



TONEY ANAYA
GOVERNOR

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

50 YEARS



1935 - 1985

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.

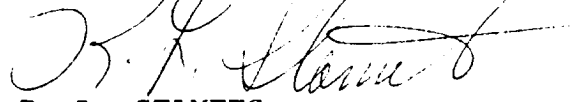
It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production 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.

APR 11 1985
OIL CON. DIV.
1037.3

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,

A handwritten signature in dark ink, appearing to read 'R. L. Stamets', with a long horizontal flourish extending to the right.

R. L. STAMETS,
Director

Tenneco Oil
Exploration and Production
A Tenneco Company

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

Western Rocky Mountain Division

February 26, 1985

skw

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,

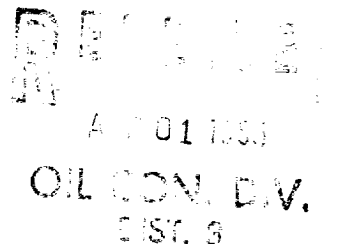
TENNECO OIL COMPANY

P.A. Doyle

P. A. Doyle
Division Production Engineer

PAD:SMc:
Enclosures
1104t

cc: Mr. John Cook
Mr. Frank Weiss



Tenneco Oil
Exploration and Production
A Tenneco Company

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

Western Rocky Mountain Division

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 objections to Tenneco Oil Company's application to commingle production as set forth above.

Name: _____ Title: _____

Date: _____

Tenneco Oil
Exploration and Production
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

WAIVER

We hereby waive any objections to Tenneco Oil Company's application to commingle production as set forth above.

Name: _____ Title: _____

Date: _____

[illegible]

Tenneco Oil
Exploration and Production
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.

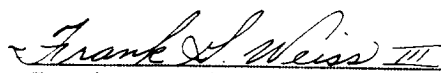
The bottom-hole pressure of the Dakota was measured with a pressure bomb and found to be 780 psig at 7500' after 8 days of shut-in. This Dakota pressure corrected to a datum of 5000' is 708 psig. A pressure bomb could not be run for the Mesaverde since this zone produces up the annulus. A dead weight 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 or 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:

	<u>DECLINE PERCENTAGE</u>	<u>REMAINING RESERVES</u>
Mesaverde	8%	1.75 BCF
Dakota	8%	37.5 MMCF

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 State New Mexico Date 12-14-84
Shut-In _____ Zero Point G.L. Tbg. Pressure 650
Casing Pressure 395 Tbg. Depth _____ Casing Perf. _____
Max. Temp. _____ Fluid Level _____

<u>DEPTH</u>	<u>PSIG</u>	<u>GRADIENT</u>
0	617	----
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 4805 Ft.

MESAVERDE

FLORENCE #5 MV/DK
MESAVERDE DAKOTA COMMINGLING
2-3/8X4-1/2 ANNULUS

DATE: 02/21/85
FILE: FILE102
PROJ: 0

G A S W E L L P R E S S U R E S

MEASURED DEPTH, FEET	5000.	FLOW STREAM ID, INCHES	2.375
TRUE VERTICAL DEPTH, FEET	5000.	FLOW STREAM OD, INCHES	6.456
GAS GRAVITY	0.687	CRITICAL TEMPERATURE	386.
BOTTOM HOLE TEMPERATURE	150.	CRITICAL PRESSURE	666.
NITROGEN, MOL %	0.	CONDENSATE GRAVITY, DEG API	50.0
CARBON DIOXIDE, MOL %	0.	WATER GRAVITY	1.047
HYDROGEN SULFIDE, MOL %	0.	PIPE ROUGHNESS, INCHES	0.00060

