



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE October 24, 1984

RE: Proposed MC _____
Proposed DHC ☒ _____
Proposed NSL _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated October 23, 1984
for the Tenneco Oil Co. Lease #20 B-24-30N-9W
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Approve

Yours truly,

Paul D. Chang

Tenneco Oil Company

A Tenneco Company

Western Rocky Mountain Division

P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800

Delivery Address:
6162 South Willow Drive
Englewood, Colorado



Attn: Frank Chubb

October 2, 1984

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

Attention: Gilbert Quintana

RE: Florance 20
Sec. 24, T30N, R9W
San Juan County, NM

Dear Mr. Quintana:

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

Questions concerning this request can be directed to Mr. Mark Owen (303/740-4836).

Very truly yours,

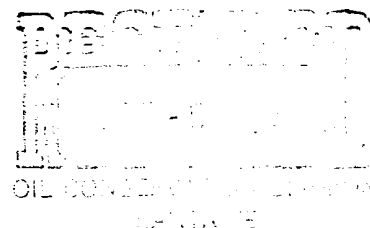
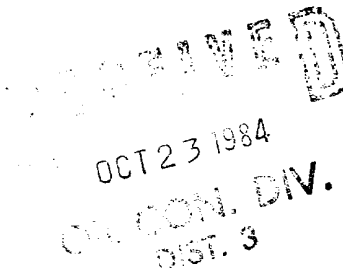
TENNECO OIL COMPANY

