

TICKET NO. 158768 DATE 8-16-81 ELEVATION (FT.) 1846' KB
 TOP OF TESTED INTERVAL (ft.) 3110' BOTTOM OF TESTED INTERVAL (ft.) 3155'
 NET PAY (ft.) 6' TOTAL DEPTH (ft.) 3155' PW bj
 HOLE OR CASING SIZE (in.) _____ MUD WEIGHT (lb./gal.) 10.0 VISCOSITY (sec.) 41
 SURFACE CHOKE (in.) .25" BOTTOM CHOKE (in.) .75"
 OIL GRAVITY _____ @ _____ °F GAS GRAVITY—ESTIMATED _____ ACTUAL _____

SAMPLER DATA

PRESSURE (P.S.I.) _____ CUBIC FT. OF GAS _____
 C.C.'s OF OIL _____ C.C.'s OF WATER _____
 C.C.'s OF MUD _____ TOTAL LIQUID C.C.'s _____

TEMPERATURE (°F)

ESTIMATE _____
 ACTUAL 107
 DEPTH (ft.) 3150'
 H.T.-500 ; THERMOMETER ;
 T.E. OR R.T.-7 ; OTHER
 SERIAL NO. 1548

GAS/OIL RATIO (cu. ft. per bbl.)

FROM SAMPLER _____ OTHER _____

RECORDER AND PRESSURE DATA

CHARTS READ BY Kelly R. Schmeidler DATA APPROVED BY _____

RECORDERS	GAUGE NUMBER	7870	7869	TIMES (00:00-24:00 HRS.)		
		GAUGE TYPE	BT	BT	TOOL OPENED	<u>1700</u>
	GAUGE DEPTH (ft.)	<u>3105'</u>	<u>3152'</u>	DATE	<u>8-16-81</u>	
	CLOCK NUMBER	<u>17421</u>	<u>17420</u>	BYPASS OPENED	<u>2130</u>	
	CLOCK RANGE (HR.)	<u>12</u>	<u>12</u>	DATE	<u>8-16-81</u>	
PRESSURES	INITIAL HYDROSTATIC	<u>1659.2</u>	<u>1689.0</u>	PERIOD	MINUTES	
	INITIAL FLOW	<u>9.7</u>	<u>41.1</u>	XXX	XXX	
	1st. FINAL FLOW	<u>11.6</u>	<u>44.9</u>	1st. FLOW	<u>30 *</u>	
	CLOSED-IN	<u>481.1</u>	<u>508.5</u>	1st. C.I.P.	<u>60 *</u>	
	INITIAL FLOW	<u>21.7</u>	<u>52.3</u>	XXX	XXX	
	2nd. FINAL FLOW	<u>19.8</u>	<u>52.5</u>	2nd. FLOW	<u>60 *</u>	
	CLOSED-IN	<u>463.9</u>	<u>491.2</u>	2nd. C.I.P.	<u>120 *</u>	
	INITIAL FLOW			XXX	XXX	
	3rd. FINAL FLOW	* See attached incremental pressure sheet...			3rd. FLOW	
	CLOSED-IN				3rd. C.I.P.	
	FINAL HYDROSTATIC	<u>1656.3</u>	<u>1684.5</u>	XXX	XXX	

Husted #10
 LFC D-6 3MS

TICKET NO. 158768 DATE 8-16-81 HALLIBURTON CAMP HAYS

LEASE OWNER ENERGY RESERVES GROUP, INCORPORATED

LEASE NAME HUSTED WELL NO. #10 TEST NO. OHT #1

LEGAL LOCATION 19 11 17
18 18S 12W FORMATION TESTED KANSAS CITY

FIELD AREA NORTH OF HAYS COUNTY ELLIS STATE KANSAS

TYPE OF D.S.T. OPEN HOLE

TESTER(S) KELLY R. SCHMEIDLER

WITNESS GERALD WERHLI DRILLING CONTRACTOR EMPHASIS DRILLING COMPANY #5

DEPTHS MEASURED FROM KELLY BUSHING CASING PERFS (FT.) _____

TYPE AND SIZE OF GAS MEASURING DEVICE _____

CUSHION DATA

TYPE _____ AMOUNT _____ WEIGHT (lb./gal.) _____

TYPE _____ AMOUNT _____ WEIGHT (lb./gal.) _____

RECOVERY (ft. or bbl.):

30' of mud with a few spots of oil.