GAS RATE	WH TEMP	WELLHEAD	BOTTOMHOLE	P/Z	CONDENSATE	WATER
M/D-----	DEG F--	PSIG-----	PSIG-----	PSIG-----	STB/MMCF--	BM/MMCF--
0.	6.	395.	451.♦	AT	4805. FEET (MEAS)	FLUID 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
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
NITROGEN	0.150	0.0000
METHANE	85.080	0.0000
ETHANE	7.780	2.0810
PROPANE	3.249	0.8940
ISOBUTANE	0.542	0.1770
N-BUTANE	0.891	0.2810
ISOPENTANE	0.297	0.1080
N-PENTANE	0.231	0.0830
HEXANE +	0.823	0.3620
	-----	-----
TOTAL	100.028	3.9860

- TENNECO WELL HISTORY -

2898

Well Name Florance #5 Unit A Sec 22 T 30N R 9W
 TD 7540 PBD 7515 County San Juan State N.M. WI .50 RI .345146
 Drig Cost _____ Re-Comp Cost 93,010 Comp Date 9-12-65 Trn On Date _____
 Dakota IP _____ BOPD 1588 MCFD _____ BWPD 3 Hours no info SIWHP
 MV IP _____ BOPD 959 MCFD _____ BWPD 3 Hours no info SIWHP

- TUBULAR RECORD -

Size	Weight	Grade	Depth	Cement	Top Hole Cement	Size	Remarks
10 3/4	32.75#		267'	200 sx	Surface	13 3/4	
7	20 & 23		4549'	200 sx	4110'	8 3/8	
4 1/2	10.5#	J-55	7540	350/225	Surface	6 1/4	DV @ 4091
2 3/8	4.6#	J-55	7210				Prod. Tbg

Packer? Yes X No _____ Type Model D Depth 7210
 Anchor? Yes _____ No X Type _____ Depth _____
 Pump Type Seal assy. "F" nipple
 Flowing gas _____

- COMPLETION & WORKOVER RECORD -

Zone #1 - Formation Dakota Date 9-3-65 Perfs w/JSPF 7374-78, 7385-87
7408-09, 7419-20, 7434-35, 7439-40, 7445-46, 7455-56, 7480-84, 7498-7501
 Press Tstd 4000 PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type 1500 gal 15%, # balls 6, Rate _____ BPM, Press. 3400 PSI
 Frac: Fluid Volume & Type 89,000 gal 1% KCL w/4# gel, Sand: 40,000# 40/60 Mesh
 Sand: 20,000# 20/40 Mesh
 Frac Rate 47 BPM Frac Pressure 3500 PSI ISIP 2300 PSI
 Comments _____

Zone #2 - Formation Dakota Date 9/5/65 Perfs w/JSPF 4 HPR: 7269-71,
7274-78, 2 HPE: 7285-87, 7334-38, 7358-59
 Press Tstd _____ PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type 300 gal 7 1/2%, # balls _____, Rate 37 BPM, Press. 3400 PSI
 Frac: Fluid Volume & Type 101,000 gal 1% KCL w/4# gel, Sand: 40,000# 40-60 Mesh
 Sand: 40,000# 20-40 Mesh
 Frac Rate 44 BPM Frac Pressure 3500 PSI ISIP 2100 PSI
 Comments _____

Zone #3 - Formation MC-PLO Date 9-6-65 Perfs w/JSPF 2 JPF: 4971-72,
90-91, 5038-39, 97-98, 5120-21, 28-29, 32-33, 39-40, 43-44, 46-47, 48-49,
52-53, 68-69, 78-79, 83-84, 96-97, 5200-01, 20-21, 27-28, 34-35, 68-89.
 Press Tstd 4000 PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type _____, # balls _____, Rate _____ BPM, Press. _____ PSI
 Frac: Fluid Volume & Type 102,300 gal 2 1/2# gel, Sand: 60,000 # 10/20 Mesh
 Sand: 20,000 # 8/12 Mesh
 Frac Rate 70 BPM Frac Pressure 2150 PSI ISIP _____ PSI
 Comments Dropped 15 balls during frac job.