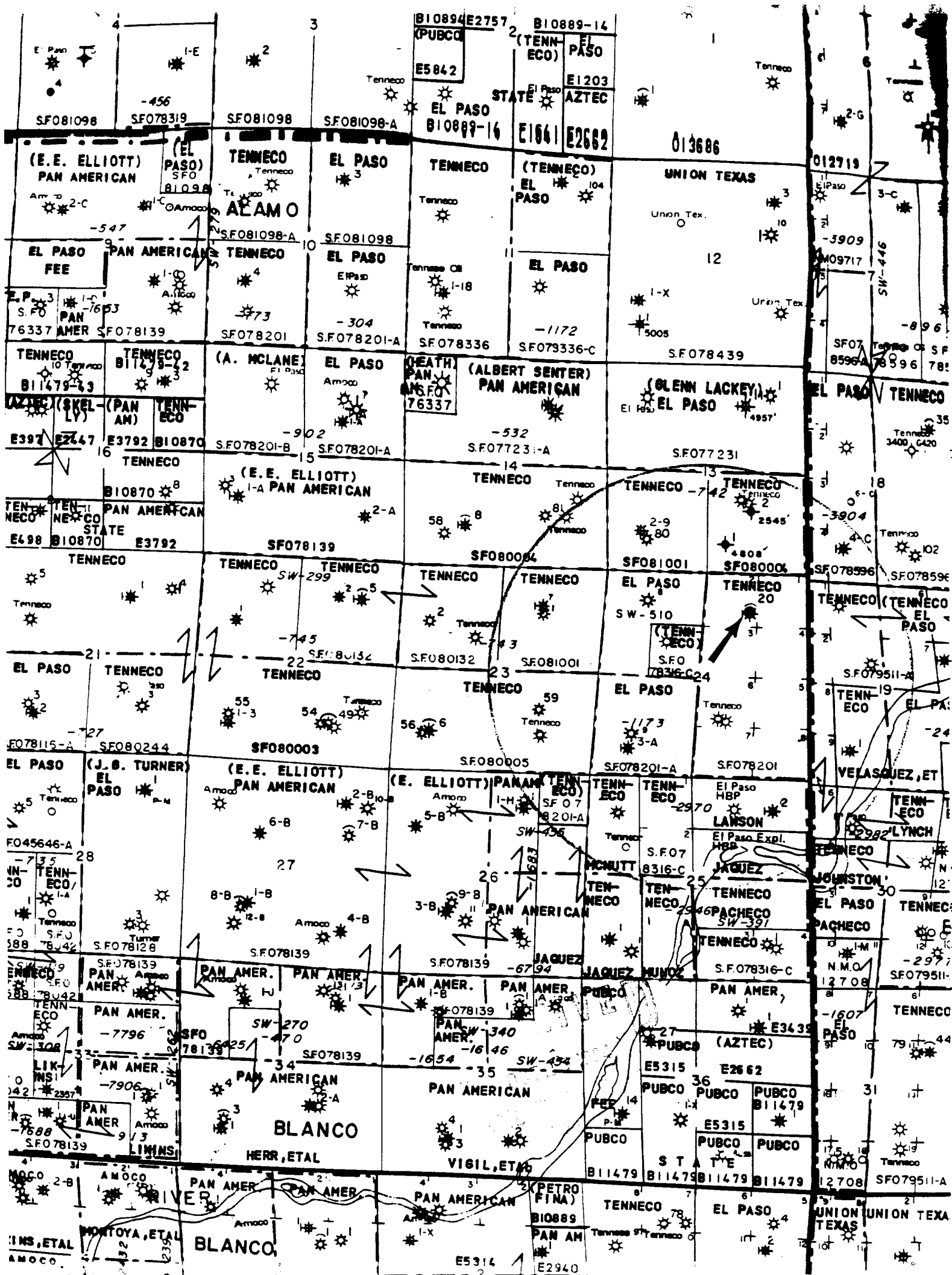
Paul Doyle

Paul Doyle
Division Production Engineer

SMc:srp
Enclosures

cc: J. Cook
F. Weiss





Tenneco Oil Company

A Tenneco Company

Western Rocky Mountain Division

P.O. Box 3249
Englewood, Colorado 80155
(303) 740-4800

Delivery Address:
6162 South Willow Drive
Englewood, Colorado



October 2, 1984

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

RE: Florance 20
Sec. 24, T30N, R9W
San Juan County, NM

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: Gilbert Quintana

We would appreciate your returning one copy to the undersigned.

Very truly yours,

TENNECO OIL COMPANY

Paul Doyle
Division Production Engineer

SMc:srp

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

The Florance #20 was completed as a Mesaverde-Dakota dual in July, 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 890 psig at 7000' after 8 days of shut-in. This Dakota pressure corrected to a datum of 5000' is 804 psig. A pressure bomb could not be run for the Mesaverde since this zone produces up the annulus. A dead weight surface pressure of 398 psig was recorded for the Mesaverde after 8 days of shut-in and the fluid level on the annulus was recorded at 4185'. The bottomhole pressure for the Mesaverde was then calculated to be 812 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 several offsets to the Florance #20. 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 90% assigned to the Mesaverde and 10% assigned to the Dakota.

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

REMOVED

OCT 23 1984

OK C. H. DIV.
RHS

Frank G. Weiss III

Frank G. Weiss III
Senior Production Engineer

FGW/dw:3403

FLORANCE # 20

DETERMINATION OF ALLOCATION PERCENTAGES

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

	<u>DECLINE PERCENTAGE</u>	<u>REMAINING RESERVES</u>
Mesaverde	12%	372 MM
Dakota	12%	42 MMCF

FGW/dw:3403

OCT 23 1984
OIL CON. DIV.
DIST. 3

B & R SERVICE, INC.

P. O. Box 1048

Farmington, New Mexico 87499

(505) 325-2393

DAKOTA FORMATION

Company Tenneco Oil Co. Lease Florance Well 20
County San Juan State New Mexico Date 3-27-84
Shut-In 8 Days Zero Point G.L. Tbg. Pressure 712
Casing Pressure 382 Tbg. Depth _____ Casing Perf. _____
Max. Temp. _____ Fluid Level _____

<u>DEPTH</u>	<u>PSIG</u>	<u>GRADIENT</u>
0	712	----
1000	731	.019
2000	750	.019
3000	769	.019
4000	787	.018
5000	804	.017
6000	821	.017
7000	890	.069

MESAVERDE

8 Day Shut In Pressure Test

Dead Weight Surface Pressure 398 psi

Annulus Fluid Level 4185'

Well Name Florance 20 Unit B Sec 24 T 30N R 9W
 TD 7124 P8TD 7097 County San Juan State N.M. WI 500 RI 3375
 Drlg Cost _____ Re-Comp Cost \$67,400 Re-Comp Date 7-8-65 Trn On Date 1954(MV)
 MV(1954) IP _____ BOPD 8318 MCFD _____ BHPD 24 Hours 1060 SIWHP
 Dakota IP _____ BOPD 1065 MCFD _____ BHPD 4 Hours 2120 SIWHP

- TUBULAR RECORD -

Size	Weight	Grade	Depth	Cement	Top Cement	Hole Size	Remarks
10-3/4"	33#	H-40	216	200 sx	Surf	13-3/4	
7-5/8	26#	J-55	4182	200 sx	3300'	9-7/8	
4-1/2"	10.5611.6	J-55	7124	730 sx	---	6-1/4	DV @ 3789'
2-3/8"	4.7#	J-55	6710				Dak strg. F/N in tubing.

