

THE APPLICATION OF MARATHON OIL  
COMPANY FOR A DUAL COMPLETION

ORDER NO. MC-2919

ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 112-A Marathon Oil Company made application to the New Mexico Oil Conservation Division on August 24th, 1981, for permission to dually complete its Jicarilla Apache Well No. 13E located in Unit E of Section 33, Township 26 North, Range 5 West, NMPM, Rio Arriba County, New Mexico, in such a manner as to permit production of gas from the Mesaverde Formation and the Basin-Dakota Pool.

Now, on this 21st day of September, 1981, the Division Director finds:

1. That application has been filed under the provisions of Rule 112-A of the Division's Rules and Regulations;
2. That satisfactory information has been provided that all operators of offset acreage have been duly notified;
3. That no objections have been received within the waiting period as prescribed by said rule.
4. That the proposed dual completion will not cause waste nor impair correlative rights.
5. That the mechanics of the proposed dual completion are feasible and consonant with good conservation practices.

IT IS THEREFORE ORDERED:

That the applicant herein, Marathon Oil Company, be and the same is hereby authorized to dually complete its Jicarilla Apache Well No. 13E located in Unit E of Section 33, Township 26 North, Range 5 West, NMPM, Rio Arriba County, New Mexico, in such a manner as to permit production of gas from the Mesaverde Formation and the Basin-Dakota Pool through the casing-tubing annulus and the tubing respectively.

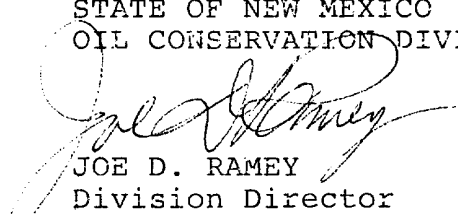
PROVIDED HOWEVER, That applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A.

PROVIDED FURTHER, That applicant shall take packer-leakage tests upon completion and annually thereafter.

IT IS FURTHER ORDERED: That jurisdiction of this cause is hereby retained for the entry of such further orders as the Division may deem necessary.

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JOE D. RAMEY  
Division Director



SEAL

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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 8-24-81

RE: Proposed MC X  
Proposed DHC \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Gentlemen:

I have examined the application dated 7-29-81  
for the Marathon Jic. Ranch 13E E-33-26N-SW  
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Previous recommendation to deny modified. Approve  
after approval of TX order. MC order will require  
an annual fluid level test in annulus.

Yours truly,

Frank T. Chavz



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 8-13-81

RE: Proposed MC x  
Proposed DHC \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Gentlemen:

I have examined the application dated 7-29-81  
for the Marathon Jicarella Apache #17E E-33-26N-5W  
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

Deny. Annular area too large for efficient production

Yours truly,

Frank J. Dwyer

NEW MEXICO OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
APPLICATION FOR MULTIPLE COMPLETION

Form C-107  
5-1-61

Operator <b>Marathon Oil Company</b>		County <b>Rio Arriba</b>	Date <b>July 20, 1981</b>
Address <b>P. O. Box 2659; Casper, WY 82602</b>		Lease <b>Jicarilla Apache</b>	Well No. <b>13E</b>
Location of Well <b>E</b>	Unit <b>33</b>	Township <b>26N</b>	Range <b>5W</b>

1. Has the New Mexico Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools or in the same zones within one mile of the subject well? YES \_\_\_\_\_ NO X
2. If answer is yes, identify one such instance: Order No. \_\_\_\_\_; Operator Lease, and Well No.: \_\_\_\_\_

3. The following facts are submitted:	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation	<b>Blanco Mesaverde</b>		<b>Basin Dakota</b>
b. Top and Bottom of Pay Section (Perforations)	<b>5,126'-5,150'</b>		<b>7,107'-7,295'</b>
c. Type of production (Oil or Gas)	<b>Gas and Condensate</b>		<b>Gas and Condensate</b>
d. Method of Production (Flowing or Artificial Lift)	<b>Flowing</b>		<b>Flowing</b>

4. The following are attached. (Please check YES or NO)

- |                                     |                          |   |
|-------------------------------------|--------------------------|---|
| Yes                                 | No                       |   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | a. Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and/or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease. <b>Attached</b>   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | c. Waivers consenting to such multiple completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application. <b>All waivers are dated July, 1980.</b>  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. <b>(If such log is not available at the time application is filed, it shall be submitted as provided by Rule 112-A.)</b>   |

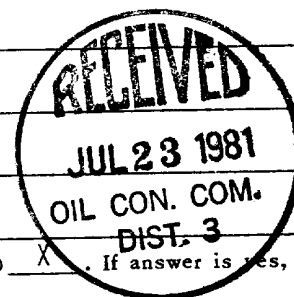
5. List all offset operators to the lease on which this well is located together with their correct mailing address.

**Tenneco Oil Co., Penthouse, 720 S. Colorado Blvd., Denver, CO 80222**

**Supron Energy Corp., Bldg. 5, 5th Floor, 10, 300N. Central Expressway, Dallas, TX 75231**

**El Paso Nat. Gas Co., P. O. Box 990, Farmington, NM 87401**

**Amoco Prod. Co., 1670 Broadway, Denver, CO 80202**



6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES \_\_\_\_\_ NO X. If answer is yes, give date of such notification \_\_\_\_\_.

