

872



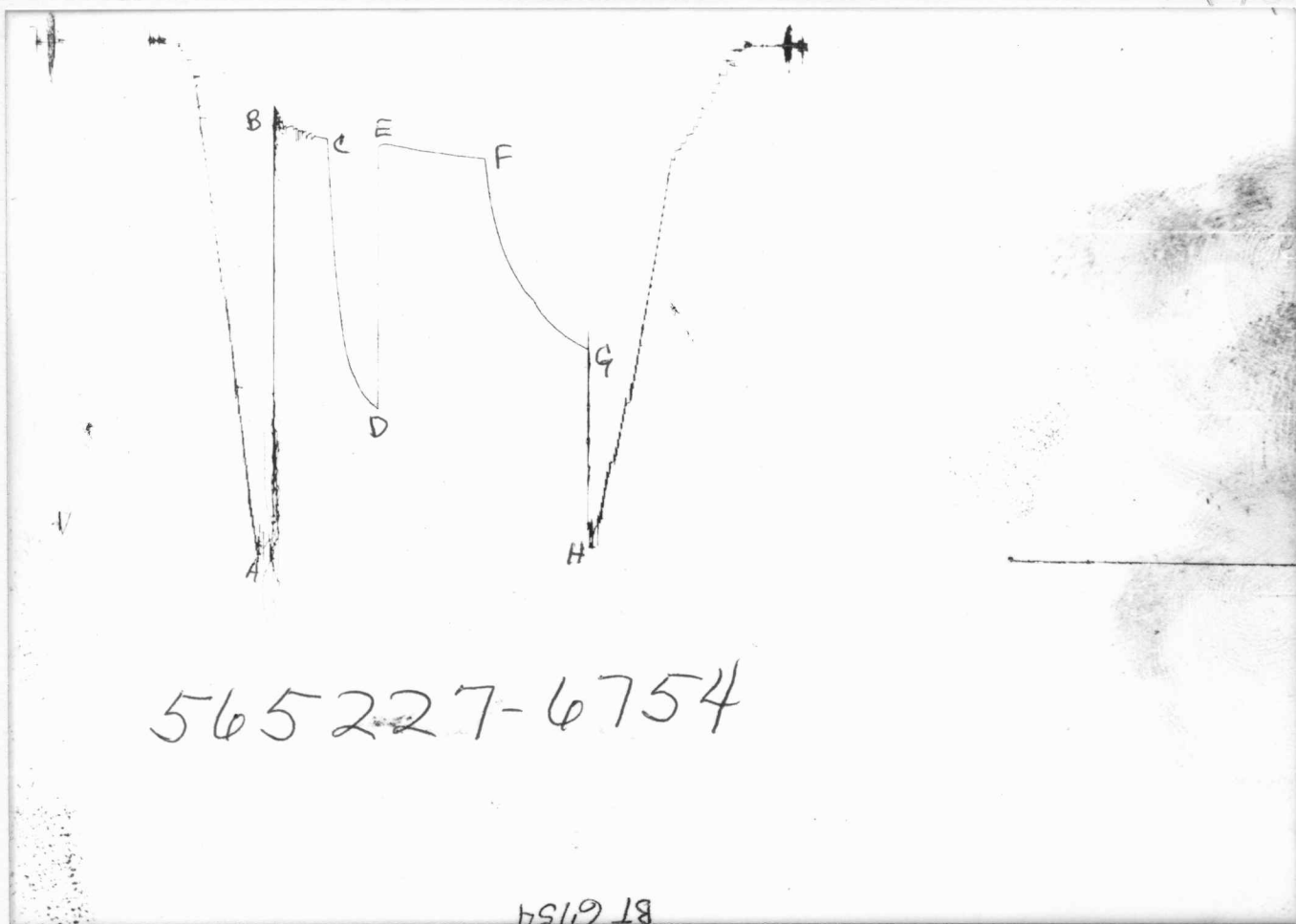
TICKET NO. 56522700
06-DEC-82
LIBERAL

FORMATION TESTING SERVICE REPORT

ADA HALLOCK		1-29	2	29-325-28W		FIELD AREA	COUNTY	MEADE	STATE KANSAS	BC-DR
LEASE NAME		WELL NO.	TEST NO.	TESTED INTERVAL		LEASE OWNER/COMPANY NAME				
LEGAL LOCATION		SEC. - TWP. - RNG.								

