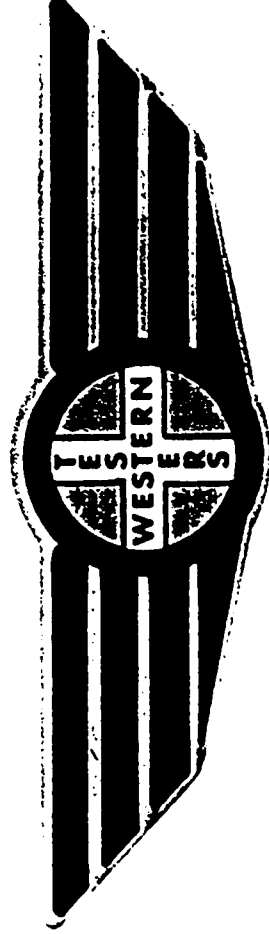


FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE	:	10-15-87	TICKET	:	12794
CUSTOMER	:	GRAVES DRILLING CO. INC.	LEASE	:	PIESTER
WELL	:	#1 TEST: 1	GEOLOGIST	:	A. RATZLAFF
ELEVATION	:	1985 KB	FORMATION	:	MISSISSIPPI
SECTION	:	26	TOWNSHIP	:	29S4
RANGE	:	16W	COUNTY	:	KIOWA
GAUGE SN#	:	13762	STATE	:	KANSAS
			RANGE	:	3925
			CLOCK	:	12

INTERVAL FROM	:	4624	TO	:	4700	TOTAL DEPTH	:	4700
DEPTH OF SELECTIVE ZONE	:							
PACKER DEPTH	:	4619	SIZE	:	6.63			
PACKER DEPTH	:	4624	SIZE	:	6.63			
PACKER DEPTH	:		SIZE	:				
PACKER DEPTH	:		SIZE	:				

DRILLING CON.	:	DUKE RIG #2			
MUD TYPE	:	CHEMICAL	VISCOSITY	:	45
WEIGHT	:	9.6	WATER LOSS (CC)	:	10.8
CHLORIDES (PPM)	:	4800			
JARS-MAKE	:	6	SERIAL NUMBER	:	6
DID WELL FLOW ?	:		REVERSED OUT ?	:	

DRILL COLLAR LENGTH	:	0	FT	I.D. inch	:	0.00
WEIGHT PIPE LENGTH	:	250	FT	I.D. inch	:	2.90
DRILL PIPE LENGTH	:	4353	FT	I.D. inch	:	3.80
TEST TOOL LENGTH	:	21	FT	TOOL SIZE	:	5.50
ANCHOR LENGTH	:	76	FT	ANCHOR SIZE	:	5.50
SURFACE CHOKE SIZE	:	.75	IN	BOTTOM CHOKE SIZE	:	.75
MAIN HOLE SIZE	:	7.875	IN	TOOL JOINT SIZE	:	4.5 XH

BLOW COMMENT #1 : INITIAL FLOW-WEAK BLOW-BUILDING TO FAIR-HOSE 5"
INTO BUCKET.

BLOW COMMENT #2 : FINAL FLOW-FAIR BLOW-BUILDING TO 7" BLOW INTO BUCKET.

BLOW COMMENT #3 :

BLOW COMMENT #4 :

RECOVERED : 30 FT OF: SLIGHTLY GAS CUT MUD
/ WITH FEW OIL SPECKS IN TOOL

Total Barrels Fluid = 0.25
Total Fluid Prod Rate = 4.71 BFPD
Indicated Wtr Rate = 0.47 BWPD

REMARK 1 :
REMARK 2 : RECOVERED 150 FEET OF GAS ABOVE FLUID.
REMARK 3 :
REMARK 4 :

SET PACKER(S) : 11:50 PM TIME STARTED OFF BOTTOM : 2:50 AM
WELL TEMPERATURE : 125
INITIAL HYDROSTATIC PRESSURE (A) 2353
INITIAL FLOW PERIOD MIN: 30 (B) 52 PSI TO (C) : 52
INITIAL CLOSED IN PERIOD MIN: 42 (D) 91
FINAL FLOW PERIOD MIN: 45 (E) 52 PSI TO (F) : 52
FINAL CLOSED IN PERIOD MIN: 57 (G) 93
FINAL HYDROSTATIC PRESSURE (H) 2320