FLUID PROPERTIES

SOURCE	RESISTIVITY	CHLORIDES (PPM)	SOURCE	RESISTIVITY	CHLORIDES (PPM)
	@ °F			@ °F	
	@ °F			@ °F	
	@ °F			@ °F	

REMARKS:

ENERGY RESERVES GROUP, INCORPORATED

158768

Lease Owner/Company Name

Ticket Number

B.T. 7870

B.T. _____

B.T. 7869

Depth 3105'

Depth _____

Depth 3152'

12 HOUR

12 HOUR

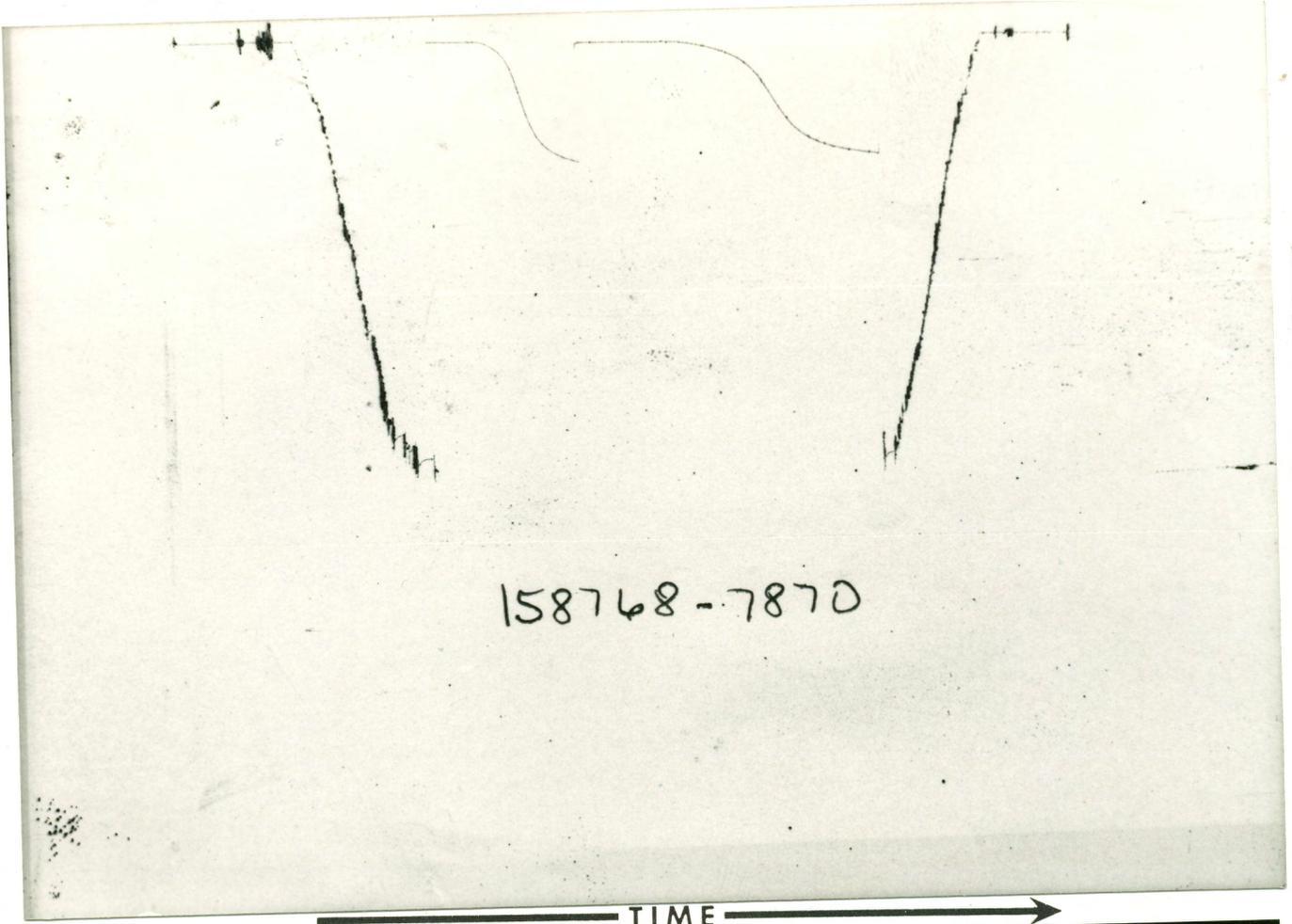
Time (minutes)	Log $\frac{t - t_0}{t}$	PSIG Temp. Corr.	Time (minutes)	Log $\frac{t - t_0}{t}$	PSIG Temp. Corr.	Time (minutes)	Log $\frac{t - t_0}{t}$	PSIG Temp. Corr.
FIRST FLOW PERIOD #1						FLOW PERIOD #1		
0		9.7				0		41.1
30.9		11.6				30.1		44.9
CLOSED IN PERIOD #1						CLOSED IN PERIOD #1		
0		11.6				0		44.9
4		21.0				4		52.4
8		35.1				8		65.7
12		55.4				12		84.5
16		89.6				16		116.7
20		147.9				20		168.6
24		229.3				24		255.1
28		308.7				28		338.3
32		365.4				32		394.8
36		403.6				36		430.3
40		428.9				40		454.3
44		446.5				44		472.6
48		459.5				48		486.4
52		469.1				52		496.6
56		477.5				56		504.9
58.0		481.1				58.6		508.5
FLOW PERIOD #2						FLOW PERIOD #2		
0		21.7				0		52.3
10		17.2				10		48.4
20		17.2				20		49.5
30		17.2				30		50.1
40		18.3				40		50.9
50		18.3				50		52.0
61.7		19.8				61.7		52.5
(Continued)						(Continued)		

