

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:

*NOMENCLATURE*  
*CASE NO. 11816*  
*ORDER NO. R-10893*

**APPLICATION OF MARATHON OIL COMPANY FOR THE EXPANSION OF THE SOUTH DAGGER DRAW-UPPER PENNSYLVANIAN ASSOCIATED POOL AND THE CONCOMITANT CONTRACTION OF THE INDIAN BASIN-UPPER PENNSYLVANIAN GAS POOL, APPROVAL OF THREE NON-STANDARD 320-ACRE GAS PRORATION UNITS, AN UNORTHODOX GAS WELL LOCATION, AND APPORTIONMENT OF GAS ALLOWABLES, EDDY COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 24, 1997, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 14th day of October, 1997, the Division Director, having considered 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) For the South Dagger Draw-Upper Pennsylvanian Associated Pool located in Eddy County, New Mexico:
  - (a) "*General Rules and Regulations for the Associated Oil and Gas Pools of Northwest and Southeast New Mexico,*" as promulgated by Division Order No. R-5353, dated January 17, 1977, caused temporary special rules and

regulations for the South Dagger Draw-Upper Pennsylvanian Associated Pool in Eddy County, New Mexico to be enacted, which established 320-acre spacing, designated well locations, set the limiting gas-oil ratio at 8,000 cubic feet of gas for each barrel of oil produced and adopted a special depth bracket allowable for an oil well of 267 barrels of oil;

(b) Division Order No. R-5353-A, dated March 15, 1977, made permanent the above-described temporary pool rules;

(c) by Division Order No. R-5353-L, dated October 26, 1990, it was established that both the North Dagger Draw-Upper Pennsylvanian Pool and said South Dagger Draw-Upper Pennsylvanian Associated Pool were, "in geological and pressure communication and are in fact both part of the same pool"; therefore, the "*Special Rules and Regulations for the South Dagger Draw-Upper Pennsylvanian Associated Pool*" were temporarily changed to parallel the special rules for the adjacent North Dagger Draw-Upper Pennsylvanian Pool (Division Order No. R-4691, as amended) to the north; said Order No. R-5353-L left the spacing unchanged at 320 acres, but modified the designated well locations, changed the limiting gas-oil ratio to 10,000 cubic feet of gas for each barrel of oil produced, and increased the special depth bracket allowable from 267 barrels of oil per day to 700 barrels of oil per day;

(d) Division Order No. R-5353-L-1, dated March 25, 1991, changed the special depth bracket allowable from 700 barrels per day to 1,400 barrels per day;

(e) Division Order No. R-10050, issued in consolidated Case 10869 and 10881 and dated January 26, 1994, specifically allowed the simultaneous dedication of acreage to both oil and gas wells and reduced the limiting gas-oil ratio from 10,000 cubic feet of gas for each barrel of oil produced to 7,000;

(f) the changes/modifications described above were

made permanent by Division Order No. R-10050-A, dated October 17, 1995;

(g) the South Dagger Draw-Upper Pennsylvanian Associated Pool currently comprises the following described area in Eddy County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 24 EAST, NMPM

Section 9:	E/2
Section 10:	S/2
Section 11:	S/2
Section 12:	S/2
Sections 13 through 15:	All
Section 16:	E/2
Sections 22 through 26:	All
Sections 34 through 36:	All

TOWNSHIP 20 SOUTH, RANGE 25 EAST, NMPM

Section 19:	S/2
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TOWNSHIP 20-1/2 SOUTH, RANGE 23 EAST, NMPM

Irregular Sections 34, 35 and 36:	All
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TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM

Irregular Sections 1 and 2:	All
Sections 11 and 12:	All
Section 13:	N/2
Section 14:	All; and,

(h) currently the South Dagger Draw-Upper Pennsylvanian Pool is spaced on 320-acre spacing and proration units with the option for multiple oil wells and multiple gas wells and allows for the simultaneous dedication of both oil and gas wells to the same 320-acre unit; further each 320-acre unit is allowed to produce up to but not in excess of 1,400 barrels of oil per day and the

current corresponding maximum gas allowable provides for 9,800 MCF of gas per day for each 320-acre unit (gas/oil ratio limitation of 7,000 to one times the top oil allowable of 1,400 BOPD which equals 9,800 MCFPD).

