

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

COMPANY ENSIGN OPERATING COMPANY LEASE & WELL NO. #1-24 COVER TRUST SEC. 24 TWP. 31S RGE. 32W TEST NO. 1 DATE 1/30/87

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE : 1/30/87 TICKET : 12245
CUSTOMER : ENSIGN OPERATING COMPANY LEASE : COVEL TRUST
WELL : 1-24 TEST: 1 GEOLOGIST : DAVIS
ELEVATION : FORMATION : MORROW
SECTION : 24 TOWNSHIP : 31S
RANGE : 32W COUNTY : SEWARD STATE : KANSAS
GAUGE SN# : 3086 RANGE : 4500 CLOCK : 12

INTERVAL FROM : 5410 TO : 5493 TOTAL DEPTH : 5493
DEPTH OF SELECTIVE ZONE :
PACKER DEPTH : 5405 SIZE : 6.63
PACKER DEPTH : 5410 SIZE : 6.63
PACKER DEPTH : SIZE :
PACKER DEPTH : SIZE :

DRILLING CON. : H-30
MUD TYPE : LOW SOLIDS VISCOSITY : 43
WEIGHT : 9.0 WATER LOSS (CC) : 13.6
CHLORIDES (PPM) :
JARS-MAKE : WTC SERIAL NUMBER : 408
DID WELL FLOW ? : YES REVERSED OUT ? : NO

DRILL COLLAR LENGTH : 460 FT I.D. inch : 2.25
WEIGHT PIPE LENGTH : 0 FT I.D. inch : 0.00
DRILL PIPE LENGTH : 4924 FT I.D. inch : 3.80
TEST TOOL LENGTH : 26 FT TOOL SIZE : 5.50
ANCHOR LENGTH : 83 FT ANCHOR SIZE : 5.50
SURFACE CHOKE SIZE : .75 IN BOTTOM CHOKE SIZE : .75
MAIN HOLE SIZE : 7.875 IN TOOL JOINT SIZE : 4.5FH

BLOW COMMENT #1 : STRONG BLOW THROUGHOUT TEST.
BLOW COMMENT #2 : GAS TO SURFACE IN 3 MINUTES ON PREFLOW.
BLOW COMMENT #3 : SEE GAS SHEET ATTACHED.
BLOW COMMENT #4 :

RECOVERED : 370 FT OF: GAS CUT MUD

Total Barrels Fluid = 1.82
Total Fluid Prod Rate = 43.67 BFPD
Indicated Wtr Rate = 35.41 BWPD

REMARK 1 :
REMARK 2 : TIGHT HOLE
REMARK 3 :
REMARK 4 :

SET PACKER(S) :	9:20 AM	TIME STARTED OFF BOTTOM :	1:20 PM
WELL TEMPERATURE :	124		
INITIAL HYDROSTATIC PRESSURE		(A)	2801
INITIAL FLOW PERIOD MIN:	30	(B)	583 PSI TO (C) : 583
INITIAL CLOSED IN PERIOD MIN:	63	(D)	1378
FINAL FLOW PERIOD MIN:	30	(E)	566 PSI TO (F) : 566
FINAL CLOSED IN PERIOD MIN:	123	(G)	1387
FINAL HYDROSTATIC PRESSURE		(H)	2774

