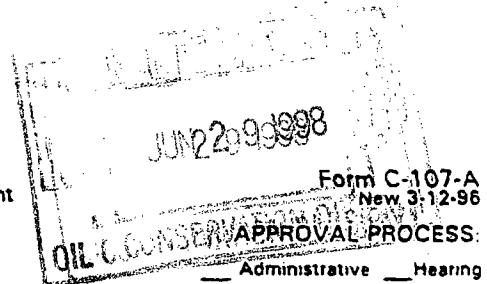


7/20/98

1973



DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

811 South First St., Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429Form C-107-A
New 3-12-96OIL CONSERVATION APPROVAL PROCESS:
Administrative Hearing

EXISTING WELLBORE

YES NO

APPLICATION FOR DOWNHOLE COMMINGLING

Texaco Exploration & Producing Inc. 205 East Bender Hobbs, New Mexico 88240
Operator AddressSDE 31 FEDERAL #1 D-31-23S-32E Lea
Lease Well No. Unit Ltr. - Sec - Tws - Rge County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO Property Code API NO. 30-025-32676 Federal X, State (and/or) Fee

The following facts are submitted in support of downhole commingling:	Lower Zone	Intermediate Zone	Upper Zone
1. Pool Name and Pool Code	South Sand Dunes-Bone Springs		Triste Draw-Delaware
2. Top And Bottom of Pay Section (Perforations)	8518-8544		8152-8166, 8202-8220, 8262-8272, 8286, 8294
3. Type of production (Oil or Gas)	Oil		Oil
4. Method of Production (Flowing or Artificial Lift)	Artificial Lift		Artificial Lift
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current	a. 320	a.	a. 320
Gas & Oil - Flowing: Measured Current	b.	b.	b.
All Gas Zones: Estimated Or Measured Original			
6. Oil Gravity (* API) or Gas BTU Content	37.9		40.3
7. Producing or Shut-In? Production Marginal? (yes or no)	Shut-in, Marginal Prod		Producing, Marginal
* If Shut-In, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data	Date: 2/95 Rates: 17 BOPD, 17 BWPD		
* If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:		8152-8166, 6/3/98, 32 BOPD, 142 MCFGPD, 8202-8208, 5/2/98, 86 BOPD, 35 MCFGPD, 2 BWPD
8. Fixed Percentage Allocation Formula -% for each zone	Oil: 26 % Gas: 0 %	Oil: % Gas: %	Oil: 74 % Gas: 100 %

9. If allocation Formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.
10. Are all working, overriding, and royalty interests identical in all commingled zones? ☒ Yes ☐ No
If not, have all working, overriding, and royalty interests been notified by certified mail? ☐ Yes ☐ No
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No
11. Will cross-flow occur? ☐ Yes ☒ No If yes, are fluids compatible, will the Formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☐ Yes ☐ No (If No, attach explanation)
12. Are all produced fluids from all commingled zones compatible with other? ☒ Yes ☐ No
13. Will the value of production be decreased by commingling? ☐ Yes ☒ No (If Yes, attach explanation)
14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Land or the United States Bureau of Land Management has been notified in writing of this application. ☒ Yes ☐ No
15. NMOC Reference Cases for Rule 303(C) Exceptions: ORDER NO(S) _____
16. ATTACHMENTS:

- * C-102 for each zone to be commingled showing its spacing unit and acreage deication.
- * Production curve for each zone for at lease one year. (If not available, attach explanation.)
- * For zones with no production history, estimated production rates and supporting data.
- * Notification list of all offset operators.
- * Notification list of working, overriding, and royalty interests for uncommon interest cases.
- * Any additional statements, data or documents required to support commingling.

