

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

CASE NO. 7029  
Order No. R-6388-A

IN THE MATTER OF THE HEARING CALLED  
BY THE OIL CONSERVATION DIVISION ON ITS  
OWN MOTION TO CONSIDER AMENDMENTS TO ITS  
SPECIAL RULES AND PROCEDURES FOR THE  
DESIGNATION OF "TIGHT FORMATION,"  
PROMULGATED BY DIVISION ORDER NO. R-6388  
TO COMPLY WITH FERC ORDER NO. 99, ISSUED  
AUGUST 15, 1980, PROMULGATING FINAL REGULATIONS  
WITH RESPECT TO SECTION 107 OF THE NGPA.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 1, 1980, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 10th day of February, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That by its Order No. R-6388, dated June 30, 1980, the New Mexico Oil Conservation Division promulgated its "Special Rules and Procedures for Tight Formation Designation Under Section 107 of the Natural Gas Policy Act of 1978."

(3) That the rules and procedures adopted by said order were predicated upon the interim regulations issued February 20, 1980, by the Federal Energy Regulatory Commission (FERC) and were intended to be amended should the final regulations promulgated by the FERC differ substantially from the afore-said interim regulations.

(4) That by its Order No. 99, issued August 15, 1980, the FERC promulgated its final rules on high-cost natural gas produced from tight formations, said rules to become effective September 22, 1980.

NMOCD EXHIBIT NO.   /  

CASE NO. 10432

January 9, 1992

(5) That said final rules differ in certain respects from the interim regulations, and certain amendments to the Division's rules and procedures as promulgated by Order No. R-6388 are therefore necessary, to wit:

(6) That Section B, Definitions, should be amended by the addition of the following definition:

6. "Infill drilling" means any drilling in a substantially developed formation (or a portion thereof) subject to requirements respecting well-spacing or proration units which were amended by the Division or the Oil Conservation Commission after the formation (or portion thereof) was substantially developed and which were adopted for the purpose of more effective and efficient drainage of the reservoirs in such formation. Such amendment may provide for the establishment of smaller drilling or production units or may permit the drilling of additional wells on the original units.

(7) That subparagraph c of subsection 1, Section D, Evidence, should be amended to read in its entirety as follows:

- "c. a map or list which clearly locates or describes wells which are currently producing oil or gas, or both, from the formation within the geographical area of the formation, and"

(8) That subparagraph d of subsection 1, Section D, Evidence, should be amended to read in its entirety as follows:

- "d. a report of the extent to which an applicant believes existing State and Federal regulations will assure that development of the formation will not adversely affect or impair any fresh water aquifers (during both hydraulic fracturing and waste disposal operations) that are being used or are expected to be used in the foreseeable future for domestic or agricultural water supplies; and"

(9) That old subparagraph e of subsection 1, Section D, Evidence, reading "any other information. . . ." should be renumbered "f" and read in its entirety as follows:

"f. any other information which the Division may require."

(10) That a new subparagraph e of subsection 1, Section D, Evidence, should be added, reading in its entirety as follows:

"e. if the formation has been authorized to be developed by infill drilling prior to the date of recommendation, information and data demonstrating that the formation cannot be developed without the incentive price established in 18 CFR §271.703(a)."

(11) That subparagraph c of subsection 2, Section D, Evidence, should be amended to read in its entirety as follows:

"c. No well drilled into the recommended tight formation is expected to produce, without stimulation, more than five barrels of crude oil per day."

(12) That a new subparagraph e should be added to subsection 2, Section D, Evidence, reading in its entirety as follows:

"e. If the formation or any portion thereof was authorized to be developed by infill drilling prior to the date of recommendation and the Division has information which in its judgment indicates that such formation or portion subject to infill drilling can be developed absent the incentive price established in 18 CFR §271.703(a), then the Division shall not include such formation or portion thereof in its recommendation."

(13) That the "Special Rules and Procedures for Tight Formation Designations Under Section 107 of the Natural Gas Policy Act of 1978," promulgated June 30, 1980, by Order No. R-6388, and amended as described above, should be re-promulgated reading in their entirety as depicted on Exhibit A, attached hereto and made a part hereof.

IT IS THEREFORE ORDERED:

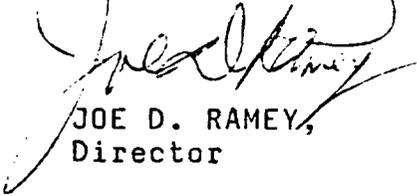
(1) That the "Special Rules and Procedures For Tight Formation Designations Under Section 107 of the Natural Gas Policy Act of 1978," as depicted by Exhibit A attached hereto and made a part hereof, are hereby adopted by the New Mexico Oil Conservation Division, effective immediately.

-4-  
Case No. 7029  
Order No. R-6388-A

(2) That 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 herein-above designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



JOE D. RAMEY,  
Director

S E A L

dr/

ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
P. O. Box 2088  
SANTA FE, NEW MEXICO 87501

SPECIAL RULES AND PROCEDURES FOR  
TIGHT FORMATION DESIGNATIONS UNDER SECTION  
107 OF THE NATURAL GAS POLICY ACT OF 1978

Amended 2-1-81

A. General

Applications for tight formation designations under Section 107 of the NGPA and applicable FERC rules and regulations shall be accepted by the Division at its Santa Fe, New Mexico office after June 30, 1980. These special rules apply only to tight formation designations and do not apply to individual well filing requirements for price category determination.

B. Definitions

1. "Crude Oil" means a mixture of hydrocarbons that exists in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separation facilities.
2. "Division" means the Oil Conservation Division of the Energy and Minerals Department of the State of New Mexico.
3. "FERC" means the Federal Energy Regulatory Commission.
4. "USGS" means the office of the United States Geological Survey in Albuquerque, New Mexico.
5. "Formation" means any geological formation or portion thereof described by geological as well as geographical parameters which is the subject of a tight formation designation application.
6. "Infill drilling" means any drilling in a substantially developed formation (or a portion thereof) subject to requirements respecting well-spacing or proration units which were amended by the Division or the Oil Conservation Commission after the formation (or portion thereof) was substantially

Order No. R-6388-A  
Exhibit A

developed and which were adopted for the purpose of more effective and efficient drainage of the reservoirs in such formation. Such amendment may provide for the establishment of smaller drilling or production units or may permit the drilling of additional wells on the original units.

C. Procedure

1. To the extent that the Division's general rules of procedure for public hearings are not altered or amended by these special rules, such general rules of procedure shall be applicable and are incorporated herein by reference.
2. All applications for tight formation designation in the State of New Mexico, in which Federal, Indian, state, or fee lands, or any combination thereof, are involved, shall be filed with the Division.
3. All applications for tight formation designation shall be set for public hearing.
4. A complete set of exhibits which an applicant proposes to offer or introduce at a hearing, together with a statement of the meaning and purpose of each exhibit, shall be submitted to the Division (and to the USGS when federal or Indian lands are involved) when the application is filed or at least 15 days prior to a hearing. These exhibits shall cover all aspects of the required evidentiary data described in Section D below. Three additional complete sets of such exhibits and statements, enclosed in an unsealed postage-paid packet, shall also accompany the application or be presented at the hearing; this packet and its contents will be forwarded to the FERC by the Division after the hearing, together with the Division order recommending disposition of the application.
5. Where practicable, applications may be consolidated for hearing at the discretion of the Director of the Division.
6. Within 15 days after its issuance, any order promulgated by the Division pursuant to these special rules shall be submitted by the Division to the FERC in accordance with Section 271.705 of the FERC rules

and regulations applicable to NGPA for approval or disapproval of a tight formation designation.

D. Evidence

1. Evidence offered by an applicant at a hearing shall include:
  - a. a map and geographical and geological descriptions of the area and formation for which the designation is sought; and
  - b. geological and engineering data to support the application; and
  - c. a map or list which clearly locates or describes wells which are currently producing oil or gas, or both, from the formation within the geographical area of the formation, and
  - d. a report of the extent to which an applicant believes existing State and Federal regulations will assure that development of the formation will not adversely affect or impair any fresh water aquifers (during both hydraulic fracturing and waste disposal operations) that are being used or are expected to be used in the foreseeable future for domestic or agricultural water supplies; and
  - e. if the formation has been authorized to be developed by infill drilling prior to the date of recommendation, information and data demonstrating that the formation cannot be developed without the incentive price established in 18 CFR §271.703(a).
  - f. any other information which the Division may require.
2. Evidence shall be based on each of the following geological and engineering guidelines:
  - a. The estimated average in situ gas permeability, throughout the pay section, is expected to be 0.1 millidarcy or less.
    - (1) Permeability may be established and demonstrated by any customary or acceptable methods, techniques, or testing acceptable in the oil and gas industry.

b. The stabilized production rate, either at atmospheric pressure or calculated against atmospheric pressure, of wells completed for production in the formation, without stimulation, is not expected to exceed the production rate determined in accordance with the following table:

If the average depth to the top of the formation (in feet):

The maximum allowable production rate (in Mcf/day) may not exceed:

<u>exceeds:</u>	<u>but does not exceed:</u>	
0	1000	44
1000	1500	51
1500	2000	59
2000	2500	68
2500	3000	79
3000	3500	91
3500	4000	105
4000	4500	122
4500	5000	141
5000	5500	163
5500	6000	188
6000	6500	217
6500	7000	251
7000	7500	290
7500	8000	336
8000	8500	388
8500	9000	449
9000	9500	519
9500	10000	600
10000	10500	693
10500	11000	802
11000	11500	927
11500	12000	1071
12000	12500	1238
12500	13000	1432
13000	13500	1655
13500	14000	1913
14000	14500	2212
14500	15000	2557

c. No well drilled into the recommended tight formation is expected to produce, without stimulation, more than five barrels of crude oil per day.

- d. If an application meets the guidelines contained in subparagraphs 2 b and 2 c above, but does not meet the guidelines contained in subparagraph 2 a, an applicant may, in the alternative, show that the formation exhibits low permeability characteristics and that the incentive price is necessary to provide reasonable incentive for production of the natural gas from the formation due to extraordinary risks or costs associated with such production.
  - (1) An application based on the guidelines outlined in subparagraph 2 d above shall include data to support the contention that the guidelines contained in paragraph 2 b and 2 c above are met, and in addition thereto, shall contain:
    - (a) the types and extent of enhanced production techniques which are expected to be necessary, and
    - (b) the estimated expenditures necessary for employing those techniques, and
    - (c) an estimate of the degree of increase in production from use of such techniques together with engineering and geological data to support that estimate.
  
- e. If the formation or any portion thereof was authorized to be developed by infill drilling prior to the date of recommendation and the Division has information which in its judgment indicates that such formation or portion subject to infill drilling can be developed absent the incentive price established in 18 CFR §271.703(a), then the Division shall not include such formation or portion thereof in its recommendation.

dr/

**Part 271—Ceiling Prices**  
[§ 24,110]

**Subpart A—Summary Tables and Calculations**

- Sec. 271.101 Ceiling prices for certain categories of natural gas.
- 271.102 Calculation of inflation adjustment for certain maximum lawful prices.

**Subpart B—New Natural Gas and Certain Natural Gas Produced from the Outer Continental Shelf**

- Sec. 271.201 Applicability.
- 271.202 Maximum lawful price.
- 271.203 Definitions.
- 271.204 Special rules.

**Subpart C—New, Onshore Production Wells**

- Sec. 271.301 Applicability.
- 271.302 Maximum lawful price.
- 271.303 Definition of new, onshore production well.
- 271.304 Waivers of well-spacing requirements.
- 271.305 Special rule applicable to existing proration units.

**Subpart D—Natural Gas Committed or Dedicated to Interstate Commerce**

- Sec. 271.401 Applicability.
- 271.402 Maximum lawful prices.
- 271.403 Special rule regarding carrying charge adjustment for advance payments.

**Subpart E—Sales Under Existing Intrastate Contracts**

- Sec. 271.501 Applicability.
- 271.502 Maximum lawful prices.
- 271.503 Recordkeeping.
- 271.504 Determination of contract price.
- 271.505 [Reserved.]
- 271.506 [Removed.]

BEFORE EXAMINER CERTIFICATION	
OIL CONSERVATION DIVISION	
1/9/82	
EXHIBIT NO. <u>1</u>	
CASE NO. <u>12432</u>	

**Subpart F—Intrastate Rollover Contracts**

- Sec. 271.601 Applicability.
- 271.602 Maximum lawful price.
- 271.603 Recordkeeping.
- 271.604 [Reserved.]

**Subpart G—High-Cost Natural Gas**

- Sec. 271.701 Applicability.
- 271.702 General rules.
- 271.703 Tight formations.
- 271.704 Qualified production enhancement gas.
- 271.705 Procedures for designating tight formations. [Revoked.]

**Subpart H—Stripper Well Natural Gas**

- Sec. 271.801 Applicability.
- 271.802 Maximum lawful price.
- 271.803 Definitions.
- 271.804 Special rules.
- 271.805 Continuing qualification.
- 271.806 Jurisdictional agency determinations and Commission review.
- 271.807 Maximum efficient rate flow.

**Subpart I—Other Categories of Natural Gas**

- Sec. 271.901 Applicability.
- 271.902 Maximum lawful price.
- 271.903 Recordkeeping.
- 271.904 Special rule.

Subpart J—[Reserved]

**Subpart K—Allowances for State Severance Taxes and Certain Production-Related Costs**

- Sec. 271.1100 Applicability.
- 271.1101 Definitions.
- 271.1102 State severance taxes.
- 271.1103 Record retention.
- 271.1104 Production-related costs.
- 271.1105 Compliance procedures under the Production-Related Costs Board.
- 271.1106 Adjustments.

**AUTHORITY:** Natural Gas Act, 15 U.S.C. 717-717w; Department of Energy Organization Act, 42 U.S.C. 7101-7352; E.O. 12009, 3 CFR 1978 Comp., p. 142; Natural Gas Policy Act of 1978, 15 U.S.C. 3301-3432.

[The next page is 14,145.]

§ 271.703 Tight formations.

[¶ 24,173]

(a) *Maximum lawful price for tight formation gas.* (1) The maximum lawful price, per MMBtu, for the first sale of tight formation gas for which there is a negotiated contract price or a pipeline production price shall be the lesser of:

- (i) The negotiated contract price or the pipeline production price, as applicable; or
  - (ii) 200% of the maximum lawful price specified for Subpart C—NGPA Section 103(b)(1) of Part 271 in Table I of § 271.101(a).
- (2) The maximum lawful price does not apply to:
- (i) New tight formation gas from a well the surface drilling of which began on or after May 13, 1990; and
  - (ii) Recompletion tight formation gas from a well the surface drilling of which was begun before July 16, 1979, if the recompletion work for the well from such designated formation was begun on or after May 13, 1990.

(b) *Definitions.* (1) "Tight formation gas" means natural gas that a jurisdictional agency has determined in accordance with Parts 274 and 275 to be new tight formation gas or recompletion tight formation gas.

(2) "New tight formation gas" is natural gas:

- (i) Which is new natural gas, (as defined in section 102(c)), certain OCS gas qualifying for the new natural gas ceiling price (as defined in section 102(d)), or gas produced through a new onshore production well (as defined in section 103(c)); and
  - (ii) Which is produced from a designated tight formation through a well the surface drilling of which began on or after July 16, 1979.
- (3) "Recompletion tight formation gas" is natural gas which is produced from a designated tight formation through a well, the surface drilling of which was begun before July 16, 1979.

(i) If such well was not completed for production from such designated formation prior to July 16, 1979, or

(ii) If such well was completed for production from such designated formation prior to July 16, 1979, such gas is produced from a completion location completed after December 27, 1983, and such gas could not have been produced from any completion location which was in existence in the wellbore on or before December 27, 1983.

(4) "Formation" means any geological formation, or portion thereof described by geological as well as geographical parameters.

(5) A "designated tight formation" is a natural gas formation as determined by the appropriate jurisdictional agency, pursuant to paragraph (c)(3) of this section. Appropriate jurisdictional agencies are identified in § 274.501 of this chapter.

(6) "Infill drilling" means any drilling in a substantially developed formation (or a portion thereof) subject to requirements respecting well-spacing or proration units which were amended by the jurisdictional agency after the formation (or portion thereof) was substantially developed and which were adopted for the purpose of more effective and efficient drainage of the reservoirs in such formation. Such amendment may provide for the establishment of smaller drilling or production units or may permit the drilling of additional wells on the original units.

