

15-081-21024

10-27s-34w

WELL NAME: Kuhn #5-10
COMPANY: Helmerich & Payne Inc
LOCATION: 10-27S-34W
Haskell County Kansas
DATE: 07/06/96

TRILOBITE TESTING L.L.C.

OPERATOR : Helmerich & Payne Inc. DATE 7-4-96
 WELL NAME: Kuhn #5-10 KB 2967.00 ft TICKET NO: 9020 DST #1
 LOCATION : 10-27S-34W Haskell Cty KS GR 2958.00 ft FORMATION: Morrow Limestone
 INTERVAL : 4947.00 To 5000.00 ft TD 5000.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins		Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	2836	2836				PF Fr. 1554 to 1624 hr
SI 60	Range(Psi)	3500.0	3500.0	4995.0	0.0	0.0	IS Fr. 1624 to 1724 hr
SF 60	Clock(hrs)	12	12	Alpin			SF Fr. 1724 to 1824 hr
FS 120	Depth(ft)	4997.0	4997.0	4952.0	0.0	0.0	FS Fr. 1824 to 2024 hr

	Field	1	2	3	4	
A. Init Hydro	2405.0	2414.0	2411.0	0.0	0.0	T STARTED 1330 hr
B. First Flow	68.0	77.0	41.0	0.0	0.0	T ON BOTM 1552 hr
B1. Final Flow	102.0	103.0	109.0	0.0	0.0	T OPEN 1554 hr
C. In Shut-in	772.0	784.0	821.0	0.0	0.0	T PULLED 2024 hr
D. Init Flow	154.0	159.0	121.0	0.0	0.0	T OUT 2345 hr
E. Final Flow	188.0	193.0	202.0	0.0	0.0	
F. Fl Shut-in	772.0	779.0	817.0	0.0	0.0	
G. Final Hydro	2351.0	2355.0	2364.0	0.0	0.0	
Inside/Outside	0	0	I			

TOOL DATA-----
 Tool Wt. 1800.00 lbs
 Wt Set On Packer 20000.00 lbs
 Wt Pulled Loose 80000.00 lbs
 Initial Str Wt 75000.00 lbs
 Unseated Str Wt 55000.00 lbs
 Bot Choke 0.75 in
 Hole Size 7.88 in
 D Col. ID 2.25 in
 D. Pipe ID 3.80 in
 D.C. Length 577.00 ft
 D.P. Length 4358.00 ft

RECOVERY

Tot Fluid 515.00 ft of 515.00 ft in DC and 0.00 ft in DP
 60.00 ft of Gas in collars
 120.00 ft of Gassy mud cut oil - 50% gas, 40% oil, 10% mud
 395.00 ft of Gassy mud cut oil - 40% gas, 50% oil, 10% mud
 8.00 ft of Pay (est)

SALINITY 0.00 P.P.M. A.P.I. Gravity 32.40

BLOW DESCRIPTION

Initial Flow -
 Strong blow, bottom of bucket in 4 min
 Initial Shutin -
 Bled off 2", no blow back
 Final Flow -
 Strong blow, bottom of bucket in 4 min
 Final Shutin -
 Bled off 2", no blow back

SAMPLES: NO
 SENT TO:

MUD DATA-----
 Mud Type Chemical
 Weight 9.20 lb/c
 Vis. 48.00 S/L
 W.L. 9.60 in3
 F.C. 0.00 in
 Mud Drop Y 25.0 ft
 Amt. of fill 0.00 ft
 Btm. H. Temp. 120.00 F
 Hole Condition Good
 % Porosity 0.00
 Packer Size 6.75 in
 No. of Packers 2
 Cushion Amt. 0.00
 Cushion Type
 Reversed Out N
 Tool Chased N
 Tester Mike Colantonio
 Co. Rep. Brad Rine
 Contr. Murfin
 Rig # 22
 Unit #
 Pump T.

Test Successful: Y

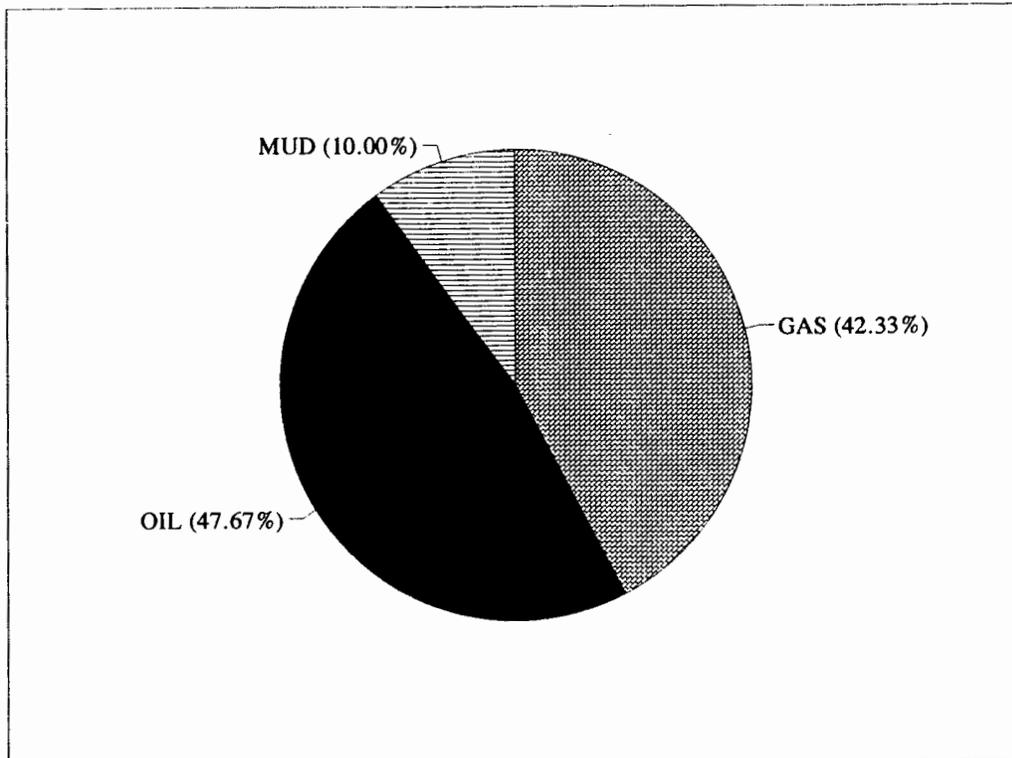
CALCULATED RECOVERY ANALYSIS - DRILL COLLARS

DST 1

TICKET 9020

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	120	50	60	40	48		0	10	12
2	395	40	158	50	197.5		0	10	39.5
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
6			0		0		0		0
TOTAL	515		218		245.5		0		51.5

			HRS OPEN		BBL/DAY
BBL OIL =	1.2005	*	1.5	=	19.2079
BBL WATER =	0	*		=	0
BBL MUD =	0.25184				
BBL GAS =	1.06602				



TEST HISTORY

9820 DST#1 Kuhn #5-10 Helmerich & Payne Inc.

Flag Points

t(Min.) P(PSig)

A:	0.00	2411.36
B:	0.00	41.22
C:	29.00	108.57
D:	60.00	820.90
E:	8.00	121.21
F:	59.00	201.92
G:	121.00	816.55
Q:	0.00	2363.84

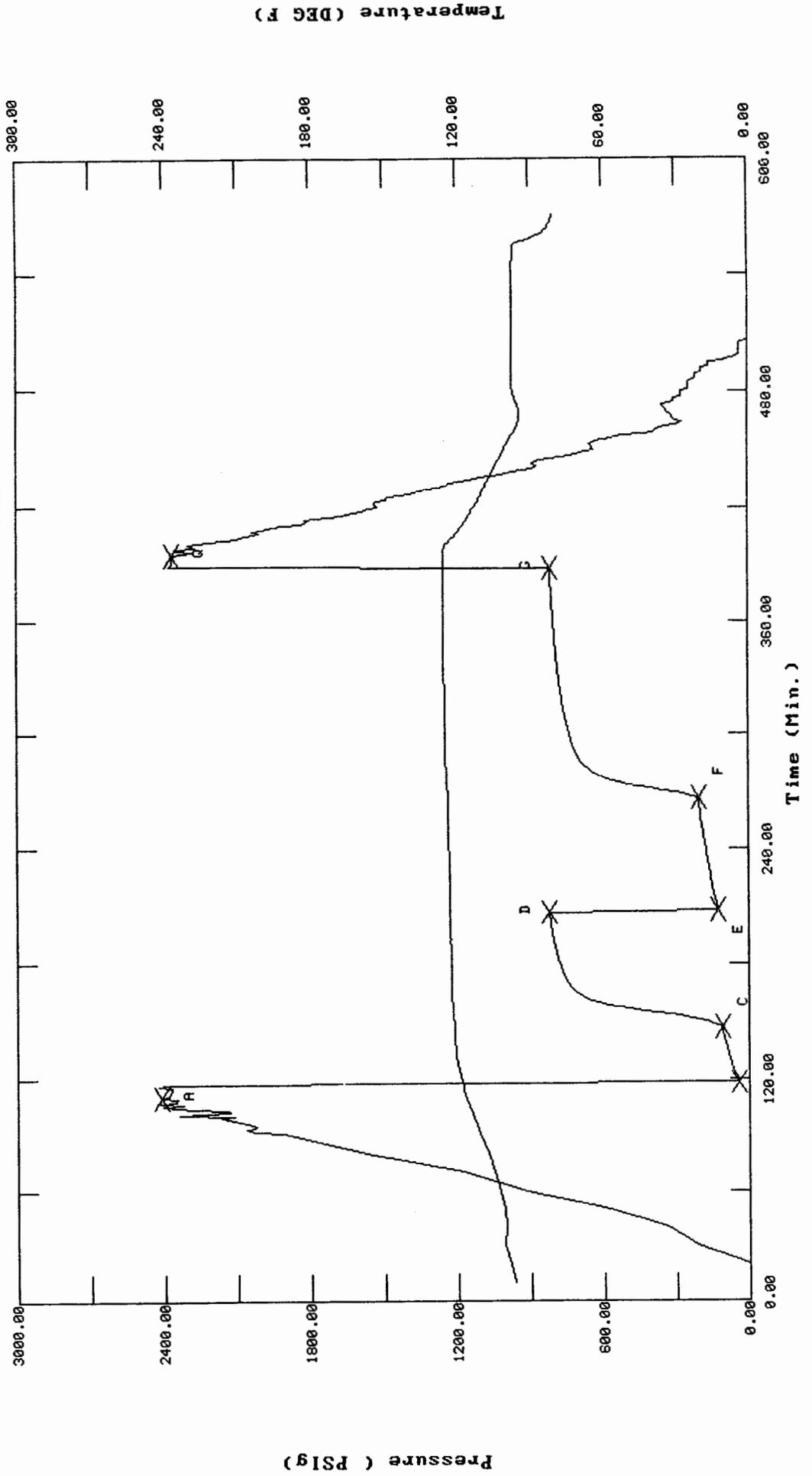
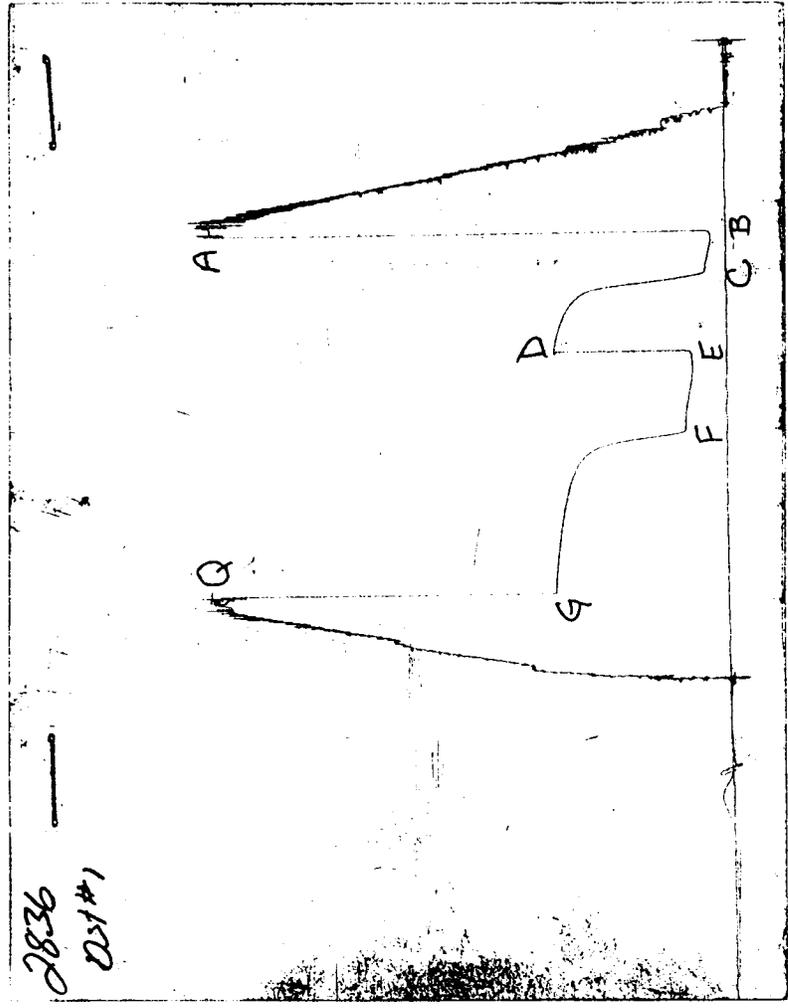


CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9020 DST#1 Kuhn #5-10 Helmerich & Payne Inc.
 DATE: 07/04/96 TIME: 14:00:20

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
***** Initial Hydro.	110.00	2411.4	0.0	116.58		
***** Start Flow 1	0.00	41.2	0.0	117.92		
	1.00	39.6	-1.6	118.01		
	2.00	43.1	1.8	118.22		
	3.00	47.2	6.0	118.49		
	4.00	51.6	10.3	118.76		
	5.00	55.4	14.2	119.00		
	6.00	58.8	17.6	119.21		
	7.00	62.0	20.8	119.40		
	8.00	64.8	23.6	119.58		
	9.00	67.7	26.5	119.73		
	10.00	70.0	28.8	119.87		
	11.00	72.4	31.1	120.01		
	12.00	74.6	33.4	120.13		
	13.00	76.9	35.6	120.25		
	14.00	78.9	37.7	120.36		
	15.00	81.0	39.8	120.44		
	16.00	83.2	42.0	120.54		
	17.00	85.3	44.1	120.62		
	18.00	87.3	46.0	120.70		
	19.00	89.3	48.1	120.77		
	20.00	91.1	49.9	120.83		
	21.00	93.3	52.1	120.89		
	22.00	95.3	54.1	120.93		
	23.00	97.5	56.2	120.97		
	24.00	99.3	58.1	121.01		
	25.00	101.0	59.8	121.06		
	26.00	102.9	61.7	121.11		
	27.00	104.7	63.5	121.16		
	28.00	106.6	65.3	121.19		
***** End Flow 1	29.00	108.6	67.4	121.25		
***** Start Shutin 1	0.00	108.6	0.0	121.25	0.0000	0.012
	1.00	124.8	16.2	121.29	30.0000	0.016
	2.00	147.9	39.4	121.34	15.5000	0.022
	3.00	173.4	64.8	121.39	10.6667	0.030
	4.00	203.0	94.4	121.44	8.2500	0.041
	5.00	237.4	128.9	121.50	6.8000	0.056
	6.00	277.9	169.3	121.55	5.8333	0.077
	7.00	324.6	216.0	121.61	5.1429	0.105
	8.00	376.7	268.1	121.68	4.6250	0.142
	9.00	432.5	323.9	121.76	4.2222	0.187
	10.00	488.3	379.7	121.83	3.9000	0.238
	11.00	538.5	430.0	121.89	3.6364	0.290
	12.00	580.3	471.7	121.96	3.4167	0.337
	13.00	616.4	507.9	122.02	3.2308	0.380
	14.00	644.8	536.2	122.07	3.0714	0.416
	15.00	666.6	558.0	122.12	2.9333	0.444
	16.00	683.2	574.6	122.16	2.8125	0.467
	17.00	696.2	587.6	122.20	2.7059	0.485
	18.00	706.8	598.2	122.23	2.6111	0.500
	19.00	715.6	607.1	122.27	2.5263	0.512

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9020 DST#1 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/04/96 TIME: 14:00:20

