

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 10/22/82		NOV 8 1982	
Company Exxon Company USA				Connection None			
Well Undesignated				Formation Abo		Unit O. C. D.	
Completion Date 10/22/82				Total Depth 3232'		Plug Back TD 3175'	
				Elevation 4309'GL		Farm or Lease Name New Mexico CS State	
Cas. Size 5 1/2"	Wt. 14.0	d 5.012	Set At 3232'	Perforations: From 2876' To 3045'		Well No. 1	
Tub. Size 2 1/2"	Wt. 6.5	d 2.441	Set At 2800'	Perforations: Open Ended		Unit Sec. Twp. Rge. F 2 7s 22e	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At None		County Chaves	
Producing Thru Tubing		Reservoir Temp. °F -		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
L 2961'		H -	G _g 0.6403	% CO ₂ 1.376	% N ₂ 6.177	% H ₂ S -	Prover -
							Meter Run 1.939
							Taps F

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g. DWT	Temp. °F	Press. p.s.i.g.	
SI							760	60	PACKER	24.0 hrs
1.	1.939	5/64	0.250	85	42	61	759			1.0 hr
2.	1.939	8/64	0.500	86	25	62	746			1.0 hr
3.	1.939	8.5/64	0.500	87	52	63	720			1.0 hr
4.	1.939	9/64	0.500	88	100	64	660			2.0 hr
5.										

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mscf/d
1	0.2990	64.22	98.2	1.0000	1.250	-	24.00
2	1.190	49.80	99.2	0.9990	1.250	-	74.00
3	1.190	72.18	100.2	0.9980	1.250	-	107.15
4	1.190	100.60	101.2	0.9962	1.250	-	149.07
5							

NO.	P _r	Temp. °R	T _r	Z	Gas-Liquid Hydrocarbon Ratio	Dry Gas	Mcf/bbl.
1	0.15	521	1.48	-	A.P.I. Gravity of Liquid Hydrocarbons	-	Deg.
2	0.15	522	1.48	-	Specific Gravity Separator Gas	0.6403	XXXXXX
3	0.15	523	1.48	-	Specific Gravity Flowing Fluid	XXXXXX	
4	0.15	524	1.48	-	Critical Pressure	666	P.S.I.A.
5					Critical Temperature	353	R

NO.	P _r ²	P _w *	P _r ²	P _r ² - P _w ²
1	822.2	676.0	666.2	9.8
2			641.9	34.1
3			570.3	105.7
4			494.5	181.5
5				

