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:

DRAFT

CASE NO. 10617
ORDER NO. R-9832

APPLICATION OF C.W. TRAINER FOR DESIGNATION OF A TIGHT FORMATION, CHAVES COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on December 17, 1992, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this _____ day of January, 1993 the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

(2) The applicant, C. W. Trainer, requests that the Division recommend to the Federal Energy Regulatory Commission ("FERC") that the Mississippian formation underlying the following lands in Chaves County, New Mexico be designated as "tight formation" in accordance with Section 107 of the Natural Gas Policy Act, FERC regulations in Title 18 CFR Section 271.703 and Oil Conservation Division Order No. R-6388-A:

Township 11 South, Range 28 East, NMPM
Section 35: E/2
Section 36: All

Township 11 South, Range 29 East, NMPM

Section 21:	S/2
Section 22:	All
Section 23:	W/2
Section 26:	W/2
Sections 27 through 34:	All
Section 35:	W/2

Township 12 South, Range 28 East, NMPM

Section 1:	All
Section 2:	Lots 1 and 2, S/2 NE/4, and SE/4 (E/2 equivalent)

Township 12 South, Range 29 East, NMPM

Section 2:	Lots 3 and 4 and S/2 NW/4 (NW/4 equivalent)
Section 3:	Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Section 4:	Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Sections 5 and 6:	All

(3) The proposed "tight formation" area contains 11,009.08 acres, more or less, of state (approximately 640 acres or 5.8%) and fee (approximately 94.2%) lands. All lands included in this proposed designation are administered by the New Mexico Oil Conservation Divsion, which is the recognized FERC jurisdictional agency in this matter (see FERC Rule 274.501(a)(2)).

(4) Included entirely within the confines of the proposed tight formation area is the White Ranch Mississippian Gas Pool, which was created by Division Order No. R-3030, issued in Case No. 3364 and dated January 21, 1966.

(5) The type log presented by the applicant to represent the Mississippian formation in the proposed "tight formation" designation is the Compensated Neutron/Formation Density Log dated May 3, 1977 in the C.W. Trainer (formerly Tom L. Ingram) White Ranch Well No. 4 located 660 feet from the North and East lines (Unit A) of Section 33, Township 11 South, Range 29 East, NMPM, Chaves County, New Mexico. Although this well was drilled to a total depth of 8810 feet, it did not fully penetrate the Mississippian formation. From this log, however, other pertinent data can be presented such as the top of the Mississippian formation found at 8315 feet and the main pay zone found in the Mississippian formation in the proposed area is from 8502 to 8545 feet.

(6) The Mississippian formation underlies all of the above-described lands, its top ranges between 7500 feet to 8500 feet ~~within the area set out in Finding Paragraph No. (2) above~~ and its thickness varies between 600 and 800 feet. ~~It is primarily a limestone formation, In the upper portion, small amounts of chert is encountered. This chert occurs primarily as nodules.~~ The lower one-third is somewhat clastic with shale and sometimes siltstone included within the formation. The primary "pay zone", found within the area (White Ranch Mississippian Gas Pool production), occurs within 150 to 200 feet of the top of the Mississippian formation, its lithology varies somewhat from that normally found in the Mississippian formation. It is a limestone, pellet, clastic type of material (limestone pellets packed together) called packstone, which occurs in a shallow marine shoal environment.

(7) The White Ranch Mississippian Gas Pool is 400 feet structurally lower than the Mississippian formation ~~and~~ is found in the western portion of the proposed area, which demonstrates a regional dipping to the east/southeast of 200 to 250 feet per mile.

(8) The following four wells, all operated by the applicant and located in Township 11 South, Range 29 East, NMPM, White Ranch Mississippian Gas Pool, White Ranch Lease, Chaves County, New Mexico, represent the only natural gas production from the Mississippian formation within the proposed area to date:

Well No.	Footage Location	Unit	Section
1	1980' FNL - 660' FWL	E	34
2	1980' FSL - 660' FWL	L	34
3	990' FSL - 660' FWL	M	34
4	660' FN & EL	A	33

(9) The Mississippian formation underlying the proposed area has been penetrated by seven other wells, none of which produced natural gas in commercial quantities from said formation.

(10) The engineering evidence presented in this case demonstrated that no well formerly or currently completed in the Mississippian formation within the proposed area exhibited permeability, gas productivity, or crude oil productivity in excess of the following parameters:

(a) average <u>in situ</u> gas permeability throughout the pay section of 0.1 millidarcy;

(b) stabilized production rates, against atmospheric pressure, as found in the table set out in 18 CFR §271.703(c)(2)(B) of the interim regulations; and,

(c) production of more than five barrels of crude oil per day.