Packer? Yes X No _____ Type _____ Model F Depth 6710'
 Anchor? Yes _____ No _____ Type _____ Depth _____
 Pump Type Flug gas (MV up annulus) Note: Old Model "D" @ 6795'

- COMPLETION & WORKOVER RECORD -

Zone #1 - Formation Dakota Date 6-12-65 Perfs w/JSPF 2 HPF: 6950, 56, 80-82, 7008-14, 67-73
 Press Tstd 4000 PSI, Spot Acid - Type 250 Gallons 7-1/2 MCA BDISIP
 Acid: Vol. & Type 2500 g 7-1/2% MCA, # balls 24, Rate 25 BPM, Press. 2800 PSI
 Frac: Fluid Volume & Type 69,000 gal wtr _____, Sand: 18,500 # 20-40 Mesh
 Frac Rate 20 BPM Frac Pressure 4000 PSI ISIP _____ PSI
 Comments 2nd Dakota zone: perf'd 6958-6868 4 HPF, 500 gal 7-1/2% spearheaded, frac'd w/69,000 gal wtr/57,500 # 20/40 # 35 BPM & 3800 psi. ISIP = 2400 psi

Zone # 2 - Formation MV-PL0 Date 6-15-65 Perfs w/JSPF 3 HPF: 4753-54, 67-68, 78-79, 84-85, 90-91, 95-96, 4810-11, 20-21, 50-51, 61-62, 66-67, 82-83, 87-88, 98-99.
 Press Tstd 4000 PSI, Spot Acid - Type 250 Gallons 7-1/2% MCA BDISIP
 Acid: Vol. & Type 500 gals 7-1/2%, # balls _____, Rate _____ BPM, Press. 1500 PSI
 Frac: Fluid Volume & Type 89,000 gal 3-1/2# gel, Sand: 20,000 # 8-12 Mesh
 Frac Rate 40 BPM Frac Pressure 32000 PSI ISIP -0- PSI
 Comments Spearheaded acid. Dropped 10 balls during frac job.

Zone # 3 - Formation MV-CH Date 6-15-65 Perfs w/JSPF 2 HPF: 4200-01, 07-08, 13-14, 97-98, 4302-03, 06-07, 16-17, 26-27, 30-31, 34-35, 43-44, 47-48, 53-54, 59-60, 71-72, 4525-26, 32-33, 34-35, 45-46, 48-49, 76-77, 82-83
 Press Tstd 4000 PSI, Spot Acid - Type 750 Gallons 7-1/2% BDISIP
 Acid: Vol. & Type 750 g 7-1/2%, # balls _____, Rate _____ BPM, Press. _____ PSI
 Frac: Fluid Volume & Type 80,000 g 3-1/2# gel, Sand: 20,000 # 8-12 Mesh
 Frac Rate 45 BPM Frac Pressure 3400 PSI ISIP -0- PSI
 Comments Spearheaded acid job, dropped 20 balls during frac job.

- CASING REPAIR RECORD -

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

Comments Location (footage) 990' FNL, 1650' FEL, 24, 730N, R9W
Well originally completed naturally in MV (open hole) in 1954.
Well was deepened & 4-1/2" casing run in 1965.

Prepared By: PAO Date: 2-2-84 Verified By: _____ Date: _____

OCT 23 1984

OIL CON. DIV.
DIST. 2

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P.O. BOX 208
SANTA FE, NEW MEXICO 87501

Form C-116
Revised 10-1-78

GAS-OIL RATIO TESTS

Operator Tenneco Oil Co.		Pool Basin Dakota		County San Juan											
Address P.O. Box 3249 Englewood, CO 80155				Type of Test - (X) ☒ Scheduled ☐											
				Completion ☐ Special ☒											
LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST				GAS - OIL RATIO CU.FT./BBL.
		U	S	T	R						WATER BBL.S.	GRAV. OIL BBL.S.	GAS M.C.F.		
Fiorance	20	B	24	30N	9W	8/29/84	F	48/64		24	0	0	28	0	

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 allowable when authorized by the Division.