(3) The Indian Basin-Upper Pennsylvanian Gas Pool currently comprises the following described area in Eddy County, New Mexico:

TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM

Sections 3 and 4:	All
Sections 8 through 10:	All
Sections 15 through 30:	All
Sections 32 through 36:	All

TOWNSHIP 21 SOUTH, RANGE 24 EAST, NMPM

Sections 19 through 21:	All
Sections 28 through 32:	All

TOWNSHIP 22 SOUTH, RANGE 23 EAST, NMPM

Sections 1 through 5:	All
Sections 8 through 17:	All
Section 21:	N/2
Section 22:	All.

(4) The Indian Basin-Upper Pennsylvanian (Prorated) Gas Pool is governed currently by the "*General Rules and Regulations for the Prorated Gas Pools of New Mexico/Special Rules and Regulations for the Indian Basin-Upper Pennsylvanian Gas Pool*," as promulgated by Division Order No. R-8170, as amended, which require standard 640-acre spacing and proration units ("GPU") with wells to be located no closer than 1650 feet from the outer boundary of the section nor closer than 330 feet from any internal governmental quarter-quarter section line or subdivision inner boundary.

(5) The applicant in this matter, Marathon Oil Company ("Marathon"), seeks an order extending the horizontal limits of the South Dagger Draw-Upper Pennsylvanian Associated Pool in Eddy County, New Mexico to include therein:

TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM

Section 3:	E/2
Section 10:	E/2
Section 15:	E/2

AND THE concomitant contraction of the Indian Basin-Upper Pennsylvanian Gas Pool in Eddy County, New Mexico by deleting therefrom:

TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM

Section 3:	E/2
Section 10:	E/2
Section 15:	E/2.

(6) In conjunction with the proposed adjustment to the boundaries of the two subject pools, Marathon seeks to establish three 320-acre, more or less, gas spacing and proration units within the Indian Basin-Upper Pennsylvanian Gas Pool within Sections 3, 10, and 15, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, whereby (i) Lots 3 and 4, the S/2 NW/4, and the SW/4 (W/2 equivalent) of said Section 3, comprising 320.32 acres, is to be dedicated to the existing North Indian Basin Unit Gas Com Well No. 3 (API No. 30-015-10557), located 1650 feet from the South line and 2310 feet from the West line (Unit K) of said Section 3; (ii) the W/2 of said Section 10, comprising 320 acres, is to be dedicated to the existing North Indian Basin Unit Well No. 1 (API No. 30-015-10068), located 660 feet from the South and West lines (Unit M) of said Section 10; and, (iii) the W/2 of said Section 15, comprising 320 acres, is to be simultaneously dedicated to the existing Federal IBA Gas Com Well No. 1 (API No. 30-015-10556) located 1650 feet from the South and West lines (Unit K) of said Section 15 and the North Indian Basin Unit Gas Com Well No. 32 (API No. 30-015-29305) located 1750 feet from the North line and 1650 feet from the West line (Unit F) of said Section 15.

(7) The resulting unorthodox gas well location for the above-described North Indian Basin Unit Gas Com Well No. 3 in Unit "K" of said Section 3 due to the proposed acreage and pool rededication causes results in this well being only 330 feet from the outer boundary of its newly designated 320.32-acre GPU and would require proper authorization pursuant to the appropriate rules and regulations governing the Indian Basin-Upper Pennsylvanian Gas Pool.