WESTERN TESTING CO. INC.
WICHITA - KANSAS

Pressure Transient Report

COMPANY : ENSIGN OPERATING COMPANY
RIG : SEWARD-KANSAS
FIELD : COVEL TRUST
WELL : 1-24
DATE : 1/30/87
GAUGE NO : 3086

OPERATIONAL COMMENTS

TIGHT HOLE

COMPANY : ENSIGN OPERATING COMPANY
 WELL : 1-24
 GAUGE # : 3086
 DATE : 30/ 1/87

FIELD : COVEL TRUST
 JOB # : 12245
 DEPTH : 5493
 TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P P1-P(I-1)
1	9:20: 0	0.000	583.000	124.00	0.000
2	9:24:59	0.083	583.000	124.00	0.000
3	9:30: 0	0.167	583.000	124.00	0.000
4	9:35: 0	0.250	583.000	124.00	0.000
5	9:39:59	0.333	583.000	124.00	0.000
6	9:45: 0	0.417	583.000	124.00	0.000
7	9:50: 0	0.500	583.000	124.00	0.000
8	9:53: 0	0.550	1123.000	124.00	540.000
9	9:56: 0	0.600	1244.000	124.00	121.000
10	9:59: 0	0.650	1282.000	124.00	38.000
11	10: 2: 0	0.700	1301.000	124.00	19.000
12	10: 5: 0	0.750	1320.000	124.00	19.000
13	10: 8: 0	0.800	1331.000	124.00	11.000
14	10:11: 0	0.850	1343.000	124.00	12.000
15	10:14: 0	0.900	1351.000	124.00	8.000
16	10:17: 0	0.950	1358.000	124.00	7.000
17	10:20: 0	1.000	1364.000	124.00	6.000
18	10:23: 0	1.050	1367.000	124.00	3.000
19	10:26: 0	1.100	1371.000	124.00	4.000
20	10:29: 0	1.150	1374.000	124.00	3.000
21	10:32: 0	1.200	1378.000	124.00	4.000
22	10:35: 0	1.250	1378.000	124.00	0.000
23	10:38: 0	1.300	1378.000	124.00	0.000
24	10:41: 0	1.350	1378.000	124.00	0.000
25	10:44: 0	1.400	1378.000	124.00	0.000
26	10:47: 0	1.450	1378.000	124.00	0.000
27	10:50: 0	1.500	1378.000	124.00	0.000
28	10:53: 0	1.550	1378.000	124.00	0.000
29	10:54: 0	1.567	566.000	124.00	-812.000
30	10:57:59	1.633	566.000	124.00	0.000
31	11: 3: 0	1.717	566.000	124.00	0.000
32	11: 8: 0	1.800	566.000	124.00	0.000
33	11:12:59	1.883	566.000	124.00	0.000
34	11:18: 0	1.967	566.000	124.00	0.000
35	11:23: 0	2.050	566.000	124.00	0.000
36	11:26: 0	2.100	1070.000	124.00	504.000
37	11:28:59	2.150	1205.000	124.00	135.000
38	11:32: 0	2.200	1248.000	124.00	43.000
39	11:35: 0	2.250	1278.000	124.00	30.000
40	11:38: 0	2.300	1309.000	124.00	31.000
41	11:41: 0	2.350	1323.000	124.00	14.000
42	11:43:59	2.400	1337.000	124.00	14.000
43	11:47: 0	2.450	1352.000	124.00	15.000
44	11:50: 0	2.500	1362.000	124.00	10.000
45	11:53: 0	2.550	1367.000	124.00	5.000
46	11:56: 0	2.600	1371.000	124.00	4.000
47	11:59: 0	2.650	1374.000	124.00	3.000
48	12: 1:59	2.700	1376.000	124.00	2.000
49	12: 5: 0	2.750	1378.000	124.00	2.000
50	12: 8: 0	2.800	1380.000	124.00	2.000
51	12:11: 0	2.850	1381.000	124.00	-1.000
52	12:14: 0	2.900	1382.000	124.00	-1.000

