

# Mallon Oil Company

Denver/Colorado ♦ Carlsbad/New Mexico

DHC-1102 3.8.95

a Mallon Resources subsidiary

RECEIVED

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OIL CONSERVATION DIV.  
SANTA FE

February 9, 1995

State of New Mexico  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87504-2088

Attention: Mr. David Catanach

Re: Application for Administrative Approval for Downhole Commingling  
Mobil '12' Federal #1  
Unit B Sec. 12, T23S R26E, Carlsbad, S.  
Eddy County, NM

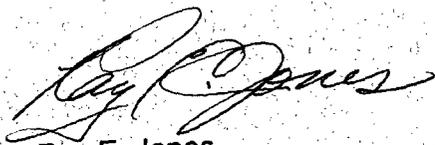
Dear Mr. Catanach:

Enclosed please find Mallon Oil Company's application for administrative approval to downhole commingle the Canyon and Strawn zones in the above referenced well. The zones were completed in July 1994 and both appear to be limited reservoirs. Mallon Oil Company requests downhole commingling approval of these zones so that the Morrow and Atoka zones may be returned to production. The Canyon and Strawn would be produced through one tubing string and the Morrow and Atoka would be produced through another. The Morrow and Atoka downhole commingling was approved by Commission Order R-4953, a copy of which is included in the application.

If you have any questions, please do not hesitate to call me.

Sincerely,

MALLON OIL COMPANY



Ray E. Jones  
Vice President, Engineering

REJ/sah

Application for Downhole Commingling  
Under NMOCD Rule 303C  
For Gas Wells

1) By operator:  
Mallon Oil Company  
999 18th Street, Suite 1700  
Denver, CO 80202

2) In the well:  
Mobil '12' Federal #1  
NWNE Sec. 12, T23S-R26E  
Eddy County, New Mexico

For the pools:	OIL	GAS
Carlsbad, S. - Canyon	79	30
Carlsbad, S. - Strawn	21	70

- 3) A plat of the area surrounding the Mobil '12' Federal #1 well showing the ownership of direct and diagonal offset locations is included.
- 4) The Canyon and Strawn are gas zones, therefore no state forms C116 are required or available. The November 1994 production from the Strawn was 43327 MCF and 45 BBLS oil. The Canyon produced 18279 MCF of gas and 171 BBLS oil in the same time period.
- 5) Production decline curves are included for the Canyon and Strawn production. The zones were completed in July 1994. Since initial completion, the production from both zones has been characteristic of limited reservoir systems with steeply declining production.
- 6) The Canyon bottom hole pressure was measured on October 23, 1994, after a two-day shut in and was 1287 psi at 9800 feet. The Strawn bottom hole pressure was measured on October 21, 1994, after a two day shut-in and was 2491 psi at 10274 feet. Corrected to a depth of 9800 feet to compare with the Canyon zone, the Strawn pressure is 2463 psi.
- 7) There will be no loss in total gas quality or value due to mixing of the production streams. The Strawn and Canyon zones produce gas with limited condensate. November 1994 GOR values were above 100,000 SCF/BBL for both zones. A copy of gas analyses, taken in August, 1994 from these zones is included.
- 8) Because of reduced operating costs per zone, commingling of the zones would allow each individual zone to be produced to a lower economic rate and would increase ultimate recovery from all zones. Commingling of the Canyon and Strawn zones would also allow production of the Morrow and Atoka zones as well, increasing the recovery from these zones.
- 9) A proposed allocation factor of 0.3 for the Canyon and 0.7 for the Strawn is presented for NMOCD review. The factors are based upon November 1994 production of 18279 MCF from the Canyon and 43327 MCF from the Strawn.

- 10) A reference map for the Mobil '12' Federal No. 1 well and surrounding wells has been included. The direct and diagonal offset wells are:

<b>Well Name</b>	<b>Spot</b>	<b>Sec.</b>	<b>TWN.</b>	<b>RNG.</b>	<b>Operator</b>
Collatt Estate Com. #1	J	1	23S	26E	Merit Energy Company
Gulf Federal Com. #1	K	1	23S	26E	Mallon Oil Company
Humble Grace Com. #1	P	2	23S	26E	Michael P. Grace
Panagra Com. #1	B	11	23S	26E	Michael P. Grace/Nielson Ent.
Pan-Am State Com. #1	J	11	23S	26E	Marathon Oil
Echols Com. #1	J	12	23S	26E	Mallon Oil Company
Gulf Federal Com. #2	L	6	23S	27E	Mallon Oil Company
Stephens Com. #1	F	7	23S	27E	Merit Energy Company
Stephens 'A' Com. #1	N	7	23S	27E	Merit Energy Company