WESTERN TESTING CO. INC.
WICHITA - KANSAS

Pressure Transient Report

COMPANY : GRAVES DRILLING CO. INC.
RIG : KIOWA-KANSAS
FIELD : PIESTER
WELL : #1
DATE : 10-15-87
GAUGE NO : 13762

OPERATIONAL COMMENTS

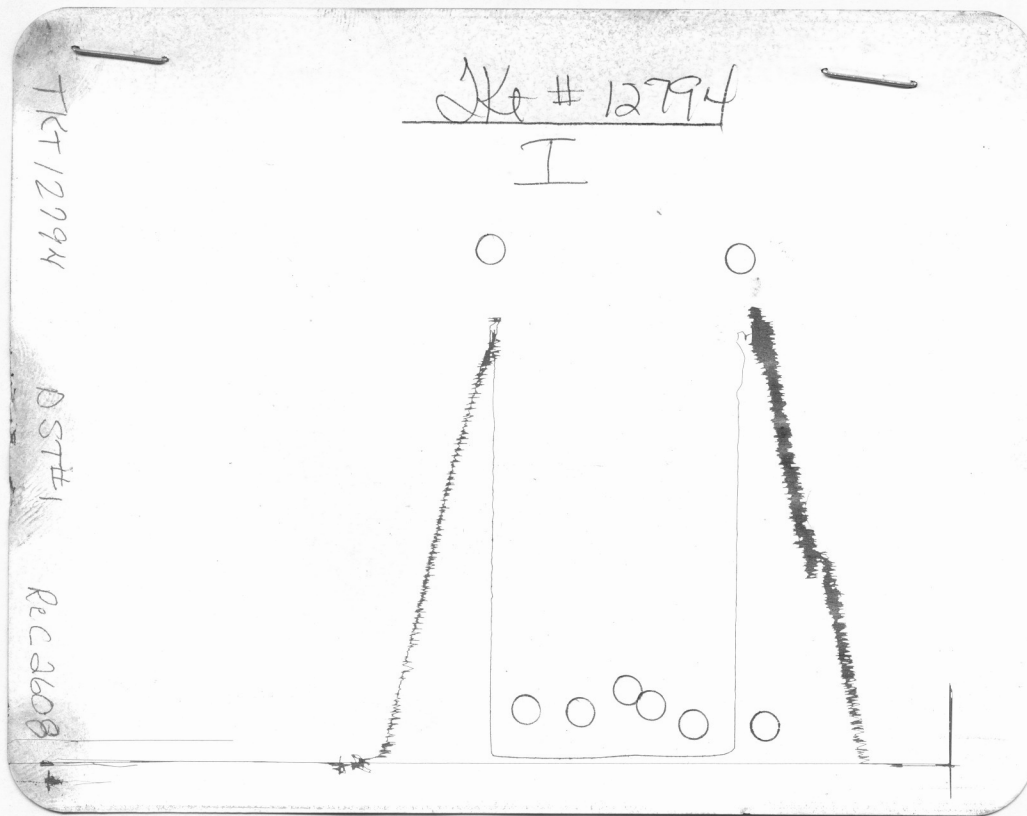
RECOVERED 150 FEET OF GAS ABOVE FLUID.

