

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION



1935 - 198

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE. NEW MEXICO 87501 ,505) 827-5800

Administrative Order No. DHC-550

Tenneco Oil Exploration and Production Co. P. O. Box 3249 Englewood, Colorado 80155

Attention: P. A. Doyle

Re: Florance Well No. 5, Unit A, Sec. 22, T-30-N, R-9-W, NMPM, San Juan County, New Mexico; Mesaverde and Dakota Pools

Gentlemen:

Reference is made to your recent application for an exception to Rule 303-A of the Division Rules and Regulations for the subject dually completed well to permit the removal of the down-hole separation equipment and to commingle the production from both pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion and required separation of the two zones, is hereby placed in abeyance.

In accordance with the provisions of Rule 303.C.4., total commingled oil production from the subject well shall not exceed 50 barrels per day, and total water production from the well shall not exceed 100 barrels per day. The maximum amount of gas which may be produced daily from the well shall be determined by Division Rules and Regulations or by the gas allocation for each respective prorated gas pool as printed in the Oil Conservation Division's San Juan Basin Gas Proration Schedule.

CILCON DV

In accordance with the provisions of Rule 303-C, the supervisor of the Aztec District Office of the Oil Conservation Division shall determine the proper allocation of production from the subject well following its completion.

Very truly yours

R. L. STAMETS,

Director

A Tenneco Company

Western Rocky Mountair Division

6162 South Willow Drive PO. Box 3249 Englewood, Colorado 80155 (303) 740-4800

February 25, 1985

kul

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501

Attention: Mr. Gilbert Quintana

RE: Florance #5

Sec.22, T30N, R9W

San Juan County, New Mexico

Dear Mr. Quintana:

We have enclosed all necessary data for administrative approval to commingle production to the referenced well.

Questions concerning this request can be directed to Mr. Frank Weiss (303) 740-4836

Very truly yours,

TENNECO OIL COMPANY

P. A. Doyle

PAEgy

Division Production Engineer

PAD: SMc: Enclosures 1104t

cc: Mr. John Cook

Mr. Frank Weiss

OIL CON. D.V.

A Tenneco Company

Western Rocky Mountain Division

6162 South Willow Drive PO. Box 3249 Englewood, Colorado 80155 (303) 740-4800

February 26, 1985

El Paso Natural Gas P. O. Box 4990 Farmington, New Mexico 87499

Re: Florance #5
Sec.22, T30N, R9W
San Juan County, N. M.

Gentlemen:

Tenneco has applied for administrative approval to commingle production from the Mesaverde and Dakota zones in the above referenced well. If you as an offset operator have no objection to the proposed commingling, please sign the waiver at the bottom of this page and forward to:

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501 Attention: Mr. Gilbert Quintana

We would appreciate your returning one copy to the undersigned

Very truly yours,

TENNECO OIL COMPANY

P. A.Doyle
Division Production Engineer

PAD:SMc:v		
	WAIVER	
We hereby waive any objection as s	ctions to Tenneco Oil Compa set forth above.	ny's application to
Name:	Title:	
Nate:		

A Tenneco Company

6162 South Willow Drive P.O. Box 3249 Englewood, Colorado 80155 (303) 740-4800



Western Rocky Mountain Division

February 26, 1985

Amoco Production Company 501 Airport Drive Farmington, New Mexico 87407

> Re: Florance #5 Sec.22, T30N, R9W

San Juan County, N. M.

Gentlemen:

Tenneco has applied for administrative approval to commingle production from the Mesaverde and Dakota zones in the above referenced well. If you as an offset operator have no objection to the proposed commingling, please sign the waiver at the bottom of this page and forward to:

New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico 87501 Attention: Mr. Gilbert Quintana

We would appreciate your returning one copy to the undersigned.