Gas volume 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 Division 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.

Charles J. [Signature]
Administrative Supervisor

(Title)

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P.O. BOX 2028
SANTA FE, NEW MEXICO 87501

Form C-116
Revised 10-1-78

GAS-OIL RATIO TESTS

Operator Tenneco Oil Co.		Pool Mesaverde		County San Juan									
Address P.O. Box 3249 Englewood, CO 80155		Type of Test - (X) ☒ Scheduled ☐		Completion ☐ Special ☒									
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW. ABL.	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU. FT./BB
		U	S	T						R	WATER OBL.	GRAV. OIL OBL.	
Florence	20	B	24	30N	9W	8/29/84	F	48/64	24	0	0	620	0

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 allowable when authorized by the Division.

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 flowing 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 Division in accordance with Rule 301 and appropriate pool rules.

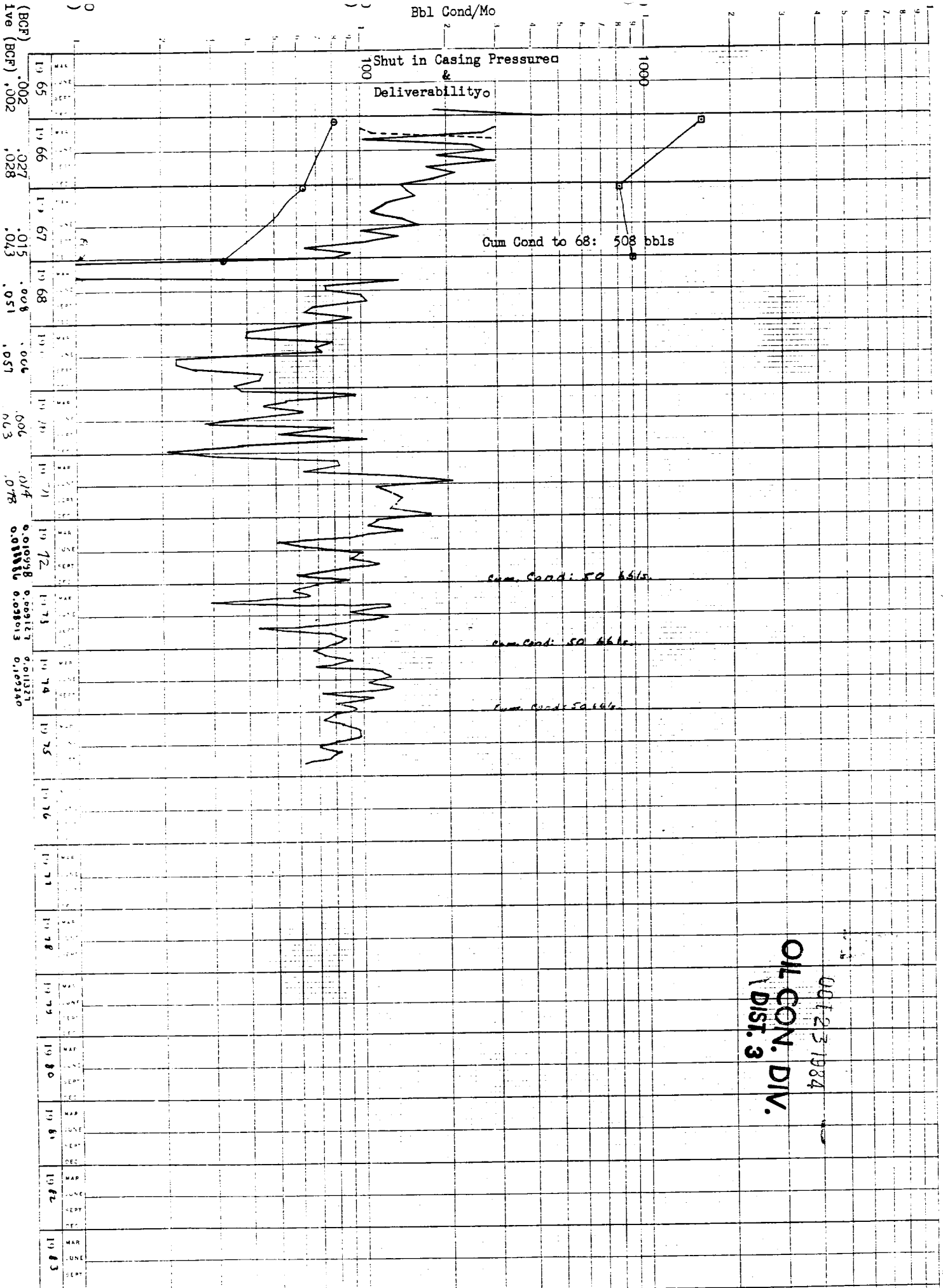
I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Therese A. B. B. B.
(Signature)
Administrative Supervisor

