

Lanny

FLUID SAMPLER DATA				Date <u>1-3- 70</u>		Ticket Number <u>277676</u>	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl.				Kind of Job <u>OPEN HOLE</u>		Halliburton District <u>GREAT BEND</u>	
				Tester <u>D. D. GORDLEY</u>		Witness <u>B. DOUGLAS</u>	
				Drilling Contractor <u>SAGE DRILLING COMPANY</u>		<u>SM S</u>	
EQUIPMENT & HOLE DATA							
				Formation Tested <u>Viola</u>			
				Elevation _____ Ft.			
				Net Productive Interval <u>3850-3871'</u>			
				All Depths Measured From _____			
				Total Depth <u>3871'</u>			
				Main Hole/Casing Size <u>9"</u>			
				Drill Collar Length _____ I.D. _____			
				Drill Pipe Length <u>3836'</u> I.D. <u>3.826"</u>			
				Packer Depth(s) <u>3845- 3850'</u>			
				Depth Tester Valve <u>3833'</u>			
TYPE		AMOUNT		Depth Back Pres. Valve		Surface Choke	
Cushion						<u>1"</u>	
						Bottom Choke <u>3/4"</u>	
Recovered	<u>90</u>	Feet of gas in pipe					
Recovered	<u>185</u>	Feet of heavy gas cut mud with show of oil					
Recovered	<u>120</u>	Feet of heavy gas cut muddy water with show of oil					
Recovered	<u>2440</u>	Feet of gas cut water with show of oil					
Recovered		Feet of					
Remarks <u>Tool opened with a strong blow for a 17 minute first flow. Closed for a 44 minute first closed in pressure. Tool reopened with a good blow which increased to strong in 3 minutes. Closed for a 45 minute second closed in pressure.</u>							
TEMPERATURE		Gauge No. <u>684</u>		Gauge No. <u>528</u>		Gauge No.	
		Depth: <u>3838</u> Ft.		Depth: <u>3867</u> Ft.		Depth: _____ Ft.	
		<u>12 Hour Clock</u>		<u>12 Hour Clock</u>		<u>Hour Clock</u>	
Est. <u>108 °F.</u>		Blanked Off <u>no</u>		Blanked Off <u>yes</u>		Blanked Off _____	
<u>3866' @</u>							
Actual <u>102 °F.</u>		Pressures		Pressures		Pressures	
		Field	Office	Field	Office	Field	Office
Initial Hydrostatic		<u>2098</u>	<u>2037</u>	<u>2112</u>	<u>2056</u>		
First Period Flow	Initial	<u>78</u>	<u>105</u>	<u>120</u>	<u>124</u>		
	Final	<u>551</u>	<u>553</u>	<u>557</u>	<u>566</u>		
	Closed In	<u>1340</u>	<u>1343</u>	<u>1357</u>	<u>1358</u>		
Second Period Flow	Initial	<u>560</u>	<u>568</u>	<u>573</u>	<u>582</u>		
	Final	<u>1164</u>	<u>1177</u>	<u>1124</u>	<u>1120</u>		
	Closed In	<u>1340</u>	<u>1339</u>	<u>Clock stopped</u>			
Third Period Flow	Initial	-	-	-	-		
	Final	-	-	-	-		
	Closed In	-	-	-	-		
Final Hydrostatic		<u>2098</u>	<u>2020</u>	-	<u>1982</u>		

Legal Location Sec. - Twp. - Rng. 2 N 15 24 11

Lease No. 8

Field Area 2

Tested Interval 3850-3871'

