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August 2, 1996

HAND DELIVERED

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

*Re: NMOCD Case 11525
North Dagger Draw*

Dear Mr. Stogner:

On behalf of Conoco, Inc., please find enclosed for your consideration our proposed order for the referenced case.

Very truly yours,



W. Thomas Kellahin

cc: Conoco Inc.

Attn: Jerry Hoover

Attn: Bill Hardie

cc: William F. Carr, Esq.

Attorney for Yates Petroleum Corporation

cc: Edmund H. Kendrick, Esq.

Attorney for Marathon Oil Company

cc: James G. Bruce, Esq.

Attorney for Mewbourne Oil Company

**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. 11525
Order No. R-_____**

**APPLICATION OF YATES PETROLEUM CORPORATION
FOR AMENDMENT OF THE SPECIAL RULES
AND REGULATIONS FOR THE NORTH DAGGER
DRAW-UPPER PENNSYLVANIAN POOL, AND FOR
THE CANCELLATION OF OVERPRODUCTION,
EDDY COUNTY, NEW MEXICO.**

**CONOCO'S
PROPOSED
ORDER OF THE DIVISION**

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on May 3, 1996, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this ____ day of July, 1996, 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.

YATES' REQUEST

- (2) The Applicant, Yates Petroleum Corporation ("Yates") seeks:
- (a) to amend the Special Rules and Regulations for the North Dagger Draw-Upper Pennsylvanian Associated Pool ("the North Dagger Draw Pool") by increasing the current 700 barrels of oil per day special depth bracket allowable assigned to a standard 160-acre spacing and proration unit to 4,000 barrels of oil per day; and
 - (b) to cancel all overproduction accumulated by certain operators in the pool who have produced certain oil proration and spacing units in excess of the current allowable of 700 barrels of oil per day.

BACKGROUND

(3) North Dagger Draw Pool is the northern-most pool of an extensive dolomite fairway hydrocarbon reservoir in Eddy County, New Mexico, currently subdivided into three pools:

- (a) the northern-most portion, which is structurally the lowest part of this extensive continuous dolomite reservoir, is classified as an oil pool and is designated as the "North Dagger Draw Upper Pennsylvanian Oil Pool."
- (b) the middle portion of this continuous reservoir declines structurally from southwest to northeast and represents an extensive transition area from the gas pool to the south (Indian Basin) and the oil pool to the north (North Dagger Draw). This transitional area is classified as an associated oil-gas pool and is designated as the "South Dagger Draw-Upper Pennsylvanian Associated Pool."

(c) the southern portion of which is structurally the highest and is classified as a gas pool being designated as the "Indian Basin Upper Pennsylvanian Gas Pool."

CURRENT RULES FOR THESE RESERVOIRS

(4) The current rules for the North Dagger Draw Oil Pool provide for 160-acre spacing and proration units with the option for multiple oil wells in a single such unit. The current maximum oil allowable for the North Dagger Draw Pool provides for top oil allowable of 700 BOPD. The current maximum gas allowable provides for 7,000 MCFPD per 160-acre spacing unit (GOR of 10,000 to 1 times the top oil allowable of 700 BOPD).

(5) The current rules for the South Dagger Draw Pool provide for 320-acre proration and spacing units with the option for multiple oil wells and multiple gas wells and allow the simultaneous dedication of both oil and gas wells to the same unit. See Order R-5353-L-1. The current maximum oil allowable of 1,400 BOPD for the South Dagger Draw Pool provides for 9,800 MCFPD per 320-acre spacing unit (GOR of 7,000 to 1 times the top oil allowable of 1,400 BOPD).

(6) The current rules for the Indian Basin Upper Penn Gas Pool provide for 640-acre gas spacing and proration units with the option for multiple gas wells in a single such unit with a current MAXIMUM GAS ALLOWABLE for this prorated gas pool of 6,000 MCFPD per 640-acre gas spacing and proration unit.

PRIOR DIVISION DECISIONS AFFECTING NORTH DAGGER DRAW

(7) On December 11, 1973, Division Order R-4691 was issued which established 320-acre spacing for the pool and a special depth bracket oil allowable of 427 BOPD.

(8) On February 3, 1976, Division Order R-4691-A was issued which changed the spacing to 160-acres and reduced the oil allowable to 267 BOPD

(9) On October 12, 1976, Division Order R-4691-B was issued which left the spacing unchanged but increased the oil allowable to 350 BOPD.

(10) On March 15, 1977, Division Order R-4691-C was issued which made these rules permanent.

(11) On November 1, 1977, Division Order R-5565 was issued which changed the 2,000 to 1 gas-oil ratio to 10,000 cubic feet of gas per barrel of oil.

(12) On March 21, 1991, Division Order R-4691-C was issued which increased the oil allowable to 700 BOPD.