(c) *Determination of tight formations.*

(1) *General.* Determinations by a jurisdictional agency must be made in the form and manner prescribed in Part 274 of this chapter.

(2) *Guidelines:* (i) The guidelines for tight formations are as follows:

(A) The estimated average *in situ* gas permeability, throughout the pay section, is expected to be 0.1 millidarcy or less.

(B) The stabilized production rate, against atmospheric pressure, of wells completed for production in the formation, without stimulation, is not expected to exceed the production rate determined in accordance with the following table:

If the average depth to the top of the formation (in feet) exceeds—	But does not exceed—	The maximum allowable production rate (in thousand cubic feet per day) may not exceed—	
		44	51
0	1,000	44	51
1,000	1,500	51	59
1,500	2,000	59	68
2,000	2,500	68	79
2,500	3,000	79	91
3,000	3,500	91	105
3,500	4,000	105	122
4,000	4,500	122	141
4,500	5,000	141	163
5,000	5,500	163	188
5,500	6,000	188	217
6,000	6,500	217	251
6,500	7,000	251	290
7,000	7,500	290	336
7,500	8,000	336	388
8,000	8,500	388	449
8,500	9,000	449	519
9,000	9,500	519	600
9,500	10,000	600	693
10,000	10,500	693	802
10,500	11,000	802	927
11,000	11,500	927	1,071
11,500	12,000	1,071	1,238
12,000	12,500	1,238	1,432
12,500	13,000	1,432	1,655
13,000	13,500	1,655	1,913
13,500	14,000	1,913	2,212
14,000	14,500	2,212	2,557
14,500	15,000	2,557	

[The next page is 14,241.]

(C) No well drilled into the recommended tight formation is expected to produce, without stimulation, more than five barrels of crude oil per day.

(D) If the formation or any portion thereof was authorized to be developed by infill drilling prior to the date of determination and the jurisdictional agency has information which in its judgment indicates that such formation or portion subject to infill drilling can be developed absent the incentive price established in paragraph (a) of this section then the jurisdictional agency shall not include such formation or portion thereof in its determination.

(ii) The jurisdictional agency may designate as a tight formation any formation which meets the guidelines contained in paragraph (c)(2)(i)(B) and (C) of this section, but does not meet the guideline contained in paragraph (c)(2)(i)(A) of this section, if the jurisdictional agency makes an adequate showing that the formation exhibits low permeability characteristics and the price established in paragraph (a) of this section is necessary to provide reasonable incentives for production of the natural gas from the determined formation due to the extraordinary costs associated with such production.

(3) *Notice to the Commission.* Any jurisdictional agency making a determination that a natural gas formation qualifies as a tight formation will provide timely notice in writing of the determination to the Commission. Such notice shall include substantiation provided in paragraph (4) of this section and be in the manner prescribed in §274.104 of this chapter.

(4) *Content of determinations.* A determination that a formation qualifies as a designated tight formation shall contain the following information:

- (i) Geological and geographical descriptions of the formation which is determined to qualify as a tight formation;
- (ii) Geological and engineering data to support the determination and the source of that data;
- (iii) A map which clearly locates wells which are currently producing from the determined tight formation or a list locating all wells which are currently producing natural gas from the determined tight formation;
- (iv) A report of the extent to which existing State and Federal regulations will assure development of the determined tight formation will not adversely affect any fresh water aquifers (during both hydraulic fracturing and waste disposal operations) that are or are expected to be used as a domestic or agricultural water supply;
- (v) If the formation is determined under paragraph (c)(2)(ii) of this section, the types and extent of enhanced production techniques which are expected to be necessary and the estimated expenditures necessary for employing those techniques; and the degree of increase in production to be expected from use of such techniques and engineering and geological data to support that estimate; and
- (vi) Any other information which the jurisdictional agency deems relevant.

(5) *Commission review of determinations.* Upon receipt of a determination submitted in accordance with this section, the Commission will review the jurisdictional agency's determination in accordance with the procedures established in Part 275 of this chapter.

(d) *Designated tight formations.* The following formations are designated as tight formations. A more detailed description of the geographical extent and geological parameters of the designated tight formations is located in the Commission's official file for Docket No. RM79-76, subindexed as indicated, and is also located in the official files of the jurisdictional agency that submitted the recommendation.

(1) *The Cotton Valley Group in Texas.* RM79-76 (Texas—1).

(i) *The Cotton Valley Group consisting of the Cotton Valley Sandstone, the Bossier Shale and the Cotton Valley Lime Formations.*—(A) *Delineation of formation.* The northern boundary of the Cotton Valley Group is the Texas-Oklahoma border extending through Fannin, Lamar, and Red River Counties; the eastern boundary is formed by the Texas-Arkansas border and the Texas-Louisiana border; the southern boundary is along the Angelina-Caldwell flexure, running through Sabine, San Augustine, Angelina and Trinity Counties; the western boundary is set by the Mexia-Talco fault zone through Limestone, Navarro and Kaufman Counties.

(B) *Depth.* The Cotton Valley Sandstone is encountered at an average depth of approximately 7,000 feet to the north, 8,000 feet to the east, between 10,000 and 11,000 feet to the south, and 5,000 feet to the west; the Bossier Shale is encountered at 7,700 feet to the north, 10,720 feet to the east, 12,600 feet to the south, and 5,340 feet to the west; the Cotton Valley Lime is encountered at 8,000 feet to the north, 11,400 feet to the east, 13,200 feet to the south, and 5,500 feet to the west.

(ii) *The Cotton Valley Sandstone in the Paige, N.E. Field area.*—(A) *Delineation of formation.* The Cotton Valley Sandstone in the Paige, N.E. Field area is found in the eastern portion of Bastrop County, Texas, in Railroad Commission District No. 1. The boundaries of the Cotton Valley Sandstone are approximately 2.5 miles around the Hou-Tex Oil and Gas No. 1 O.R. Mitchell Well. This well is in the Paige, N.E. Field, located two miles from Paige, Texas, in the Wm. Boatwright Survey, A-82.

(B) *Depth.* The top and base of the Cotton Valley Sandstone in the Paige, N.E. Field area are found at the approximate subsea depths of -11,520 feet and -12,780 feet, respectively. The maximum thickness of the formation is approximately 1,790 feet.

(2) *The Mancos "B" Formation in Colorado.* RM79-76 (Colorado—2).

(i) *Delineation of formation.* The Mancos "B" Formation is located approximately midway between Grand Junction and Rangely, Colorado, and straddles the Rio Blanco-Garfield county line from the Utah-Colorado state line east to the Douglas Pass and Baxter Pass Unit Area, underlying

[The next page is 14,247.]

NEW MEXICO OIL CONSERVATION DIVISION

CASE 10432

January 9, 1992

EXHIBIT NO. 3

TIGHT FORMATION AREA DESIGNATED NM - 25

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**CONTENTS**

Federal Register, Vol. 48 No. 119, June 20, 1983, pg. 28113-28114

N.M. Oil Conservation Division Order No. R-7200

Correspondence: USBLM to OCD, May 3, 1983

Correspondence: FERC to USBLM, March 28, 1984

FERC Final Ruling, Order No. 397 issued 9/21/84

the top of the Mancos "B" Formation is 3,000 feet. The Mancos "B" Formation ranges in thickness from 150 to 325 feet.

III. Discussion of Recommendation

Colorado claims in its submission that evidence gathered through information and testimony presented at a public hearing in Cause No. NG-31 convened by Colorado on this matter demonstrates that:

(1) The average *in situ* gas permeability throughout the pay section of the proposed area is not expected to exceed 0.1 millidarcy;

(2) The stabilized production rate, against atmospheric pressure, of wells completed for production from the recommended formation, without stimulation, is not expected to exceed the maximum allowable production rate set out in § 271.703(c)(2)(i)(B); and

(3) No well drilled into the recommended formation is expected to produce more than five (5) barrels of oil per day.

Colorado further asserts that existing State and Federal Regulations assure that development of this formation will not adversely affect any fresh water aquifers.

Accordingly, pursuant to the authority delegated to the Director of the Office of Pipeline and Producer Regulation by Commission Order No. 97, issued in Docket No. RM80-68 (45 FR 53456, August 12, 1980), notice is hereby given of the proposal submitted by Colorado that an additional area of the Mancos "B" Formation, as described and delineated in Colorado's recommendation as filed with the Commission, be designated as a tight formation pursuant to § 271.703.

IV. Public Comment Procedures

Interested persons may comment on this proposed rulemaking by submitting written data, views or arguments to the Office of the Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, D.C. 20426, on or before August 1, 1983. Each person submitting a comment should indicate that the comment is being submitted in Docket No. RM79-76-233 (Colorado-27 Addition), and should give reasons including supporting data for any recommendations. Comments should include the name, title, mailing address, and telephone number of one person to whom communications concerning the proposal may be addressed. An original and 14 conformed copies should be filed with the Secretary of the Commission. Written comments will be available for public inspection at the Commission's Division of Public Information, Room

1000, 825 North Capitol Street, NE., Washington, D.C., during business hours.

Any person wishing to present testimony, views data, or otherwise participate at a public hearing should notify the Commission in writing of the desire to make an oral presentation and therefore request a public hearing. Such request shall specify the amount of time requested at the hearing. Requests should be filed with the Secretary of the Commission no later than June 30, 1983.

List of Subjects in 18 CFR Part 271

Natural gas, Incentive price, Tight formations.

(Natural Gas Policy Act of 1978, 15 U.S.C. 3301-3432)

Accordingly, the Commission proposes to amend the regulations in Part 271, Subchapter H, Chapter I, Title 18, Code of Federal Regulations, as set forth below, in the event Colorado's recommendation is adopted.

Kenneth A. Williams, Director, Office of Pipeline and Producer Regulation.

PART 271—(AMENDED)

Section 271.703 is amended by revising paragraph (d)(112) to read as follows:

§ 271.703 Tight formations.

(d) Designated tight formations.

(112) Mancos "B" Formation in Colorado. RM79-76-126 (Colorado-27).

(i) Delineation of formation. The Mancos "B" Formation is located in the Douglas Creek Arch area of western Colorado, in Rio Blanco County. The Mancos "B" Formation underlies Township 1 North, Range 101 West, Sections 17 through 20 and 29 through 32; Township 1 North, Range 102 West, Sections 7 through 9 and 13 through 36; Townships 1 North and South, Range 103 West, All Sections; Townships 1 North and South, Range 104 West, Sections 1 through 3, 10 through 15, 22 through 27, and 34 through 36; Township 1 South Range 102 West, Sections 1 through 10, 16 through 21, and 28 through 33; Township 2 South, Range 102 West, Sections 4 through 8, N 1/2 of Section 8, N 1/2, SE 1/4 of Section 9; Township 2 South, Range 103 West, Sections 1 through 6, 17, 18, 20, 29, 32, and 33; and Township 2 South Range 104 West, Sections 1 through 3 and 10 through 15.

(ii) Depth. The Mancos "B" Formation ranges in thickness from 150 to 325 feet.

The average depth to the top of the Mancos "B" Formation is 3,000 feet.

(FR Doc. 83-16438 Filed 6-17-83; 8:45 am) BILLING CODE 6717-01-M

18 CFR Part 271

(Docket No. RM79-76-204; New Mexico-25)

High-Cost Gas Produced From Tight Formations; New Mexico

AGENCY: Federal Energy Regulatory Commission, DOE.

ACTION: Notice of Proposed Rulemaking.

SUMMARY: The Federal Energy Regulatory Commission is authorized by section 107(c)(5) of the Natural Gas Policy Act of 1978 to designate certain types of natural gas as high-cost gas where the Commission determines that the gas is produced under conditions which present extraordinary risks or costs. Under section 107(c)(5), the Commission issued a final regulation designating natural gas produced from tight formations as high-cost gas which may receive an incentive price (18 CFR 271.703). This rule established procedures for jurisdictional agencies to submit to the Commission recommendations of areas for designation as tight formations. This Notice of Proposed Rulemaking by the Director of the Office of Pipeline and Producer Regulation contains the recommendation of the State of New Mexico that the Pictured Cliffs Formation be designated as a tight formation under § 271.703(d).

DATE: Comments on the proposed rule are due on August 1, 1983.

Public Hearing: No public hearing is scheduled in this docket as yet. Written requests for a public hearing are due on June 30, 1983.

ADDRESS: Comments and requests for hearing must be filed with the Office of the Secretary, 825 North Capitol Street, NE., Washington, D.C. 20426.

FOR FURTHER INFORMATION CONTACT: Leslie Lawner, (202) 357-8511, or Victor Zabel, (202) 357-8618.

SUPPLEMENTARY INFORMATION:

In the matter of: High-Cost Gas Produced from Tight Formations; Docket No. RM79-76-204 (New Mexico-25)

Issued June 15, 1983.

I. Background

On May 20, 1983, the State of New Mexico Energy and Minerals Department, Oil Conservation Division (New Mexico) submitted to the Commission a recommendation, in accordance with § 271.703 of the

Commission's regulations (45 FR 56034, August 22, 1980), that the Pictured Cliffs Formation located in Rio Arriba and Sandoval Counties, New Mexico, be designated as a tight formation. Pursuant to § 271.703(c)(4) of the regulations this Notice of Proposed Rulemaking is hereby issued to determine whether New Mexico's recommendation that the Pictured Cliffs Formation be designated a tight formation should be adopted. The United States Department of the Interior, Bureau of Land Management (BLM) concurs in part with New Mexico's recommendation, recommending that certain areas be included and other areas be deleted. New Mexico's recommendation and supporting data are on file with the Commission and are available for public inspection.

## II. Description of Recommendation

The recommended area is located in the southeastern portion of the San Juan Basin in Rio Arriba and Sandoval Counties, New Mexico. The recommended formation underlies approximately 234,240 acres and is approximately 95 feet in thickness. The average depth to the top of the Pictured Cliffs Formation is 2,685 feet.

## III. Discussion of Recommendation

New Mexico claims in its submission that evidence gathered through information and testimony presented at a public hearing in Case No. 7746 convened by New Mexico on this matter demonstrates that:

(1) The average *in situ* gas permeability throughout the pay section of the proposed area is not expected to exceed 0.1 millidarcys;

(2) The stabilized production rate, against atmospheric pressure, of wells completed for production from the recommended formation, without stimulation, is not expected to exceed the maximum allowable production rate set out in § 271.703(c)(2)(i)(B); and

(3) No well drilled into the recommended formation is expected to produce more than five (5) barrels of oil per day.

New Mexico further asserts that existing State and Federal Regulations assure that development of this formation will not adversely affect any fresh water aquifers.

BLM claims that the recommended formation underlying Township 24 North, Range 3 West, Sections 26 through 35 and the S/2 of Section 36, adjacent to the northeastern boundary

of New Mexico's proposed area, is within the geologic boundaries of the formation and should be included in the recommended area.

BLM further recommends that the portion of the Pictured Cliffs Formation underlying Township 22 North, Range 5 West, All Sections; Township 22 North, Range 4 West, Sections 13 through 36; Township 22 North, Range 3 West, Sections 19 through 36, located in the southwest corner of New Mexico's proposed area should be excluded from tight formation designation. BLM asserts that this area is not part of the same producing trend as the rest of the recommended formation and has not been adequately tested, described, or characterized by the applicant's data to warrant inclusion in the recommended area.

Accordingly, pursuant to the authority delegated to the Director of the Office of Pipeline and Producer Regulation by Commission Order No. 97, issued in Docket No. RM80-68 (45 FR 53456, August 12, 1980), notice is hereby given of the proposal submitted by New Mexico that the Pictured Cliffs Formation, as described and delineated in New Mexico's recommendation as filed with the Commission, be designated as a tight formation pursuant to § 271.703.

## IV. Public Comment Procedures

Interested persons may comment on this proposed rulemaking by submitting written data, views or arguments to the Office of the Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, D.C. 20426, on or before August 1, 1983. Each person submitting a comment should indicate that the comment is being submitted in Docket No. RM79-76-204 (New Mexico-25), and should give reasons including supporting data for any recommendations. Comments should include the name, title, mailing address, and telephone number of one person to whom communications concerning the proposal may be addressed. An original and 14 conformed copies should be filed with the Secretary of the Commission. Written comments will be available for public inspection at the Commission's Division of Public Information, Room 1000, 825 North Capitol Street, NE., Washington, D.C., during business hours.