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

(a) the average in situ permeability throughout the pay section of the Mississippian formation is expected to be 0.1 millidarcy or less; and,

(b) the stabilized production rate, against atmospheric pressure, of wells contemplated for production in the Mississippian formation, without stimulation, is not expected to exceed production levels determined by reference to 18 CFR §271.703(c)(2)(B) of the interim regulations; and,

(c) no well drilled into the formation is expected to produce more than five barrels of crude oil per day.

(12) Within the proposed area there is a recognized water aquifer, being the Permian Sand, found to occur from the surface of the ground to the top of the Salado (salt) interval at approximately 300 feet.

(13) Existing State of New Mexico and Federal regulations relating to casing and cementing of wells will assure that development of the Mississippian formation will not adversely affect said water zones.

(14) The White Ranch Mississippian Gas Pool and the surrounding Mississippian formation is governed by statewide rules and regulations which spaces this zone on 320-acre units (General Rule 104.B(1)(a) and 104.C(2)). Although there are no official infill drilling provisions for this zone in the proposed area, two of the applicant's wells producing from the White Ranch Mississippian Gas Pool share a standard 320-acre spacing unit in the S/2 of Section 34, Township 11 South, Range 29 East, NMPM, Chaves County, New Mexico, those being the White Ranch Well Nos. 2 and 3 in Units L and M, respectively. When the No. 3 well was recompleted from a deeper oil horizon into the existing unit dedicated to the No. 2 well in 1977, Division policy at that time allowed for such simultaneous dedication of acreage.

(15) The last development drilling/recompletion work within said pool occurred in 1977 with the No. 4 well in Section 33, Township 11 South, Range 29 East, NMPM, Chaves County, New Mexico.

(16) The Mississippian formation within the proposed area 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 CFR §271.703, that the Mississippian formation, as further described in Finding Paragraph No. (5)(6) of this Order, underlying the following described lands in Chaves County, New Mexico, be designated as a tight formation:

Township 11 South, Range 28 East, NMPM
Section 35: E/2
Section 36: All

Township 11 South, Range 29 East, NMPM
Section 21: S/2
Section 22: All
Section 23: W/2
Section 26: W/2
Sections 27 through 34: All
Section 35: W/2

Township 12 South, Range 28 East, NMPM
Section 1: All
Section 2: Lots 1 and 2, S/2 NE/4, and SE/4 (E/2 equivalent)

Township 12 South, Range 29 East, NMPM
Section 2: Lots 3 and 4 and S/2 NW/4 (NW/4 equivalent)
Section 3: Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Section 4: Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Sections 5 and 6: All

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

BEFORE THE OIL CONSERVATION DIVISION

OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF
C. W. TRAINER FOR A TIGHT FORMATION
DESIGNATION UNDER SECTION 107 OF THE
NATURAL GAS POLICY ACT OF 1978,
CHAVES COUNTY, NEW MEXICO CASE NO. 10617

PRE-HEARING STATEMENT

This prehearing statement is submitted by C. W. Trainer, as required by the Oil Conservation Division.

APPEARANCES OF PARTIES

APPLICANT	ATTORNEY
C. W. Trainer	Joel M. Carson
P. O. Box 755	Losee, Carson, Haas & Carroll, P.A.
Hobbs, New Mexico 88240	P. O. Drawer 239
(505)393-2727	Artesia, New Mexico 88211-0239
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STATEMENT OF CASE

APPLICANT

Applicant requests designation of the Mississippian formation as a "tight formation" pursuant to the regulations of the Federal Energy Regulatory Commission and Section 107 of the Natural Gas Policy Act of 1978, under those lands specified in the application, and the Notice published November 15, 1992, in the Roswell Daily Record, as reflected by the Affidavit of Publication provided.

PROPOSED EVIDENCE

APPLICANT

WITNESSES (Name and expertise)	EST. TIME	EXHIBITS
C. W. Trainer, Engineer	20	
Jack Ahlen, Geologist	15	

Attached is a preliminary list of proposed exhibits with a short narrative explaining the exhibit. Applicant has already submitted a preliminary set of exhibits to the hearing examiner.