Very truly yours,

TENNECO OIL COMPANY

P. A. Doyle
Division Production Engineer

PAD:SMc:v	
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	WAIVER
	waive any objections to Tenneco Oil Company's application to production as set forth above.
Name:	Title:
Date:	

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A Tenneco Company

6162 South Willow Drive P.O. Box 3249 Englewood, Colorado 80155 (303) 740-4800

Western Rocky Mountain Division

The Florance #5 was completed as a Mesaverde-Dakota dual in September, 1965 with 4-1/2" casing and one string of 2-3/8" tubing. The Dakota produces up the tubing and the Mesaverde flows up the casing-tubing annulus. Because of the large flow area in the annulus, the Mesaverde is experiencing liquid loading problems which are restricting the production from that zone.

Enclosed are decline curves for both the Mesaverde and Dakota zones.

The bottom-hole pressure of the Dakota was measured with a pressure bomb and found to be 780 psig at 7500' after 8 days of shut-in. This Dakota pressure corrected to a datum of 5000' is 708 psig. A pressure bomb could not be run for the Mesaverde since this zone produces up the annulus. A dead weight surface pressure of 395 psig was recorded for the Mesaverde after 8 days of shut-in and the fluid level on the annulus was recorded at 4805'. The bottomhole pressure for the Mesaverde was then calculated to be 539 psig at a datum of 5000'. The requirement that the lower pressured zone have a pressure that is greater than 50% of the pressure of the higher pressured zone corrected to a common datum is; therefore, satisfied.

Compatibility tests were conducted using the produced Dakota water from this well and the Mesaverde water from an offset to the Florance #5. The testing indicates that no scale of precipitate problems should result from the commingling of these two zones. In addition, the salinities of the two zones are similar enough that no formation damage should occur in either zone.

The intent of commingling these two zones is to increase the total production from the well. This will be accomplished by increasing the flow velocity by flowing both zones up the tubing. The cross-sectional area of the tubing is 3.13 square inches, as opposed to 11.27 square inches for the tubing and annulus. Even if no production increase were realized, a 3.6 fold increase in average flow velocity would result from this commingling. This velocity increase will enable the well to unload produced fluids and will result in increased gas production from each zone. This greater production rate will increase the velocity in the tubing, yielding even more liquid lifting capacity.

Based upon the decline curves and reserve estimates for these zones, I recommend that the production be allocated on a strict percentage basis with 98% assigned to the Mesaverde and 2% assigned to the Dakota.

If you need any additional information, feel free to call me at (303) 740-4840.

Frank G. Weiss III

Senior Production Engineer

FGW/dw: 4355

Florance #5

DETERMINATION OF ALLOCATION PERCENTAGES

The decline rates and reserve estimate for the Mesaverde and Dakota are indicated below:

	DECLINE PERCENTAGE	REMAINING RESERVES
Mesaverde	8%	1.75 BCF
Dakota	8%	37.5 MMCF

4356

B & R SERVICE, INC.

P. O. Box 1048 Farmington, New Mexico 87499 (505) 325-2393

Company Tenneco Oil Co.	Lease Florance	Well#5 (Dak)
County San Juan	StateNew Mexico	Date12-14-84
Shut-In	Zero PointG.L.	Tbg. Pressure 650
Casing Pressure 395	Tbg. Depth	Casing Perf.
Max. Temp	Fluid Level	

<u>DE P'TH</u>	PSIG	GRADIENT
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1000	638	.021
2000	660	.022
3000	674	.014
4000	692	.018
5000	708	.016
6000	724	.016
7000	740	.016
7500	780	.080