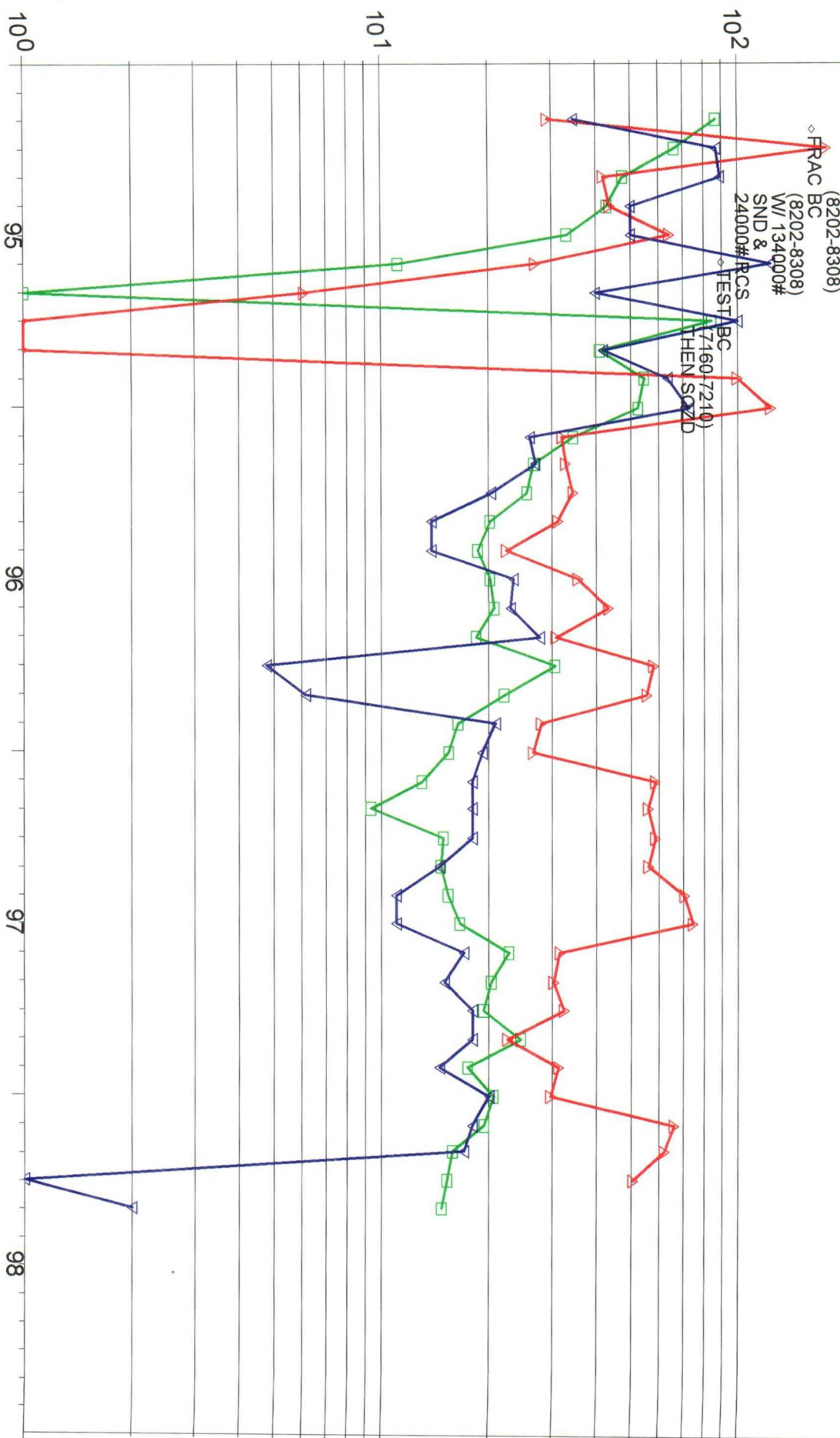
I hereby certify that the information above is true and complete to the best of my knowledge and belief

SIGNATURE J. Denise Leake TITLE ENGR. ASSISTANT DATE 6-15-98
TYPE OR PRINT NAME J. Denise Leake TELEPHONE NO. (505) 397-0405