(1) $\frac{P_r^2}{P_r^2 - P_w^2} = 68.98$

AOF = Q $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 338.4$

(2) $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 14.10$

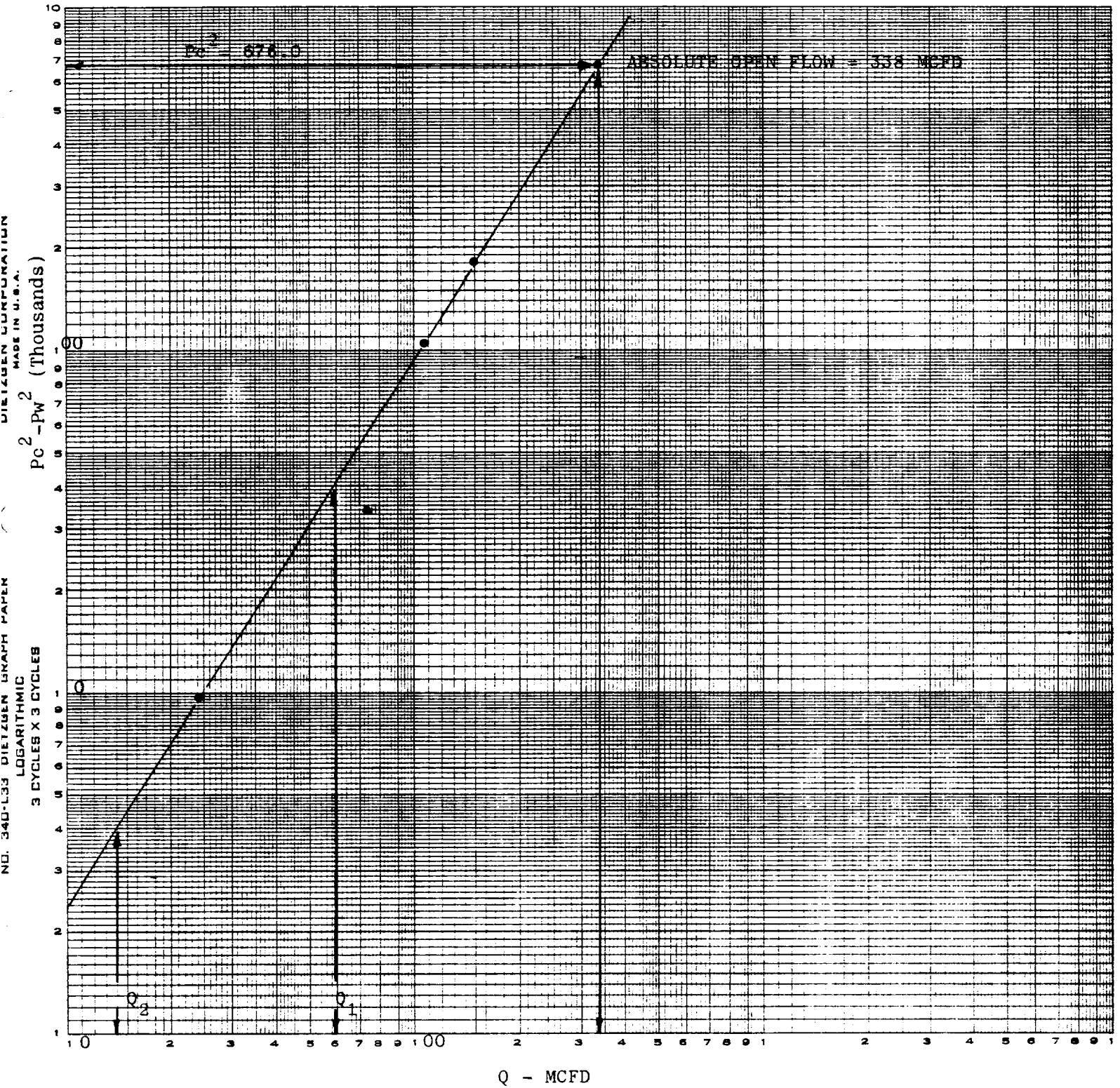
Post FO-2
11-19-82
Sample BK

Absolute Open Flow	338	Mcf/d @ 15.025	Angle of Slope @	58° 0'	Slope, n	0.625
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Remarks: * BOTTOM HOLE PRESSURE @ (+ 1348) 2961' USED FOR PRESSURE CALCULATIONS

Approved By Division	Conducted By: JARREL WELL TESTING INC	Calculated By: Joe A. Coleman	Checked By: PE #2208 Joe A. Coleman
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COMPANY: Exxon Company USA
 WELL: New Mexico State, No. 1
 LOCATION: F 2 7s 22e
 COUNTY: Chaves
 DATE: October 22, 1982



**NEW-TEX
LAB**

PHONE 505/393-3581

P. O. BOX 1161

611 W. SNYDER

HOBBS, NEW MEXICO 88240

ANALYSIS CERTIFICATE

CLIENT: JARREL WELL TESTING
ADDRESS: BOX 1457
CITY, STATE: HOBBS NM 88240

ANALYSIS NUMBER: 8522
DATE OF RUN: 10 21 82
DATE SECURED: 10 20 82

SAMPLE IDENT: EXXON CO USA - NEW MEXICO "CS" STATE #1
SAMPLING PRESS: 150 PSIG SAMPLING TEMP: 60 DEG F

***** GAS ANALYSIS *****

	MOLE PERCENT	GAL/ MCF
NITROGEN	6.177	
CARBON DIOXIDE	1.376	
METHANE	87.258	
ETHANE	2.706	0.722
PROPANE	1.217	0.334
ISO-BUTANE	0.187	0.061
NORMAL BUTANE	0.537	0.169
ISO-PENTANE	0.086	0.031
NORMAL PENTANE	0.187	0.068
HEXANES	0.101	0.041
HEPTANES PLUS	0.168	0.077
TOTAL	100.000	1.503