(Title)

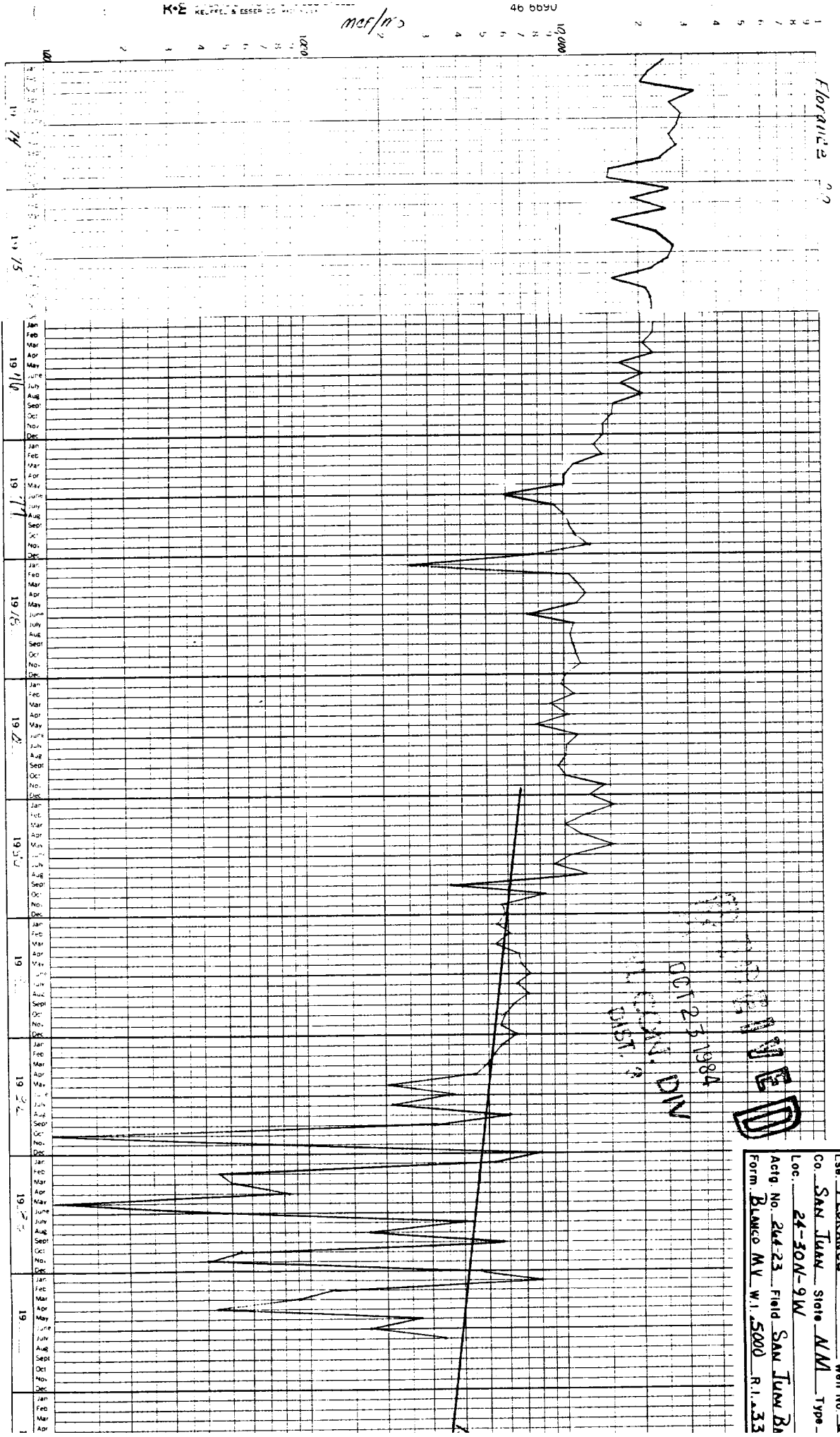
OCT 23 1984
OIL CON. DIV.
SANTA FE, N.M.