Remarks: _____

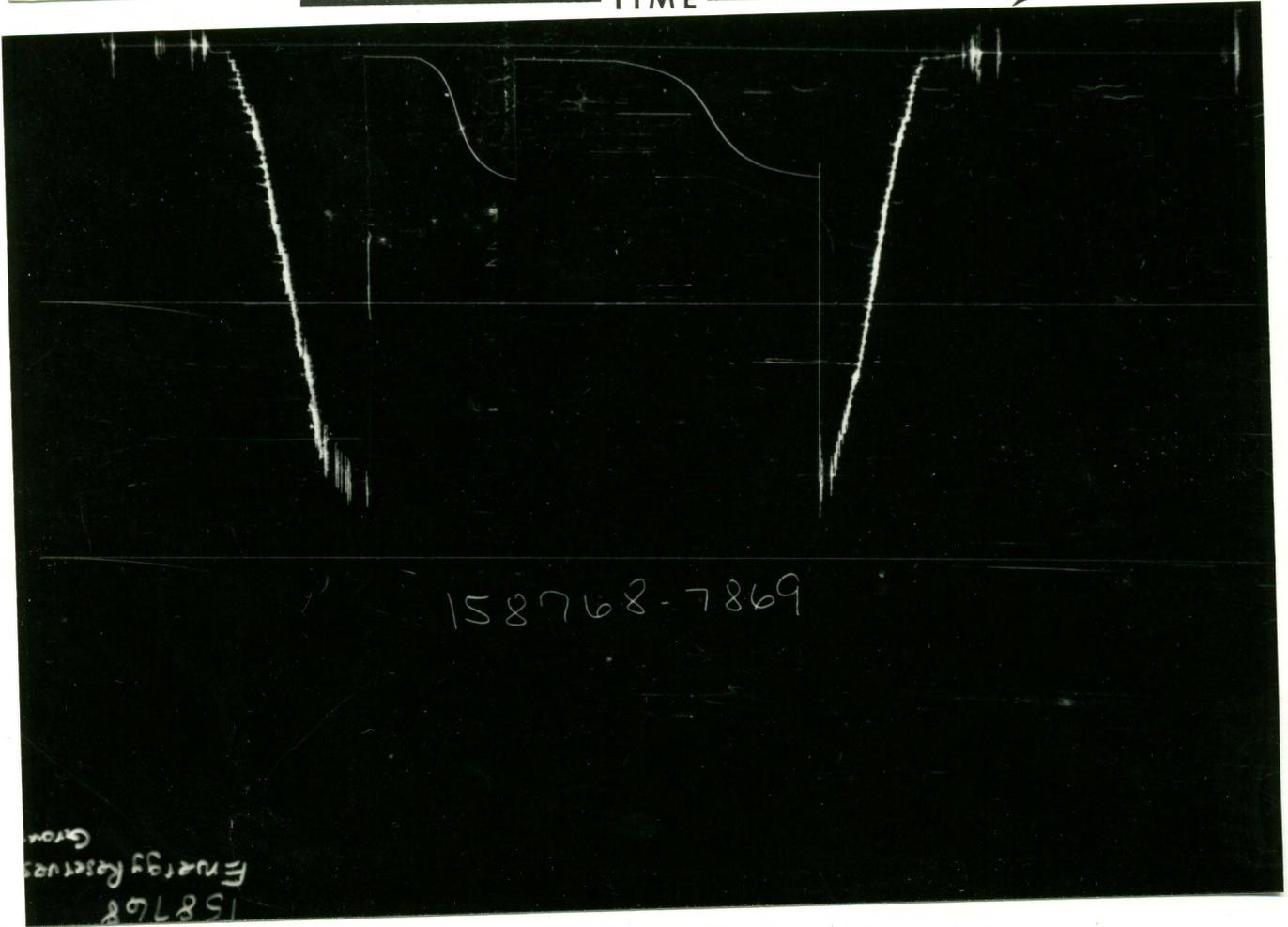
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	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	??	??	??	
Drill Collars	??	??	??	
Reversing Sub	5.75"	2.75"	1.00'	2967'
Water Cushion Valve				
Drill Pipe	4.50"	3.826"	126'	
Drill Collars				
Handling Sub & Choke Assembly				
Dual CIP Valve	5.00"	.87"	6.00'	3093'
Dual CIP Sampler				
Hydro-Spring Tester	5.00"	.75"	5.00'	3103'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5.00"	3.06"	4.00'	3105'