CERTIFICATE: I, the undersigned, state that I am the District Operations Manager of the Marathon Oil (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

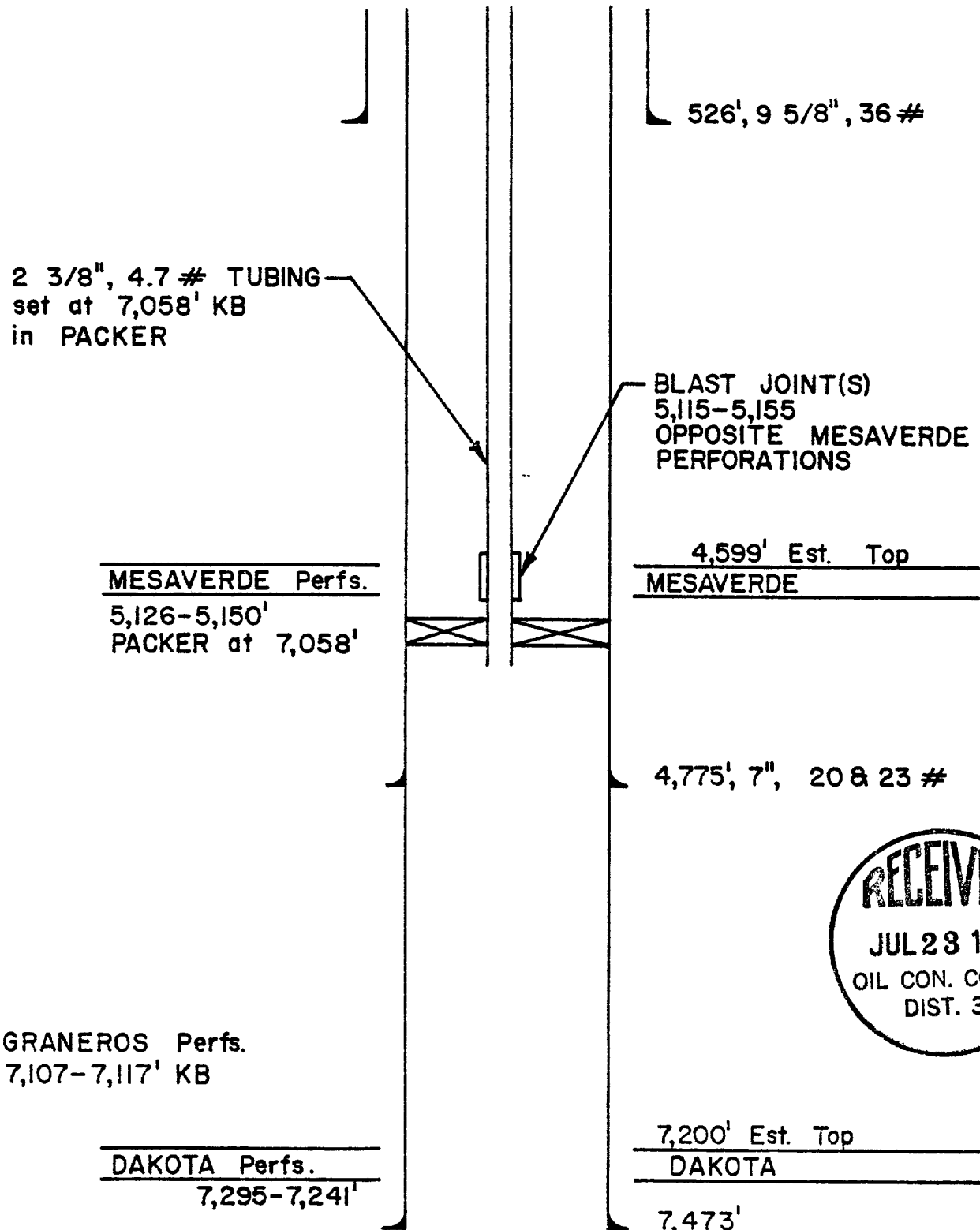
Dale T. Caddy  
Signature

\*Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard perforation unit in one or more of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

JICARILLA APACHE # 13-E

1,850' FNL, 930' FWL  
SECTION 33, T26N, R5W UNIT E  
RIO ARRIBA COUNTY  
DUAL COMPLETION SCHEMATIC



Casper Division  
Production, U.S. & Canada



**Marathon  
Oil Company**

P.O. Box 2659  
Casper, Wyoming 82602  
Telephone 307/235-2511

July 17, 1980

Tenneco Oil Company  
Division Rod Manager  
720 South Colorado Blvd., Penthouse  
Denver, Colorado 80222

Attn: Mr. J.M. Lacey

Dear Sir:

Marathon Oil Company is requesting approval from the New Mexico Oil Conservation Commission for dual completion of our Jicarilla Apache Well #13E, 1850' FNL and 930' FWL, Unit E, Sec. 33, T26N, R5W Rio Arriba Co., NM, and Well #16E, 825 FWL and 955' FEL, Unit A, Sec. 34, T26N, R5W, Rio Arriba Co., NM., in the Basin Dakota and Otero Chacra formations. These wells offset one of your leases, so we have enclosed schematic diagrams of the proposed completions and plats for your information.

If you have no objection to these dual completions, will you please sign the approval on the bottom of the attached two copies of this letter and return them to me at your earliest convenience.

Very truly,

MARATHON OIL COMPANY

Dale T. Caddy  
District Operations Manager

DC/WEW/pla  
Attachments



Tenneco Oil Company has no objection to the dual completion of Jicarilla Apache Wells #13E and #16E.

BY: [Signature]  
TITLE: DIVISION PRODUCTION MGR  
DATE: 7/25/80

**Tenneco Oil**  
A Tenneco Company

Penthouse  
720 South Colorado Blvd.  
Denver, Colorado 80222  
(303) 758-7130

July 24, 1980

Marathon Oil Company  
P.O. Box 2659  
Casper, Wyoming 82602

Attention: Dale T. Caddy  
District Operations Manager

Re: Proposal to Dually Complete  
Jicarilla Apache Well #13E & #16E  
Rio Arriba County, New Mexico

Gentlemen:

Tenneco Oil Company has no objections to the proposed dual completion of the captioned well. As you requested, attached are two executed copies of your Letter Ballot indicating Tenneco's approval.