C. W. TRAINER

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P. O. Drawer 239
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Jack Ahlen

CONSULTING GEOLOGIST
533 PETROLEUM BUILDING
ROSWELL, NEW MEXICO 88201

Proposed Tight Formation Designation,
White Ranch Area, Chaves Co. N.M.
NGPA of 1978, amended, effective March 31,1992

Narrative to accompany evidence submitted in support of the above referenced action:

Exhibit A. Lease Map which indicates land types, amounts and percentage

Exhibit A is a copy of the Midland Map Company land map covering portions of Chaves County in T11 and 12S R28 and 29E. It shows the location of the White Ranch field and the West White Ranch field. The outline of the proposed designated area is the broad black line enclosing the central part of the map. The total proposed area encompasses approximately 11,040 acres of which 640 acres are state lands and 10,400 acres are fee lands. The relative percentage is 5.8% state and 94.2% fee. State lands are marked by the diagonal lines while the remaining lands within the proposed area are fee.

Exhibits B. Map and geographical and geological descriptions of area and formation for which designation is sought.

Exhibit B 1 is a structure contour map of the top of the Mississippian Lime formation. Contour interval is 100 feet, scale is 1"=4000'. The contours indicate the regional and local structural trends at White Ranch and West White Ranch fields as well as the fact that the structure at West White Ranch is approximately 400 feet higher than at White Ranch.

Exhibit B 2 is an isopach of Mississippian lime porosity greater than 5%. The contour interval is 5 feet and the scale is 1"=4000'. The porosity zone is widespread and is continuous between the fields. Maximum thickness is 37 feet while the average thickness in the area is about 20 feet. The designated area is based on the 15 foot contour line.

Exhibit B 3 is a north south structure cross section of the White Ranch field showing electric log sections of the lower Pennsylvanian, Mississippian and uppermost Devonian formations. The index map on the left relates the line of section to the local geography and the proposed designated area for tight formation. The logs are hung on the 4500' below sea level datum. The Mississippian and Devonian tops are labled as well as the currently producing pay zone. The two hundred feet of structural difference of the pay zone datum does not adversely effect the presence of gas. Well tests and treatments are tabulated below each well profile.

Exhibit B 4 is a north south structure cross section through West White Ranch field which shows electric log sections and is similar to exhibit B 3 above. The datum has been changed for convience to 4000 feet below sea level. Note that the pay zone has the same relationship to the formation boundries. The initial test well in West White Ranch is the J.C. Williamson #1 White Ranch, the second well from the left on the section. The pay zone is illustrated in this well from 7750 to 7770 feet.

Exhibit B 5 is an east west structure cross section between the two fields. It illustrates correlations between the fields, the structural relationships and the pay zone is the same stratigraphic horizon in the two fields.

The Mississippian formation consists of from 400 to 600 feet of very fine grained tan to brown cherty limestone. The formation is shaley in the lower third with varying percentage of shale and siltstone. The Woodford shale member is the lowermost part of this section. Cores of the pay zone indicate it to be a fine grained lime pellet packstone. Porosity varies up to a maximum of 12.7% as measured in a core from the Tom L. Ingram #4 White Ranch well. Core permiabilities were measured at .4 millidarcys and less. The average permiability of the core is .098md (see attached core analysis, exhibit C1). A second core had no shows and was not analyzed.

Exhibit C. Geological and engineering data to support the application

Exhibit C 1 is the core analysis from the Tom L. Ingram #4 White Ranch for the depths 8494 to 8539. Analysis is whole core, broken into 34 segments of 1.0 to 1.8 feet. The results are tabulated showing from left to right depth, maximum permiability, permiability at 90°, porosity, fluid saturations for oil and water and at the far right a lithologic description. Permiability varies from less than .1md to .4md. The average is .0987md for the interval. Porosity ranges from .3 to 12.7% with an average of 6.5 for the interval. Oil saturation varies from zero to 12.3%.

Exhibit C 2 Core graph and CNDL of pay zone, #4 Ingram, the core variables are plotted at electric log scale of 5 inches equals 100 feet on this exhibit for correlation with open hole logs.

Exhibit C 3 is the digitized time/pressure data from the drill stem test at 8480 to 8573 of the Mississippian pay zone in the Ingram #4 White Ranch. Page 7 is a copy of the DST chart which is labled for easy reference. The label points are used in the succeeding pages to assist in the quantitative analysis of the test. Page 8 presents a summary of laboratory corrected pressure data on the top third of the page and incremental readings of time, pressure, T+DT/DT, log T+DT/DT, and Pw-Pf on the lower two thirds of the page. Succeeding pages 9,10 and 11 present the remainder of the above time and pressure data which has been utilized to make a Horner Plot for interpretation of the test.