SDE 31 Federal #1

Well: SDE31 1 ID: 30025326760000 Type: DL Daily

◊ PERF BONE SPRING	◊ RODCLP-OTH	◊ PMPPLG-SND
(8518-8544)	◊ PORBDY-OTH	
◊ ACID BS (8518-8544)	◊ PMPB&S-SND	
W/ 2000 GAL	8349' MI&RU	
15% HCL	G/O PUMP	◊ RODCLP-IMU 475'
◊ FRAC BS (8518-8544)	LOAD AND	DOWN SIZE
W/ 168720#	TEST. RIG	PUMP TO
20/40-SND		1.50 FROM
◊ CIBP @ 8480'		1.75
◊ PERF BRUSHY CANYON		
(8202-8308)		



Leake, J Denise

From: Wacker, Jason H
Sent: Friday, June 19, 1998 8:47 PM
To: Harbour, Shari A; Leake, J Denise
Subject: FW: SDE 31 Federal #1

Jason Wacker
Texaco Exploration & Production, Inc.
Production Engineer
Carlsbad FMT
Tex-Net 676-3484
(505) 397-0484

-----Original Message-----

From: Sleeper, David L
Sent: Thursday, June 11, 1998 9:11 AM
To: Wacker, Jason H
Subject: FW: SDE 31 Federal #1

Jason,

Offset operators/owners, from surface to the base of Bone Spring, to the NWNW of Sec.31, T23S, R32E are :

(Sec. 25 & 36 T23S, R31E)
Devon Energy Corporation (Nevada)
1500 Mid-America Tower
20 North Broadway
Oklahoma City, Oklahoma 73102-8260
Attn: Ken Gray

(Sec. 30: Lot 4 (SWSW) T23S, R32E)
Mitchell Energy Corporation
P.O. Box 4000
The Woodlands, TX 77387
Attn: Larry Cunningham

(Sec. 30: SESW)
Mitchell Energy Corporation

Santa Fe Energy Resources, Inc.
550 West Texas Ave., Suite 1330
Midland, TX 79701
Attn: Steven J. Smith

Let me know if you need more.

-----Original Message-----

From: Sleeper, David L
Sent: Monday, June 08, 1998 2:03 PM
To: Wacker, Jason H
Subject: RE: SDE 31 Federal #1

Jason,

I'm pretty sure it's Devon to the west and northwest. It's us to the south and east. I am having to have the north offset checked and it may be a couple of days before I hear. At one time it was Santa Fe but they may have sold. I'll let you know.

-----Original Message-----

From: Wacker, Jason H
Sent: Monday, June 08, 1998 10:40 AM
To: Sleeper, David L
Subject: SDE 31 Federal #1

David,

As discussed, the Hobbs OU is applying for a downhole commingle permit for the subject well. Offset operators need to be notified of our intent to commingle as required by the permit. Please send me a list of offset operators for the SDE 31 Federal #1.



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

May 22, 1998

Texaco Exploration & Production Inc.
205 E. Bender Blvd.
Hobbs, New Mexico 88240

Attention: Ms. Denise Leake

Re: SDE "31" Federal Well No. 1
Unit D, Section 31, T-23S, R-32E,
Lea County, New Mexico

Dear Ms. Leake:

Reference is made to your request dated April 21, 1998, to amend Division Order No. R-10547 to allow for the downhole commingling of Delaware and Bone Spring production within the subject well.

Please be advised that:

- a) a Division hearing order cannot be amended by this method;
and,
- b) it is not necessary to amend Division Order No. R-10547 in order to obtain a downhole commingling permit for the subject well, however, it will be necessary for Texaco to file a Division Form C-107-A to obtain such approval.

Please submit Form C-107-A for the subject well at your earliest convenience in order that Texaco may proceed with the proposed downhole commingling.

If you should have any questions, please contact me at (505) 827-8184.