Yours very truly,

TENNECO OIL COMPANY

J. M. Lacey  
Division Production Manager

JML:RJG:sh

Attachment(s)





**Marathon  
Oil Company**

Casper Division  
Production, U.S. & Canada

P.O. Box 2659  
Casper, Wyoming 82602  
Telephone 307/235-2511

Dist. Engr. \_\_\_\_\_  
Acctg. Supr. \_\_\_\_\_  
Drig. Supt. \_\_\_\_\_  
Prod. Supt. \_\_\_\_\_  
Res. Engr. \_\_\_\_\_  
Prod. Engr. \_\_\_\_\_  
Proc. Engr. \_\_\_\_\_  
Geologists \_\_\_\_\_  
File \_\_\_\_\_

July 17, 1980

Supron Energy Corporation  
Bldg. 5, 5 Floor, 10,300 N.  
Central Expressway  
Dallas, Texas 75231

Attn: Mr. H. Fleetwood

Gentlemen:

Marathon Oil Company is requesting approval from the New Mexico Oil Conservation Commission for dual completion of our Jicarilla Apache Well #13E, 1850' FNL and 930' FWL, Unit E, Sec. 33, T26N, R5W, Rio Arriba Co., NM, and Well #16E, 825 FWL and 955' FEL, Unit A, Sec. 34, T26N, R5W, Rio Arriba Co., NM., in the Basin Dakota and Otero Chacra formations. These wells offset one of your leases, so we have enclosed schematic diagrams of the proposed completions and plats for your information.

If you have no objection to these dual completions, will you please sign the approval on the bottom of the attached two copies of this letter and return them to me at your earliest convenience.

Very truly,

MARATHON OIL COMPANY

*Dale T. Caddy*

Dale T. Caddy  
District Operations Manager

DC/WEW/pla  
Attachments



Supron Energy Corporation has no objection to the dual completions of Jicarilla Apache Wells #13E and #16E.

BY: Supron Energy Corporation

TITLE: \_\_\_\_\_

*Haskell Fleetwood*  
Haskell Fleetwood, Vice President

DATE: July 21, 1980

**RECEIVED**

JUL 23 1980

CASPER DISTRICT  
OPERATIONS





**Marathon  
Oil Company**

P.O. Box 2659  
Casper, Wyoming 82602  
Telephone 307/235-2511

July 17, 1980

El Paso Natural Gas Company  
San Juan Production Manager  
P.O. Box 990  
Farmington, NM 87401

Attn: Mr. C.E. Matthews

Dear Sir:

Marathon Oil Company is requesting approval from the New Mexico Oil Conservation Commission for dual completion of our Jicarilla Apache Well #13E, 1850' FNL and 930' FWL, Unit E, Sec. 33, T26N, R5W Rio Arriba Co., NM, and Well #16E, 825 FWL and 955' FEL, Unit A, Sec. 34, T26N, R5W, Rio Arriba Co., NM., in the Basin Dakota and Otero Chacra formations. These wells offset one of your leases, so we have enclosed schematic diagrams of the proposed completions and plats for your information.

If you have no objection to these dual completions, will you please sign the approval on the bottom of the attached two copies of this letter and return them to me at your earliest convenience.

Very truly,

MARATHON OIL COMPANY

A handwritten signature in cursive script that reads 'Dale T. Caddy'.

Dale T. Caddy  
District Operations Manager

DC/WEW/pla  
Attachments

El Paso Natural Gas Company has no objection to the dual completions of Jicarilla Apache Wells #13E & 16E.

BY: Carl E. Matthews  
TITLE: Regional Production Mgr.  
DATE: 7/21/80

TEFTELLER, INC.  
RESERVOIR ENGINEERING DATA  
Midland, Texas

Well : JICARILLA APACHE NO. 13-E

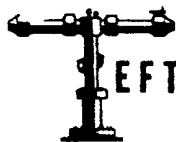
Page 1 of 3

Field : BASIN DAKOTA

File 2-11644-AOF&WL

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA

1981 Date	Status of Well	Time	Elapsed Time		Daily Rate		Wellhead Pressure	
			Hrs.	Min.	Oil B/D	Gas MCF/D	Tbg	Csg
4-3	Shut-in, Arrived on							
"	location	11:00						
"	Gradient Traverse	11:15						
"	Open on 2"X3/4"	12:00	0	00			1501	333
"	"	12:15	0	15	1.040	5461.5	373	349
"	"	12:30	0	30	1.040	5404.7	369	347
"	"	12:45	0	45	1.035	4715.2	322	347
"	"	13:00	1	00	1.028	3799.9	259	346
"	"	13:30	1	30	1.021	2799.2	189	349
"	"	14:00	2	00	1.016	2328.2	156	348
"	"	15:00	3	00	1.013	1837.7	121	347
"	Set FWP blanking plug							
"	In F nipple @ 7068'							