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OIL CON. DIV.
DIST. 3

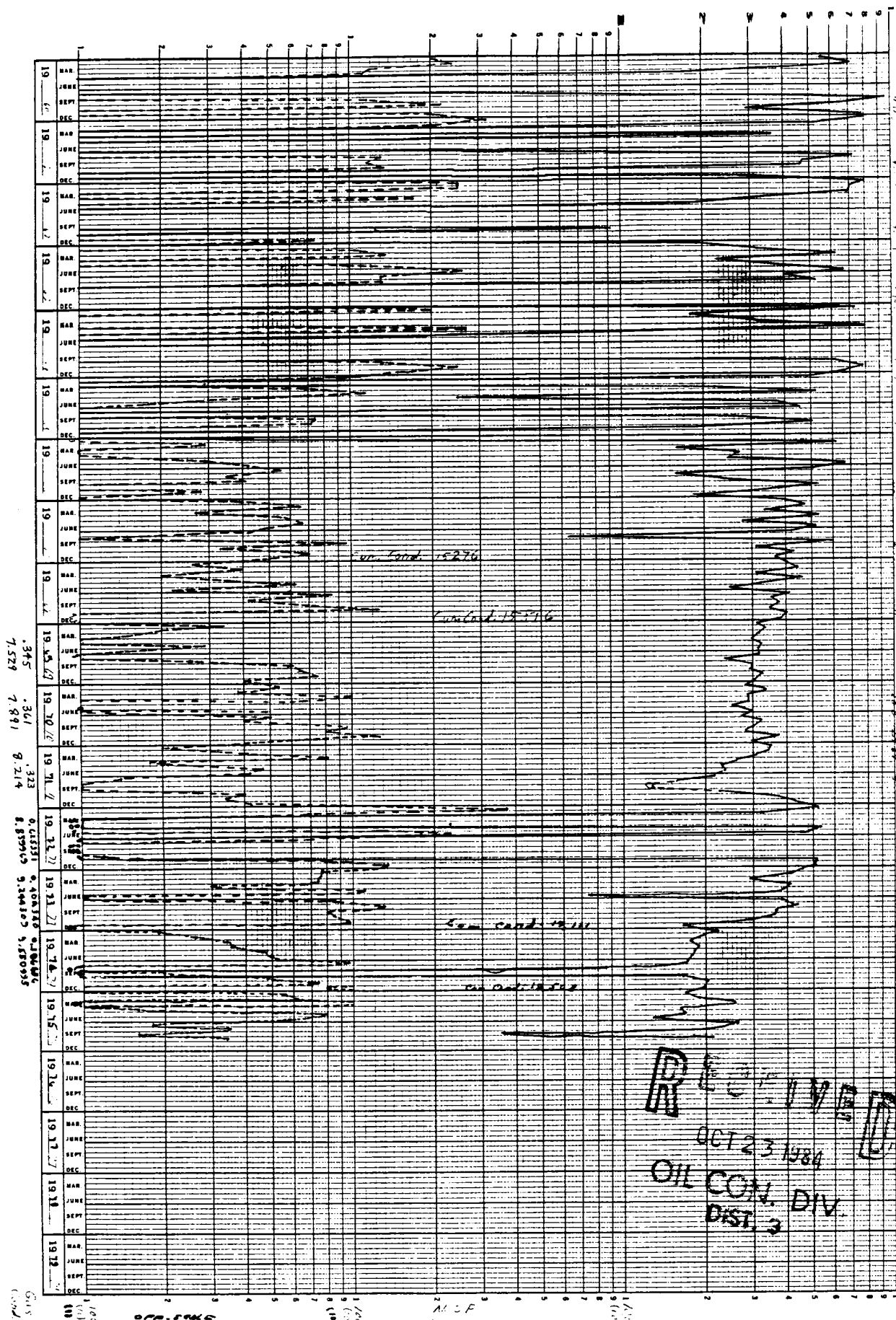


TENNECO OIL COMPANY Company Ope
 Lse FLORANCE Well No. 2
 Co. SAN JUAN State NM Type -
 Loc. 24-30N-9W
 Actg. No. 244-23 Field SAN JUAN Ba
 Form BLANCO MY W. 1,500 R. 1,33