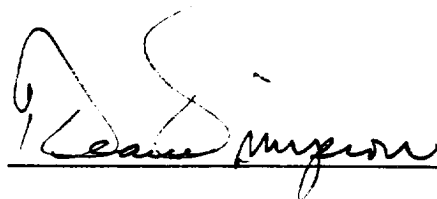
PROPANE GPM: 0.33 BUTANES GPM: 0.23
ETHANE GPM: 0.72 PENTANES PLUS GPM: 0.22

SPECIFIC GRAV (CALC): 0.6403
MOLE WEIGHT: 18.56

HHV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
	14.696	991	1209
	14.650	988	1205
	14.730	993	1211
	14.735	994	1211

ANALYZED BY: DEANE SIMPSON

APPROVED BY



JARREL SERVICES, INC.

POST OFFICE BOX 1654

PHONE 505 393-5396

HOBBS, NEW MEXICO 88240

COMPANY: Exxon Company USA

WELL: New Mexico CS State, No. 1

FIELD: Undesignated Abo

CHRONOLOGICAL PRESSURE DATA

DATE	STATUS OF WELL	TIME	ELAPSED TIME		SURFACE PRESSURE		BHP @ (+1348)
			HRS.	MIN.	TBG	CSG	2961' PSIG
1982							
10/22	Shut in 24.0 hrs.	10:30 AM	-	-	760 DWT	PKR	809
	Run Static Gradient w/ Tandem Bombs & hung Bombs @ 2780'					MCF/D	
	Started 1st Rate	11:00	0	30	760		809
	Finished 1st Rate &	12:00 N	1	00	759	24.00	803
	Started 2nd Rate						
	Finished 2nd Rate &	1:00 PM	1	00	746	74.00	788
	Started 3rd Rate						
	Finished 3rd Rate &	2:00	1	00	720	107.15	742
	Started 4th Rate						
	Finished 4th Rate	4:00	2	00	660	149.07	690
	& Shut in for Buildup						
	Shut in	4:05	0	05	-	-	703
	"	4:10	0	10	-	-	714
	"	4:15	0	15	-	-	722
	"	4:20	0	20	-	-	725
	"	4:25	0	25	-	-	729
	"	4:30	0	30	-	-	733
	"	4:35	0	35	-	-	737
	"	4:40	0	40	-	-	741
	"	4:45	0	45	-	-	744
	"	4:50	0	50	-	-	748
	"	4:55	0	55	-	-	750
	"	5:00	1	00	-	-	752
	"	5:15	1	15	-	-	756
	"	5:30	1	30	-	-	762
	"	5:45	1	45	-	-	769
	"	6:00	2	00	-	-	771
	"	7:00	3	00	-	-	777
	"	8:00	4	00	-	-	790
	"	9:00	5	00	-	-	792
	"	10:00	6	00	-	-	800
	"	11:00	7	00	-	-	805
	"	12:00 MN	8	00	-	-	807
10/23	"	1:00 AM	9	00	-	-	809
	"	2:00	10	00	-	-	811
	"	3:00	11	00	-	-	813
	"	4:00	12	00	-	-	817
	"	5:00	13	00	-	-	822
	"	6:00	14	00	-	-	822
	"	7:00	15	00	-	-	824
	"	8:00	16	00	-	-	826
	"	9:00	17	00	-	-	826
	"	10:00	18	00	-	-	828