All offset operators and the Bureau of Land Management have been notified in writing of the proposed commingling. Those notified and their addresses are:

Merit Energy Company  
12221 Merit Drive, Suite 500  
Dallas, TX 75251

Michael P. Grace  
P.O.Box 207  
Carlsbad, NM 88220

Marathon Oil Company  
P.O.Box 552  
Midland, TX 79702

Nielson Enterprises, Inc.  
P.O. Box 370  
Cody, Wyoming 82414

Bureau of Land Management  
P.O.Box 1778  
Carlsbad, NM 88220

**OPERATORS AND WORKING INTEREST  
OWNERS ON OFFSETTING LEASES TO  
THE N/2 OF SECTION 12, T23S, R26E  
EDDY COUNTY, NEW MEXICO**

Mobil 12-1 Federal

Canyon & Strawn Formations

Acreege dedicated to the well: N/2 of Section 12, T-23-S, R-26-E

N/2 of Section 12, T-23-S, R-26E

(NM-040547 & NM-027994)

Operator: Mallon Oil Company  
999 18th Street  
Suite 1700  
Denver, Colorado 80202

Below 10,600 ft

Working Interest Owners:	Mallon Oil Company	58.4803%
	Wainoco Oil & Gas	17.7497%
	Redstone Oil & Gas	11.8850%
	W. Wesley Perry	5.9425%
	Olwick Corporation	5.9425%

Surface to 10,600 ft

Working Interest Owners:	Mallon Oil Company	58.4803%
	Wainoco Oil & Gas	17.7497%
	Redstone Oil & Gas	11.8850%
	Roemer Oil Co.	7.923333%
	Okie Crude Co.	3.961667%

S/2 of Section 12, T-23-S, R-26E

(NM-040547 & Fee)

Operator: Mallon Oil Company  
999 18th Street  
Suite 1700  
Denver, Colorado 80202

<u>Working Interest Owners:</u>	Mallon Oil Company	23.3200%
	Marathon Oil Co.	24.6100%
	Marshall & Winston	6.2589%
	Cal-Mon Oil Co.	3.0428%
	Centurion Energy	3.1206%
	Cody Energy Inc.	12.3050%
	Diverse GP III	9.1200%
	TEX-OK Energy LP	12.3050%
	Redstone Oil & Gas	2.9200%
	Monaghan Living Trst	0.0777%
	W. Wesley Perry	1.4600%
	Olwick Corporation	1.4600%

SE/4 of Section 1, T-23-S, R-26E  
(Fee)

Operator: Merit Energy Company  
12221 Merit Drive  
Suite 500  
Dallas, Texas 75251

Working Interest Owners: Merit Energy Company

Note: Pooled with the NE/4.

S/2SW/4 and NE/4SW/4 of Section 1, T-23-S, R-26-E  
(NM-040547)

Operator: to 5,000 feet - Redstone Oil & Gas Co.  
8235 Douglas Avenue  
Suite 1050  
Dallas, Texas 75225

below 5,000'- Mallon Oil Company  
999 18th Street  
Suite 1700  
Denver, Colorado 80202

Working Interest Owners: Mallon Oil Company  
Redstone Oil & Gas  
W. Wesley Perry  
Olwick Corp.  
Wainoco Oil & Gas  
Matador Petroleum

S/2S/2 & NW/4SW/4 of Section 2, T-33-S, R-26-E  
(State L-1582)

Operator: Michael P. Grace  
P.O. Box 207  
Carlsbad, New Mexico 88220

Working Interest Owners: Michael P. Grace

Note: Assignments limited from surface to 12,111 feet below the

NE/4NE/4 and S/2NE/4 of Section 11, T-23-S, R-26-E  
(State K-2511-2)

Operator: Nielson Enterprises, Inc.  
P.O. Box 370  
Cody, Wyoming 82414

Working Interest Owners:	Nielson Enterprises, Inc.	75.00%
	Michael P. Grace (in unit)	25.00%

Note: N/2 Unitized, Grace owns in NW/4NE/4 and NE/4NW/4.