DEC 23 1984
 CLEAN D/W
 DIST. 2



46 6690
 10,000
 K-E KEL-FEL & ESSER CO
 mac/m's
 1000
 1974
 1975
 1976
 1977
 1978
 1979
 1980
 1981
 1982
 1983
 1984



SOUTHERN UNION GATHERING COMPANY
REPORT OF BTU TEST RESULTS

TO: TENNECO OIL CO

(846)

REF: FLORANCE 20
4092
NORTHWEST NEW MEXICO

MESAVERDE FORMATION

(70)

DATE OF THIS TEST: 1/17/84
DATE OF LAST TEST: 4/27/82
TEST FREQUENCY: NOT SPECIFIED

RESULTS: SPECIFIC GRAVITY: 0.6660
BTU/CF @ 14.73/60F/DRY: 1163.9

	MOL %	G. P. M.
CARBON DIOXIDE	0.879	0.0000
NITROGEN	0.195	0.0000
METHANE	86.920	0.0000
ETHANE	7.370	1.9710
PROPANE	2.374	0.6530
ISOBUTANE	0.487	0.1590
N-BUTANE	0.721	0.2270
ISOPENTANE	0.239	0.0870
N-PENTANE	0.184	0.0660
HEXANE +	0.656	0.2890
TOTAL	100.025	3.4520

FLORENCE 20
MESAVERT
23/8X41/2 ANNULUS

DATE: 09/21/84
FILE: FLO20
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	4.050
GAS GRAVITY	0.666	CRITICAL TEMPERATURE	379.
BOTTOM HOLE TEMPERATURE	140.	CRITICAL PRESSURE	667.
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--	BW/MMCF--
0.	60.	398.	442.♦	AT	4185. FEET (MEAS)	FLUID LEVEL
			812.♦	AT	5000. FEET (MEAS)	(WTR)

♦ COMPUTED VALUE

EADY
YE
00015.33 CRU 0000.43 TCH 0005.88 KC

IFF AT 17:45CDT 09/21/84

FILED
OCT 23 1984
CON. DIV.
DIST. 3

SMITH ENERGY SERVICES
Division of Smith International, Inc.

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

June 19, 1984

Tenneco
Western Rocky Mountain Division
P.O. Box 3249
Englewood, Co. 80155

ATTN: Frank Weiss

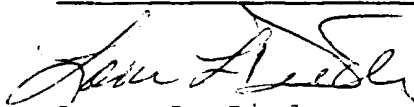
Dear Mr. Weiss:

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

- | | |
|-----------------|------------|
| 1. Jacquez #2A | Mesa Verde |
| 2. Florance #20 | Dakota |
| 3. Jacquez #1 | Mesa Verde |
| 4. Florance #9A | Mesa Verde |

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 to be compatible for mixing in any concentrations needed.

Sincerely,
SMITH ENERGY SERVICES


Loren L. Diede
District Engineer

LLD/kr

RECEIVED
OCT 23 1984
CORL. DIV.
DIST. 2

REPORT NUMBER : 2
DATE : 3/14/84

COMPANY : TENNECO
ENGLEWOOD CO.

ATTENTION OF : JOHN COOK

PROPERTY :
LOCATION : MESA VERDE
WELL : JACQUES #1

DATE SAMPLED : 3/12/84
FIELD :
LEASE : JACQUES #1
SLS ANALYST : LOREN DIEDER

WATER ANALYSIS
=====

SPECIFIC GRAVITY	1.000	pH :	6.50
CHLORIDE :	199.955 mg/l	CALCIUM :	80.100 mg/l
BICARBONATE :	61.017 mg/l	MAGNESIUM :	0.000 mg/l
SULFATE :	0.000 mg/l	TOTAL IRON :	0.000 mg/l
SULFIDE :	0.000 mg/l	SODIUM :	60.667 mg/l
POTASSIUM :	0.000 mg/l		
TOTAL HARDNESS (as CaCO ₃) :		100.060 mg/l	
TOTAL DISSOLVED SOLIDS :		401.799 mg/l	
RESISTIVITY :	2.000 OHM METERS @	60.0 DEGREES FAHRENHEIT.	