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
20.00	723.2	614.6	122.30	2.4500	0.523
21.00	729.9	621.3	122.33	2.3810	0.533
22.00	735.8	627.3	122.34	2.3182	0.541
23.00	741.2	632.6	122.36	2.2609	0.549
24.00	746.1	637.6	122.40	2.2083	0.557
25.00	750.6	642.1	122.42	2.1600	0.563
26.00	754.8	646.2	122.42	2.1154	0.570
27.00	758.6	650.0	122.44	2.0741	0.575
28.00	762.2	653.6	122.46	2.0357	0.581
29.00	765.6	657.1	122.47	2.0000	0.586
30.00	768.8	660.2	122.48	1.9667	0.591
31.00	771.8	663.3	122.49	1.9355	0.596
32.00	774.7	666.1	122.50	1.9062	0.600
33.00	777.4	668.8	122.52	1.8788	0.604
34.00	780.0	671.4	122.53	1.8529	0.608
35.00	782.4	673.9	122.54	1.8286	0.612
36.00	784.7	676.2	122.54	1.8056	0.616
37.00	787.0	678.4	122.56	1.7838	0.619
38.00	789.1	680.5	122.57	1.7632	0.623
39.00	791.1	682.6	122.58	1.7436	0.626
40.00	793.1	684.5	122.59	1.7250	0.629
41.00	795.0	686.4	122.59	1.7073	0.632
42.00	796.8	688.2	122.60	1.6905	0.635
43.00	798.6	690.0	122.61	1.6744	0.638
44.00	800.2	691.7	122.62	1.6591	0.640
45.00	801.9	693.3	122.63	1.6444	0.643
46.00	803.4	694.8	122.62	1.6304	0.645
47.00	804.9	696.3	122.64	1.6170	0.648
48.00	806.3	697.8	122.64	1.6042	0.650
49.00	807.7	699.2	122.66	1.5918	0.652
50.00	809.1	700.5	122.66	1.5800	0.655
51.00	810.4	701.9	122.68	1.5686	0.657
52.00	811.7	703.2	122.68	1.5577	0.659
53.00	813.0	704.4	122.69	1.5472	0.661
54.00	814.2	705.6	122.69	1.5370	0.663
55.00	815.4	706.8	122.70	1.5273	0.665
56.00	816.6	708.0	122.70	1.5179	0.667
57.00	817.7	709.1	122.71	1.5088	0.669
58.00	818.8	710.2	122.71	1.5000	0.670
59.00	819.9	711.3	122.72	1.4915	0.672
60.00	820.9	712.3	122.73	1.4833	0.674
***** End Shut-in 1					
***** Start Flow 2	0.00	121.2	0.0	122.72	
	1.00	122.3	1.1	122.68	
	2.00	122.1	0.9	122.65	
	3.00	126.9	5.7	122.63	
	4.00	129.1	7.9	122.64	
	5.00	132.0	10.8	122.66	
	6.00	134.6	13.4	122.69	
	7.00	137.5	16.2	122.73	
	8.00	140.1	18.9	122.76	
	9.00	142.1	20.9	122.79	

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

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TIME: 14:00:20

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
10.00	143.5	22.3	122.83		
11.00	145.2	24.0	122.86		
12.00	146.8	25.6	122.89		
13.00	148.1	26.9	122.90		
14.00	149.6	28.4	122.93		
15.00	150.7	29.5	122.95		
16.00	151.3	30.1	122.97		
17.00	152.5	31.2	122.99		
18.00	153.8	32.6	123.00		
19.00	155.0	33.8	123.01		
20.00	156.7	35.5	123.03		
21.00	158.1	36.9	123.05		
22.00	159.4	38.2	123.06		
23.00	161.2	40.0	123.08		
24.00	162.5	41.3	123.09		
25.00	163.9	42.7	123.11		
26.00	165.4	44.2	123.13		
27.00	166.4	45.2	123.14		
28.00	168.0	46.8	123.16		
29.00	169.2	48.0	123.18		
30.00	170.9	49.7	123.20		
31.00	172.1	50.9	123.22		
32.00	173.3	52.1	123.24		
33.00	174.3	53.1	123.25		
34.00	175.5	54.3	123.28		
35.00	177.0	55.8	123.29		
36.00	178.5	57.3	123.30		
37.00	180.1	58.9	123.32		
38.00	181.0	59.8	123.34		
39.00	182.8	61.6	123.35		
40.00	184.2	63.0	123.38		
41.00	185.1	63.9	123.39		
42.00	186.5	65.3	123.41		
43.00	187.8	66.6	123.44		
44.00	189.2	68.0	123.45		
45.00	190.6	69.4	123.47		
46.00	191.8	70.6	123.49		
47.00	193.2	72.0	123.51		
48.00	194.3	73.1	123.53		
49.00	195.3	74.1	123.54		
50.00	196.3	75.1	123.56		
51.00	197.0	75.7	123.58		
52.00	197.2	76.0	123.60		
53.00	198.5	77.3	123.61		
54.00	198.9	77.7	123.64		
55.00	199.4	78.2	123.65		
56.00	199.8	78.5	123.67		
57.00	200.6	79.4	123.68		
58.00	201.3	80.1	123.70		
59.00	201.9	80.7	123.73		
***** End Flow 2					
***** Start Shutin 2	0.00	201.9	0.0	123.73	0.0000 0.041

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

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DATE: 07/04/96

TIME: 14:00:20

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
1.00	234.4	32.5	123.74	89.0000	0.055
2.00	268.1	66.2	123.76	45.0000	0.072
3.00	306.7	104.8	123.79	30.3333	0.094
4.00	352.9	151.0	123.82	23.0000	0.125
5.00	404.2	202.3	123.86	18.6000	0.163
6.00	454.1	252.2	123.90	15.6667	0.206
7.00	497.6	295.7	123.95	13.5714	0.248
8.00	533.6	331.7	124.00	12.0000	0.285
9.00	564.0	362.1	124.06	10.7778	0.318
10.00	589.0	387.1	124.12	9.8000	0.347
11.00	610.1	408.2	124.16	9.0000	0.372
12.00	626.5	424.5	124.22	8.3333	0.392
13.00	639.5	437.6	124.26	7.7692	0.409
14.00	650.2	448.3	124.31	7.2857	0.423
15.00	659.3	457.4	124.35	6.8667	0.435
16.00	669.6	467.7	124.39	6.5000	0.448
17.00	678.4	476.5	124.43	6.1765	0.460
18.00	685.6	483.7	124.46	5.8889	0.470
19.00	691.8	489.9	124.49	5.6316	0.479
20.00	697.1	495.1	124.51	5.4000	0.486
21.00	701.6	499.7	124.55	5.1905	0.492
22.00	705.7	503.8	124.57	5.0000	0.498
23.00	709.5	507.6	124.60	4.8261	0.503
24.00	713.1	511.1	124.63	4.6667	0.508
25.00	716.4	514.5	124.64	4.5200	0.513
26.00	719.5	517.6	124.67	4.3846	0.518
27.00	722.4	520.5	124.68	4.2593	0.522
28.00	725.2	523.3	124.69	4.1429	0.526
29.00	727.9	525.9	124.72	4.0345	0.530
30.00	730.4	528.4	124.72	3.9333	0.533
31.00	732.8	530.8	124.74	3.8387	0.537
32.00	735.1	533.1	124.76	3.7500	0.540
33.00	737.3	535.4	124.76	3.6667	0.544
34.00	739.4	537.5	124.77	3.5882	0.547
35.00	741.5	539.6	124.79	3.5143	0.550
36.00	743.4	541.5	124.79	3.4444	0.553
37.00	745.4	543.4	124.81	3.3784	0.556
38.00	747.2	545.3	124.83	3.3158	0.558
39.00	749.0	547.1	124.84	3.2564	0.561
40.00	750.7	548.8	124.85	3.2000	0.564
41.00	752.4	550.5	124.86	3.1463	0.566
42.00	754.1	552.2	124.87	3.0952	0.569
43.00	755.7	553.8	124.88	3.0465	0.571
44.00	757.2	555.3	124.89	3.0000	0.573
45.00	758.6	556.7	124.90	2.9556	0.576
46.00	760.1	558.2	124.91	2.9130	0.578
47.00	761.5	559.6	124.92	2.8723	0.580
48.00	762.9	560.9	124.93	2.8333	0.582
49.00	764.2	562.3	124.94	2.7959	0.584
50.00	765.5	563.6	124.95	2.7600	0.586
51.00	766.7	564.8	124.96	2.7255	0.588

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Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
52.00	768.0	566.0	124.96	2.6923	0.590
53.00	769.2	567.2	124.98	2.6604	0.592
54.00	770.3	568.4	124.98	2.6296	0.593
55.00	771.5	569.6	124.99	2.6000	0.595
56.00	772.6	570.7	125.00	2.5714	0.597
57.00	773.7	571.8	125.01	2.5439	0.599
58.00	774.8	572.9	125.02	2.5172	0.600
59.00	775.8	573.9	125.02	2.4915	0.602
60.00	776.8	574.9	125.04	2.4667	0.603
61.00	777.9	575.9	125.03	2.4426	0.605
62.00	778.8	576.9	125.04	2.4194	0.607
63.00	779.8	577.9	125.05	2.3968	0.608
64.00	780.8	578.8	125.07	2.3750	0.610
65.00	781.7	579.8	125.06	2.3538	0.611
66.00	782.6	580.7	125.08	2.3333	0.612
67.00	783.5	581.6	125.08	2.3134	0.614
68.00	784.4	582.5	125.10	2.2941	0.615
69.00	785.3	583.3	125.10	2.2754	0.617
70.00	786.1	584.2	125.10	2.2571	0.618
71.00	786.9	585.0	125.12	2.2394	0.619
72.00	787.7	585.8	125.12	2.2222	0.621
73.00	788.5	586.6	125.12	2.2055	0.622
74.00	789.3	587.4	125.12	2.1892	0.623
75.00	790.1	588.2	125.13	2.1733	0.624
76.00	790.9	589.0	125.15	2.1579	0.626
77.00	791.6	589.7	125.16	2.1429	0.627
78.00	792.4	590.5	125.16	2.1282	0.628
79.00	793.1	591.2	125.17	2.1139	0.629
80.00	793.8	591.9	125.17	2.1000	0.630
81.00	794.6	592.6	125.17	2.0864	0.631
82.00	795.3	593.3	125.18	2.0732	0.632
83.00	796.0	594.0	125.19	2.0602	0.634
84.00	796.7	594.7	125.20	2.0476	0.635
85.00	797.3	595.4	125.21	2.0353	0.636
86.00	797.9	596.0	125.20	2.0233	0.637
87.00	798.6	596.7	125.22	2.0115	0.638
88.00	799.3	597.4	125.22	2.0000	0.639
89.00	799.9	598.0	125.22	1.9888	0.640
90.00	800.5	598.6	125.23	1.9778	0.641
91.00	801.1	599.2	125.23	1.9670	0.642
92.00	801.8	599.8	125.25	1.9565	0.643
93.00	802.4	600.5	125.25	1.9462	0.644
94.00	802.9	601.0	125.25	1.9362	0.645
95.00	803.5	601.6	125.26	1.9263	0.646
96.00	804.1	602.2	125.27	1.9167	0.647
97.00	804.7	602.7	125.27	1.9072	0.647
98.00	805.2	603.3	125.27	1.8980	0.648
99.00	805.8	603.9	125.28	1.8889	0.649
100.00	806.4	604.4	125.28	1.8800	0.650
101.00	806.9	605.0	125.29	1.8713	0.651
102.00	807.4	605.5	125.29	1.8627	0.652

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9020 DST#1 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/04/96 TIME: 14:00:20

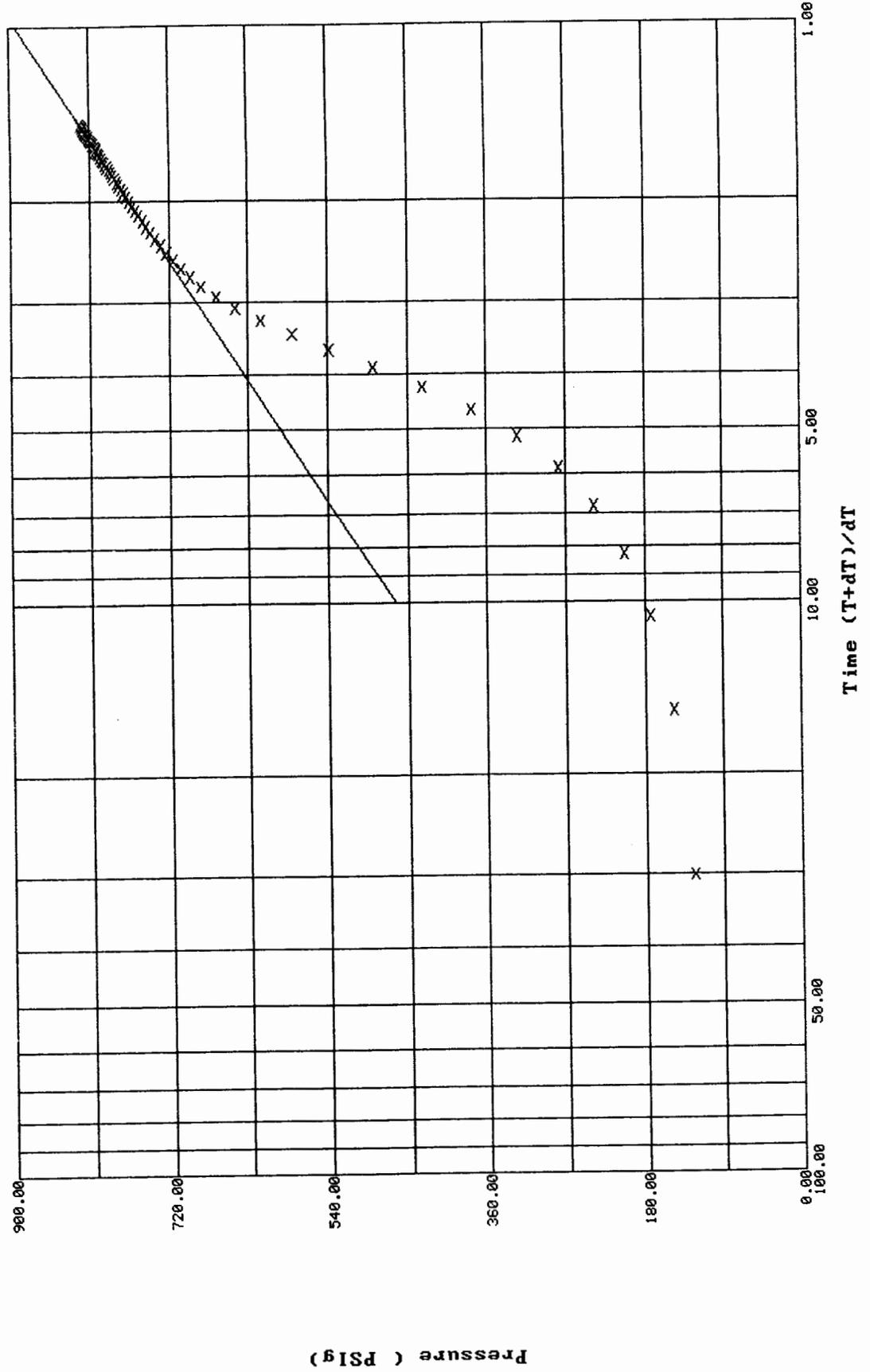
	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	103.00	808.0	606.1	125.30	1.8544	0.653
	104.00	808.5	606.6	125.31	1.8462	0.654
	105.00	809.0	607.1	125.30	1.8381	0.654
	106.00	809.5	607.6	125.31	1.8302	0.655
	107.00	810.0	608.1	125.32	1.8224	0.656
	108.00	810.5	608.6	125.34	1.8148	0.657
	109.00	811.0	609.1	125.33	1.8073	0.658
	110.00	811.5	609.6	125.33	1.8000	0.659
	111.00	812.0	610.1	125.34	1.7928	0.659
	112.00	812.5	610.6	125.34	1.7857	0.660
	113.00	812.9	611.0	125.36	1.7788	0.661
	114.00	813.4	611.5	125.36	1.7719	0.662
	115.00	813.9	612.0	125.36	1.7652	0.662
	116.00	814.4	612.4	125.36	1.7586	0.663
	117.00	814.8	612.9	125.37	1.7521	0.664
	118.00	815.2	613.3	125.37	1.7458	0.665
	119.00	815.7	613.8	125.37	1.7395	0.665
	120.00	816.1	614.2	125.39	1.7333	0.666
***** End Shut-in 2	121.00	816.6	614.6	125.39	1.7273	0.667
***** Final Hydro.	395.00	2363.8	0.0	125.44		