MESAVERDE

8 Day Shut In Pressure Test

Dead Weight Surface Pressure 395 psi

Annulus Fluid Level

Max. Temp. ___

4805 Ft.

MESAVERDE

FLORANCE #5 MV/DK MESAVERDE DAKOTA COMMINSLING 2-3/8X4-1/2 ANNULUS DATE: 02/21/85 FILE: FILE102 PROU: 0

GAS WELL PRESSURES

MEASURED DEPTH, FEET TRUE VERTICAL DEPTH, FEET	5000. 5000.	FLOW STREAM ID: INCHES FLOW STREAM OD: INCHES	2.375 6.456
GAS GRAVITY	0.687	CRITICAL TEMPERATURE	386.
BOTTOM HOLE TEMPERATURE	150.	CRITICAL PRESSURE	666.
NITROGEN, MOL %	0.	CONDENSATE GRAVITY, DEG	1.047
CARBON DIOXIDE, MOL %	0.	WATER GRAVITY	
HYDROGEN SULFIDE, MOL %	0.	PIPE ROUGHNESS, INCHES	
GAS RATE WH TEMP WELLHE	EAD BOTTOMHOLE	PZZ COMDENSATE	WATER
M/D DEG F PSIG	PSIG	PSIG STB/MMCF	BW/MMCF
0. 6. 395	5. 451. ♦	AT 4805. FEET (MEAS) FLO	UID LEVEL
	539. ♦	AT 5000. FEET (MEAS)	(WTR)

+ COMPUTED VALUE

SOUTHERN UNION GATHERING COMPANY REPORT OF BTU TEST RESULTS

TO: TENNECO OIL CO (846)

REF: FLORANCE 5 (MESAVERDE)

4064

TOTAL

NORTHWEST NEW MEXICO (70)

DATE OF THIS TEST: 6/28/83
DATE OF LAST TEST: 6/06/82
TEST FREQUENCY: 12

RESULTS: SPECIFIC GRAVITY: 0.6872

BTU/CF @ 14.73/60F/DRY: 1194.4

MOL % G. P. M. CARBON DIOXIDE 0.985 0.0000 0.0000 NITROGEN 0.150 0.0000 85. 080 METHANE 2.0810 ETHANE 7. 780 3. 249 0.8940 PROPANE 0.542 0.1770 ISOBUTANE 0.891 0.2810 N-BUTANE 0. 297 0.1080 ISOPENTANE 0. 231 0.0830 N-PENTANE 0.3620 0.823 HEXANE +

100.028

3. 9860

-TENNECO WELL HISTORY-

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NEW MEXICO OIL CONSERVATION COMMISSION GAS-OIL RATIO TESTS

C-116

Revised 1-1-65

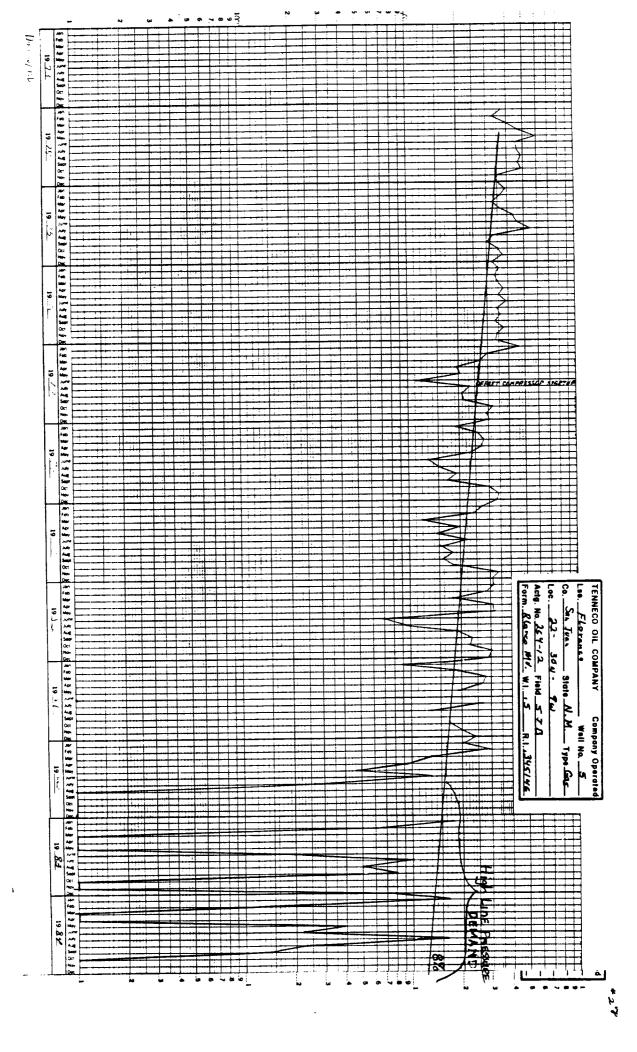
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will be 0.50. Report casing pressure in lieu of tubing pressure for any well producing through casing. Mail original and one copy of this report to the district office of the New Mexico Oll Conservation Commission in accordance with Rule 301 and appropriate pool rules.	ell will be assigned og gas-oil ratio test, nore than 25 percent. lowables when author volumes must be repu				Florance	LEASE NAME	P.O. Box 3249 Eng	TENNECO OIL COMPANY
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(Date)

