

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name WARD 1-8 Test No. 1 Date 6/12/93
Company RANKEN ENERGY CORPORATION Zone FT SCOTT
Address 2325 S.W. 15th ST EDMOND OK 73013-2024 Elevation 2508
Co. Rep./Geo. DOUG BELLIS Cont. EMPHASIS RIG #7 Est. Ft. of Pay 4
Location: Sec. 8 Twp. 18S Rge. 26W Co. NESS State KS

Interval Tested	<u>4334-4400</u>	Drill Pipe Size	<u>4.5" XH</u>
Anchor Length	<u>66</u>	Wt. Pipe I.D. - 2.7 Ft. Run	<u>90</u>
Top Packer Depth	<u>4327-4334</u>	Drill Collar - 2.25 Ft. Run	<u>90</u>
Bottom Packer Depth	<u>4400</u>	Mud Wt.	<u>9.3</u> lb/Gal.
Total Depth	<u>4510</u>	Viscosity	<u>45</u> Filtrate <u>10</u>

Tool Open @ 1:38 AM Initial Blow WEAK SURFACE BLOW BUILT TO 3 1/8" IN 30 MINUTES

Final Blow WEAK SURFACE BLOW BUILT TO 6 1/4" IN 120 MINUTES

Recovery - Total Feet 165 Flush Tool? NO

Rec. 165 Feet of MUD
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 117 °F Gravity _____ °API _____
RW .2 °F Chlorides 2500 ppm Recovery Chlorides 2000 ppm System

(A) Initial Hydrostatic Mud 2179.6 PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure 61.7 PSI @ (depth) 4336 w / Clock No. 25828

(C) First Final Flow Pressure 80.9 PSI AK1 Recorder No. 10332 Range 27566

(D) Initial Shut-in Pressure 1164.3 PSI @ (depth) 4395 w / Clock No. 31152

(E) Second Initial Flow Pressure 103.2 PSI AK1 Recorder No. _____ Range _____

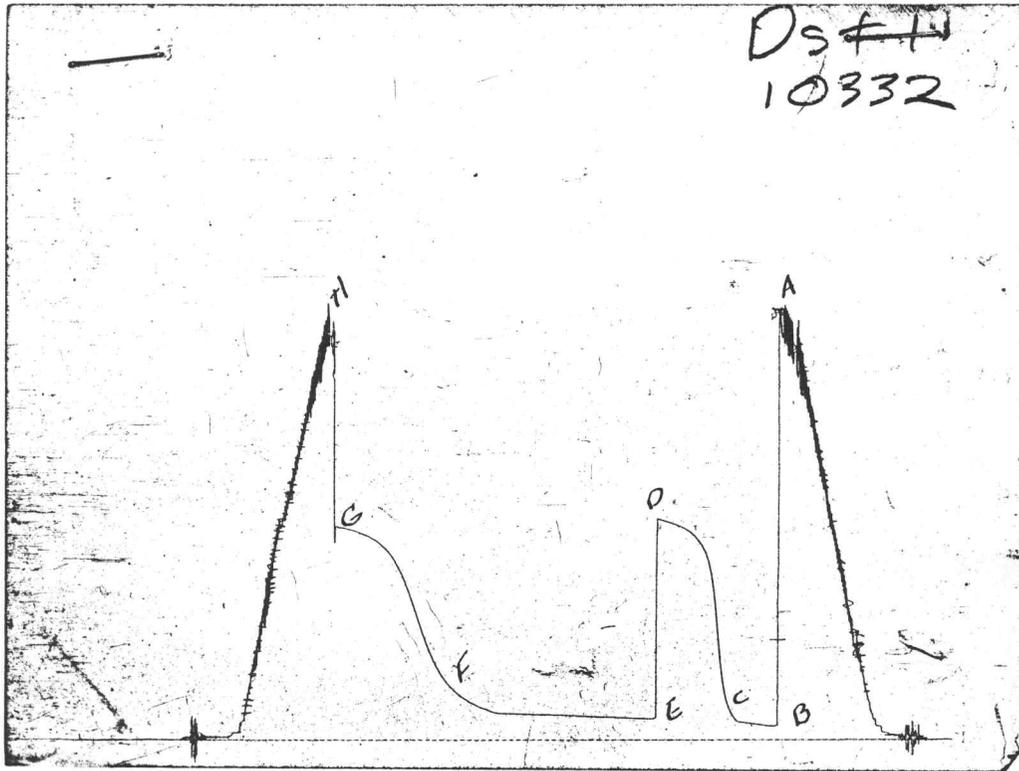
(F) Second Final Flow Pressure 126.5 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 1123.9 PSI Initial Opening 30 Final Flow 120