Horner Plot: shut-in #1

9020 DST#1 Kuhn #5-10 Helmerich & Payne Inc.

Slope: 431.1274 PSig/cycle

Ext. Pressure: 894.7029 PSig

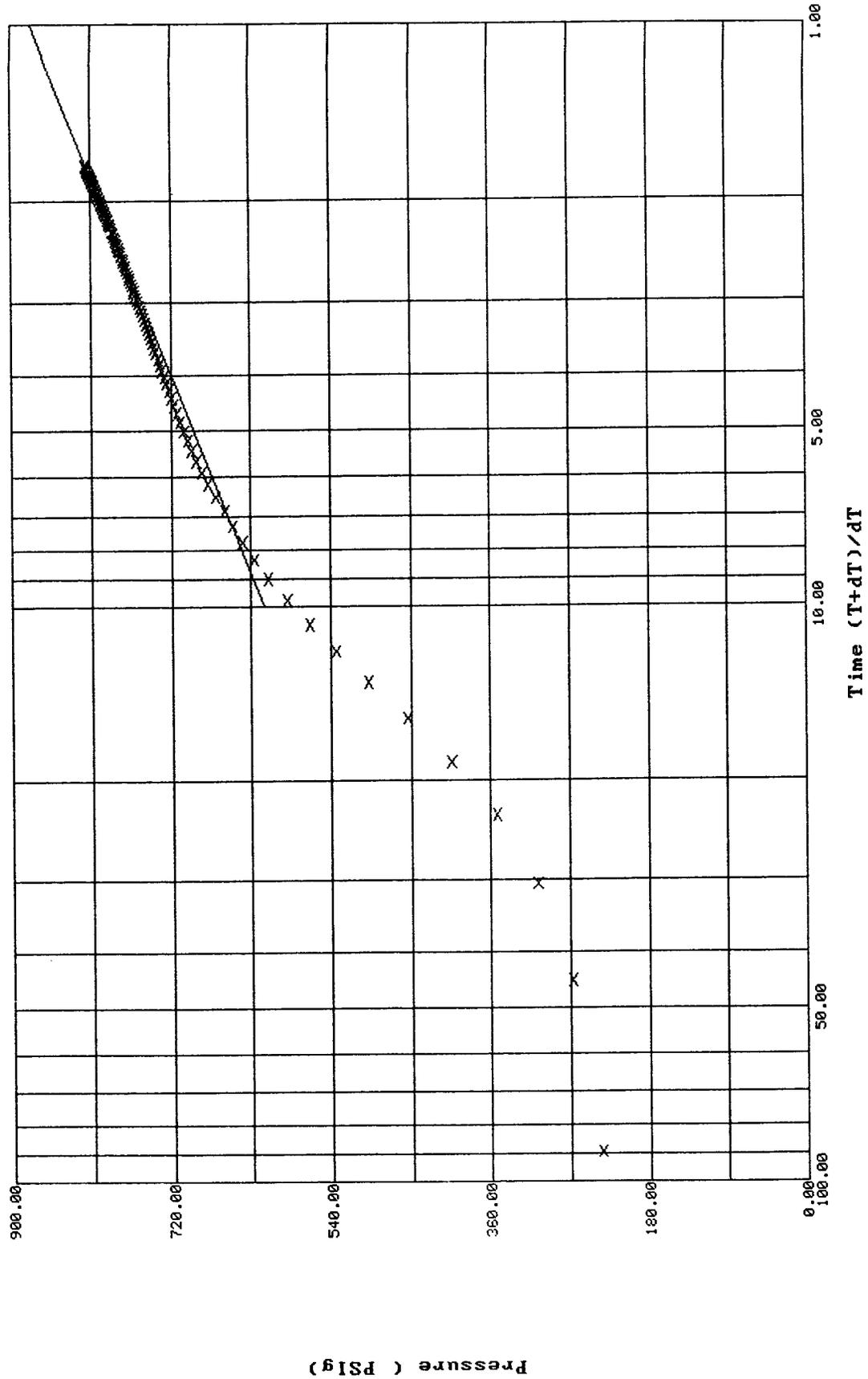


Horner Plot: shut-in #2

9020 DST#1 Kuhn #5-10 Helmerich & Payne Inc.

Slope: 263.8486 PSig/cycle

Ext. Pressure: 878.8460 PSig



*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Kuhn #5-10

LOCATION : 10-27S-34W Haskell Cty KS

TICKET No. 9020 D.S.T. No. 1 DATE 7-4-96

TOTAL TOOL TO BOTTOM OF TOP PACKERS 30

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 22

TOTAL TOOL 52

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single 1 Total 31

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY 83

D.C. ABOVE TOOLS.Stands9 Single Total 577

D.P. ABOVE TOOLS.Stands69 Single 1 Total 4358

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5018

TOTAL DEPTH 5000

TOTAL DRILL PIPE ABOVE K.B. 18

REMARKS:

FLUID SAMPLER DATA

SAMPLER RECOVERY -

Gas 1.2 cu ft, Oil 3000 ml,
Pressure 525 PSI, Total 4000 ml

SAMPLER ANALYSIS -

Gravity 32.4 corrected at 60 F

PIT MUD ANALYSIS -

Chlorides 1000 ppm, Viscosity 48,
Mud Weight 9.2, Filtrate 9.6

P.O. SUB	
C.O. SUB 1ft	4917
S.I. TOOL 5ft	4923
3ft Sampler	4926
HMV 5ft	4931
JARS 5ft	4936
SAFETY JOINT 2ft	4938
PACKER 5ft	4942
PACKER 5ft	4947
DEPTH 4947	
STUBB 1ft	4948
ANCHOR	
3ft perf	4951
Alpine Recorder	4952
6ft. pick up sub	4957
5ft perf	4962
1ft C/O sub	4963
T.C.	
DEPTH	
31ft Drlg. Collar	4994
1ft double pin	4995
1ft hanger sub	4996
1ft perf	4997
AK-1 recorder	4997
BULLNOSE 3ft bull plug	
T.D.	5000

Well name Kuhn

DST # 1

Recorder # 2836

1			
2	A		2414
3	B		77
4	C		163
5	D		784
6	E		159
7	F		193
8	G		779
9	H		2355
10			
11			
12			

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

Nº 9020

Well Name & No.	<u>Kuhn #5-10</u>	Test No.	<u>1</u>	Date	<u>7-4-96</u>
Company	<u>Helmerich & Payne Inc.</u>	Zone Tested	<u>Morrow lime stone</u>		
Address	<u>Box 558 Garden City KS. 67846</u>	Elevation	<u>2967</u>	KB	<u>2958</u> GL
Co. Rep / Geo.	<u>Brad Rine</u>	Cont.	<u>Martin Rig #22</u>	Est. Ft. of Pay	<u>8'</u> Por. <u> </u> %
Location: Sec.	<u>10</u>	Twp.	<u>27S</u>	Rge.	<u>34W</u>
		Co.	<u>Haskell</u>	State	<u>KS.</u>
No. of Copies	<u> </u>	Distribution Sheet (Y, N)	<u>NO</u>	Turnkey (Y, N)	<u>NO</u>
		Evaluation (Y, N)	<u> </u>		

Interval Tested	<u>4947-5000</u>	Initial Str Wt./Lbs.	<u>75,000</u>	Unseated Str Wt./Lbs.	<u>55,000</u>
Anchor Length	<u>53'</u>	Wt. Set Lbs.	<u>20,000</u>	Wt. Pulled Loose/Lbs.	<u>80,000</u>
Top Packer Depth	<u>4942</u>	Hole Size — 7 7/8"	<u>X</u>	Rubber Size — 6 3/4"	<u>X</u>
Bottom Packer Depth	<u>4947</u>	Wt. Pipe I.D. — 2.7 Ft. Run	<u> </u>		
Total Depth	<u>5000</u>	Drill Collar — 2.25 Ft. Run	577'	<u>577'</u>	
Mud Wt.	<u>9.2</u> LCM <u>1</u> Vis. <u>48</u> WL <u>9.6</u>	Drill Pipe Size	<u>4 1/2 X-Hole</u>	Ft. Run	<u>4358</u>

Blow Description Strong Blow B.O.B. in 4 min.
ISI. Bled off line NO Blow Back.
2nd opening Strong Blow B.O.B. in 4 min.
FSI. Bled off line NO Blow Back.

Recovery — Total Feet	Ft. in DC	Ft. in WP	Ft. in DP	%gas	%oil	%water	%mud
Rec. <u>60'</u>	Feet Of <u>Gas in alg collar</u>						
Rec. <u>120</u>	Feet Of <u>HG foil sly mud cut</u>	<u>50</u>		<u>40</u>	<u>40</u>	<u>10</u>	<u>10</u>
Rec. <u>395</u>	Feet Of <u>Hole & Gas sly mud cut</u>	<u>40</u>		<u>50</u>	<u>50</u>	<u>10</u>	<u>10</u>

BHT 120 °F Gravity 34 API D@ 85 °F Corrected Gravity 30.4 °API
 RW @ Ala Chlorides ppm Recovery Chlorides 1,000 ppm System

(A) Initial Hydrostatic Mud	<u>2411</u> <u>2405</u> PSI	Recorder No.	<u>IBM</u>	T-Started	<u>1:30 pm</u>
(B) First Initial Flow Pressure	<u>41</u> <u>68</u> PSI	@ (depth)	<u>4952</u>	T-Open	<u>3:54 pm</u>
(C) First Final Flow Pressure	<u>108</u> <u>102</u> PSI	Recorder No.	<u>2836</u>	T-Pulled	<u>8:24 pm</u>
(D) Initial Shut-in Pressure	<u>820</u> <u>772</u> PSI	@ (depth)	<u>4997</u>	T-Out	<u>11:45 pm</u>
(E) Second Initial Flow Pressure	<u>121</u> <u>154</u> PSI	Recorder No.	<u> </u>		
(F) Second Final Flow Pressure	<u>201</u> <u>188</u> PSI	@ (depth)	<u> </u>		
(G) Final Shut-in Pressure	<u>816</u> <u>772</u> PSI	Initial Opening	<u>30 min.</u>	Test	<input checked="" type="checkbox"/> <u>Conventional</u> <u>600</u>
(H) Final Hydrostatic Mud	<u>2363</u> <u>2351</u> PSI	Initial Shut-in	<u>60 min.</u>	Jars	<input checked="" type="checkbox"/> <u>200</u>

Final Flow 60 min. Safety Joint 50
 Final Shut-in 120 min. Straddle
 Circ. Sub N/C
 Sampler 200

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By Brad Rine
 Our Representative Mike Clinton

Extra Packer
 Elect. Rec. 150
 Other
 TOTAL PRICE \$ 1200

TRILOBITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. QST #1 Ticket # 9020 Date 7-4-96
Company Name Helmeick & Payne Inc.
Lease Muhn # 5-10 Test No. #1
County Haskell Sec. 10 Twp. 27S Rng. 34W

SAMPLER RECOVERY

Gas 1.2 cubic Ft. ML
Oil 3800 ML
Mud _____ ML
Water _____ ML
Other _____ ML
Pressure 525 PSI
Total 4000 ML

PIT MUD ANALYSIS

Chlorides 1,000 ppm.
Resistivity _____ ohms @ _____ F
Viscosity 48
Mud Weight 9.2
Filtrate 9.6
Other _____

SAMPLER ANALYSIS

Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
Gravity 32.4 corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
BOTTOM
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

TRILOBITE TESTING L.L.C.

OPERATOR : Helmerich & Payne Inc. DATE 7-5-96
 WELL NAME: Kuhn #5-10 KB 2967.00 ft TICKET NO: 9021 DST #2
 LOCATION : 10-27S-34W Haskell Cty KS GR 2958.00 ft FORMATION: Morrow Sand
 INTERVAL : 5017.00 To 5060.00 ft TD 5060.00 ft TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins		Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	2836	2836	2341			PF Fr. 1305 to 1335 hr
SI 60	Range(Psi)	3550.0	3550.0	4995.0	0.0	0.0	IS Fr. 1335 to 1435 hr
SF 60	Clock(hrs)	12	12	Alpin			SF Fr. 1435 to 1535 hr
FS 120	Depth(ft)	5057.0	5057.0	5022.0	0.0	0.0	FS Fr. 1535 to 1735 hr

	Field	1	2	3	4	
A. Init Hydro	2440.0	2427.0	2454.0	0.0	0.0	T STARTED 1100 hr
B. First Flow	34.0	50.0	27.0	0.0	0.0	T ON BOTM 1302 hr
B1. Final Flow	51.0	60.0	39.0	0.0	0.0	T OPEN 1305 hr
C. In Shut-in	1204.0	1211.0	1289.0	0.0	0.0	T PULLED 1735 hr
D. Init Flow	68.0	67.0	39.0	0.0	0.0	T OUT 2025 hr
E. Final Flow	77.0	71.0	64.0	0.0	0.0	
F. Fl Shut-in	1256.0	1258.0	1336.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2306.0	2306.0	2355.0	0.0	0.0	Tool Wt. 1800.00 lbs
Inside/Outside	0	0	I			Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 80000.00 lbs
						Initial Str Wt 75000.00 lbs
						Unseated Str Wt 55000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 608.00 ft
						D.P. Length 4389.00 ft

RECOVERY

Tot Fluid 120.00 ft of 120.00 ft in DC and 0.00 ft in DP
 730.00 ft of Gas in Collars
 120.00 ft of Gassy oil - 50% gas, 50% oil

SALINITY 0.00 P.P.M. A.P.I. Gravity 24.70

BLOW DESCRIPTION

Initial Flow -
 Fair blow built to bottom of bucket in
 25 minutes

Final Flow -
 Strong blow, bottom of bucket in 2 min

SAMPLES: NO
 SENT TO:

MUD DATA-----

Mud Type	Chemical
Weight	9.10 lb/ct
Vis.	49.00 S/L
W.L.	9.60 in3
F.C.	0.00 in
Mud Drop Y	35.0 ft
Amt. of fill	0.00 ft
Btm. H. Temp.	120.00 F
Hole Condition	Good
% Porosity	0.00
Packer Size	6.75 in
No. of Packers	2
Cushion Amt.	0.00
Cushion Type	
Reversed Out N	
Tool Chased N	
Tester	Mike Colantonio
Co. Rep.	Brad Rine
Contr.	Murfin
Rig #	22
Unit #	
Pump T.	

Test Successful: Y

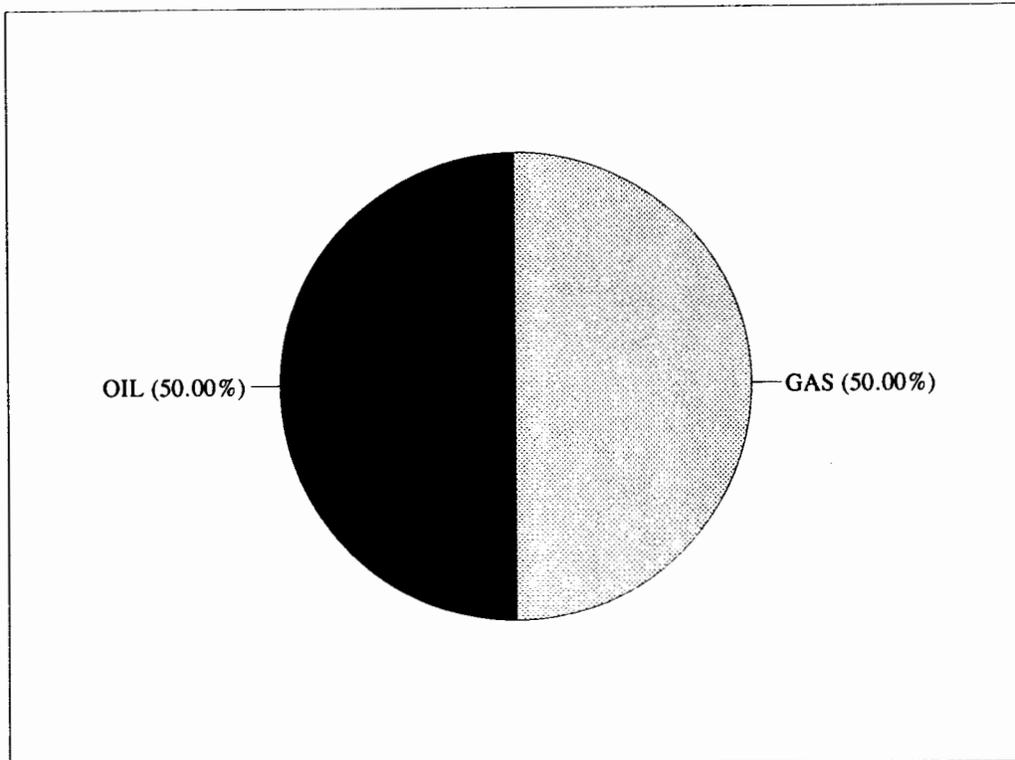
CALCULATED RECOVERY ANALYSIS - DRILL COLLARS

DST 2

TICKET 9021

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	120	50	60	50	60		0		0
2			0		0		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
6			0		0		0		0
TOTAL	120		60		60		0		0

			HRS OPEN		BBL/DAY
BBL OIL =	0.2934	*	1.5	=	7.0416
BBL WATER =	0	*		=	0
BBL MUD =	0				
BBL GAS =	0.2934				



TEST HISTORY

9021 DST#2 Kuhn #5-10 Helmerich & Payne Inc.

Flag Points

t (Min.) P (PSIg)

