

**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. 11681
ORDER NO. R-10656-A**

**APPLICATION OF RICHARDSON
OPERATING COMPANY FOR
COMPULSORY POOLING,
DOWNHOLE COMMINGLING, AND AN
UNORTHODOX GAS WELL
LOCATION, SAN JUAN COUNTY, NEW
MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on December 19, 1996, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 13th day of January, 1997, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) At the time of the hearing this case was consolidated with Case No. 11680 for the purpose of testimony.

(3) At the request of the applicant, the record, evidence and testimony presented in Case No. 11570, heard by the Division on July 11, 1996, are hereby incorporated by reference in this case.

(4) The applicant, Richardson Operating Company ("Richardson"), seeks an order pooling all mineral interests in the Undesignated West Kutz-Pictured Cliffs Pool underlying the NE/4 of Section 15, Township 29 North, Range 13 West, NMPM, San Juan County, New Mexico and all mineral interests in the Basin-Fruitland Coal (Gas) Pool underlying the E/2 of said Section 15, thereby forming a standard 160-acre and a standard 320-acre gas spacing and proration unit for both pools, respectively. Both units are to be dedicated to its ROPCO "15" GW "A"-PC/"B"-FC Well No. 1 to be drilled and completed at an unorthodox gas well location for both intervals 2171 feet from the North line and 775 feet from the East line (Unit H) of said Section 15.

(5) Applicant further seeks authorization to commingle conventional Pictured Cliffs gas production with coal gas production from the Basin-Fruitland Coal (Gas) Pool within the wellbore of the proposed well.

(6) The E/2 of said Section 15 consists of some 76 different fee tracts all within the City of Farmington, New Mexico.

(7) Richardson has proposed to all unleased mineral owners and working interest owners the formation of the two subject spacing units and the drilling of the proposed well and has obtained the voluntary agreement of more than 96% of the interest ownership within the 160-acre spacing unit and more than 91% of the interest ownership within the 320-acre spacing unit; however, the remaining balance of the interest owners in the proposed units have not agreed to pool their interests.

(8) Richardson has the right to drill for and develop those minerals underlying both the proposed 160-acre and 320-acre units. Further, Richardson has made a good faith effort to reach a voluntary agreement with all mineral interest owners underlying the two subject tracts and is therefore entitled to seek compulsory pooling.

(9) The subject well location is within the boundaries of the Basin-Fruitland Coal (Gas) Pool which is governed by Special Rules and Regulations as promulgated by Division Order No. R-8768, as amended, which require standard 320-acre gas spacing and proration units with wells to be located within the NE/4 or SW/4 of a section and no closer than 790 feet from any outer boundary of the spacing unit nor closer than 130 feet from any quarter section line nor closer than 10 feet from any quarter-quarter section line or subdivision inner boundary. The proposed well site is also located within three-fourths of a mile from the West Kutz-Pictured Cliffs Pool which is subject to **Rule 104 C(3)** of the Division's statewide rules and regulations, which currently provides for 160-acre spacing and proration units with wells to be located no closer than 790 feet to any outer boundary of the tract nor closer than 130 feet to any quarter-quarter section or subdivision inner boundary.

(10) In accordance with the applicable Division notice rules, Richardson has provided adequate notice to all interested and affected parties regarding those matters associated with downhole commingling and the proposed unorthodox location. Mr. Merrill Kempton, of Farmington, New Mexico, a royalty owner, who has agreed to join his interest of approximately 40 acres within the E/2 of said Section 15, is the owner of the surface at which the well is to be located and has entered his appearance by letters dated June 29, 1996 and July 16, 1996 in Case No. 11570 in opposition to the applicant but failed to appear at either the July 11, 1996 or the July 25, 1996 hearings. No other party has appeared in opposition to the subject application.