WELL: New Mexico State, No. 1PAGE: 2

DATE	STATUS OF WELL	TIME	ELAPSED TIME		SURFACE PRESSURE		BHP @ (+1348)
			HRS.	MIN.	TBG	CSG	2961' PSIG
	Shut in	11:00	19	00	-	-	830
	"	12:00 N	20	00	-	-	830
	"	1:00 PM	21	00	-	-	832
	"	2:00	22	00	-	-	832
	"	3:00	23	00	-	-	834
	"	4:00	24	00	-	-	834
	"	5:00	25	00	-	-	836
	"	6:00	26	00	-	-	838
	"	7:00	27	00	-	-	841
	"	8:00	28	00	-	-	841
	"	9:00	29	00	-	-	843
	"	10:00	30	00	-	-	845
	"	11:00	31	00	-	-	845
	"	12:00 MN	32	00	-	-	845
10/24	"	1:00 AM	33	00	-	-	847
	"	2:00	34	00	-	-	849
	"	3:00	35	00	-	-	851
	"	4:00	36	00	-	-	853
	"	5:00	37	00	-	-	853
	"	6:00	38	00	-	-	853
	"	7:00	39	00	-	-	855
	"	8:00	40	00	-	-	857
	"	9:00	41	00	-	-	857
	"	10:00	42	00	-	-	860
	"	11:00	43	00	-	-	862
	"	12:00 N	44	00	-	-	864
	"	1:00 PM	45	00	-	-	864
	"	2:00	46	00	-	-	864
	"	3:00	47	00	-	-	866
	"	4:00	48	00	-	-	866
	"	5:00	49	00	-	-	866
	"	6:00	50	00	-	-	866
	"	7:00	51	00	-	-	868
	"	8:00	52	00	-	-	870
	"	9:00	53	00	-	-	872
	"	10:00	54	00	-	-	872
	"	11:00	55	00	-	-	872
	"	12:00 MN	56	00	-	-	872
10/25	"	1:00 AM	57	00	-	-	874
	"	2:00	58	00	-	-	874
	"	3:00	59	00	-	-	874
	"	4:00	60	00	-	-	876
	"	5:00	61	00	-	-	876
	"	6:00	62	00	-	-	876
	"	7:00	63	00	-	-	879
	"	8:00	64	00	-	-	879
	"	9:00	65	00	-	-	879
	"	10:00	66	00	-	-	879
	"	11:00	67	00	-	-	879
	"	12:00 N	68	00	-	-	881
	"	1:00 PM	69	00	-	-	881
	Pulled Bombs	2:00	70	00	-	-	881

JARREL SERVICES, INC.