A:	0.00	2454.21
B:	0.00	27.42
C:	29.00	38.58
D:	60.00	1289.43
E:	0.00	39.07
F:	59.00	63.92
G:	118.00	1336.23
Q:	0.00	2354.88

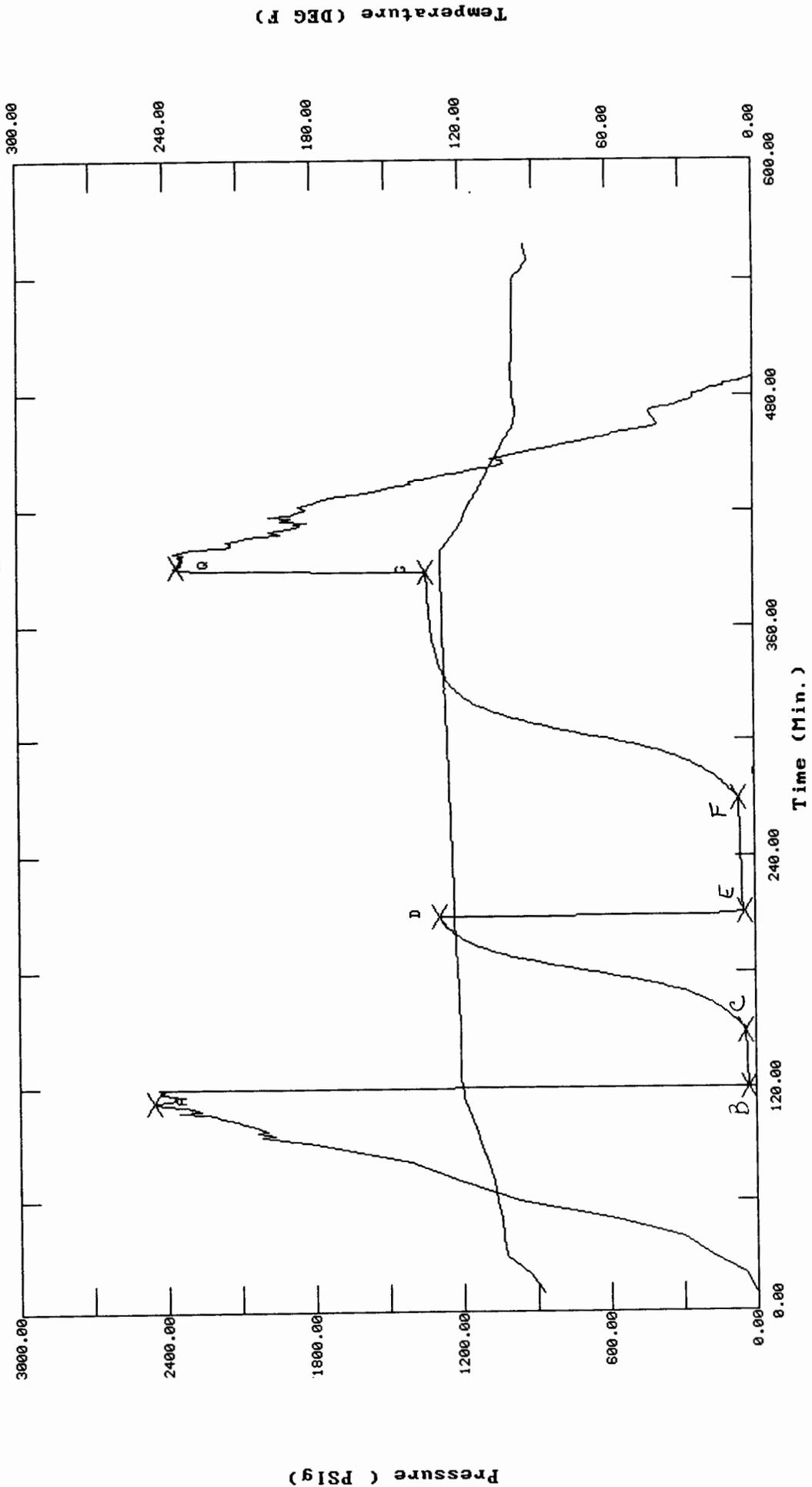
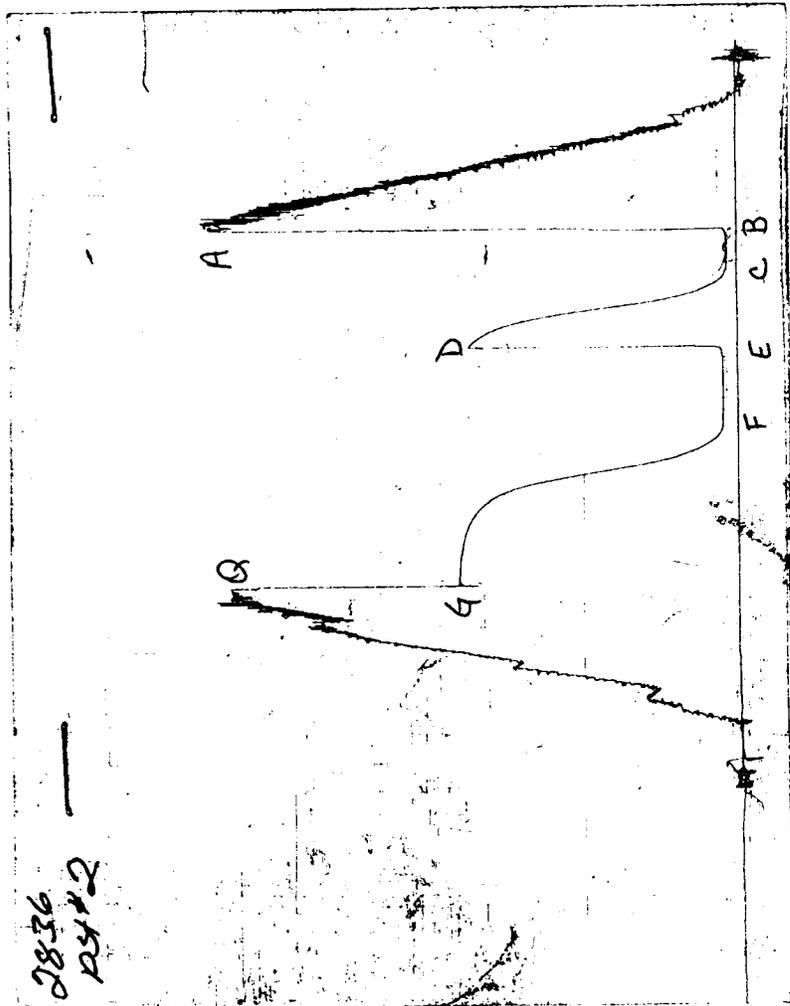


CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9021 DST#2 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/05/96

TIME: 11:03:43

	Time	Pressure PSI _g	delta P PSI _g	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
***** Initial Hydro.	112.00	2454.2	0.0	118.63		
***** Start Flow 1	0.00	27.4	0.0	119.83		
	1.00	30.1	2.7	120.01		
	2.00	30.3	2.9	120.14		
	3.00	29.8	2.4	120.25		
	4.00	30.0	2.5	120.34		
	5.00	30.2	2.8	120.40		
	6.00	30.6	3.2	120.41		
	7.00	30.9	3.4	120.42		
	8.00	31.1	3.6	120.45		
	9.00	31.6	4.2	120.45		
	10.00	32.0	4.6	120.47		
	11.00	32.4	5.0	120.49		
	12.00	33.0	5.5	120.51		
	13.00	33.3	5.9	120.52		
	14.00	33.7	6.2	120.53		
	15.00	33.9	6.5	120.54		
	16.00	34.3	6.8	120.54		
	17.00	34.5	7.1	120.55		
	18.00	34.9	7.5	120.56		
	19.00	35.3	7.8	120.56		
	20.00	35.6	8.2	120.57		
	21.00	35.8	8.3	120.57		
	22.00	36.1	8.7	120.58		
	23.00	36.4	9.0	120.61		
	24.00	36.9	9.5	120.61		
	25.00	37.2	9.8	120.63		
	26.00	37.8	10.4	120.64		
	27.00	38.1	10.7	120.65		
	28.00	38.3	10.8	120.67		
***** End Flow 1	29.00	38.6	11.2	120.68		
***** Start Shutin 1	0.00	38.6	0.0	120.68	0.0000	0.001
	1.00	42.0	3.4	120.69	30.0000	0.002
	2.00	50.8	12.2	120.70	15.5000	0.003
	3.00	59.2	20.6	120.72	10.6667	0.004
	4.00	67.6	29.1	120.73	8.2500	0.005
	5.00	76.0	37.4	120.77	6.8000	0.006
	6.00	84.8	46.2	120.77	5.8333	0.007
	7.00	93.9	55.3	120.79	5.1429	0.009
	8.00	103.4	64.8	120.80	4.6250	0.011
	9.00	113.2	74.6	120.84	4.2222	0.013
	10.00	123.6	85.0	120.85	3.9000	0.015
	11.00	134.6	96.0	120.87	3.6364	0.018
	12.00	146.2	107.6	120.90	3.4167	0.021
	13.00	158.6	120.1	120.92	3.2308	0.025
	14.00	171.9	133.3	120.95	3.0714	0.030
	15.00	186.0	147.4	120.98	2.9333	0.035
	16.00	201.2	162.6	121.00	2.8125	0.040
	17.00	217.6	179.0	121.03	2.7059	0.047
	18.00	235.0	196.5	121.07	2.6111	0.055
	19.00	254.8	216.2	121.11	2.5263	0.065

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9021 DST#2 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/05/96

TIME: 11:03:43

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
20.00	276.2	237.6	121.14	2.4500	0.076
21.00	299.4	260.8	121.16	2.3810	0.090
22.00	324.4	285.8	121.21	2.3182	0.105
23.00	351.8	313.2	121.23	2.2609	0.124
24.00	381.8	343.2	121.28	2.2083	0.146
25.00	414.5	375.9	121.32	2.1600	0.172
26.00	450.2	411.6	121.35	2.1154	0.203
27.00	488.8	450.2	121.39	2.0741	0.239
28.00	530.2	491.6	121.44	2.0357	0.281
29.00	573.8	535.2	121.48	2.0000	0.329
30.00	619.1	580.5	121.52	1.9667	0.383
31.00	665.3	626.8	121.58	1.9355	0.443
32.00	711.9	673.3	121.60	1.9062	0.507
33.00	757.9	719.3	121.66	1.8788	0.574
34.00	802.6	764.1	121.71	1.8529	0.644
35.00	845.7	807.1	121.80	1.8286	0.715
36.00	886.6	848.0	121.85	1.8056	0.786
37.00	925.4	886.8	121.90	1.7838	0.856
38.00	961.4	922.9	121.94	1.7632	0.924
39.00	994.9	956.3	121.99	1.7436	0.990
40.00	1025.8	987.2	122.04	1.7250	1.052
41.00	1054.1	1015.5	122.09	1.7073	1.111
42.00	1079.9	1041.3	122.16	1.6905	1.166
43.00	1103.6	1065.0	122.19	1.6744	1.218
44.00	1125.1	1086.5	122.25	1.6591	1.266
45.00	1144.7	1106.1	122.28	1.6444	1.310
46.00	1162.3	1123.7	122.33	1.6304	1.351
47.00	1178.2	1139.6	122.39	1.6170	1.388
48.00	1192.5	1153.9	122.42	1.6042	1.422
49.00	1205.5	1166.9	122.47	1.5918	1.453
50.00	1217.3	1178.7	122.51	1.5800	1.482
51.00	1227.9	1189.3	122.57	1.5686	1.508
52.00	1237.6	1199.1	122.61	1.5577	1.532
53.00	1246.4	1207.8	122.63	1.5472	1.553
54.00	1254.4	1215.8	122.67	1.5370	1.573
55.00	1261.6	1223.0	122.70	1.5273	1.592
56.00	1268.2	1229.6	122.75	1.5179	1.608
57.00	1274.2	1235.6	122.79	1.5088	1.624
58.00	1279.7	1241.2	122.83	1.5000	1.638
59.00	1284.8	1246.2	122.86	1.4915	1.651
60.00	1289.4	1250.9	122.90	1.4833	1.663

***** End Shut-in 1

***** Start Flow 2

0.00	39.1	0.0	122.84
1.00	43.1	4.0	122.83
2.00	45.2	6.1	122.80
3.00	46.4	7.3	122.80
4.00	48.2	9.1	122.80
5.00	49.2	10.2	122.81
6.00	49.8	10.7	122.82
7.00	50.3	11.3	122.85
8.00	50.6	11.6	122.87
9.00	50.8	11.8	122.90

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9021 DST#2 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/05/96

TIME: 11:03:43

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
10.00	51.0	11.9	122.93		
11.00	51.1	12.1	122.96		
12.00	51.3	12.2	123.00		
13.00	51.5	12.4	123.03		
14.00	51.6	12.6	123.06		
15.00	51.8	12.7	123.09		
16.00	51.9	12.8	123.12		
17.00	52.1	13.0	123.15		
18.00	52.3	13.2	123.19		
19.00	52.8	13.7	123.23		
20.00	53.1	14.0	123.25		
21.00	53.2	14.1	123.30		
22.00	53.3	14.3	123.33		
23.00	53.8	14.7	123.36		
24.00	54.0	14.9	123.39		
25.00	54.1	15.0	123.42		
26.00	54.2	15.2	123.46		
27.00	54.7	15.6	123.49		
28.00	54.8	15.8	123.52		
29.00	54.9	15.9	123.57		
30.00	55.3	16.3	123.60		
31.00	55.7	16.6	123.62		
32.00	55.9	16.8	123.66		
33.00	56.0	16.9	123.69		
34.00	56.1	17.1	123.72		
35.00	56.3	17.3	123.74		
36.00	56.5	17.4	123.78		
37.00	56.8	17.7	123.81		
38.00	57.1	18.1	123.85		
39.00	57.4	18.3	123.88		
40.00	57.9	18.8	123.91		
41.00	58.2	19.1	123.93		
42.00	58.4	19.3	123.97		
43.00	58.7	19.7	124.01		
44.00	59.1	20.0	124.04		
45.00	59.3	20.3	124.05		
46.00	59.6	20.5	124.08		
47.00	60.1	21.0	124.11		
48.00	60.4	21.3	124.14		
49.00	60.7	21.6	124.17		
50.00	61.1	22.0	124.19		
51.00	61.4	22.3	124.23		
52.00	61.6	22.5	124.26		
53.00	62.0	22.9	124.29		
54.00	62.3	23.3	124.33		
55.00	62.5	23.5	124.35		
56.00	62.8	23.7	124.39		
57.00	63.1	24.1	124.41		
58.00	63.7	24.6	124.44		
59.00	63.9	24.9	124.47		

***** End Flow 2

***** Start Shutin 2 0.00 63.9 0.0 124.47 0.0000 0.004

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9021 DST#2 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/05/96

TIME: 11:03:43

Time	Pressure PSIg	delta P PSIg	P	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
1.00	72.6	8.7		124.49	89.0000	0.005
2.00	80.8	16.9		124.53	45.0000	0.007
3.00	88.9	25.0		124.55	30.3333	0.008
4.00	97.0	33.1		124.58	23.0000	0.009
5.00	105.4	41.4		124.61	18.6000	0.011
6.00	113.7	49.8		124.64	15.6667	0.013
7.00	122.5	58.6		124.67	13.5714	0.015
8.00	131.6	67.6		124.69	12.0000	0.017
9.00	141.0	77.1		124.72	10.7778	0.020
10.00	150.7	86.8		124.75	9.8000	0.023
11.00	161.2	97.3		124.78	9.0000	0.026
12.00	172.1	108.2		124.81	8.3333	0.030
13.00	183.6	119.7		124.83	7.7692	0.034
14.00	195.7	131.8		124.86	7.2857	0.038
15.00	208.6	144.7		124.88	6.8667	0.044
16.00	222.2	158.3		124.92	6.5000	0.049
17.00	237.1	173.2		124.93	6.1765	0.056
18.00	253.1	189.2		124.96	5.8889	0.064
19.00	270.4	206.4		125.00	5.6316	0.073
20.00	289.1	225.2		125.03	5.4000	0.084
21.00	309.3	245.4		125.05	5.1905	0.096
22.00	331.2	267.2		125.08	5.0000	0.110
23.00	354.9	291.0		125.11	4.8261	0.126
24.00	380.6	316.6		125.12	4.6667	0.145
25.00	408.7	344.7		125.15	4.5200	0.167
26.00	438.7	374.8		125.23	4.3846	0.192
27.00	471.0	407.1		125.26	4.2593	0.222
28.00	505.5	441.5		125.32	4.1429	0.255
29.00	541.8	477.9		125.34	4.0345	0.294
30.00	579.8	515.9		125.37	3.9333	0.336
31.00	618.9	555.0		125.40	3.8387	0.383
32.00	658.8	594.8		125.45	3.7500	0.434
33.00	698.7	634.8		125.47	3.6667	0.488
34.00	738.5	674.6		125.52	3.5882	0.545
35.00	777.4	713.5		125.55	3.5143	0.604
36.00	815.1	751.2		125.60	3.4444	0.664
37.00	851.3	787.3		125.63	3.3784	0.725
38.00	885.7	821.8		125.68	3.3158	0.784
39.00	918.4	854.4		125.71	3.2564	0.843
40.00	948.9	885.0		125.76	3.2000	0.900
41.00	977.7	913.8		125.78	3.1463	0.956
42.00	1004.3	940.4		125.84	3.0952	1.009
43.00	1029.3	965.4		125.87	3.0465	1.059
44.00	1052.1	988.2		126.00	3.0000	1.107
45.00	1073.4	1009.5		125.92	2.9556	1.152
46.00	1092.9	1029.0		125.97	2.9130	1.194
47.00	1110.9	1047.0		125.99	2.8723	1.234
48.00	1127.4	1063.5		126.04	2.8333	1.271
49.00	1142.7	1078.8		126.08	2.7959	1.306
50.00	1156.6	1092.6		126.11	2.7600	1.338
51.00	1169.2	1105.3		126.13	2.7255	1.367