(11) Because of a combination of various surface use limitations imposed by "in-town drilling", Richardson is unable to locate its well at a standard gas well location within the NE/4 of said Section 15 that satisfies the location requirements of both the Basin-Fruitland Coal (Gas) Pool and Undesignated West Kutz-Pictured Cliffs Pool, and therefore seeks the proposed unorthodox location which it anticipates will satisfy all the requirements imposed by the City of Farmington.

(12) In support of its unorthodox location request, Richardson introduced an aerial photograph, tract maps, and geologic evidence, including a stratigraphic cross-section and isopach map of the Upper Pictured Cliffs Sandstone which demonstrates that:

- (a) the proposed unorthodox location is due to surface topographical conditions and surface use limitations imposed by the City of Farmington;
- (b) the proposed unorthodox location will serve to minimize surface disturbance within the NE/4 of said Section 15 by being in close proximity to a well pad currently being used by Conoco Inc. for its Farmington "B" Com Well No. 1 (API No. **30-045-08330**), located 2300 feet from the North line and 1150 feet from the East line (Unit H) of said Section 15;
- (c) that in this instance there is no significant geological differences between the closest standard location and the proposed unorthodox location; and,
- (d) Richardson's proposed unorthodox gas well will serve to provide for a suitable well location for both intervals.

(13) To date the City of Farmington has not yet issued a permit to Richardson for the proposed well location and should it be necessary for Richardson to relocate its well in the event the City of Farmington requires it to be moved for whatever reason, a special administrative procedure should be adopted in this particular instance to provide for a "drilling window" within which Richardson may drill this well. Such a provision will serve to avoid any undue regulatory burden imposed upon Richardson of having to reappear before a Division hearing examiner in order to modify this well location.

(14) To avoid the drilling of unnecessary wells, to protect correlative rights, to prevent waste, and to afford to the owner of each interest in said units the opportunity to recover or receive without unnecessary expense his just and fair share of the production in any pool completion resulting from this order, the application of Richardson to pool all mineral interests, whatever they may be, within said 160-acre and 320-acre units should be approved.

(15) Richardson Operating Company should be designated the operator of the subject well and units.

(16) Technical evidence presented to support Richardson's request to downhole commingle both Fruitland coal gas and Pictured Cliffs gas production within the subject well demonstrates that:

- (a) expected Fruitland coal gas production is insufficient to economically justify a well solely for production from that interval;
- (b) the producing characteristics of both formations will necessitate the installation of two artificial lift systems within a dually completed wellbore, which could present certain mechanical difficulties;
- (c) downhole commingling will serve to efficiently recover Fruitland coal gas and Pictured Cliffs gas reserves underlying each respective proration and spacing units;
- (d) there will be no crossflow between the two commingled pools;
- (e) neither commingled zone exposes the other to damage by produced fluids if any is encountered;

- (f) the fluids from each zone are compatible with the other;
- (g) the value of the commingled production is not less than the sum of the values of the individual production;
- (h) while the ownership in each spacing unit is different, the allocation formula proposed by the applicant is fair and equitable and will afford each interest owner the right to receive its just and appropriate share of production.

(17) Approval of the proposed downhole commingling will allow the applicant the opportunity to recover the gas reserves in the Fruitland and Pictured Cliffs formations underlying each respective proration unit thereby preventing waste and will not violate correlative rights.

(18) Subsequent to completion, the applicant proposes to conduct a production test on each of the subject zones in order to obtain initial production data.

(19) The production tests should be of sufficient duration in order to obtain stabilized producing rates. In addition, the applicant should notify the supervisor of the Aztec district office of the Division prior to conducting such production tests in order that such tests may be witnessed.

(20) The applicant should present the results of the production tests to the supervisor of the Aztec district office of the Division in order that the results may be verified and approved for use in its allocation formula.

(21) Due to the nature of the Basin-Fruitland coal gas production, straight allocation of gas volumes from both zones is not appropriate. The applicant therefore seeks the adoption of a monthly allocation formula, as shown on Exhibit "A" attached hereto and made a part hereof.

