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. 12122
ORDER NO. R-11139

APPLICATION OF CONOCO INC FOR DOWNHOLE COMMINGLING, UNORTHODOX GAS WELL LOCATIONS, AND APPROVAL OF A PILOT PROJECT INCLUDING AN EXCEPTION FROM RULE 2(b) OF THE SPECIAL RULES AND REGULATIONS FOR THE BASIN-DAKOTA GAS POOL, RIO ARRIBA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on February 4, 1999, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 18th day of February, 1999, 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-Dakota Gas Pool is currently governed by the "***SPECIAL RULES AND REGULATIONS FOR THE BASIN-DAKOTA GAS POOL***", set forth in ***EXHIBIT "B", "SPECIAL RULES FOR INDIVIDUAL PRORATED GAS POOLS"*** of Division Order No. R-10987, dated May 7, 1998. The rules pertaining to well spacing and location requirements are set forth as follows:

WELL ACREAGE AND LOCATION REQUIREMENTS

The STANDARD GPU (Gas Proration Unit) in the Basin-Dakota Gas Pool shall be 320 acres.

WELL LOCATION:

1) THE INITIAL WELL drilled on a GPU shall be located not closer than 790 feet to any outer boundary of the quarter section on which the well is located and not closer than 130 feet to any quarter-quarter section line or subdivision inner boundary.

2) THE INFILL WELL drilled on a GPU shall be located in the quarter section of the GPU not containing a Dakota well, and shall be located with respect to the GPU boundaries as described in the preceding paragraph.

No Dakota infill well shall be drilled nearer than 920 feet to an existing Dakota well on the same GPU.

The plat (Form C-102) accompanying the Application for Permit to Drill (OCD Form C-101 or the federal form) for the subsequent well on a GPU shall have outlined thereon the boundaries of the GPU and shall show the location of all existing Dakota wells on the GPU plus the proposed new well.

In the event an infill well is drilled on any GPU, both wells shall be produced for so long as it is economically feasible to do so.

(3) The applicant, Conoco Inc., seeks authority to institute a pilot infill drilling program within its San Juan 28-7 Unit whereby up to four wells may be drilled on a standard 320-acre gas proration unit. The applicant further seeks:

a) an exception to the well location requirements for the Basin-Dakota Gas Pool whereby its 80-acre infill wells may be drilled at unorthodox locations anywhere in the proration unit provided that such wells are located no closer than 10 feet from any section, quarter-section or quarter-quarter section line; and

b) authority to downhole commingle Basin-Dakota and Blanco-Mesaverde Gas Pool production within the proposed 80-acre infill wells.

(4) At the hearing, the applicant requested that its pilot infill drilling project be initially limited to the drilling of the following described six wells:

Well Name & Number	Well Location All in Township 28 North, Range 7 West
Standard Well Locations:	
San Juan 28-7 Unit No. 234M	1020' FSL & 895' FEL (Unit P), Section 15
San Juan 28-7 Unit No. 135E	1270' FNL & 1850' FWL (Unit C), Section 27
Unorthodox Well Locations:	
San Juan 28-7 Unit No. 280M	1320' FSL & 10' FWL, Section 16
San Juan 28-7 Unit No. 219M	1365' FSL & 690' FWL (Unit L), Section 20
San Juan 28-7 Unit No. 225E	1340' FSL & 2020' FEL (Unit J), Section 34
San Juan 28-7 Unit No. 226E	1500' FNL & 2400' FWL (Unit F), Section 36

(5) The Estate of Glen D. Hughes, an overriding royalty interest owner within the San Juan 28-7 Unit, appeared at the hearing through legal counsel.

(6) In addition to the parties of record, the hearing was attended by a representative of the United States Bureau of Land Management (BLM) and the Supervisor of the Division's Aztec District Office.

(7) Subsequent to the hearing, it was determined that the proposed location for the San Juan 28-7 Unit Well No. 280M fell on a quarter-quarter section line within Section 16. Upon being advised of the situation by the Division, the applicant requested that the well location be amended to 1310 feet from the South line and 10 feet from the West line (Unit M) of Section 16.

(8) Subsequent to the hearing, it was also determined that the proposed location for the San Juan 28-7 Unit Well No. 135E is unorthodox for the Basin-Dakota Gas Pool by virtue of being too close to an interior quarter-quarter section line.

(9) The San Juan 28-7 Unit Wells No. 280M and 135E are located within the interior of the San Juan 28-7 Unit and there are no affected offset operators and/or interest owners, therefore, no additional or amended notice of these well locations is necessary.

(10) The applicant is the current operator of the San Juan 28-7 Unit, a Federal exploratory unit comprising some 31,000 acres, more or less, and encompassing Sections 7 through 36, Township 28 North, Range 7 West, and Sections 1 through 12, and all or portions of Sections 15 through 22 and 27 through 30, Township 27 North, Range 7 West, NMPM, Rio Arriba County, New Mexico.

(11) According to applicant's testimony, the San Juan 28-7 Unit is not fully developed in the Basin-Dakota Gas Pool at this time with 160-acre infill wells.

(12) The applicant testified that the Dakota Participating Area (PA) currently encompasses the entire San Juan 28-7 Unit area with the exception of a 160-acre tract comprising the SW/4 of Section 18 and a 320-acre tract comprising the E/2 of Section 21, both in Township 27 North, Range 7 West. These tracts were excluded from the Dakota PA apparently due to the presence of Dakota wells that were deemed non-commercial by the BLM.