Zone #4 - Formation MV Date 9/7/65 Perfs w/JSPF 4512-13, 21-22,
24-25, 27-28, 30-31, 38-39, 44-45, 50-51, 58-59, 65-66, 72-73, 4600-01, 07-08,
09-10, 14-15, 58-59, 63-64, 4707-08, 12-13, 17-18, 55-56, 68-69, 76-77, 4814-15
 Press Tstd 4000 PSI, Spot Acid - Type _____ Gallons _____ BDISIP _____
 Acid: Vol. & Type _____, # balls _____, Rate _____ BPM, Press. _____ PSI
 Frac: Fluid Volume & Type 107,000 gal 3 1/2# gel, Sand: 60,000 # 10/20 Mesh
 Sand: 20,000 # 8/12 Mesh
 Frac Rate 64 BPM Frac Pressure _____ PSI ISIP _____ PSI

- CASING REPAIR RECORD -

Depth of Leak _____, # of squeezes required _____, # of sx used _____
 Cathodic Protection? Yes _____ No _____ Date Installed _____

Comments Originally completed in MV open hole to 4542 in 1951. IP was 7364
MCFD. Deepended into Dakota & dualled w/4 1/2" csq in 1965.

Prepared By: _____ Date: _____ Verified By: PA Date: 6/6/84

C-116
Revised 1-1-65

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 psia and a temperature of 60° F. Specific gravity base 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 Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

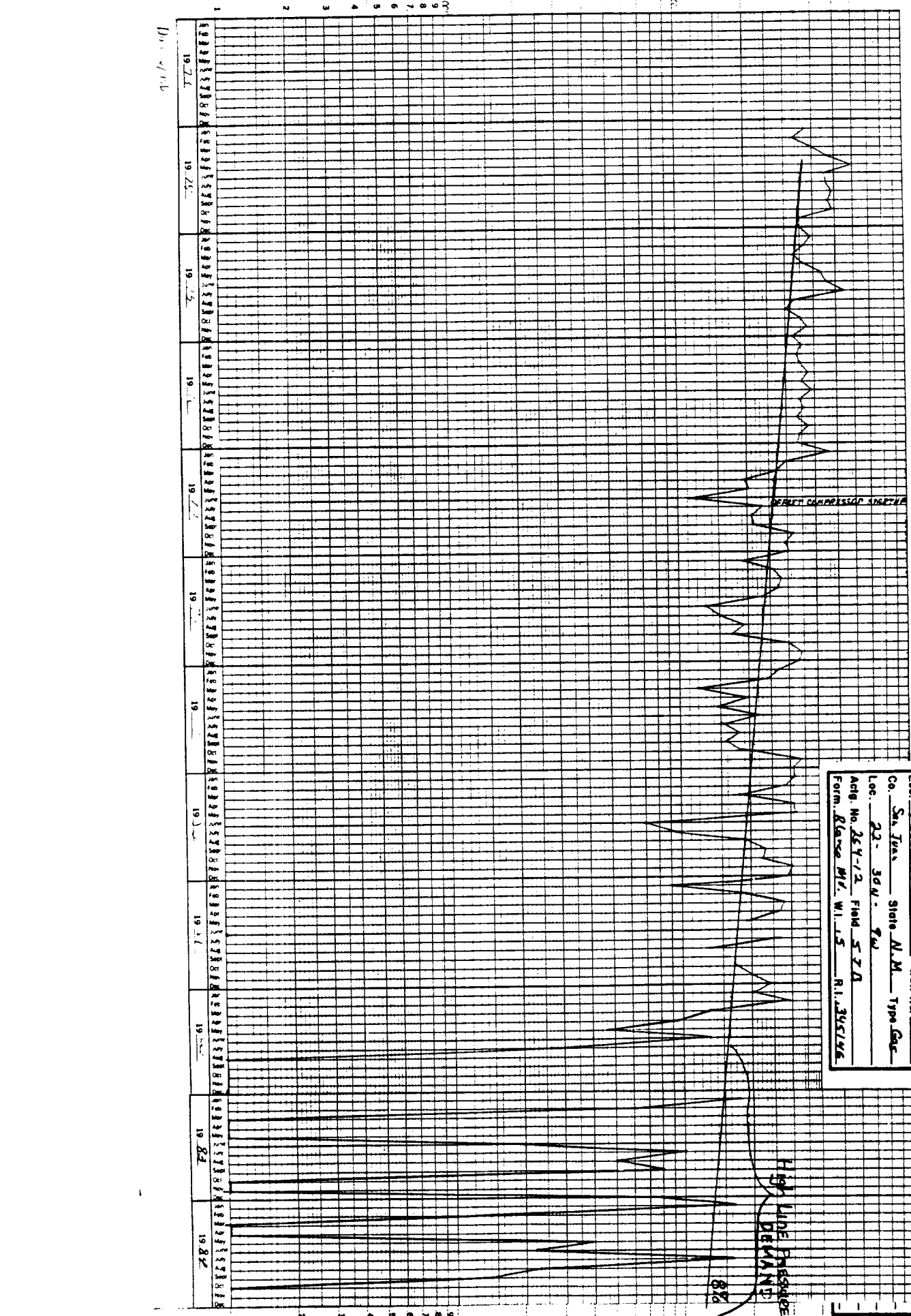
I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Administrative Supervisor