Exhibit C 4 is a Horner plot of the White Ranch #4 Mississippian drill stem test. The slope of the middle time portion of the final shut in is 4200psi per cycle. The flow rate during the test was 4.28bbls per day. The flow rate is based on a pressure difference of 64.8psi between the initial flow pressure 215.9psi (at 2) and the final flow pressure of 280.7 psi (at 6) and a gradient of .473 psi per foot. Dividing 64.8 by the gradient of .473 gives a height of fluid of 137 feet. in the 2.25 ID drill collars. The capacity of 2.25 ID drill collars is one bbl of liquid for each 203 feet of pipe. Therefore the formation produced .675 bbls of liquid during the 227 minutes of the initial flow, initial shut in and final flow periods. The daily rate is then .675 X 1440/227 or 4.28 bbls per day.

Transmissability Kh/uB = 162.6 Q/M. 162.6 X 4.28/4200 = .166mdft/cp. K = .166/42 = .00395md. The assumption that uB = 1 is based on the recovery of liquid only. See appendix A for a more detailed treatment of the above computations.

Exhibit C 5 is a series of scout tickets for all Mississippian and deeper wells within the outlined area. The pertinant data concerning testing of the Mississippian formation is tabulated below:

Drill Stem Tests:

Ohio Oil Co. #1 State WR Sec. 36 T11S R28E
Top Miss. 7778, Top Devonian 8327
D.S.T. 7900-7947, open 120 minutes, 1000' water blanket. Recovered 1000' water blanket plus 120' slightly gas cut mud. flow pressures, initial 460#, final 460#, 30 minute shut in pressure 860#.

D.S.T.s cont.

Depco, Inc. #1 Sundance Federal "B" Sec. 11 T12S R29E
Top Miss. 8616, Top Devonian 9188
Straddle Packer D.S.T. 8765-8845, open 60 minutes
Sampler recovered 1700cc's of drilling fluid at 50#, 60 minute initial shut in pressure 131#, flow pressure 22#-22#, 180 minute final shut in pressure 283#

Rebublic Natural Gas and Seaboard of Delaware #1 White Ranch 1980 FNL & 660 FWL of Sec. 34 T11S R29E, Top Miss. 8120, Top Devonian 8724, D.S.T. 8340-8400, open 60 minutes, gas to surface 77 minutes at an estimated rate of 35,000CFGPD, recovered 250' of heavily gas cut mud, no pressures available.

Tom L. Ingram #4 White Ranch 660 FN&EL Sec. 33 T11S R29E Top Miss. 8313, Top Devonian not penetrated D.S.T. 8480-8573, open 120 minutes, recovered 500' of gas and distillate cut mud, sampler recovered .5 cubic feet at gas and 2240cc's condensate and gas cut mud at 240#. 90 minutes initial shut in pressure 2556#, flow pressure 256-281, 240 minute final shut in pressure 2811#, bottom hole temperature 150°F.

The Republic Natural Gas and Seaboard of Delaware #1 White Ranch drill stem test had gas to the surface in 77 minutes. The volume of 8340' of $4\frac{1}{2}$ inch drill pipe is approximately 255 cubic feet. The calculated daily rate is therefore approximately 4800 cubic feet of gas per day. This rate is significantly less than the statutory limit set by the regulation.

Exhibit D. (below) A list of wells currently producing gas from the Mississippian formation.

1. C.W. Trainer #1 White Ranch (Republic Natural Gas and Seaboard of Delaware)
   1980' FNL 660' FWL Sec. 34 T11S R29E
2. C.W. Trainer #2 White Ranch (Republic Natural Gas and Seaboard of Delaware)
   1980' FSL & 660' FWL Sec. 34 T11S R29E
3. C.W. Trainer #3 White Ranch (Republic Natural Gas and Seaboard of Delaware)
   660' FS&WL Sec. 34 T11S R29E
4. C.W. Trainer #4 White Ranch (Tom L. Ingram)
   660' FN&EL Sec. 33 T11S R29E

Exhibit E is a copy of the topographic map covering the proposed area. An inspection of the map reveals that there is one fresh water well located within the designated area and one located less than a $\frac{1}{2}$ mile from the outer boundry.

One is at the Malstrom Ranch headquarters in the SE/4 SW/4 Sec. 3 T12S R29E and the other is in the NE/4 SE/4 of Sec. 30 T11S R29E. The surface is developed on and is comprised of the Dewey Lake and Rustler Formation redbeds. There are no springs. Surface runoff is retained by several stock tanks as indicated on the attached portions of the topographic maps of the "Malstrom Ranch" and "Culp Ranch". Stock tanks are located in sections 22,31,32 and 33 of T11S R29E, Sec. 36 T11S R28E, Sec. 6 and 3 of T12S R29E. All are within the boundry of the LE Ranch except for two in the SE/4 SW/4 of Sec. 3 T12S R29E which are on the Malstrom Ranch.