NORTH DAGGER DRAW POOL

(13) From the geologic and reservoir engineering presentations submitted by both Yates and Conoco, the Division finds that:

(a) the North Dagger Draw Pool is an oil pool which also produces significant amount of water along a structural axis oriented northeast to southwest consisting of brittle, vugular dolomite with good vertical permeability with the eastern edge of the reservoir being down structure and the western edge being upstructure;

(b) the dolomite is thickest along the top of the structure and thins to the southeast through the "Allowable Violation Area" due to the development of non-productive limestone stringers;

(c) this combination of vugs, fractures and vertical permeability provide the necessary flow channels to permit good pressure communication within North Dagger Draw which is evidenced by the fact new wells will encounter 800 to 1000 psi less than original reservoir pressure;

- (d) the withdrawal of reservoir fluids have caused pressure declines throughout North Dagger Draw Pool; and
- (e) there is consistent hydraulic connections and good pressure communication across the pool.

**ANALYSIS OF YATES'
PETROLEUM ENGINEERING PRESENTATION**

(14) In support of its request, Yates:

(a) plotted swabbing oil cut versus second month producing oil cut for some 58 wells in North and South Dagger Draw Pools and from its plot of the oil cuts of this "early-time well performance data", hypothesized that a positive slope "confirmed" that at high rates, a well would produce less water per barrel of oil produced. (See Transcript page 32-34) (Yates Exhibit 6);

(b) presented 17 examples for newly completed wells in North Dagger Draw Pool of plots of oil cut versus oil rate during the early time performance of these wells and hypothesized that this confirmed that at higher rates of withdrawal, more oil and less water were being produced. Yates Exhibit 5, Transcript pages 28-32; and

(c) that the Aparejo APA Well No. 5 in North Dagger Draw had been produced for approximately 2 weeks and at different rates which showed that at higher rates each produced "higher oil cuts". See Transcript page 35-39

(15) Yates also presented the following additional information:

(a) that there is minimum pressure data available for either pool, however when Yates completed its State K Well No.2 in Unit J of Section 28, T19S, R25E, NMPM its initial pressure was approximately 2100 psi compared to an original reservoir pressure of 2900 to 3100 psi confirming that the reservoir had already been partially drained and depleted at this location by offsetting production; See Transcript pages 81-82.

(b) that within approximately six section area within North Dagger Draw, including the Allowable Violation Area", consisting of portions of Sections 8, 9, 21, 29 and 28 T19S, R35E, NMPM, there are 11 wells interfering with each other production; Yates Exhibit 9 Transcript page 42-45.

(c) Yates has not conducted any reservoir studies concerning pressure depletion and its affect upon correlative rights; See Transcript page 83

(d) Yates admitted that as the pressure in the reservoir is depleted, production rates declines, the differential pressure between the reservoir and the wellbore goes down, fluid rates go down so that the earliest wells drilled in an area which are produced at the maximum possible rate will have a significant advantage over the ultimate recoveries for wells drilled later; See Transcript page 85

(e) While Yates is unable to calculate drainage areas for wells in either pool, Yates believes the wells studied in North Dagger Draw are not draining more than 40-acres and could **therefore** be shut-in to make up for "overproduction" without being subject to offset drainage; See Transcript page 107.

(f) that there is interference among and between overproduced wells in the "allowable Violation Area" of North Dagger Draw; See Transcript page 43.

(g) that a well's producing rate will be affected by changes in producing rates by offset wells which can be attributed to interference; See Transcript page 110

FINDINGS OF THE DIVISION CONCERNING YATES' TECHNICAL EVIDENCE

(16) There is a significant risk of offset drainage among wells in and within the Allowable Violation Area because the oil productive dolomite is relatively thin and any excessive pressure depletion occurring due to overproduction will have a detrimental effect on wells such as the Conoco operated wells in the N/2 of Section 32, T19S, R35E which are located on the flank of the reservoir.

(17) Contrary to Yates' contention that "positive slope" plots of oil cut versus oil rate during the early time performance of these wells indicates at higher rates of withdrawal, more oil and less water were being produced, analysis of Yates Exhibit 6 shows at least five wells with "negative slope" in the Allowable Violation Area.

(18) Yates failed to demonstrate with substantial evidence whether this early time performance was nothing more than accelerating the rate of recovery of the same amount of ultimate oil or whether in fact such higher

early time rates would result in increasing the amount of oil ultimately recovered from either of these pools.

(19) Yates failed to demonstrate with substantial evidence that its "early-time" analysis of these wells represents (a) "pseudosteady-state production" during which the entire drainage area starts to contribute production and accurate reservoir recoveries can be calculated or (b) is simply attributable to well performance under transient production during which a well's inflow performance is unstable and producing oil versus water rates may not correctly reflect performance during these unstabilized conditions.