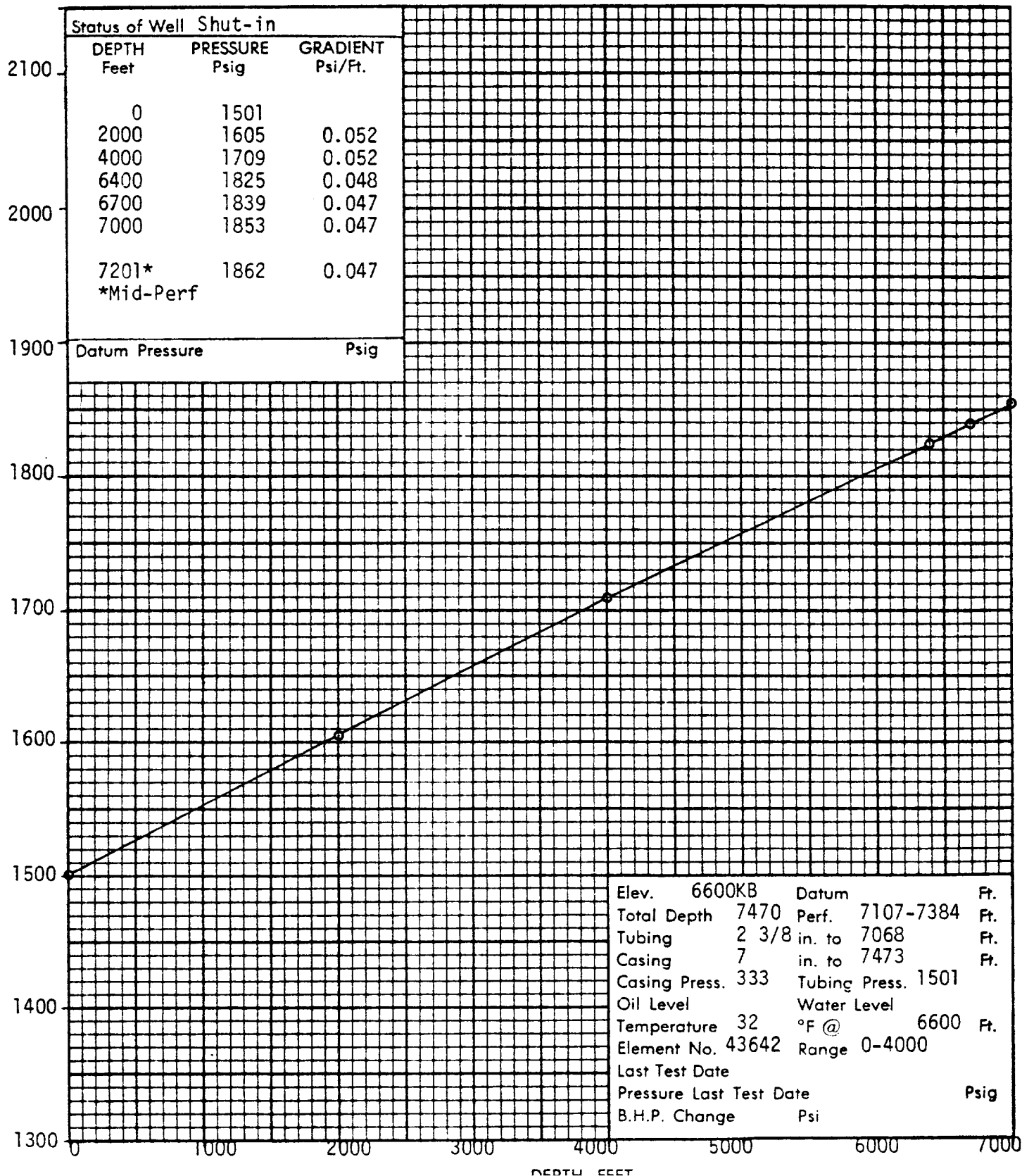


**J. E. TELLER, INC.**

reservoir engineering data  
MIDLAND, TEXAS

Page 2 of 3  
File 2-11644-AOF&WL

Company MARATHON OIL COMPANY Lease JICARILLA APACHE Well No. 13-E  
Field BASIN DAKOTA County RIO ARRIBA State NEW MEXICO  
Formation DAKOTA Test Date APRIL 3, 1981



NEW MEXICO OIL CONSERVATION COMMISSION  
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122  
Revised 9-1-65

Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special				Test Date 4-3-81	
Company Marathon Oil Company				Connection	
Pool Basin Dakota				Formation Dakota	
Completion Date		Total Depth 7470		Plug Back TD 7429	
				Elevation 6600 KB	
Farm or Lease Name Jicarilla Apache					
Csg. Size 7"	Wt. 20.23 29#	d	Set At 7472	Perforations: From 7107 To 7295	
Well No. 13-E					
Tbg. Size 2 3/8	Wt. 4.7	d	Set At 7068	Perforations: From To	
Unit Sec. Twp. Rge. E 33 26N 5W					
Type Well - Single - Bradenhead - G.G. or G.O. Multiple				Packer Set At	
				County Rio Arriba	
Producing Thru		Reservoir Temp. °F		Baro. Press. - P <sub>g</sub>	
				State New Mexico	
L	H	Gg	% CO <sub>2</sub>	% N <sub>2</sub>	% H <sub>2</sub> S
					Prover 3/4" pos. ck.
Meter Run					
Taps					

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h <sub>w</sub>	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
1.	2" X 3/4"	pos. ck.					1501	60	333		
2.							121	60	347		3 hours
3.											
4.											
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P <sub>m</sub>	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1.	11.0		133	1.000	1.240	1.013	1837.7
2.							
3.							
4.							
5.							

NO.	P <sub>t</sub>	Temp. °R	T <sub>r</sub>	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.					A.P.I. Gravity of Liquid Hydrocarbons	Deq.
2.					Specific Gravity Separator Gas	X X X X X X X X
3.					Specific Gravity Flowing Fluid	X X X X X
4.					Critical Pressure	P.S.I.A.
5.					Critical Temperature	R

P <sub>c</sub> 1513	P <sub>c</sub> <sup>2</sup> 228.9			
NO.	P <sub>t</sub> <sup>2</sup>	P <sub>w</sub>	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>
1		1013	102.7	126.2
2				
3				
4				
5				

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.8138$$

$$(2) \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.5629$$

$$AOF = Q \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2872.1$$

Absolute Open Flow	2872.1	Mcf/d @ 15.025	Angle of Slope °	53.13°	Slope, n	0.75
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Remarks:

Approved By Commission:	Conducted By: TEFTELLER, INC.	Calculated By:	Checked By: <i>[Signature]</i>
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TEFTELLER, INC.  
RESERVOIR ENGINEERING DATA  
Midland, Texas

Well: JICARILLA APACHE NO. 13-E

Page 1 of 6

Field:

File 2-11796-BU&AOF

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA

1981 Date	Status of Well	Time	Elapsed Time		Daily Rate Gas MCF/D	Wellhead Pressure		BHP @ 7000' Psig
			Hrs.	Min.		Tbg	Csg	
4-28	Arrived on location							
"	well flowing	10:45						
"	Rig up to run gradient							
"	traverse					358	519	
"	Rig up to run tandem inst.							
"	Inst. @ 7000'	12:30						599
"	"	14:30						603
"	Shut in for build up	14:30	0	00				
"	"	14:36	0	06				614
"	"	14:42	0	12				639
"	"	14:48	0	18				653
"	"	14:54	0	24				666
"	"	15:00	0	30				676
"	"	15:06	0	36				686
"	"	15:12	0	42				697
"	"	15:18	0	48				705
"	"	15:24	0	54				713
"	"	15:30	1	00				722
"	"	15:45	1	15				753
"	"	16:00	1	30				776
"	"	16:15	1	45				795
"	"	16:30	2	00				813
"	"	17:00	2	30				842
"	"	17:30	3	00				867
"	"	18:00	3	30				891
"	"	18:30	4	00				907
"	"	19:30	5	00				938
"	"	20:30	6	00				961
"	"	21:30	7	00				980
"	"	22:30	8	00				994
"	"	23:30	9	00				1007
4-29	"	00:30	10	00				1019
"	"	02:30	12	00				1040
"	"	04:30	14	00				1059
"	"	06:30	16	00				1073
"	"	08:30	18	00				1088
"	"	10:30	20	00				1100
"	"	14:30	24	00				1121
"	"	18:30	28	00				1142
"	"	22:30	32	00				1159
4-30	"	02:30	36	00				1172
"	"	08:30	42	00				1194

TEFTELLER, INC.  
RESERVOIR ENGINEERING DATA  
Midland, Texas

Well: JICARILLA APACHE NO. 13-E

Page 2 of 6

Field:

File 2-11796-BU&AOF

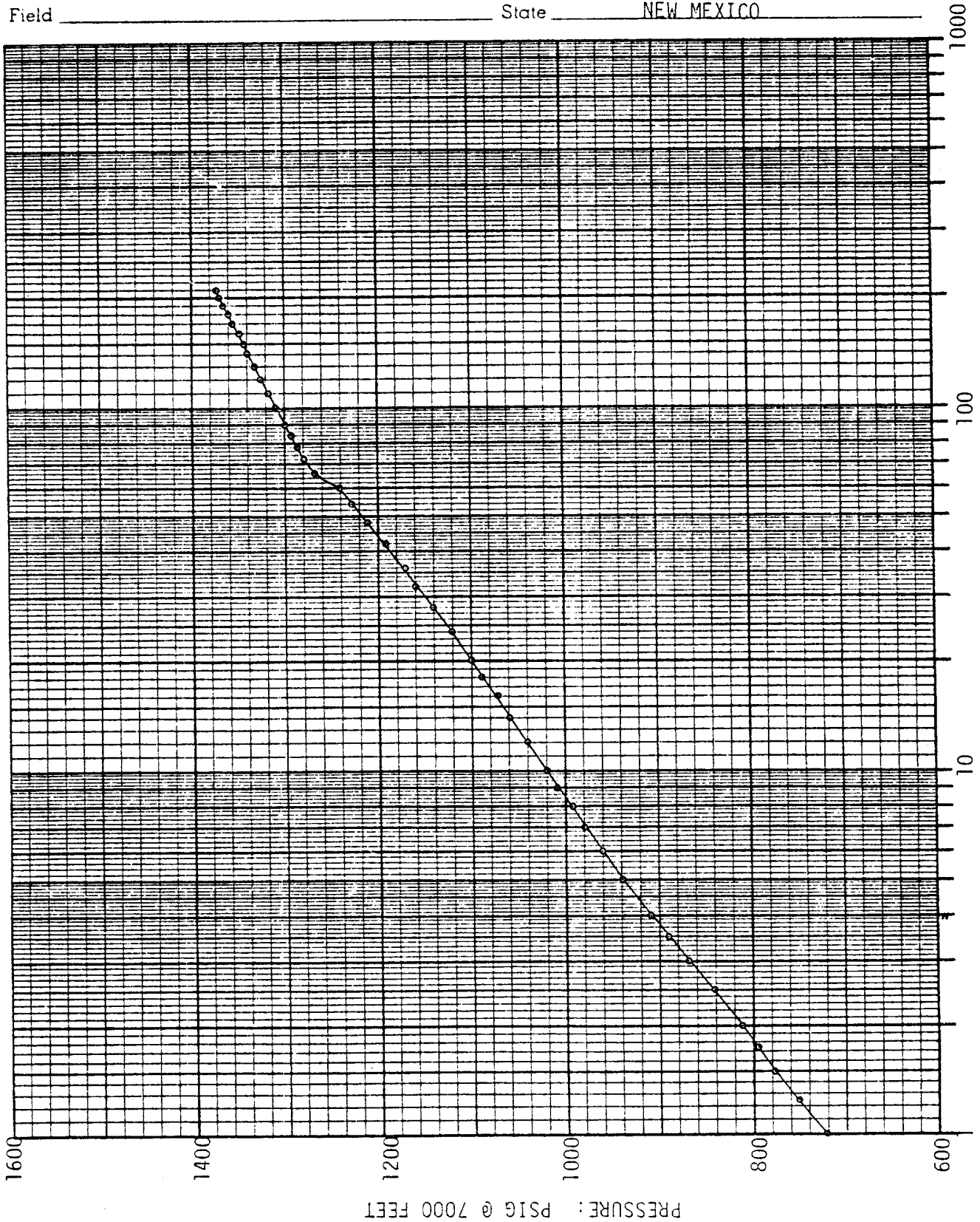
CHRONOLOGICAL PRESSURE AND PRODUCTION DATA