COMPANY : ENSIGN OPERATING COMPANY
WELL : 1-24
GAUGE # : 3086
DATE : 30/ 1/87

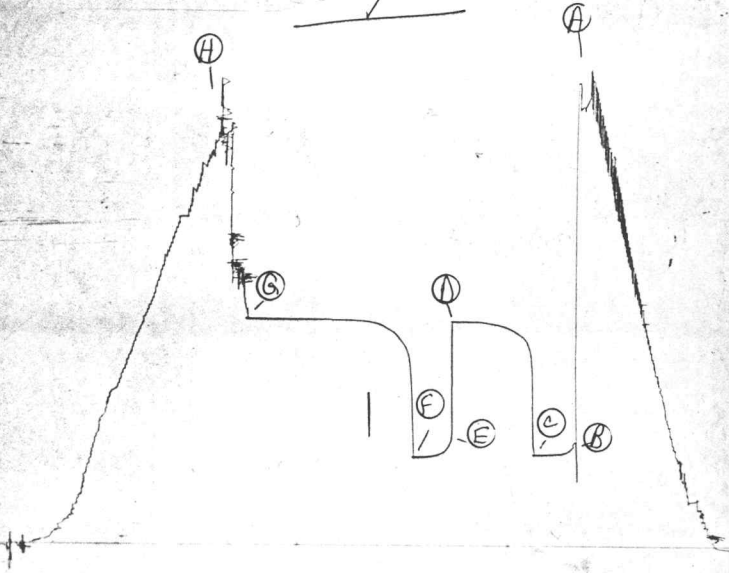
FIELD : COVEL TRUST
JOB # : 12245
DEPTH : 5493
TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
53	12:16:59	2.950	1383.000	124.00	1.000
54	12:20: 0	3.000	1384.000	124.00	1.000
55	12:23: 0	3.050	1385.000	124.00	1.000
56	12:26: 0	3.100	1386.000	124.00	1.000
57	12:29: 0	3.150	1387.000	124.00	1.000
58	12:31:59	3.200	1387.000	124.00	0.000
59	12:35: 0	3.250	1387.000	124.00	0.000
60	12:38: 0	3.300	1387.000	124.00	0.000
61	12:41: 0	3.350	1387.000	124.00	0.000
62	12:44: 0	3.400	1387.000	124.00	0.000
63	12:46:59	3.450	1387.000	124.00	0.000
64	12:50: 0	3.500	1387.000	124.00	0.000
65	12:53: 0	3.550	1387.000	124.00	0.000
66	12:56: 0	3.600	1387.000	124.00	0.000
67	12:59: 0	3.650	1387.000	124.00	0.000
68	13: 1:59	3.700	1387.000	124.00	0.000
69	13: 5: 0	3.750	1387.000	124.00	0.000
70	13: 8: 0	3.800	1387.000	124.00	0.000
71	13:11: 0	3.850	1387.000	124.00	0.000
72	13:14: 0	3.900	1387.000	124.00	0.000
73	13:17: 0	3.950	1387.000	124.00	0.000
74	13:20: 0	4.000	1387.000	124.00	0.000
75	13:23: 0	4.050	1387.000	124.00	0.000
76	13:26: 0	4.100	1387.000	124.00	0.000

WESTERN TESTING CO. INC.

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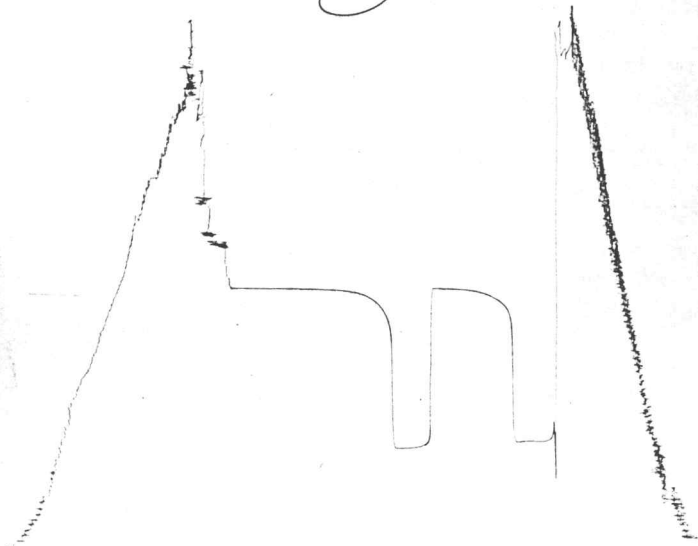
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FORMATION TEST REPORT



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Phone (316) 262-5861

COMPANY ENSIGN OPERATING COMPANY LEASE & WELL NO. #1-24 COVER TRUST SEC. 24 TWP. 31S RGE. 32W TEST NO. 2 DATE 1/31/87

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE : 1-31-87 TICKET : 12246
CUSTOMER : ENSIGN OPERATING COMPANY LEASE : COVEL TRUST
WELL : #1-24 TEST: 2 GEOLOGIST : R. DAVIS
ELEVATION : NA FORMATION : MORROW
SECTION : 24 TOWNSHIP : 31S
RANGE : 32W COUNTY : SEWARD STATE : KANSAS
GAUGE SN# : 3086 RANGE : 4500 CLOCK : 12

INTERVAL FROM : 5502 TO : 5538 TOTAL DEPTH : 5538
DEPTH OF SELECTIVE ZONE :
PACKER DEPTH : 5497 SIZE : 6.63
PACKER DEPTH : 5502 SIZE : 6.63
PACKER DEPTH : SIZE :
PACKER DEPTH : SIZE :

DRILLING CON. : H-30 DRILLING RIG #1
MUD TYPE : - VISCOSITY : 43
WEIGHT : 9.0 WATER LOSS (CC) : 13.6
CHLORIDES (PPM) : -
JARS-MAKE : WTC SERIAL NUMBER : 408
DID WELL FLOW ? : YES REVERSED OUT ? : NO

