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April 21, 1998

**HAND DELIVERED**

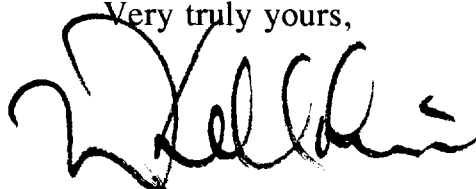
Mr. Michael E. Stogner  
Hearing Examiner  
Oil Conservation Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505

Re: NMOCD Case 11964  
Application of Marathon Oil Company  
to amend Travis-Upper Penn Pool Rules  
Eddy County, New Mexico

Dear Mr. Stogner:

On behalf of Marathon Oil Company, please find enclosed our  
proposed order for your consideration in the referenced case.

Very truly yours,

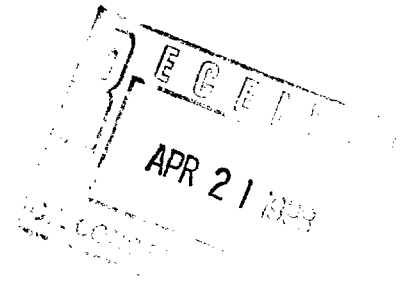


W. Thomas Kellahin

cc: Marathon Oil Company  
Attn: Thomas C. Lowry, Esq.

**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. 11964  
ORDER NO. R-5643-B**

**APPLICATION OF MARATHON OIL COMPANY  
TO AMEND THE SPECIAL RULES AND REGULATIONS  
FOR THE TRAVIS-UPPER PENNSYLVANIAN POOL  
EDDY COUNTY, NEW MEXICO**

**MARATHON OIL COMPANY'S  
PROPOSED  
ORDER OF THE DIVISION**

**BY THE DIVISION:**

This cause came on for hearing at 8:15 a.m. on April 16, 1998, at Santa Fe, New Mexico, before Examiner Michael E. Stogner

NOW, on this \_\_\_\_ day of April, 1998, 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.

(1) Applicant, Marathon Oil Company ("Marathon") seeks the amendment of Rule 4 of the Special Rules and Regulations for the Travis-Upper Pennsylvanian Pool, Eddy County, New Mexico to provide for well locations not closer than 330 feet to any outer boundary of a governmental quarter-quarter section and the adoption of a new rule for a limiting gas oil ratio of 7,000 cubic feet of gas for each barrel of oil produced from said pool.

(2) On November 16, 1977, the Division entered Order No. R-5643 (Case 6072) which created the Travis-Upper Pennsylvanian Pool and adopted 80-acre oil spacing and proration units for said pool.

(3) On May 2, 1979, the Division entered Order No. R-5643-A (Case 6072) making these rules permanent.

(4) In 1997, Marathon drilled the following two wells originally intended as Morrow formation gas wells but which were subsequently recompleted in the Cisco/Canyon formation in February 1998:

(a) Crockett "27" Well No 1, located 1980 feet from the West line and 1650 feet from the South line (Unit K) Section 27, T18S, R28E, NMPM, Eddy County, New Mexico;

(b) Buchanan "33" Well No 1, located 660 feet from the East line and 2000 feet from the South line (Unit I) Section 33, T18S, R28E, NMPM, Eddy County, New Mexico.

(5) The Division's District Supervisor (Artesia) has determined that these two wells should be subject to the rules and regulations for the Travis-Upper Pennsylvanian Pool.

(6) The Travis Upper-Pennsylvanian Pool currently includes five (5) active producing oil wells located in portions Sections 14 and 23 of T18S, R28E, NMPM.

(7) Marathon presented geologic evidence which demonstrates that:

(a) the production from all of the wells in this pool including the Buchanan and Crockett wells has been from the Canyon formation.

(b) this Canyon formation is a northeast-southwest trending, laterally continuous carbonate development, composed of interconnected algal limestone build-ups.

(c) The Crockett and Buchanan wells are part of the same common source of supply as the wells within in the current pool boundary.