COMPANY : GRAVES DRILLING CO. INC.
 WELL : #1
 GAUGE # : 13762
 DATE : 15/10/87

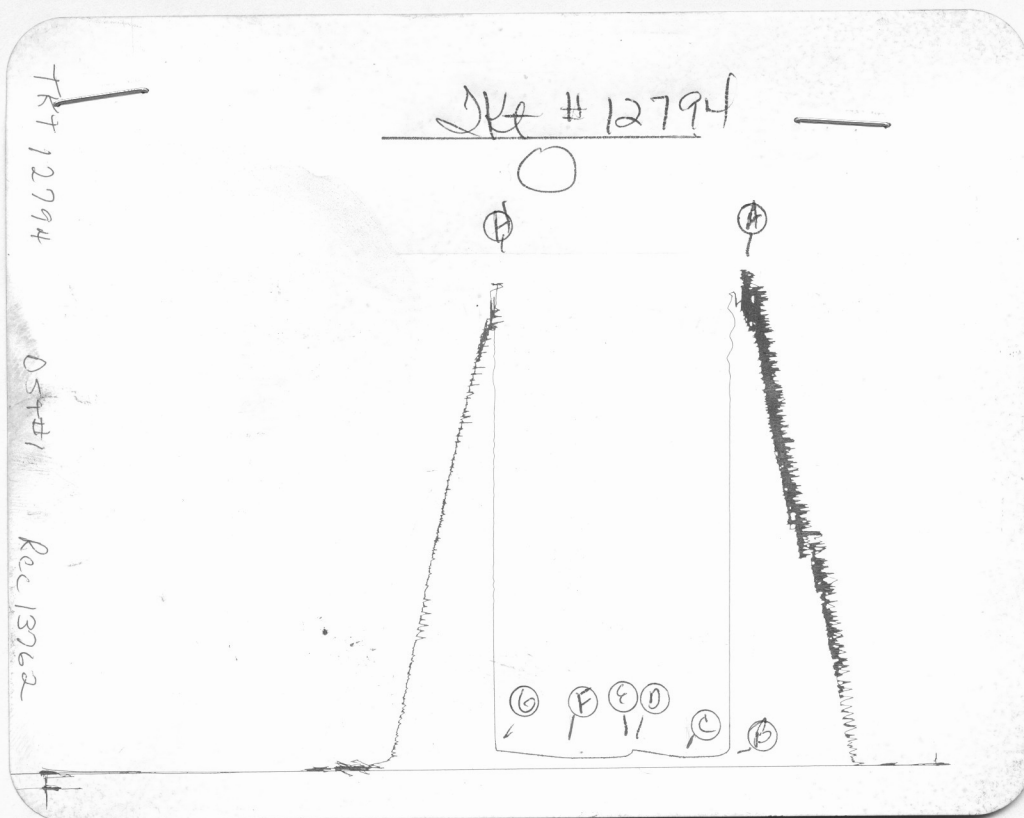
FIELD : PIESTER
 JOB # : 12794
 DEPTH : 4700
 TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
1	11:50: 0	0.000	52.000	125.00	0.000
2	11:54:59	0.083	52.000	125.00	0.000
3	12: 0: 0	0.167	52.000	125.00	0.000
4	12: 5: 0	0.250	52.000	125.00	0.000
5	12: 9:59	0.333	52.000	125.00	0.000
6	12:15: 0	0.417	52.000	125.00	0.000
7	12:20: 0	0.500	52.000	125.00	0.000
8	12:23: 0	0.550	52.000	125.00	0.000
9	12:26: 0	0.600	53.000	125.00	1.000
10	12:29: 0	0.650	55.000	125.00	2.000
11	12:32: 0	0.700	58.000	125.00	3.000
12	12:35: 0	0.750	61.000	125.00	3.000
13	12:38: 0	0.800	64.000	125.00	3.000
14	12:41: 0	0.850	68.000	125.00	4.000
15	12:44: 0	0.900	72.000	125.00	4.000
16	12:47: 0	0.950	75.000	125.00	3.000
17	12:50: 0	1.000	80.000	125.00	5.000
18	12:53: 0	1.050	82.000	125.00	2.000
19	12:56: 0	1.100	86.000	125.00	4.000
20	12:59: 0	1.150	88.000	125.00	2.000
21	13: 2: 0	1.200	91.000	125.00	3.000
22	13: 3: 0	1.217	52.000	125.00	-39.000
23	13: 6:59	1.283	52.000	125.00	0.000
24	13:12: 0	1.367	52.000	125.00	0.000
25	13:17: 0	1.450	52.000	125.00	0.000
26	13:21:59	1.533	52.000	125.00	0.000
27	13:27: 0	1.617	52.000	125.00	0.000
28	13:32: 0	1.700	52.000	125.00	0.000
29	13:36:59	1.783	52.000	125.00	0.000
30	13:42: 0	1.867	52.000	125.00	0.000
31	13:47: 0	1.950	52.000	125.00	0.000
32	13:50: 0	2.000	54.000	125.00	2.000
33	13:53: 0	2.050	55.000	125.00	1.000
34	13:56: 0	2.100	57.000	125.00	2.000
35	13:59: 0	2.150	58.000	125.00	1.000
36	14: 2: 0	2.200	61.000	125.00	3.000
37	14: 5: 0	2.250	64.000	125.00	3.000
38	14: 8: 0	2.300	66.000	125.00	2.000
39	14:11: 0	2.350	70.000	125.00	4.000
40	14:14: 0	2.400	72.000	125.00	2.000
41	14:17: 0	2.450	74.000	125.00	2.000
42	14:20: 0	2.500	76.000	125.00	2.000
43	14:23: 0	2.550	78.000	125.00	2.000
44	14:26: 0	2.600	80.000	125.00	2.000
45	14:29: 0	2.650	83.000	125.00	3.000
46	14:32: 0	2.700	86.000	125.00	3.000
47	14:35: 0	2.750	88.000	125.00	2.000
48	14:38: 0	2.800	90.000	125.00	2.000
49	14:41: 0	2.850	92.000	125.00	2.000
50	14:44: 0	2.900	93.000	125.00	1.000

WESTERN TESTING CO. INC.