Any person wishing to present testimony, views, data, or otherwise participate at a public hearing should notify the Commission in writing of the

desire to make an oral presentation and therefore request a public hearing. Such request shall specify the amount of time requested at the hearing. Requests should be filed with the Secretary of the Commission no later than June 30, 1983.

## List of Subjects in 18 CFR Part 271

Natural gas, Incentive price, Tight formations.

(Natural Gas Policy Act of 1978, 15 U.S.C. 3301-3432)

Accordingly, the Commission proposes to amend the regulations in Part 271, Subchapter H, Chapter I, Title 18, *Code of Federal Regulations*, as set forth below, in the event New Mexico's recommendation is adopted.

**Kenneth A. Williams,**

*Director, Office of Pipeline and Producer Regulation.*

## PART 271—(AMENDED)

Section 271.703 is amended by adding paragraph (d)(193) to read as follows:

§ 271.703 Tight formations.

(d) *Designated tight formations.*

(135) through (192) [RESERVED]

(193) *Pictured Cliffs Formation in New Mexico.* RM79-76-204 (New Mexico-25).

(i) *Delineation of formation.* The Pictured Cliffs Formation is located in Rio Arriba and Sandoval Counties, New Mexico, in Township 22 North, Ranges 2, 3, 4, and 5 West, All Sections; Township 23 North, Range 2 West, Sections 5 through 9, 16 through 21, and 25 through 36; Township 23 North, Ranges 3, 4, and 5 West, All Sections; Township 24 North, Range 3 West, Section 19, 20, 26 through 35, and S/2 of 36; Township 24 North, Range 4 West, Sections 3 through 10 and 13 through 36; Township 24 North, Range 5 West, All Sections; Township 25 North, Range 4 West, Sections S/2 of 30, 31, and 32; Township 25 North, Range 5 West, Sections 15 through 23, S/2 of 24, and 25 through 36, NMPM.

(ii) *Depth.* The Pictured Cliffs Formation is defined as that interval at a depth of approximately 3,046 feet to 3,141 feet on the Induction Electric Log from the John E. Schalk, Cinco Diablos Well No. 6. The average depth to the top of the Pictured Cliffs Formation is 2,685 feet.

[FR Doc. 83-16439 Filed 6-17-83; 8:45 am]

BILLING CODE 6717-01-M

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

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

CASE NO. 7746  
Order No. R-7200

APPLICATION OF FOUR CORNERS GAS  
PRODUCERS ASSOCIATION FOR DESIGNATION  
OF A TIGHT FORMATION, RIO ARRIBA AND  
SANDOVAL COUNTIES, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on November 23, 1982, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 3rd day of February, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Four Corners Gas Producers Association, requests that the Division in accordance with Section 107 of the Natural Gas Policy Act, and 18 C.F.R. §271.703 recommend to the Federal Energy Regulatory Commission that the Pictured Cliffs formation underlying those lands situated in Rio Arriba and Sandoval Counties, New Mexico, described on "Exhibit A" attached to this order and hereinafter referred to as the Pictured Cliffs formation, be designated as a tight formation in said Federal Energy Regulatory Commission's regulations.

(3) That the Pictured Cliffs formation underlies all of the above-described lands; that the formation consists of marine siltstone, clay-filled deposits about 95 feet thick, consisting of near shore bars which are lenticular, ribbon-like deposits with limited areal extent; that better permeability is encountered on the crests of these near shore bars

where the sands are better developed than the areas off the bar crests where the sands become siltier and more clay-filled; and that the top of such formations is found at an average depth of 2685 feet below the surface of the area set forth in "Exhibit A" attached to this order.

(4) That the type section for the Pictured Cliffs formation for the proposed tight formation designation is found at a depth of approximately 3046 feet to 3141 feet on the Induction Electric Log from the John E. Schalk, Cinco Diablos Well No. 6 located in Unit D of Section 14, Township 23 North, Range 4 West, Rio Arriba County, New Mexico.

(5) That the area for which a tight formation designation is sought is comprised of approximately 1464 proration units on which 466 Pictured Cliffs wells have been drilled of which 94 have been abandoned.

(6) That with less than one-third of the available gas spacing units being developed, the area proposed for designation may be characterized as one of low to moderate development.

(7) That approximately 60 gas wells have been completed in the proposed area since February 20, 1980, the date of promulgation of interim FERC rules on high-cost natural gas produced from tight formations.

(8) That at the average depth for the Pictured Cliffs formation in the proposed area, the maximum qualifying unstimulated production rate is 79 MCFD.

(9) That unstimulated natural production rates were available from seven producible wells completed after February 20, 1980.

(10) That one well had an unstimulated potential of 259 MCFD while the remainder averaged 16.5 MCFD.

(11) That core analyses were available on nine wells, two of which were drilled after February 20, 1980, within the proposed area.

(12) That one cored well was a dry hole and that data should not be used in determining average in situ permeability.

(13) That one well exhibited average laboratory permeability of 2.64 millidarcies.

(14) That the remaining core derived in situ permeability averaged 0.011 millidarcies.

(15) That based on an analysis of available data from existing wells within the proposed area and utilizing generally and customarily accepted petroleum engineering techniques and measurements:

- (a) the estimated average in situ gas permeability throughout the pay section of the Pictured Cliffs formation is expected to be 0.1 millidarcy or less; and
- (b) the stabilized production rate, against atmospheric pressure of wells completed for production in the Pictured Cliffs formation, without stimulation, is not expected to exceed production levels determined by reference to well depth, as found in the table set out in 18 C.F.R. §271.703 (2) (B) of the regulations; and
- (c) no well drilled into the Pictured Cliffs formation is expected to produce, without stimulation, more than five barrels of crude oil per day.

(16) That within the proposed area there is a recognized aquifer being the Cjo Alamo, located over 200 feet above the Pictured Cliffs formation.

(17) That existing State of New Mexico and Federal Regulations relating to casing and cementing of wells will assure that development of the Pictured Cliffs formation will not adversely affect the said aquifer.

(18) That the Pictured Cliffs formation should be recommended to the Federal Energy Regulatory Commission for designation as a tight formation.

IT IS THEREFORE ORDERED:

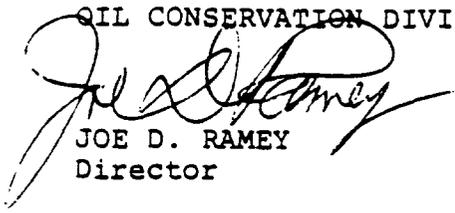
(1) That it be and hereby is recommended to the Federal Energy Regulatory Commission pursuant to Section 107 of the Natural Gas Policy Act of 1978, and 18 C.F.R. §271.703 of the regulations that the Pictured Cliffs formation underlying those lands in Rio Arriba and Sandoval Counties, New Mexico, as described on "Exhibit A" attached to this order, be designated as a tight formation.

-4-  
Case No. 7746  
Order No. R-7200

(2) That 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 herein-  
above designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



JOE D. RAMEY  
Director

S E A L

fd/

Four Corners Gas Producers Association  
Five Lakes Canyon Tight Formation Area  
Rio Arriba and Sandoval Counties, New Mexico

TOWNSHIP 22 NORTH, RANGE 2 WEST, NMPM  
Sections 1 through 36: All

TOWNSHIP 22 NORTH, RANGE 3 WEST, NMPM  
Sections 1 through 36: All

TOWNSHIP 22 NORTH, RANGE 4 WEST, NMPM  
Sections 1 through 36: All

TOWNSHIP 22 NORTH, RANGE 5 WEST, NMPM  
Sections 1 through 36: All

TOWNSHIP 23 NORTH, RANGE 2 WEST, NMPM  
Sections 5 through 9: All  
Sections 16 through 21: All  
Sections 25 through 36: All

TOWNSHIP 23 NORTH, RANGE 3 WEST, NMPM  
Sections 1 through 36: All

TOWNSHIP 23 NORTH, RANGE 4 WEST, NMPM  
Sections 1 through 36: All

TOWNSHIP 23 NORTH, RANGE 5 WEST, NMPM  
Sections 1 through 36: All

TOWNSHIP 24 NORTH, RANGE 3 WEST, NMPM  
Sections 19 and 20: All  
Sections 29 through 32: All  
Section 33: W/2

TOWNSHIP 24 NORTH, RANGE 4 WEST, NMPM  
Sections 3 through 10: All  
Sections 13 through 36: All

TOWNSHIP 24 NORTH, RANGE 5 WEST, NMPM  
Sections 1 through 36: All

TOWNSHIP 25 NORTH, RANGE 4 WEST, NMPM  
Section 30: S/2  
Sections 31 and 32: All

TOWNSHIP 25 NORTH, RANGE 5 WEST, NMPM  
Sections 15 through 23: All  
Section 24: S/2  
Sections 25 through 36: All

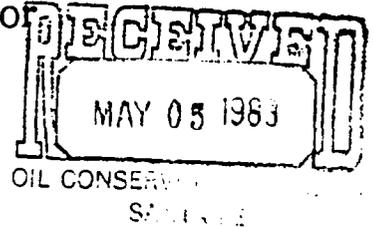
Containing a total of 234,240 acres, more or less.

Exhibit A  
Order No. R-7200



## United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
505 Marquette Avenue, NW, Suite 815  
Albuquerque, New Mexico 87102



MAY 03 1983

Mr. W. Perry Pearce  
Oil Conservation Division  
State of New Mexico  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Dear Mr. Pearce:

This jurisdictional agency concurs in part, in the recommendation of the State of New Mexico, Case No. 7746, Order No. R-7200, dated February 3, 1983, that the Pictured Cliffs formation underlying the described lands in subject order in Rio Arriba and Sandoval Counties, New Mexico, be designated as a Section 107 tight formation.

We recommend that certain areas be included and other areas be deleted as outlined in the following paragraphs.

According to Mr. McCord's testimony, the boundaries of the Five Lakes Canyon Tight Gas Area are based on acreage position, not on engineering or geologic parameters. However, earlier in his testimony Mr. McCord does refer to boundaries. He describes the northeast edge as bounded by the extensively developed South Blanco Pictured Cliffs field. This boundary is reasonable except where parts of the Lindrith Federal Unit are excluded. It is recommended that sections 26-35 and S $\frac{1}{2}$  section 36, T. 24 N., R. 3 W., be included in the tight gas area. The Federal interest would not be served by arbitrarily excluding Federal units.

Mr. McCord describes the Pictured Cliffs as "nearshore bars aligned north-west-southeast" and also says that the "nearshore bars within the proposed area are extremely lenticular, ribbon-like deposits with a very limited southwest-northeast areal extent." In view of this limited areal extent, it is unreasonable to include virtually untested areas which are several miles southwest from the edge of the main trend.

The applicant did not supply us with isopach maps or other information which would delineate the natural edge of the Ballard Pictured Cliffs field. However, electric logs of wells drilled through the Pictured Cliffs south of the developed portion of the field were studied in section 19, T. 22 N., R. 2 W., section 16, T. 22 N., R. 3 W.(A'), section 8, T. 22 N., R. 4 W., section 1, T. 22 N., R. 5 W., section 36, T. 23 N., R. 5 W., and section 35, T. 23 N., R. 6 W. The Pictured Cliffs in these wells appears to be poorly developed, containing a greater proportion of clay and having higher water

saturations than wells along the main trend of the field. Further southwest of this line of wells the sands are again better developed indicating another set of nearshore bars.

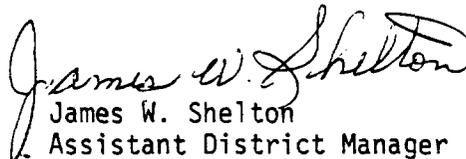
Although the Pictured Cliffs sands may be tight in the southwest corner of the proposed area, our data suggests that it is not part of the same trend as the Ballard Pictured Cliffs. As such, these sands have not been adequately tested, described or characterized by the data presented by the applicant. Therefore, we disagree with that portion of the State order which defines the boundaries and recommend that the following lands not be included in the proposed tight gas sands area:

T. 22 N., R. 5 W., all  
 T. 22 N., R. 4 W., sections 13-36  
 T. 22 N., R. 3 W., sections 19-36

This results in a southwestern boundary which more closely approximates the trend of the deposit.

It is requested that this concurrence and recommendation be included with the package submitted to the Federal Energy Regulatory Commission.

Sincerely yours,

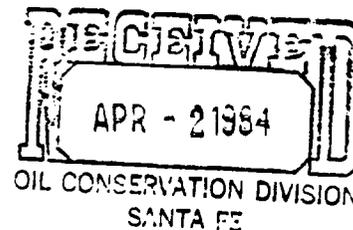
  
 James W. Shelton  
 Assistant District Manager  
 for Minerals

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

IN REPLY REFER TO N840-A

MAR 28 1984

Mr. James W. Shelton  
Assistant District Manager  
Bureau of Land Management  
Albuquerque District Office (NGPA)  
P.O. Box 6770  
Albuquerque, New Mexico 87107



In Re: Docket No. RM79-76-204  
(New Mexico-25)  
Pictured Cliffs Formation  
Rio Arriba and Sandoval Counties

Dear Mr. Shelton:

On May 20, 1983, the Commission received the recommendation by the State of New Mexico, Energy and Minerals Department, Oil Conservation Division (New Mexico), that the Pictured Cliffs Formation located in portions of Rio Arriba and Sandoval Counties, New Mexico, be designated as a tight formation. Included as part of the recommendation was your letter dated May 3, 1983, in which the Bureau of Land Management (BLM) wanted additional areas to be included and certain areas to be deleted from the proposed designated area. A Notice of Proposed Rulemaking was issued on June 15, 1983, and established a comment period ending July 30, 1983. Included in the Notice of Proposed Rulemaking was the additional acreage which BLM requested. The Notice also included that area which BLM had requested be excluded from the designated area.

On August 31, 1983, the Commission sent a letter to the BLM requesting additional comments regarding the exclusion of the southwest portion of the recommended area. 1/ No written reply was received, however we have received phone inquiries regarding the status of the application from your office.

As this application now stands, the federal units mentioned in your letter of May 3, 1983, are included in the recommended area. However, along with inclusion of the federal units we noticed the proposal to include acreage you opposed and which appears to meet the geologic guidelines. (Sections 26 through 28, East 1/2 of Section 33, Sections 34 and 35, and the South 1/2 of Section 36, Township 24 North, Range 3 West.) As mentioned in our letter dated August 31, 1983, these guidelines would not necessarily require that the designated area be in the same geologic trend.

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1/ A copy of our letter dated August 31, 1983, is enclosed for your review.

In order to accurately present this matter to the Commission for decision, the Bureau of Land Management's current position regarding the above described acreage is requested.

Very truly yours,

*Howard K. Schmit*  
Howard Kilchrist, Director  
Division of Producer Audits  
and Pricing

Enclosure

cc: W. Perry Pearce  
Legal Counsel to the Oil  
Conservation Division  
Department of Energy and Minerals  
P.O. Box 2088  
Santa Fe, New Mexico 87501

William F. Carr  
Campbell, Byrd, & Black P.A.  
Jefferson Place  
Santa Fe, New Mexico 87501

Ernest L. Padilla  
P.O. Box 2523  
Santa Fe, New Mexico 87501

Jeffrey E. Jackson  
Attorney at Law  
P.O. Box 3249, Terminal Annex  
Los Angeles, California 90051

John H. Belson  
Regulatory Affairs  
P.O. Box 3249, Terminal Annex  
Los Angeles, California 90051

J.S. Charles, Vice President  
Regulatory Affairs  
Northwest Pipeline Corporation  
P.O. Box 1526  
Salt Lake City, Utah 84110

Mary Duffin, Esquire  
Northwest Pipeline Corporation  
P.O. Box 1526  
Salt Lake City, Utah 84110

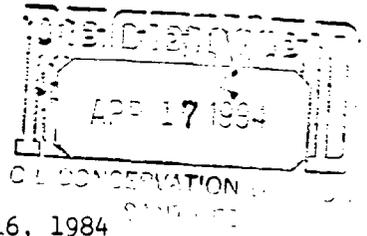
Kim M. Clark, Esquire  
Akin, Gump, Strauss, Hauer & Feld  
1333 New Hampshire Avenue, N.W.  
Suite 400  
Washington, D.C. 20036



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT ALBUQUERQUE DISTRICT OFFICE

505 Marquette, N.W.  
P.O. Box 6770  
Albuquerque, New Mexico 87197-6770



April 16, 1984

Mr. Howard Kilchrist  
Director  
Division of Producer Audits and Pricing  
Federal Energy Regulatory Commission  
825 North Capitol Street  
Washington, DC 20426

Dear Mr. Kilchrist:

This letter is in reply to your inquiry of March 28, 1984, regarding Docket No. RM79-76-204, New Mexico-25, designation of Pictured Cliffs Formation in Rio Arriba and Sandoval Counties as a tight formation under the Natural Gas Policy Act of 1978.