(8) Marathon is the operator of the following three standard 640-acre, more or less, gas proration and spacing units within the Indian Basin-Upper Pennsylvanian Gas

Pool:

- (a) all of Section 3, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, comprising 640.56 acres, is currently simultaneously dedicated to the above-described North Indian Basin Unit Gas Com Well No. 3 located in Unit "K" of said Section 3 and the Comanche Federal "3" Well No. 1 (API No. 30-015-28720) located 1650 feet from the North line and 1850 feet from the East line (Unit G) of said Section 3;
- (b) all of Section 10, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, is currently simultaneously dedicated to the above-described North Indian Basin Unit Well No. 1 located in Unit "M" of said Section 10 and the North Indian Basin Unit Well No. 30 (API No. 30-015-29059) located 660 feet from the North and East lines (Unit A) of said Section 10; and,
- (c) all of Section 15, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, is currently simultaneously dedicated to the above-described Federal IBA Gas Com Well No. 1 located in Unit "K" of said Section 15 and the North Indian Basin Unit Gas Com Well No. 32 located in Unit "F" of said Section 15.
- (9) Marathon presented geologic, geochemical and petroleum engineering evidence which determines that the E/2's of said Sections 3, 10 and 15 should be subject to the rules for the South Dagger Draw Pool while the W/2's of said Sections 3, 10 and 15 should be subject to the rules for the Indian Basin Gas Pool and which is summarized as follows:
- (a) In the Indian Basin area, the Upper Pennsylvanian formations contain multiple compartmentalized reservoirs which are productive of oil, gas and water from several dolomitized horizons from the top of the Cisco formation to the base of the Canyon Two formation. Production from the Indian Basin Gas Pool is predominately gas production from the Cisco formation, while production from the South Dagger Draw Pool is predominately oil production with

associated gas and water from the Canyon One and Canyon Two formations;

(b) The western boundary of oil production in Sections 3, 10 and 15 can be described as follows:

(i) Oil can be produced from the Canyon One reservoir below -3850 feet subsea which would be a surface location approximately along the current western boundary of the South Dagger Draw Pool (the eastern section lines of Sections 3, 10 and 15).

(ii) Oil can be produced from the Canyon Two reservoir below -3850 feet which would be a surface location approximately one-half mile west of the current western boundary of the South Dagger Draw Pool (the vertical half section line of Sections 3, 10 and 15);

(c) Geochemical analysis of four (4) gas samples and eight (8) liquid samples demonstrate that Indian Basin is compartmentalized such that the types of hydrocarbon production from the Indian Basin Gas Pool are distinctly different from the types of hydrocarbons produced from the Canyon One and Canyon Two reservoirs in the South Dagger Draw Pool;

(d) pressure data demonstrates that the South Dagger Draw Pool is not in pressure communication with the Indian Basin Gas Pool; and,

(e) pressure data in Sections 3, 10 and 15 demonstrate that the E/2 of each of these sections has a pressure related to the South Dagger Draw Pool while the W/2 of these sections is more closely associated with Indian Basin Gas Pool.

(10) Therefore all of Sections 2, 11, and 14 and the E/2's of Sections 3, 10 and 15 all in Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico should

be subject to the same pool rules so that any oil and its associated gas produced from those lands will be subject to the same special rules and regulations. Further, the W/2's of said Sections 3, 10 and 15 should continue to be subject to the same pool rules as apply in Indian Basin-Upper Pennsylvanian Gas Pool.

(11) Marathon presented production data from Sections 15 and 10 which demonstrate that the gas wells currently dedicated to the Indian Basin-Upper Pennsylvanian Gas Pool are all marginal and therefore the approval of 320-acre non-standard units for the W/2's of each of those sections will not result in any overproduction being attributable to any GPU.

(12) Marathon presented production data from said Section 3 which demonstrate that the existing 640-acre, more or less, GPU consisting of all of Section 3 and dedicated to the Indian Basin-Upper Pennsylvanian Gas Pool became non-marginal as of February, 1996 and is currently overproduced.