DRILL COLLAR LENGTH : 560 FT I.D. inch : 2.25
WEIGHT PIPE LENGTH : 0 FT I.D. inch : 0.00
DRILL PIPE LENGTH : 4916 FT I.D. inch : 3.80
TEST TOOL LENGTH : 26 FT TOOL SIZE : 5.50
ANCHOR LENGTH : 36 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 : STRONG BLOW THROUGHOUT BOTH FLOW PERIODS.
BLOW COMMENT #2 : GAS TO SURFACE IN 4 MINUTES ON THE INITIAL FLOW.
BLOW COMMENT #3 :
BLOW COMMENT #4 :

RECOVERED : 90 FT OF: GAS CUT MUD

Total Barrels Fluid = 0.44
Total Fluid Prod Rate = 7.08 BFPD
Indicated Wtr Rate = 6.37 BWPD

REMARK 1 : TIGHT HOLE.

REMARK 2 :

REMARK 3 :

REMARK 4 :

SET PACKER(S) : 4:00 AM

TIME STARTED OFF BOTTOM : 8:30 AM

WELL TEMPERATURE : 124

INITIAL HYDROSTATIC PRESSURE (A) 2993

INITIAL FLOW PERIOD MIN: 30 (B) 307 PSI TO (C) : 231

INITIAL CLOSED IN PERIOD MIN: 66 (D) 1346

FINAL FLOW PERIOD MIN: 60 (E) 237 PSI TO (F) : 155

FINAL CLOSED IN PERIOD MIN: 123 (G) 1314

FINAL HYDROSTATIC PRESSURE (H) 2993

GAS FLOW REPORT

Date : 1-31-87	Ticket # : 12246
Customer : ENSIGN OPERATING COMPANY	Lease : COVEL TRUST
Well : #1-24 Test : 2	Geologist : R. DAVIS
Elevation (KB) : NA Formation : MORROW	
Section : 24 Township : 31S	
Range : 32W County : SEWARD	State : KANSAS
Gauge SN # : 3086 Range : 4500	Clock : 12

TIME GAUGE (MIN)	TESTER TYPE	ORFICE SIZE	PRESSURE (PSI)	FLOW DESCRIPTION
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PRE FLOW

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5	MERLA	1 1/2"	36 " WTR	418000 CFPD
10	MERLA	1 1/2"	52 " WTR	502000 CFPD
20	MERLA	1 1/2"	60 " WTR	539000 CFPD
30	MERLA	1 1/2"	56 " WTR	521000 CFPD

SECOND FLOW

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5	MERLA	1 1/2"	60 " WTR	539000 CFPD
10	MERLA	1 1/2"	58 " WTR	530000 CFPD
20	MERLA	1 1/2"	54 " WTR	511000 CFPD
30	MERLA	1 1/2"	52 " WTR	502000 CFPD
40	MERLA	1 1/2"	50 " WTR	493000 CFPD
50	MERLA	1 1/2"	70 " WTR	583000 CFPD
60	MERLA	1 1/2"	60 " WTR	539000 CFPD

Gas Bottle SN # : 23
 Date Bottle Filled : 1-31-87
 Date to be Invoiced :

WESTERN TESTING CO. INC.
WICHITA - KANSAS

Pressure Transient Report

COMPANY : ENSIGN OPERATING COMPANY
RIG : SEWARD-KANSAS
FIELD : COVEL TRUST
WELL : #1-24
DATE : 1-31-87
GAUGE NO : 3086

OPERATIONAL COMMENTS

TIGHT HOLE.

COMPANY : ENSIGN OPERATING COMPANY
 WELL : #1-24
 GAUGE # : 3086
 DATE : 31/ 1/87

FIELD : COVEL TRUST
 JOB # : 12246
 DEPTH : 5538
 TEST : TIGHT HOLE.