We have reviewed the application of the Four Corners Gas Producers Association and this jurisdictional agency reaffirms its original recommendation that the area in question be deleted. Well-log correlations show that there are geologic limits to the Ballard and South Blanco Pictured Cliffs fields; the test data which describe these pools are not valid beyond the limits of the pools. Therefore, all of township T. 22 N., R. 5 W., sections 13-36, T. 22 N., R. 4 W., and sections 19-36, T. 22 N., R. 5 W., have not been adequately tested, described or characterized by the data presented by the applicant because they lie beyond the limits of either of these pools. The data presented do not prove this area to be tight. This area should not be included in the tight sands area until data is submitted which specifically tests this area and proves that it meets the requirements for a tight formation.

Sincerely yours,

  
For District Manager

cc:

NM Oil Conservation Division  
P.O. Box 2088  
Santa Fe, NM 87501

Mr. William F. Carr  
Campbell, Byrd & Black, PA  
P.O. Box 2208  
Santa Fe, NM 87501

Ms. Mary Duffin, Esquire  
Northwest Pipeline Corporation  
P.O. Box 1526  
Salt Lake City, UT 84110

AUG 3 1 1983

N840-A

James W. Shelton  
Assistant District Manager for Minerals  
United States Department of the Interior  
Bureau of Land Management  
505 Marquette Avenue, N.W., Suite 815  
Albuquerque, New Mexico 87102

In Re: Docket No. RM79-76-204  
(New Mexico-25)  
Pictured Cliffs Formation  
Rio Arriba and Sandoval Counties

Dear Mr. Shelton:

On May 20, 1983, the Commission received the recommendation by the State of New Mexico, Energy and Minerals Department, Oil Conservation Division (New Mexico), that the Pictured Cliffs Formation located in portions of Rio Arriba and Sandoval Counties, New Mexico, be designated as a tight formation. A Notice of Proposed Rulemaking concerning the recommendation was issued on June 15, 1983, and established a comment period ending July 30, 1983.

Included as part of New Mexico's recommendation is your letter of May 3, 1983, which concurred in part with the recommendation. Your letter additionally recommended that certain areas be included and others be deleted as discussed below.

With respect to areas which you recommend be added you indicate that certain Federal units appeared to be arbitrarily excluded based on acreage position. However, based on geologic parameters you believe these areas should be included. Our review of the data also indicates that Sections 26 through 28, E 1/2 of Section 33, Sections 34 and 35, and the S 1/2 of Section 36, Township 24 North, Range 3 West meet the geologic criteria and should be included in the area for consideration. The inclusion of this acreage is reflected in the Notice of Proposed Rulemaking issued on June 15, 1983.

With respect to the area which you indicate should be deleted your letter states that "although the Pictured Cliffs sands may be tight in the southwest corner of the proposed area, our data suggests that it is not part of the same trend as the Ballard Pictured Cliffs." The Commission's guidelines in this regard require only that the area being recommended exhibit tight formation characteristics as defined in the regulations. These guidelines would not necessarily require that the designated area be in the same geologic trend.

The comment period with respect to this formation ended on July 31, 1983. One comment opposed to New Mexico's recommendation was timely filed by Northwest Pipeline Corporation and one comment opposed to New Mexico's recommendation was untimely filed by Southern California Gas Company and Pacific Lighting Gas Supply Company (copies attached). We have requested that Northwest furnish the data referred to in its comments.

In light of your recommendation as well as the comments of Northwest Pipeline Corporation, Southern California Gas Company, and Pacific Lighting Gas Supply Company, we will continue to weigh the data submitted by New Mexico to the extent that it indicates that the whole of the proposed area meets the Commission's guidelines for designation as a tight formation.

Should you have additional evidence or comments regarding the exclusion of the southwest portion of the recommended area we would be most happy to consider them. Thank you for your cooperation.

Very truly yours,

  
Howard Kilchrist, Director  
Division of Producer Audits  
and Pricing

Attachments (2)

cc: W. Perry Pearce  
Legal Counsel to the Oil  
Conservation Division  
Department of Energy and Minerals  
P.O. Box 2088  
Santa Fe, New Mexico 87501

William F. Carr  
Campbell, Byrd, & Black P.A.  
Jefferson Place  
Santa Fe, New Mexico 87501

Ernest L. Padilla  
P.O. Box 2523  
Santa Fe, New Mexico 87501

Jeffrey E. Jackson  
Attorney at Law  
P.O. Box 3249, Terminal Annex  
Los Angeles, California 90051

James W. Shelton

- 3 -

cc: John H. Balson  
Regulatory Affairs  
P.O. Box 3249, Terminal Annex  
Los Angeles, California 90051

J.S. Charles, Vice President  
Regulatory Affairs  
Northwest Pipeline Corporation  
P.O. Box 1526  
Salt Lake City, Utah 84110

Mary Duffin, Esquire  
Northwest Pipeline Corporation  
P.O. Box 1526  
Salt Lake City, Utah 84110

Kim M. Clark, Esquire  
Akin, Gump, Strauss, Hauer & Feld  
1333 New Hampshire Avenue, N.W.  
Suite 400  
Washington, D.C. 20036

18 C.F.R. Part 271

High-Cost Gas Produced from Tight Formations; Final Rule

Docket No. RM79-76-204 (New Mexico - 25)

ORDER NO. 397

(Issued September 21, 1984)

AGENCY : Federal Energy Regulatory Commission

ACTION : Final rule

**SUMMARY :** Under section 107(c)(5) of the Natural Gas Policy Act of 1978, the Federal Energy Regulatory Commission designates certain types of natural gas as high-cost gas. High-cost gas is produced under conditions which present extraordinary risks or costs and once designated may receive an incentive price. Under section 107(c)(5), the Commission issued a rule designating natural gas produced from tight formations as high-cost gas. Jurisdictional agencies may submit recommendations of areas for designation as tight formations. Here the Commission adopts the recommendation by the New Mexico Energy and Minerals Department, and the U. S. Bureau of Land Management that a portion of the pictured Cliffs formation located in Rio Arriba and Sandoval Counties, New Mexico, be designated as a tight formation.

**EFFECTIVE DATE :** This rule is effective October 22, 1984.

**FOR FURTHER INFORMATION CONTACT :** Kevin R. Rees, (202) 357-5420 or Walter Lawson, (202) 357-8556.

Before Commissioners: Raymond J. O'Connor, Chairman;  
Georgiana Sheldon, A. G. Sousa,  
Oliver G. Richard III and Charles G. Stalton.

High-Cost Gas Produced ) Docket No. RM79-76-204  
from Tight Formations ) (New Mexico - 25)

ORDER NO. 397

FINAL RULE

(Issued September 21, 1984)

**I. BACKGROUND**

Based on a recommendation made by the New Mexico Energy and Minerals Department, Oil Conservation Division (New Mexico), the Commission amends its regulations 1/ to designate a portion of the pictured Cliffs formation located in Rio Arriba and Sandoval Counties, New Mexico, as a designated tight formation eligible for incentive pricing. The Director of the Office of Pipeline and Producer Regulation (Director) issued a Notice of Proposed Rulemaking proposing the designation on June 15, 1984. 2/

1/ 18 C.F.R. § 271.703(d) (1983).

2/ 48 Fed. Reg. 28,113 (June 20, 1983).

The U. S. Department of Interior, Bureau of Land Management (BLM), 3/ supports the New Mexico recommendation in part, but argues that certain other areas should be included in the recommendation and that others be deleted. BLM recommends that the part of the Pictured Cliffs Formation underlying Township 24 North, Range 3 West, Sections 26 through 35 and South 1/2 of Section 36, be included in the tight formation designation (Sections 29 through 32 and the West 1/2 of Section 33 were included in the New Mexico recommendation).

However, BLM also recommends that the portion of the Pictured Cliffs Formation underlying Township 22 North, Range 3 West, Sections 19 through 36; Township 22 North, Range 4 West, Sections 13 through 36; and Township 22 North, Range 5 West, all sections, be deleted from the tight formation designation. BLM asserts that this portion, located in the southwest corner of New Mexico's proposed area, is not part of the same trend found in the Ballard Pictured Cliffs field and has not been adequately tested, described or characterized by the data contained in the application.

BLM describes the portion of the Pictured Cliffs Formation it supports as being nearshore bars aligned northwest to southeast, whereas the area it opposes is described as nearshore

3/ portions of the land involved herein are Federal lands and therefore the BLM was involved in the proceeding.

bars which are extremely lenticular, ribbon-like deposits with a very limited southwest-northeast areal extent. BLM asserts that because of the limited areal extent of the deposits, it is unreasonable to include the untested acreage found several miles southwest from the edge of the main trend.

#### 11. SUMMARY OF COMMENTS

Several comments were received in response to the Notice of Proposed Rulemaking. Southern California Gas Supply Company (SoCal) and the Pacific Lighting and Gas Supply Company (PLGS) filed joint comments opposing the New Mexico recommendation. The Northwest Pipeline Corporation (Northwest) also filed comments opposing New Mexico's recommendation.

SoCal and PLGS objected to the recommendation by New Mexico on the grounds that there was insufficient well test data and an inadequate analysis to support its assertion that the recommended area qualified as a tight formation. SoCal and PLGS assert that the applicant before New Mexico attempted to arrive at the expected in situ permeability based on core analyses from only four wells. SoCal and PLGS argue further that while this applicant chose to rely more on an analysis using Darcy's equation to estimate the recommended area's permeability rather than the core method, flow rate data from only six wells were available for the analysis. SoCal and PLGS feel this does not constitute sufficient and adequate reservoir data to properly evaluate an area of nearly 370 square miles.

SoCal and PLGS also argue that the applicant excluded certain unfavorable data from its calculations, resulting in an erroneously low expected average in situ permeability.

SoCal and PLGS state that the analytical approach for determining the average in situ permeability under the regulations is to calculate the arithmetic average of the permeabilities of all productive wells in the recommended area. SoCal and PLGS assert that the applicant excluded the unstimulated flow rate from one of the seven wells because the applicant believed that the particular well had penetrated a highly productive sweet spot uncharacteristic of the recommended formation, yet included rates from two wells whose production rate was too small to measure. SoCal and PLGS assert that the applicant did not submit enough supporting data to justify the exclusion.

SoCal and PLGS assert that the applicant's use of an average net pay thickness of 41 feet is inappropriate for such a non-homogeneous formation such as the pictured Cliffs formation, because it does not reflect localized differences in net pay thickness, static and flowing bottom hole pressures, wellbore radius and near wellbore damage of individual wells. SoCal and PLGS state that they have summarized the core data and have arrived at an average pay thickness of 23 feet. SoCal and PLGS assert that when this figure is used, along with the arithmetic average of the unstimulated flow rate for all productive wells of 51.2 Mcf

per day, it arrives at an estimated in situ permeability of 0.24 millidarcy, exceeding the 0.1 millidarcy guideline found in § 271.703(c)(2)(i)(A).

On August 1, 1983, the Commission also received comments from Northwest Pipeline Corporation (Northwest) in which Northwest expressed concern about the development and permeability levels of the acreage found in the South Blanco Pictured Cliffs and Ballard Pictured Cliffs pools as established by New Mexico Order Nos. 156 and 577 respectively. <sup>4/</sup> On August 31, 1983, the Commission requested any additional data Northwest had concerning these areas and any permeability data Northwest felt was pertinent. On October 12, 1983, the Commission received the additional data from Northwest.

Northwest submits that New Mexico Spacing Order No. R-1670, issued May 23, 1960, allows the drilling of four wells per section in these pools. Northwest submits of the 65 sections contained in the Blanco Pictured Cliffs pool, 298 are 100% developed, 158 are 75% developed and 378 are partially developed. In the Ballard Pictured Cliffs pool, containing 103 sections, there is 100% development on 468 of the sections, 98 of the remaining sections are 75% developed, 48 of these sections are 66% developed, and 22 % of the sections are 50%

<sup>4/</sup> New Mexico Order Nos. 156 and 577 were issued on May 20, 1952, and on February 9, 1955, respectively.

developed. Altogether, Northwest submits 81A of the sections in the two pools are at least 50A developed. Northwest therefore concludes that incentive prices for tight formation gas has not been needed for the development of these two areas and that it is not necessary for the future development of the area as well.

Northwest also submits that it has reviewed production history from 19 wells in the South Blanco Pictured Cliffs Pool and of 6 wells in the Ballard Pictured Cliffs Pool. Northwest calculates the permeability of the recommended formation, based on its review, to be an average of 0.113 millidarcy.

### III. DISCUSSION

#### A. HLM's Recommendation

The Commission has reviewed HLM's comments and finds that the additional area that HLM proposes to include in the recommended area is supported by the evidence submitted. The Commission therefore includes this area in the area designated as a tight formation.

The Commission, however, disagrees with HLM's assertions that certain areas recommended by New Mexico should be deleted. Review of the data shows the Pictured Cliffs formation in the proposed area to be a continuous lithologic unit of interfingered sand lenses recognizable on electric logs of wells throughout the recommended area. The subject formation, a silty sandstone with clay filled pore spaces, was deposited

in a regressive marine environment by the Late Cretaceous sea. The same physical forces responsible for depositing the near-shore bars found near the northeast boundary were operating during the deposition of the nearshore bars in the southwest portion of the proposed area. Consequently, we believe that formation characteristics in the developed nearshore bar trend in the northeastern portion, from which most of the raw data originates, can reasonably be used to approximate the characteristics in the adjacent nearshore bar system believed to underlie the sparsely drilled southwestern portion.

The Commission's guidelines require that a recommended area exhibit or be expected to exhibit tight formation characteristics. They do not go so far as to require that data exist in the same degree in all parts of the formation as in the northeast portion of the recommended area. If this were so, then undeveloped areas, for which the incentive price is most needed, could never be designated as tight formations. The Commission believes that the southwestern portion should not be deleted from the tight formation designation, since enough evidence exists to lead to a finding that this area is expected to exhibit tight formation characteristics.

#### B. Social and PLGC's Comments.

The Commission also finds Social and PLGC's comments unavailing. Commission review of the data submitted indicates that the flow rates from the "sweet spot" were anomalous to the

rest of the recommended area and finds that exclusion of the flow rate from the "sweet spot" is justified in this particular case. Furthermore, the Commission believes that the applicant's approximation of 41 feet for the net pay thickness of the pay section is supported by the evidence available. Based on data from nine wells producing in the subject cross section, excluding the flow rate from the sweet spot area, the Commission arrived at an arithmetic average for the unstimulated stabilized flow rate of 16.5 Mcf. The Commission finds that Socal and PUGS' assertion that the unstimulated flow rate was 51.2 Mcf was actually an unstimulated rate of flow and not in accordance with the guidelines in § 271.703(c)(2)(1)(B). Furthermore, that section of the Commission's regulations requires the applicant to show a stabilized prestimulated flow rate of 79.5 Mcf for the subject formation, a figure above Socal and PUGS' estimated rate of flow. Additionally, the Commission used its estimate of the unstimulated flow rate and the applicant's estimation of a net pay section of 41 feet in Darcy's equation and arrived at an expected average in situ permeability of .018 millidarcy, which is well below the 0.1 millidarcy requirement found in § 271.703(c)(2)(1)(A).

C. Northwest's Comments

We now turn to Northwest's comments that certain areas have been substantially developed and should be deleted from

this designation. Section 271.703(c)(2)(1)(D) provides that no area should be included in a recommendation if that area was authorized to be developed by infill drilling prior to the date of the recommendation, and information exists to indicate that the area can be developed absent the incentive price. We have found this "information" to exist in cases where the area was substantially developed at the time an infill drilling order was issued.<sup>5/</sup> In this case, there has been no infill drilling order and so there is no basis to exclude any areas under § 271.703(c)(2)(1)(D). Additionally, our review shows that 88 percent of the existing wells in the Hallard Pictured Cliffs and South Blanco Pictured Cliffs pools were drilled and completed in the tight formation prior to July 16, 1979, the date at which the incentive price was established. Accordingly, production from these wells in the tight formation will probably not qualify for the NGPA section 107 incentive price. See § 271.703(u)(2) and (3). Furthermore, as stated above, the Commission estimates the expected in situ permeability to be .018 millidarcy for the designated area.