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9021 DST#2 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/05/96

TIME: 11:03:43

Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
52.00	1180.8	1116.9	126.17	2.6923	1.394
53.00	1191.5	1127.6	126.20	2.6604	1.420
54.00	1201.3	1137.4	126.22	2.6296	1.443
55.00	1210.4	1146.5	126.25	2.6000	1.465
56.00	1218.8	1154.8	126.28	2.5714	1.485
57.00	1226.4	1162.4	126.22	2.5439	1.504
58.00	1233.4	1169.5	126.34	2.5172	1.521
59.00	1239.9	1176.0	126.37	2.4915	1.537
60.00	1245.9	1181.9	126.40	2.4667	1.552
61.00	1251.4	1187.5	126.42	2.4426	1.566
62.00	1256.5	1192.5	126.44	2.4194	1.579
63.00	1261.3	1197.3	126.46	2.3968	1.591
64.00	1265.6	1201.7	126.51	2.3750	1.602
65.00	1269.7	1205.8	126.53	2.3538	1.612
66.00	1273.5	1209.6	126.54	2.3333	1.622
67.00	1277.1	1213.2	126.57	2.3134	1.631
68.00	1280.4	1216.4	126.60	2.2941	1.639
69.00	1283.5	1219.6	126.62	2.2754	1.647
70.00	1286.3	1222.4	126.63	2.2571	1.655
71.00	1289.1	1225.2	126.63	2.2394	1.662
72.00	1291.6	1227.7	126.69	2.2222	1.668
73.00	1294.0	1230.1	126.72	2.2055	1.674
74.00	1296.3	1232.3	126.73	2.1892	1.680
75.00	1298.3	1234.4	126.75	2.1733	1.686
76.00	1300.4	1236.5	126.78	2.1579	1.691
77.00	1302.3	1238.3	126.80	2.1429	1.696
78.00	1304.2	1240.2	126.82	2.1282	1.701
79.00	1305.8	1241.9	126.85	2.1139	1.705
80.00	1307.4	1243.5	126.86	2.1000	1.709
81.00	1308.9	1245.0	126.91	2.0864	1.713
82.00	1310.4	1246.4	126.92	2.0732	1.717
83.00	1311.7	1247.8	126.93	2.0602	1.721
84.00	1313.0	1249.1	126.96	2.0476	1.724
85.00	1314.2	1250.3	126.98	2.0353	1.727
86.00	1315.4	1251.5	127.02	2.0233	1.730
87.00	1316.6	1252.7	127.00	2.0115	1.733
88.00	1317.6	1253.7	127.04	2.0000	1.736
89.00	1318.7	1254.7	127.06	1.9888	1.739
90.00	1319.6	1255.7	127.08	1.9778	1.741
91.00	1320.5	1256.6	127.19	1.9670	1.744
92.00	1321.5	1257.6	127.09	1.9565	1.746
93.00	1322.3	1258.4	127.14	1.9462	1.749
94.00	1323.2	1259.3	127.16	1.9362	1.751
95.00	1324.0	1260.0	127.19	1.9263	1.753
96.00	1324.8	1260.9	127.20	1.9167	1.755
97.00	1325.5	1261.5	127.24	1.9072	1.757
98.00	1326.2	1262.2	127.25	1.8980	1.759
99.00	1326.9	1262.9	127.27	1.8889	1.761
100.00	1327.5	1263.6	127.27	1.8800	1.762
101.00	1328.1	1264.2	127.32	1.8713	1.764
102.00	1328.8	1264.9	127.33	1.8627	1.766

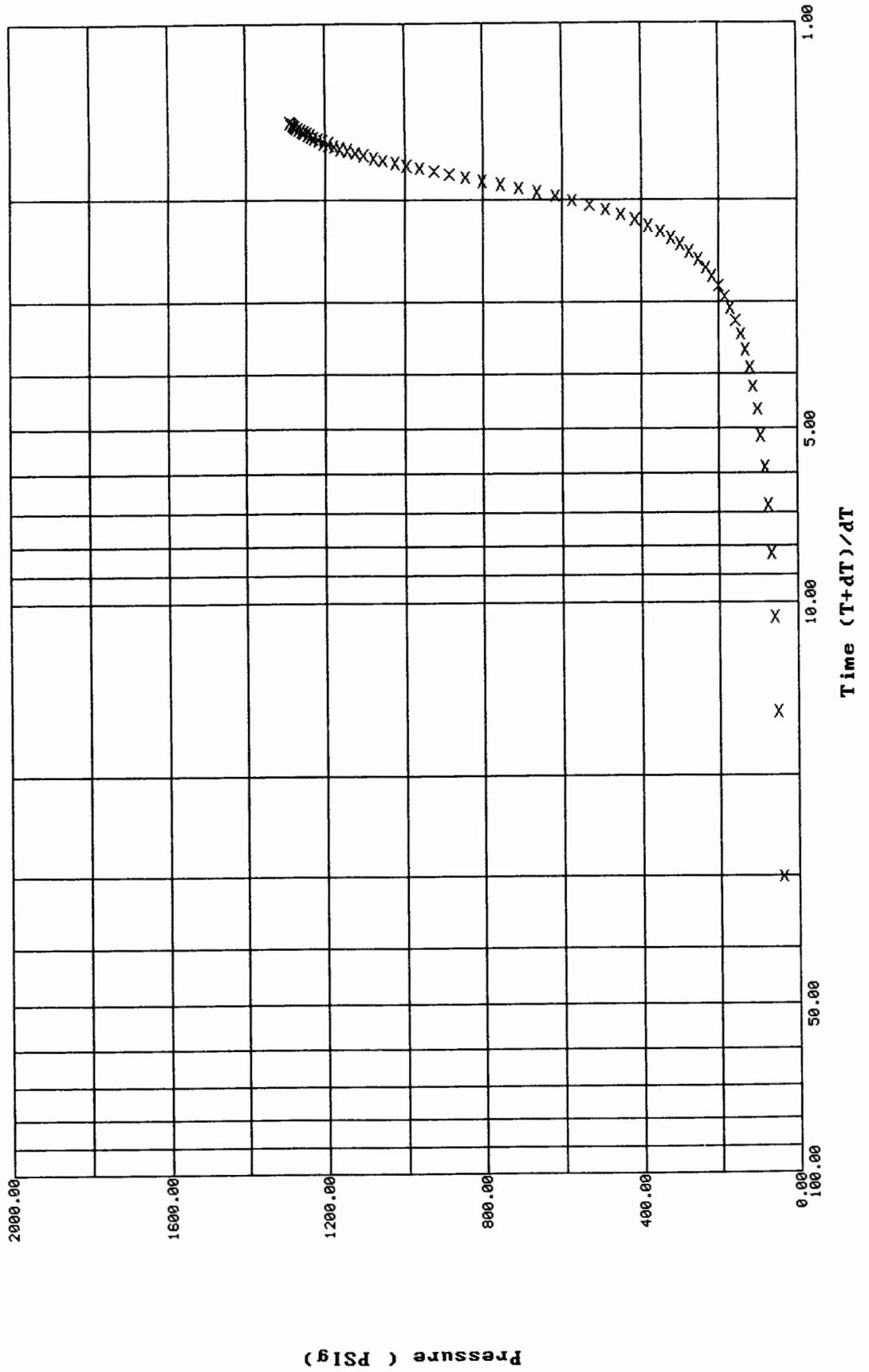
ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9021 DST#2 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/05/96 TIME: 11:03:43

	Time	Pressure PSig	delta P PSig	P	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	103.00	1329.3	1265.4		127.36	1.8544	1.767
	104.00	1329.9	1266.0		127.35	1.8462	1.769
	105.00	1330.5	1266.5		127.39	1.8381	1.770
	106.00	1331.0	1267.1		127.40	1.8302	1.772
	107.00	1331.6	1267.7		127.38	1.8224	1.773
	108.00	1332.1	1268.1		127.45	1.8148	1.774
	109.00	1332.5	1268.6		127.45	1.8073	1.776
	110.00	1332.9	1269.0		127.48	1.8000	1.777
	111.00	1333.3	1269.4		127.49	1.7928	1.778
	112.00	1333.8	1269.9		127.53	1.7857	1.779
	113.00	1334.3	1270.4		127.54	1.7788	1.780
	114.00	1334.7	1270.8		127.57	1.7719	1.781
	115.00	1335.0	1271.1		127.58	1.7652	1.782
	116.00	1335.4	1271.5		127.63	1.7586	1.783
	117.00	1335.8	1271.9		127.61	1.7521	1.784
***** End Shut-in 2	118.00	1336.2	1272.3		127.64	1.7458	1.786
***** Final Hydro.	391.00	2354.9	0.0		127.84		

Horner Plot: shut-in #1
 9021 DST#2 Kuhn #5-10 Helmerich & Payne Inc.

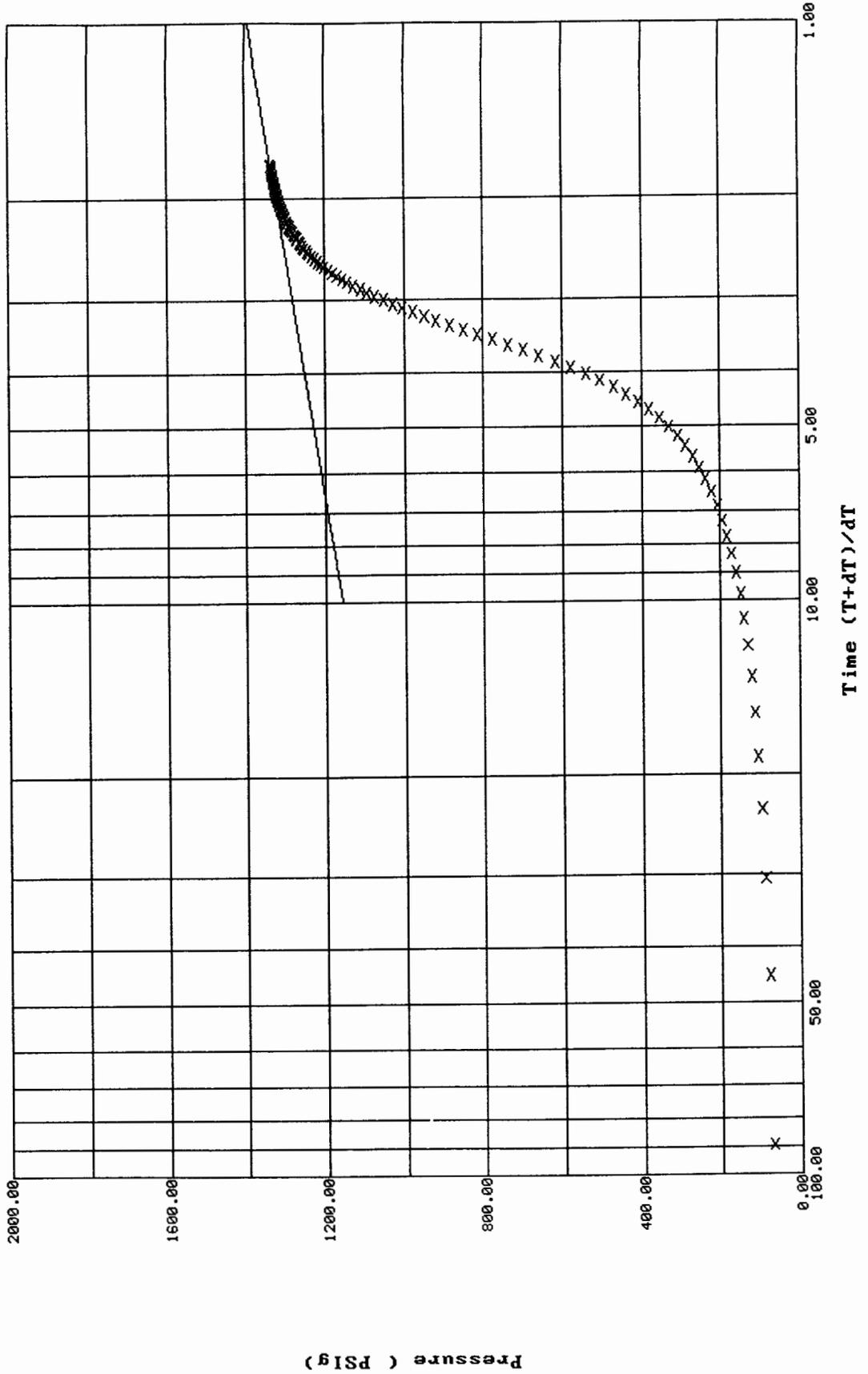


Horner Plot: shut-in #2

9021 DST#2 Kuhn #5-10 Helmerich & Payne Inc.

Slope: 237.5537 PSig/cycle

Ext. Pressure: 1393.6689 PSig



*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Kuhn #5-10	P.O. SUB	
	C.O. SUB 1ft	4987
LOCATION : 10-27S-34W Haskell Cty KS	S.I. TOOL 5ft	4993
TICKET No. 9021 D.S.T. No. 2 DATE 7-5-96		
TOTAL TOOL TO BOTTOM OF TOP PACKERS 30	3ft SAMPLER	4996
INTERVAL TOOL	HMV 5ft	5001
BOTTOM PACKERS AND ANCHOR 43	JARS 5ft	5006
TOTAL TOOL 73		
DRILL COLLAR ANCHOR IN INTERVAL		
D.C. ANCHOR STND.Stands Single Total	SAFETY JOINT 2ft	5008
D.P. ANCHOR STND.Stands Single Total	PACKER 5ft	5012
TOTAL ASSEMBLY 73	PACKER 5ft	5017
D.C. ABOVE TOOLS.Stands9 Single 1 Total 608	DEPTH	
D.P. ABOVE TOOLS.Stands71 Single Total 4389	STUBB 1ft	5018
TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5070	ANCHOR	
	Alpine Rec.	5022
TOTAL DEPTH 5060	6ft Pick up sub	5024
TOTAL DRILL PIPE ABOVE K.B. 10		
REMARKS:	33ft Perf	5057
FLUID SAMPLER DATA		
SAMPLER RECOVERY -		
Gas 1.9 cu ft, Oil 3800 ml,		
Pressure 1000 PSI, Total 4000 ml	T.C.	
SAMPLER ANALYSIS -	DEPTH	
Gravity 24.7 corrected at 60 F		
PIT MUD ANALYSIS -		
Chlorides 800 ppm, Viscosity 49,		
Mud Weight 9.1, Filtrate 9.6	AK-1 recorder	5057
	BULLNOSE 3ft bull plug	
	T.D.	5060

Well name Kuhn

DST # 2

Recorder # 2836

A		2427	
B		50	
C		60	
D		1211	
E		107	
F		71	
G		1258	
H		2306	
0			
1			
2			

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

N^o 9021

Well Name & No. <u>Kuhn #5-10</u>	Test No. <u>#2</u>	Date <u>7-5-96</u>
Company <u>Helmerich & Payne</u>	Zone Tested <u>Morrow Sand</u>	
Address <u>Box 558 Garden City KS, 67846</u>	Elevation <u>2962</u> KB <u>2958</u> GL	
Co. Rep / Geo. <u>Brad Rine</u>	Cont. <u>Martin #22</u>	Est. Ft. of Pay <u>?</u> Por. <u> </u> %
Location: Sec. <u>10</u>	Twp. <u>27S</u>	Rge. <u>34W</u> Co. <u>Haskell</u> State <u>KS.</u>
No. of Copies <u> </u>	Distribution Sheet (Y, N) <u>NO</u>	Turnkey (Y, N) <u>NO</u> Evaluation (Y, N) <u> </u>

Interval Tested <u>5017-5060</u>	Initial Str Wt./Lbs. <u>25000</u>	Unseated Str Wt./Lbs. <u>55000</u>
Anchor Length <u>43'</u>	Wt. Set Lbs. <u>20000</u>	Wt. Pulled Loose/Lbs. <u>85000</u>
Top Packer Depth <u>5012</u>	Hole Size — 7 7/8" <u>X</u>	Rubber Size — 6 3/4" <u>X</u>
Bottom Packer Depth <u>5017</u>	Wt. Pipe I.D. — 2.7 Ft. Run <u> </u>	
Total Depth <u>5060</u>	Drill Collar — 2.25 Ft. Run <u>608'</u>	
Mud Wt. <u>9.1</u> LCM <u>TR</u> Vis. <u>49</u> WL <u>9.6</u>	Drill Pipe Size <u>4 1/2 X-Hole</u>	Ft. Run <u>4389</u>
Blow Description <u>Fair Blow Built to B.O.B. in 25 min.</u>		

2nd opening Strong Blow B.O.B. in 2 min.