(20) Yates failed to submit engineering calculations showing estimated ultimate recovery for any well in either pool and failed to submit any production decline curves for any of the 17 wells shown on Yates Exhibit 5 so that any other engineer could calculate those ultimate recoveries; See Transcript page 85

(21) Yates' failed to demonstrate with substantial evidence that increasing the oil rate was not being accomplished by simply "taking" oil from adjoining wells and spacing units.

(22) That the short term step rates tests conducted on the Aparejo APA Well No. 5 in North Dagger Draw were conducted for too short a period and under conditions not verified by the Division and therefore cannot be considered typical or characteristic of the performances of all wells in the pool.

(23) Even if Yates is correct about higher rate meaning higher oil cut, Yates failed to present substantial evidence to show that such an oil allowable of 4000 BOPD per spacing unit was necessary.

(24) Even if Yates is correct about higher rate meaning higher oil cut, that does not excuse Yates from liability for "overproducing" either pool's allowables.

(25) Yates' request is simply the result of Yates having drilled too many wells and produced them at too high a rate in an effort to drain offsetting spacing units.

ADDITIONAL FINDINGS BY THE DIVISION

(26) The Division further finds that:

(a) There are no proration units in North Dagger Draw which had or may have the capacity to produce 4,000 BOPD;

(b) Yates' application in this case for these pool-wide changes, if approved, would increase the oil allowable limitation from 700 barrels of oil per day to a new maximum 4,000 barrels of oil per day per 160-acre proration unit which will have a dramatic impact on the prevention of waste, ultimate recovery of oil and correlative rights in the North Dagger Draw Pool.

(c) excessive production above current oil allowable rates accelerate pressure decline and adversely affect correlative rights by interfering with offsetting operators ability to produce their share of recovery oil underlying their spacing units.

(d) approval of the Yates' application will substantially increase interference among wells and cause rapid decline in the producing rates of existing wells

(e) based upon current production and engineering and geological reservoir evaluations, the current maximum oil allowable of 700 BOPD for a spacing unit in the North Dagger Draw Pool is appropriate;

(f) Yates' request for an increase to 4,000 BOPD is probably not achievable by a single spacing unit and will result in the waste of oil reserves if applied to multiple gas wells in the same spacing unit;

(g) the current gas allowable of 7 MMCFPD all wells in a spacing unit in the North Dagger Draw Pool is appropriate;

(h) denial of Yates' requests is necessary in order to prevent excessive premature drainage of offsetting spacing units;

(i) denial of Yates' requests and the continuance of the current rules will afford the opportunity to adequately recover both oil and gas reserves without causing undue waste;

(j) the evidence presented by Conoco demonstrates that the current rules and regulations for North Dagger Draw Pool have and will continue to provide for the orderly and efficient development and proper depletion of the North Dagger Draw Pool thereby preventing waste and protecting correlative rights;

(k) continuance of the current regulatory conservation methods imposed to minimize excessive production in the Pool provide appropriate limitations necessary to protect the conservation of reservoir energy;

(l) Yates failed to sustain its burden of proving that the changes it seeks will result in increased ultimate oil recovery while doing so in a manner to protect correlative rights; and

(m) Yates' request is simply an attempt to avoid the consequences of producing illegal oil and gas products from this pool and should be **denied**.

ILLEGAL OIL and GAS

(27) Pursuant to Section 70-2-21 and 70-2-22 NMSA (1978), and its authority to adopt rules and regulations to effectuate prohibitions against the purchase or handling of "illegal gas and oil products", the Division has adopted rules and regulations which provide that:

(a) Illegal gas is defined by Division Rules to mean "natural gas produced from a gas well in excess of the allowable determined by the Division and the sale, purchase, acquisition, or the transporting refining processing or handling, in any way of said gas is prohibited. See Rule 0.1. and Rule 901

(b) Illegal oil is defined by Division Rules to mean "crude petroleum oil produced from an oil well in excess of the allowable fixed by the Division and the sale, purchase, acquisition, or the transporting refining processing or handling, in any way of said oil is prohibited. See Rule 0.1 and Rules 801 and 502.

(28) The Division has adopted oil allowables for this pool in order to manage and regulate production in a very competitive reservoir and to assure that all operators are "playing by the same rules" so that correlative rights are protected.

(29) The Division has fixed and determined that any oil/and or gas produced from the North Dagger Draw Pool in excess of 700 BOPD and/or 7 MMCFPD per 160-acre spacing and proration unit is illegal oil and illegal gas products.

(30) Yates has ignored those rules and regulations and has created a greater pressure differential to their spacing units than would have occurred if it had complied with the regulated production rates which have given Yates an unfair competitive advantage over those operators who are complying with these rules.

(31) As a result of Yates' excessive pressure depletion of the reservoir which cannot not be restored, Yates has caused permanent damage to the correlative rights of those operators who have complied with these rules.

