

Flow Time	1st 5 Min.	2nd 60 Min.	Date	8-17-64	Ticket Number	423121 - S
Closed In Press. Time	1st 30 Min.	2nd 30 Min.	Kind of Job	OPEN HOLE	Halliburton District	PRATT
Pressure Readings	Field	Office Corrected	Tester	SHAUERS	Witness	BLACK
Depth Top Gauge	3443' Ft.	NO Blanked Off	Drilling Contractor	JACKSON DRILLING COMPANY	BM	
BT. P.R.D. No.	533	12 Hour Clock	Elevation	1561' D.F.	Top Packer	3453'
Initial Hydro Mud Pressure	1901	1887	Total Depth	3491'	Bottom Packer	3458'
Initial Closed in Pres.	1443	1443	Interval Tested	3458' - 3491'	Formation Tested	LANSING
Initial Flow Pres.	9 1 20	19 2 35	Casing or Hole Size	7 7/8"	Casing Perfs. { Top - Bot. -	
Final Flow Pres.	19 1 18	38 2 44	Surface Choke	1"	Bottom Choke	3/4"
Final Closed in Pres.	1291	1296	Size & Kind Drill Pipe	4 1/2" API F.H.	Drill Collars Above Tester	I.D. - LENGTH -
Final Hydro Mud Pressure	1872	1860	Mud Weight	9.8	Mud Viscosity	49
Depth Cen. Gauge	Ft.	Blanked Off	Temperature	107 @ 3486' °F Est. °F Actual	Anchor Size & Length	ID 3.84" OD 5" X 33'
BT. P.R.D. No.		Hour Clock	Depths Mea. From	KELLY BUSHING	Depth of Tester Valve	3442' Ft.
Initial Hydro Mud Pres.			TYPE AMOUNT		Depth Back Pres. Valve	NONE Ft.
Initial Closed in Pres.			Cushion	NONE		
Initial Flow Pres.	1		Recovered	1500' Feet of gas in the pipe		
Final Flow Pres.	2		Recovered	90' Feet of watery mud with slightly oil specked in top of fluid		
Final Closed in Pres.	1		Recovered	Feet of		
Final Hydro Mud Pres.	2		Recovered	Feet of		
Depth Bot. Gauge	3487' Ft.	YES Blanked Off	Oil A.P.I. Gravity	-	Water Spec. Gravity	1.105
BT. P.R.D. No.	534	12 Hour Clock	Gas Gravity	-	Surface Pressure	0# psi
Initial Hydro Mud Pres.	1937	1910	Tool Opened	12:14 A.M. P.M.	Tool Closed	2:19 A.M. P.M.
Initial Closed in Pres.	1472	1466	Remarks	Tool opened @ 12:14 AM with a weak blow for a 5 minute first flow. Tool closed @ 12:19.		
Initial Flow Pres.	29 1 48	29 2 56		Rotated tool for a 30 minute initial closed in		
Final Flow Pres.	38 1 42	57 2 64		pressure. Tool reopened @ 12:49 with a weak blow		
Final Closed in Pres.	1326	1318		to a strong blow, which continued throughout the test. Tool closed @ 1:49. Took a 30 minute final closed in pressure. Off bottom @ 2:19.		
Final Hydro Mud Pres.	1907	1896				

FORMATION TEST DATA

Legal Location
Sec. - Twp. - Rng.

C-NE-NE-23-25-8

Field Area

WILDCAT

County

HENO

State

KANSAS

Lease Name

Well No.

Test No.

