

**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. 11429  
Order No. R-10547**

**APPLICATION OF TEXACO EXPLORATION  
& PRODUCTION INC. FOR DOWNHOLE  
COMMINGLING LEA COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This cause came on for hearing at 8:15 a.m. on November 16, 1995, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 4th day of March, 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.

(2) The applicant, Texaco Exploration & Production Inc., seeks approval to downhole commingle the Delaware and Bone Spring formations within existing or future drilled wells located anywhere within the W/2 E/2 and the E/2 W/2 of Section 31, Township 23 South, Range 32 East, NMPM, West Triste Draw-Delaware and South Sand Dunes-Bone Spring Pool, Lea County, New Mexico.

(3) Within the subject area, hereinafter referred to as the "development area", the applicant currently operates the following described wells:

<u>Well Name</u>	<u>Well</u>	<u>Completion Interval</u>	<u>Date Completed &amp; IP</u>
SDE "31" No. 2	Unit C	Bone Spring 8,571'-8,623'	11/94 359 BOPD
SDE "31" No. 4	Unit F	Bone Spring 8,560'-8,614'	3/95 310 BOPD
SDE "31" No. 5	Unit B	Bone Spring 9,018'-9,044'	3/95 154 BOPD
SDE "31" No. 8	Unit K	Delaware (Upper Brushy Canyon) 7,193'-7,226'	5/95 33 BOPD
SDE "31" No. 9	Unit J	Delaware (Lower Brushy Canyon) 8,226'-8,437'	4/95 86 BOPD
SDE "31" No. 14	Unit N	Bone Spring 8,559'-8,610'	6/95 286 BOPD

(4) Division records further indicate that the applicant has obtained drilling permits for the following described wells within the development area:

<u>Well Name</u>	<u>Well</u>	<u>Completion Interval</u>	<u>Date Completed &amp; IP</u>
SDE "31" No. 6	Unit G	Delaware & Bone Spring	
SDE "31" No. 15	Unit O	Delaware & Bone Spring	

(5) The applicant's plan of operation for the development area includes:

- a) completing the Delaware formation within the SDE "31" Well Nos. 2, 4, 5 and 14 and downhole commingling this production with existing Bone Spring production;
- b) completing the Bone Spring formation within the SDE "31" Well Nos. 8 and 9 and downhole commingling this production with existing Delaware production; and,
- c) depending on the results obtained in the proposed recompletions, drill two additional wells, being the SDE "31" Well Nos. 6 and 15, as downhole commingled Bone Spring and Delaware producers.

(6) According to applicant's evidence and testimony, the Bone Spring formation within the development area typically exhibits high initial producing rates as indicated by the above-described IP's, however, this Bone Spring production exhibits decline rates of approximately 85-90 percent.

(7) Applicant's evidence shows that the SDE "31" Well No. 4, which initially produced at a rate of approximately 220 BOPD from the Bone Spring formation, produces at a rate of approximately 86 BOPD after just four months of production.

(8) Similarly, the evidence shows that the SDE "31" Well No. 14, which initially produced at a rate of approximately 175 BOPD from the Bone Spring formation, produces at a rate of approximately 78 BOPD after just two months of production.

(9) Applicant testified that at the current rate of decline of Bone Spring production, the existing Bone Spring producing wells within the development area may soon reach their economic limit (estimated by the applicant to be approximately 20 BOPD).

(10) Applicant's geologic evidence shows that the existing SDE "31" Well Nos. 2, 4, 5 and 14 have developed the thicker and better portion of the Bone Spring reservoir underlying the development area. Additional Bone Spring wells drilled within this area are likely to exhibit lower producing rates than those obtained by the existing wells.

(11) Applicant's geologic evidence further indicates that within the development area there is potential for production from the Upper Brushy Canyon and possibly the Lower Brushy Canyon members of the Delaware formation. The Upper Brushy Canyon member is the interval applicant intends to target in the proposed recompletions.

(12) Production data from existing wells located to the north and south of the development area in Section 30, Township 23 South, Range 32 East, and Section 6, Township 24 South, Range 32 East, respectively, indicates that the Delaware formation exhibits:

- a) relatively high initial producing rates in the range of approximately 200 barrels of oil per day;
- b) high rates of water production which average approximately 220 barrels per day; and,
- c) relatively high decline rates in the range of 50-60 percent.

(13) The production data presented by the applicant further indicates that within 6-12 months of production, Delaware wells in this area generally produce at a rate of less than 100 barrels of oil per day.

(14) At the time of the hearing, the applicant testified that it is currently recompleting the SDE "31" Well No. 2 to the Upper Brushy Canyon interval. The well tested at a rate of 124 BOPD, 50 MCFGD, and 202 barrels of load water.

(15) Applicant testified that if unable to downhole commingle existing wells within the development area, Bone Spring production may have to be prematurely abandoned, thereby causing waste.