(22) The operator should be responsible for reporting the monthly gas production from said well by utilizing the proposed allocation formula.

(23) An annual report should be submitted by the operator to both the Aztec and Santa Fe offices of the Division showing the complete computation for each month.

(24) Any condensate production from the subject well should be allocated entirely to the Pictured Cliffs interval.

(25) Any change in the method of gas allocation between the two pools should be made only after due notice and hearing.

(26) To afford the Division an opportunity to assess the potential of waste and to expeditiously order the appropriate remedial action, the operator should notify the Aztec district office of the Division any time the subject well is shut-in for seven consecutive days.

(27) Any non-consenting working interest owner should be afforded the opportunity to pay his share of the estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production.

(28) At the time of the hearing the applicant requested and presented testimony for a maximum risk penalty factor of 200 percent to be assessed in the drilling of the proposed well. However, said testimony was insufficient to support assessing a maximum 200 percent risk penalty factor in this instance, therefore, based on precedent established in compulsory pooling cases in the Basin-Fruitland Coal Gas Pool, a 156 percent risk penalty has been established as being proper for wells within said coal gas pool.

(29) Any non-consenting working interest owner should be afforded the opportunity to object to the actual well costs but actual well costs should be adopted as the reasonable well costs in the absence of such objection.

(30) Following determination of reasonable well costs, any non-consenting working interest owner who has paid his share of estimated costs should pay to the operator any amount that reasonable well costs exceed estimated well costs and should receive from the operator any amount that paid estimated well costs exceed reasonable well costs.

(31) \$3,500.00 per month while drilling and \$ 450.00 per month while producing should be fixed as reasonable charges for supervision (combined fixed rates); the operator should be authorized to withhold from production the proportionate share of such supervision charges attributable to each non-consenting working interest, and in addition thereto, the operator should be authorized to withhold from production the proportionate share of actual expenditures required for operating the subject well, not in excess of what are reasonable, attributable to each non-consenting working interest.

(32) All proceeds from production from the subject well which are not disbursed for any reason should be placed in escrow to be paid to the true owner thereof upon demand and proof of ownership.

(33) Upon the failure of the operator of said pooled units to commence the drilling of the well to which said units are dedicated on or before April 15, 1997, the order pooling said units should become null and void and of no effect whatsoever.

(34) Should all the parties to this forced pooling order reach voluntary agreement subsequent to entry of this order, this order shall thereafter be of no further effect.

(35) The operator of the well and units shall notify the Director of the Division in writing of the subsequent voluntary agreement of all parties subject to the forced pooling provisions of this order.

IT IS THEREFORE ORDERED THAT:

(1) All mineral interests, whatever they may be, in the Undesignated West Kutz-Pictured Cliffs Pool underlying the NE/4 of Section 15, Township 29 North, Range 13 West, NMPM, San Juan County, New Mexico and all mineral interests, whatever they may be, in the Basin-Fruitland Coal (Gas) Pool underlying the E/2 of said Section 15, are hereby pooled to form a standard 160-acre and a standard 320-acre gas spacing and proration unit, respectively, for both pools. Both units are to be dedicated to the proposed ROPCO "15" GW "A"-PC/"B"-FC Well No. 1 to be drilled and completed at an unorthodox gas well location for both intervals 2171 feet from the North line and 775 feet from the East line (Unit H) of said Section 15.

PROVIDED HOWEVER THAT, the operator is authorized to relocate said well at any surface location that is within a "drilling window" being an area within the NE/4 of said Section 15: (i) not closer than 790 feet to the North line of said Section 15; (ii) not closer than 790 feet to the western boundary of the NE/4 of said Section 15; (iii) nor closer than 469 feet to the southern boundary of the NE/4 of said Section 15; (iv) nor closer than 775 feet to the East line of said Section 15.

PROVIDED HOWEVER THAT, the operator of said units shall commence the drilling of said well on or before the 15th day of April, 1997, and shall thereafter continue the drilling of said well with due diligence to a depth sufficient to test the Pictured Cliffs formation.