S/2 Except the NW/4SW/4 of Section 11, T-23-S, R-26-E  
(State K-2511)

Operator: Marathon Oil Company  
P.O. Box 552  
Midland, Texas 79702

Working Interest Owners:	Marathon Oil Company	21.875%
	Nielson Enterprises Inc. & TEX-OK Energy Inc.	43.750%
	John H. Hill	12.500%
	Seneca Oil & Gas Co.	13.333%
	Prudential Funds, Inc.	8.542%

Note: Net Working Interest goes from 70% to 65% upon recovery of

Page 4  
Application for Commingling

SW/4 of Section 6, T-23-S, R-27-E  
(NM-040547)

Operator: Mallon Oil Company

Working Interest Owners:	Mallon Oil Company	72.20955%
	Wainoco Oil & Gas Co.	15.90506%
	Redstone Oil & Gas	5.94269%
	W. Wesley Perry	2.97135%
	Olwick Corporation	2.97135%

W/2NW/4 and N/2SW/4 of Section 7, T-23-S, R-27-E  
(NM-91071 out of NM-040547)

Operator: N/2SW/4 = Merit Energy Company  
W/2NW/4 = Merit Energy Company

Working Interest Owners:	to 5,000 feet - Merit Energy Company	
	5,000' to base of the Morrow formation -	
	Merit Net Partners, LP	36.8900% Net
	Wainoco, Inc.	17.7497% Net

Note: N/2SW/4 communitized as to S/2 of Section 7.  
W/2NW/4 communitized as to N/2 of Section 7 subject to JOA