(13) Therefore, Marathon, in accordance with the provisions of Rule (14)(b) of the General Rules for the "*General Rules and Regulations for the Prorated Gas Pools of New Mexico/Special Rules and Regulations for the Indian Basin-Upper Pennsylvanian Gas Pool,*" as promulgated by Division Order No. R-8170, as amended, seeks the approval of a 320.32-acre non-standard GPU for the W/2 equivalent of said Section 3 to be dedicated to the above-described North Indian Basin Unit Gas Com Well No. 3 located in Unit "K" of said Section 3, which should also be reclassified from marginal to non-marginal effective as of December, 1995 and for the reinstatement of canceled underproduction for the gas proration periods ending March 31, 1996 and 1997 such that said GPU as of July 31, 1997 will be 340,625 MMCF underproduced in relation to the established allowable for a 320-acre, more or less, non-standard GPU.

(14) Marathon demonstrated that prior to November, 1995, the North Indian Basin Unit Gas Com Well No. 3 was not capable of producing the non-marginal allowable for a 320-acre non-standard GPU but after it was recompleted on the 13th day of November 1995, its productive capacity was substantially improved and it had the capacity to produce a 320-acre non standard GPU non-marginal allowable but did not only because of gas plant capacity constraints.

(15) Approval of this request made pursuant to Rule No. (14)(b) of Division Order R-8170, as amended, will not cause waste and will not violate correlative rights and should be approved as requested.

(16) Underproduction in the amount of 932,314 MMCF shall be credited against

overproduction from the subject 320-acre GPU consisting of the W/2 equivalent of said Section 3, during the gas proration periods from April 1, 1995 through March 31, 1998 such that as of August 1, 1997 the accumulated over-under production shall be 340,625 mmcf of underproduction credit.

(17) Marathon also provided evidence which demonstrates the granting of the subject application will not impair correlative rights of any owner within any of the existing 640-acre, more or less, GPU's because those owners will continue to share in production from the applicable new 320-acre, more or less, GPU's on the same proportional basis as they shared in production from the original 640-acre units.

(18) Therefore the Canyon formation underlying the E/2's of Sections 3, 10 and 15 and all of said Sections 2, 11, and 14 is a single reservoir (ie, one single common source of supply) the development of which has occurred such that wells in the Sections 2, 11, and 14 have been dedicated to the South Dagger Draw-Upper Penn Associated Pool while wells located or to be located in the E/2 of Sections 3, 10 and 15 have been or will be dedicated to the Indian Basin-Upper Pennsylvanian Gas Pool. Further, in order to afford an opportunity to drill a well to develop the Canyon Two formation of the South Dagger Draw-Upper Pennsylvanian Associated Pool, it is necessary to have the E/2 of Sections 3, 10 and 15 spaced on the same 320-acre spacing pattern as established for the South Dagger Draw-Upper Pennsylvanian Associated Pool.

(19) In order to prevent waste, to prevent the drilling of unnecessary wells, to protect correlative rights and provide for a more orderly development of the Cisco/Canyon formations, it is necessary to do the following:

- (a) contract the Indian Basin-Upper Pennsylvanian Gas Pool to delete the E/2's of Sections 3, 10 and 15 from that pool;
- (b) approve the three above-described non-standard 320-acre, more or less, GPU's within the Indian Basin-Upper Pennsylvanian Gas Pool;
- (c) treat the W/2 equivalent of said Section 3 as a marginal 320-acre non-standard GPU beginning on December 1, 1995 such that underproduction in the amount of 932,314 MMCF shall be credited against overproduction during the gas proration periods from April 1, 1995 through March 31, 1998 such that as of August 1, 1997 the

accumulated over-under production shall be 340,625 mmcf of underproduction credit; and,

(d) approve an unorthodox gas well location for the North Indian Basin Unit Gas Com Well No. 3 located 1650 feet from the South line and 2310 feet from the West line (Unit K) of said Section 3.