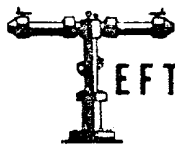
1981 Date	Status of Well	Time	Elapsed Time		Daily Rate Gas MCF/D	Wellhead Pressure		BHP @ 7000' Psig
			Hrs.	Min.		Tbg	Csg	
4-30	Continued shut-in	14:30	48	00				1211
"	"	20:30	54	00				1227 /
5-1	"	02:30	60	00				1242
"	"	08:30	66	00				1269
"	"	14:30	72	00				1278
"	"	20:30	78	00				1286
5-2	"	02:30	84	00				1294
"	"	08:30	90	00				1300
"	"	18:30	100	00				1308
5-3	"	04:30	110	00				1317
"	"	14:30	120	00				1325
5-4	"	00:30	130	00				1333
"	"	10:30	140	00				1340
"	"	20:30	150	00				1344
5-5	"	06:30	160	00				1348
"	Pull instruments	10:30	164	00				1352 /
"	Re-ran instruments to 7000'	11:00						
"	"	16:30	170	00				1356
5-6	"	02:30	180	00				1360
"	"	12:30	190	00				1365
"	"	22:30	200	00				1369 /
5-7	Arrived on location							
"	shut-in	09:15				1102	1081	
"	Pull instruments	09:30	211	00				1373
"	Run gradient traverse	11:00	212	30				1373
"	Rig up to run AOF							
"	Open well on 3/4" pos. ck.	11:15	0	00				
"	Producing thru casing	11:30	0	15	8506.0	517	573	626
"	Well flowing dry	11:45	0	30	3972.1	349	271	391
"	"	12:00	0	45	2782.6	280	188	320
"	"	12:15	1	00	2699.1	264	182	302
"	"	12:45	1	30	1977.8	258	131	297
"	"	13:15	2	00	1796.3	258	118	304
"	"	13:45	2	30	1656.4	267	108	310
"	"	14:15	3	00	1585.9	276	103	318
"	Shut well in							

Company MARATHON OIL COMPANY Formation POINT LOOK OUT  
 Well JICARILLA APACHE NO. 13-E County RIO ARRIBA  
 Field \_\_\_\_\_ State NEW MEXICO

BUILD UP CURVE

SHUT-IN TIME: HOURS





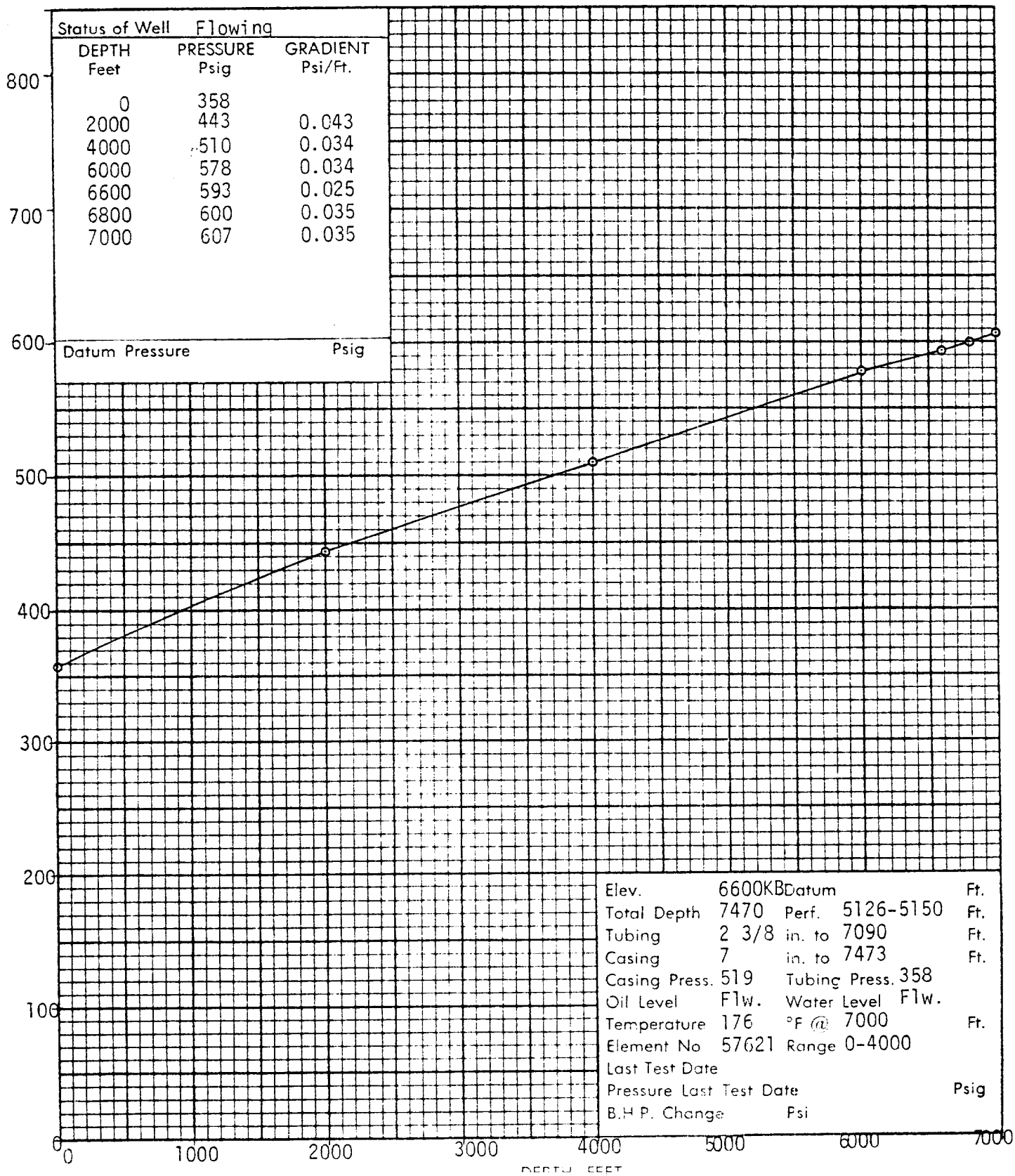
LEFFELLER, INC.