100,000

10,000

GAS  
MCF/MO

1,000

100

1994/1995

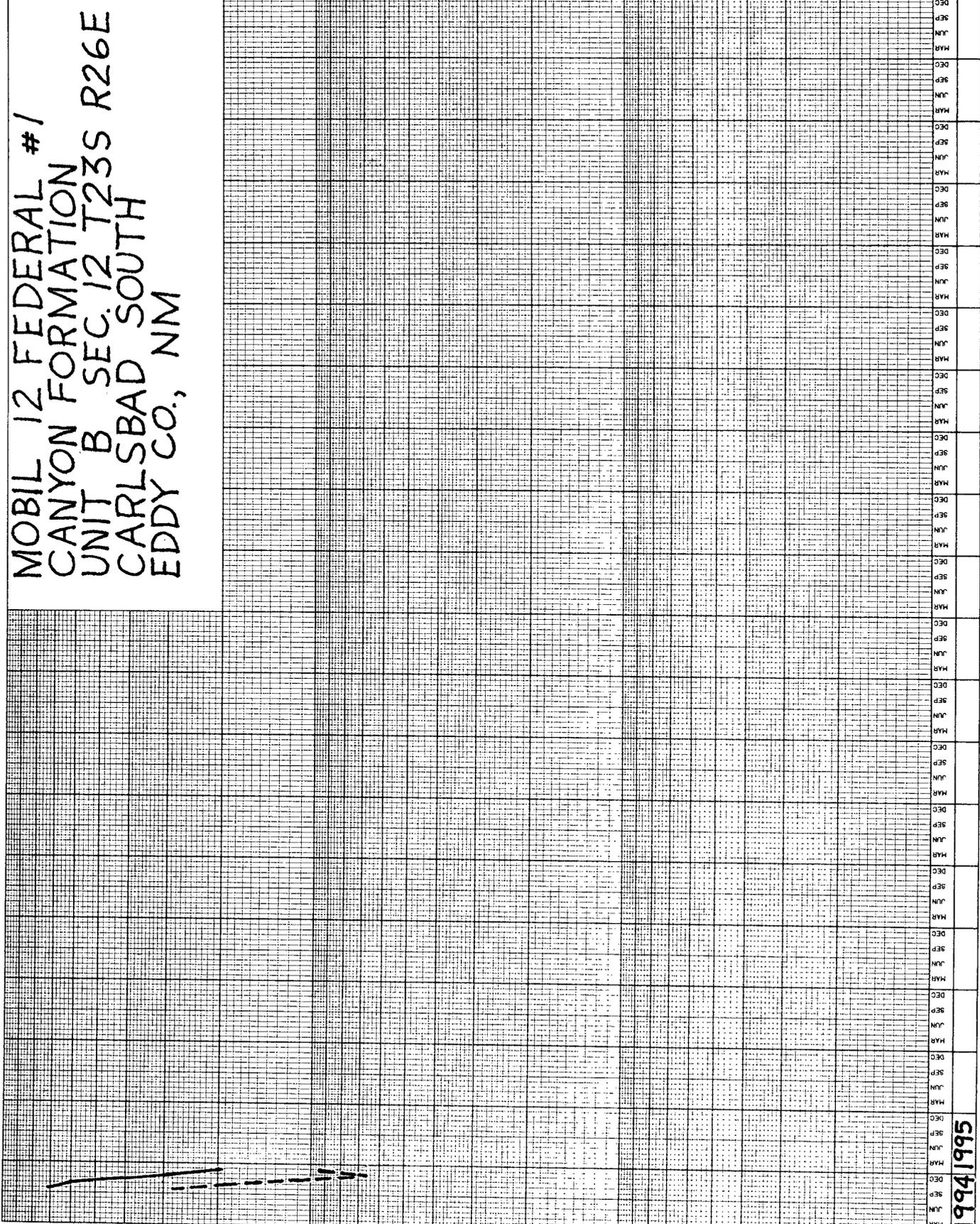
100

10

YIELD ---  
BBLs/MMCF

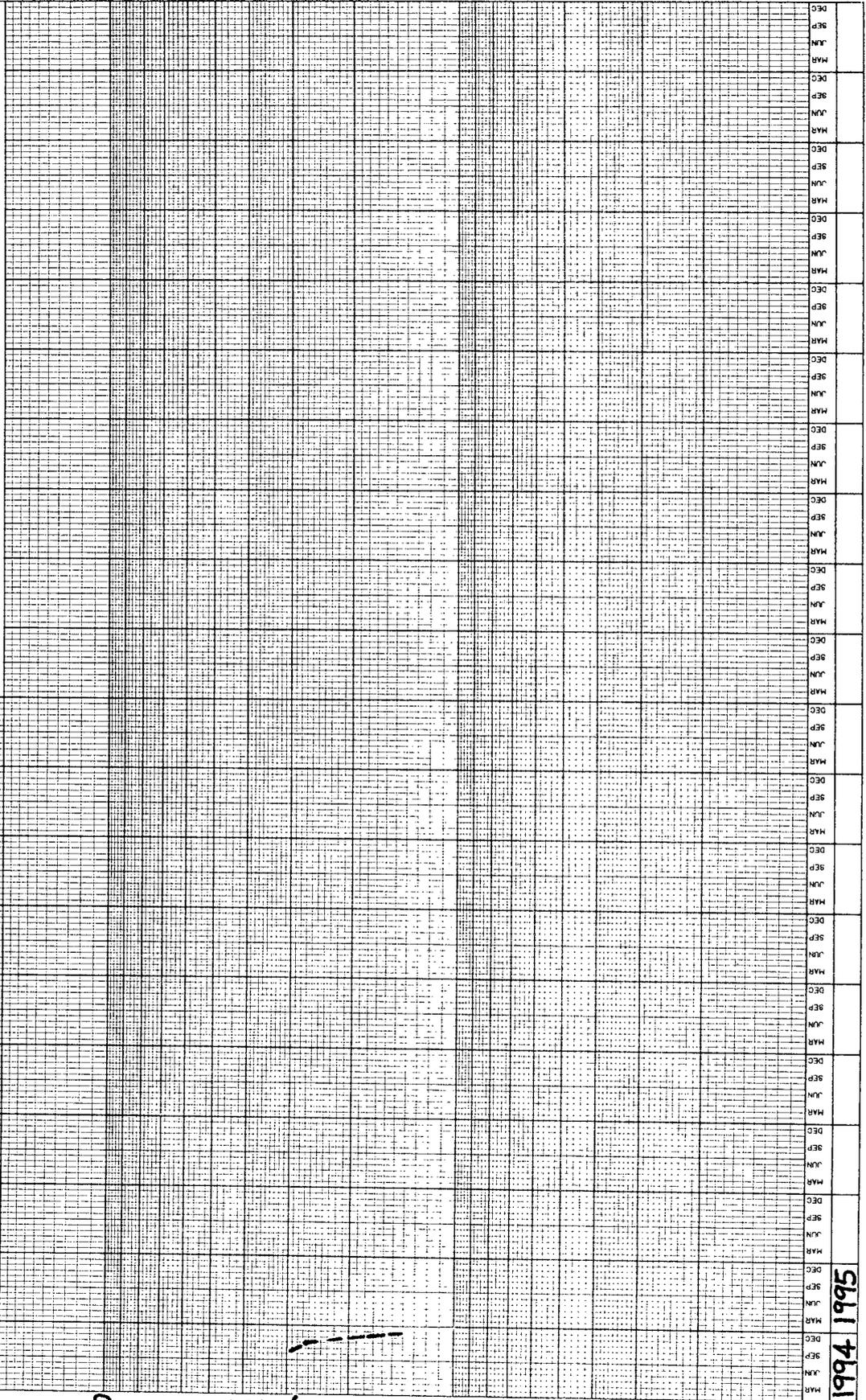
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MOBIL 12 FEDERAL #1  
CANYON FORMATION  
UNIT B SEC. 12 T23S R26E  
CARLSBAD SOUTH  
EDDY CO., NM



100'000  
100

MOBIL 12 FEDERAL #1  
STRAWN FORMATION  
UNIT B SEC. 12 T23S R26E  
CARLSBAD SOUTH  
EDDY CO., NM



GAS  
MCF/MO.