(16) Further testimony indicates that the proposed downhole commingling will allow the applicant to economically justify drilling the SDE "31" Well Nos. 6 and 15 to a depth sufficient to recover marginal Bone Spring and Lower Brushy Canyon reserves, as opposed to drilling to a depth sufficient to recover Upper Brushy Canyon reserves only.

(17) The interest ownership between the Delaware and Bone Spring formations within the development area is common.

(18) Due to the wellbore configuration of the existing wells, dual completion of the Delaware and Bone Spring intervals would likely result in numerous mechanical difficulties within the wellbores. For this reason, applicant also seeks to avoid dual completions within the proposed SDE "31" Well Nos. 6 and 15.

(19) Applicant proposes that the subject downhole commingled wells be assigned an oil allowable equal to the top unit allowable of the shallowest commingled horizon. In this instance, the proposed allowable would equal 187 barrels of oil per day, which is the current top allowable for the West Triste Draw-Delaware Pool.

(20) The proposed allowable is in conformance with changes to Division Rule No. 303(C) (Downhole Commingling) recently recommended by the New Mexico Oil and Gas Association Industry Committee, and likely to be adopted by the New Mexico Oil Conservation Commission.

(21) The evidence and testimony in this case indicates that the producing characteristics of both the Delaware and Bone Spring formations in the development area are unique and such that downhole commingling is necessary in order to economically and efficiently drain and develop the oil and gas reserves within this area.

(22) The applicant's evidence further shows that:

- a) neither commingled zone exposes the other to damage by produced liquids;
- b) the fluids from each zone are compatible with the other;
- c) the value of the commingled production is not less than the sum of the values of the individual production;

- d) the subject wells will be maintained at pumped off conditions at all times.

(23) No offset operator and/or interest owner appeared at the hearing in opposition to the proposed downhole commingling.

(24) The downhole commingling of the six existing wells and the two proposed development wells within the development area will benefit the interest owners, will result in the recovery of oil and gas reserves which may otherwise not be recovered, thereby preventing waste, and will not violate correlative rights.

(25) Applicant proposed that Delaware and Bone Spring production from the subject wells be allocated based upon the following:

- a) the Delaware formation within the SDE "31" Well Nos. 2, 4, 5, and 14 will be tested for a period of 2-3 weeks subsequent to recompletion operations. This production test data along with existing Bone Spring production data will be utilized to determine the allocation percentages;
- b) within the SDE "31" Well Nos. 6 and 15, both the Delaware and Bone Spring formations will be tested separately upon completion for a period of 2-3 weeks. This production data will then be utilized to determine allocation percentages.

(26) Applicant's proposed method of allocation is fair and reasonable and should be adopted.

(27) The applicant should consult with the supervisor of the Division's Hobbs District Office subsequent to the completion of testing operations on the subject wells in order to arrive at fixed allocation percentages for each well.

(28) All allocation formulas and/or fixed percentages should be submitted to the Santa Fe and Hobbs offices of the Division.

(29) The operator should immediately notify the supervisor of the Hobbs District Office of the Division any time any of the subject wells have been shut-in for seven consecutive days and shall concurrently present, to the Division, a plan for remedial action.

**IT IS THEREFORE ORDERED THAT:**

(1) The applicant, Texaco Exploration & Production Inc., is hereby authorized to downhole commingle the Delaware and Bone Spring formations within existing or future drilled wells located anywhere within the W/2 E/2 and the E/2 W/2 of Section 31, Township 23 South, Range 32 East, NMPM, West Triste Draw-Delaware and South Sand Dunes-Bone Spring Pool, Lea County, New Mexico.

(2) The subject downhole commingled wells are hereby assigned an oil allowable of 187 barrels of oil per day.

(3) The allocation of production to the Delaware and Bone Spring formations within the subject downhole commingled wells shall be determined as follows:

- a) the Delaware formation within the SDE "31" Well Nos. 2, 4, 5, and 14 shall be tested for a minimum period of 2-3 weeks subsequent to recompletion operations. This production test data along with existing Bone Spring production data shall be utilized to determine the allocation percentages; and,
- b) within the SDE "31" Well Nos. 6 and 15, both the Delaware and Bone Spring formations shall be tested separately upon completion for a minimum period of 2-3 weeks. This production data shall then be utilized to determine allocation percentages.

(4) The applicant shall consult with the supervisor of the Division's Hobbs District Office subsequent to the completion of testing operations on the subject wells in order to arrive at fixed allocation percentages for each well.

(5) All allocation formulas and/or fixed percentages shall be submitted to the Santa Fe and Hobbs offices of the Division.

(6) The operator shall immediately notify the supervisor of the Hobbs District Office of the Division any time any of the subject wells have been shut-in for seven consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(7) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

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



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A handwritten signature in black ink, appearing to read "William J. Lemay".

WILLIAM J. LEMAY  
Director