(d) in order to provide the greatest opportunity to maximize efficient recovery of hydrocarbons from the pool and avoid waste, future wells should be located at the point of greatest porosity thickness.

(e) Rule 4 of the special pool rules which currently provide for well locations within 150 feet of the center of a governmental quarter-quarter line should be amended so that additional flexibility is provided by requiring wells to be located not closer than 330 feet to the outer boundary of any governmental quarter-quarter section.

(8) Marathon presented petroleum engineering evidence which demonstrates that:

(a) step rate tests which confirm that the Crockett "27" Well No. 1 and the Buchanan "33" Well No. 1 are oil wells whose most efficient gas-oil ratio is approximately 7,000 cubic feet of gas per barrel of oil produced.

(b) step rate tests conducted on these wells indicate that attempts to restrict these wells to a statewide 2,000 cubic feet of gas to 1 barrel of oil limiting GOR adversely impacts each well's ability to maximize oil production and therefore is wasteful.

(c) Variable producing rate tests conducted in accordance with standard petroleum engineering methods demonstrate that:

(i) For the Buchanan Well:

if this well is produced in order to comply with a 2,000 to 1 GOR limit then the producing GOR for the well escalates to 6,762 to 1 GOR and the oil rate drops to an average of 105 BOPD,

but if the well is produced in order to comply with a 7,000 to 1 GOR limit then the producing GOR for the well drops to 4,789 to 1 GOR and the oil rate increases to an average of 355 BOPD.

(ii) For the Crockett Well:

if this well is produced in order to comply with a 2,000 to 1 GOR limit then the producing GOR for the well escalates to 11,639 to 1 GOR and the oil rate drops to an average of 61 BOPD,

but if the well is produced in order to comply with a 7,000 to 1 GOR limit then the producing GOR for the well drops to 6,817 to 1 GOR and the oil rate increases to an average of 355 BOPD.

(d) pressure build up analysis conducted on the two Marathon wells establishes a radius of investigation of not less than 1600 feet for the Buchanan Well and not less than 2,000 feet for the Crockett Well which demonstrates that these two wells have good permeability and the ability to produce the hydrocarbons underlying an 80-acre proration and spacing unit.

(e) production logs for the two Marathon wells establish that both the oil and gas production is being produced from the same set of perforations which indicates that a gas cap does not exist in this pool.

(f) the Buchanan and Crockett wells had an initial reservoir pressure between 2319 psi and 2420 psi which indicates some degree of pressure communication with the older wells the wells in this pool.

(9) In accordance with Division Rule 1207, Marathon has sent a copy of this application and notice for hearing to be held on April 16, 1998 to all the proper parties entitled to said notice.

(10) Of the 179 notices sent to operators and interest owners in the area affected no party appeared in opposition to the application.

(11) Marathon was only interested party to appear and provide technical geologic and engineering testimony concerning the reservoir and these proposed amendments.

(12) Ocean Production Company (formerly UMC Petroleum Corporation) appeared at the hearing through counsel in support of Marathon's application.

(13) The Division finds that Marathon presented geological and engineering evidence and conclusions which demonstrate that:

(a) the pool is a solution gas drive reservoir with all wells currently being produced having production characteristics of a oil wells with high GORs;

(b) there is no indication that a gas cap exists or is being formed up-structure to the oil wells;

(c) the occurrence of increased volumes of gas production in the Pool is attributed to the fact that production in this pool has occurred for more than 20 years from the Canyon formation which is correlative but which is both laterally and horizontally discontinuous;

(d) more hydrocarbon liquids are recovered per cubic feet of gas produced at GOR up to 7,000 to one thereby preventing waste and potentially improving ultimate recovery.

(e) the pool should be extended by adding the following acreage to the pool:

Section 27: NE/4 and SW/4

Section 33: NE/4 and N/2SE/4

(14) That in order to avoid the arbitrary effect of having any well in the Pool shut-in or curtailed as a result of allowables being calculated based upon inapplicable statewide rules the effective date of this order should made retroactive to February 1, 1998.

APR 21 1998  
OIL CONSERVATION DIVISION