(H) Final Hydrostatic Mud 2156.8 PSI Initial Shut-in 60 Final Shut-in 120

Our Representative MARK HERSKOWITZ

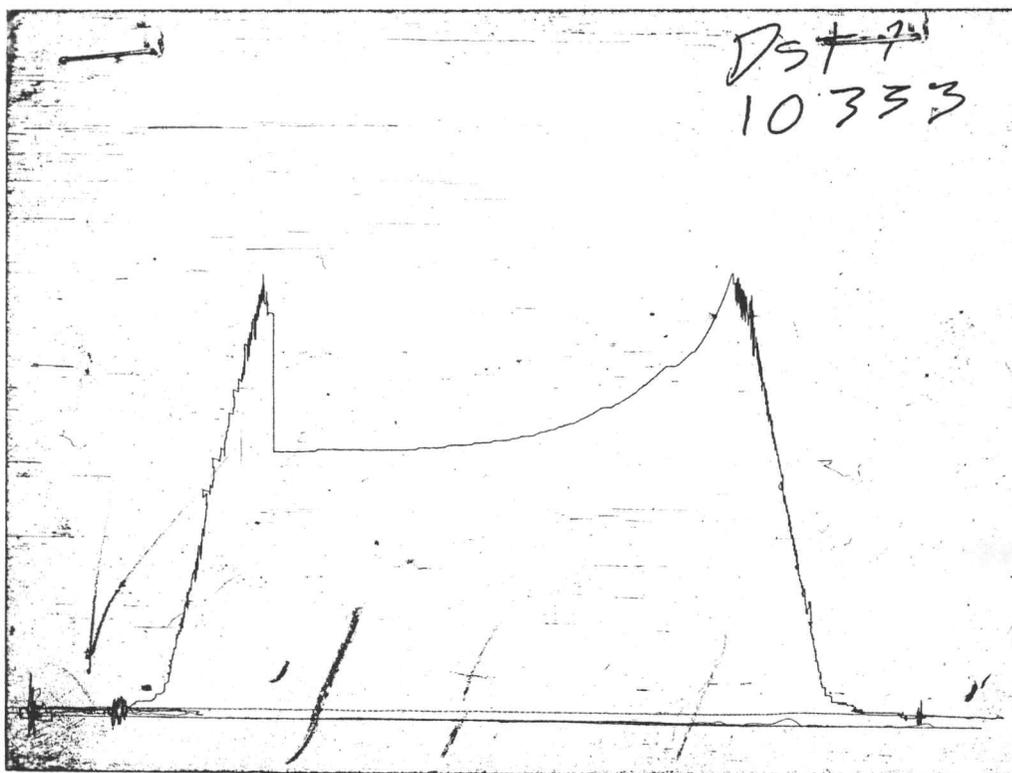
CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2169	2179.6
(B) FIRST INITIAL FLOW PRESSURE	39	61.7
(C) FIRST FINAL FLOW PRESSURE	69	80.9
(D) INITIAL CLOSED-IN PRESSURE	1144	1164.3
(E) SECOND INITIAL FLOW PRESSURE	88	103.2
(F) SECOND FINAL FLOW PRESSURE	118	126.5
(G) FINAL CLOSED-IN PRESSURE	1104	1123.9
(H) FINAL HYDROSTATIC MUD	2140	2156.8