29-325-28W

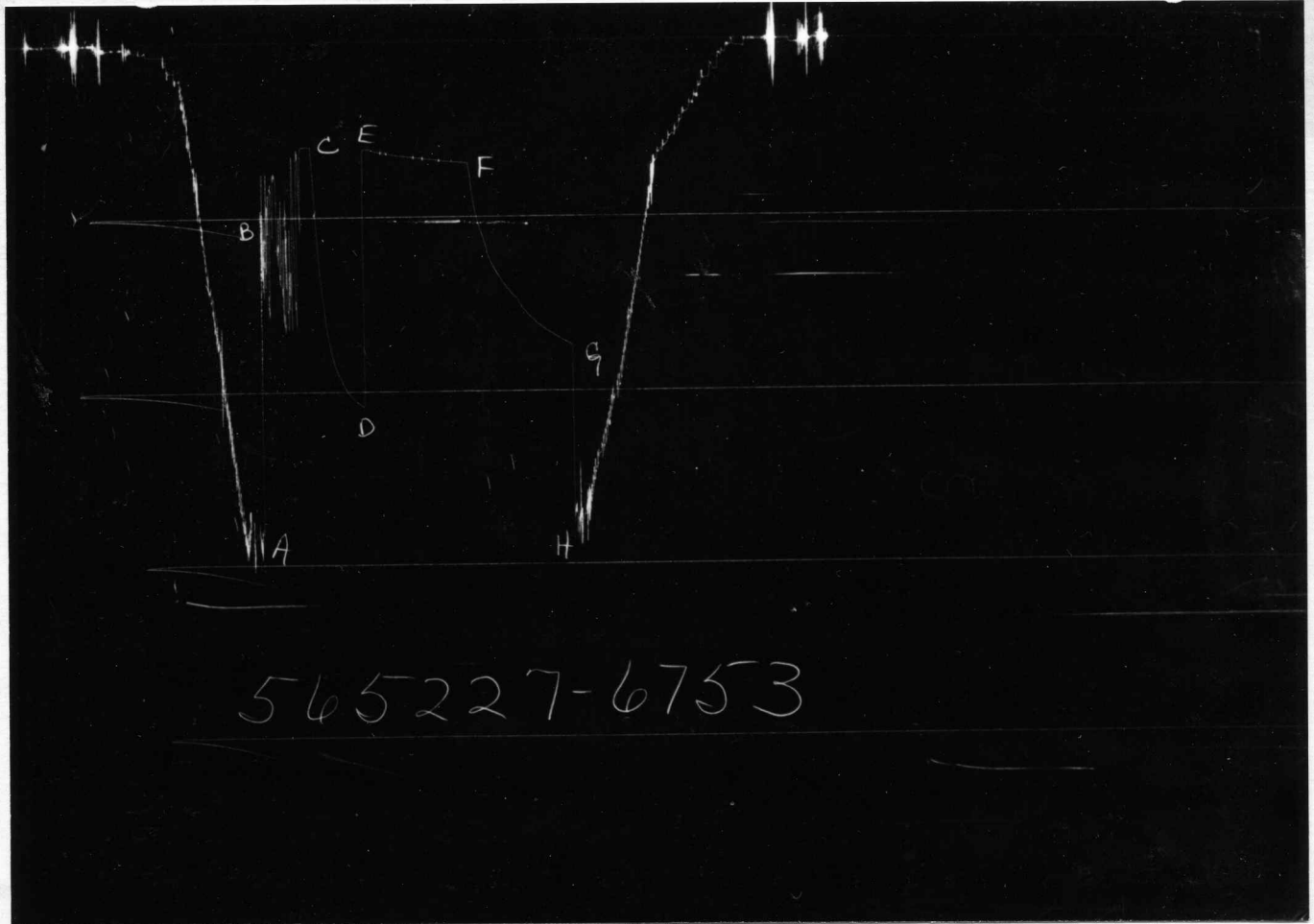
C10



GAUGE NO: 6754 DEPTH: _____ BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2764.6			
B	INITIAL FIRST FLOW		351.7			
C	FINAL FIRST FLOW		529.4	61.0	60.7	F
C	INITIAL FIRST CLOSED-IN		529.4			
D	FINAL FIRST CLOSED-IN		2022.9	60.0	58.1	C
E	INITIAL SECOND FLOW		574.5			
F	FINAL SECOND FLOW		632.7	120.0	118.2	F
F	INITIAL SECOND CLOSED-IN		632.7			
G	FINAL SECOND CLOSED-IN		1688.3	120.0	124.0	C
H	FINAL HYDROSTATIC		2682.4			