Lease Owner/Company Name

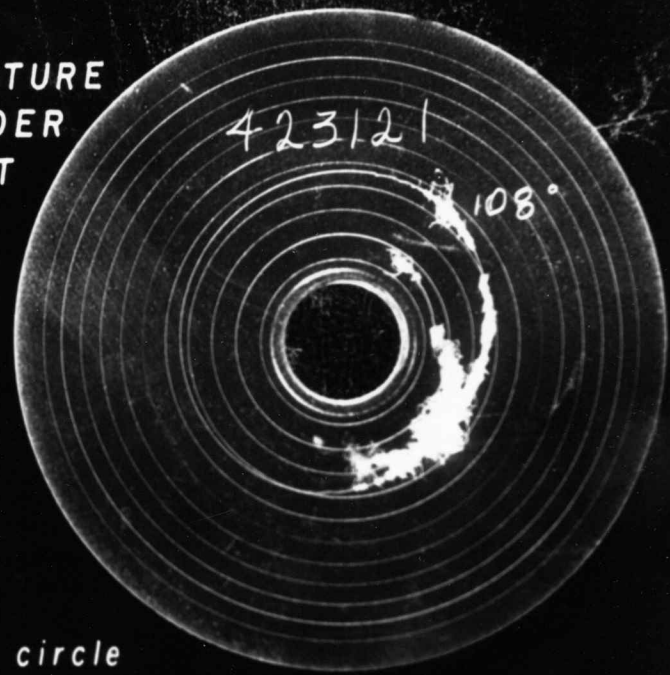
Owner's District

Gauge No. 533			Depth 3443'			Clock 12 hour			Ticket No. 423121		
First Flow Period			Initial Closed In Pressure			Second Flow Period			Final Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.		Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
P ₀	.000	20	.000		18	.000	35		.000		44
P ₁	.0076	18	.0201		379	.101	29		.0207		103
P ₂	.0152	17	.0402		1078	.202	33		.0414		230
P ₃	.0228	17	.0603		1290	.303	39		.0621		548
P ₄	.0304	18	.0804		1353	.404	44		.0828		913
P ₅	.038	18	.1005		1386				.1035		1088
P ₆			.1206		1407				.1242		1176
P ₇			.1407		1420				.1449		1225
P ₈			.1608		1430				.1656		1256
P ₉			.1809		1436				.1863		1280
P ₁₀			.201		1443				.207		1296

Gauge No.		534		Depth		3487'		Clock		12 hour	
P ₀	.000	48	.000		42	.000	56	.000		64	
P ₁	.0076	41	.0201		923	.103	47	.0204		122	
P ₂	.0152	40	.0402		1259	.206	53	.0408		238	
P ₃	.0228	39	.0603		1340	.309	58	.0612		622	
P ₄	.0304	40	.0804		1385	.412	64	.0816		1029	
P ₅	.038	42	.1005		1411			.1020		1151	
P ₆			.1206		1429			.1224		1212	
P ₇			.1407		1442			.1428		1254	
P ₈			.1608		1451			.1632		1283	
P ₉			.1809		1460			.1836		1303	
P ₁₀			.201		1466			.204		1318	
Reading Interval		1	3			15		3 Minutes			

