

REVISED

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NOV 04 '87

NEW MEXICO
OIL CONSERVATION DIVISION
P. O. DRAWER DD
ARTESIA, NEW MEXICO

O. C. D.
ARTESIA, OFFICE

88210

Date November 3, 1987

NOTICE OF LLANO'S GAS CONNECTION:

OPERATOR: EXXON COMPANY USA
LEASE: Happy Valley Delivery
WELL NUMBER AND UNIT: NE $\frac{1}{4}$
LOCATION: 12-23S-26E
POOL: See Attached Sheet for Wells connected to this Station.
DATE WELL CONNECTED: August 10, 1987
DATE OF FIRST GAS SALES: August 10, 1987 9:30 AM
LLANO'S STATION NUMBER: 426

LLANO, INC.
TRANSPORTER


REPRESENTATIVE

DOYLE T. FORRESTER
CONTRACT TECHNICIAN

xc: Oil Conservation Division, Box 2088, Santa Fe, New Mexico 87501

Well Name & Number

Lease
Description

J. A. Tomaino
Federal Com. No. 1

W/2 Sec. 27,
T-22-S, R-26-E

Happy Valley Federal
Com. No. 1

N/2 Sec. 28,
T-22-S, R-26-E

Happy Valley "B"
Federal Com. No. 1

S/2 Sec. 28,
T-22-S, R-26-E

New Mexico "EV"
State Com. No. 1

All of Sec. 32,
T-22-S, R-26-E

✓ Squaw Federal
No. 3

All of Sec. 1,
T-23-S, R-25-E

↑ Sheep Draw Alaska Gas Pool

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AUG 24 '87

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 7/20/87		ARTESIA OFFICE	
Company Exxon Corporation		Connection None			
Pool Sheep Draw - 1		Formation Atoka		Unit	
Completion Date 7-18-87		Total Depth 11,665'		Plug Back TD 11150'	
Elevation 3734' KB		Farm or Lease Name Squaw Federal			
Csg. Size 5"	Wt. 20.8#	d 4.154	Set At 11665	Perforations: From 10469' To 10857'	
Trg. Size 2 7/8"	Wt. 6.5#	d 2.441	Set At 10400'	Perforations: From Open To Ended	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 10400'	
Producing Thru Tbg		Reservoir Temp. °F 164 @ 10633		Mean Annual Temp. °F 60°	
Baro. Press. - P _a 13.2		State New Mexico			
L -	H -	C _g 0.595	% CO ₂ 0.425	% N ₂ 0.483	% H ₂ S -
Prover -		Meter Run 4.026		Taps Flg	

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.		Temp. °F
SI							3180	63	PACKER		75.5 hrs
1.	4.026	4/64	1.500	515	3	77	3095	63			1.0 hrs
2.	4.026	7/64	1.500	520	6	77	2985	61			1.0 hrs
3.	4.026	10/64	1.500	525	13	77	2810	61			1.0 hrs
4.	4.026	14/64	1.500	530	18	76	2640	61			1.0 hrs
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 _{sp}	Rate of Flow Q, Mscf/d
1	10.84	39.81	528.2	0.9840	1.296	1.039	572
2	10.84	56.56	533.2	0.9840	1.296	1.039	812
3	10.84	83.65	538.2	0.9840	1.296	1.040	1203
4	10.84	98.88	543.2	0.9850	1.296	1.040	1423
5							

NO.	P _r	Temp. °R	T _g	Z	Gas Liquid Hydrocarbon Ratio	Dry	Mcf/ubt.
1	0.78	537	1.53	0.927	A.P.I. Gravity of Liquid Hydrocarbons	-	Deg.
2	0.79	537	1.53	0.926	Specific Gravity Separator Gas	0.595	XXXXXX
3	0.80	537	1.53	0.925	Specific Gravity Flowing Fluid	XXXXX	
4	0.80	536	1.53	0.925	Critical Pressure	675	P.S.I.A.
5					Critical Temperature	350	°R

P _c 4072.2*		P _c ² 16582.8	
NO.	P ₁ ²	P _w	P _w ²
1	3950.2	15604.1	978.7
2	3792.2	14380.8	2202.0
3	3628.2	13163.8	3419.0
4	3519.2	12384.8	4198.0
5			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.950$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4760$