874



GAUGE NO: 6753 DEPTH: BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2818.3			
B	INITIAL FIRST FLOW		959.5			
C	FINAL FIRST FLOW		594.7	61.0	60.7	F
C	INITIAL FIRST CLOSED-IN		594.7			
D	FINAL FIRST CLOSED-IN		2087.6	60.0	58.1	C
E	INITIAL SECOND FLOW		617.2			
F	FINAL SECOND FLOW		693.5	120.0	118.2	F
F	INITIAL SECOND CLOSED-IN		693.5			
G	FINAL SECOND CLOSED-IN		1741.0	120.0	124.0	C
H	FINAL HYDROSTATIC		2733.9			



GAUGE NO: 7940 DEPTH: BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2850.7			
B	INITIAL FIRST FLOW		420.6			
C	FINAL FIRST FLOW		628.5	61.0	60.7	F
C	INITIAL FIRST CLOSED-IN		628.5			
D	FINAL FIRST CLOSED-IN		2107.3	60.0	58.1	C
E	INITIAL SECOND FLOW		642.7			
F	FINAL SECOND FLOW		727.3	120.0	118.2	F
F	INITIAL SECOND CLOSED-IN		727.3			
G	FINAL SECOND CLOSED-IN		1757.9	120.0	124.0	C
H	FINAL HYDROSTATIC		2772.0			

EQUIPMENT & HOLE DATA

FORMATION TESTED: _____
 NET PAY (ft): _____
 GROSS TESTED FOOTAGE: _____
 ALL DEPTHS MEASURED FROM: GROUND LEVEL
 CASING PERFS. (ft): _____
 HOLE OR CASING SIZE (in): 7.875
 ELEVATION (ft): 0
 TOTAL DEPTH (ft): _____
 PACKER DEPTH(S) (ft): _____
 FINAL SURFACE CHOKE (in): 0.250
 BOTTOM HOLE CHOKE (in): 0.750
 MUD WEIGHT (lb/gal): 9.20
 MUD VISCOSITY (sec): 49
 ESTIMATED HOLE TEMP. (°F): _____
 ACTUAL HOLE TEMP. (°F): 128 @ _____ ft

TICKET NUMBER: 56522700DATE: 12-1-82 TEST NO: 2TYPE DST: ON BTM. STRADDLEHALLIBURTON CAMP:
LIBERALTESTER: KALIES

WITNESS: _____

DRILLING CONTRACTOR:

SLAWSON DRILLING #7FLUID PROPERTIES FOR
RECOVERED MUD & WATER

SOURCE

RESISTIVITY

CHLORIDES

SOURCE	RESISTIVITY	CHLORIDES
TOP	0.040 @ 60 °F	9676 ppm
MIDDLE	0.170 @ 60 °F	24190 ppm
BOTTOM	0.130 @ 60 °F	36285 ppm
SAMPLER	0.130 @ 60 °F	33866 ppm
	@ °F	ppm
	@ °F	ppm

SAMPLER DATA

Pstg AT SURFACE: 680
 cu.ft. OF GAS: 2.63
 cc OF OIL: 0
 cc OF WATER: 950
 cc OF MUD: 0
 TOTAL LIQUID cc: 950

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): _____ @ _____ °F
 GAS/OIL RATIO (cu.ft. per bbl): _____
 GAS GRAVITY: _____

CUSHION DATA

TYPE AMOUNT WEIGHT

RECOVERED:

1230' OF GAS CUT MUD
 3890' OF GAS IN PIPE

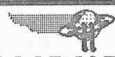
MEASURED FROM
TESTER VALVE

REMARKS:

NO DEPTHS REPORTED-TIGHT HOLE INFORMATION
 CHARTS INDICATE PARTIAL PLUGGING OF ANCHOR PERFORATIONS.
 CHARTS ALSO INDICATE THAT THE BOTTOM PACKER SEATS DID NOT HOLD.
 THEREFORE THE TESTED INTERVAL WAS FROM THE TOP SET OF PACKERS TO THE
 TOTAL DEPTH.