CHART PAGE



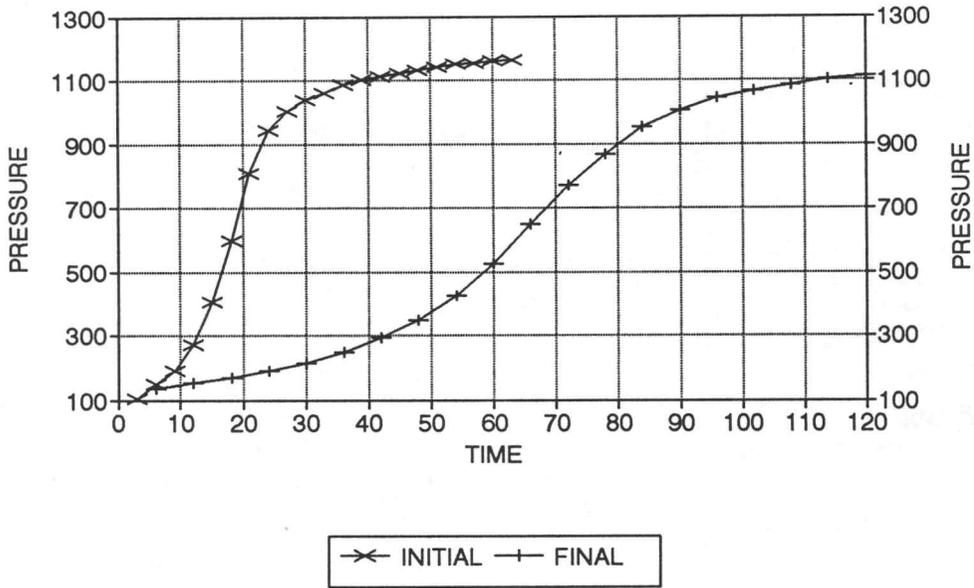
This is an actual photograph of recorder chart

FIELD
READING

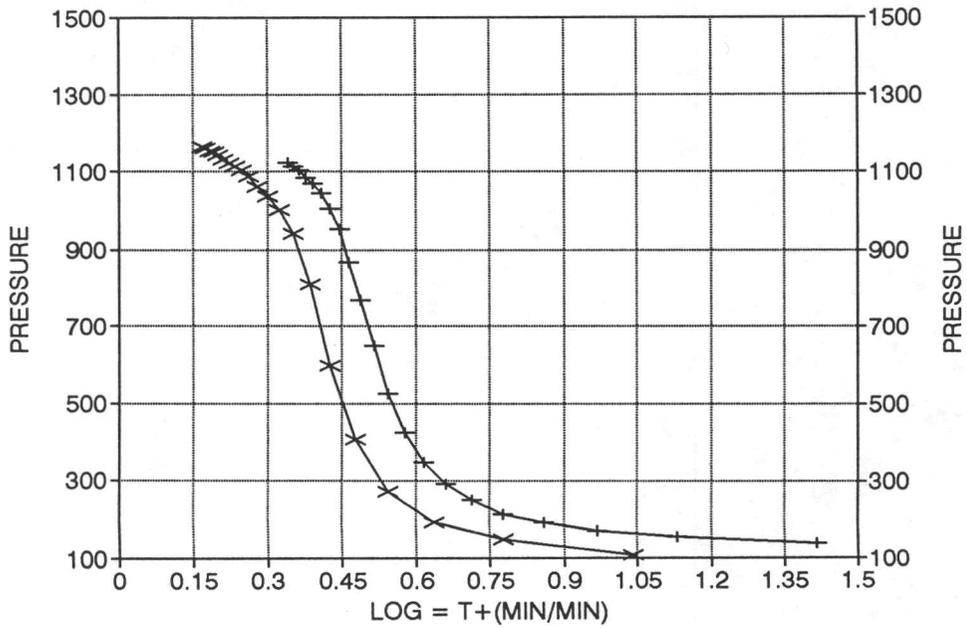
OFFICE
READING

- (A) INITIAL HYDROSTATIC MUD
- (B) FIRST INITIAL FLOW PRESSURE
- (C) FIRST FINAL FLOW PRESSURE
- (D) INITIAL CLOSED-IN PRESSURE
- (E) SECOND INITIAL FLOW PRESSURE
- (F) SECOND FINAL FLOW PRESSURE
- (G) FINAL CLOSED-IN PRESSURE
- (H) FINAL HYDROSTATIC MUD