(32) The Division lacks the resources to police compliance with its rules and regulations and expects all operators including Yates to comply with Division Rules and Regulations.

(33) Yates testified that in the summer of 1995, Yates was notified of its overproduction in the North Dagger Draw Pool by the Supervisor of the Artesia Office of the Division.

(34) Despite notification and with knowledge that it was producing illegal oil and gas products from North Dagger Draw Pool, Yates continued to do so until March 1996 when the Supervisor of the Artesia Office of the Division imposed restrictions upon Yates which limited Yates to maintaining current production with the allowable but did not then require that Yates to shut-in its well production or otherwise commence to "make-up" its overproduction.

OVERPRODUCTION WITHIN ALLOWABLE VIOLATION AREA

(35) From February 23, 1995 to March 22, 1995, Yates proposed 39 North Dagger Draw wells to Nearburg Exploration Company ("Nearburg") and commenced a "drilling and production war" against Nearburg (See NMOCD Case 11311, Nearburg Exhibit 5) during which Yates consistently exceeded the oil allowables in order to gain an unfair advantage over Nearburg within the "Allowable Violation Area" described as follows:

TOWNSHIP 19 SOUTH RANGE 25 EAST

Section 21: NW/4 and S/2

Section 27: W/2

Section 28: All

Section 29: All

which resulted in the following levels of overproduction:

OPERATOR	SPACING UNIT	OVER PRODUCTION	DATE
Yates	NW/4-21	7,594	2/1/96
Yates	SW/4-21	83,236	2/1/96
Yates	SE/4-21	53,531	2/1/96

Yates	NW/4-29	11,884	2/1/96
Yates	NE/4-29	60,729	2/1/96
Yates	SW/4-29	70,641	2/1/96
Yates	SE/4-29	132,351	2/1/96
Yates	NW/4-28	108,594	2/1/96
Yates	NE/4-28	136,167	2/1/96
Yates	SW/4-28	117,283	2/1/96
Yates	SE/4-28	206,187	2/1/96
Yates		988,197 total	
Nearburg	NW/4-27	132,560	3/1/96
Nearburg	SW/4-27	32,038	3/1/96
		164,598 total	
		TOTAL: 1,152,795	

(36) As part of its strategy against Nearburg in the Allowable Violation Area, Yates drilled and produced wells (up to a maximum of 4 wells in a 160-acre unit) and sequenced their production so that each well was allowed to produce at its total capacity without regard to the oil allowable. See Conoco Exhibits 6-19.

(37) The production of illegal oil is a flagrant and willful disregard of the Division rules which is of significance to the ability of the Division to exercise its duties to prevent waste and protect correlative rights. Accordingly, the Division should direct the Supervisor of the Artesia office of the Oil Conservation Division to determine which proration unit and which operators have "overproduced either the oil and/or gas allowables in this pool and to impose a penalty of One Thousand Dollars per day per proration unit for each and every day said proration unit has been overproduced.

(38) Within thirty days of the date of this order, each and every operator of any proration unit in the pool which has been overproduced either the oil and/or gas allowable for this pool should pay said penalty by certified check or money order to the Director.

(39) That the Supervisor of the Artesia Office of the Division should provide a list to the Director of each and every operator of any proration unit in the pool which has been overproduced either the oil and/or gas allowable for this pool and shall immediately notify said operator that every well within a proration unit which is overproduced shall be immediately shut-in until said overproduction is made up.

IT IS THEREFORE ORDERED THAT:

(1) The application of Yates Petroleum Corporation in this case to:

(a) amend the Special Rules and Regulations for the South Dagger Draw-Upper Pennsylvanian Pool ("the North Dagger Draw Pool") by increasing the current 700 barrels of oil per day special depth bracket allowable assigned to a standard 160-acre spacing and proration unit to 4,000 barrels of oil per day; and

(b) to cancel all overproduction accumulated by certain operators in the pool who have produced certain oil proration and spacing units in excess of the current allowable of 700 barrels of oil per day.

IS HEREBY DENIED.

(2) That the Supervisor of the Artesia Office of the Division shall provide a list to the Director of each and every operator of any proration unit in the pool which has been overproduced either the oil and/or gas allowable for this pool and shall immediately notify said operator that every well within a proration unit which is overproduced shall be immediately shut-in until said overproduction is made up.

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(3) A penalty of One Thousand Dollars per day per proration unit for each and every day said proration unit has been overproduced is **hereby imposed**.

(4) Within thirty days of the date of this order, each and every operator of any proration unit in the pool which has been overproduced either the oil and/or gas allowable for this pool shall pay said penalty by certified check or money order to the Director.

(5) Jurisdiction of this cause, including all parties hereto and the subject matter herein, is hereby 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.

SEAL