5/ See Docket No. RM79-76, (Colorado-1) FERC Stats. & Regs. Reg. Examples 1977-1981 ¶ 30,228 (1981), Order 124; Docket No. RM79-76, (Colorado-3) FERC Stats. & Regs. Reg. Examples 1977-1981 ¶ 30,244 (1981), Order 137; Commission Order Denying Rehearing, Order 137-A, 15 FERC ¶ 61,277 (1981).

IV. CONCLUSION

Based on the above, the Commission finds that the evidence submitted by New Mexico supports the assertion that the pictured Cliffs formation meets the guidelines contained in § 271.703(c)(2). Thus, the Commission adopts the New Mexico recommendation, with the additional area recommended by BLM.

This amendment shall become effective October 22, 1984.

List of Subjects in 18 C.F.R. Part 271:

Natural gas, incentive price, Tight formations.

In consideration of the foregoing, Part 271 of Subchapter H, Chapter 1, Code of Federal Regulations, is amended as set forth below.

By the Commission  
( 5 E. A. L. )

*Kenneth F. Plumb*  
Kenneth F. Plumb,  
Secretary.

Section 271.703 is amended to read as follows:

1. The authority citation for Part 271 reads as follows:

Authority: Department of Energy Organization Act, 42 U.S.C. §§ 7101 et seq.; Natural Gas Policy Act of 1978, 15 U.S.C. §§ 3301 - 3432; Administrative Procedure Act, 5 U.S.C. § 553.

2. Section 271.703(d) is amended by adding paragraph (179)

to read as follows:

§ 271.703 Tight Formations.

(d) Designated tight formations.

\* \* \*

(179) Pictured Cliffs formation in New Mexico.

RM79-76-204 (New Mexico - 25).

(i) Delineation of formation. The Pictured Cliffs Formation is located in Rio Arriba and Sandoval Counties, New Mexico, in Township 22 North, Range 2, 3, 4 and 5 West, Sections 5 through 9, 16 through 21, and 25 through 36; Township 23 North, Ranges 3, 4 and 5 West, All Sections; Township 24 North, Range 3 West, Sections 19, 20, 26 through 35, and S/2 of 36; Township 24 North, Range 4 West, Sections 3 through 10 and 13 through 36; Township 24 North, Range 5 West, All Sections; Township 25 North, Range 4 West, Sections S/2 of 30, 31 and 32; Township 25 North, Range 5 West, Sections 15 through 23 S/2 of 24, and 25 through 30, NMPM.

(11) Depth. The picture cliffs formation is defined as that interval at a depth of approximately 3,046 feet to 3,141 feet on the Induction Electric Log from the John F. Schalk, Cinco Diables Well No. 6. The average depth to the top of the pictured cliffs formation is 2,685 feet.

NEW MEXICO OIL CONSERVATION DIVISION

CASE 10432

January 9, 1992

EXHIBIT NO. 4

TIGHT FORMATION AREA DESIGNATED NM - 29

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**CONTENTS**

Federal Register, Vol. 56, No. 214, Nov. 5, 1991, pg. 56515

N.M. Oil Conservation Division Order No. R-9495

Correspondence from NMOCD to the FERC - July 11, 1991

Correspondence from ULBLM to FERC - October 18, 1991

within 30 days after the time allowed for filing a protest, the instant request shall be treated as an application for authorization pursuant to section 7 of the Natural Gas Act.

Lois D. Cashell,

Secretary.

[FR Doc. 91-26572 Filed 11-4-91; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. JD92-00842T New Mexico-29]

**The United States Department of the Interior, Bureau of Land Management; Receipt of Determination Designating Tight Formation**

October 29, 1991.

Take notice that on October 24, 1991, the United States Department of the Interior, Bureau of Land Management (BLM), submitted the above-referenced notice of determination to the Commission, pursuant to § 271.703(c)(3) of the Commission's regulations, that the Pictured Cliffs Formation in a portion of Rio Arriba County, New Mexico, qualifies as a tight formation under section 107(b) of the Natural Gas Policy Act of 1978 (NGPA). The notice covers approximately 76,800 acres. Of this total, roughly 30,720 acres fall within the Carson National Forest. The remaining acreage, approximately 46,080 acres, falls within the Jicarilla Apache Indian Reservation. The recommended area consists of all of Sections 4-9, 16-21, and 28-33 in T29N, R3W (NMPM), all of Sections 1-36 in T29N, R4W (NMPM), all of Sections 1-36 in T30N, R3W (NMPM), all of Sections 1, 2, 11-14, 23-26, 35 and 36 in T30N, R4W (NMPM), and all of Sections 4-9, 16-21, and 28-33 in T31N, R3W (NMPM). The notice of determination also contains the BLM's findings that the referenced portion of the Pictured Cliffs Formation meets the requirements of the Commission's regulations set forth in 18 CFR part 271.

The application for determination is available for inspection, except for material which is confidential under 18 CFR 275.206, at the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426. Persons objecting to the determination may file a protest, in accordance with 18 CFR 275.203 and 275.204, within 20 days after the date this notice is issued by the Commission.

Lois D. Cashell,

Secretary.

[FR Doc. 91-26573 Filed 11-4-91; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. TM92-4-20-000]

**Algonquin Gas Transmission Co.; Proposed Changes in FERC Gas Tariff**

October 29, 1991.

Take notice that Algonquin Gas Transmission Company ("Algonquin") on October 25, 1991, filed proposed changes in its FERC Gas Tariff, Third Revised Volume No. 1, as set forth in the revised tariff sheets, to be effective November 25, 1991.

*Appendix A Tariff Sheets*

Fourth Revised Sheet No. 92  
Third Revised Sheet No. 93  
Fourth Revised Sheet No. 674D  
Third Revised Sheet No. 674G  
Third Revised Sheet No. 674K  
Third Revised Sheet No. 674L  
Third Revised Sheet No. 674M  
Third Revised Sheet No. 674N  
Third Revised Sheet No. 674O

*Appendix D Tariff Sheet*

Substitute Fourth Revised Sheet No. 92

Algonquin states that the purpose of this filing is to update the amount of take-or-pay charges to be billed to Algonquin by CNG Transmission Corporation and National Fuel Gas Supply to be recovered by Algonquin by operation of § 33.7 of the General Terms and Conditions to Algonquin's FERC Gas Tariff, Third Revised Volume No. 1. Algonquin also states that the revised take-or-pay surcharges are the result of revised allocation methods imposed by its pipeline suppliers in response to the Commission's Order No. 528 and 528-A.

Algonquin notes that copies of this filing were served upon each affected party and interested state commissions.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, DC 20426, in accordance with §§ 385.214 and 385.211 of the Commission's Rules and Regulations. All such motions or protests should be filed on or before November 5, 1991. Protests will be considered by the Commission in determining the appropriate action to be taken but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 91-26574 Filed 11-4-91; 8:45 am]

BILLING CODE 6717-01-M

[Docket No. TM92-2-4-000]

**Granite State Gas Transmission, Inc.; Proposed Changes in Rates**

October 30, 1991.

Take notice that on October 28, 1991, Granite State Gas Transmission, Inc. (Granite State) 300 Friberg Parkway, Westborough, Massachusetts 01581 tendered for filing Seventh Revised Sheet No. 25 in its FERC Gas Tariff, Second Revised Volume No. 1, for effectiveness on October 3, 1991.

According to Granite State, it provides storage services for Bay State Gas Company and Northern Utilities, Inc., under its Rate Schedule S-1 with storage capacity provided in a facility operated by Penn-York Energy Corporation (Penn-York) pursuant to Penn-York's Rate Schedule SS-1.

Granite State further states that, on June 28, 1991, Penn-York filed a motion under section 4(e) of the Natural Gas Act to make effective on July 1, 1991, the suspended rates for its Rate Schedule SS-1 storage service, pending in Docket No. RP91-68-000. It is further stated that, in an order issued August 2, 1991, the Commission accepted Penn-York's motion rates, subject to refund. Granite State further states that on August 22, 1991, it filed revised rates in its Rate Schedule S-1 tracking the Penn-York Rate Schedule SS-1 rates that the Commission had accepted in its August 2, 1991 order. (Docket No. TM91-11-4-000). Granite State's filing was accepted in a Letter Order dated September 19, 1991 "subject to Granite State promptly tracking any further rate changes" by Penn-York.

Granite State states that, on October 3, 1991, the Commission issued a further Order Granting and Denying Rehearing Requests in Docket Nos. RP91-68-000, *et al.*, directing Penn-York to revise the rates for Rate Schedule SS-1 service, effective with the date of the order. It further states that Penn-York filed revised rates on October 15, 1991, in compliance with the Commission's October 3, 1991 order.

According to Granite State, its filing tracks in its Rate Schedule S-1 the change filed by Penn-York in compliance with the Commission's October 3, 1991 order.

Granite State states that copies of its filing were served on its storage service customers, Bay State Gas Company and Northern Utilities, Inc. and also on the regulatory commissions of the states of Maine, Massachusetts and New Hampshire.

Any person desiring to be heard or to protest said filing should file a motion to

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. 10264  
ORDER NO. R-9495

APPLICATION OF ROBERT L. BAYLESS FOR  
DESIGNATION OF A TIGHT FORMATION,  
RIO ARRIBA COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on March 21, 1991, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 6th day of May, 1991 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, Robert L. Bayless, requests that the Division in accordance with Section 107 of the Natural Gas Policy Act and 18 C.F.R. §271.703 recommend to the Federal Energy Regulatory Commission that the Pictured Cliffs formation underlying the following lands situated in Rio Arriba County, New Mexico, hereinafter referred to as the Pictured Cliffs formation, be designated as a "tight formation" in said Federal Energy Regulatory Commission's regulations:

TOWNSHIP 29 NORTH, RANGE 2 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 29 NORTH, RANGE 3 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 29 NORTH, RANGE 4 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 30 NORTH, RANGE 2 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 30 NORTH, RANGE 3 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 30 NORTH, RANGE 4 WEST, NMPM

Sections 1 and 2: All  
Sections 11 through 14: All  
Sections 23 through 26: All  
Sections 35 and 36: All

TOWNSHIP 31 NORTH, RANGE 2 WEST, NMPM

Sections 2 through 36: All

TOWNSHIP 31 NORTH, RANGE 3 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 32 NORTH, RANGE 2 WEST, NMPM

Sections 7 through 10: All  
Sections 15 through 22: All  
Sections 27 through 35: All

TOWNSHIP 32 NORTH, RANGE 3 WEST, NMPM

Sections 7 through 36: All

containing 193,090 acres, more or less; of which approximately 30,720 acres are within the Carson National Forest and the remaining is located within the Jicarilla Apache Indian Reservation.

(3) The applicant has designated the above-described area the "Cabresto Tight Gas Area" and included within the confines of said area are portions of the Choza Mesa-Pictured Cliffs Pool, East Blanco-Pictured Cliffs Pool, and Gobernador-Pictured Cliffs Pool.

(4) The type log presented by the applicant to represent the Pictured Cliffs formation in the area proposed for "tight formation" designation is the Welx Induction Guard Log run in the applicant's Jicarilla 474 Well No. 4 located 1850 feet from the South line and 1775 feet from the East line (Unit J) of Section 31, Township 30 North, Range 3 West, NMPM, East Blanco-Pictured Cliffs Pool, Rio Arriba County, New Mexico.

(5) The top and base of the Pictured Cliffs formation are found at depths of 3699 feet and 3974 feet, respectively, on said type log.

(6) One hundred and twenty four wells have been drilled into or through the Pictured Cliffs formation in the proposed designation area. Of these, fifty-three are presently capable of producing from the Pictured Cliffs formation.

(7) The average depth of the top of the Pictured Cliffs formation in the proposed Cabresto Tight Gas Area was testified to be 3715 feet.

(8) The geological evidence presented by the applicant indicates that the Pictured Cliffs formation underlies essentially all of the area under consideration. The formation consists of a marine clay filled very fine to fine grained, reasonably well sorted, subround to subangular, slightly calcareous, "salt and pepper" sandstone; the dark grains are predominately glauconite, mica and carbonaceous shale. This sandstone was deposited as a lenticular beach and nearshore bars which represent the last marine strata in the northeasterly regression of the Cretaceous Sea and therefore creating stratigraphic entrapment for the accumulation of natural gas. The geologic evidence also indicates that there are two main zones within the Pictured Cliffs formation in this area with each zone representing a regressive sequence separated by a transgressive marine tongue of shale. There are also interbeds of this shale in the lower portion of each main zone, however, such interbeds became thinner and fewer in the upper portions.

(9) Further, geological testimony indicates that the sandstone grains are coated with an illite-smectite authigenic clay and is pervasive throughout the vertical extent of the Pictured Cliffs formation. This clay coating serves to reduce the effective permeability of the formation.

(10) The applicant included in his testimony as direct evidence a technical paper entitled *Effect of Overburden Pressure and Water Saturation on Gas Permeability of Tight Sandstone Cores*, authored by Rex D. Thomas and Don C. Ward, which was presented at the Society of Petroleum Engineers (SPE) 46<sup>th</sup> Annual Fall Meeting, New Orleans, October 3-6, 1971 as SPE 3634. Said paper was a published report of research conducted by the U.S. Bureau of Mines which attempts to verify that the gas

permeability of tight sandstone cores is markedly decreased with increasing overburden pressure. Said research was conducted utilizing Pictured Cliffs formation cores taken from wells within Project Gasbuggy located in Section 36, Township 29 North, Range 4 West, NMPM, Choza Mesa-Pictured Cliffs Pool, Rio Arriba County, New Mexico, (Division Order No. R-3197). Project Gasbuggy was a part of the Plowshare Program of the U.S. Atomic Energy Commission in which a 29-kiloton nuclear explosive was detonated at a depth of 4,227 feet on December 10, 1967 for the purpose of conducting the United States' first underground nuclear experiment for the stimulation of low productivity gas reservoirs.

(11) In said report, it was concluded from approximately 200 core samples taken from the Choza-Mesa Pictured Cliffs Pool in Project Gasbuggy, yielding an average initial gas permeability of 0.16 millidarcies (md), dry and an average water saturation of 48 percent, an effective overburden pressure for this reservoir of 3000 psi results in a total reduction of initial permeability of 95 percent to 0.008 md.

(12) Said technical report has been utilized to support many of the previously approved "tight gas areas" throughout New Mexico.

(13) Utilizing the technical procedure and calculations from said SPE paper, an analysis on three additional cored wells from the Cabresto Tight Gas Area along with a core utilized in the report indicates the average dry air permeability for the Pictured Cliffs formation from the four wells to be 0.66 md, the net confining overburden pressure at a depth of 3715 feet is approximately 2800 psi, the average core water saturation was found to be 46 percent. The resulting in-situ permeability from the four cored wells was determined to be 0.035 md.

(14) Obtaining stabilized unstimulated gas production flowrates for Pictured Cliffs wells is not a standard procedure in this area, therefore all existing Pictured Cliffs wells within said area have been stimulated with fracture treatments (usually hydraulic and not nuclear in nature).

(15) In preparation for this Cabresto Tight Gas study, the applicant performed a "partially" unstimulated flow test on its Jicarilla 31-3-32 Well No. 1 (acid was used to insure that the perforations in said wellbore were open) located in Unit L of Section 32, Township 30 North, Range 3 West, NMPM, Rio Arriba County, New Mexico, which resulted in a calculated 24-hour flowrate of 22.0 MCFD.

(16) The natural gas produced from the Pictured Cliffs formation in the Cabresto Tight Gas Area is virtually "dry" with a few wells reporting very little condensate production, which occurred only after stimulation.

(17) Within the proposed area there is a recognized aquifer being the Ojo Alamo, located over 500 feet above the Pictured Cliffs formation.

(18) Existing State of New Mexico and Federal Regulations, administered by the U.S. Forest Service, U.S. Bureau of Land Management, and the U.S. Department of Energy, relating to drilling, casing and cementing of wells are in effect to help assure that development of the Pictured Cliffs formation will not adversely affect said aquifer.