PROVIDED FURTHER THAT, in the event said operator does not commence the drilling of said well on or before the 15th day of April, 1997, Decretory Paragraph No. (1) of this order shall be null and void and of no effect whatsoever, unless said operator obtains a time extension from the Division for good cause shown.

PROVIDED FURTHER THAT, should said well not be drilled to completion, or abandonment, within 120 days after commencement thereof, said operator shall appear before the Division Director and show cause why Decretory Paragraph No. (1) of this order should not be rescinded.

(2) Subsequent to completion, the applicant shall conduct a production test on each of the subject zones in order to obtain initial stabilized producing rates. In addition, the applicant shall notify the supervisor of the Aztec district office of the Division prior to conducting such production tests in order that such test may be witnessed.

(3) The applicant shall present the results of the production tests to the supervisor of the Aztec district office of the Division in order that the results may be verified and approved for use in its allocation formula.

(4) The allocation of gas produced from both zones shall be in accordance with the allocation formula adopted for this well as further described in Exhibit "A" attached hereto and made a part hereof.

(5) The operator is responsible for reporting the monthly gas production from the subject well to the Division by utilizing the allocation formula adopted herein. An annual report shall be submitted by the operator to both the Aztec and Santa Fe offices of the Division showing the complete computation for the previous twelve month period.

(6) Condensate production from the subject well shall be allocated entirely to the Pictured Cliffs formation. Water production shall be reported in a manner acceptable to the supervisor of the Aztec district office of the Division.

(7) Any variance in the method of gas allocation between the two pools shall be made only after due notice and hearing.

(8) The operator shall immediately notify the Aztec district office of the Division any time the subject well has been shut-in for seven consecutive days and shall concurrently present to the Division a plan for remedial action.

(9) Any change in the method of gas allocation between the two pools should be made only after due notice and hearing.

(10) Richardson Operating Company is hereby designated the operator of the subject well and units.

(11) After the effective date of this order and within 90 days prior to commencing said well, the operator shall furnish the Division and each known working interest owner in the subject units an itemized schedule of estimated well costs.

(12) Within 30 days from the date the schedule of estimated well costs is furnished to him, any non-consenting unleased mineral owner or uncommitted working interest owner shall have the right to pay his share of estimated well costs to the operator in lieu of paying his share of reasonable well costs out of production, and any such owner who pays his share of estimated well costs as provided above shall remain liable for operating costs but shall not be liable for risk charges.

(13) The operator shall furnish the Division and each known unleased mineral owner or working interest owner an itemized schedule of actual well costs within 90 days following completion of the well; if no objection to the actual well costs is received by the Division and the Division has not objected within 45 days following receipt of said schedule, the actual well costs shall be the reasonable well costs; provided however, if there is objection to actual well costs within said 45-day period the Division will determine reasonable well costs after public notice and hearing.

(14) Within 60 days following determination of reasonable well costs, any non-consenting working interest owner who has paid his share of estimated well costs in advance as provided above shall pay to the operator his pro rata share of the amount that reasonable well costs exceed estimated well costs and shall receive from the operator his pro rata share of the amount that estimated well costs exceed reasonable well costs.

(15) The operator is hereby authorized to withhold the following costs and charges from production:

- (a) the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him; and,
- (b) as a charge for the risk involved in the drilling of the well, 156 percent of the pro rata share of reasonable well costs attributable to each non-consenting working interest owner who has not paid his share of estimated well costs within 30 days from the date the schedule of estimated well costs is furnished to him.

(16) The operator shall distribute said costs and charges withheld from production to the parties who advanced the well costs.