(Date) 2-21-85

C-116
Revised 1-1-65

2011.11.15
(Date)

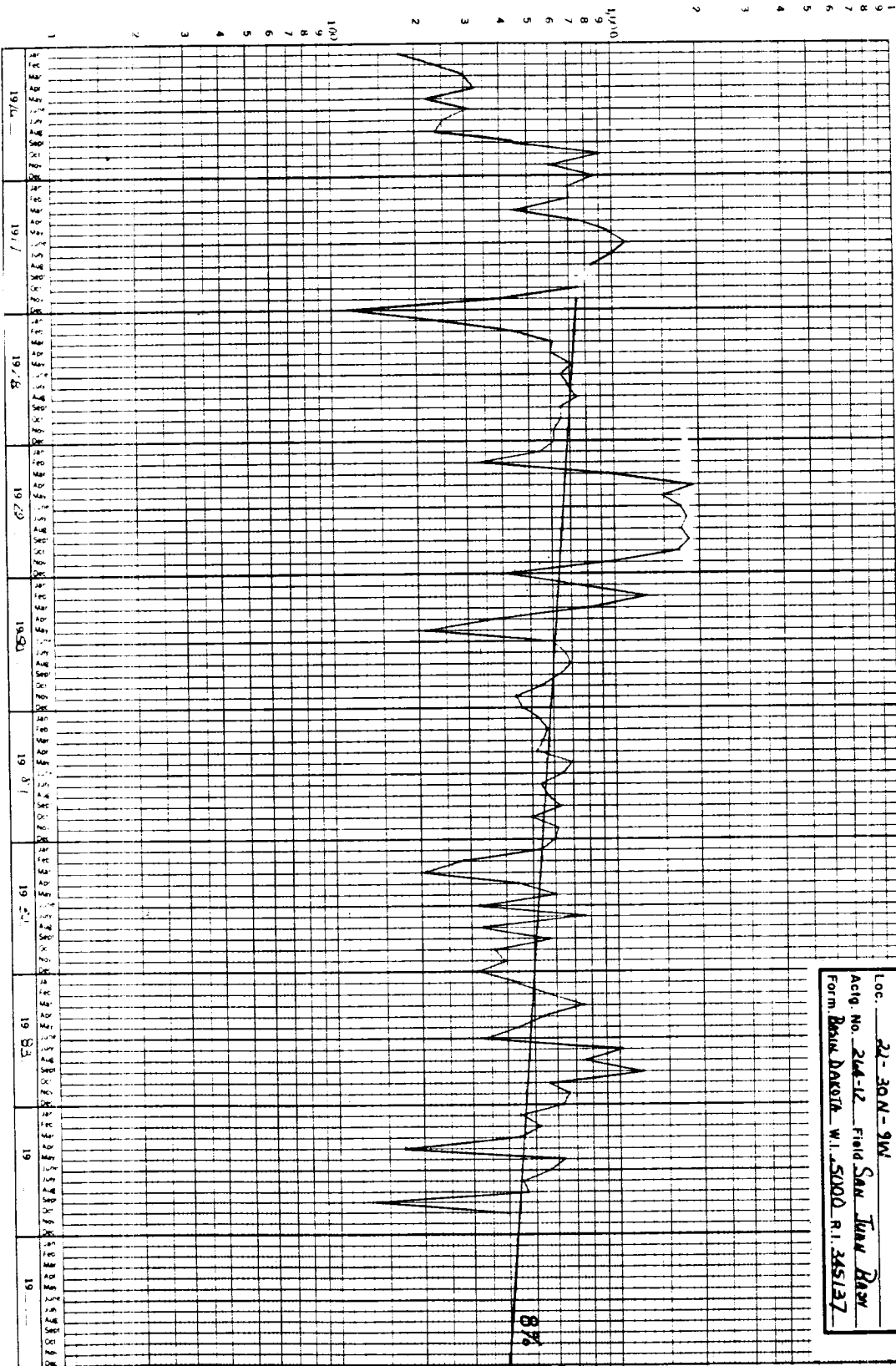


TENNECO OIL COMPANY Company Operated
 Loe. Elkton Well No. 5
 Co. S. Iva State N.M. Type Gas
 Loc. 23-30N-7W
 Acq. No. 264-12 FIDM 570
 Form. Black Mt. W.I. 15 R.I. 345146

100

MEF OF SAN JUAN

Well w/110



TENNECO OIL COMPANY Company Operated
Lse. FLOKINGT Well No. 5
Co. SAN JUAN State NM Type GAS
Loc. 21-30N-9W
Acq. No. 244-12 Field SAN JUAN BASIN
Form. Basin DAKOTA W.I. 5000 R.I. 345127

SMITH ENERGY SERVICES

Division 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:

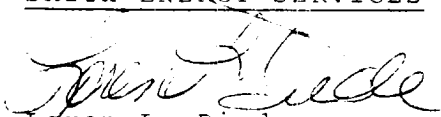
A compatibility study was conducted using the following
formation water samples:

- | | |
|-----------------|----------------------|
| 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 precipitates 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
DATE : 7/12/84

COMPANY : KENNEDY OIL CO.
ENGLEWOOD CO.

ATTENTION OF : FARMER, WILL

COUNTY :
FORMATION : DAKOTA
WELL : FLEARNER

DATE SAMPLED :
FIELD :
LEAGE : 45
GSS ANALYST : JERRY DODGE

WATER ANALYSIS
=====

SPECIFIC GRAVITY	1.010	PH :	7.20