County STAFFORD

State KANSAS

BRADEN ZENITH INCORPORATED

Lease Owner/Company Name

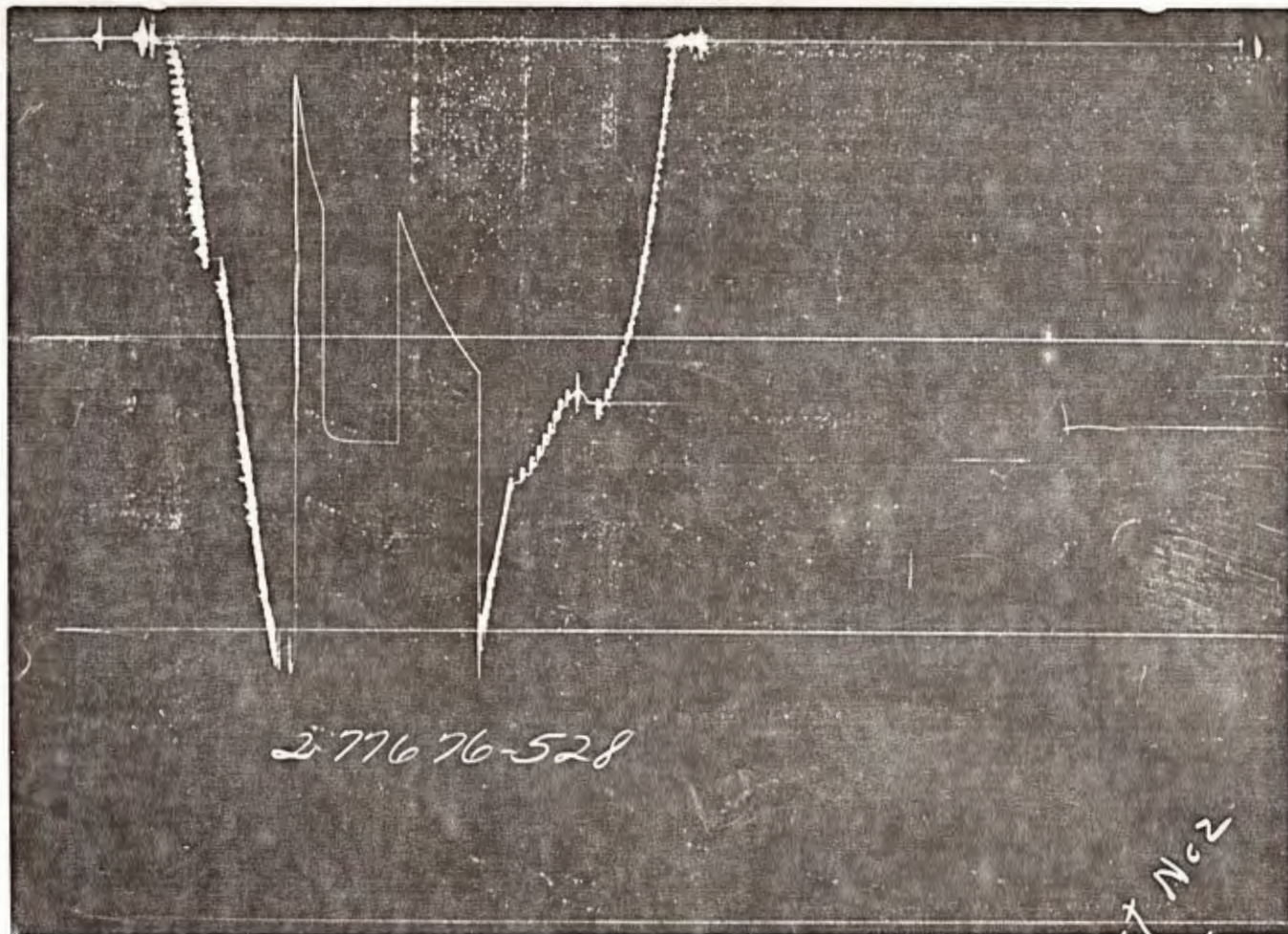
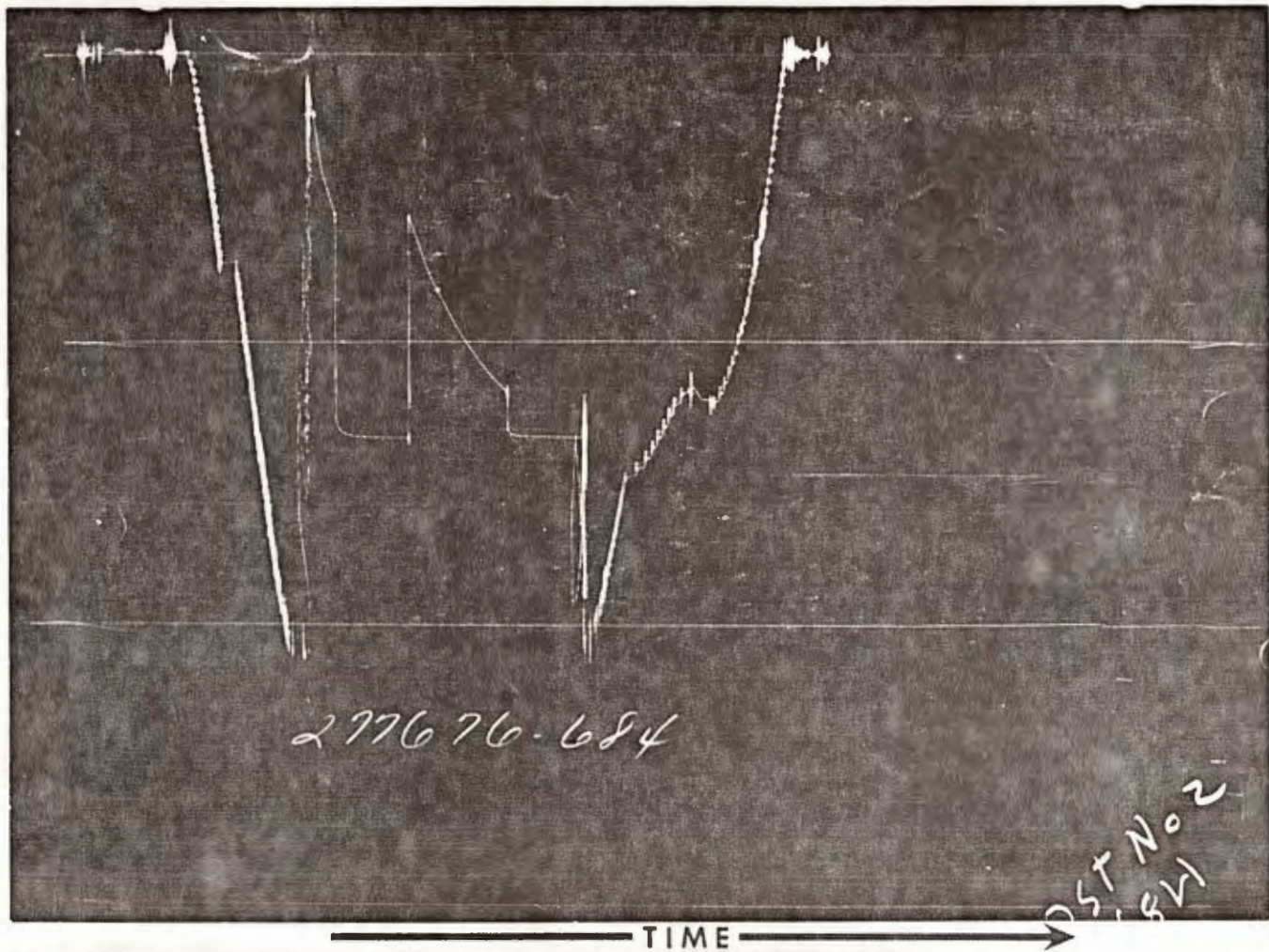
Gauge No. 684			Depth 3838'			Clock No. ??			12 hour	Ticket No. 277676					
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	105	.000		553	.000	568	.000		1177					
1	.0198	178	.0271		1319	.0673	726	.0337		1330					
2	.0396	298	.0542		1330	.1346	851	.0674		1333					
3	.0594	407	.0813		1335	.2019	961	.1011		1335					
4	.0792	466	.1084		1337	.2692	1047	.1348		1336					
5	.0990	518	.1355		1338	.3365	1122	.1685		1337					
6	.112*	553	.1626		1339	.397**	1177	.2022		1337					
7			.1897		1340			.2359		1338					
8			.2168		1340			.2696		1338					
9			.2439		1341			.3030		1339					
10			.2710		1341										
11			.2980		1343										
12															
13															
14															
15															