TICKET NO: 56522700

CLOCK NO: 17438 HOUR: 24


HALLIBURTON
SERVICES

GAUGE NO: 6754

DEPTH: 0.0

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW						SECOND CLOSED-IN - CONTINUED					
B	1	0.0	351.7			11	60.0	1429.9	797.3	44.9	0.600
	2	10.0	464.5	112.8		12	66.0	1478.5	845.8	48.2	0.569
	3	20.0	459.6	-4.9		13	72.0	1511.7	879.1	51.3	0.542
	4	30.0	489.5	29.9		14	78.0	1543.0	910.3	54.3	0.518
	5	40.0	503.0	13.5		15	84.0	1568.9	936.2	57.2	0.496
	6	50.0	518.6	15.6		16	90.0	1591.8	959.2	59.9	0.475
C	7	60.7	529.4	10.7		17	96.0	1614.9	982.2	62.5	0.457
FIRST CLOSED-IN						18	102.0	1632.7	1000.0	65.0	0.440
C	1	0.0	529.4			19	108.0	1650.0	1017.3	67.3	0.424
	2	4.0	887.2	357.9	3.8 1.208	20	114.0	1665.5	1032.8	69.6	0.410
	3	8.0	1188.4	659.0	7.0 0.936	21	120.0	1679.7	1047.0	71.8	0.396
	4	12.0	1385.5	856.2	10.0 0.782	G 22	124.0	1688.3	1055.6	73.2	0.388
	5	16.0	1549.6	1020.2	12.7 0.680						
	6	20.0	1674.1	1144.7	15.0 0.606						
	7	24.0	1759.2	1229.8	17.2 0.548						
	8	28.0	1822.3	1293.0	19.2 0.501						
	9	32.0	1859.6	1330.2	21.0 0.462						
	10	36.0	1903.4	1374.1	22.6 0.429						
	11	40.0	1935.1	1405.7	24.1 0.401						
	12	44.0	1960.2	1430.8	25.5 0.376						
	13	48.0	1980.1	1450.7	26.8 0.355						
	14	52.0	1997.4	1468.1	28.0 0.336						
	15	56.0	2014.0	1484.6	29.1 0.319						
D	16	58.1	2022.9	1493.5	29.7 0.311						
SECOND FLOW											
E	1	0.0	574.5								
	2	20.0	564.6	-9.9							
	3	40.0	584.4	19.8							
	4	60.0	599.3	14.9							
	5	80.0	612.6	13.3							
	6	100.0	624.9	12.3							
F	7	118.2	632.7	7.7							
SECOND CLOSED-IN											
F	1	0.0	632.7								
	2	6.0	837.0	204.3	5.8 1.490						
	3	12.0	980.1	347.4	11.3 1.200						
	4	18.0	1080.8	448.1	16.3 1.040						
	5	24.0	1164.6	531.9	21.2 0.927						
	6	30.0	1227.9	595.3	25.7 0.843						
	7	36.0	1281.2	648.6	30.0 0.776						
	8	42.0	1326.5	693.8	34.0 0.721						
	9	48.0	1369.1	736.4	37.9 0.674						
	10	54.0	1396.3	763.6	41.5 0.635						

REMARKS:

TICKET NO: 56522700

CLOCK NO: 17413 HOUR: 24



GAUGE NO: 6753

DEPTH: 0.0

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	959.5			
C 2†	60.7	594.7	-364.8		
FIRST CLOSED-IN					
C 1	0.0	594.7			
2	4.0	977.7	383.0	3.8	1.205
3	8.0	1293.7	699.0	7.1	0.933
4	12.0	1482.2	887.5	10.0	0.783
5	16.0	1645.3	1050.6	12.6	0.682
6	20.0	1756.6	1161.9	15.0	0.606
7	24.0	1841.4	1246.7	17.2	0.547
8	28.0	1893.2	1298.5	19.2	0.500
9	32.0	1934.1	1339.3	21.0	0.462
10	36.0	1978.3	1383.6	22.6	0.429
11	40.0	2009.2	1414.5	24.1	0.401
12	44.0	2032.7	1438.0	25.5	0.376
13	48.0	2052.2	1457.5	26.8	0.355
14	52.0	2068.2	1473.5	28.0	0.336
15	56.0	2082.1	1487.4	29.1	0.319
D 16	58.1	2087.6	1492.9	29.7	0.311
SECOND FLOW					
E 1	0.0	617.2			
2	20.0	630.8	13.6		
3	40.0	650.0	19.2		
4	60.0	662.6	12.6		
5	80.0	673.9	11.3		
6	100.0	685.8	11.9		
F 7	118.2	693.5	7.8		
SECOND CLOSED-IN					
F 1	0.0	693.5			
2	6.0	915.8	222.3	5.8	1.491
3	12.0	1045.3	351.7	11.2	1.202
4	18.0	1137.5	444.0	16.3	1.040
5	24.0	1240.0	546.5	21.2	0.927
6	30.0	1298.7	605.1	25.7	0.843
7	36.0	1348.5	655.0	30.0	0.776
8	42.0	1391.9	698.4	34.0	0.721
9	48.0	1426.5	732.9	37.8	0.675
10	54.0	1460.3	766.7	41.5	0.635
11	60.0	1497.6	804.1	44.9	0.600
12	66.0	1540.9	847.3	48.2	0.569
13	72.0	1573.2	879.6	51.3	0.542
14	78.0	1600.9	907.3	54.3	0.518
15	84.0	1624.3	930.8	57.2	0.496