(19) The data available indicates that the Pictured Cliffs formation within the proposed designated area, as described in Finding Paragraph No. (6) above, meets all the criteria set forth in 18 C.F.R. §271.703(C)(2)(a), (b), (c), and (d), viz:

- (a) the estimated average in-situ permeability throughout the pay section is expected to be less than 0.1 millidarcies;
- (b) the stabilized production rate, against atmospheric pressure, for wells completed for production in the Pictured Cliffs formation, without stimulation, is not expected to exceed 105 MCF per day (the average depth of the top of the formation is 3715 feet);
- (c) no well drilled into the formation is expected to produce more than five barrels of crude oil per day; and
- (d) the Division has not authorized the formation or any portion thereof to be developed by infill drilling.

(20) The Pictured Cliffs formation underlying the lands described in Finding Paragraph No. (2) above should be recommended to the Federal Energy Regulatory Commission for designation as a tight formation.

**IT IS THEREFORE ORDERED THAT:**

(1) It be and hereby is recommended to the Federal Energy Regulatory Commission pursuant to Section 107 of the Natural Gas Policy Act of 1978, and 18 C.F.R. §271.703, that the Pictured Cliffs formation, as further described in Finding Paragraph Nos. (4) and (5) of this Order, underlying the following described lands in Rio Arriba County, New Mexico, be designated as a tight formation:

**TOWNSHIP 29 NORTH, RANGE 2 WEST, NMPM**  
Sections 1 through 36: All

TOWNSHIP 29 NORTH, RANGE 3 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 29 NORTH, RANGE 4 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 30 NORTH, RANGE 2 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 30 NORTH, RANGE 3 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 30 NORTH, RANGE 4 WEST, NMPM

Sections 1 and 2: All

Sections 11 through 14: All

Sections 23 through 26: All

Sections 35 and 36: All

TOWNSHIP 31 NORTH, RANGE 2 WEST, NMPM

Sections 2 through 36: All

TOWNSHIP 31 NORTH, RANGE 3 WEST, NMPM

Sections 1 through 36: All

TOWNSHIP 32 NORTH, RANGE 2 WEST, NMPM

Sections 7 through 10: All

Sections 15 through 22: All

Sections 27 through 35: All

TOWNSHIP 32 NORTH, RANGE 3 WEST, NMPM

Sections 7 through 36: All

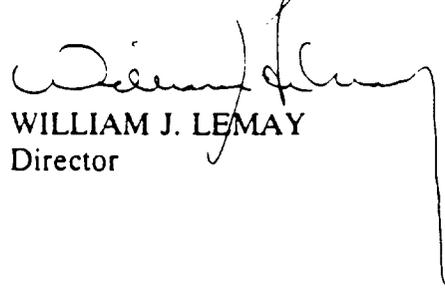
containing 193,090 acres, more or less, to be designated the Cabresto Tight Gas Area.

(2) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

*Cuse No. 10264*  
*Order No. R-9495*  
*Page No. 7*

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM J. LEMAY  
Director

SEAL

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

POST OFFICE BOX 2088  
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SANTA FE, NEW MEXICO 87504  
(505) 827-5800

July 11, 1991

**Federal Energy Regulatory Commission**  
823 N. Capitol Street NE  
Washington, D.C. 20426

ATTN: Marilyn Rand, Director  
Division of Producer Resolution

Dear Ms. Rand:

I am writing to you to confirm our telephone conversation on Thursday July 11, 1991, it is my understanding that a recommendation from the N.M. Oil Conservation Division on a proposed "Tight Formation" application recently considered by this agency will not be required since all the acreage involved is on Federally controlled lands (193,090 acres total, 30,720 acres Carson National Forest and 162,370 acres Jicarilla Apache Indian Reservation).

Thank you for your assistance in this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael E. Stogner", with a long horizontal line extending to the right.

MICHAEL E. STOGNER  
Chief Hearing Officer/Engineer

MES/jc

cc: OCD - Aztec  
Kevin McCord - Farmington  
Robert L. Bayless - Farmington  
Tommy Roberts - Farmington  
Case File: 10264  
U.S. Forest Service - Blanco, NM  
U.S. BLM - Albuquerque



United States Department of the Interior



BUREAU OF LAND MANAGEMENT  
ALBUQUERQUE DISTRICT OFFICE  
435 MONTANO N.E.  
ALBUQUERQUE, NEW MEXICO 87107

3160 (015)

October 18, 1991

Marilyn Rand, Director  
Division of Producer Regulation  
Federal Energy Regulatory Commission  
825 North Capitol Street NE  
Washington, DC 20426

Dear Ms. Rand:

This jurisdictional agency hereby designates the Pictured Cliffs formation underlying the following described lands in Rio Arriba County, New Mexico as a tight formation, BLM Docket No. NM-74-91, under Section 107 of the NGPA:

- a. Township 29 North, Range 3 West, NMPM  
Sections 4 through 9: All  
Sections 16 through 21: All  
Sections 28 through 33: All
- b. Township 29 North, Range 4 West, NMPM  
Sections 1 through 36: All
- c. Township 30 North, Range 3 West, NMPM  
Sections 1 through 36: All
- d. Township 30 North, Range 4 West, NMPM  
Sections 1 and 2: All  
Sections 11 through 14: All  
Sections 23 through 26: All  
Sections 35 and 36: All
- e. Township 31 North, Range 3 West, NMPM  
Sections 4 through 9: All  
Sections 16 through 21: All  
Sections 28 through 33: All

The total area encompasses 76,800 acres, more or less, of which approximately 30,720 acres are within the Carson National Forest and the remaining is located within the Jicarilla Apache Indian Reservation, situated in Rio Arriba County, New Mexico.

b. The applicant, Robert L. Bayless, has designated the area described above as the "Cabresto Tight Gas Area" and included within the confines of said area are portions of the Choza Mesa Pictured Cliffs Pool, East Blanco Pictured Cliffs Pool, and Gobernador Pictured Cliffs Pool.

c. A recognized aquifer, Ojo Alamo, is located within the designated area over 500 feet above the Pictured Cliffs formation. Existing Federal and State of New Mexico Regulations, administered by the U.S. Forest Service, U.S. Bureau of Land Management, and the U.S. Department of Energy, relating to drilling, casing, and cementing of wells are in effect to help assure that development of the Pictured Cliffs formation will not adversely affect said aquifer.

d. The estimated average in-situ gas permeability, throughout the pay section, is expected to be 0.1 millidarcy or less.

e. The stabilized production rate, against atmospheric pressure, of wells completed for production in the Pictured Cliffs formation, without stimulation, is not expected to exceed the production rate of 105 MCF per day at the average 3715 foot depth of the top of the formation.

f. No well drilled into the designated tight formation is expected to produce, without stimulation, more than five barrels of crude oil per day.

g. The formation or any portion thereof has not been authorized to be developed by infill drilling.

Evidence was presented at a public hearing held by the New Mexico Oil Conservation Division, Case No. 10264, on March 21, 1991, at Santa Fe, New Mexico. Exhibits and other documentation are enclosed. The lands involved are 100% Federal/Indian, so no designation will be submitted by the State of New Mexico.

This jurisdictional agency reduced the area requested by the applicant to approximately forty (40) percent of its original size due to lack of supporting data for the eliminated acreage. The applicant, Robert L. Bayless, at an informal conference held in this office on July 22, 1991, presented additional technical interpretation of their data.

It is requested that this jurisdictional agency be advised in writing when the 45 day review period will end and the appropriate FERC Order No. and/or State No. (NM-\_\_\_) assigned to this tight formation be included.

Persons objecting to this determination may file a protest directly with the Federal Energy Regulatory Commission, in accordance with 18 CFR Part 275.203 and 275.204, within 20 days after the notice is published in the Federal Register by the FERC.

If you have any questions please contact Allen F. Buckingham at FTS 479-8765 or (505) 761-8765.

Sincerely yours,

  
for Assistant District Manager  
Mineral Resources

Enclosures

cc:

Robert L. Bayless (Kevin McCord)  
NM Oil Conservation Division (Michael Stogner)  
William F. Carr (Amoco Prod. Co.)  
Tommy Roberts (Mallon Oil Co. & Schalk Dev. Co.)  
H. L. Kendrick (El Paso Natural Gas Company)  
NM-922 (Joe Chesser)

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NEW MEXICO OIL CONSERVATION DIVISION  
STATE OF NEW MEXICO  
CASE NO. 10420

IN THE MATTER OF:

The Application of Union Oil  
Company of California, d/b/a  
UNOCAL, for designation of a  
tight formation, Rio Arriba  
County, New Mexico.

BEFORE:

MICHAEL E. STOGNER  
Hearing Examiner

Bureau of Land Management Building  
435 Montano Road, Northeast  
Albuquerque, New Mexico  
December 20, 1991

REPORTED BY:  
DEBBIE VESTAL  
Certified Shorthand Reporter

BEFORE EXAMINER OR AMPLIFIER
OIL CONSERVATION DIVISION
11/19/92
<u>          </u> EXHIBIT NO. <u>5</u>
CASE NO. <u>10432</u>

COPY

1 dismissed.

2 I believe Mr. Buckingham has a  
3 statement at this point in time.

4 MR. BUCKINGHAM: Yes. Since this area  
5 involves infill drilling, I'd like to just put in  
6 for a matter of record what FERC's feeling on  
7 infill drilling is at this stage of the game.

8 The FERC issued a notice of proposed  
9 rule making on March 20, 1991. The subject was  
10 qualifying certain tight formation gas for tax  
11 credit.

12 Within that proposed rule making, a  
13 portion of which I quote, "was previously  
14 authorized to be developed by infill drilling if  
15 in the jurisdictional agency's judgment the  
16 formation cannot be developed without the tax  
17 credit for incentive price or the incentive price  
18 for wells spud before May 13, 1990."

19 I talked to FERC on December 6, 1991,  
20 after our informal meeting here with the  
21 representatives from the OCD and UNOCAL regarding  
22 economic data because this is an infill drilling  
23 area.

24 The reply I got from FERC was that if  
25 we were -- if you go in and use economic data

1 alone for any way to support your case, it will  
2 result in an automatic tolling letter from the  
3 FERC because even though we realize it, you  
4 realize it, the industry realizes it, everybody  
5 realizes it, that the tax credit is what is  
6 driving this rush to get wells drilled, but the  
7 regulation still says price incentive.

8           There is no price incentive, but until  
9 that regulation is changed, the FERC is bound by  
10 that regulation. They must follow that  
11 regulation to the letter.

12           So as a result, when we go in with the  
13 recommendation and designation of this area, I  
14 will state -- the BLM will state in there that  
15 the only reason this economic data is there is  
16 just for general information. The application,  
17 if we decide to designate it, will stand on its  
18 own merits based on permeability, crude oil  
19 production, and production according to the table  
20 listed in the FERC guidelines.

21           I asked -- I keep asking FERC. I've  
22 been following this since March 20, 1991. They  
23 are not in a hurry to issue a rule. I'm afraid  
24 they're waiting for a test case. Since I know  
25 they will read this transcript, this might be a

1 test case. But I just want to make that very  
2 clear that we cannot use economic data to prove  
3 our case.

4 As far as infill drilling, I also asked  
5 FERC about -- we are talking about an area here.  
6 Since the boundaries are a federal unit and there  
7 is no substantial infill drilling, all we're  
8 looking at is a federal unit. So that should  
9 stand by itself. That's all I have to say.

10 EXAMINER STOGNER: Thank you, Mr.  
11 Buckingham.

12 Does anybody else have anything further  
13 in this case?

14 Mr. Carr, I'm going to ask you to  
15 provide me a rough draft -- I'm sorry -- provide  
16 me and Mr. Buckingham with a rough draft order.

17 MR. CARR: Okay.

18 EXAMINER STOGNER: If there's nothing  
19 further in Case 10420, I'll take it under  
20 advisement.

21 (The proceedings were concluded.)  
22  
23  
24  
25

use in the aviation industry, shows negligible evidence of any flight crewmember or employee drug use, and demonstrates that the level of drug abuse in the general population is not increased in the airlines' workforce.

(RFD) (Docket) Filed 03-28-91; 3:45 am]  
BILLING CODE 4910-19-4

## DEPARTMENT OF ENERGY

Federal Energy Regulatory  
Commission

10 CFR Part 271

(Docket No. ER91-3-000)

### Qualifying Certain Tight Formation Gas for Tax Credit; Proposed Rulemaking

Issued March 29, 1991.

AGENCY: Federal Energy Regulatory Commission, DOE.

ACTION: Notice of proposed rulemaking.

**SUMMARY:** The Federal Energy Regulatory Commission (Commission) is proposing to amend its regulations to carry out Congress' intent in restoring the tax credit for gas from newly drilled tight formation wells. In this notice, the Commission proposes to establish maximum allowable production rates for natural gas produced from tight formations whose average depth exceeds 15,000 feet, so that gas from such formations may qualify for the tax credit. The Commission also proposes to permit jurisdictional agencies to designate as a tight formation a formation that (1) does not meet the permeability standard for tight formations (but meets the production rate standards) if the jurisdictional agency shows that the tax credit (or the incentive price for wells spudded before May 13, 1990) is necessary to provide reasonable incentives to produce natural gas from that formation, or (2) was previously authorized to be developed by infill drilling if, in the jurisdictional agency's judgment, the formation cannot be developed without the tax credit (or incentive price for wells spudded before May 13, 1990).

**DATES:** An original and 14 copies of the written comments on this proposed rule must be filed with the Commission by April 29, 1991.

**ADDRESSES:** All filings should be addressed to the Secretary, Federal Energy Regulatory Commission, 825 North Capitol St. NE., Washington, DC 20426, and should refer to Docket No. ER91-3-000.

**FOR FURTHER INFORMATION CONTACT:** Darrell Blakewit, Office of the General

Counsel, Federal Energy Regulatory Commission, 825 North Capitol Street NE., Washington, DC 20426, (202) 208-0224.

**SUPPLEMENTARY INFORMATION:** In addition to publishing the full text of this document in the Federal Register, the Commission also provides all interested persons an opportunity to inspect or copy the contents of this document during normal business hours in room 3308, 941 North Capitol Street NE., Washington, DC.

The Commission Issuance Posting System (CIPS), an electronic bulletin board service, provides access to the texts of formal documents issued by the Commission. CIPS is available at no charge to the user and may be accessed using a personal computer with a modem by dialing (202) 208-1397. To access CIPS, set your communications software to use 300, 1200 or 2400 baud, full duplex, no parity, 8 data bits, and 1 stop bit. The full text of this notice of proposed rulemaking will be available on CIPS for 90 days from the date of issuance. The complete text on diskette in WordPerfect format may also be purchased from the Commission's copy contractor, La Dem Systems Corporation, also located in room 3308, 941 North Capitol Street NE., Washington, DC 20426.

#### I. Introduction

As part of the Revenue Reconciliation Act of 1990,<sup>1</sup> signed into law by the President on November 5, 1990, the tax credit for nonconventional fuels under Section 29 of the International Revenue Code was extended for two years to continue to provide an incentive to develop nonconventional fuels. The tax credit was also reinstated for one nonconventional fuel for which it had previously lapsed—gas from newly drilled wells in tight formations—by revising the tax code so that tight formation gas is eligible for the tax credit even if the price for tight formation gas is no longer regulated.

The Federal Energy Regulatory Commission (Commission) is proposing three minor amendments to the Commission's regulations to carry out Congress' intent in restoring the tax credit for gas produced from newly drilled tight formation wells. The Commission is proposing to establish maximum allowable production rates for natural gas produced from tight formation whose average depth exceeds 15,000 feet.<sup>2</sup> In addition, the Commission

is proposing to permit jurisdictional agencies to designate as a tight formation a formation that (1) does not meet the Commission's permeability standard for tight formations (but meets the production rate standards), if the jurisdictional agency can show that the tax credit (or the incentive price for the wells spudded before May 13, 1990) is necessary to provide reasonable incentives to produce natural gas from that formation, or (2) was previously authorized to be developed by infill drilling if the jurisdictional agency's judgment is that the formation subject to infill drilling cannot be developed without the tax credit (or incentive price for wells spudded before May 13, 1990). These proposed amendments would enable natural gas produced from tight formations of average depths below 15,000 feet, natural gas produced from formations which do not meet the Commission's permeability standard for tight formations, and natural gas produced from formations subject to previously infill drilling orders to qualify for the tax credit. The proposed amendments do not affect the price at which tight formation gas may lawfully be sold.