Hydraulic Jar				
VR Safety Joint				
Pressure Equalizing Crossover				
Packer Assembly	6.75"	1.53"	4.00'	3110'
Distributor				
Packer Assembly				
Flush Joint Anchor	5.00"	3.84"	38'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor				
HT 500 TEMP. CASE	5.00"	3.75"	1.50'	3150'
Blanked-Off B.T. Running Case	5.00"	2.44"	4.00'	3152'
Total Depth				3155'

PRESSURE

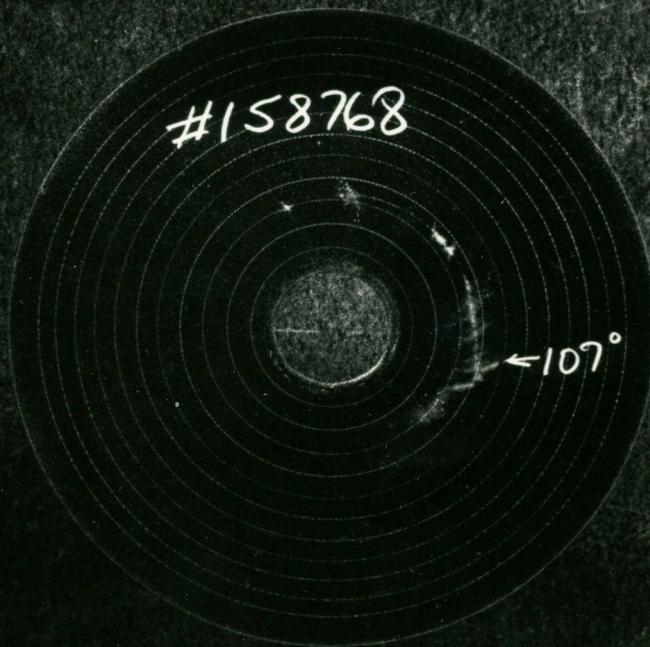


TIME



Each Horizontal Line Equal to 1000 p.s.i.