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P P _i -P _(i-1)
1	4: 0: 0	0.000	307.000	124.00	0.000
2	4: 4: 59	0.083	283.000	124.00	-24.000
3	4: 10: 0	0.167	272.000	124.00	-11.000
4	4: 15: 0	0.250	260.000	124.00	-12.000
5	4: 19: 59	0.333	246.000	124.00	-14.000
6	4: 25: 0	0.417	238.000	124.00	-8.000
7	4: 30: 0	0.500	231.000	124.00	-7.000
8	4: 33: 0	0.550	1070.000	124.00	839.000
9	4: 36: 0	0.600	1201.000	124.00	131.000
10	4: 39: 0	0.650	1234.000	124.00	33.000
11	4: 42: 0	0.700	1247.000	124.00	13.000
12	4: 45: 0	0.750	1261.000	124.00	14.000
13	4: 48: 0	0.800	1271.000	124.00	10.000
14	4: 51: 0	0.850	1282.000	124.00	11.000
15	4: 54: 0	0.900	1290.000	124.00	8.000
16	4: 57: 0	0.950	1299.000	124.00	9.000
17	5: 0: 0	1.000	1304.000	124.00	5.000
18	5: 2: 59	1.050	1311.000	124.00	7.000
19	5: 6: 0	1.100	1317.000	124.00	6.000
20	5: 9: 0	1.150	1322.000	124.00	5.000
21	5: 12: 0	1.200	1325.000	124.00	3.000
22	5: 15: 0	1.250	1329.000	124.00	4.000
23	5: 18: 0	1.300	1334.000	124.00	5.000
24	5: 21: 0	1.350	1336.000	124.00	2.000
25	5: 24: 0	1.400	1338.000	124.00	2.000
26	5: 27: 0	1.450	1340.000	124.00	2.000
27	5: 30: 0	1.500	1342.000	124.00	2.000
28	5: 33: 0	1.550	1344.000	124.00	2.000
29	5: 36: 0	1.600	1346.000	124.00	2.000
30	5: 37: 0	1.617	237.000	124.00	-1109.000
31	5: 40: 59	1.683	203.000	124.00	-34.000
32	5: 46: 0	1.767	185.000	124.00	-18.000
33	5: 51: 0	1.850	178.000	124.00	-7.000
34	5: 55: 59	1.933	172.000	124.00	-6.000
35	6: 1: 0	2.017	168.000	124.00	-4.000
36	6: 5: 59	2.100	165.000	124.00	-3.000
37	6: 10: 59	2.183	161.000	124.00	-4.000
38	6: 16: 0	2.267	158.000	124.00	-3.000
39	6: 21: 0	2.350	155.000	124.00	-3.000
40	6: 25: 59	2.433	155.000	124.00	0.000
41	6: 31: 0	2.517	155.000	124.00	0.000
42	6: 36: 0	2.600	155.000	124.00	0.000
43	6: 38: 59	2.650	955.000	124.00	800.000
44	6: 41: 59	2.700	1064.000	124.00	109.000
45	6: 45: 0	2.750	1096.000	124.00	32.000
46	6: 48: 0	2.800	1121.000	124.00	25.000
47	6: 51: 0	2.850	1137.000	124.00	16.000
48	6: 53: 59	2.900	1151.000	124.00	14.000
49	6: 56: 59	2.950	1162.000	124.00	11.000
50	7: 0: 0	3.000	1172.000	124.00	10.000
51	7: 3: 0	3.050	1183.000	124.00	11.000
52	7: 6: 0	3.100	1189.000	124.00	6.000

COMPANY : ENSIGN OPERATING COMPANY
WELL : #1-24
GAUGE # : 3086
DATE : 31/ 1/87

FIELD : COVEL TRUST
JOB # : 12246
DEPTH : 5538
TEST : TIGHT HOLE.