Existing state and federal regulations insure that developement of the Mississippian formation will not adversely affect or impair fresh water acquafers

that are currently being used or are expected to be used in the foreseeable future. Two strings of casing are usually run through the shallow redbed sequence before the 7 7/8 inch deep hole is drilled. The reservoir rocks below 7000 feet are separated from fresh water aquifers by impervious shales, limestones, dolomites and anhydrites of the Pennsylvanian, Wolfcamp, Abo, Yeso and San Andres formations. It is highly probable that the seal of these formations will not be compromised by the expected hydrolic fracturing or waste disposal operations attributable to these operations.

F. The formation has not been authorized to be developed by infill drilling. All wells which have been drilled in the area have been drilled on the normal statewide pattern established for oil wells.

G. No other information is required at present.

Par. 2. The above evidence is based on the following geologic and engineering guidelines.

A. The estimated average in situ permiability, throughout the pay section is expected to be .1 millidarcy of less. Permiability is established by core analysis and drill stem testing in the Ingram #4 White Ranch.

B. The stabilized production rate of wells completed for production in the formation, without stimulation, is not expected to exceed the production rate as determined in accordance with the depth rate chart of the special rules.

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

D. Application does meet guidlines contained in subparagraphs 2A, 2B and 2C above.

E. N/A

Appendex A

The Horner Plot (exhibit C4) of T+DT/DT vs Pws during the 4 hour final shut in period has a slope of 4200. The flow rate during the test was 4.28 bbl per day. Kh/uB is therefore 162.6 X 4.28/4200 = .166 mdft/cp. The average effective permiability is .166 uB/42. or approximately .0039 md for liquid. No measurable gas was recovered during the test.

a. Recovery was reported as 500 feet of slightly gas cut mud (above the valve). An additional 93 feet of recovery was lost below the valve and above the pressure recorder. The final flow pressure was 280.7 psi. The mud column gradient is therefore 280.7/593' = .473 psi per foot.

b. The initial flow pressure demonstrates that part of the recovered fluids bypassed the packers before the test started, therefore by subtracting the initial flow pressure from the final flow pressures and dividing the result by the gradient it is possible to compute the fluid recovered during the test. Final flow pressure (6) 280.7 less initial flow pressure (2) 215.9 = 64.8psi. 64.8/.473 = 137'. of fluid in DC. Drill collars ID is 2.25", 137' of liquid = 137/203'bbl=.675bbl. Daily rate = .675 x 1440/227 = 4.28bbls/day.

c. Transmissability Kh/uB = 162.6 Q/M = 162.6 x 4.28/4200 = .166mdft
K = .166/42 = .00395md assuming the product of uB = 1.

Recovery was of condensate cut mud therefore:
u @ 150°F is ± .6 to .7
B for water is 1 ± .1

Summery #4 White Ranch core and DST

1. Daily rate of production for DST was 4.28bbls
2. Average permiability measured from core = .0987md for the 42 feet of the core.
3. Permiability calulated from D.S.T. is .00395md.

Daily rate of gas production from Republic Natural Gas Co. and Seaboard #1 DST was estimated at 35,000 CFPD, a rate of 4,800 CFPD is calculated from the 77 minute displacement time.

The above data meets all the guidelines as proposed in the regulation for tight formation designation.

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

CASE NO. 10432
ORDER NO. R-6388-B

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 FORMATIONS," PROMULGATED BY DIVISION ORDER NO. R-6388-A.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on January 9, 1992, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 31st day of March, 1992 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) By Order No. R-6388, dated June 30, 1980, the New Mexico Oil Conservation Division first promulgated its "Special Rules and Procedures for Tight Formation Designation Under Section 107 of the Natural Gas Policy Act of 1978" which was predicated upon the interim regulations issued February 20, 1980, by the Federal Energy Regulatory Commission (FERC) and was intended to be amended should the final regulations promulgated by the FERC differ substantially from the aforementioned interim regulations.

(3) By Order No. R-6388-A, dated February 10, 1981, the Division re-promulgated said special rules as the results of FERC Order No. 99, issued August 15, 1980, which incorporated those differences in the final rule from the interim regulations.

(4) Since the inception of said rules the Division has entertained thirty-six cases calling for the designation of tight formation areas throughout the state. At the time of this hearing twenty-nine areas have been designated by the FERC. All but two of these approved areas were designated on or before January 18, 1985, when the "incentive" to file for a tight formation area was essentially pricing. Coincidentally, applications for tight formation areas in New Mexico all but ceased about this time.