NEW MEXICO OIL CONSERVATION COMMISSION GAS-OIL RATIO TESTS

C-116 Revised 1-1-65

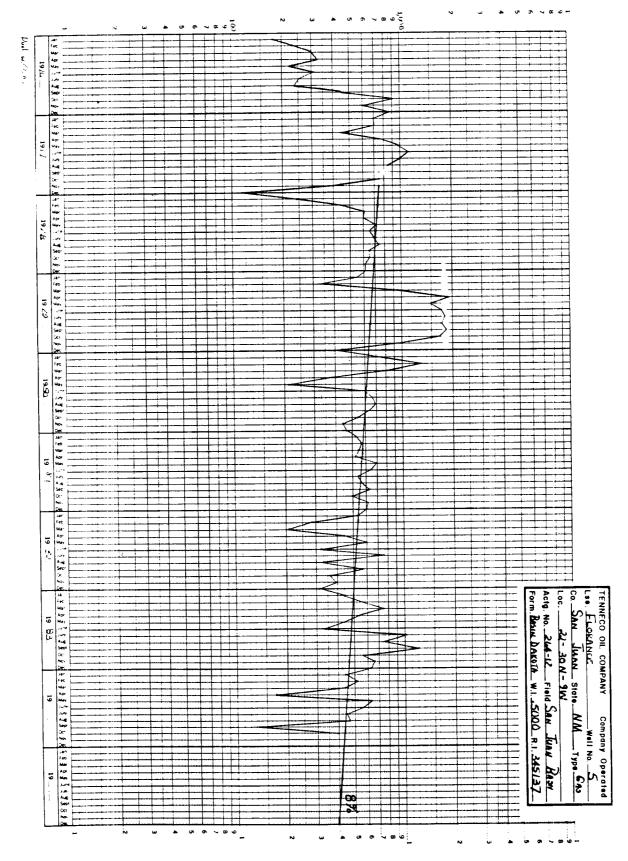
will be 0.60. Report casing pressure in lieu of tubing pressure for any well producing through casing. Mail original and one copy of this report to the district office of the New Mexico Oli Conservation Commission in accordance with Rule 301 and appropriate pool rules.	No well will be assigned an allowable greater than the amount of oil produced on the official test. During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission. Gas volumes must be reported in MCF measured at a pressure base of 15.025 pala and a temperature of 60° F. Specific gravity base	Florance	7 7 7 7 7 7		Address P.O. Box 3249	Operator Tenneco Oil Com
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MET OF GAR IT LALLS



Divison of Smith International, Inc.

2198 East Bloomfield Highway Farmington, New Mexico 87401 Phone (505) 327-7281

July 13, 1984

Tenneco Oil Co. Western Rocky Mtn. Div. P.O. Box 3249 Englewood, Co. 80155

ATTN: Frank Weiss

Dear Mr. Weiss:

A compatibility study was conducted using the following formation water samples:

1. Florance #5

Dakota Formation

2. Florance #3B

Mesa Verde Formation

A small amount of reddish orange precipitate formed, but this is to be expected when oxygen is admitted to a water sample containing even a trace of iron. This precipitate should pose no problems in a closed system.

No solid precipatates of any other type was noted and these samples should be considered compatible for mixing in any concentrations needed.

Sincerely,

SMITH ENERGY SERVICES

Loren L. Diede

District Engineer

LLD/kr

REPORT NUMBER : 2 7718784 2472 I

COMPANY: TENNACO CIL DB. ENGLEWCCD DG. HITERIUS OF 1 HAR SALID

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