POST OFFICE BOX 1654

PHONES 505 393-5396 — 393-8274

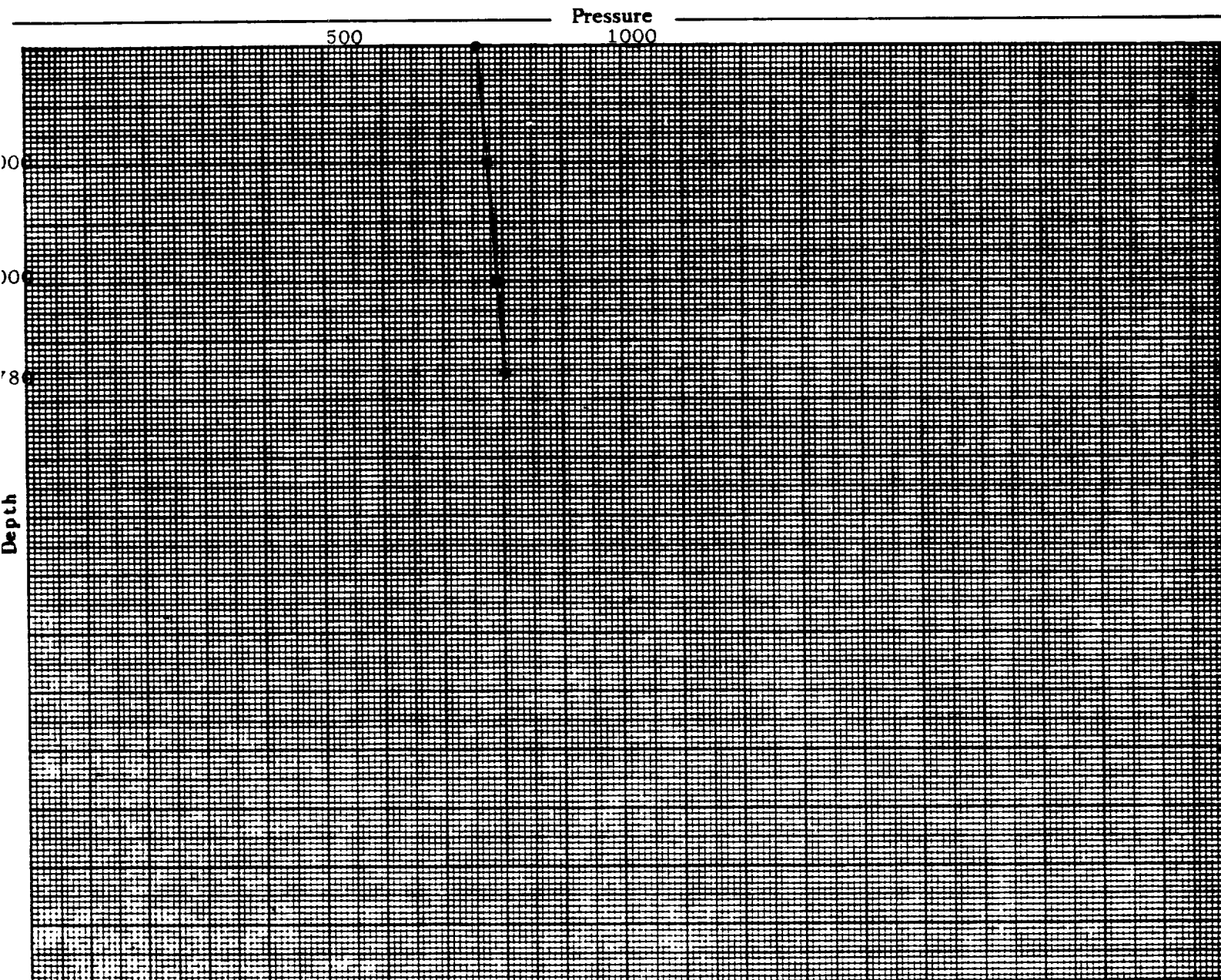
HOBBS, NEW MEXICO 88240

BOTTOM HOLE PRESSURE RECORD

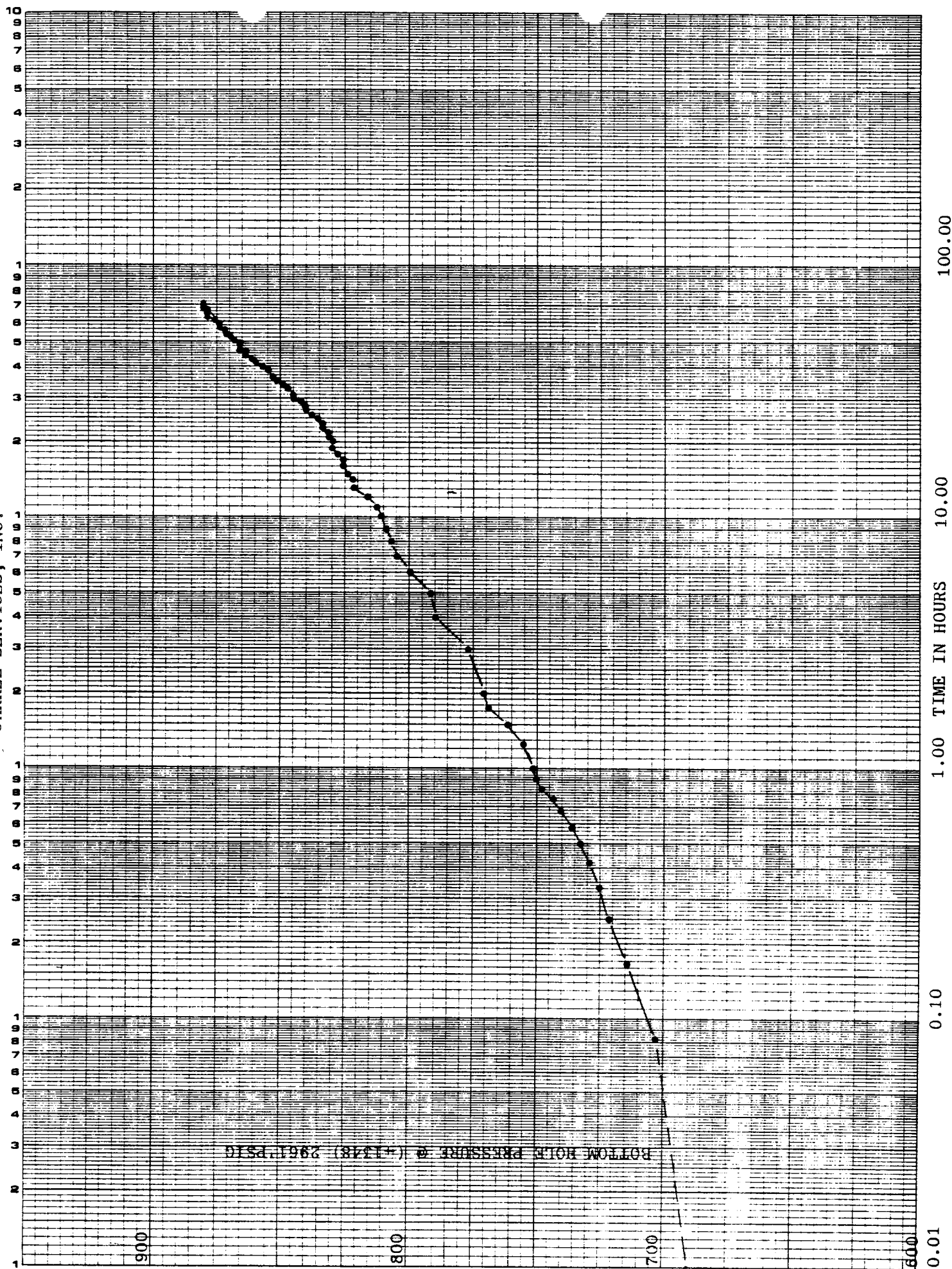
OPERATOR Exxon Company USA
FIELD Undesignated
FORMATION Abo
LEASE New Mexico CS State WELL # 1
COUNTY Chaves STATE New Mexico
DATE 10/22/82 TIME 10:30 AM
Status Shut in
Test Depth 2780'
Time S. I. 24.0 hrs. Last test date -
Tub Pres. 760 DWT BHP last test -
Cas. Pres. - BHP change -
Elev. 4309' GL Fluid top None
Datum (+1348)** Water top None
Temp. @ - Run by JSI #35
Cal. No. A33196N Chart No. 1