TEMPERATURE
RECORDER
CHART



10° each circle

TICKET NO. 158769 DATE 8-17-81 ELEVATION (FT.) 1846' KB
 TOP OF TESTED INTERVAL (ft.) 3292' BOTTOM OF TESTED INTERVAL (ft.) 3333'
 NET PAY (ft.) 2' TOTAL DEPTH (ft.) 3333'
 HOLE OR CASING SIZE (in.) 7 7/8 MUD WEIGHT (lb./gal.) 9.9 VISCOSITY (sec.) 39
 SURFACE CHOKE (in.) .25 BOTTOM CHOKE (in.) .75"
 OIL GRAVITY 30 @ 60 °F GAS GRAVITY—ESTIMATED _____ ACTUAL _____

SAMPLER DATA

TEMPERATURE (°F)

PRESSURE (P.S.I.) _____ CUBIC FT. OF GAS _____
 C.C.'s OF OIL _____ C.C.'s OF WATER _____
 C.C.'s OF MUD _____ TOTAL LIQUID C.C.'s _____

ESTIMATE 112⁰F
 ACTUAL 117
 DEPTH (ft.) 3328'
 H.T.-500 ; THERMOMETER ;
 T.E. OR R.T.-7 ; OTHER
 SERIAL NO. 1548

GAS/OIL RATIO (cu. ft. per bbl.)

FROM SAMPLER _____ OTHER _____

RECORDER AND PRESSURE DATA

CHARTS READ BY Kelly R. schmeidler DATA APPROVED BY _____

R E C O R D E R S	GAUGE NUMBER	7870	7869			TIMES (00:00-24:00 HRS.)	
	GAUGE TYPE	1	1			TOOL OPENED	00:15
	GAUGE DEPTH (ft.)	3287	3330'			DATE	8-18-81
	CLOCK NUMBER	17421	17420			BYPASS OPENED	04:45
	CLOCK RANGE (HR.)	12	12			DATE	8-18-81
	INITIAL HYDROSTATIC	1731.7	1756.5			PERIOD	MINUTES
	INITIAL FLOW	463.1	493.4			XXX	XXX
P	1st. FINAL FLOW	552.3	582.4			1st. FLOW	30 *
R	CLOSED-IN	982.3	997.5			1st. C.I.P.	60 *
E	INITIAL FLOW	555.8	571.6			XXX	XXX
S	2nd. FINAL FLOW	687.0	693.6			2nd. FLOW	60 *
U	CLOSED-IN	985.4	998.0			2nd. C.I.P.	120 *
R	INITIAL FLOW					XXX	XXX
E	3rd. FINAL FLOW	*See attached incremental pressure sheet				3rd. FLOW	
S	CLOSED-IN	for computed times.				3rd. C.I.P.	
	FINAL HYDROSTATIC	1751.0	1771.7			XXX	XXX

Husted #10
Ar 6 top 3292-3333'

TICKET NO. 158769 DATE 8-17-81 HALLIBURTON CAMP HAYS
 LEASE OWNER ENERGY RESERVES GROUP INCORPORATED
 LEASE NAME HUSTED WELL NO. 10 TEST NO. 2
 LEGAL LOCATION 18-11-S-17W FORMATION TESTED ARBUCKLE
 FIELD AREA BEMIS-SHUTTS COUNTY ELLIS STATE KANSAS IC-dr
 TYPE OF D.S.T. OPEN HOLE
 TESTER(S) KELLY R. SCHEIDLER
 WITNESS GERALD WERKLI DRILLING CONTRACTOR EMPAHASIS #5
 DEPTHS MEASURED FROM KELLY BUSHING CASING PERFS (FT.)
 TYPE AND SIZE OF GAS MEASURING DEVICE

CUSHION DATA

TYPE FRESH WATER AMOUNT 994.85' WEIGHT (lb./gal.)
 TYPE AMOUNT WEIGHT (lb./gal.)