Recovery — Total Feet	Ft. in DC	Ft. in WP	Ft. in DP				
Rec. <u>730</u>	Feet Of <u>Gas in Dilz Collars</u>	%gas	%oil	%water	%mud		
Rec. <u> </u>	Feet Of <u> </u>	%gas	%oil	%water	%mud		
Rec. <u>120</u>	Feet Of <u>Gassey Oil</u>	<u>50</u> %gas	<u>50</u> %oil	%water	%mud		
Rec. <u> </u>	Feet Of <u> </u>	%gas	%oil	%water	%mud		
Rec. <u> </u>	Feet Of <u> </u>	%gas	%oil	%water	%mud		

BHT °F Gravity 26 °API D@ 82 °F Corrected Gravity 24.7 °API
RW @ Alpine Chlorides 141 ppm Recovery Chlorides 800 ppm System

(A) Initial Hydrostatic Mud <u>2454</u> <u>2440</u> PSI	Recorder No. <u>2341</u>	T-Started <u>11:00 am.</u>
(B) First Initial Flow Pressure <u>27</u> <u>34</u> PSI	@ (depth) <u>5022</u>	T-Open <u>1:05 pm.</u>
(C) First Final Flow Pressure <u>38</u> <u>51</u> PSI	Recorder No. <u>2836</u>	T-Pulled <u>5:35 pm.</u>
(D) Initial Shut-in Pressure <u>1289</u> <u>1204</u> PSI	@ (depth) <u>5057</u>	T-Out <u>8:25</u>
(E) Second Initial Flow Pressure <u>39</u> <u>68</u> PSI	Recorder No. <u> </u>	
(F) Second Final Flow Pressure <u>72</u> <u>77</u> PSI	@ (depth) <u> </u>	
(G) Final Shut-in Pressure <u>1336</u> <u>1256</u> PSI	Initial Opening <u>30 min.</u>	Test <u>✓ Conventional</u> <u>600</u>
(H) Final Hydrostatic Mud <u>2354</u> <u>2306</u> PSI	Initial Shut-in <u>60 min.</u>	Jars <u>✓</u> <u>200</u>
	Final Flow <u>60 min.</u>	Safety Joint <u>✓</u> <u>50</u>
	Final Shut-in <u>180 min.</u>	Straddle <u> </u>

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By Brad Rine

Our Representative Mike Carter

Extra Packer

Elect. Rec. ✓ 150

Other

TOTAL PRICE \$ 1200 1300

TRILOBITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. Dst #2 Ticket # 9021 Date 7-5-96
Company Name Helmerich & Payne
Lease Kahn #5-10 Test No. Dst #2
County Haskell Sec. 10 Twp. 27S Rng. 34W

SAMPLER RECOVERY

Gas 1.9 cubic ft. ML
Oil 3,800 ML
Mud _____ ML
Water _____ ML
Other _____ ML
Pressure 1000 PSI
Total 4,000 ML

PIT MUD ANALYSIS

Chlorides 800 ppm.
Resistivity _____ ohms @ _____ F
Viscosity 49
Mud Weight 9.1
Filtrate 9.6
Other _____

SAMPLER ANALYSIS

Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.
Gravity 24.7 corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

BOTTOM
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

TRILOBITE TESTING L.L.C.

OPERATOR : Helmerich & Payne Inc.

DATE 7-6-96

WELL NAME: Kuhn #5-10

KB 2967.00 ft

TICKET NO: 9022

DST #3

LOCATION : 10-27S-34W Haskell Cty KS

GR 2958.00 ft

FORMATION: St. Louis

INTERVAL : 5187.00 To 5200.00 ft

TD 5200.00 ft

TEST TYPE: CONVENTIONAL

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30	Rec.	2836	2836	2341		PF Fr. 1550 to 1620 hr
SI 60	Range(Psi)	3550.0	3550.0	4995.0	0.0	0.0 IS Fr. 1620 to 1720 hr
SF 60	Clock(hrs)	12	12	Alpin		SF Fr. 1720 to 1820 hr
FS 120	Depth(ft)	5197.0	5197.0	5190.0	0.0	0.0 FS Fr. 1820 to 2020 hr

	Field	1	2	3	4	
A. Init Hydro	2494.0	2484.0	2528.0	0.0	0.0	T STARTED 1330 hr
B. First Flow	34.0	33.0	25.0	0.0	0.0	T ON BOTM 1548 hr
B1. Final Flow	51.0	39.0	55.0	0.0	0.0	T OPEN 1550 hr
C. In Shut-in	1230.0	1228.0	1305.0	0.0	0.0	T PULLED 2020 hr
D. Init Flow	85.0	96.0	82.0	0.0	0.0	T OUT 2335 hr
E. Final Flow	111.0	104.0	121.0	0.0	0.0	
F. Fl Shut-in	1221.0	1209.0	1287.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2422.0	2421.0	2451.0	0.0	0.0	Tool Wt. 1800.00 lbs
Inside/Outside	0	0	I			Wt Set On Packer 20000.00 lbs
						Wt Pulled Loose 80000.00 lbs
						Initial Str Wt 75000.00 lbs
						Unseated Str Wt 55000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.80 in
						D.C. Length 608.00 ft
						D.P. Length 4575.00 ft

RECOVERY

Tot Fluid 310.00 ft of 310.00 ft in DC and 0.00 ft in DP
 1400.00 ft of Gas in pipe
 40.00 ft of Gassy Oil - 50% oil, 50% gas
 90.00 ft of Gassy water cut mud & oil -
 50% gas, 20% oil, 10% water, 20% mud
 90.00 ft of Gassy slightly water cut muddy oil -
 53% gas, 25% oil, 2% water, 20% mud
 90.00 ft of Gassy oil cut watery mud -
 25% gas, 15% oil, 25% water, 35% mud
 SALINITY 0.00 P.P.M. A.P.I. Gravity 33.40

BLOW DESCRIPTION

Initial Flow -
 Fair blow, built to bottom of bucket
 in 22 min
 Final Flow -
 Strong blow, built to bottom of bucket
 in 5 min
 Final Shutin -
 Bled off 2", surface blow back built
 to 2"

SAMPLES: NO

SENT TO:

MUD DATA-----
 Mud Type Chemical
 Weight 9.20 lb/cf
 Vis. 55.00 S/L
 W.L. 10.40 in3
 F.C. 0.00 in
 Mud Drop Y 45.0 ft
 Amt. of fill 0.00 ft
 Btm. H. Temp. 122.00 F
 Hole Condition Good
 % Porosity 0.00
 Packer Size 6.75 in
 No. of Packers 2
 Cushion Amt. 0.00
 Cushion Type
 Reversed Out N
 Tool Chased N
 Tester Mike Colantonio
 Co. Rep. Brad Rine
 Contr. Murfin
 Rig # 22
 Unit #
 Pump T.

Test Successful: Y

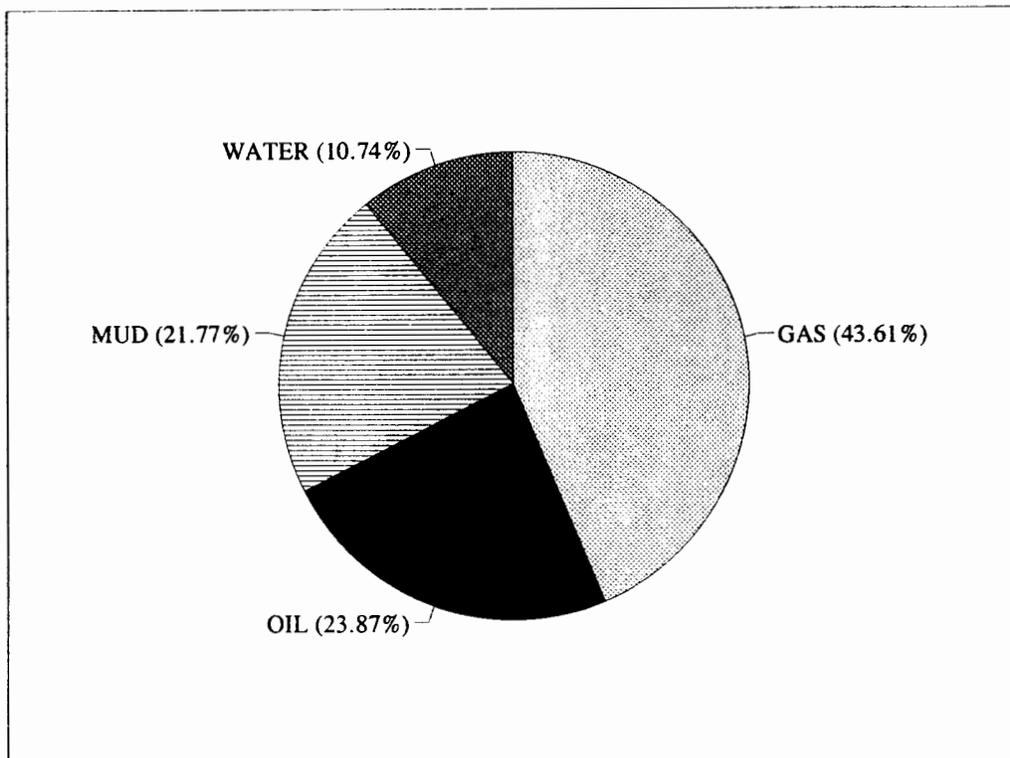
CALCULATED RECOVERY ANALYSIS - DRILL COLLARS

DST 3

TICKET 9022

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	40	50	20	50	20		0		0
2	90	50	45	20	18	10	9	20	18
3	90	53	47.7	25	22.5	2	1.8	20	18
4	90	25	22.5	15	13.5	25	22.5	35	31.5
5			0		0		0		0
6			0		0		0		0
TOTAL	310		135.2		74		33.3		67.5

BBL OIL =	0.36186	*	HRS OPEN	1.5	=	BBL/DAY	8.68464
BBL WATER =	0.16284	*			=		3.90809
BBL MUD =	0.33008						
BBL GAS =	0.66113						



9022 DST#3 Kuhn #5-10 Helmerich & Payne Inc.

Flag Points

t (Min.)	P (PSig)
A: 0.00	2528.11
B: 0.00	25.43
C: 29.00	55.30
D: 59.00	1304.85
E: 0.00	81.64
F: 59.00	121.04
G: 120.00	1286.71
Q: 0.00	2450.91

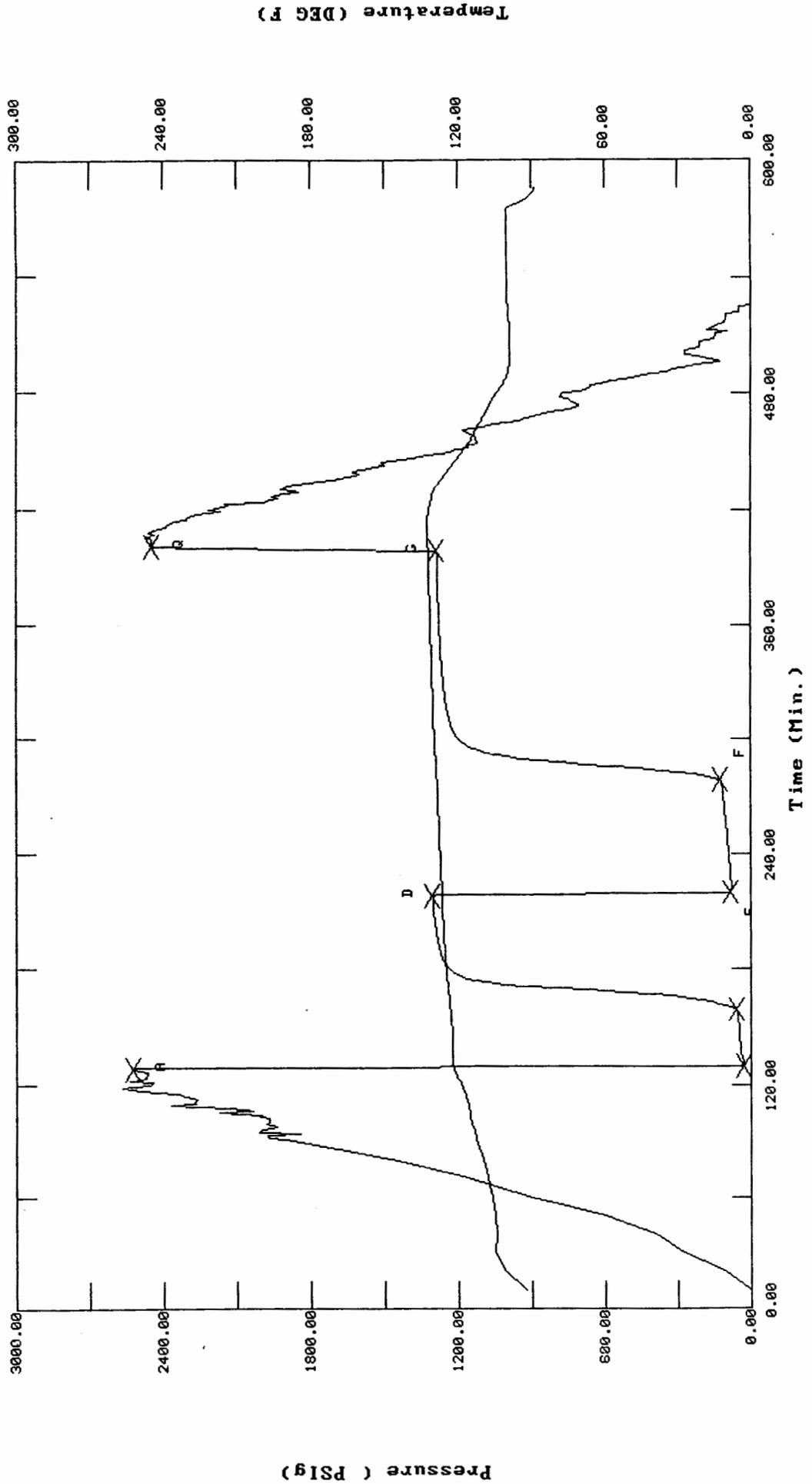
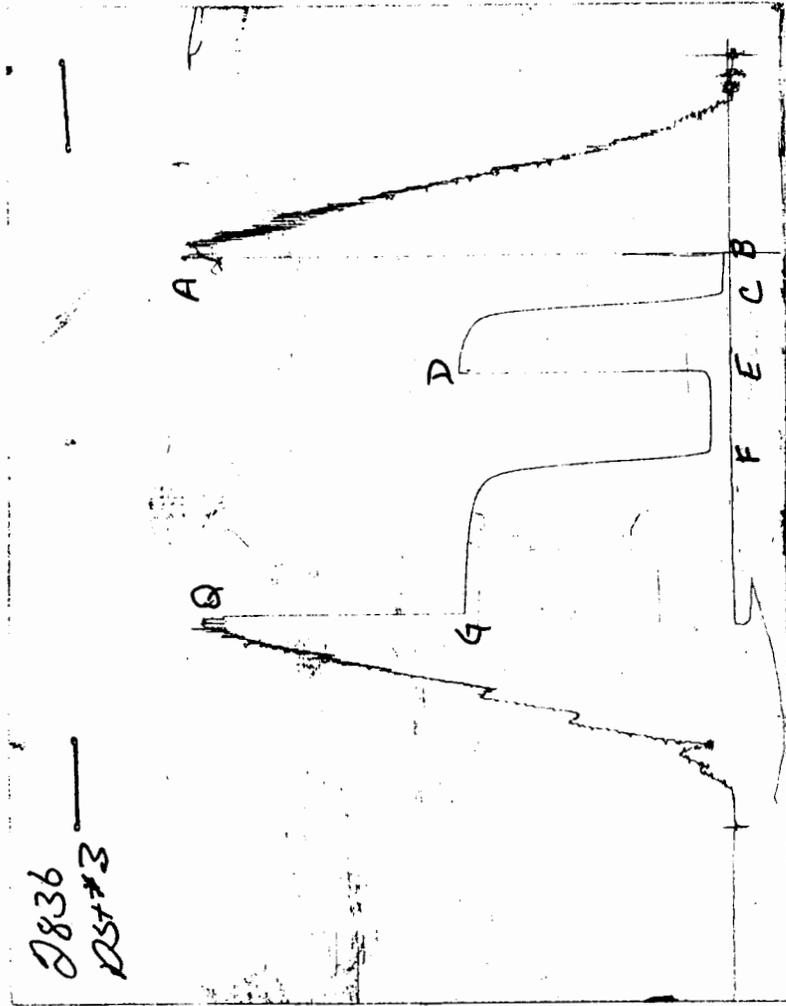


CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9022 DST#3 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/06/96

TIME: 13:39:31

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
***** Initial Hydro.	128.00	2528.1	0.0	121.67		
***** Start Flow 1	0.00	25.4	0.0	121.94		
	1.00	26.9	1.4	122.03		
	2.00	28.0	2.6	122.06		
	3.00	29.8	4.4	122.10		
	4.00	32.2	6.8	122.11		
	5.00	35.3	9.8	122.10		
	6.00	37.4	12.0	122.12		
	7.00	37.6	12.1	122.14		
	8.00	38.6	13.2	122.18		
	9.00	39.8	14.4	122.21		
	10.00	40.2	14.8	122.21		
	11.00	41.1	15.7	122.23		
	12.00	42.3	16.9	122.26		
	13.00	43.4	18.0	122.29		
	14.00	44.3	18.9	122.32		
	15.00	44.4	19.0	122.36		
	16.00	44.5	19.1	122.40		
	17.00	44.4	19.0	122.45		
	18.00	44.5	19.1	122.49		
	19.00	44.5	19.1	122.56		
	20.00	45.4	20.0	122.60		
	21.00	46.9	21.4	122.65		
	22.00	47.5	22.1	122.72		
	23.00	48.8	23.3	122.78		
	24.00	49.7	24.3	122.84		
	25.00	50.6	25.2	122.92		
	26.00	51.8	26.4	122.98		
	27.00	52.6	27.2	123.05		
	28.00	53.2	27.8	123.13		
***** End Flow 1	29.00	55.3	29.9	123.21		
***** Start Shutin 1	0.00	55.3	0.0	123.21	0.0000	0.003
	1.00	79.2	23.9	123.27	30.0000	0.006
	2.00	103.3	48.0	123.35	15.5000	0.011
	3.00	130.5	75.2	123.43	10.6667	0.017
	4.00	162.2	106.9	123.51	8.2500	0.026
	5.00	200.4	145.1	123.59	6.8000	0.040
	6.00	248.8	193.5	123.66	5.8333	0.062
	7.00	313.5	258.2	123.74	5.1429	0.098
	8.00	403.7	348.4	123.83	4.6250	0.163
	9.00	525.7	470.4	123.91	4.2222	0.276
	10.00	667.2	611.9	124.00	3.9000	0.445
	11.00	804.2	748.9	124.06	3.6364	0.647
	12.00	921.3	866.0	124.16	3.4167	0.849
	13.00	1014.4	959.1	124.31	3.2308	1.029
	14.00	1083.5	1028.1	124.38	3.0714	1.174
	15.00	1132.3	1077.0	124.47	2.9333	1.282
	16.00	1166.2	1110.9	124.57	2.8125	1.360
	17.00	1189.9	1134.6	124.66	2.7059	1.416
	18.00	1207.1	1151.8	124.72	2.6111	1.457
	19.00	1219.8	1164.5	124.82	2.5263	1.488

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9022 DST#3 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/06/96

TIME: 13:39:31

	Time	Pressure PSig	delta P PSig	Temp. DEG F	(T+dT)/dT	P^2/10^6
	20.00	1229.7	1174.4	124.98	2.4500	1.512
	21.00	1237.6	1182.3	124.95	2.3810	1.532
	22.00	1244.2	1188.9	125.01	2.3182	1.548
	23.00	1249.7	1194.4	125.08	2.2609	1.562
	24.00	1254.4	1199.1	125.13	2.2083	1.574
	25.00	1258.6	1203.3	125.19	2.1600	1.584
	26.00	1262.3	1207.0	125.25	2.1154	1.593
	27.00	1265.5	1210.2	125.32	2.0741	1.602
	28.00	1268.5	1213.2	125.36	2.0357	1.609
	29.00	1271.0	1215.7	125.42	2.0000	1.615
	30.00	1273.6	1218.3	125.47	1.9667	1.622
	31.00	1275.7	1220.4	125.51	1.9355	1.627
	32.00	1277.9	1222.6	125.57	1.9062	1.633
	33.00	1279.7	1224.4	125.61	1.8788	1.638
	34.00	1281.5	1226.2	125.67	1.8529	1.642
	35.00	1283.1	1227.8	125.71	1.8286	1.646
	36.00	1284.7	1229.4	125.76	1.8056	1.650
	37.00	1286.2	1230.9	125.81	1.7838	1.654
	38.00	1287.5	1232.2	125.86	1.7632	1.658
	39.00	1288.7	1233.4	125.90	1.7436	1.661
	40.00	1290.0	1234.7	125.94	1.7250	1.664
	41.00	1291.1	1235.8	126.00	1.7073	1.667
	42.00	1292.2	1236.9	126.02	1.6905	1.670
	43.00	1293.1	1237.8	126.08	1.6744	1.672
	44.00	1294.1	1238.8	126.12	1.6591	1.675
	45.00	1295.0	1239.7	126.16	1.6444	1.677
	46.00	1295.9	1240.6	126.21	1.6304	1.679
	47.00	1296.8	1241.5	126.24	1.6170	1.682
	48.00	1297.7	1242.4	126.29	1.6042	1.684
	49.00	1298.4	1243.1	126.34	1.5918	1.686
	50.00	1299.3	1244.0	126.38	1.5800	1.688
	51.00	1300.0	1244.7	126.42	1.5686	1.690
	52.00	1300.7	1245.4	126.47	1.5577	1.692
	53.00	1301.3	1246.0	126.50	1.5472	1.694
	54.00	1302.1	1246.8	126.55	1.5370	1.695
	55.00	1302.5	1247.2	126.60	1.5273	1.697
	56.00	1303.1	1247.8	126.62	1.5179	1.698
	57.00	1303.7	1248.4	126.66	1.5088	1.700
	58.00	1304.3	1249.0	126.70	1.5000	1.701
***** End Shut-in 1	59.00	1304.8	1249.5	126.74	1.4915	1.703
***** Start Flow 2	0.00	81.6	0.0	126.74		
	1.00	78.8	-2.8	126.73		
	2.00	77.7	-4.0	126.73		
	3.00	75.9	-5.7	126.74		
	4.00	76.3	-5.3	126.76		
	5.00	76.7	-5.0	126.78		
	6.00	77.4	-4.2	126.81		
	7.00	79.9	-1.7	126.83		
	8.00	82.4	0.8	126.86		
	9.00	83.6	2.0	126.90		
	10.00	83.5	1.9	126.93		

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9022 DST#3 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/06/96

TIME: 13:39:31

	Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	11.00	82.7	1.1	126.97		
	12.00	83.0	1.4	127.01		
	13.00	83.5	1.8	127.05		
	14.00	84.1	2.4	127.08		
	15.00	84.7	3.1	127.12		
	16.00	85.4	3.8	127.16		
	17.00	86.1	4.4	127.21		
	18.00	86.6	5.0	127.25		
	19.00	87.3	5.6	127.29		
	20.00	88.1	6.4	127.32		
	21.00	88.4	6.7	127.37		
	22.00	89.5	7.9	127.40		
	23.00	90.2	8.6	127.44		
	24.00	90.7	9.1	127.47		
	25.00	91.5	9.9	127.52		
	26.00	92.3	10.7	127.55		
	27.00	93.0	11.4	127.59		
	28.00	93.6	11.9	127.64		
	29.00	94.3	12.7	127.67		
	30.00	94.9	13.2	127.69		
	31.00	95.6	13.9	127.69		
	32.00	96.3	14.6	127.74		
	33.00	96.7	15.1	127.75		
	34.00	97.9	16.2	127.79		
	35.00	98.3	16.7	127.85		
	36.00	99.3	17.7	127.88		
	37.00	100.0	18.4	127.93		
	38.00	100.8	19.1	127.97		
	39.00	101.3	19.6	127.99		
	40.00	102.3	20.7	128.03		
	41.00	103.1	21.5	128.07		
	42.00	104.1	22.5	128.11		
	43.00	104.8	23.2	128.14		
	44.00	105.7	24.0	128.17		
	45.00	106.7	25.1	128.20		
	46.00	107.3	25.7	128.23		
	47.00	107.9	26.3	128.26		
	48.00	108.6	26.9	128.30		
	49.00	109.5	27.9	128.34		
	50.00	110.0	28.3	128.37		
	51.00	110.9	29.3	128.40		
	52.00	112.1	30.5	128.43		
	53.00	112.6	30.9	128.45		
	54.00	113.9	32.3	128.49		
	55.00	114.2	32.6	128.53		
	56.00	115.0	33.3	128.54		
	57.00	116.1	34.5	128.56		
	58.00	116.9	35.3	128.59		
***** End Flow 2	59.00	121.0	39.4	128.62		
***** Start Shutin 2	0.00	121.0	0.0	128.62	0.0000	0.015
	1.00	156.7	35.6	128.72	89.0000	0.025

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9022 DST#3 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/06/96

TIME: 13:39:31

Time	Pressure PSIg	delta PSIg	P	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
2.00	193.2	72.2	128.74	45.0000	0.037	
3.00	236.2	115.2	128.78	30.3333	0.056	
4.00	292.1	171.0	128.81	23.0000	0.085	
5.00	367.8	246.8	128.85	18.6000	0.135	
6.00	465.5	344.4	128.89	15.6667	0.217	
7.00	577.2	456.1	128.94	13.5714	0.333	
8.00	687.7	566.7	128.99	12.0000	0.473	
9.00	787.1	666.1	129.05	10.7778	0.620	
10.00	872.6	751.5	129.11	9.8000	0.761	
11.00	944.5	823.4	129.17	9.0000	0.892	
12.00	1003.7	882.6	129.22	8.3333	1.007	
13.00	1051.2	930.1	129.27	7.7692	1.105	
14.00	1088.3	967.3	129.33	7.2857	1.184	
15.00	1117.1	996.0	129.38	6.8667	1.248	
16.00	1139.1	1018.1	129.44	6.5000	1.298	
17.00	1156.3	1035.3	129.48	6.1765	1.337	
18.00	1169.9	1048.9	129.52	5.8889	1.369	
19.00	1180.7	1059.7	129.56	5.6316	1.394	
20.00	1189.6	1068.5	129.60	5.4000	1.415	
21.00	1196.9	1075.9	129.62	5.1905	1.433	
22.00	1203.1	1082.1	129.66	5.0000	1.448	
23.00	1208.3	1087.3	129.70	4.8261	1.460	
24.00	1212.9	1091.9	129.62	4.6667	1.471	
25.00	1217.0	1095.9	129.78	4.5200	1.481	
26.00	1220.6	1099.5	129.82	4.3846	1.490	
27.00	1223.9	1102.8	129.84	4.2593	1.498	
28.00	1226.7	1105.7	129.88	4.1429	1.505	
29.00	1229.5	1108.4	129.91	4.0345	1.512	
30.00	1231.9	1110.9	129.95	3.9333	1.518	
31.00	1234.2	1113.2	129.97	3.8387	1.523	
32.00	1236.3	1115.3	129.99	3.7500	1.528	
33.00	1238.2	1117.2	130.02	3.6667	1.533	
34.00	1240.1	1119.0	130.06	3.5882	1.538	
35.00	1241.8	1120.8	130.11	3.5143	1.542	
36.00	1243.4	1122.4	130.14	3.4444	1.546	
37.00	1245.0	1123.9	130.16	3.3784	1.550	
38.00	1246.4	1125.3	130.19	3.3158	1.553	
39.00	1247.8	1126.8	130.22	3.2564	1.557	
40.00	1249.1	1128.1	130.24	3.2000	1.560	
41.00	1250.3	1129.3	130.26	3.1463	1.563	
42.00	1251.5	1130.5	130.29	3.0952	1.566	
43.00	1252.7	1131.7	130.30	3.0465	1.569	
44.00	1253.8	1132.8	130.35	3.0000	1.572	
45.00	1254.8	1133.7	130.37	2.9556	1.574	
46.00	1255.7	1134.7	130.40	2.9130	1.577	
47.00	1256.7	1135.6	130.43	2.8723	1.579	
48.00	1257.6	1136.6	130.45	2.8333	1.582	
49.00	1258.5	1137.5	130.48	2.7959	1.584	
50.00	1259.4	1138.4	130.51	2.7600	1.586	
51.00	1260.3	1139.3	130.52	2.7255	1.588	
52.00	1261.2	1140.1	130.56	2.6923	1.591	

ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9022 DST#3 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/06/96

TIME: 13:39:31

Time	Pressure PSIg	delta P PSIg	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
53.00	1261.8	1140.8	130.58	2.6604	1.592
54.00	1262.6	1141.6	130.60	2.6296	1.594
55.00	1263.3	1142.2	130.64	2.6000	1.596
56.00	1264.0	1143.0	130.66	2.5714	1.598
57.00	1264.8	1143.7	130.69	2.5439	1.600
58.00	1265.4	1144.3	130.71	2.5172	1.601
59.00	1265.9	1144.9	130.74	2.4915	1.603
60.00	1266.6	1145.6	130.77	2.4667	1.604
61.00	1267.2	1146.2	130.80	2.4426	1.606
62.00	1267.7	1146.7	130.82	2.4194	1.607
63.00	1268.4	1147.3	130.84	2.3968	1.609
64.00	1268.9	1147.9	130.87	2.3750	1.610
65.00	1269.4	1148.4	130.89	2.3538	1.611
66.00	1270.0	1148.9	130.92	2.3333	1.613
67.00	1270.4	1149.4	130.96	2.3134	1.614
68.00	1270.9	1149.9	130.98	2.2941	1.615
69.00	1271.4	1150.4	131.01	2.2754	1.617
70.00	1271.9	1150.9	130.96	2.2571	1.618
71.00	1272.4	1151.4	131.04	2.2394	1.619
72.00	1272.8	1151.8	131.08	2.2222	1.620
73.00	1273.3	1152.2	131.10	2.2055	1.621
74.00	1273.7	1152.7	131.13	2.1892	1.622
75.00	1274.1	1153.1	131.15	2.1733	1.623
76.00	1274.6	1153.6	131.17	2.1579	1.625
77.00	1275.0	1153.9	131.19	2.1429	1.626
78.00	1275.4	1154.3	131.23	2.1282	1.627
79.00	1275.8	1154.8	131.24	2.1139	1.628
80.00	1276.1	1155.1	131.27	2.1000	1.628
81.00	1276.4	1155.4	131.31	2.0864	1.629
82.00	1276.8	1155.7	131.32	2.0732	1.630
83.00	1277.1	1156.1	131.35	2.0602	1.631
84.00	1277.5	1156.5	131.33	2.0476	1.632
85.00	1277.9	1156.8	131.36	2.0353	1.633
86.00	1278.2	1157.1	131.39	2.0233	1.634
87.00	1278.6	1157.5	131.40	2.0115	1.635
88.00	1278.8	1157.8	131.43	2.0000	1.635
89.00	1279.1	1158.1	131.46	1.9888	1.636
90.00	1279.4	1158.3	131.48	1.9778	1.637
91.00	1279.8	1158.7	131.51	1.9670	1.638
92.00	1280.1	1159.1	131.53	1.9565	1.639
93.00	1280.4	1159.3	131.56	1.9462	1.639
94.00	1280.6	1159.6	131.58	1.9362	1.640
95.00	1280.9	1159.9	131.61	1.9263	1.641
96.00	1281.2	1160.1	131.62	1.9167	1.641
97.00	1281.5	1160.4	131.65	1.9072	1.642
98.00	1281.7	1160.7	131.67	1.8980	1.643
99.00	1282.0	1160.9	131.72	1.8889	1.644
100.00	1282.2	1161.2	131.70	1.8800	1.644
101.00	1282.6	1161.5	131.70	1.8713	1.645
102.00	1282.7	1161.7	131.74	1.8627	1.645
103.00	1283.0	1162.0	131.76	1.8544	1.646

 ALPINE SUBSURFACE ELECTRONICS PROBE INCREMENTS LISTING

TEST: 9022 DST#3 Kuhn #5-10 Helmerich & Payne Inc.