reservoir engineering data

MIDLAND, TEXAS

Page 4 of 6  
File 2-11796-BU&AOF

Company MARATHON OIL COMPANY Lease JICARILLA APACHE Well No. 13-E  
Field \_\_\_\_\_ County RIO ARRIBA State NEW MEXICO  
Formation \_\_\_\_\_ Test Date APRIL 28, 1981





NEW MEXICO OIL CONSERVATION COMMISSION  
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122  
Revised 9-1-65

Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special						Test Date 5-7-81			
Company Marathon Oil Company				Connection					
Pool				Formation Point Lookout				Unit	
Completion Date		Total Depth		Plug Back TD		Elevation 6600 KB		Farm or Lease Name Jicarilla Apache	
Csg. Size 7	Wt. 29	d	Set At 7473	Perforations: From 5126 To 5150		Well No. 13-E			
Tbg. Size 2 3/8	Wt.	d	Set At	Perforations: From To		Unit Sec. Twp. Rge. E 33 26N 5W			
Type Well - Single - Bradenhead - G.G. or G.C. Multiple Dual Gas						Packer Set At 7090		County Rio Arriba	
Producing Thru Casing		Reservoir Temp. °F 176 @ 7000'		Mean Annual Temp. °F		Baro. Press. - P <sub>a</sub>		State New Mexico	
L	H	G <sub>g</sub> 0.650 est.	% CO <sub>2</sub>	% N <sub>2</sub>	% H <sub>2</sub> S	Prover Pos. ck.		Meter Run	Taps

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h <sub>w</sub>	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
SI							1102		1081		112.75 hour
1.	2" X 3/4" pos.						276	60	103		3 hours
2.											
3.											
4.											
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P <sub>m</sub>	Flow Temp. Factor Ft.	Gravity Factor F <sub>g</sub>	Super Compress. Factor, F <sub>pv</sub>	Rate of Flow Q, Mcfd
1	11.0		115	1.000	1.240	1.011	1585.9
2.							
3.							
4.							
5.							

NO.	P <sub>t</sub>	Temp. °R	T <sub>r</sub>	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1.					A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2.					Specific Gravity Separator Gas _____ X X X X X X X X
3.					Specific Gravity Flowing Fluid _____ X X X X X
4.					Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
5.					Critical Temperature _____ R _____ R

P <sub>c</sub> 1114      P <sub>c</sub> <sup>2</sup> 1241.0				
NO.	P <sub>t</sub> <sup>2</sup>	P <sub>w</sub>	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>
1		288	82.9	1158.1
2				
3				
4				
5				

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.0716$$

$$(2) \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.0532$$

$$AOF = Q \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1670.3$$

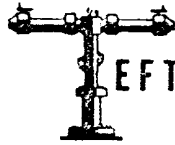
Absolute Open Flow	1670.3	Mcf/d @ 15.025	Angle of Slope @	53.13	Slope, n	0.75
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Remarks:

Approved By Commission:	Conducted By: Tefteller, Inc.	Calculated By: Tefteller, Inc.	Checked By: <i>(Signature)</i>
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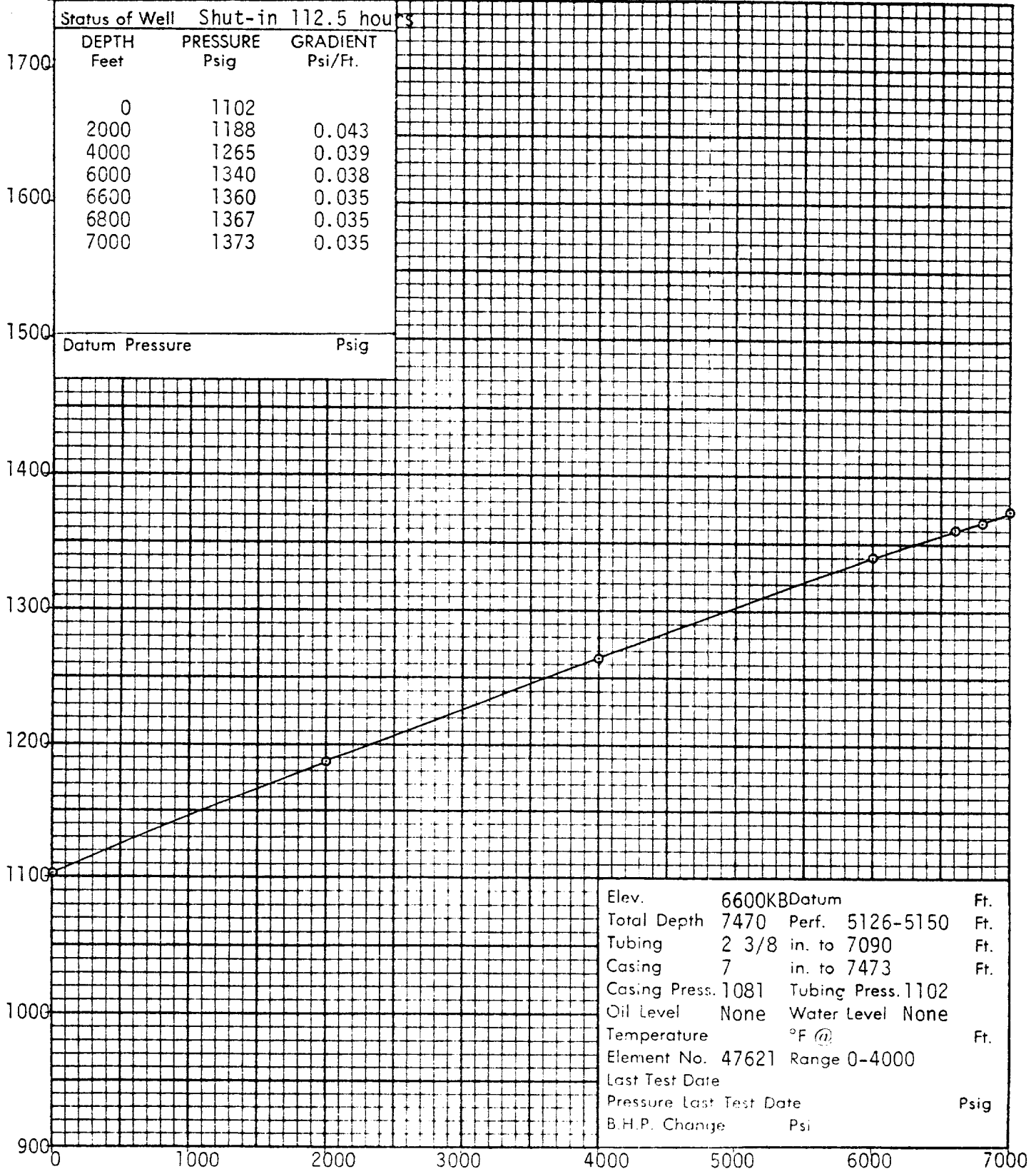
EFTELLER, INC.