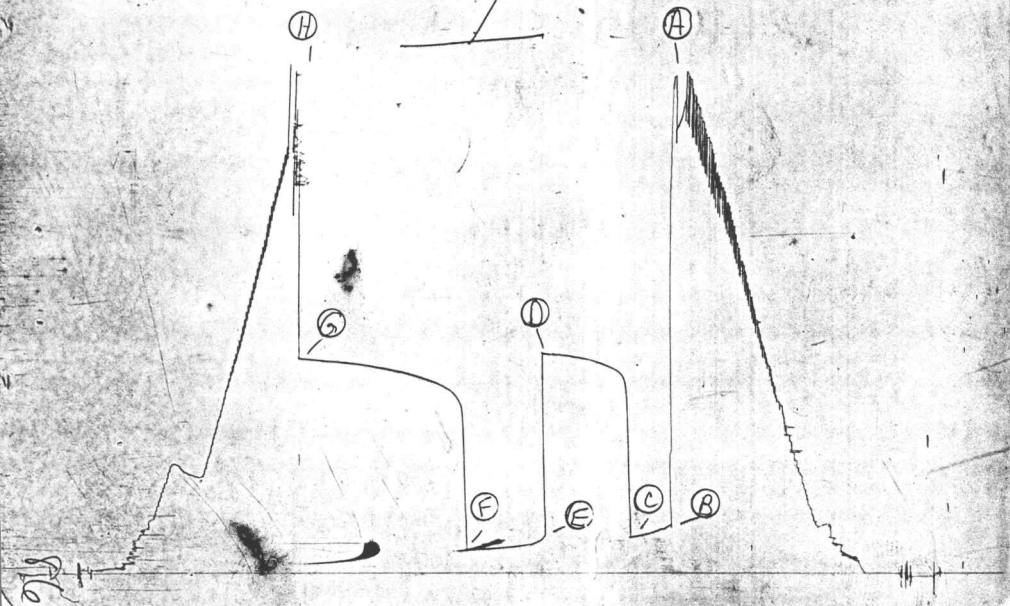
DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
53	7: 8:59	3.150	1197.000	124.00	8.000
54	7:11:59	3.200	1205.000	124.00	8.000
55	7:15: 0	3.250	1215.000	124.00	10.000
56	7:18: 0	3.300	1220.000	124.00	5.000
57	7:21: 0	3.350	1229.000	124.00	9.000
58	7:23:59	3.400	1234.000	124.00	5.000
59	7:26:59	3.450	1239.000	124.00	5.000
60	7:30: 0	3.500	1244.000	124.00	5.000
61	7:33: 0	3.550	1248.000	124.00	4.000
62	7:36: 0	3.600	1252.000	124.00	4.000
63	7:38:59	3.650	1258.000	124.00	6.000
64	7:41:59	3.700	1261.000	124.00	3.000
65	7:45: 0	3.750	1266.000	124.00	5.000
66	7:48: 0	3.800	1271.000	124.00	5.000
67	7:51: 0	3.850	1274.000	124.00	3.000
68	7:53:59	3.900	1277.000	124.00	3.000
69	7:56:59	3.950	1280.000	124.00	3.000
70	8: 0: 0	4.000	1283.000	124.00	3.000
71	8: 3: 0	4.050	1286.000	124.00	3.000
72	8: 6: 0	4.100	1289.000	124.00	3.000
73	8: 8:59	4.150	1292.000	124.00	3.000
74	8:11:59	4.200	1294.000	124.00	2.000
75	8:15: 0	4.250	1296.000	124.00	2.000
76	8:18: 0	4.300	1298.000	124.00	2.000
77	8:21: 0	4.350	1300.000	124.00	2.000
78	8:23:59	4.400	1302.000	124.00	2.000
79	8:27: 0	4.450	1304.000	124.00	2.000
80	8:30: 0	4.500	1306.000	124.00	2.000
81	8:33: 0	4.550	1309.000	124.00	3.000
82	8:36: 0	4.600	1312.000	124.00	3.000
83	8:38:59	4.650	1314.000	124.00	2.000

WESTERN TESTING CO. INC.

TK 12246

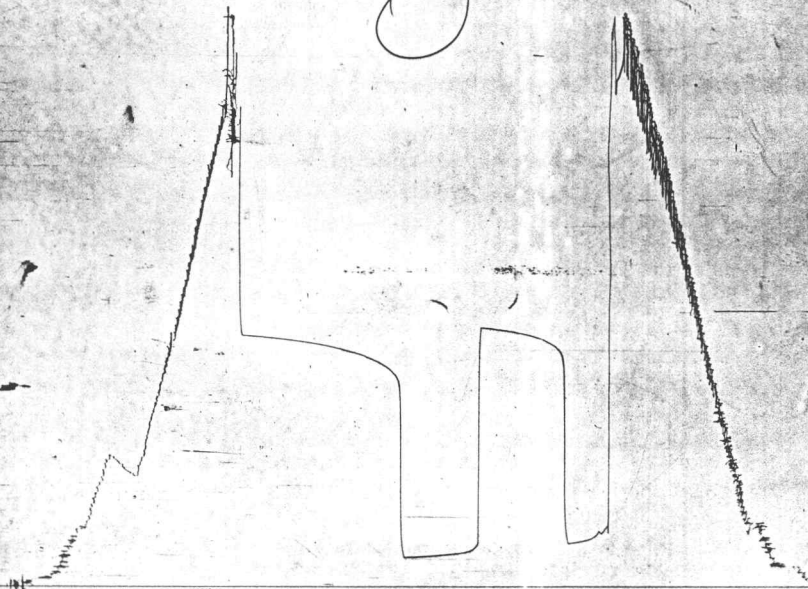
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