#### II. Background

Under Section 29 of the Internal Revenue Code, qualified nonconventional fuels are eligible for a production credit that is equal to \$3 per barrel or the Btu barrel-of-oil equivalent (adjusted for inflation). Qualified fuels include (1) oil produced from shale and tar sands, (2) gas produced from geopressured brine, Devonian shale, coal seams, tight formations, or biomass, and (3) liquid, gaseous, or solid synthetic fuels produced from coal (including lignite), including such fuels when used as feedstocks. Prior to amendment by the Revenue Reconciliation Act of 1990, the production credit was available for qualified fuels produced from a well drilled, or a facility placed in service, before January 1, 1991, and sold before January 1, 2001. Under the 1990 Act, the credit was extended for two years to fuels produced from a well drilled, or a facility placed in service, before January 1, 1993, and sold before January 1, 2003.

In addition, before amendment by the 1990 Act, the tax credit for gas produced from tight formations was only available if the price of the gas was regulated by the United States with a maximum lawful price of at least 150 percent of the applicable ceiling price under section 103 of the Natural Gas Policy Act of 1978

<sup>1</sup> Section 11501, Public Law No. 101-508, 104 Stat. 1388-479.

<sup>2</sup> The average depth referred to means the average depth to the top of the formation.

EXHIBIT NO. 6

CASE NO. 10432

Application of the NMOCD

(NGPA).<sup>3</sup> Section 107(c)(5) of the NGPA authorized the Commission to prescribe maximum lawful prices that exceeded the otherwise applicable ceiling prices for the first sale of "high-cost" natural gas produced under such other conditions as the Commission determines to present extraordinary risks or costs. In Order No. 99, issued August 15, 1980, the Commission, acting under NGPA section 107(c)(5), authorized a ceiling price of 200 percent of the maximum lawful price under NGPA section 103 for gas produced from qualified tight formations.<sup>4</sup> The incentive price was not provided for gas from tight formations below 15,000 feet, because ceiling prices for gas from below such depths had been previously removed under NGPA section 121(b).<sup>5</sup>

All tight formation gas that qualified for the NGPA section 107(c)(5) incentive ceiling price established by Order No. 99 qualified for the tax credit. However, by 1990 a substantial portion of the tight formation gas had been deregulated and, accordingly, no longer qualified for the tax credit. Under the Natural Gas Wellhead Decontrol Act of 1989,<sup>6</sup> natural gas that was not subject to a first sale contract on the date of enactment was immediately deregulated. Gas sold under contract that expire or are terminated, or which the parties renegotiate to provide that maximum lawful prices no longer apply, is also deregulated. Gas from newly spudded wells will be deregulated on May 15, 1991, and all remaining wellhead price controls will be removed on January 1, 1993. In Order No. 523, the Commission amended its regulations to reflect the provisions of the Decontrol Act, and noted that producers may voluntarily file applications for well category determinations for any NGPA category, including high-cost gas, until

January 1, 1993, when section 503 of the NGPA is repealed. The Commission stated that it would continue to process such applications for well category determinations until that date in order to allow producers to obtain tax credits that are dependent upon such determinations, even if the gas has been otherwise decontrolled.

In addition, in Order No. 519, issued February 12, 1990, the Commission terminated the incentive ceiling price for sales of tight formation natural gas produced from wells spudded or recompleted after May 12, 1990.<sup>7</sup> The Commission concluded that since most natural gas had already been decontrolled, or was being sold at levels beneath the applicable ceiling price, the incentive ceiling prices for tight formation gas were no longer necessary to stimulate new production of such gas, and that commitment of new money by producers in reliance on the incentive ceiling price was no longer in the public interest.<sup>8</sup> Thus, the tax credit for gas from tight formations, which was dependent on the existence of a regulated price, lapsed for tight formation gas from wells spudded or recompleted after May 12, 1990, or for which the price has been deregulated under the Decontrol Act.

The 1990 Act allows such deregulated gas nevertheless to qualify for the tax credit by making it available for gas from tight formations that was committed or dedicated to interstate commerce (as defined in the NGPA) as of April 20, 1977, or produced after December 31, 1990, from a well drilled after the date of enactment.<sup>9</sup> The requirement that the price of the gas be regulated was deleted.

### III. Discussion

Section 271.703 of the regulations provides that a formation must meet three guidelines to qualify as a tight formation: a permeability standard, a maximum production rate, and an oil production limit. One of these guidelines—the maximum stabilized production rate in § 271.703(c)(2)(i)(B)—is tied to the average depth of a formation. Because gas below 15,000 feet was deregulated on November 1, 1979, the Commission only established maximum stabilized production rates for

formations whose average depth did not exceed that depth. Any gas from below that depth, having no ceiling price, could not therefore qualify for an incentive price. However, since newly drilled wells that produce gas from tight formations below 15,000 feet are now eligible for the tax credit, the Commission proposes to amend § 271.703(c)(2)(i)(B) to establish maximum allowable production rates for formation below that depth.<sup>10</sup> The highest maximum stabilized production rate proposed is for completions at 19,500 feet and deeper. The Commission does not believe there is any need to establish higher rates for production from lower depths, because very little gas is found below 20,000 feet, and the maximum allowable production rate for completions at 19,500 feet is an adequate measure of tight formation production rates from lower depths.

The second proposed change involves § 271.703(c)(2)(ii) of the Commission's regulations. That section currently provides that a jurisdictional agency may designate as a tight formation a formation that meets the maximum allowable production rates for gas and oil, but does not meet the permeability standard of 0.1 millidarcy or less, if the jurisdictional agency shows that the formation exhibits low permeability characteristics, and the tight formation incentive price is necessary to provide reasonable incentives to produce natural gas from that formation. Since there is no longer a tight formation incentive price for gas from wells drilled or recompleted after May 12, 1990, or tight formation gas that has been deregulated under the Decontrol Act, the Commission proposes to amend this regulation to provide that jurisdictional agencies may designate a formation with permeability in excess of the 0.1 millidarcy standard as a tight formation, if it otherwise qualifies as a tight formation, and the tax credit (or the incentive ceiling price for wells spudded before May 13, 1990) is needed to develop the formation.

Some formations with permeability in excess of 0.1 millidarcy, which may be designated tight formations on the ground that the tax credit is needed to develop the formation, may include wells that were spudded before May 13, 1990. The Commission is requesting

<sup>3</sup> 15 U.S.C. 3301-3342 (1988). However, the credit is not available unless the gas was sold at a lawful price determined without regard to the provisions of NGPA Section 107. (Internal Revenue Code Section 29(e)). Thus, a producer can utilize the tight formation incentive price by collecting a price in excess of the otherwise applicable maximum, or the tax credit, but not both.

<sup>4</sup> Regulations Covering High-Cost Natural Gas Produced From Tight Formations, 45 FR 56034 (Aug. 22, 1980), FERC Stats. & Regs. [Regulations Preambles 1977-1981] § 30.163.

<sup>5</sup> Section 121(b) of the NGPA provided that on the effective date of the Commission's incremental pricing regulations under section 201 of the NGPA, the ceiling prices for section 107 high-cost gas would no longer apply, except to categories of gas under section 107(c)(5). Incremental price regulations became effective November 1, 1979. See Interim Rules Defining and Deregulating Certain High-Cost Natural Gas, 44 FR 61950 (Oct. 29, 1979), FERC Stats. & Regs. [Regulations Preambles 1977-1981] § 30.794 at p. 30.691.

<sup>6</sup> Public Law No. 101-60, July 26, 1989, 103 Stat. 157 (1989).

<sup>7</sup> Limitation of Incentive Price for High-Cost Gas to Commodity Values, 55 FR 6367 (Feb. 23, 1990), FERC Stats. & Regs., Regulations Preambles §-30.879.

<sup>8</sup> *Id.* at p. 31.668.

<sup>9</sup> The Revenue Reconciliation Act of 1990 was signed by the President on November 5, 1990. However, the Conference Report states that gas qualifies for the tax credit if produced from a well drilled after December 31, 1990.

<sup>10</sup> The formula used to establish maximum stabilized production rates below 15,000 feet is the same as that used in Order No. 99 to establish such rates for production from above 15,000 feet. Regulations Covering High-Cost Natural Gas Produced From Tight Formations, 45 FR 56034 (Aug. 22, 1980), FERC Stats. & Regs. [Regulations Preambles 1977-1981]

comments on the appropriate treatment of gas from such wells. A jurisdictional agency may determine that a field qualifies as a tight formation based on a showing that the tax credit is necessary to warrant further development, without considering whether the incentive price is necessary to provide reasonable incentives for production. In such circumstances, should any producer in that field be entitled to collect the tight formation incentive price for gas from wells in that formation spudded before May 13, 1990, based solely on the finding that the tax credit is necessary to warrant further development? Alternatively, should separate procedures be established to consider whether the tight formation incentive price (as opposed to the tax credit) is necessary to provide reasonable incentives to produce natural gas from those wells?

The third proposed change involves § 271.703(c)(2)(i)(D) of the Commission's regulations. This section currently requires a jurisdictional agency to exclude a formation, or portion thereof, that is subject to a prior infill drilling order from determination as a tight formation if the jurisdictional agency's judgment is that the formation subject to infill drilling can be developed without the incentive price. The Commission proposes to amend this section to refer to the tax credit for the same reasons given for amending § 271.703(c)(2)(ii).

**III. Written Comment Procedure**

The Commission invites all interested persons to submit written data, views, and other information concerning the proposals in this Notice of Proposed Rulemaking. All comments in response to this Notice should be submitted to the Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, N.E., Washington, DC 20426, and should refer to Docket No. RM91-8-000. An original and fourteen copies should be filed with the Commission within 30 days after publication of this Notice in the Federal Register.

Written comments will be placed in the Commission's public files and will be available for inspection in the Commission's Public Reference Room, 941 North Capitol Street N.E., Washington, DC, during regular business hours.

**IV. Administrative Findings**

**A. Regulatory Flexibility Act Statement**

The Regulatory Flexibility Act (RFA)<sup>11</sup> requires the Commission to describe the impact that a proposed rule would have on small entities or to certify that the rule will not have a significant economic impact on a substantial number of small entities.<sup>12</sup> The Commission is not required to make an analysis if a proposed rule will not have such an impact.<sup>13</sup>

In general, the economic impact of a proposed rule is not "significant" within the meaning of the RFA if the impact on small entities is expected to be beneficial.<sup>14</sup> The proposed rule will enable certain natural gas producers that may qualify as small entities to qualify for tax credits. The Commission believes this impact is beneficial and, therefore, certifies that this proposed rule will not have a significant economic impact on a substantial number of small entities.<sup>15</sup>

**B. Environmental Review**

The Commission is not preparing an environmental assessment or environmental impact statement in this proceeding because the proposed amendments do not substantially change the effect of the regulations being amended. The proposed amendments provide procedures for carrying out the intent of Congress in reinstating the tax credit for gas produced from new wells in tight formations, but would have no significant effect on the human environment.<sup>16</sup>

**C. Information Collection Statement**

The Office of Management and Budget's (OMB) regulations require

OMB to approve certain information collection requirements imposed by agency rule.<sup>17</sup> In Order No. 523, *supra*, the Commission stated that it would continue to process applications for well category determinations through December 31, 1992, so that producers could qualify for tax credits. This proposal will not increase the regulatory burden under existing regulations on producers seeking to qualify tight formations of natural gas to be eligible for tax credits. The Commission, however, is notifying OMB of its actions in this notice of proposed rulemaking.

**List of Subjects in 18 CFR Part 271**

Continental shelf, Natural gas, Price controls, Reporting and recordkeeping requirements.

In consideration of the foregoing, the Commission proposes to amend part 271, chapter I, title 18, *Code of Federal Regulations*, as set forth below.

By direction of the Commission.  
**Lois D. Castrell,**  
*Secretary.*

**PART 271—CEILING PRICES**

1. The authority citation for part 271 is revised to read as follows:

Authority: 15 U.S.C. 717-717w; 42 U.S.C. 7101-7352; E.O. 12009, 3 CFR, 1978 Comp., p. 142; 15 U.S.C. 3301-3432.

2. In § 271.703, paragraphs (c)(2)(i)(B), (c)(2)(i)(D), and (c)(2)(ii) are revised to read as follows:

**§ 271.703 Tight formations.**

- (c) \* \* \*
- (2) \* \* \*
- (i) \* \* \*

(B) The stabilized production rate, against atmospheric pressure, of wells completed for production in the formation, without stimulation, is not expected to exceed the production rate determined in accordance with the following table:

<sup>11</sup> Section 360.4(a)(2)(i) of the Commission's regulations categorically exempt from environmental review Commission proposals for promulgation of rules that are clarifying, corrective or procedural, or that do not substantially change the effect of regulations being amended. *See also*, § 290.2(a) for the definition of "categorical exclusion."

<sup>17</sup> 5 CFR 1320.13 (1990).

<sup>12</sup> 5 U.S.C. 601-612 (1988).

<sup>13</sup> The Act defines a "small entity" as a small business, a small not-for-profit enterprise, or a small governmental jurisdiction. 5 U.S.C. 601(b) (1988). A "small business" is defined by reference to section 3 of the Small Business Act as in effect on 10/3/80, which is generally only owned and operated and which is

not dominant in its field of operation." 15 U.S.C. 632(a) (1988).

<sup>14</sup> 5 U.S.C. 605(b) (1988).

<sup>15</sup> *M J-Tex Electric Cooperative, Inc. v. FERC*, 773 F.2d 127, 340-43 (DC Cir. 1985).

<sup>16</sup> 5 U.S.C. 605(n) (1988).

If the average depth to the top of the formation (in feet)		The maximum allowable production rate (in thousand cubic feet per day) may not exceed—
Exceeds—	But does not exceed—	
0	1,000	34
1,000	1,500	51

If the average depth to the top of the formation (in feet)		The maximum allowable production rate (in thousand cubic feet per day) may not exceed—
Exceeds—	But does not exceed—	
1,500	2,000	59
2,000	2,500	68
2,500	3,000	79
3,000	3,500	91
3,500	4,000	105
4,000	4,500	122
4,500	5,000	141
5,000	5,500	163
5,500	6,000	188
6,000	6,500	217
6,500	7,000	251
7,000	7,500	290
7,500	8,000	336
8,000	8,500	388
8,500	9,000	448
9,000	9,500	519
9,500	10,000	600
10,000	10,500	693
10,500	11,000	802
11,000	11,500	927
11,500	12,000	1,071
12,000	12,500	1,238
12,500	13,000	1,432
13,000	13,500	1,655
13,500	14,000	1,913
14,000	14,500	2,212
14,500	15,000	2,557
15,000	15,500	2,956
15,500	16,000	3,417
16,000	16,500	3,950
16,500	17,000	4,567
17,000	17,500	5,279
17,500	18,000	6,103
18,000	18,500	7,055
18,500	19,000	8,156
19,000	19,500	9,429
19,500 +		10,900

(D) If the formation or any portion thereof was authorized to be developed by infill drilling prior to the date of determination and the jurisdictional agency has information which in its judgment indicates that such formation or portion subject to infill drilling can be developed absent the tax credit under section 29 of the Internal Revenue Code (or incentive price established in paragraph (a) of this section for wells spudded before May 13, 1990), then the jurisdictional agency shall not include such formation or portion thereof in its determination.

(ii) The jurisdictional agency may designate as a tight formation any formation that meets the guidelines contained in paragraphs (c)(2)(i)(B) and (c)(2)(i)(C) of this section, but does not meet the guideline contained in paragraph (c)(2)(i)(A) of this section, if the jurisdictional agency makes an adequate showing that the formation exhibits low permeability characteristics, and that eligibility for a tax credit under section 29 of the Internal Revenue Code (or the incentive ceiling price for wells spudded before May 13, 1990) is necessary to provide reasonable incentives for production of

the natural gas from the determined formation due to the extraordinary costs associated with such production.

[FR Doc. 91-7296 Filed 3-28-91; 6:45 am]

BILLING CODE 6717-01-M

#### POSTAL SERVICE

##### 39 CFR Part 111

#### Nonmailability of Deceptive Solicitations

**AGENCY:** Postal Service.

**ACTION:** Proposed rule.

**SUMMARY:** The Postal Service proposes to amend its regulations to implement the Deceptive Mailings Prevention Act of 1990, Public Law No. 101-524 (November 6, 1990). Effective May 5, 1991, the Act makes solicitations by nongovernmental entities, which imply a Federal Government connection, approval, or endorsement they do not actually have, nonmailable unless they are contained in certain publications or display prescribed disclaimers.