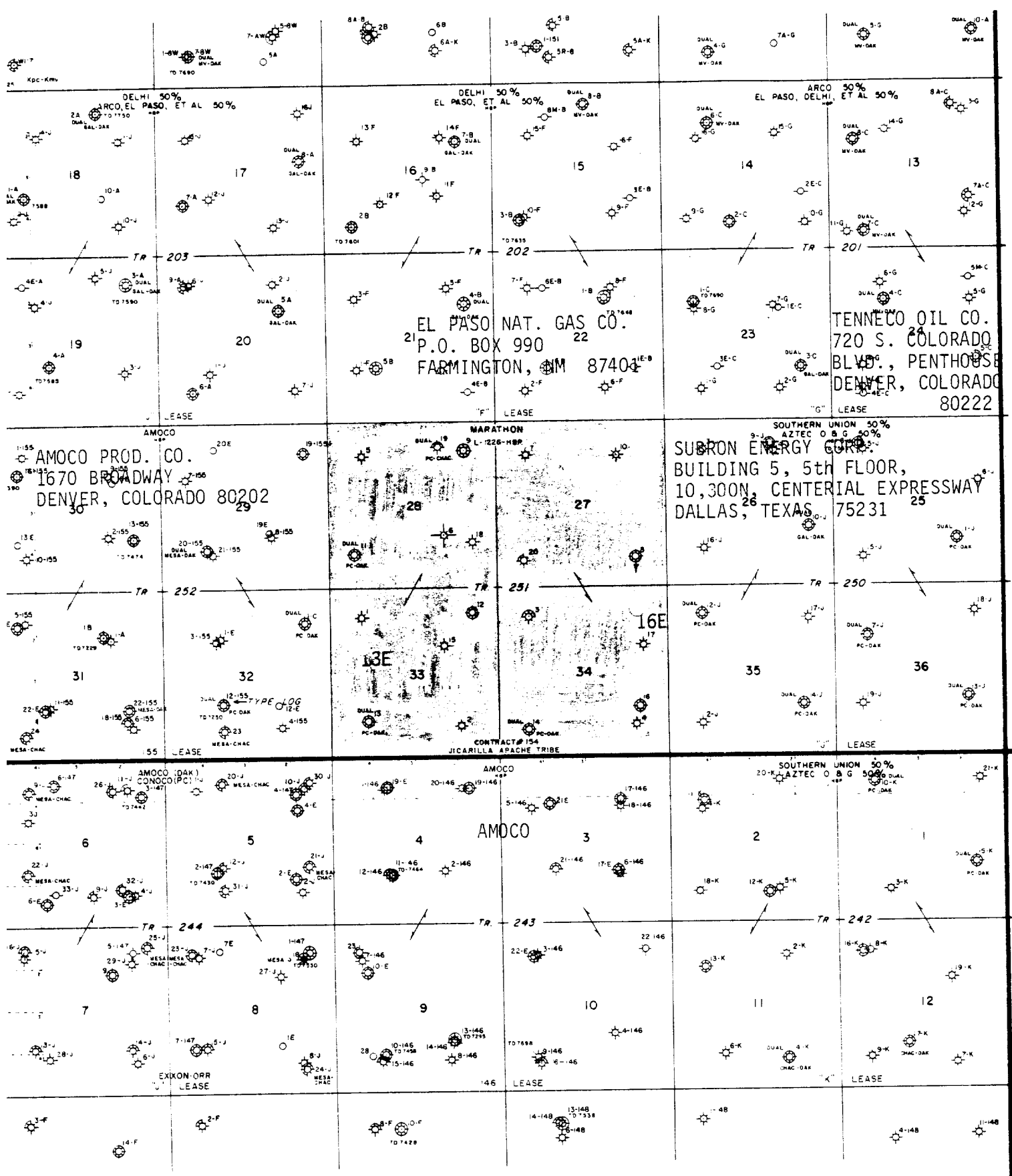
reservoir engineering data

MIDLAND, TEXAS

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File 2-11796-BU&AOF

Company MARATHON OIL COMPANY Lease JICARILLA APACHE Well No. 13-E  
Field \_\_\_\_\_ County RIO ARRIBA State NEW MEXICO  
Formation POINT LOOKOUT Test Date MAY 7, 1981






**RECEIVED**  
**JUL 23 1981**  
**OIL CON. COM.**  
**DIST. 3**

- LEGEND —
- ★ PICTURED CLIFFS GAS WELL
  - MESAVEROE GAS WELL
  - DAKOTA OIL WELL
  - DAKOTA GAS WELL
  - PICTURE CLIFFS & CHACRA GAS WELL
  - PICTURE CLIFFS DEEPENED TO DAKOTA
  - CHACRA GAS WELL

R 5 W

  
**MARATHON OIL COMPANY**

**JICARILLA AREA**  
**RIO ARRIBA COUNTY, NEW MEXICO**

T 26  
N  
T 25  
N