(20) Marathon was the only interested party to appear and provide technical, land, geologic, and engineering testimony concerning the reservoir, these pools and its classification.

(21) The requested change in pool boundaries and the creation of the requested spacing units will not affect ownership of production from said Sections 3, 10 and 15; thus no violation of correlative rights will occur.

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

(23) Approval of Marathon's request will allow the interest owners the opportunity to economically recover their share of the oil and gas in the subject pool, will not reduce ultimate recovery from the subject pool, and will not violate correlative rights.

**IT IS THEREFORE ORDERED THAT:**

(1) The Indian Basin-Upper Pennsylvanian Gas Pool in Eddy County, New Mexico, as heretofore classified, defined, and described, is hereby contracted by the deletion of the following described area:

**TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM**

Section 3:	E/2
Section 10:	E/2
Section 15:	E/2.

(2) Concomitantly, the South Dagger Draw-Upper Pennsylvanian Associated Pool in Eddy County, New Mexico, as heretofore classified, defined, and described is hereby extended to include therein the horizontal limits comprising that area described in Decretory Paragraph No. (1) above.

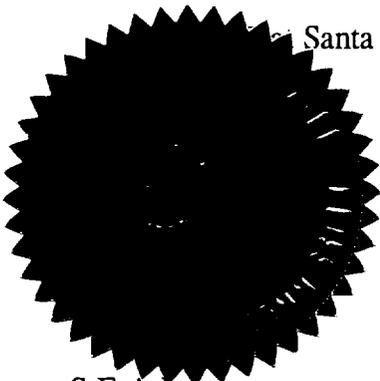
(3) The following three 320-acre, more or less, gas spacing and proration units

("GPU") within the Indian Basin-Upper Pennsylvanian Gas Pool within Sections 3, 10, and 15, Township 21 South, Range 23 East, NMPM, Eddy County, New Mexico, are hereby approved:

- (a) Lots 3 and 4, the S/2 NW/4, and the SW/4 (W/2 equivalent) of said Section 3, comprising 320.32 acres, to be dedicated to the existing North Indian Basin Unit Gas Com Well No. 3 (API No. 30-015-10557), located at an unorthodox gas well location for said 320.32-acre GPU, herein approved at this time, 1650 feet from the South line and 2310 feet from the West line (Unit K) of said Section 3;
  - (b) the W/2 of said Section 10, comprising 320 acres, to be dedicated to the existing North Indian Basin Unit Well No. 1 (API No. 30-015-10068), located 660 feet from the South and West lines (Unit M) of said Section 10; and,
  - (c) the W/2 of said Section 15, comprising 320 acres, to be simultaneously dedicated to the existing Federal IBA Gas Com Well No. 1 (API No. 30-015-10556) located 1650 feet from the South and West lines (Unit K) of said Section 15 and the North Indian Basin Unit Gas Com Well No. 32 (API No. 30-015-29305) located 1750 feet from the North line and 1650 feet from the West line (Unit F) of said Section 15.
- (4) Underproduction in the amount of 932,314 MMCF shall be credited against overproduction from the 320-acre, more or less, non-standard GPU consisting of the W/2 equivalent of said Section 3 during the gas proration periods from April 1, 1995 through March 31, 1998 such that as of August 1, 1997 the accumulated over-under production shall be 340,625 mmcf of underproduction credit, including the retroactive adjustment to December 1, 1995 for the North Indian Basin Unit Gas Com Well No. 3 being the date that well would have been reclassified as non-marginal.
- (5) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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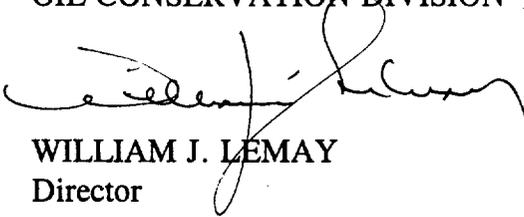
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SEAL

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY  
Director