EXHIBIT

Average Reservoir Parameters
Shipp Field

Permeability:	k	45 md	
Formation Volume Factor:	Bo	1.50	Reservoir Barrel Stock Tank Barrel
Porosity:	ø	8%	
Water Saturation:	Sw	15%	12-25%
Recovery Factor:	R.F.	25%	
Reservoir Temp:	T	160°F	
Oil Viscosity:	μ	.28 cp (Res. Cond.)	
Oil Gravity:	ɣ	45° API (Corr.)	

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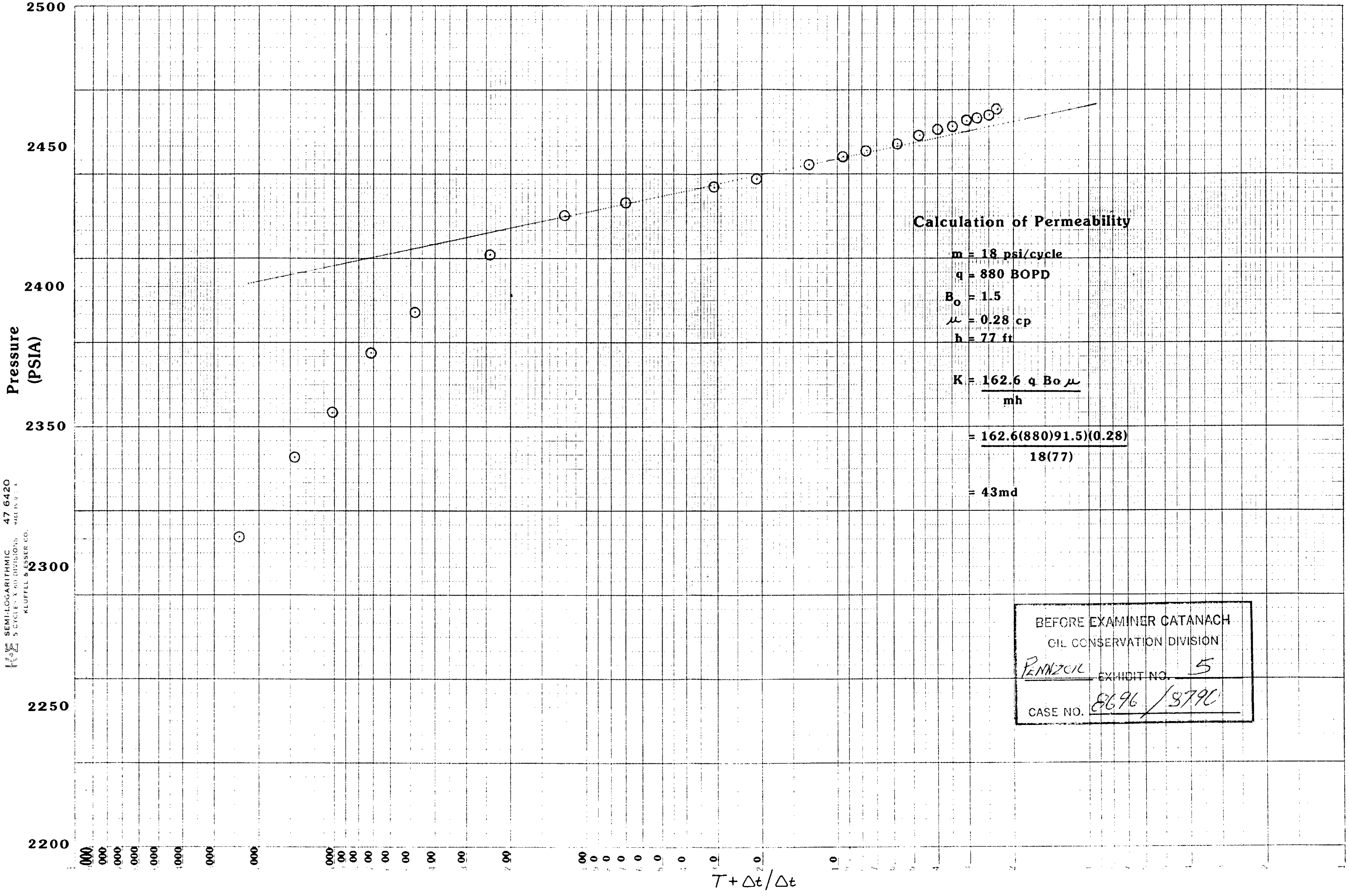
PENNZOIL EXHIBIT NO. 4
CASE NO. 8696 / 8790

Viersen No. 1

Horner Plot of Pressure Build-up



Calculation of Permeability

m = 18 psi/cycle

q = 880 BOPD

B_o = 1.5

μ = 0.28 cp

h = 77 ft

$$K = \frac{162.6\ q\ B_o \mu}{mh}$$

$$= \frac{162.6(880)91.5)(0.28)}{18(77)}$$

= 43md

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SEMI-LOGARITHMIC 47 6420
5 CYCLES X 70 DIVISIONS MADE IN U.S.A.
KEUFFEL & ESSER CO.

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CASE NO. 8696 / 8790

ROTARY ENGINEERS LABORATORIES

WHOLE CORE ANALYSIS TABULAR DATA

COMPANY Pennzoil Company | WELL Virson #2 | FIELD Shipp
COUNTY Lea | STATE New Mexico | DATE 11-18-85 | ANALYST DRM
FORMATION Strawn | TYPE ANALYSIS Whole Core - Vertical Permeabilities | JOB NO. R-7495
REMARKS 2 Sets of Slabs * Plug Vertical Permeability | ELEVATION 3773.9' G.L.