Depth	Pressure	Gradient
0	760	-
1000	775	.015
2000	792	.017
2780	806	.018
2961 (+1348)	809 * **	(.018)

* EXTRAPOLATED PRESSURE



JARREL SERVICES, INC.



OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	☒
FILE	☒
U.S.G.S.	☒
LAND OFFICE	☒
OPERATOR	☒

5a. Indicate Type of Lease	
State ☒	Fee ☐
5. State Oil & Gas Lease No.	
V417	

1a. TYPE OF WELL		OIL WELL ☐		GAS WELL ☒		DRY ☐		OTHER <u>RECEIVED</u>	
b. TYPE OF COMPLETION		NEW WELL ☒		WORK OVER ☐		DEEPEN ☐		PLUG BACK ☐	
				DIFF. RESVR. ☐				OTHER <u>NOV 8 1982</u>	

2. Name of Operator		Exxon Corporation	
3. Address of Operator		P. O. Box 1600, Midland, Texas 79702	
4. Location of Well		O. C. D. ARTESIA, OFFICE	

UNIT LETTER <u>F</u>		LOCATED <u>1980</u>		FEET FROM THE <u>North</u>		LINE AND <u>1980</u>		FEET FROM	
THE <u>West</u>		LINE OF SEC. <u>2</u>		TWP. <u>7S</u>		RGE. <u>22E</u>		NMPM	
12. County		Chaves							

15. Date Spudded		16. Date T.D. Reached		17. Date Compl. (Ready to Prod.)		18. Elevations (DF, RKB, RT, GR, etc.)		19. Elev. Casinghead	
9-22-82		9-29-82		10-19-82		4309' GR		-	
20. Total Depth		21. Plug Back T.D.		22. If Multiple Compl., How Many		23. Intervals Drilled By		Rotary Tools	
3250'		3175'		-		0-3250'		-	
24. Producing Interval(s), of this completion - Top, Bottom, Name								25. Was Directional Survey Made	
2876'-3045', 41 shots								-	
26. Type Electric and Other Logs Run								27. Was Well Cored	
FPC, CNL, GR, DLL, MA, SFL								-	