Sample Source :

Analyst's Remarks :

RECEIVED
OCT 23 1984
W. CON. DIV.
DIST. 3

REPORT NUMBER : 2
DATE : 3-5-84

COUNTY : TENNESSEE

ATTENTION OF : JOHN COOK

WELL :
LOCATION : DANDY
: #20

DATE SAMPLED : 3-5-84
FIELD :
LEADS : FLEMING
SLS ANALYST : LORIN L. DILDE

WATER ANALYSIS
=====

WELLFLO GRAVITY	1.015	OH :	0.00
CHLORIDE :	16395.305 mg/l	CALCIUM :	1042.000 mg/l
MAGNESIUM :	355.100 mg/l	MAGNESIUM :	0.000 mg/l
SULFATE :	0.000 mg/l	TOTAL IRON :	16.704 mg/l
SODIUM :	0.000 mg/l	SODIUM :	6619.000 mg/l
POTASSIUM :	5200.200 mg/l		
TOTAL HARDNESS (as CaCO ₃) :			2001.000 mg/l
TOTAL DISSOLVED SOLIDS :			24470.297 mg/l
RESISTIVITY :	0.340 CM METERS @		62.0 DEGREES FAHRENHEIT.

Sample Source :

Analyst's Remarks :

POTASSIUM TEST APPEARS TO BE TOO HIGH, BUT MAY NOT BE.
SAMPLE APPEARS TO BE A COMBINATION OF FRESH WATER AND
FORMATION WATER.

RECEIVED
OCT 23 1984
OIL CON. DIV.
DIST. 6

REPORT NUMBER : 1
DATE : 3-14-84

CUSTOMER : TENNECO

ATTENTION OF : JOHN COOK

LOCATION :
WELL : MESAVERDE
#9A

DATE SAMPLED : 3-12-84
FIELD :
LEASE : FLORANCE
SEAL ANALYST : LUREN L. DIEDE

WATER ANALYSIS
=====

SPECIFIC GRAVITY	1.000	pH :	6.50
CHLORIDE :	199.955 mg/l	CALCIUM :	120.240 mg/l
BICARBONATE :	61.017 mg/l	MAGNESIUM :	0.000 mg/l
SULFATE :	0.000 mg/l	TOTAL IRON :	0.000 mg/l
SULFIDE :	0.000 mg/l	SODIUM :	14.707 mg/l
POTASSIUM :	0.000 mg/l		
TOTAL HARDNESS (as CaCO ₃) :			100.060 mg/l
TOTAL DISSOLVED SOLIDS :			395.919 mg/l
RESISTIVITY :	9.000 OHM METERS @		60.0 DEGREES FAHRENHEIT.

Sample Source :

Analyst's Remarks :

EST 23 1984
OIL CON. DIV
DIST. 3

REPORT NUMBER : 1
DATE : 3 6 84

CLIENT : KENNEDY
LOCATION : MESA VERDE
SITE : JACQUES #2A

ATTENTION OF : JOHN COOK
DATE SAMPLED : 3 5 84
FIELD :
LEADS : JACQUES #2A
SES ANALYST : LUREN L. DILDE

WATER ANALYSIS
=====

SPECIFIC GRAVITY	1.000	PH :	8.80
CHLORIDE :	159.955 mg/l	CALCIUM :	40.080 mg/l
BICARBONATE :	61.017 mg/l	MAGNESIUM :	0.000 mg/l
SULFATE :	0.000 mg/l	TOTAL IRON :	0.000 mg/l
FLUORIDE :	0.000 mg/l	SODIUM :	105.827 mg/l
POTASSIUM :	0.000 mg/l		
TOTAL HARDNESS (as CaCO ₃) :			100.000 mg/l
TOTAL DISSOLVED SOLIDS :			407.679 mg/l
CONDUCTIVITY :	8.000 OHM METER @		25.0 DEGREES CENTIGRADE

Sample Source :

Analyst's Remarks :

7-7-84