WARD 1-8 / DST #1 DELTA T DELTA P



HORNER PLOT



WARD 1-8
INITIAL

DST #1 SHUTIN		-----		
30 INITIAL FLOW TIME	SLOPE	PSI/CYCLE		
	P*	PSI		

	Log	<>		
TIME(MIN)	Pws (psi)	Horn T	PRESSURE	Horn T
-----	-----	-----	-----	-----
3	106.2	1.041	106.2	11
6	148.7	0.778	42.5	6
9	191.2	0.637	42.5	4
12	272.2	0.544	81.0	4
15	405.8	0.477	133.6	3
18	597.5	0.426	191.7	3
21	809.9	0.385	212.4	2
24	943.1	0.352	133.2	2
27	1003.9	0.325	60.8	2
30	1038.3	0.301	34.4	2
33	1061.5	0.281	23.2	2
36	1086.7	0.263	25.2	2
39	1103.8	0.248	17.1	2
42	1113.9	0.234	10.1	2
45	1121.9	0.222	8.0	2
48	1133.1	0.211	11.2	2
51	1143.1	0.201	10.0	2
54	1150.2	0.192	7.1	2
57	1154.2	0.184	4.0	2
60	1161.3	0.176	7.1	2
63	1164.3	0.169	3.0	1

WARD 1-8
FINAL

DST #1 SHUTIN		-----		
150	TOTAL FLOW TIME	SLOPE P*		PSI/CYCLE PSI

		Log	<>	
	Pws (psi)	Horn T	PRESSURE	Horn T
	-----	-----	-----	-----
6	137.6	1.415	137.6	26
12	153.8	1.130	16.2	14
18	170.1	0.970	16.3	9
24	190.2	0.860	20.1	7
30	213.5	0.778	23.3	6
36	249.9	0.713	36.4	5
42	292.5	0.660	42.6	5
48	348.1	0.615	55.6	4
54	426.1	0.577	78.0	4
60	525.3	0.544	99.2	4
66	650.3	0.515	125.0	3
72	770.3	0.489	120.0	3
78	867.8	0.466	97.5	3
84	952.1	0.445	84.3	3
90	1005.9	0.426	53.8	3
96	1046.3	0.409	40.4	3
102	1068.5	0.393	22.2	2
108	1084.6	0.378	16.1	2
114	1104.8	0.365	20.2	2
120	1112.9	0.352	8.1	2
126	1123.9	0.341	11.0	2

1	0.105	106.2803
2	0.147	148.7842
3	0.189	191.2957
4	0.269	272.2653
5	0.401	405.8724
6	0.59	597.552
7	0.799	809.9633
8	0.93	943.0507
9	0.99	1003.958
10	1.024	1038.314
11	1.047	1061.504
12	1.072	1086.704
13	1.089	1103.836
14	1.099	1113.912
15	1.107	1121.98
16	1.118	1133.073
17	1.128	1143.156
18	1.135	1150.214
19	1.139	1154.247
20	1.146	1161.304
21	1.149	1164.328

1	0.125	126.5208
2	0.136	137.6527
3	0.152	153.8444
4	0.168	170.0394
5	0.188	190.2834
6	0.211	213.5633
7	0.247	249.9991
8	0.289	292.5071
9	0.344	348.1764
10	0.421	426.1196
11	0.519	525.3975
12	0.642	650.3927
13	0.76	770.3192
14	0.856	867.8804
15	0.939	952.1863
16	0.992	1005.988
17	1.032	1046.381
18	1.054	1068.561
19	1.07	1084.688
20	1.09	1104.844
21	1.098	1112.905
22	1.109	1123.997