(5) Since the Federal Revenue Reconciliation Act of 1990 was signed into law on November 5, 1990, which revised the federal tax code allowing for a tax credit on tight formation gas even if the price for such gas is unregulated, five applications for tight formation designations have been filed with the Division.

(6) Procedures in the way the FERC reviews such final determinations submitted by the various state jurisdictional agencies when said areas contain lands administered by the U.S. Bureau of Land Management ("BLM") have evidently changed in the interim.

(7) Current procedures require both the State Jurisdictional Agency and the reviewing BLM office to concur on the area to be designated prior to submittal to the FERC. This change, unbeknownst to the Division, has led to a certain amount of confusion, misunderstanding, delay and waste of time for the applicant, Division, FERC and BLM in the processing of the last five tight formation applications.

(8) The procedures now in effect for initial review of such areas through the Division's hearing and ordering process are very ineffective and cumbersome when such concurrence with the BLM can only be obtained after the Division has issued a determination based on evidence submitted by an applicant at a hearing.

(9) To rectify this situation, a procedure should be adopted allowing the Division to review such applications along with the BLM more freely and to enter into a negotiable stance either with the applicant and/or the BLM in mediating an area to be submitted to the FERC for final review.

(10) The Division at this time proposes to place the previous Rules and Procedures for Tight Formation Designations, Order No. R-6388-A, in abeyance until further notice and to adopt an administrative procedure allowing for a more flexible approach in reviewing such applications and to amend said procedures to include any changes or amendments to the process in which the FERC, Internal Revenue Service, or any other federal entity sees fit to do so from time to time. Said procedures will therefore not be incorporated into this order.

IT IS THEREFORE ORDERED THAT:

(1) The "Special Rules and Procedures for Tight Formation Designation Under Section 107 of the Natural Gas Policy Act of 1978", as promulgated by Division Order No. R-6388-A, dated February 10, 1981, is hereby placed in abeyance until further notice and upon a hearing to reinstate said provisions.

(2) An administrative procedure to allow for more flexibility shall be adopted concomitantly by the Division at this time and shall be amended from time to time as applicable to laws enacted which effect said process.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING

CASE NO. 3364
Order No. R-3030

THE APPLICATION OF THE OIL CONSERVATION COMMISSION UPON ITS OWN MOTION FOR AN ORDER CREATING AND EXTENDING CERTAIN POOLS IN CHAVES, EDDY, AND LEA COUNTIES, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on January 19, 1966, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 21st day of January, 1966, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That there is need for the creation of a new pool in Chaves County, New Mexico, for the production of gas from the Mississippian formation, said pool to bear the designation of White Ranch-Mississippian Gas Pool. Said White Ranch-Mississippian Gas Pool was discovered by Socony Mobil Oil Company, Inc., White Ranch No. 2, located in Unit L of Section 34, Township 11 South, Range 29 East, NMPM. It was completed in Mississippian on May 2, 1964. The top of perforations is 8302 feet.

(3) That there is need for certain extensions to the North Benson Queen-Grayburg Pool, the Indian Basin-Upper Pennsylvanian Gas Pool, and the West Mesa-Queen Gas Pool, all in Eddy County, New Mexico, the Buckeye-[illegible] Pool, the Eumont Gas Pool, the East Hightower-Lower Pennsylvanian Pool, the Justis Gas Pool, the Terry-Blinebry Pool, and the Vacuum-Queen Gas Pool, all in Lea County, New Mexico. Further, that the proposed extension to the Linda-San Andres Pool in Chaves County, New Mexico, should be dismissed pending further study.

IT IS THEREFORE ORDERED:

(a) That a new pool in Chaves County, New Mexico, classified as a gas pool for Mississippian production, is hereby created and designated as the White Ranch-Mississippian Gas Pool, consisting of the following described area:

TOWNSHIP 11 SOUTH, RANGE 29 EAST, NMPM
SECTION 34: W/2

(b) That the North Benson Queen-Grayburg Pool in Eddy County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM
SECTION 32: N/2 NW/4

(c) That the Buckeye-Abo Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
SECTION 3: SE/4

(d) That the Eumont Gas Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM
SECTION 11: S/2 NE/4 and SE/4
SECTION 12: SW/4
SECTION 13: NW/4

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
SECTION 18: All
SECTION 19: W/2

(e) That the East Hightower-Lower Pennsylvanian Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 12 SOUTH, RANGE 34 EAST, NMPM
SECTION 30: W/2

(f) That the Indian Basin-Upper Pennsylvanian Gas Pool in Eddy County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM
SECTION 18: All