28. CASING RECORD (Report all strings set in well)					
CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8"	24	1137'	12 1/4"	1072	-
5 1/2"	14	3232'	7 7/8"	800	-

29. LINER RECORD				30. TUBING RECORD		
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET
					2 7/8"	2793'
						2793'

31. Perforation Record (Interval, size and number)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
2876'-3045', 41 shots		DEPTH INTERVAL	
		2876'-3045'	
		AMOUNT AND KIND MATERIAL USED	
		Acidz w/2100 gal 15% HCl, frac	
		w/52,500 gal KCl wtr, 17,500	
		gal CO ₂ , 87,500 #20-40 sd,	
		24,000# sd.	

33. PRODUCTION							
Date First Production		Production Method (Flowing, gas lift, pumping - Size and type pump)				Well Status (Prod. or Shut-in)	
10-8-82		Flow (Gas Well)				Shut in	
Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
10-19-82	24	48/64		-	280	20	-
Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API (Corr.)	
103	-		-	280	20	-	

34. Disposition of Gas (Sold, used for fuel, vented, etc.)		Test Witnessed By	
4-pt test attached			

35. List of Attachments		
36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.		
SIGNED <u>A. P. Louie</u>	TITLE <u>Sr. Administrator</u>	DATE <u>November 5, 1982</u>

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

Northwestern New Mexico

T. Anhy _____	T. Canyon _____	T. Ojo Alamo _____	T. Penn. "B" _____
T. Salt _____	T. Strawn _____	T. Kirtland-Fruitland _____	T. Penn. "C" _____
B. Salt _____	T. Atoka _____	T. Pictured Cliffs _____	T. Penn. "D" _____
T. Yates _____	T. Miss _____	T. Cliff House _____	T. Leadville _____
T. 7 Rivers _____	T. Devonian _____	T. Menefee _____	T. Madison _____
T. Queen _____	T. Silurian _____	T. Point Lookout _____	T. Elbert _____
T. Grayburg _____	T. Montoya _____	T. Mancos _____	T. McCracken _____
T. San Andres _____	T. Simpson _____	T. Gallup _____	T. Ignacio Qtzte _____
T. Glorieta _____	T. McKee _____	Base Greenhorn _____	T. Granite _____
T. Paddock _____	T. Ellenburger _____	T. Dakota _____	T. _____
T. Blinbry _____	T. Gr. Wash _____	T. Morrison _____	T. _____
T. Tubb ²²²³ _____	T. Granite _____	T. Todilto _____	T. _____
T. Drinkard _____	T. Delaware Sand _____	T. Entrada _____	T. _____
T. Abo ²⁸⁶⁴ _____	T. Bone Springs _____	T. Wingate _____	T. _____
T. Wolfcamp _____	T. _____	T. Chinle _____	T. _____
T. Penn. _____	T. _____	T. Permian _____	T. _____
T. Cisco (Bough C) _____	T. _____	T. Penn. "A" _____	T. _____

OIL OR GAS SANDS OR ZONES

No. 1, from 2876 to 3045 No. 4, from _____ to _____
 No. 2, from _____ to _____ No. 5, from _____ to _____
 No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from _____ to _____ feet. _____

No. 2, from _____ to _____ feet. _____

No. 3, from _____ to _____ feet. _____

No. 4, from _____ to _____ feet. _____

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	300	300	Surface				
300	3250	2950	Dolomite & Shale				
	TD						

New Mexico "CS" State, Well #1, Unit F, Sec. 2, T-7-S, R-22-E
Chaves County, New Mexico

4-Point Test

1st rate, 759# FTP, 25 MCF Rate, 5/64 ck
2nd rate, 746# FTP, 78 MCF Rate, 8/64 ck
3rd rate, 720# FTP, 111 MCF Rate, 8.5/64 ck
4th rate, 685# FTP, 155 MCF Rate, 9/64 ck

1 hr extended rate, FTP 660#, 159 MCF Rate, 9/64 ch.