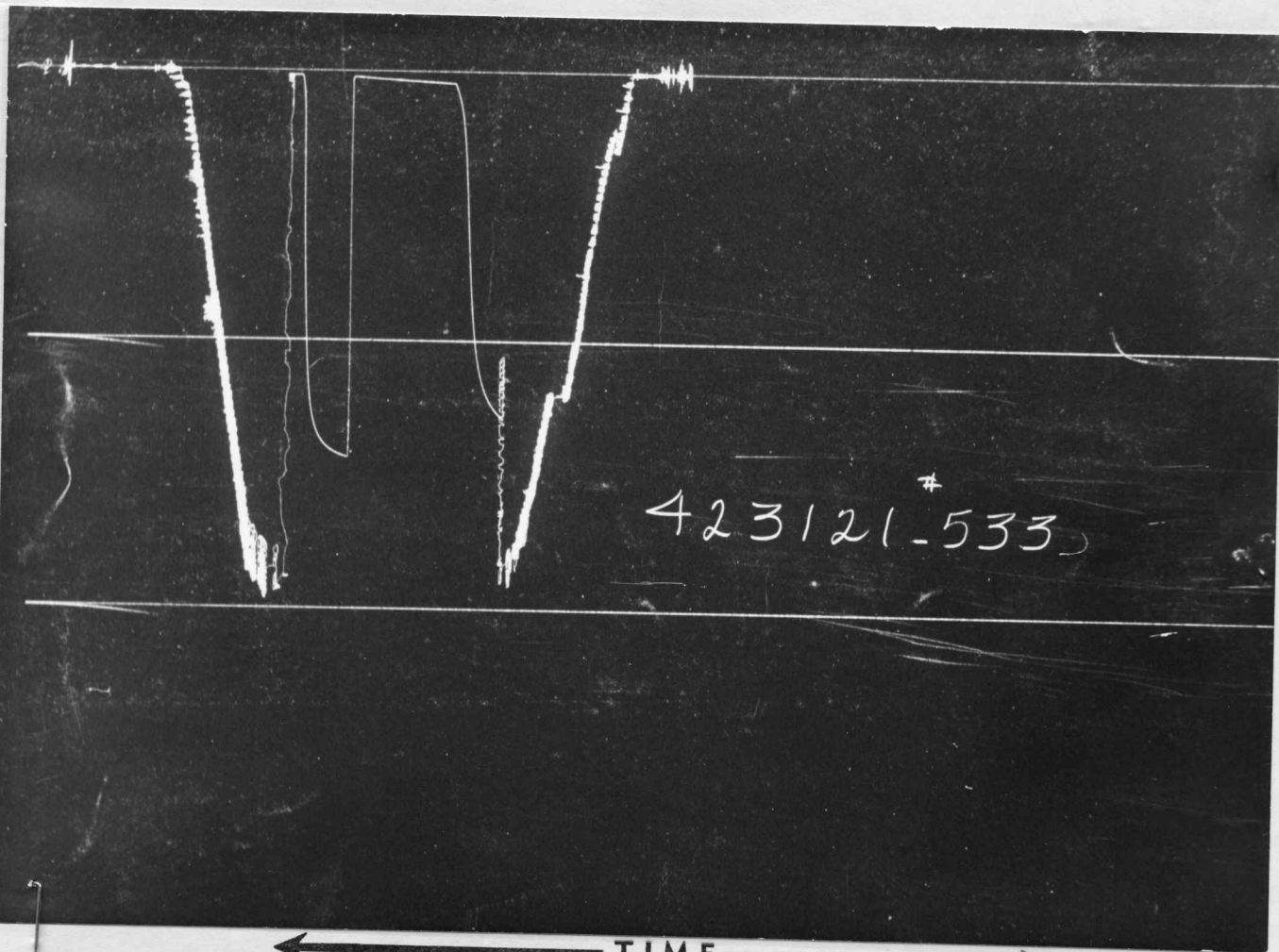
SPECIAL PRESSURE DATA

TEMPERATURE
RECORDER
CHART

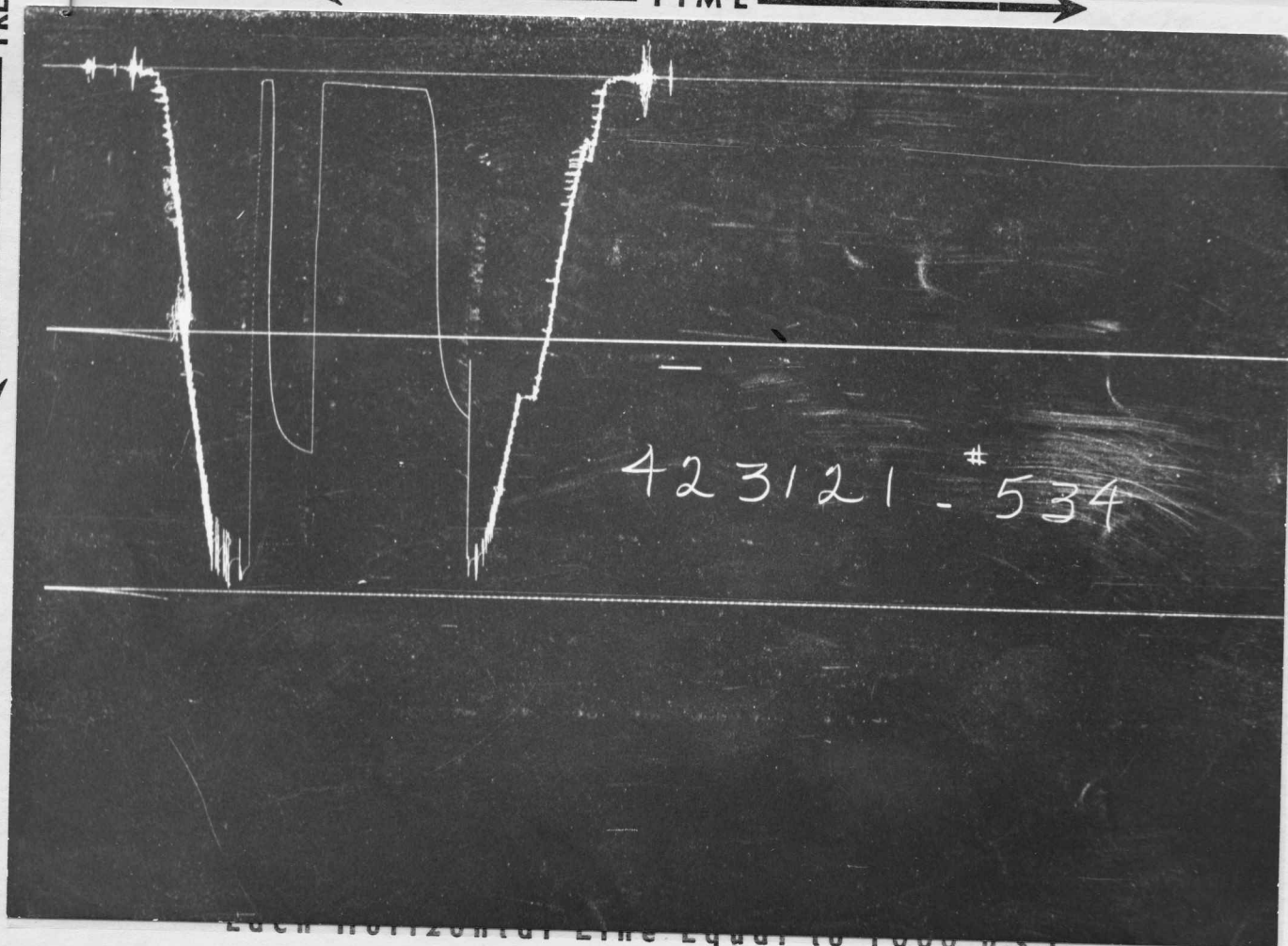


10° each circle

↑
PRESSURE
↓



← TIME →



EACH HORIZONTAL LINE EQUAL TO 1000 P.S.I.

Flow Time	1st 6 Min.	2nd 60 Min.	Date	8-18-64	Ticket Number	419213 - S	Legal Location Sec. - Twp. - Rng. C 23 - NE 25 - NE 8W	
Closed In Press. Time	1st 30 Min.	2nd 30 Min.	Kind of Job	OPEN HOLE	Halliburton District	PRATT		
Pressure Readings	Field	Office Corrected	Tester	THOMPSON	Witness	BLACK		
Depth Top Gauge	3735' Ft.	NO Blanked Off	Drilling Contractor	A.L. JACKSON DRILLING COMPANY			BM	
BT. P.R.D. No.	585	12 Hour Clock	Elevation	1561' D.F.	Top Packer	3745'	Well No.	
Initial Hydro Mud Pressure	2016	2039	Total Depth	3772'	Bottom Packer	3750'		
Initial Closed in Pres.	1171	1173	Interval Tested	(NET PAY 21') 3750' - 3772'	Formation Tested	MISSISSIPPI		
Initial Flow Pres.	155 1	210	Casing or Hole Size	7 7/8"	Casing Perfs. { Top - Bot. -		Field Area	
Final Flow Pres.	128 1	142	Surface Choke	1"	Bottom Choke	3/4"		
Final Closed in Pres.	155 2	154	Size & Kind Drill Pipe	4 1/2" F H	Drill Collars Above Tester	I.D. - LENGTH -		
Final Hydro Mud Pressure	1997	2022	Mud Weight	10.3	Mud Viscosity	52	Test No.	
Depth Cen. Gauge	Ft.	Blanked Off	Temperature	107 °F Est. °F Actual	Anchor Size & Length	ID 3.37" OD 5" X 22'		