Sincerely,

A handwritten signature in cursive script, appearing to read "David Catanach".

David Catanach
Engineer

xc: OCD-Hobbs
Lori Wrotenbery



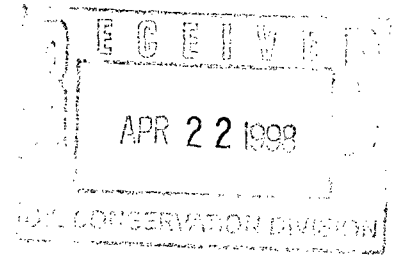
Texaco E & P

205 E. Bender Blvd.
Hobbs NM 88240
505 393 7191

AMEND DHC 5/12/98

April 21, 1998

NMOCD
2040 South Pacheco
Santa Fe, New Mexico 87505



Attn : Mr. David Catanach

RE : Amendment to SDE 31 Application Downhole Commingling
SDE 31 Federal #1
660 FNL & 660 FWL, D-31-23S-32E
Lea County, New Mexico

Dear Mr. Catanach,

Texaco Exploration & Production, Inc. respectfully requests to amend its application for downhole commingling, Case No. 11429 Order No. R-10547, to include the SDE 31 Federal #1. Allocation percentages will be based upon a Bone Spring production test on 2/31/95 of 17 BOPD & 17 BWPD and a Delaware production test on 4/15/98 of 13 BO, 10 BW, & 34 MCF. Texaco plans to commingle Bone Spring and Delaware production and add 14 feet of Delaware pay in the subject well. Any additional production realized by adding pay in the Delaware will be allocated to the Delaware.

This well is located at Unit Letter D : Section 31, T-23-S, R-32-E, Lea County New Mexico. Texaco respectfully requests that the amendment be made at the earliest possible convenience so that operations can be advanced in a prudent manner. If you have any questions concerning the request, please contact me at (505) 397-0405.

Sincerely,

Denise Leake
Engineering Assistant
Texaco Exploration & Production, Inc.

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:

*Just hook this over to make
sure it is exactly what
we want. If not, we can
get it changed without
much trouble.
If it is OK
we need to let
Carr know.
Leland*

CASE NO. 11429
Order No. R-10547

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

ORDER OF THE DIVISION

COPY

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:

Post-it Fax Note	7671	Date	3/7	Pages	7
To	MICHAEL ALEXANDER	From	JIM DORE		
Co./Dept.	HOBBS OU	Co.	SHOBBSAT		
Phone #		Phone #			
Fax #		Fax #			

SIDE DHC ORDER

CASE NO. 11429
Order No. R-10547
Page -2-

<u>Well Name</u>	<u>Well</u>	<u>Completion Interval</u>	<u>Date Completed & 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 & 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.

CASE NO. 11429
Order No. R-10547
Page -3-

(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.

CASE NO. 11429
Order No. R-10547
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(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;

CASE NO. 11429
Order No. R-10547
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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.

CASE NO. 11429
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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.

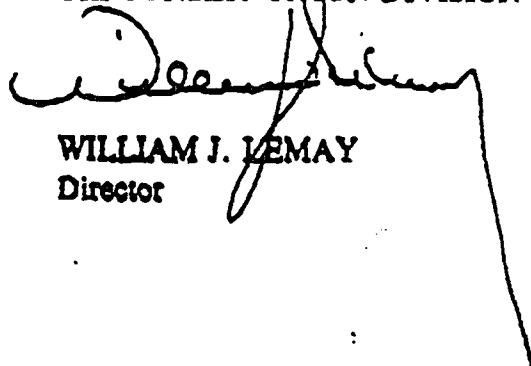
(6) The operator shall immediately notify the supervisor of the Hobbs District Office of the Division any time any of the subject wells have been shut-in for seven consecutive days and shall concurrently present, to the Division, a plan for remedial action.

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

CASE NO. 11429
Order No. R-10547
Page -7-

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