(17) \$3,500.00 per month while drilling and \$ 450.00 per month while producing are hereby fixed as reasonable charges for supervision (combined fixed rates); the operator is hereby authorized to withhold from production the proportionate share of such supervision charges attributable to each non-consenting working interest, and in addition thereto, the operator is hereby authorized to withhold from production the proportionate share of actual expenditures required for operating such well, not in excess of what are reasonable, attributable to each non-consenting working interest. The operator is hereby authorized to make annual adjustments of said combined fixed rates as of the first day of April each year in accordance with the COPAS accounting schedule utilized by the industry.

(18) Any unleased mineral interest shall be considered a seven-eighths (7/8) working interest and a one-eighth (1/8) royalty interest for the purpose of allocating costs and charges under the terms of this order.

(19) Any well costs or charges which are to be paid out of production shall be withheld only from the working interest's share of production, and no costs or charges shall be withheld from production attributable to royalty interests.

(20) All proceeds from production from the subject well which are not disbursed for any reason shall immediately be placed in escrow in San Juan County, New Mexico, to be paid to the true owner thereof upon demand and proof of ownership; the operator shall notify the Division of the name and address of said escrow agent within 30 days from the date of first deposit with said escrow agent.

(21) Should all the parties to this forced pooling order reach voluntary agreement subsequent to entry of this order, this order shall thereafter be of no further effect.

(22) The operator of the well and units shall notify the Director of the Division in writing of the subsequent voluntary agreement of all parties subject to the forced pooling provisions of this order.

(23) 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


WILLIAM J. LEMAY, Director

S E A L

Exhibit "A"
CASE NO. 11681
DIVISION ORDER NO. R-10656-A

ROPCO "15" GW "A"-PC/"B"-FC Well No. 1
MONTHLY GAS PRODUCTION ALLOCATION FORMULA
GENERAL EQUATION

$Q_t = Q_{ftc} + Q_{pc}$

WHERE:
 Q_t = TOTAL MONTHLY PRODUCTION FROM WELL (MCF/MONTH)
 Q_{ftc} = FRUITLAND COAL (FTC) MONTHLY PRODUCTION (MCF/MONTH)
 Q_{pc} = PICTURED CLIFFS (PC) MONTHLY PRODUCTION (MCF/MONTH)

REARRANGING THE EQUATION TO SOLVE FOR Q_{ftc} :

$Q_{ftc} = Q_t - Q_{pc}$

ANY PRODUCTION RATE OVER WHAT IS CALCULATED FOR THE PICTURED CLIFFS (PC) USING THE APPLIED FORMULA IS FRUITLAND COAL (FTC) PRODUCTION.

PICTURED CLIFFS (PC) FORMATION PRODUCTION FORMULA IS:

$Q_{pc} = Q_{pci} * e^{-\{-(D_{pc}) * (t)\}}$

WHERE:
 Q_{pci} = INITIAL PC MONTHLY FLOW RATE (CALCULATED FROM FLOW TEST)
 D_{pc} = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED

FROM: $(Q_{pci} - Q_{pcabd}) / N_{p(pc)}$
See Determination of Q_{pci} and Pictured Cliffs Estimated Ultimate Recovery ($N_{p(pc)}$)
 $Q_{pcabd} = 300 \text{ mcf/d}$

WHERE:
 $N_{p(pc)} = \text{PICTURED CLIFFS ESTIMATED ULTIMATE RECOVERY (EUR)}$
 $P * 9.5 \text{ MMCF/psi} * R_f$
 P = INITIAL RESERVOIR PRESSURE (7 day SIBHP)
 R_f = RECOVERY (FIELD ANALOGY): = 0.85
"9.5": IS DETERMINED FROM MATERIAL BALANCE (FIELD ANALOGY) AND VOLUMETRIC RESERVES (LOG ANALYSIS)

By calculating $N_{p(pc)}$ from SIBHP and determining Q_{pci} , D_{pc} can then be calculated utilizing the previously described parameters.

THUS: $Q_{ftc} = Q_t - Q_{pci} * e^{-\{-(D_{pc}) * (t)\}}$
WHERE: (t) = TIME (MONTHS) FROM INITIAL PRODUCTION

REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4.