TOWNSHIP 22 SOUTH, RANGE 23 EAST, NMPM
SECTION 12: All
SECTION 16: All

TOWNSHIP 22 SOUTH, RANGE 24 EAST, NMPM
SECTION 7: All
SECTION 8: All

(g) That the Justis Gas Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 24 SOUTH, RANGE 37 EAST, NMPM
SECTION 35: E/2 NW/4

(h) That the proposed extension to the Linda-San Andres Pool in Chaves County, New Mexico, as heretofore classified,defined and described, to include therein:

TOWNSHIP 6 SOUTH, RANGE 25 EAST, NMPM
SECTION 24: E/2 E/2

TOWNSHIP 6 SOUTH, RANGE 26 EAST, NMPM
SECTION 19: S/2 SW/4 and SW/4 SE/4

TOWNSHIP 7 SOUTH, RANGE 26 EAST, NMPM
SECTION 5: S/2 NE/4

is hereby dismissed.

(i) That the West Mesa-Queen Gas Pool in Eddy County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 16 SOUTH, RANGE 31 EAST, NMPM
SECTION 13: N/2

(j) That the Terry-Blinebry Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
SECTION 35: S/2
SECTION 36: W/2

(k) That the Vacuum-Queen Gas Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 12: NW/4

IT IS FURTHER ORDERED:

That the effective date of this order and all creations and extensions included herein shall be February 1, 1966.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JACK M. CAMPBELL, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & secretary

S E A L

sg

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. 10617
ORDER NO. R-9832

APPLICATION OF C.W. TRAINER FOR DESIGNATION OF A TIGHT FORMATION, CHAVES COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on December 17, 1992, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 25th day of January, 1993 the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

(2) The applicant, C. W. Trainer, requests that the Division recommend to the Federal Energy Regulatory Commission ("FERC") that the Mississippian formation underlying the following lands in Chaves County, New Mexico be designated as "tight formation" in accordance with Section 107 of the Natural Gas Policy Act, FERC regulations in Title 18 CFR Section 271.703 and Oil Conservation Division Order No. R-6388-A:

Township 11 South, Range 28 East, NMPM
Section 35: E/2
Section 36: All

Township 11 South, Range 29 East, NMPM

Section 21:	S/2
Section 22:	All
Section 23:	W/2
Section 26:	W/2
Sections 27 through 34:	All
Section 35:	W/2

Township 12 South, Range 28 East, NMPM

Section 1:	All
Section 2:	Lots 1 and 2, S/2 NE/4, and SE/4 (E/2 equivalent)

Township 12 South, Range 29 East, NMPM

Section 2:	Lots 3 and 4 and S/2 NW/4 (NW/4 equivalent)
Section 3:	Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Section 4:	Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Sections 5 and 6:	All

(3) The proposed "tight formation" area contains 11,009.08 acres, more or less, of state (approximately 640 acres or 5.8%) and fee (approximately 94.2%) lands. All lands included in this proposed designation are administered by the New Mexico Oil Conservation Divsion, which is the recognized FERC jurisdictional agency in this matter (see FERC Rule 274.501(a)(2)).

(4) Included entirely within the confines of the proposed tight formation area is the White Ranch Mississippian Gas Pool, which was created by Division Order No. R-3030, issued in Case No. 3364 and dated January 21, 1966.

(5) The type log presented by the applicant to represent the Mississippian formation in the proposed "tight formation" designation is the Compensated Neutron/Formation Density Log dated May 3, 1977 in the C.W. Trainer (formerly Tom L. Ingram) White Ranch Well No. 4 located 660 feet from the North and East lines (Unit A) of Section 33, Township 11 South, Range 29 East, NMPM, Chaves County, New Mexico. Although this well was drilled to a total depth of 8810 feet, it did not fully penetrate the Mississippian formation. From this log, however, other pertinent data can be presented such as the top of the Mississippian formation found at 8315 feet and the main pay zone found in the Mississippian formation in the proposed area is from 8502 to 8545 feet.

(6) Geological evidence presented by the applicant shows that the Mississippian formation underlies all of the above-described lands; its top ranges between 7500 feet to 8500 feet and its thickness varies between 600 and 800 feet. It is primarily a limestone formation, small amounts of chert occurring as "nodules" are encountered in the upper portion. The lower one-third is somewhat clastic with shale and sometimes siltstone included within the formation. The primary "pay zone", found within the area (White Ranch Mississippian Gas Pool production), occurs within 150 to 200 feet of the top of the Mississippian formation, its lithology varies somewhat from that normally found in the Mississippian formation. It is a limestone, pellet, clastic type of material (limestone pellets packed together) called packstone, which occurs in a shallow marine shoal environment.