(13) The evidence and testimony presented indicates that the applicant has undertaken a study to analyze the drainage efficiency of Dakota gas wells in the San Juan 28-7 Unit area. As part of this study, the applicant has examined various geologic and engineering factors that may affect ultimate gas recoveries.

(14) In its investigation, the applicant gathered initial shut-in wellhead pressure data from both the initial and infill wells within the San Juan 28-7 Unit area. Applicant then utilized this data to construct a pressure-drop map.

(15) Applicant's data indicates that there are considerable pressure-drop differences between areas in the San Juan 28-7 Unit. Pressure drops range from greater than 60 psi/year to less than 5 psi/year.

(16) The applicant presented geologic evidence and testimony indicating that:

a) the Dakota formation generally exhibits low permeability in the area of the San Juan 28-7 Unit, typically in the range of .005 md. to .03 md.;

b) the calculated pressure drops are a good indication of effective permeability in the Dakota reservoir;

c) areas with low pressure drops are most likely not being efficiently and effectively drained by existing well density;

d) the difference between areas of high and low pressure drop cannot be attributed to differences in matrix porosity and permeability, reservoir structure or reservoir thickness; and

e) the presence and density of natural fractures in the Dakota reservoir appear to account for the differences between areas of high and low pressure drop and the resulting differences in drainage efficiency.

(17) The applicant presented the results of a reservoir simulation study it has conducted within the San Juan 28-7 Unit area. The results of this study show that 80-acre infill wells in the San Juan 28-7 Unit area should ultimately recover approximately 829 MMCF of gas from the Basin-Dakota Gas Pool. Of this amount, approximately 704 MMCFG will be new gas reserves that would otherwise not be recovered by the existing wells (160-acre well density), and 125 MMCFG will be accelerated reserves.

(18) The evidence and testimony indicate that various geologic and engineering criteria were utilized by the applicant in its selection of locations for the proposed infill wells.

(19) The proposed unorthodox infill well locations should be approved.

(20) The applicant notified all interest owners in the San Juan 28-7 Unit and all offset operators of its application in this case.

(21) No offset operator and/or interest owner appeared at the hearing in opposition to the application.

(22) Preliminary geologic and engineering data indicate that the proposed pilot infill drilling program within the San Juan 28-7 Unit will allow the applicant the opportunity to gather additional geologic and engineering data to determine proper well density in this portion of the Basin-Dakota Gas Pool, will allow the recovery of additional gas reserves from the San Juan 28-7 Unit that may otherwise not be recovered, thereby preventing waste, and will not violate correlative rights.

(23) The applicant does not seek an increase in the gas allowable for the GPU's in which the pilot infill drilling program is to be conducted.

(24) By Order No. R-10476-B issued in Case No. 11815 on October 17, 1997, the Division, upon application of Conoco Inc., established a downhole commingling "reference case" within the San Juan 28-7 Unit whereby the Dakota formation was determined to be "marginal" with regards to economically drilling a well to produce singly from this formation.

(25) The data presented by the applicant in the immediate case and in Case No. 11815 demonstrate that the commingling of Basin-Dakota and Blanco-Mesaverde Gas Pool production within the proposed pilot infill wells is necessary in order to economically recover the remaining gas reserves within these formations.

(26) Prior to downhole commingling, the applicant should file a Form C-107-A (Application for Downhole Commingling) for the six wells within the pilot infill drilling area.

(27) The applicant should conduct a production test on the Dakota and Mesaverde formations within the six pilot infill wells for a sufficient period of time to obtain stabilized production rates.

IT IS THEREFORE ORDERED THAT:

(1) As an exception to the "***SPECIAL RULES AND REGULATIONS FOR THE BASIN-DAKOTA GAS POOL***," the applicant, Conoco Inc., is hereby authorized to conduct an 80-acre pilot infill drilling program within its San Juan 28-7 Unit, located in portions of Townships 27 & 28 North, Range 7 West, NMPM, Rio Arriba County, New Mexico, by drilling the following described Basin-Dakota Gas Pool wells within existing GPU's:

Well Name & Number	Well Location All in Township 28 North, Range 7 West
Standard Well Locations:	
San Juan 28-7 Unit No. 234M	1020' FSL & 895' FEL (Unit P), Section 15
Unorthodox Well Locations:	
San Juan 28-7 Unit No. 135E	1270' FNL & 1850' FWL (Unit C), Section 27
San Juan 28-7 Unit No. 280M	1310' FSL & 10' FWL (Unit M), Section 16
San Juan 28-7 Unit No. 219M	1365' FSL & 690' FWL (Unit L), Section 20
San Juan 28-7 Unit No. 225E	1340' FSL & 2020' FEL (Unit J), Section 34
San Juan 28-7 Unit No. 226E	1500' FNL & 2400' FWL (Unit F), Section 36

(2) The pilot infill drilling program shall be initially limited to the drilling of these six wells.

(3) These GPU's shall not receive a gas allowable greater than that normally assigned a proration unit containing two wells in the Basin-Dakota Gas Pool.

(4) The applicant is further authorized to downhole commingle Basin-Dakota and Blanco-Mesaverde Gas Pool production within the six pilot infill wells, provided however, the applicant shall, prior to commingling, file a Form C-107-A for each of the wells.

(5) The applicant shall conduct a production test on the Dakota and Mesaverde formations within the six pilot infill wells for a sufficient period in order to obtain stabilized production rates.

(6) 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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