

OIL CONSERVATION DIVISIO

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator KAISER-FRANCIS Oil Company						Lease or Unit Name BELL LAKE UNIT 1					
Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 4/19/97		Well No. 4			
Completion Date 4/17/97		Total Depth 15566		Plug Back TD 13320		Elevation 3615 DF		Unit Ltr. - Sec. - TWP - Rge. F 6-24S-34E			
Csg. Size 7"5-1/2	WL 32/15	d 6.094	Set At 14561	Perforations: From: 13261 To: 13294				County LEA			
Tbg. Size 2-7/8	WL 6.5	d 2.44	Set At 13069	Perforations: From: - To: -				Pool Bell Lake Morrow South			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple single						Packer Set At 13037		Formation MORROW			
Producing Thru TBG		Reservoir Temp. °F 206.6		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		Connection AIR			
L 13261	H 13261	Gg .580	% CO ₂ .49	% N ₂ .32	% H ₂ S	Prover -0-	Meter Run 4.026	Taps FLG			

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI						4000		PKR.		
1.	4.026 X 1.750		500	3	100°	3700	76	"		60 min
2.	4.026 X 1.750		550	8	100°	3450	76	"		60 min
3.	4.026 X 1.750		550	9	86°	3325	75	"		60 min
4.	4.026 X 1.750		550	18	72°	3125	76	"		60 min
5.										

RATE OF FLOW CALCULATIONS							
NO.	COEFFICIENT (24 HOUR)	$h_w P_m$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	14.93	39.23	513.2	.9636	1.313	1.033	765
2.	14.93	67.12	563.2	.9636	1.313	1.033	1309
3.	14.93	71.19	563.2	.9759	1.313	1.036	1410
4.	14.93	100.68	563.2	.9887	1.313	1.039	2027
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	.82	560	1.61	.938	N/A	
2.	.82	560	1.61	.938	N/A	
3.	.80	546	1.57	.932		
4.	.78	532	1.53	.927		
5.						

NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²
1.		3714.3	13796.3	2309.5
2.		3466.7	12018.0	4087.8
3.		3342.4	11171.4	4934.4
4.		3147.2	9904.9	6200.8
5.				

1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.597$

2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.575$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 5.220$

Gas Liquid Hydrocarbon Ratio **N/A** Mcf/bbl.

A.P. I Gravity of Liquid Hydrocarbons **N/A** Deg.

Specific Gravity Separator Gas **.580** XXXXXXXXXX

Specific Gravity Flowing Fluid **N/A** XXXXXX

Critical Pressure **675** P.S.I.A. P.S.I.A.

Critical Temperature **346** R R

Absolute Open Flow 5.220 Mcfd @ 15.025	Angle of Slope θ 45.24	Slope, n .991
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Remarks: **NO FLUID MADE DURING TEST**

Approved By Division	Conducted By: PRO WELL TESTER	Calculated By: MB	Checked By: BM
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PCW

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	5
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VOL 1 :	765	PSIA 1 :	3713.2	RESV.TEMP	206.6	Pc2-Pw2=	2309.5	Pw2 =	13796.3	
VOL 2 :	1309	PSIA 2 :	3463.2				4087.8		12018.0	
VOL 3 :	1410	PSIA 3 :	3338.2	SHUT-IN PR=	4013.2		4934.4		11171.4	
VOL 4 :	2027	PSIA 4 :	3138.2				6200.8		9904.9	