RECOVERY (ft. or bbl.):

63' of free oil
 1390' Water
 94' Heavy gassy oily mud

FLUID PROPERTIES

SOURCE	RESISTIVITY	CHLORIDES (PPM)	SOURCE	RESISTIVITY	CHLORIDES (PPM)
	@ °F			@ °F	
	@ °F			@ °F	
	@ °F			@ °F	

REMARKS: Charts indicate only 11 minutes of initial closed in pressure period and 12 1/2 minutes of final closed in pressure period are usable due to apparent leakage.

B.T. 7870

B.T. 7869

B.T. _____

Depth 3287

Depth 3330'

Depth _____

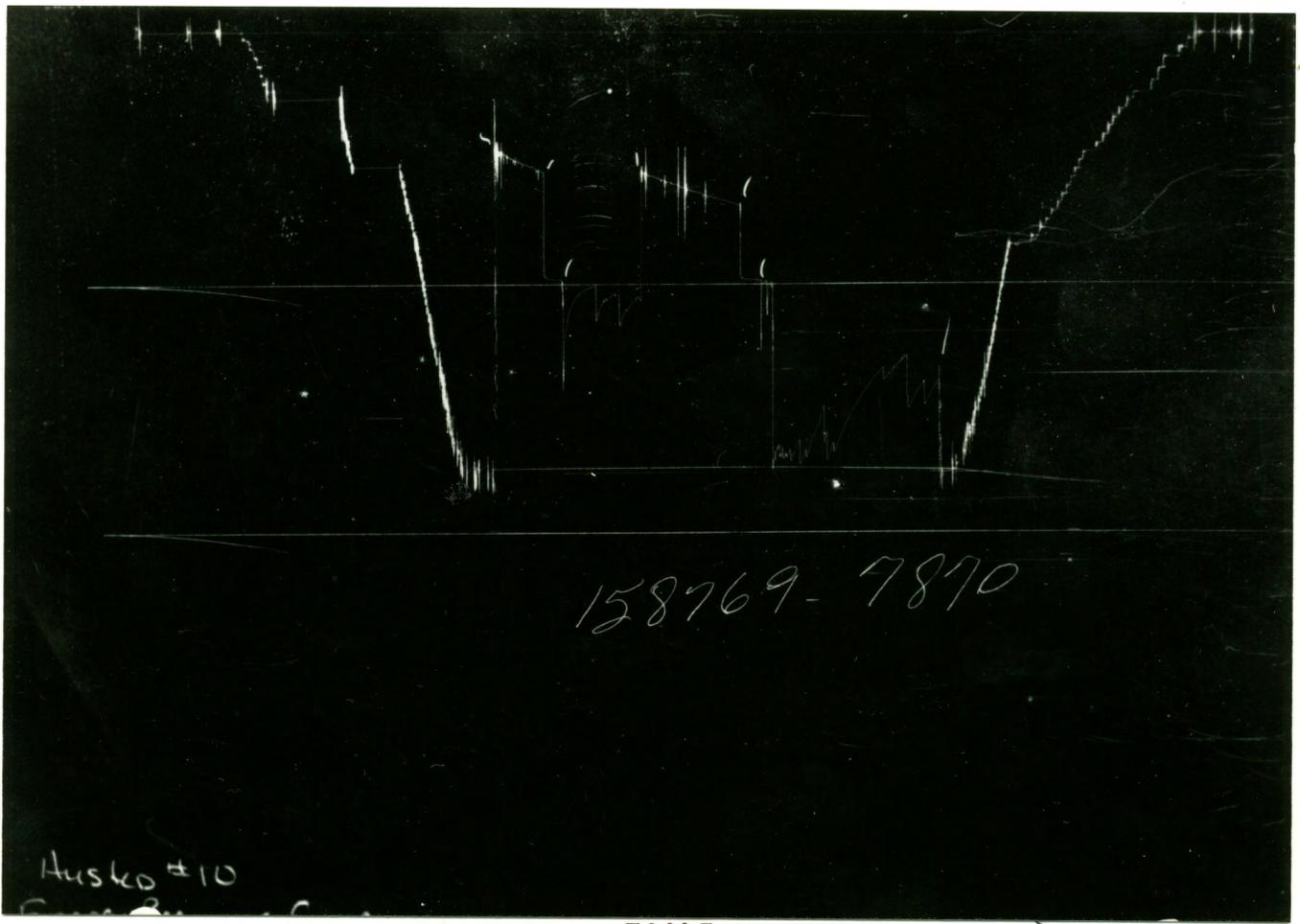
PAGE 1

Time (minutes)	Log $\frac{t - 0}{t}$	PSIG Temp. Corr.	Time (minutes)	Log $\frac{t - 0}{t}$	PSIG Temp. Corr.	Time (minutes)	Log $\frac{t - 0}{t}$	PSIG Temp. Corr.
FIRST FLOW			FIRST FLOW					
0		463.1	0		493.4			
5		478.7	5		513.3			
10		498.3	10		530.3			
15		512.8	15		550.0			
20		526.0	20		566.9			
25		539.7	25		576.8			
29.5		552.3	28.8		582.4			
FIRST CIP			FIRST CIP					
0		552.3	0		582.4			
1		973.1	1		930.3			
2		977.1	2		986.8			
3		979.9	3		991.3			
4		930.9	4		993.0			
5		981.8	5		994.9			
6		982.3	6		995.6			
7		982.3	7		996.4			
8		982.3	8		997.0			
9		982.7	9		997.5			
10		982.7	10		997.5			
11.2		982.8	11.1		997.5			
SECOND FLOW			SECOND FLOW					
0		555.8	0		571.6			
10		577.3	10		590.8			
20		600.8	20		612.6			
30		626.5	30		640.3			
40		647.8	40		664.0			
50		666.3	50		679.5			
60.1		687.0	59.8		693.6			

Remarks: _____

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	?	?	?	
Drill Collars				
Reversing Sub	5.75"	2.75"	1'	3149'
Water Cushion Valve				
Drill Pipe	?	?	?	
Drill Collars				
Handling Sub & Choke Assembly				
Dual CIP Valve	5"	.87"	6'	3275'
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75 "	5'	3285'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	3287'
Hydraulic Jar				
VR Safety Joint				
Pressure Equalizing Crossover				
Packer Assembly	6.75"	1.53"	4'	3292'
Distributor				
Packer Assembly				
Flush Joint Anchor	5"	3.84"	34'	
Pressure Equalizing Tube	5"	3.75"	1.5'	3328'
Blanked-Off B.T. Running Case	5"	2.44"	4'	3330'
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor				
Blanked-Off B.T. Running Case				
Total Depth				3333'