Inside Recorder



Outside Recorder

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE	:	10-18-87	TICKET	:	12044
CUSTOMER	:	GRAVES DRILLING INC.	LEASE	:	PIESTER
WELL	:	#1	TEST:	:	2
ELEVATION	:	1978 GL	GEOLOGIST	:	A. RATZLAFF
SECTION	:	25	FORMATION	:	VIOLA
RANGE	:	16W	COUNTY	:	KIOWA
GAUGE SN#	:	13552	STATE	:	KANSAS
			RANGE	:	4050
			CLOCK	:	12

INTERVAL FROM	:	4834	TO	:	4910	TOTAL DEPTH	:	5034
DEPTH OF SELECTIVE ZONE	:							
PACKER DEPTH	:	4829	SIZE	:	6.63			
PACKER DEPTH	:	4834	SIZE	:	6.63			
PACKER DEPTH	:	4910	SIZE	:	6.63			
PACKER DEPTH	:		SIZE	:				

DRILLING CON.	:	DUKE RIG #2			
MUD TYPE	:	CHEMICAL	VISCOSITY	:	62
WEIGHT	:	9.7	WATER LOSS (CC)	:	10.8
CHLORIDES (PPM)	:	4800			
JARS-MAKE	:	NO	SERIAL NUMBER	:	
DID WELL FLOW ?	:	NO	REVERSED OUT ?	:	YES

DRILL COLLAR LENGTH	:	0	FT	I.D. inch	:	0.00
WEIGHT PIPE LENGTH	:	251	FT	I.D. inch	:	2.25
DRILL PIPE LENGTH	:	4563	FT	I.D. inch	:	3.80
TEST TOOL LENGTH	:	20	FT	TOOL SIZE	:	5.50
ANCHOR LENGTH	:	76	FT	ANCHOR SIZE	:	5.50
SURFACE CHOKE SIZE	:	.75	IN	BOTTOM CHOKE SIZE	:	.75
MAIN HOLE SIZE	:	7.875	IN	TOOL JOINT SIZE	:	4.5 FH

BLOW COMMENT #1 : INITIAL FLOW-GOOD 8" BLOW DECREASING TO 6".
BLOW COMMENT #2 : FINAL FLOW-STRONG BLOW.
BLOW COMMENT #3 : NO GAS TO SURFACE.
BLOW COMMENT #4 :

RECOVERED : 255 FT OF: WATERY MUD
RECOVERED : 2745 FT OF: WATER

CHLORIDES: TOP- 82000 PPM
BOTTOM- 103000 PPM

Total Barrels Fluid = 39.79
Total Fluid Prod Rate = 716.27 BFPD
Indicated Wtr Rate = 685.95 BWPD

REMARK 1 :
REMARK 2 : 124 FEET OF TAIL PIPE.
REMARK 3 :
REMARK 4 :

SET PACKER(S) :	10:50 AM	TIME STARTED OFF BOTTOM :	2:05 PM
WELL TEMPERATURE :	128		
INITIAL HYDROSTATIC PRESSURE		(A)	2631
INITIAL FLOW PERIOD MIN:	20	(B)	125 PSI TO (C) : 125
INITIAL CLOSED IN PERIOD MIN:	45	(D)	1582
FINAL FLOW PERIOD MIN:	60	(E)	440 PSI TO (F) : 1430
FINAL CLOSED IN PERIOD MIN:	60	(G)	1520
FINAL HYDROSTATIC PRESSURE		(H)	2589

WESTERN TESTING CO. INC.
WICHITA - KANSAS

Pressure Transient Report

COMPANY : GRAVES DRILLING INC.
RIG : KIOWA-KANSAS
FIELD : PIESTER
WELL : #1
DATE : 10-18-87
GAUGE NO : 13267

OPERATIONAL COMMENTS

124 FEET OF TAIL PIPE.

COMPANY : GRAVES DRILLING INC.
WELL : #1
GAUGE # : 13267
DATE : 18/10/87

FIELD : PIESTER
JOB # : 12044
DEPTH : 5034
TEST :