CHLORIDE :	8038.175 mg/l	CALCIUM :	55.110 mg/l
BICARBONATE :	345.153 mg/l	MAGNESIUM :	35.733 mg/l
SULFATE :	1200.000 mg/l	TOTAL IRON :	1.751 mg/l
SULFIDE :	0.000 mg/l	SODIUM :	2021.262 mg/l
POTASSIUM :	0.000 mg/l		
TOTAL HARDNESS (as CaCO ₃) :			17186.126 mg/l
TOTAL DISSOLVED SOLIDS :			
RESISTIVITY :	0.600 CM METERS @		20.0 DEGREES C-4.000 CM

Sample Source :

Analyst's Remarks :

1000

[illegible]

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group (n = 10) and the experimental group (n = 10). The control group received a placebo (P) and the experimental group received a 10 mg/kg dose of the drug (D). The subjects were then divided into two subgroups: the control group (n = 5) and the experimental group (n = 5). The control group received a placebo (P) and the experimental group received a 10 mg/kg dose of the drug (D). The subjects were then divided into two subgroups: the control group (n = 5) and the experimental group (n = 5). The control group received a placebo (P) and the experimental group received a 10 mg/kg dose of the drug (D).

[illegible]

755-511-1177 1.800.678.7772

Sample Form:

FINAL VERDICT