YIELD ---  
BRLS/MMCF

1994 1995

MAR 1994  
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 DEC 2025

# ARC

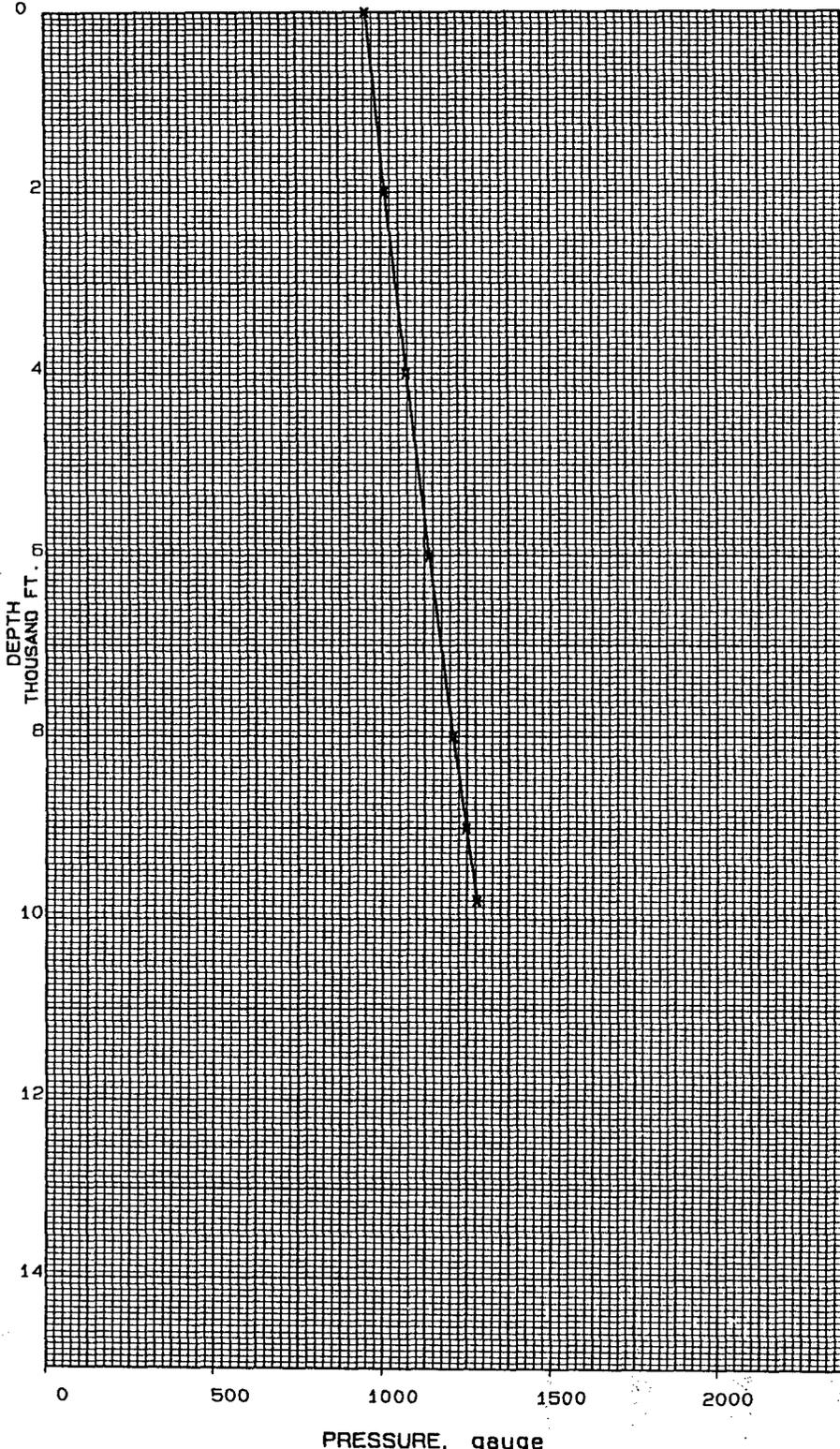
## PRESSURE DATA

INCORPORATED

P.O. Box 13268 • Odessa, Texas 79768-3268 • 915/563-2371 • FAX 915/550-0092

### INDIVIDUAL WELL DATA SHEET

COMPANY MALLON OIL COMPANY LEASE MOBIL '12' FEDERAL WELL No. 1U  
 FIELD \_\_\_\_\_ COUNTY EDDY STATE NM  
 TEST DATE 10/23/94 TIME 15:08 STATUS OF WELL SHUT-IN SHUT IN 13:40  
10/21/94