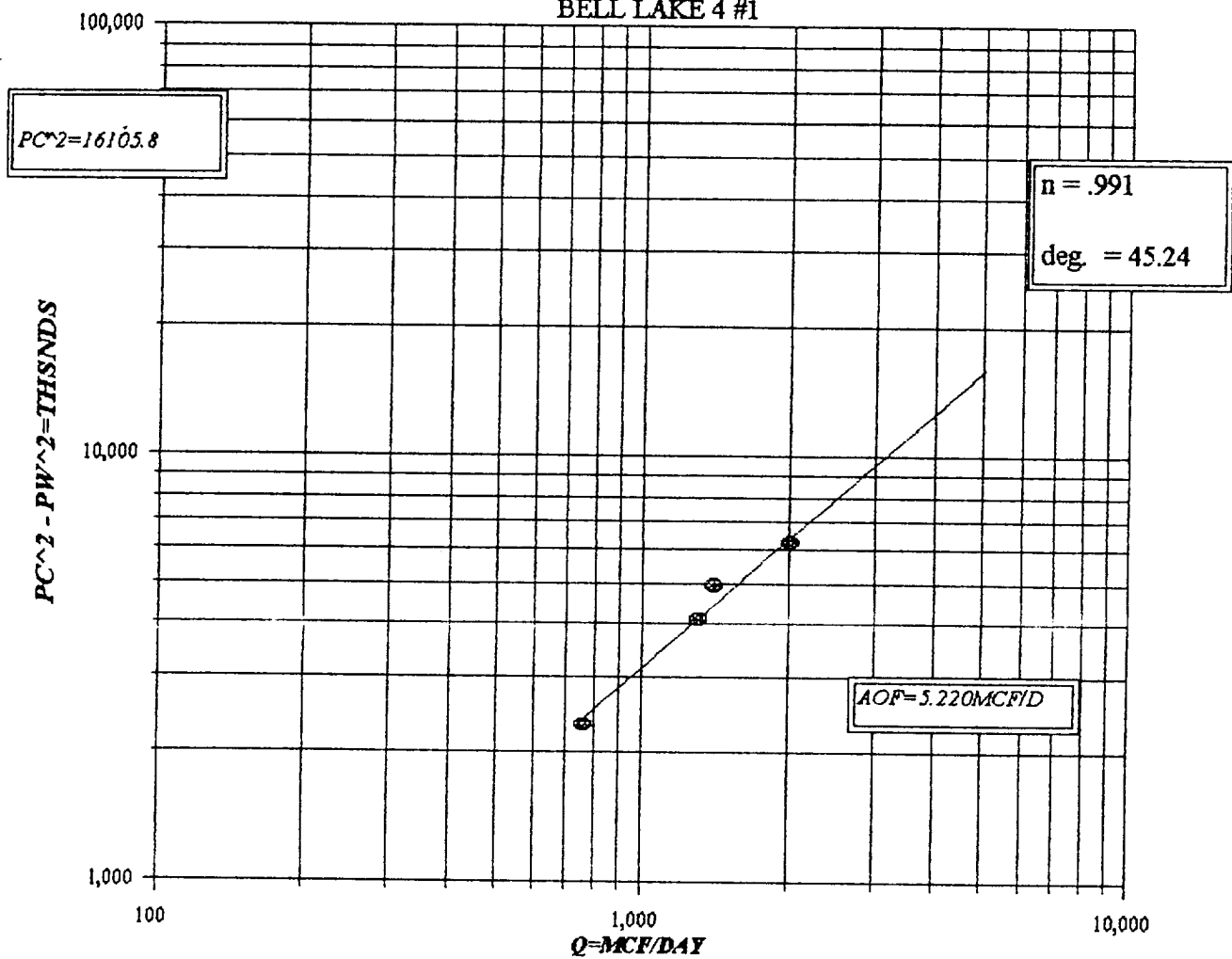
PCR : 675 :: n = 0.991
TCR : 346 ::

LINE	RATE 1		RATE 2		RATE 3		RATE 4		
									3.940
									3.264
	'1ST	'2ND	'1ST	'2ND	'1ST	'2ND	'1ST	'2ND	2.597

1	GM	0.765	0.765	1.309	1.309	1.410	1.410	2.027	2.027		
2	TW	534	534	534	534	534	534	534	534	[Pc2/Pc2-Pw2]n =	6.853
3	Ts	666.6	666.6	666.6	666.6	666.6	666.6	666.6	666.6		3.892
4	T	600.3	600.3	600.3	600.3	600.3	600.3	600.3	600.3		3.229
	PR (est)	5.50		5.13		4.95		4.65			2.575
5	Z(est)	0.891	0.923	0.880	0.907	0.875	0.899	0.867	0.888		
6	TZ	535.0	554.1	528.1	544.3	525.0	539.8	520.7	533.0	AOF= 0	5.243
7	GH/TZ	14.376	13.880	14.565	14.129	14.650	14.249	14.772	14.430		5.094
8	eS	1.714	1.683	1.727	1.699	1.732	1.706	1.740	1.718		4.554
9	1-e-S	0.417	0.406	0.421	0.411	0.423	0.414	0.425	0.418		5.220
10	Pt	3713.2	3713.2	3463.2	3463.2	3338.2	3338.2	3138.2	3138.2		
11	Pt2 /1000	13787.9	13787.9	11993.8	11993.8	11143.6	11143.6	9848.3	9848.3		
12	Fr	0.010774	0.010774	0.010774	0.010774	0.010774	0.010774	0.010774	0.0107746		
13	Fc=FrTZ	5.765	5.970	5.690	5.865	5.657	5.816	5.610	5.743		
14	FcQm	4.41	4.57	7.45	7.68	7.98	8.20	11.37	11.64		
15	L/H(FcQm)	19.4	20.9	55.5	58.9	63.6	67.2	129.3	135.5		
16	Fw	8.104120	8.465119	23.34593	24.24434	26.89046	27.83603	55.00041	56.633502		
17	Pw2	13796.0	13796.3	12017.1	12018.0	11170.5	11171.4	9903.3	9904.9		
18	Ps2	23652.8	23217.7	20749.1	20414.8	19349.2	19062.3	17232.8	17016.0		
19	Ps	4863.4	4818.5	4555.1	4518.3	4398.8	4366.0	4151.2	4125.0		
20	P	4288.3	4265.8	4009.2	3990.7	3868.5	3852.1	3644.7	3631.6		
21	Pr	6.35	6.32	5.94	5.91	5.73	5.71	5.40	5.38		
22	Tr	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73		
23	Z	0.923	0.922	0.907	0.906	0.899	0.898	0.888	0.887		FORM C122

FORM C122-D

KAISER FRANCIS OIL COMPANY
BELL LAKE 4 #1



Attachment to C-122
Test date: 4/19/97