Gauge No. 528			Depth 3867'			Clock No. ??			12 hour						
0	.000	124	.000		566	.000	582								
1	.0198	220	.027		1335	.0673	726								
2	.0396	334	.054		1347	.1346	858								
3	.0594	430	.081		1351	.2019	967								
4	.0792	484	.108		1354	.2692	1060								
5	.0990	532	.135		1355	(.323***	1120)								
6	.112*	566	.162		1356	.3363	-								
7			.189		1357	.397**	-								
8			.216		1358										
9			.243		1358										
10			.270		1358										
11			.297		1358										
12															
13															
14															
15															
Reading Interval 3			4			10			5			Minutes			

REMARKS: ** Last interval is equal to 2 minutes. **Last = 9 minutes. ***Read at the end of 48 minutes when clock apparently stopped.

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	5.75"	2.75"	12"	
Water Cushion Valve				
Drill Pipe	4.50"	3.826"	3836'	
Drill Collars				
Handling Sub & Choke Assembly				
Dual CIP Valve	5"	.87"	48.92"	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	60.21"	3833'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	49.63"	3838'
Hydraulic Jar				
VR Safety Joint				
Pressure Equalizing Crossover				
Packer Assembly	7½"	1.53"	48.89"	3845'
Distributor				
Packer Assembly	7½"	1.53"	48.89"	3850'
Flush Joint Anchor	5"	2.37"	21'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case	5"	3.06"	49.63"	3867'
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor				
Blanked-Off B.T. Running Case				

— PRESSURE —
↓



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

Sample
Recovery

Gravitational
Gas/Oil

Recovery
Recovery
Recovery
Mud
Mud
Mud

Cushion

Recovery

Recovery

Recovery

Recovery

Recovery

Removal

TEMPERATURE

Estimated

Actual

Initial

First Period

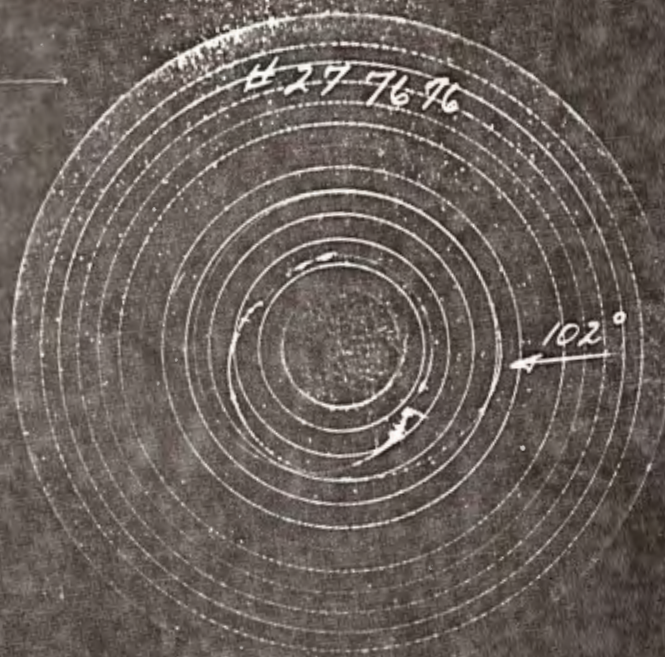
Second Period

Third Period

Final

PRINTED

TEMPERATURE RECORDER CHART



10° each circle

OF_3	= Theoretical Open Flow Potential	.....	Psig.
OF_4	= Theoretical Open Flow Potential with/Damage Removed Min.	.....	Psig.
P_s	= Extrapolated Static Pressure	.....	Psig.
P_f	= Final Flow Pressure	.....	Feet
P_{ot}	= Potentiometric Surface (Fresh Water*)	.....	bbls/day
Q	= Average Adjusted Production Rate During Test	.....	bbls/day
Q_1	= Theoretical Production w/Damage Removed	.....	MCF/D
Q_g	= Measured Gas Production Rate	.....	bbls
R	= Corrected Recovery	.....	Feet
r_w	= Radius of Well Bore	.....	Minutes
t	= Flow Time	.....	Minutes
t_o	= Total Flow Time	.....	°R
T	= Temperature Rankine	.....	CP
Z	= Compressibility Factor	.....	
μ	= Viscosity Gas or Liquid	.....	
Log	= Common Log	.....	

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