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND CLOSED-IN - CONTINUED					
16	90.0	1645.6	952.0	59.9	0.475
17	96.0	1664.3	970.8	62.5	0.457
18	102.0	1683.2	989.6	65.0	0.440
19	108.0	1700.9	1007.3	67.3	0.424
20	114.0	1718.4	1024.9	69.6	0.410
21	120.0	1731.6	1038.0	71.8	0.396
G 22	124.0	1741.0	1047.5	73.2	0.388

REMARKS:

INITIAL FLOW PERIOD NOT READ DUE TO PLUGGING.

088

TICKET NO: 56522700

CLOCK NO: 8090 HOUR: 12



GAUGE NO: 7940

DEPTH: 0.0

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	420.6			
2	10.0	524.2	103.6		
3	20.0	551.6	27.3		
4	30.0	568.3	16.7		
5	40.0	585.5	17.2		
6	50.0	618.8	33.3		
C 7	60.7	628.5	9.7		
FIRST CLOSED-IN					
C 1	0.0	628.5			
2	4.0	904.0	275.5	3.8	1.209
3	8.0	1243.6	615.1	7.1	0.934
4	12.0	1472.8	844.3	10.0	0.782
5	16.0	1646.1	1017.6	12.7	0.680
6	20.0	1770.1	1141.6	15.1	0.605
7	24.0	1860.2	1231.7	17.2	0.548
8	28.0	1919.3	1290.8	19.1	0.501
9	32.0	1957.5	1329.0	21.0	0.462
10	36.0	2001.8	1373.3	22.6	0.429
11	40.0	2034.1	1405.6	24.1	0.401
12	44.0	2059.5	1431.0	25.5	0.376
13	48.0	2079.8	1451.3	26.8	0.355
14	52.0	2097.1	1468.6	28.0	0.336
15	56.0	2105.2	1476.7	29.1	0.319
D 16	58.1	2107.3	1478.8	29.7	0.311
SECOND FLOW					
E 1	0.0	642.7			
2	20.0	813.0	170.2		
3	40.0	722.7	-90.3		
4	60.0	840.3	117.6		
5	80.0	1031.3	191.0		
6	100.0	723.2	-308.1		
F 7	118.2	727.3	4.1		
SECOND CLOSED-IN					
F 1	0.0	727.3			
2	6.0	775.3	47.9	5.8	1.491
3	12.0	971.6	244.3	11.2	1.203
4	18.0	1109.1	381.8	16.4	1.039
5	24.0	1210.9	483.6	21.2	0.927
6	30.0	1288.9	561.6	25.7	0.842
7	36.0	1353.4	626.1	30.0	0.776
8	42.0	1401.2	673.8	34.0	0.721
9	48.0	1450.1	722.8	37.9	0.674
10	54.0	1483.6	756.3	41.5	0.635

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND CLOSED-IN - CONTINUED					
11	60.0	1510.5	783.2	44.9	0.600
12	66.0	1563.3	836.0	48.2	0.570
13	72.0	1603.0	875.6	51.3	0.542
14	78.0	1633.0	905.7	54.3	0.518
15	84.0	1650.4	923.1	57.2	0.496
16	90.0	1668.0	940.7	59.9	0.475
17	96.0	1682.1	954.8	62.5	0.457
18	102.0	1702.8	975.5	65.0	0.440
19	108.0	1715.9	988.6	67.4	0.424
20	114.0	1729.3	1001.9	69.6	0.410
21	120.0	1751.6	1024.2	71.8	0.396
G 22	124.0	1757.9	1030.6	73.2	0.388