Depth feet (G.L.)	Pressure Lbs. Sq. In.	Gradient Psi/Ft.
0	957.2	
2000	1010.8	.0268
4000	1073.4	.0313
6000	1139.1	.0329
8000	1209.2	.0350
9000	1248.7	.0395
9800 R.D.	1280.0	.0391

Elev: K.B. - G.L. -  
 Pressure Datum 10103 MPP  
 Top of pay  
 Tubing 2 3/8 Depth 9808  
 S. N. 9808 Packer  
 Casing Depth  
 Perf 10080-10126  
 Total Depth  
 Formation CANYON  
 Casing Pressure  
 Tubing Pressure 957 DWG  
 Top of fluid NONE  
 Top of water NONE  
 Hrs shut in 49.4667 Flowing  
 Temp. @ - deg F  
 Last Test Date  
 Press Last Test  
 B. H. P. Change 0.0  
 Instrument No. 012474  
 Run By JOE PEREZ  
 Calculated By ORVILLE TURNER

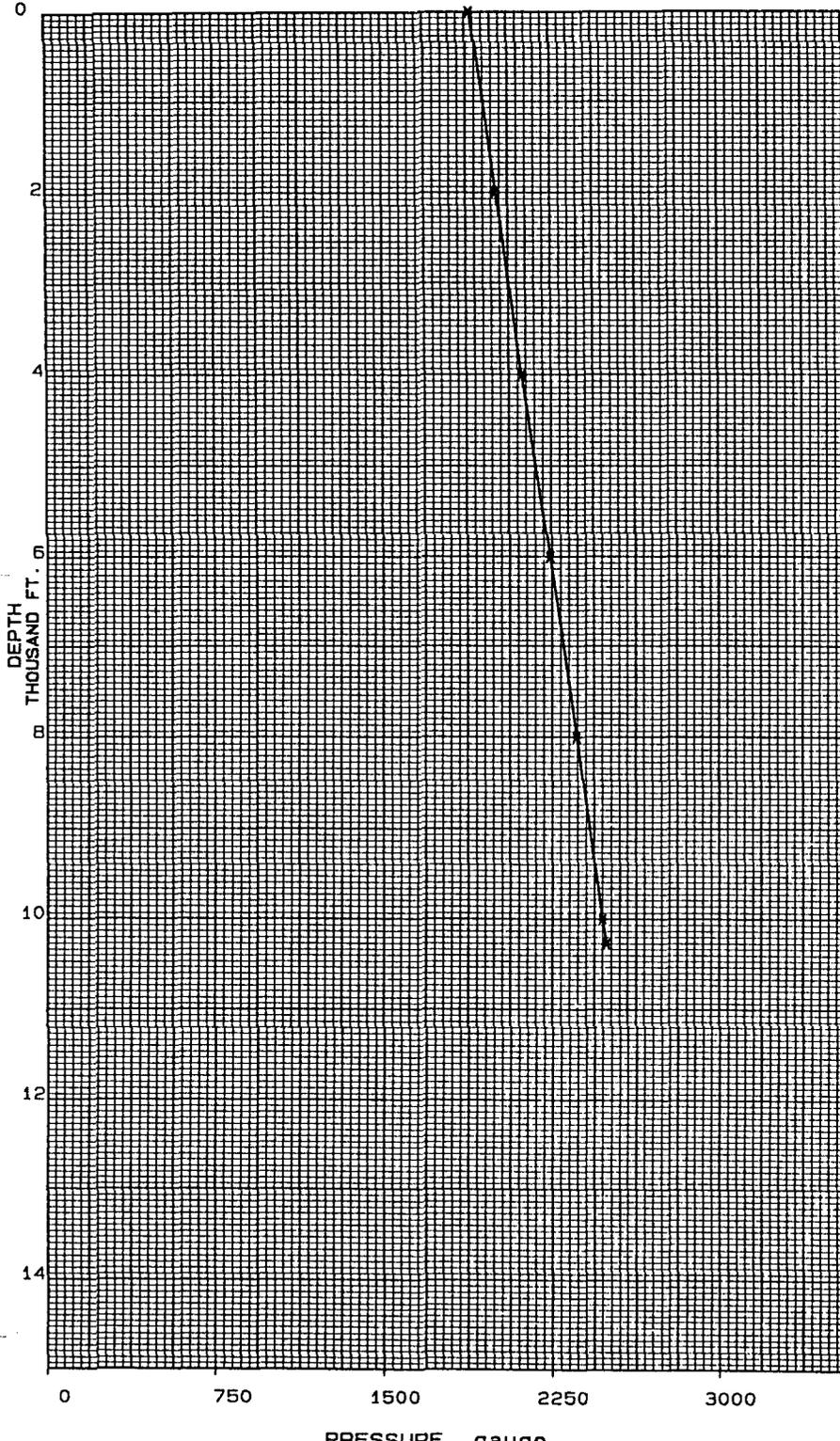
# ARC

## PRESSURE DATA

INCORPORATED

P.O. Box 13268 • Odessa, Texas 79768-3268 • 915/563-2371 • FAX 915/550-0092  
**INDIVIDUAL WELL DATA SHEET**

COMPANY MALLON OIL COMPANY LEASE MOBIL '12' FEDERAL WELL No. 1L  
 FIELD \_\_\_\_\_ COUNTY EDDY STATE NM  
 TEST DATE 10/21/94 TIME 10:50 STATUS OF WELL SHUT-IN SHUT IN 10:30 10/19/94



Depth feet (G.L.)	Pressure Lbs. Sq. In.	Gradient Psi/Ft.
0	1896.1	
2000	2008.4	.0561
4000	2120.6	.0561
6000	2243.1	.0612
8000	2360.0	.0585
10000	2473.9	.0569
10274 R.D.	2491.5	.0642

Elev: K.B. - G.L. -  
 Pressure Datum \_\_\_\_\_  
 Top of pay \_\_\_\_\_  
 Tubing 2 3/8 Depth 10285  
 S. N. 10285 Packer 10285  
 Casing \_\_\_\_\_ Depth \_\_\_\_\_  
 Perf 10382-10422  
 Total Depth 11822 PB  
 Formation STRAWN  
 Casing Pressure \_\_\_\_\_  
 Tubing Pressure 1900 DWG  
 Top of fluid NONE  
 Top of water NONE  
 Hrs shut in \_\_\_\_\_ Flowing \_\_\_\_\_  
 Temp. @ \_\_\_\_\_ deg F  
 Last Test Date \_\_\_\_\_  