SAMPLE NUMBER	DEPTH	RATING	GRAIN DENSITY	POROSITY	VERT. PERM.	WHOLE CORE PERMEABILITY MAX.	WHOLE CORE PERMEABILITY 90°	FLUIDS S_W	FLUIDS S_O	FLO.	REMARKS
				Core #(1) 11,068-11,098', Cut & Recovered 30'							
1	11068-11069	F	2.71	8.7	0.66	1.46	0.62	29.6	8.8	100	Limestone,Vugs,Fr.
2	11069-11070	F	2.71	9.2	4.11	57.21	8.33	31.1	10.1	100	Limestone,Vugs,Fr.
3	-71	F	2.71	9.8	12.75	7.40	6.54	27.9	11.0	100	Limestone,Vugs
4	-72	F	2.70	7.4	0.54	1.56	1.00	28.0	10.3	100	Limestone,Vugs
5	-73	F	2.70	5.7	2.83	27.56	8.14	31.7	2.5	100	Limestone,Vugs
6	-74	F	2.71	7.9	64.28	140.89	63.07	32.7	9.9	100	Limestone,Vugs,Fr.
7	11074-11075	F	2.71	7.9	1.18	2.57	1.68	34.3	9.9	100	Limestone,Vugs,Fr.
8	-76	F	2.70	10.5	1.34	58.40	45.28	32.0	10.4	100	Limestone,Vugs,Fr.
9	-77	F	2.70	9.5	0.50	22.41	4.22	28.1	9.4	100	Limestone,Vugs,Fr.
10	-78	F	2.70	10.9	30.17	48.55	35.20	26.3	10.3	100	Limestone,Vugs,Fr.
11	-79	F	2.71	8.5	1203.07	539.59	472.62	33.3	13.3	100	Limestone,Vugs,Fr.
12	11079-11080	F	2.70	13.4	604.99	673.51	516.82	34.4	10.1	100	Limestone,Vugs
13	-81	F	2.72	10.8	4.31	191.95	171.19	32.4	9.9	100	Limestone,Vugs
14	-82	F	2.70	10.8	11.75	48.37	39.71	34.8	11.7	100	Limestone,S/P,Vugs
15	-83	F	2.70	10.8	18.57	22.03	16.34	37.7	11.5	100	Limestone,S/P,Vugs
16	-84	F	2.71	9.4	0.20	289.30	168.08	41.6	9.5	100	Limestone,S/P,Vugs,Fr.
17	11084-11085	F	2.63	7.5	* 0.40	0.07	Plug	39.7	10.8	100	Limestone,Vugs,Fr.
18	-86	F	2.74	11.3	* 0.76	7.38	Plug	32.6	10.4	100	Limestone,Stylolites,Vugs,Fr.
19	-87	F	2.76	11.1	* 0.16	2.80	Plug	40.0	13.3	100	Limestone,Vugs,Fr.
20	-88	F	2.70	10.6	6.48	262.65	209.50	38.3	12.5	100	Limestone,Vugs
21	-89	F	2.70	9.4	1.67	10.04	2.59	35.8	11.3	100	Limestone,Vugs
22	11089-11090	F	2.71	8.9	1.02	42.52	38.25	36.8	8.4	100	Limestone,Vugs
23	-91	F	2.71	13.1	40.20	393.07	81.28	37.4	10.8	Sp.	Limestone,Vugs
24	-92	F	2.70	11.7	9.71	71.93	63.44	35.8	10.5	Sp.	Limestone,Vugs
25	-93	F	2.70	10.1	3.87	20.33	18.92	33.0	8.5	Sp.	Limestone,Vugs
26	-94	F	2.70	7.4	11.02	42.50	32.65	32.8	8.9	Sp.	Limestone,Vugs
27	11094-11095	F	2.68	6.3	0.38	0.61	0.58	32.6	8.1	Sp.	Limestone,Vugs
28	-96	F	2.71	8.9	0.93	69.67	12.23	28.7	10.7	Sp.	Limestone,Vugs
29	-97	F	2.71	10.0	6.32	8.93	7.09	26.8	8.3	Sp.	Limestone,S/P,Vugs
30	11097-11098	F	2.73	9.5	8.03	18.85	10.55	29.5	9.1	Sp.	Limestone,Vugs

LITHOLOGICAL ABBREVIATIONS

Fr.----------Fracture
S/P----------Shale Partings
Sp.----------Spotty
FLUIDS S_W-------Total Water Saturation %P.V.
FLUIDS S_O-------Residual Oil Saturation %P.V.

EXHIBIT

Economic Comparison of 40 and 80 Acre Spacing

	40 Acre	80 Acre
Number of Wells	2	1
Total Well Cost	1400 M$	700 M$
Gross Oil Reserves	500 MB	500 MB
Gross Gas Reserves	582 MMCF	582 MMCF
Total Producing Life	4 Years	9 Years
Initial Oil Rate	640 BOPD	445 BOPD
Payout Time	0.5 Years	0.5 Years
Cash Flow/Investment	2.05 $/$	5.87 $/$
Present Value/Investment	1.73 $/$	3.99 $/$
Capital Investment/Equiv. Barrel	2.93 $/Bbl	1.47 $/Bbl

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