**DATES:** Comments must be received on or before April 29, 1991.

**ADDRESSES:** Written comments on the proposal should be sent to the Assistant General Counsel, Consumer Protection Division, Law Department, U.S. Postal Service, 475 L'Enfant Plaza West SW., Washington, DC 20260-1144. Copies of all written comments received will be available for inspection and photocopying between 9 a.m. and 4 p.m. each business day, in room 6347, Postal Service Headquarters, 475 L'Enfant Plaza West, SW., Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Mr. John F. Ventresco, (202) 268-3965.

**SUPPLEMENTARY INFORMATION:** The Deceptive Mailings Prevention Act of 1990 (Pub. L. No. 101-524, November 6, 1990) adds new subsections (f) and (g) to section 3001 of title 39, United States Code, and makes them applicable to matter deposited for mailing and delivery on or after 180 days after enactment—i.e., on or after May 5, 1991. The new subsections deal with any solicitation by a nongovernmental entity containing terms or symbols that reasonably could be interpreted or construed as implying a Federal Government connection, approval, or endorsement. If the soliciting entity does not have such connection, approval, or

# The Natural Gas Policy Act: The Texas Approach.

A Handbook for Operators.



## RAILROAD COMMISSION OF TEXAS

Lena Guerrero, Chairman  
James E. (Jim) Nugent, Commissioner  
Robert Krueger, Commissioner

BEFORE EXAMINER CATANZARI
OIL CONSERVATION DIVISION
11/9/92
<u>WALCO</u> EXHIBIT NO. <u>7</u>
CASE NO. <u>10432</u>

Published by  
NGPA Section

David M. Garlick, Director  
Oil and Gas Division

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512-463-6755

Revised April, 1991

## **Section 107**

### **Tight Formation Gas**

**DEFINITION:** Natural gas produced from a tight formation is produced with difficulty because the rock of the formation has low permeability and flow rates. Production from a tight formation is often termed "unconventional" production because normal completion operations are not usually sufficient to economically produce gas from the formation. Massive fracturing can be required to stimulate production. The designation of a formation creates the economic incentive for drilling which may not otherwise take place.

#### **This Section Includes:**

A.	Designation of a Tight Formation .....	D-13
B.	State and Federal Action on Recommendations .....	D-14
C.	Content of Tight Formation Recommendations .....	D-15
D.	Tight Formations Approved by FERC .....	D-17
E.	Tight Formations Awaiting Approval by FERC.....	D-24
F.	Qualification of Individual Wells .....	D-24
G.	New Tight Formation Gas Defined .....	D-24
H.	Recompletion Tight Formation Gas Defined .....	D-24
I.	Section 107 Tight Formation Filing Requirements .....	D-26
J.	Section 107 Tight Formation Sample Oath .....	D-26
K.	Questions and Answers .....	D-27

The critical requirement in this category is that tight formation gas must be produced from a "designated" tight formation. Procedurally, therefore, a two-step process exists when qualifying wells under Section 107 tight formation gas. First, the tight formation in which that well is completed must be designated as a tight gas formation. Second, an application must be submitted for each individual well.

**Designation of a Tight Formation:** The federal regulations in Section 271.703(c)(2)(i) establish four requirements that must be met for a formation to qualify to be designated as a tight gas formation.

1. **Permeability:** Estimated average in-situ permeability throughout the pay section is expected to be 0.1 md or less.

2. **Stabilized Production Rate:** Stabilized production rate, against atmospheric pressure, of wells completed in the formation without stimulation is expected to be within the rate and depth table set forth below.

If the average depth to the top of the formation (in feet)		The maximum allowable production rate (in thousand cubic feet per day) may not exceed—
exceeds—	but does not exceed—	
0	1,000	44
1,000	1,500	51
1,500	2,000	59
2,000	2,500	68
2,500	3,000	79
3,000	3,500	91
3,500	4,000	105
4,000	4,500	122
4,500	5,000	141
5,000	5,500	163
5,500	6,000	188
6,000	6,500	217
6,500	7,000	251
7,000	7,500	290
7,500	8,000	336
8,000	8,500	388
8,500	9,000	449
9,000	9,500	519
9,500	10,000	600
10,000	10,500	693
10,500	11,000	802
11,000	11,500	927
11,500	12,000	1,071
12,000	12,500	1,238
12,500	13,000	1,432
13,000	13,500	1,655
13,500	14,000	1,913
14,000	14,500	2,212
14,500	15,000	2,557

3. **Nonassociated Natural Gas:** Wells completed in the formation are not expected to produce, without stimulation, more than five barrels of crude oil per day. The NGPA defines "crude oil" as a mixture of hydrocarbons that exists in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.
4. **Infill Drilling Guideline:** A formation or any portion shall not be included in the recommendation if the formation or any portion has undergone infill drilling prior to the date of recommendation and the state agency has information which indicates that such portion can be developed absent the incentive price. Infill drilling exists when the formation or portion thereof is considered substantially developed subject to requirements respecting well spacing or proration units, and the requirements were amended by the state agency to provide for smaller proration units for more effective and efficient drainage of the reservoirs in the formation.

Additionally, Section 271.703(c)(2)(ii) allows the consideration of a formation for designation when the permeability exceeds 0.1 md but the formation exhibits low permeability characteristics. The jurisdictional agency must make an adequate showing of both of two facts. The agency must show that the formation exhibits low permeability characteristics and that the price established for tight formation gas is necessary to provide reasonable incentives for production of the natural gas from the recommended formation due to the extraordinary costs associated with such production.

**State Action to Recommend a Formation:** An applicant may request a tight formation determination by submitting a written request to the NGPA section of the Oil and Gas Division that a named formation or a specific portion thereof is a tight formation. The applicant must submit the names and addresses of all first purchasers, as indicated on current commission records, from all wells (regardless of operator) within the specific portion of the named formation and all operators in the same field or fields involved. RRC staff will mail a notice of application to all parties. If the technical staff is satisfied with the data submitted with the application, (see Content of the Recommendation Compiled) and if no protest is filed within 21 days of the notice, the application will be presented to the Railroad Commission for approval of the recommendation. If the technical staff is not satisfied with the data submitted, or if a protest is filed within the 21-day notice period, the applicant may request a hearing to consider the application. Any such hearing shall be held only after at least ten days notice to all affected persons. If no protestant appears at the hearing, the application will be presented to the Railroad Commission for approval of the recommendation if the application and any evidence presented at the hearing establishes that the subject formation meets the prescribed requirements for a tight formation determination. A Railroad Commission tight formation determination is not final for NGPA purposes until after FERC finalization. Individual well filings for a determination that natural gas from the wells is being produced from a designated tight formation will not be forwarded to the FERC until after the subject tight formation determination is final for NGPA purposes.

**Federal Action to Designate a Formation:** FERC action on tight gas determinations begins upon receipt of the determination from the jurisdictional agency. A determination submitted to the FERC shall become final 45 days after the date on which the commission received notice of the determination from the jurisdictional agency. (See §275.202 of the Federal Regulations.)

**Content of the Recommendation Compiled:** The content of the recommendation forwarded to FERC from Texas is composed of very specific requirements listed in the regulations concerning tight gas formation designation. The extent of the data depends upon the size and geology of the formation, but each recommendation must contain the following basic information.

1. **Geography and Geology:** The applicant must provide a geographical and geological description. Geographic data should include a map showing the geographic limits of the formation, naming counties involved, describing boundaries, including abstract numbers and survey names, listing fields and/or outlining the area of concern. It is often helpful for the applicant to provide a map showing all data points. Be as precise as possible.

The geological data should include a structure map showing the top contour of the formation, a regional cross-section to determine upper and lower limits of the formation, and some depositional history. It can also be helpful to provide information to the Railroad Commission about the lithology or rock composition of the formation.

2. **Supporting Data:** Applicant must provide the appropriate engineering and geological data to support the technical guidelines. In-situ permeability data can be obtained from pressure buildup (PBU) analysis, from core analysis (routine permeability which is converted to in situ permeability by calculating or by applying reservoir conditions to the core) or from flow test. Prestimulation flow rate data can be obtained from either a 4-pt. calculated absolute open flow (CAOF), or a 1-pt. CAOF.

Data should be provided on any liquids which are produced. If liquid (oil, condensate, water) is produced during the prestimulation testing, data should be submitted showing the properties of the fluid. Such data would include the gravity at standard conditions, the volume being produced, the gas/oil ratio, the bottom-hole temperature, and the bottom-hole pressure.

3. **Producing Wells:** Applicant should provide a map or list of the wells that are currently producing in the subject formation.
4. **Fresh Water Protection:** The applicant must address the issue of whether any fresh water aquifers that are or are expected to be used as a domestic or agricultural water supply will be adversely affected by designating the tight formation. Therefore the depth of the deepest fresh water aquifer in this formation should be given. Applicant can submit copies of letters from the Texas Department of Water Resources signifying the depth to which fresh water must be protected in the subject area.

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION  
P.O. BOX 2088  
SANTA FE, NEW MEXICO 87504

SPECIAL RULES AND PROCEDURES FOR  
TIGHT FORMATION DESIGNATIONS UNDER  
SECTION 107 OF THE NATURAL GAS POLICY ACT OF 1978

Amended 1/92

A. *General*

Applications for tight formation designations under Section 107 of the NGPA and applicable FERC rules and regulations shall be accepted by the Division at its Santa Fe, New Mexico office after June 30, 1980. These special rules apply only to individual tight formation designations and to not apply to individual well filing requirements for price category determination.

B. *Definitions*

1. "Crude oil" means a mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separation facilities.
2. "Division" means the Oil Conservation Division of the Energy, Minerals and Natural Resources Department of the State of New Mexico.
3. "FERC" means the Federal Energy Regulatory Commission.
4. "USBLM" means the office of the United States Bureau of Land Management in Albuquerque, New Mexico.
5. "Formation" means any geological formation or portion thereof described by geological as well as geographical parameters which is the subject of a tight formation designation application.
6. "Infill drilling" means any drilling in a substantially developed formation (or a portion thereof) subject to the requirements respecting well spacing or proration units which were amended by the Division or the Oil Conservation Commission

NMOCD Exhibit No. 8

January 9, 1992

CASE NO. 10432

after the formation (or portion thereof) was substantially developed and which were adopted for the purpose of more effective and efficient drainage of the reservoirs in such formation. Such amendment may provide for the establishment of smaller drilling or production units or may permit the drilling of additional wells on original units.

C. *Procedure*

1. All applications for tight formation designation in the State of New Mexico, which contains state and/or fee lands in any proportion shall be filed with the Division.
2. Any application for tight formation designation in the State of New Mexico which contains Federal and/or Indian lands in any proportion shall be concurrently filed with the USBLM. Any application containing lands entirely administered by the federal government shall be filed only with the USBLM.
3. Upon receipt of an application for the designation of a tight formation which involves both the Division and USBLM, it will be determined after preliminary review of the subject filing which agency is the most appropriate to sponsor said filing and submit same to the FERC.
4. Proof of publication must be submitted with the application. Such proof shall consist of a copy of the legal advertisement which was published in the county or counties covered in the proposed tight formation area. The contents of such advertisement shall include:
  - a. the name, address, phone number and contact party for the applicant;
  - b. the legal description of the proposed area, amount of acreage contained in said area and percentages of land types within said area;
  - c. name of formation or formations to be included and pool names if applicable;
  - d. a notation that any interested party must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87504, within twenty days from the date of publication.

**NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTIFICATION HAS BEEN SUBMITTED.**

5. If no objection is received within twenty days following the receipt of a complete application, the application may be approved administratively.

6. If a written objection is received within twenty days after receipt of a complete application or if a hearing is deemed advisable by the Division Director, the application shall be set for hearing and notice thereof given by the Division.
7. The application shall include a complete set of supporting exhibits (i.e. -- maps, plats, cross-sections, type logs, engineering data, reservoir analyses, core analyses, calculations, pressure information, publications, etc.) together with a statement of the meaning and purpose of each exhibit shall be submitted to the Division and if applicable to the USBLM. These exhibits shall cover all aspects of the required evidentiary data described in Section D below.
8. An oath statement shall accompany the application signed by each participant and notarized as to the accuracy and interpretation of the application.
9. Three complete additional sets of exhibits, statements, and oath statements must accompany the application; these additional items will be forwarded to the FERC by either the Division or USBLM, together with the Division's recommendation either in the form of an administrative order or letter to the FERC filed by the USBLM.
10. Further, it may be necessary for the applicant to submit additional data and/or supplement the original application with additional supporting statements and/or data. The applicant shall be responsible for submitting the required number of copies to complete the application for final approval by the FERC.
11. At the request of the USBLM or the Division, a meeting with the applicant may be necessary so that additional inquiries or questions of the filing may be addressed.

D. *Evidence*

1. Evidence offered by an applicant shall include:
  - a. a land plat or lease map which clearly indicates the land types (state, fee, federal, and/or Indian) and amounts and percentages for each;
  - b. a map and geographical and geological descriptions of the area and formation for which the designation is sought;
  - c. geological and engineering data to support the application;
  - d. a map or list which clearly locates or describes wells which are currently producing oil or gas, or both, from the formation within the geographical area of the formation;

- e. a report of the extent to which an applicant believes existing state and federal regulations will assure that development of the formation will not adversely affect or impair fresh water aquifers (during both hydraulic fracturing and waste disposal operations) that are being used or are expected to be used in the foreseeable future for domestic or agricultural water supplies;
  - f. if the formation has been authorized to be developed by infill drilling prior to the date of recommendation, information and data demonstrating that the formation cannot be developed without the incentive price established in 18 CFR §271.703(a); and,
  - g. any other information which the Division and/or BLM may require.
2. Evidence shall be based on each of the following geological and engineering guidelines:
- a. the estimated average in situ permeability, throughout the pay section, is expected to be 0.1 millidarcy or less;
    - (1) Permeability may be established and demonstrated by any customary or acceptable methods, techniques, or testing acceptable in the oil and gas industry.
  - b. The stabilized production rate, either at atmospheric pressure or calculated against atmospheric pressure, of wells completed for production in the formation, without stimulation, is not expected to exceed the production rate determined in accordance with the following table:

<i>If the average depth to the top of the formation (in feet):</i>		<i>The maximum allowable production rate (in MCF/day may not exceed:</i>
<i>Exceeds</i>	<i>but does not exceed</i>	
0	1000	44
1000	1500	51
1500	2000	59
2000	2500	68
2500	3000	79
3000	3500	91
3500	4000	105

<i>If the average depth to the top of the formation (in feet):</i>		<i>The maximum allowable production rate (in MCF/day may not exceed:</i>
<i>Exceeds</i>	<i>but does not exceed</i>	
4000	4500	122
4500	5000	141
5000	5500	163
5500	6000	188
6000	6500	217
6500	7000	251
7000	7500	290
7500	8000	336
8000	8500	388
8500	9000	449
9000	9500	519
9500	10000	600
10000	10500	693
10500	11000	802
11000	11500	927
11500	12000	1071
12000	12500	1328
12500	13000	1432
13000	13500	1655
13500	14000	1913
14000	14500	2212
14500	15000	2557

- c. No well drilled into the recommended tight formation is expected to produce, without stimulation, more than five barrels of crude oil per day.

- d. if an application meets the guidelines contained in subparagraphs 2.b. and 2.c. above, but does not meet the guidelines contained in subparagraph 2.a., the applicant may, in the alternative, show that the formation exhibits low permeability characteristics and that the incentive price is necessary to provide reasonable incentive for production of natural gas from the formation due to extraordinary risks or costs associated with such production.
  - (1) An application based on the guidelines outlined in subparagraph 2.d. above shall include data to support the contention that the guidelines contained in paragraph 2.b. and 2.c above are met, and in addition thereto, shall contain:
    - (a) the types and extent of enhanced production techniques which are expected to be necessary;
    - (b) the estimated expenditures necessary for employing those techniques; and,
    - (c) an estimate of the degree of increase in production from use of such techniques together with engineering and geological data to support that estimate.
- e. If the formation or any portion thereof were authorized to be developed by infill drilling prior to the date of recommendation and the Division has information which in its judgement indicates that such formation or portion subject to infill drilling can be developed absent the incentive price established in 18 CFR §271.703(a), then the Division Director shall not include such information or portion thereof in its recommendation.