 Press Last Test \_\_\_\_\_  
 B. H. P. Change 0.0  
 Instrument No. 012474  
 Run By MAX WHEELER  
 Calculated By ORVILLE TURNER

\*\*\*\*\* DAWSON NATURAL GAS SERVICES, INC. \*\*\*\*\*  
 1515 IDLEWILDE  
 P.O. BOX 7006 \* MIDLAND, TEXAS 79708-0006  
 PHONE 915/694-6000

RUN NO: 15640  
 DATE RUN: 08/23/94

STATION NAME: 104 - MOBIL 12 FED #1 STRAWN  
 COMPANY NAME: MALLON OIL COMPANY  
 LOCATION: EDDY CO., NM SECURED BY: SR DATE: 08/22/94  
 SAMPLE CONDITIONS: PRESS: 263# TEMP: 108F TIME:

\*\*\*\*\* FRACTIONAL ANALYSIS \*\*\*\*\*

@ 14.65 PSIA & 60 DEG. F.

	<u>MOL. %</u>		<u>CALC. SP.GR., (REAL)</u>
CARBON DIOXIDE	0.46		0.6131
NITROGEN	0.81		0.6134
OXYGEN			<u>CALC SP.GR., (IDEAL)</u>
H2S	0.00		0.6116
METHANE	92.06	<u>GPM (REAL)</u>	0.8117
ETHANE	4.57	1.218	
PROPANE	1.10	0.302	<u>BTU/CU.FT., (REAL)</u>
ISO-BUTANE	0.26	0.085	1077
N-BUTANE	0.25	0.079	1059
ISO-PENTANE	0.13	0.047	<u>BTU/CU.FT., (IDEAL)</u>
N-PENTANE	0.07	0.025	1074
HEXANES PLUS	0.29	0.126	1056
<b>TOTAL</b>	<u>100.00</u>	<u>1.882</u>	

\*\*\*\*\* ADDITIONAL DATA AND REMARKS \*\*\*\*\*

Z (SAT) 0.997                      Z (DRY) 0.998

COPIES TO:

REMARKS: HYDROGEN SULFIDE BY STAIN TUBE-0 MOL %;

\*\*\*\*\* DAWSON NATURAL GAS SERVICES, INC. \*\*\*\*\*  
 1515 IDLEWILDE  
 P.O. BOX 7006 \* MIDLAND, TEXAS 79708-0006  
 PHONE 915/694-6000

RUN NO: 15642  
 DATE RUN: 08/23/94

STATION NAME: 106 - MOBIL 12 FED #1 CANYON  
 COMPANY NAME: MALLON OIL COMPANY  
 LOCATION: EDDY CO., NM SECURED BY: SR DATE: 08/22/94  
 SAMPLE CONDITIONS: PRESS: 285# TEMP: 108F TIME:

\*\*\*\*\* FRACTIONAL ANALYSIS \*\*\*\*\*  
 @ 14.65 PSIA & 60 DEG. F.