(7) The White Ranch Mississippian Gas Pool is 400 feet structurally lower than the Mississippian formation found in the western portion of the proposed area, which demonstrates a regional dipping to the east/southeast of 200 to 250 feet per mile.

(8) The following four wells, all operated by the applicant and located in Township 11 South, Range 29 East, NMPM, White Ranch Mississippian Gas Pool, White Ranch Lease, Chaves County, New Mexico, represent the only natural gas production from the Mississippian formation within the proposed area to date:

Well No.	Footage Location	Unit	Section
1	1980' FNL - 660' FWL	E	34
2	1980' FSL - 660' FWL	L	34
3	990' FSL - 660' FWL	M	34
4	660' FN & EL	A	33

(9) The Mississippian formation underlying the proposed area has been penetrated by seven other wells, none of which produced natural gas in commercial quantities from said formation.

(10) The engineering evidence presented in this case demonstrates that no well formerly or currently completed in the Mississippian formation within the proposed area exhibited permeability, gas productivity, or crude oil productivity in excess of the following parameters:

(a) average in situ gas permeability throughout the pay section of 0.1 millidarcy;

(b) stabilized production rates, against atmospheric pressure, as found in the table set out in 18 CFR §271.703(c)(2)(B) of the interim regulations; and,

(c) production of more than five barrels of crude oil per day.

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

(a) the average in situ permeability throughout the pay section of the Mississippian formation is expected to be 0.1 millidarcy or less; and,

(b) the stabilized production rate, against atmospheric pressure, of wells contemplated for production in the Mississippian formation, without stimulation, is not expected to exceed production levels determined by reference to 18 CFR §271.703(c)(2)(B) of the interim regulations; and,

(c) no well drilled into the formation is expected to produce more than five barrels of crude oil per day.

(12) Within the proposed area there is a recognized water aquifer, being the Permian Sand, found to occur from the surface of the ground to the top of the Salado (salt) interval at approximately 300 feet.

(13) Existing State of New Mexico and Federal regulations relating to casing and cementing of wells will assure that development of the Mississippian formation will not adversely affect said water zones.

(14) The White Ranch Mississippian Gas Pool and the surrounding Mississippian formation is governed by statewide rules and regulations which spaces this zone on 320-acre units (General Rule 104.B(1)(a) and 104.C(2)). Although there are no official infill drilling provisions for this zone in the proposed area, two of the applicant's wells producing from the White Ranch Mississippian Gas Pool share a standard 320-acre spacing unit in the S/2 of Section 34, Township 11 South, Range 29 East, NMPM, Chaves County, New Mexico, those being the White Ranch Well Nos. 2 and 3 in Units L and M, respectively. When the No. 3 well was recompleted from a deeper oil horizon into the existing unit dedicated to the No. 2 well in 1977, Division policy at that time allowed for such simultaneous dedication of acreage.

(15) The last development drilling/recompletion work within said pool occurred in 1977 with the No. 4 well in Section 33, Township 11 South, Range 29 East, NMPM, Chaves County, New Mexico.

(16) The Mississippian formation within the proposed area 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 CFR §271.703, that the Mississippian formation, as further described in Finding Paragraph Nos. (5), (6) and (7) of this Order, underlying the following described lands in Chaves County, New Mexico, be designated as a tight formation:

Township 11 South, Range 28 East, NMPM

Section 35:	E/2
Section 36:	All

Township 11 South, Range 29 East, NMPM

Section 21:	S/2
Section 22:	All
Section 23:	W/2
Section 26:	W/2
Sections 27 through 34:	All
Section 35:	W/2

Township 12 South, Range 28 East, NMPM

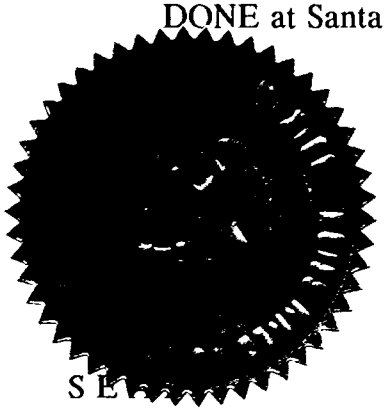
Section 1:	All
Section 2:	Lots 1 and 2, S/2 NE/4, and SE/4 (E/2 equivalent)

Township 12 South, Range 29 East, NMPM

Section 2:	Lots 3 and 4 and S/2 NW/4 (NW/4 equivalent)
Section 3:	Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Section 4:	Lots 1 through 4 and S/2 N/2 (N/2 equivalent)
Sections 5 and 6:	All

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

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



STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director