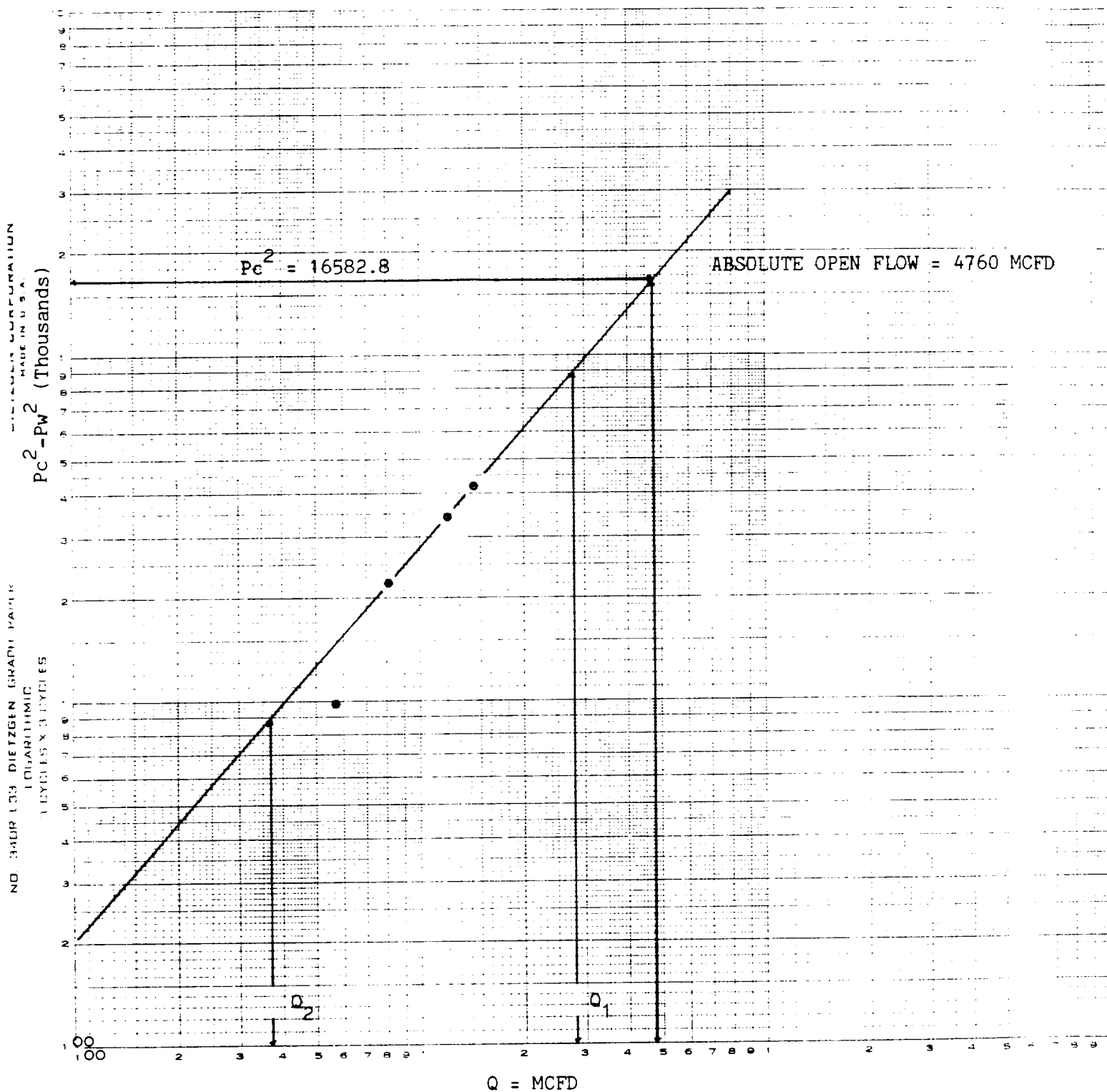
(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.345$

Absolute Open Flow	4760	Mcf/d @ 15.023	Angle of Slope @	48° 41'	Slope, n	0.879
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Remarks: * BOTTOM HOLE PRESSURES @ 10633' (-6899) USED FOR PRESSURE CALCULATIONS

Approved By Division	Conducted By:	Calculated By:	Checked By:
	Parrel Services, Inc.	H. H. Johnson	

COMPANY: Exxon Company USA
 WELL: Squaw Federal, No. 3
 LOCATION: K 1 23_s 25_e
 COUNTY: Eddy
 DATE: July 20, 1987



$$Q_1 = 2800 \text{ MCFD: } \log Q_1 = 3.447158$$

$$Q_2 = 370 \text{ MCFD: } \log Q_2 = 2.568202$$

$$N = 0.878956 = 0.879$$

JARREL SERVICES, INC.