	<u>MOL. %</u>		<u>CALC. SP.GR., (REAL)</u>
CARBON			DRY BASIS 0.6808
DIOXIDE	0.17		SAT BASIS 0.6801
NITROGEN	0.75		CALC SP.GR., (IDEAL)
OXYGEN			DRY BASIS 0.6787
H2S	0.00		SAT BASIS 0.6777
METHANE	83.33	<u>GPM (REAL)</u>	
ETHANE	10.14	2.705	
PROPANE	3.24	0.891	<u>BTU/CU.FT., (REAL)</u>
ISO-BUTANE	0.52	0.170	DRY BASIS 1191
N-BUTANE	0.94	0.296	SAT BASIS 1171
ISO-PENTANE	0.26	0.095	<u>BTU/CU.FT., (IDEAL)</u>
N-PENTANE	0.26	0.094	DRY BASIS 1187
HEXANES PLUS	0.39	0.169	SAT BASIS 1167
<b>TOTAL</b>	<u>100.00</u>	<u>4.420</u>	

\*\*\*\*\* ADDITIONAL DATA AND REMARKS \*\*\*\*\*

Z (SAT) 0.997                      Z (DRY) 0.997

COPIES TO:  
 REMARKS: HYDROGEN SULFIDE BY STAIN TUBE-0 MOL %;



THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
COMMISSION OF NEW MEXICO FOR  
THE PURPOSE OF CONSIDERING:

CASE NO. 5398  
Order No. R-4953

APPLICATION OF PENNZOIL UNITED,  
INC., FOR DOWNHOLE COMMINGLING,  
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 8, 1975, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 28th day of January, 1975, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Pennzoil United, Inc., is the owner and operator of the Mobil 12 Federal Well No. 1, located in Unit B of Section 12, Township 23 South, Range 26 East, NMPM, South Carlsbad Field, Eddy County, New Mexico.
- (3) That said well is a gas well which has been dually completed in the Atoka and Morrow formations for several years.
- (4) That the applicant has recently perforated additional producing zones in the Atoka and Morrow formations in said well.
- (5) That for unknown reasons, the perforation work resulted in communication of the Atoka and Morrow zones within the wellbore of said well.
- (6) That to perform the work necessary to achieve separation of the two zones in the wellbore would result in substantial risk to human life or damage to the reservoir with concurrent underground waste.
- (7) That the applicant proposes to commingle Atoka and Morrow gas production in the wellbore of the subject well.

- (8) That the Morrow zone in said well is prorated.
- (9) That the Atoka zone in said well is not prorated.
- (10) That if the production for both zones were credited to the Morrow zone, the well would still be a marginal well.
- (11) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.
- (12) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.
- (13) That to afford the Commission the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Artesia district office of the Commission any time the subject well is shut-in for 7 consecutive days.
- (14) That in order to allocate the commingled production to each of the commingled zones in the subject well for statistical purposes, 30 percent of the commingled production should be allocated to the Atoka zone, and 70 percent of the commingled production to the Morrow zone.
- (15) That for purposes of prorationing, 100 percent of the production from the subject well should be charged against the well's gas allowable for the Morrow zone.

IT IS THEREFORE ORDERED:

(1) That the applicant, Pennzoil United, Inc., is hereby authorized to commingle Atoka and Morrow production within the wellbore of the Mobil 12 Federal Well No. 1, located in Unit B of Section 12, Township 23 South, Range 26 East, NMPM, South Carlsbad Field, Lea County, New Mexico.

(2) That for statistical purposes, 30 percent of the commingled production shall be allocated to the Atoka zone and 70 percent of the commingled production shall be allocated to the Morrow zone.

(3) That 100 percent of the commingled production shall be charged against the well's gas allowable for the Morrow zone.

(4) That the operator of the subject well shall immediately notify the Commission's Artesia district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Commission, a plan for remedial action.

-3-

CASE NO. 5398

Order No. R-

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman



PHIL R. LUCERO, Member



A. L. PORTER, Jr., Member & Secretary

S E A L

jr/