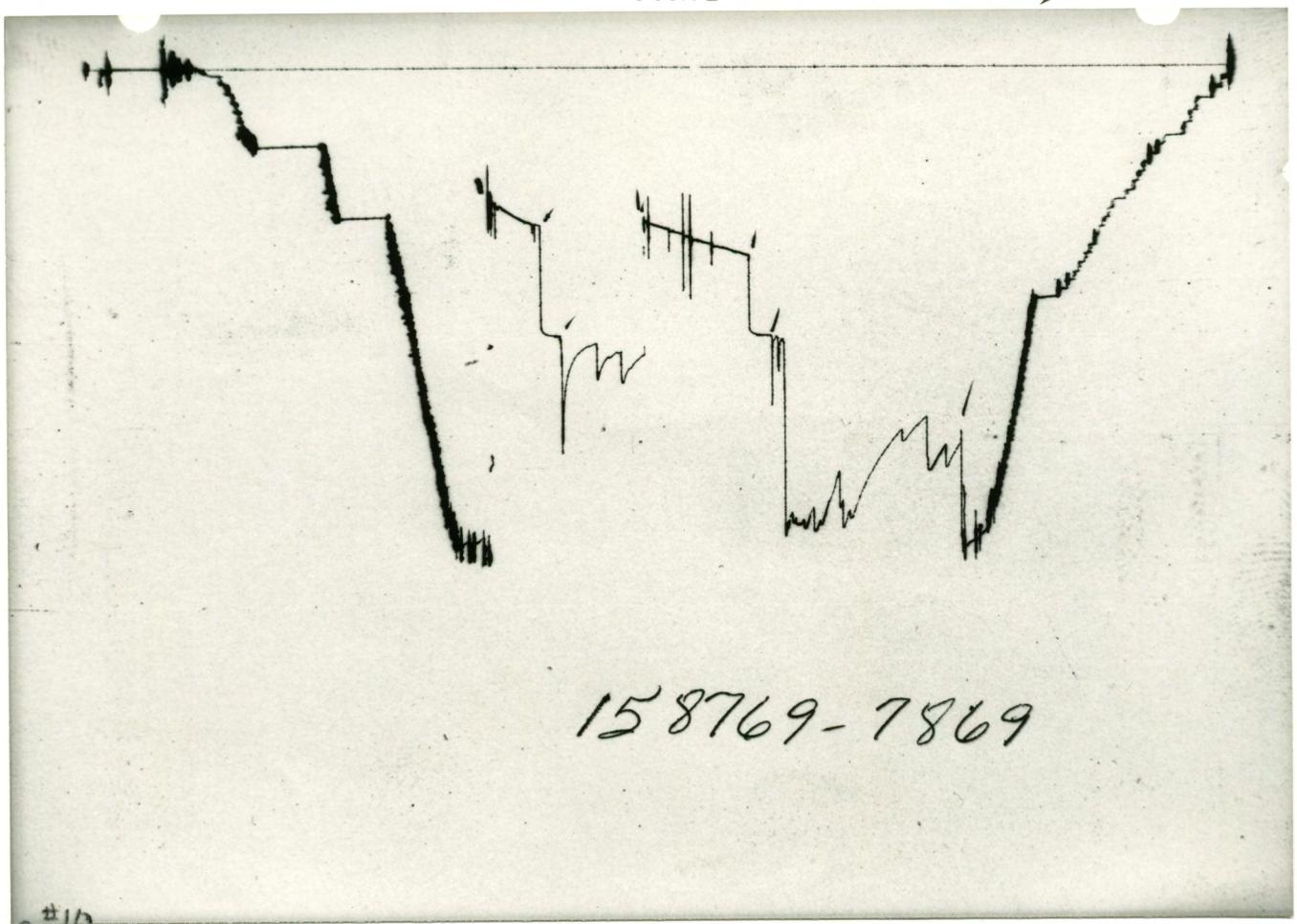
PRESSURE



158769-7870

Ausko #10

TIME

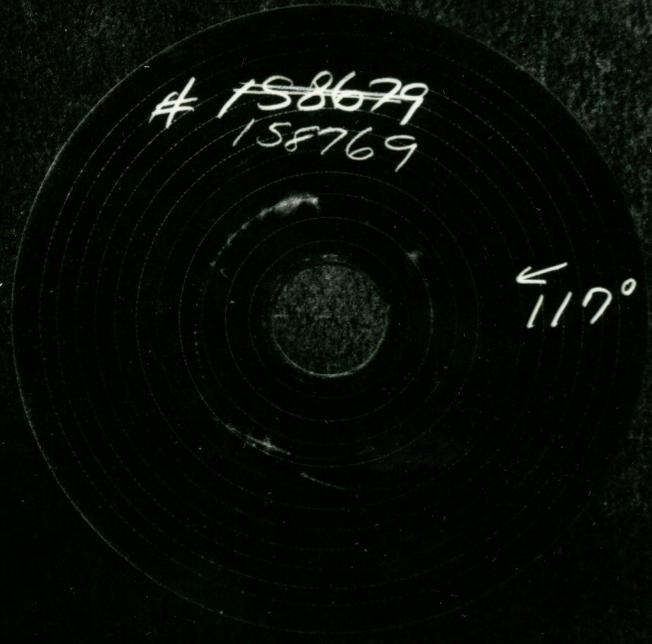


158769-7869

#10

Each Horizontal Line Equal to 1000 p.s.i.

TEMPERATURE
RECORDER
CHART



10° each circle

NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b₁	= Approximate Radius of Investigation (Net Pay Zone h _i)	Feet
D.R.	= Damage Ratio	—
EI	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h₁	= Net Pay Thickness	Feet
K	= Permeability	md
K₁	= Permeability (From Net Pay Zone h _i)	md
m	= Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF₁	= Maximum Indicated Flow Rate	MCF/D
OF₂	= Minimum Indicated Flow Rate	MCF/D
OF₃	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF₄	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_o	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q₁	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.