POST OFFICE BOX 1654

PHONES 505 393-5396 — 393-8274

HOBBS, NEW MEXICO 88240

COMPANY: Exxon Company USA

WELL: Squaw Federal, No. 3

FIELD: Sheep Draw - Atoka

CHRONOLOGICAL PRESSURE DATA

DATE	STATUS OF WELL	TIME	ELAPSED TIME		SURFACE PRESSURE		BHP @ (-6899)	
			HRS.	MIN.	TBG DWT	CSG	10350	10633 psig
1987								
7/20	Shut in 73.5 hrs.	9:30 AM	73	30	3180	PKR	4033	4059
	Run Bombs to 10350'							
	Started 1st Rate	11:30	75	30	3180	-	4033	4059
	Flowing					MCFD		
	Finished 1st Rate &	12:30 PM	1	00	3095	572	3911	3937
	Started 2nd Rate							
	Finished 2nd Rate &	1;30	1	00	2985	812	3753	3779
	Started 3rd Rate							
	Finished 3rd Rate &	2:30	1	00	2810	1203	3589	3615
	Started 4th Rate							
	Finsihed 4th Rate &	3:30	1	00	2640	1423	3480	3506
	Pulled Bombs							

NEW-TEX LAB
P.O. Box 1161
Hobbs, New Mexico 88240

ANALYSIS CERTIFICATE

CLIENT: BENNETT & CATHEY INC., ANALYSIS NUMBER: 1632
ADDRESS: BOX 787 DATE OF RUN: 07 21 87
CITY, STATE: ARTESIA, NM 88210 DATE SECURED: 07 21 87

SAMPLE IDENT: EXXON - SQUAW FEDERAL #3
SAMPLING PRESS: 150 PSIG SAMPLING TEMP: 60 DEG F

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

	MOLE PERCENT	GAL/ MCF
NITROGEN	0.483	
CARBON DIOXIDE	0.425	
METHANE	93.981	
ETHANE	3.835	1.023
PROPANE	0.789	0.217
ISO-BUTANE	0.161	0.053
NORMAL BUTANE	0.143	0.045
ISO-PENTANE	0.080	0.029
NORMAL PENTANE	0.055	0.020
HEXANES	0.048	0.020
TOTAL	100.000	1.407

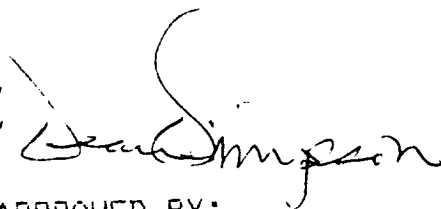
PROPANE GPM: 0.22 BUTANES GPM: 0.10
ETHANE GPM: 1.02 PENTANES PLUS GPM: 0.07

SPECIFIC GRAV (CALC): 0.5945
MOLE WEIGHT: 17.22

HHV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
14.696		1036	1055
14.650		1033	1051
14.730		1038	1057
14.735		1039	1057

ANALYZED BY:

APPROVED BY:



JARREL SERVICES, INC.
Box 1230
Hobbs, New Mexico 88240

<<Static Gradient Survey>>

COMPANY: Exxon Company USA
LEASE: Squaw Federal
FIELD: Sheep Draw
COUNTY: Eddy
STATUS: Shut in 73.5 hours
PERFORATIONS FROM: 10469 ft
DEPTH: 10857 ft

Date: 07/20/87 @ 9:30 am
CONTACT: James Fort
WELL: #3
ZONE: Atoka
STATE: New Mexico
OPERATOR: Standefer
TD: 10857 ft
TEMPERATURE: 161°F

TABULAR DATA

DEPTH (ft)	PRESSURE (psi)	GRADIENT (psi/ft)	EXPLANATIONS
0	3177		
2000	3339	0.081	
4000	3509	0.085	
6000	3676	0.084	
8000	3839	0.082	
9000	3924	0.085	
10000	4004	0.080	
10350	4033	0.083	
10663	4059	0.083	<=Extrapolated BHP

NOTE: Explanations are included to clarify calculated data points.