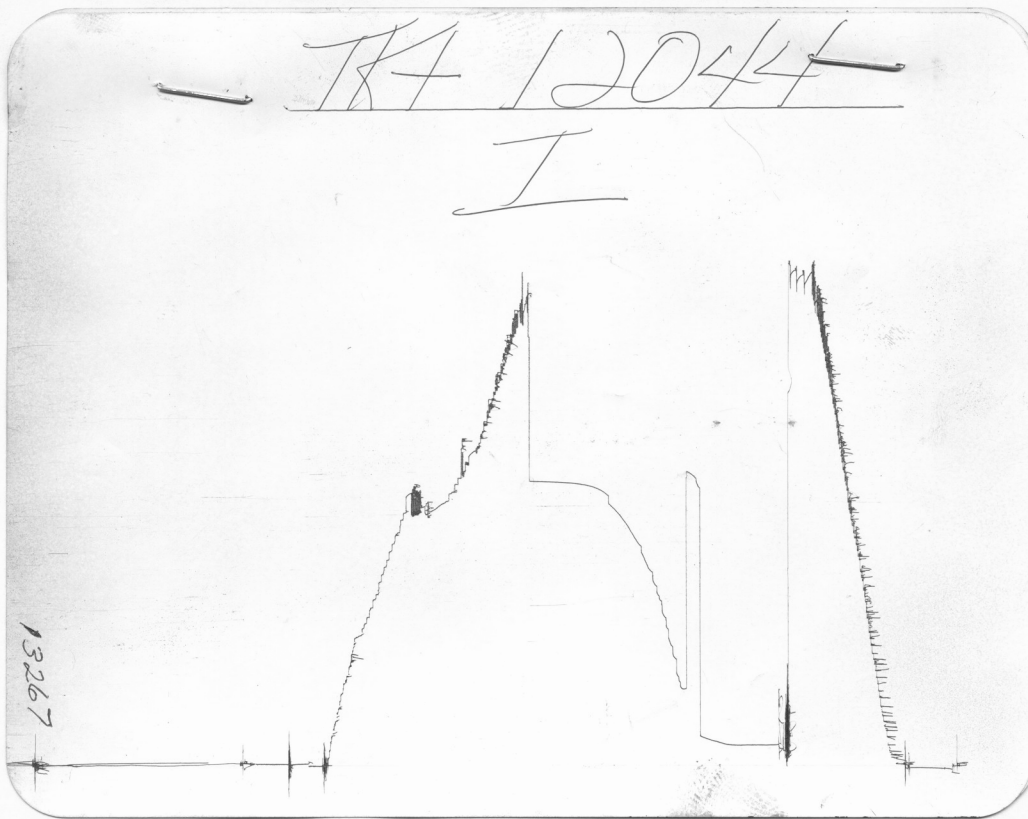
DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
1	10:50: 0	0.000	125.000	128.00	0.000
2	10:54:59	0.083	125.000	128.00	0.000
3	11: 0: 0	0.167	125.000	128.00	0.000
4	11: 5: 0	0.250	125.000	128.00	0.000
5	11: 9:59	0.333	125.000	128.00	0.000
6	11:12:59	0.383	125.000	128.00	0.000
7	11:15:59	0.433	125.000	128.00	0.000
8	11:18:59	0.483	125.000	128.00	0.000
9	11:21:59	0.533	127.000	128.00	2.000
10	11:24:59	0.583	134.000	128.00	7.000
11	11:27:59	0.633	143.000	128.00	9.000
12	11:30:59	0.683	152.000	128.00	9.000
13	11:33:59	0.733	165.000	128.00	13.000
14	11:36:59	0.783	173.000	128.00	8.000
15	11:39:59	0.833	183.000	128.00	10.000
16	11:42:59	0.883	215.000	128.00	32.000
17	11:45:59	0.933	601.000	128.00	386.000
18	11:48:59	0.983	1547.000	128.00	946.000
19	11:51:59	1.033	1571.000	128.00	24.000
20	11:54:59	1.083	1582.000	128.00	11.000
21	11:56: 0	1.100	440.000	128.00	-1142.000
22	11:59:59	1.167	545.000	128.00	105.000
23	12: 5: 0	1.250	696.000	128.00	151.000
24	12: 9:59	1.333	866.000	128.00	170.000
25	12:14:59	1.417	984.000	128.00	118.000
26	12:20: 0	1.500	1079.000	128.00	95.000
27	12:24:59	1.583	1165.000	128.00	86.000
28	12:29:59	1.667	1246.000	128.00	81.000
29	12:35: 0	1.750	1310.000	128.00	64.000
30	12:39:59	1.833	1353.000	128.00	43.000
31	12:44:59	1.917	1393.000	128.00	40.000
32	12:50: 0	2.000	1418.000	128.00	25.000
33	12:54:59	2.083	1430.000	128.00	12.000
34	12:57:59	2.133	1470.000	128.00	40.000
35	13: 0:59	2.183	1485.000	128.00	15.000
36	13: 3:59	2.233	1493.000	128.00	8.000
37	13: 6:59	2.283	1499.000	128.00	6.000
38	13: 9:59	2.333	1503.000	128.00	4.000
39	13:12:59	2.383	1506.000	128.00	3.000
40	13:15:59	2.433	1508.000	128.00	2.000
41	13:18:59	2.483	1510.000	128.00	2.000
42	13:21:59	2.533	1512.000	128.00	2.000
43	13:24:59	2.583	1513.000	128.00	1.000
44	13:27:59	2.633	1514.000	128.00	1.000
45	13:30:59	2.683	1515.000	128.00	1.000
46	13:33:59	2.733	1516.000	128.00	1.000
47	13:36:59	2.783	1516.000	128.00	0.000
48	13:39:59	2.833	1516.000	128.00	0.000
49	13:42:59	2.883	1517.000	128.00	1.000
50	13:45:59	2.933	1518.000	128.00	1.000
51	13:48:59	2.983	1519.000	128.00	1.000
52	13:51:59	3.033	1520.000	128.00	1.000