DATE: 07/06/96 TIME: 13:39:31

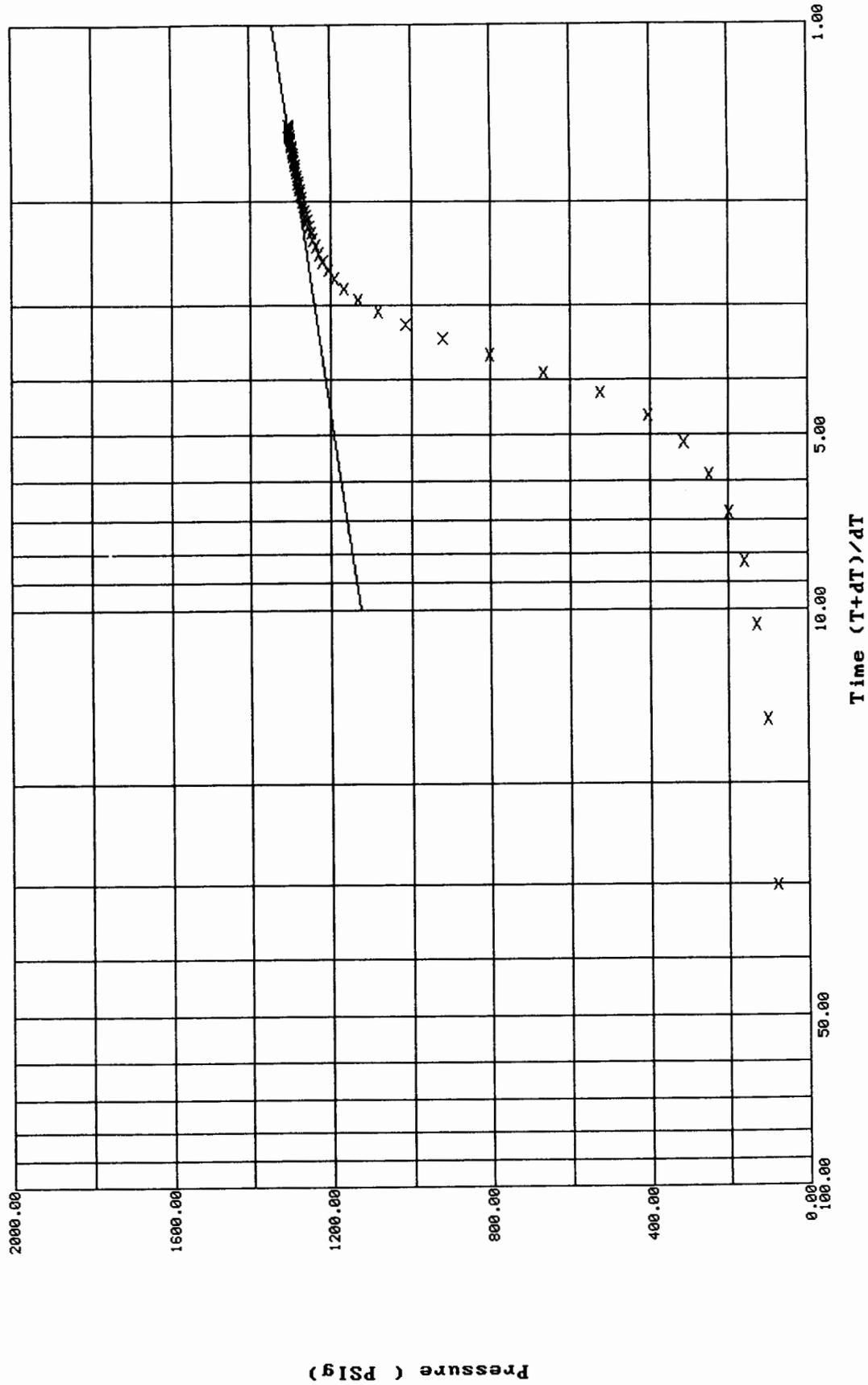
	Time	Pressure PSig	delta P PSig	P	Temp. DEG F	(T+dT)/dT	P ² /10 ⁶
	104.00	1283.2	1162.1		131.79	1.8462	1.647
	105.00	1283.4	1162.4		131.81	1.8381	1.647
	106.00	1283.7	1162.7		131.84	1.8302	1.648
	107.00	1283.9	1162.9		131.86	1.8224	1.648
	108.00	1284.2	1163.2		131.87	1.8148	1.649
	109.00	1284.4	1163.4		131.90	1.8073	1.650
	110.00	1284.7	1163.6		131.92	1.8000	1.650
	111.00	1284.9	1163.9		131.94	1.7928	1.651
	112.00	1285.2	1164.1		131.96	1.7857	1.652
	113.00	1285.3	1164.2		131.99	1.7788	1.652
	114.00	1285.5	1164.5		131.99	1.7719	1.653
	115.00	1285.6	1164.6		132.01	1.7652	1.653
	116.00	1285.9	1164.9		132.04	1.7586	1.654
	117.00	1286.1	1165.0		132.06	1.7521	1.654
	118.00	1286.3	1165.2		132.09	1.7458	1.655
	119.00	1286.5	1165.4		132.09	1.7395	1.655
***** End Shut-in 2	120.00	1286.7	1165.7		132.11	1.7333	1.656
***** Final Hydro.	401.00	2450.9	0.0		132.30		

Horner Plot: shut-in #1

9022 DST#3 Kuhn #5-10 Helmerich & Payne Inc.

Slope: 214.8898 PSig/cycle

Ext. Pressure: 1342.1188 PSig

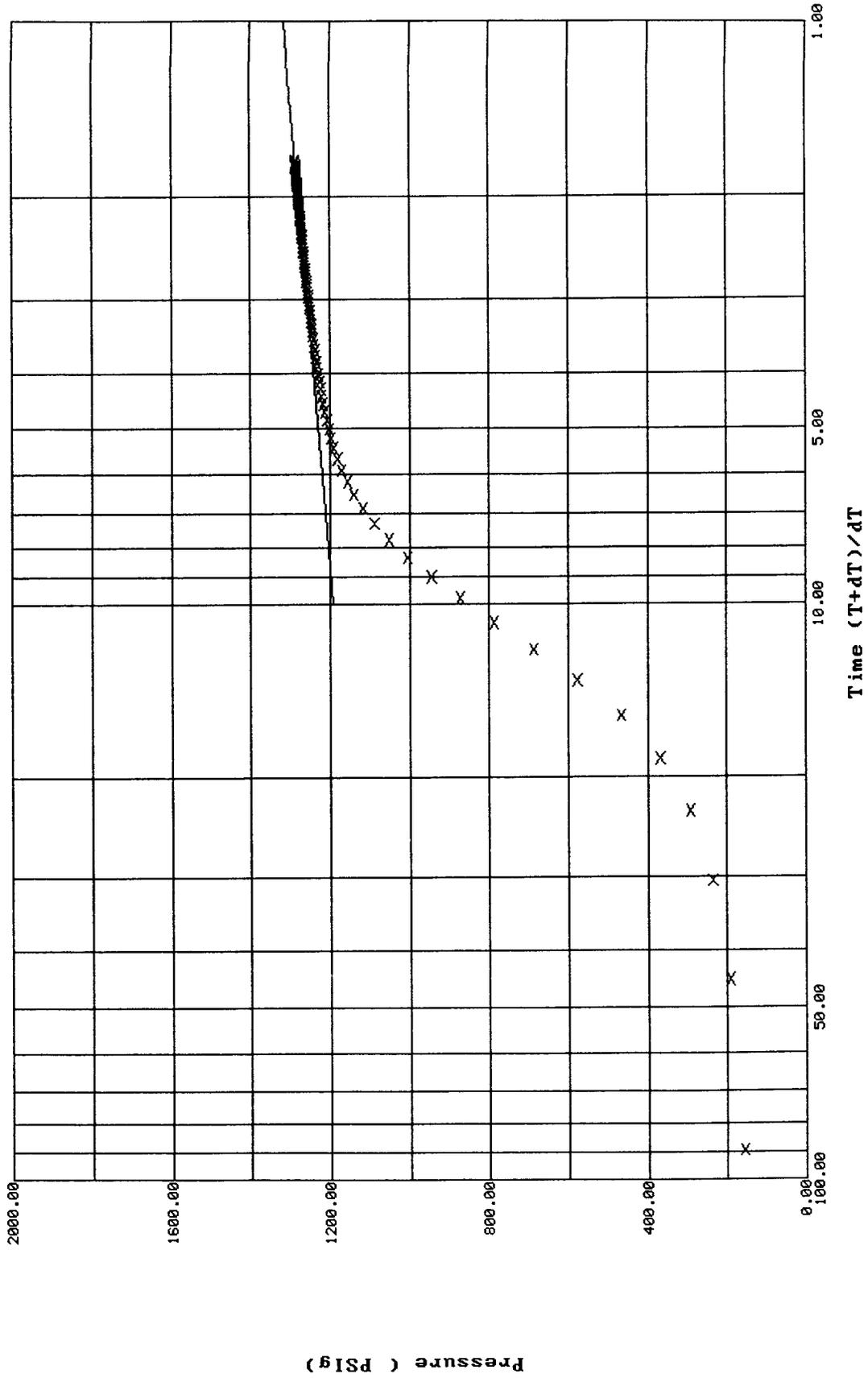


Horner Plot: shut-in #2

9022 DST#3 Kuhn #5-10 Helmerich & Payne Inc.

Slope: 126.0004 PSig/cycle

Ext. Pressure: 1316.7941 PSig



*** TOOL DIAGRAM *** CONVENTIONAL

WELL NAME: Kuhn #5-10

LOCATION : 10-27S-34W Haskell Cty KS

TICKET No. 9022 D.S.T. No. 1 DATE 7-6-96

TOTAL TOOL TO BOTTOM OF TOP PACKERS 30

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 13

TOTAL TOOL 43

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands Single Total

TOTAL ASSEMBLY 43

D.C. ABOVE TOOLS.Stands9 Single 1 Total 608

D.P. ABOVE TOOLS.Stands75 Single Total 4575

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5226

TOTAL DEPTH 5200

TOTAL DRILL PIPE ABOVE K.B. 26

REMARKS:

FLUID SAMPLER DATA

SAMPLER RECOVERY -

Gas 1.3 cu ft, Oil 3900 ml, Press 750 PSI,
Total 4000 ml

SAMPLER ANALYSIS -

Resistivity .566 ohms @ 79.7 F,
Chlorides 9000 ppm
Gravity 33.4 corrected @ 60 F

PIT MUD ANALYSIS -

Chlorides 700 ppm, Viscosity 55,
Mud Weight 9.2, Filtrate 10.4

P.O. SUB	
C.O. SUB 1ft	5157
S.I. TOOL 5ft	5163
3ft SAMPLER	5166
HMV 5ft	5171
JARS 5ft	5176
SAFETY JOINT 2ft	5178
PACKER 5ft	5182
PACKER 5ft	5187
DEPTH	
STUBB 1ft	5188
ANCHOR 1ft Perf	5189
Alpine Rec.	5190
6ft. pick up sub	5195
T.C.	
DEPTH	
2ft perf	5197
AK-1 recorder	5197
BULLNOSE 3ft bull plug	
T.D.	5200

Well name Kuhn

DST # 3

Recorder # 2836

1			
2	A		2484
3	B		33
4	C		39
5	D		1228
6	E		96
7	F		104
8	G		1209
9	H		2421
0			
1			
2			

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

N^o 9022

Well Name & No. <u>Kuhn #5-10</u>	Test No. <u>3</u>	Date <u>7-6-96</u>
Company <u>Helmerich & Payne Inc.</u>	Zone Tested <u>St. Louis</u>	
Address <u>Box 558 Garden City KS, 67846</u>	Elevation <u>2967</u> KB <u>2858</u> GL	
Co. Rep / Geo. <u>Brad Rine</u>	Cont. <u>Martin Rye #22</u>	Est. Ft. of Pay <u>9'</u> Por. <u> </u> %
Location: Sec. <u>10</u> Twp. <u>27S</u> Rge. <u>34W</u>	Co. <u>Haskell</u> State <u>KS</u>	
No. of Copies <u> </u> Distribution Sheet (Y, N) <u>NO</u>	Turnkey (Y, N) <u>NO</u>	Evaluation (Y, N) <u> </u>

Interval Tested <u>5189-5200</u>	Initial Str Wt./Lbs. <u>75000</u>	Unseated Str Wt./Lbs. <u>55000</u>
Anchor Length <u>13'</u>	Wt. Set Lbs. <u>29000</u>	Wt. Pulled Loose/Lbs. <u>80000</u>
Top Packer Depth <u>5182</u>	Hole Size — 7 7/8" <u>X</u>	Rubber Size — 6 3/4" <u>X</u>
Bottom Packer Depth <u>5187</u>	Wt. Pipe I.D. — 2.7 Ft. Run <u> </u>	
Total Depth <u>5200</u>	Drill Collar — 2.25 Ft. Run <u>608</u>	
Mud Wt. <u>9.2</u> LCM <u>1</u> Vis. <u>55</u> WL <u>10.4</u>	Drill Pipe Size <u>4 1/2 X-Hole</u>	Ft. Run <u>4575</u>
Blow Description <u>Fair Blow Built to B.O.B. in 22 min.</u>		

ISF. NO Blow Back.
and opening Strong Blow B.O.B in 5 min.
F.S.F. Bld off air Had Blow Back Built to Rin Blow

Recovery — Total Feet <u>310</u>	Ft. in DC <u>310</u>	Ft. in WP <u> </u>	Ft. in DP <u> </u>
Rec. <u>1400</u> Feet Of <u>Gas in P.p.c.</u>	%gas <u> </u>	%oil <u> </u>	%water <u> </u> %mud <u> </u>
Rec. <u>40</u> Feet Of <u>H-Gassy - Oil</u>	<u>50</u> %gas <u>50</u> %oil	%water <u> </u>	%mud <u> </u>
Rec. <u>90</u> Feet Of <u>G-O & M Sly H₂O cut</u>	<u>50</u> %gas <u>20</u> %oil	<u>10</u> %water <u>20</u> %mud	
Rec. <u>90</u> Feet Of <u>HG-O-M Sly H₂O</u>	<u>53</u> %gas <u>25</u> %oil	<u>2</u> %water <u>20</u> %mud	
Rec. <u>90</u> Feet Of <u>M M Gassy Oil & H₂O</u>	<u>25</u> %gas <u>15</u> %oil	<u>25</u> %water <u>35</u> %mud	
BHT <u>122</u> °F Gravity <u>35</u> API <u>84</u>	°API D@ <u>84</u>	°F Corrected Gravity <u>33.4</u>	°API <u> </u>
RW <u> </u> @ <u> </u> °F Chlorides <u>700</u>	ppm Recovery Chlorides <u>700</u>	ppm System <u> </u>	

(A) Initial Hydrostatic Mud <u>2528</u> <u>2494</u> PSI	Recorder No. <u>2341</u>	T-Started <u>1:30 pm</u>
(B) First Initial Flow Pressure <u>25</u> <u>34</u> PSI	@ (depth) <u>5190</u>	T-Open <u>3:50 pm</u>
(C) First Final Flow Pressure <u>55</u> <u>51</u> PSI	Recorder No. <u>2836</u>	T-Pulled <u>8:20 pm</u>
(D) Initial Shut-in Pressure <u>1304</u> <u>1230</u> PSI	@ (depth) <u>5192</u>	T-Out <u>11:35 pm</u>
(E) Second Initial Flow Pressure <u>81</u> <u>85</u> PSI	Recorder No. <u> </u>	
(F) Second Final Flow Pressure <u>62</u> <u>111</u> PSI	@ (depth) <u> </u>	
(G) Final Shut-in Pressure <u>1286</u> <u>1221</u> PSI	Initial Opening <u>30 min</u>	Test <input checked="" type="checkbox"/> <u>Cover hole 1700</u>
(H) Final Hydrostatic Mud <u>2838</u> <u>2482</u> PSI	Initial Shut-in <u>60 min</u>	Jars <input checked="" type="checkbox"/> <u>200</u>
	Final Flow <u>60 min</u>	Safety Joint <input checked="" type="checkbox"/> <u>50</u>
	Final Shut-in <u>120 min</u>	Straddle <u> </u>

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By Brad Rine

Our Representative M. L. [Signature]

Elect. Rec. 150

Other

TOTAL PRICE \$ 1300

TRILOBITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. #9022 Date 7-6-96
Company Name Helmreich & Payne Inc.
Lease Mahn #5-10 Test No. Dst #3
County Haskell Sec. 10 Twp. 27S Rng. 34W

SAMPLER RECOVERY

Gas 1.3 cubic ft. ML
Oil 3,900 ML
Mud _____ ML
Water _____ ML
Other _____ ML
Pressure 750 PSI PSI
Total 4,000 ML

PIT MUD ANALYSIS

Chlorides 700 ppm.
Resistivity _____ ohms @ _____ F
Viscosity 55
Mud Weight 9.2
Filtrate 10.4
Other _____

SAMPLER ANALYSIS

Resistivity .566 ohms @ 79.7 F
Chlorides 9,000 ppm.
Gravity 33.4 corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

BOTTOM
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.