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH
1		DRILL PIPE.....	4.500	3.826	
3		DRILL COLLARS.....	6.000	2.250	
50		IMPACT REVERSING SUB.....	6.000	0.620	1.0
3		DRILL COLLARS.....	6.000	2.250	121.0
5		CROSSOVER.....	6.000	2.250	1.0
13		DUAL CIP SAMPLER.....	5.000	0.870	7.0
60		HYDROSPRING TESTER.....	5.000	0.750	5.0
80		AP RUNNING CASE.....	5.000	2.370	4.0
15		JAR.....	5.000	1.750	5.0
16		VR SAFETY JOINT.....	5.000	1.000	3.0
70		OPEN HOLE PACKER.....	6.750	1.530	6.0
70		OPEN HOLE PACKER.....	6.750	1.530	6.0
20		FLUSH JOINT ANCHOR.....	5.000	2.370	26.0
5		CROSSOVER.....	6.000	2.250	1.0
5		CROSSOVER.....	6.000	2.250	1.0
3		DRILL COLLARS.....	6.000	2.250	61.0
5		CROSSOVER.....	6.000	2.250	1.0
5		CROSSOVER.....	5.000	0.250	1.0
80		AP RUNNING CASE.....	5.000	2.370	4.0
70		OPEN HOLE PACKER.....	6.750	1.530	6.0
70		OPEN HOLE PACKER.....	6.750	1.530	6.0
5		CROSSOVER.....	5.000	2.250	1.0
23		BLANK SUB.....	5.000		1.0
5		CROSSOVER.....	6.000	2.250	1.0
3		DRILL COLLARS.....	6.000	2.250	30.0
5		CROSSOVER.....	6.000	2.250	1.0
5		CROSSOVER.....	6.000	2.250	1.0
20		FLUSH JOINT ANCHOR.....	5.000	2.370	17.0

CONTINUED

EQUIPMENT DATA

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TICKET NO. 56522700

		O.D.	I.D.	LENGTH	DEPTH
83		HT-500 TEMPERATURE CASE.....	5.000		1.0
81		BLANKED-OFF RUNNING CASE.....	5.000		4.0

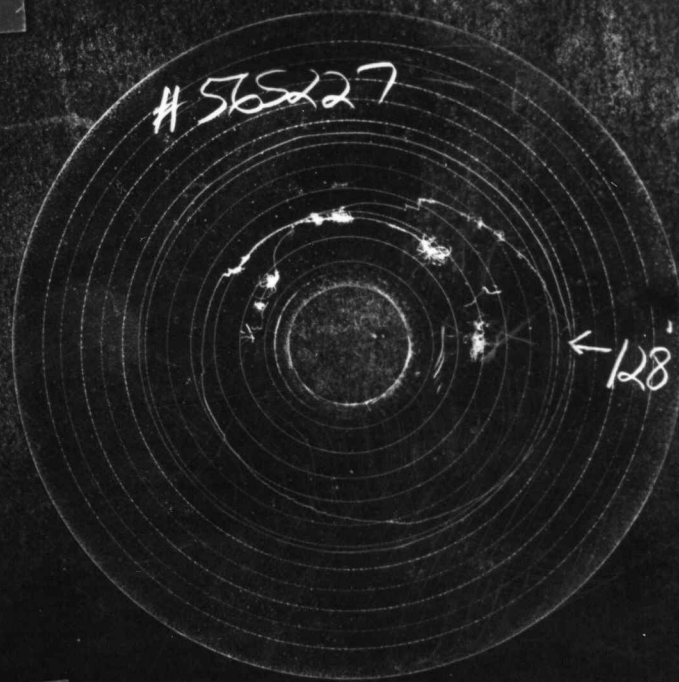
↑ TOTAL DEPTH

EQUIPMENT DATA

TEMPERATURE

RECORDER

CHART



10° each circle

WELL ANALYSIS

Indicated Flow
Capacity

$$kh = \frac{1637 Q_g T}{m}$$

md-ft

Average Effective
Permeability

$$k = \frac{kh}{h}$$

md

Skin Factor

$$S = 1.151 \left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG} \frac{kt}{\phi \mu c_t r_w^2} + 3.23 \right] \text{ ---}$$

Damage Ratio

$$DR = \frac{m(P^*) - m(P_f)}{m(P^*) - m(P_f) - 0.87 mS} \text{ ---}$$

Indicated Flow
Rate (Maximum)

$$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_f)}$$

MCFD

Indicated Flow
Rate (Minimum)

$$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_f)}}$$

MCFD

Approx. Radius of
Investigation

$$r_i = 0.032 \sqrt{\frac{kt}{\phi \mu c_t}}$$

ft