COMPANY : GRAVES DRILLING INC.
WELL : #1
GAUGE # : 13267
DATE : 18/10/87

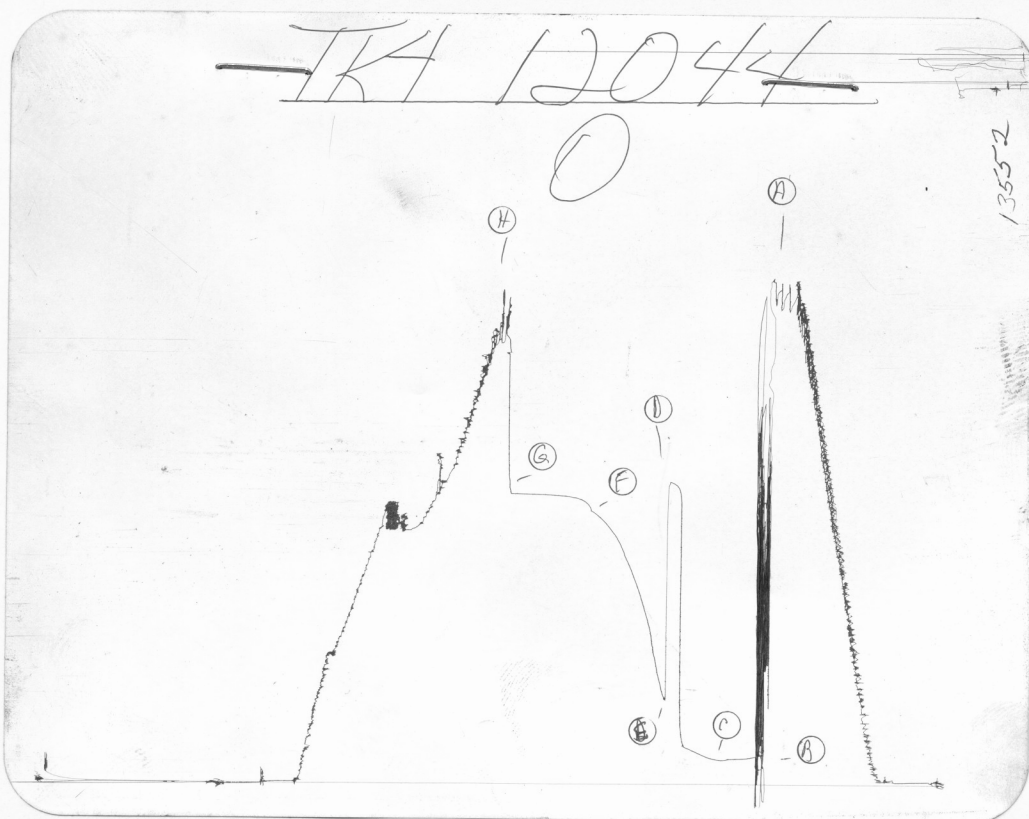
FIELD : PIESTER
JOB # : 12044
DEPTH : 5034
TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P P1-P(1-1)
53	13:54:59	3.083	1520.000	128.00	0.000

WESTERN TESTING CO. INC.



Inside Recorder



Outside Recorder