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. 10707
Order No. R-9948

APPLICATION OF AMOCO PRODUCTION COMPANY FOR A CO2 INJECTION PILOT PROJECT AND AN EXCEPTION TO RULE NO. (4), ORDER NO. R-8768, AS AMENDED, SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on April 8, June 3 and July 1, 1993, at Santa Fe, New Mexico, before Examiners David R. Catanach and Michael E. Stogner.

NOW, on this 30th day of August, 1993, 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) The applicant, Amoco Production Company, seeks authority to initiate a pilot carbon dioxide injection project in the Basin-Fruitland Coal Gas Pool underlying the N/2 of Section 23, Township 30 North, Range 9 West, NMPM, San Juan County, New Mexico, by the injection of carbon dioxide into the coal seams through its Florance "S" Gas Com Well No. 7A located 1750 feet from the North line and 1590 feet from the West line (Unit F) of Section 23.

(3) The applicant further seeks an exception to Rule No. (4) of the Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool as promulgated by Division Order No. R-8768, as amended, by recompleting its Florance "D" Well No. 2, located 1450 feet from the North line and 790 feet from the West line (Unit E) of Section 23, from the Blanco-Pictured Cliffs Pool to the Basin-Fruitland Coal Gas Pool to be utilized as a monitor/producing well within the pilot project area.

(4) The proposed injection well is currently producing from the Blanco-Mesaverde Pool through perforations from 4,471 feet to 5,182 feet. The applicant proposes to complete this well as a dual injection/producing well in the Basin-Fruitland Coal Gas Pool and Blanco-Mesaverde Pool, respectively.

(5) Within Section 23 there are currently two wells producing from the Basin-Fruitland Coal Gas Pool, these being the Florance "U" Well No. 3 located in Unit M, currently dedicated to the S/2 of Section 23, and the Florance "S" Gas Com Well No. 4 located in Unit G and currently dedicated to the N/2 of Section 23.

(6) All of the Basin-Fruitland Coal Gas Pool wells within Section 23 are operated by the applicant.

(7) According to applicant's evidence and testimony, laboratory research and computer modeling have indicated that injection of carbon dioxide into coal formations may aid in the methane desorption process which may result in the recovery of a significantly greater amount of gas from the Basin-Fruitland Coal Gas Pool than would normally be recovered by pressure depletion.

(8) According to applicant's engineering evidence and testimony, the proposed carbon dioxide pilot injection project is an attempt to test the injectivity of carbon dioxide into coal seams and to test the effectiveness of carbon dioxide as a displacing agent as described above.

(9) The applicant proposes to inject into seven distinct coal seam intervals located within the gross interval from approximately 2,522 feet to 2,752 feet.

(10) Applicant further proposes to inject approximately 2.4 MMCFG per day at a surface injection pressure of approximately 1700 psi.

(11) The applicant's plan of operation includes monitoring and producing the aforesaid Florance "D" Well No. 2, as well as four additional wells surrounding the proposed injection well, these being the Florance "S" Gas Com Well No. 4, the Florance "U" Well No. 3, the Florance "K" Well No. 3 and the Florance "R" Well No. 4.

(12) Applicant's proposed pilot project, according to its testimony, should be complete in approximately one year.

(13) The only affected offset operator to the proposed pilot project is Meridian Oil Inc.

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

(15) Approval of the proposed pilot carbon dioxide injection project will allow the applicant the opportunity to test a new process and technology which may ultimately result in the recovery of otherwise unrecoverable gas from the Basin-Fruitland Coal Gas Pool, thereby preventing waste, and will not violate correlative rights.

(16) The applicant should take all steps necessary to ensure that the injected carbon dioxide enters only the coal seam intervals and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(17) The injection of carbon dioxide into the Florance "S" Gas Com Well No. 7A should be accomplished through 2 3/8-inch internally plastic-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation; an approved leak detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(18) Prior to commencing injection operations into the Florance "S" Gas Com Well No. 7A, the casing should be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(19) The injection well or pressurization system should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 504 psi.

(20) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the pressure limitation described in Finding No. (19) above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(21) The operator should give advance notification to the supervisor of the Aztec District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure test in order that the same may be witnessed.

(22) The proposed carbon dioxide injection pilot project should be approved and the project should be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(23) Expansion of the pilot project should be approved only after notice and hearing.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Amoco Production Company, is hereby authorized to initiate a pilot carbon dioxide injection project in the Basin-Fruitland Coal Gas Pool underlying the N/2 of Section 23, Township 30 North, Range 9 West, NMPM, San Juan County, New Mexico, by the injection of carbon dioxide into the perforated interval from approximately 2,522 feet to 2,752 feet in its Florance "S" Gas Com Well No. 7A located 1750 feet from the North line and 1590 feet from the West line (Unit F) of Section 23.

(2) The applicant is further authorized to complete said Florance "S" Gas Com Well No. 7A as a dual injection/production well in the Basin-Fruitland Coal and Blanco-Mesaverde Gas Pools, respectively.

(3) As an exception to Rule No. (4) of the Special Rules and Regulations for the Basin-Fruitland Coal Gas Pool, the applicant is authorized to recomplete its Florance "D" Well No. 2, located 1450 feet from the North line and 790 feet from the West line (Unit E) of Section 23, from the Blanco-Pictured Cliffs Pool to the Basin-Fruitland Coal Gas Pool to be utilized as a monitor/producing well within the pilot project area in conjunction with the existing Florance "S" Gas Com Well No. 4 located in Unit G.

(4) The applicant shall take all steps necessary to ensure that the injected carbon dioxide enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(5) Injection into the Florance "S" Gas Com Well No. 7A shall be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation; an approved leak detection device shall be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(6) The injection well or pressurization system shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 504 psi.

(7) The Division Director shall have the authority to administratively authorize a pressure limitation in excess of the above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(8) Prior to commencing injection operations into the Florance "S" Gas Com Well No. 7A, the casing shall be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(9) The operator shall give advance notification to the supervisor of the Aztec District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure test in order that the same may be witnessed.

(10) The applicant shall immediately notify the supervisor of the Aztec District Office of the Division of the failure of the tubing, casing or packer in the injection well, the leakage of gas from or around any producing well, or the leakage of gas from any plugged and abandoned well within the project area, and shall take such steps as may be timely and necessary to correct such failure or leakage.

(11) The subject project is hereby designated the Basin Fruitland Carbon Dioxide Pilot Project, and the applicant shall conduct injection operations in accordance with Division Rule Nos. 701 through 708 and shall submit monthly progress reports in accordance with Division Rule Nos. 706 and 1115.

(12) Expansion of the pilot project shall be approved only after notice and hearing.

(13) Jurisdiction of this cause 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

WILLIAM J. LeMAY
Director

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