BT. P.R.D. No.		Hour Clock	Depths Mea. From	KELLY BUSHING	Depth of Tester Valve	3735' Ft.		
Initial Hydro Mud Pres.			TYPE AMOUNT	Cushion	NONE	Depth Back Pres. Valve	- Ft.	
Initial Closed in Pres.			Recovered	130'	Feet of very slightly oil cut mud		Med. From Tester Valve	
Initial Flow Pres.	1		Recovered	120'	Feet of water			
Final Flow Pres.	1		Recovered		Feet of			
Final Closed in Pres.			Recovered		Feet of		County	
Final Hydro Mud Pres.			Oil A.P.I. Gravity	-	Water Spec. Gravity	-		
Depth Bot. Gauge	3768' Ft.	YES Blanked Off	Gas Gravity	-	Surface Pressure	0# psi		
BT. P.R.D. No.	297	12 Hour Clock	Tool Opened	2:43 A.M. P.M.	Tool Closed	4:18 A.M. P.M.	RENO	
Initial Hydro Mud Pres.	2000	2077	Remarks	On bottom @ 2:40 - tool opened @ 2:43 for				
Initial Closed in Pres.	1167	1178	a 6 minute first flow with gas to the surface in					
Initial Flow Pres.	133 1	238	2 1/2 minutes. Tool closed @ 2:48. Rotated tool for					
Final Flow Pres.	80 1	144	a 30 minute initial closed in pressure. Tool re-					
Final Closed in Pres.	1052	1072	opened @ 3:18 with maximum gas 877.000 - stabilized					
Final Hydro Mud Pres.	-	2031	@ 734,000 MCF. Tool closed @ 4:18. Took a 30 minute final closed in pressure. Off bottom @ 4:48.					

FORMATION TEST DATA

5

Lease Name

Well No.

Test No.

Field Area

Med. From Tester Valve

County

RENO

State

KANSAS

Owner's District

23-20

KRHEIBLE

1

2

E.O.H. RUGGS

Lease Owner/Company Name

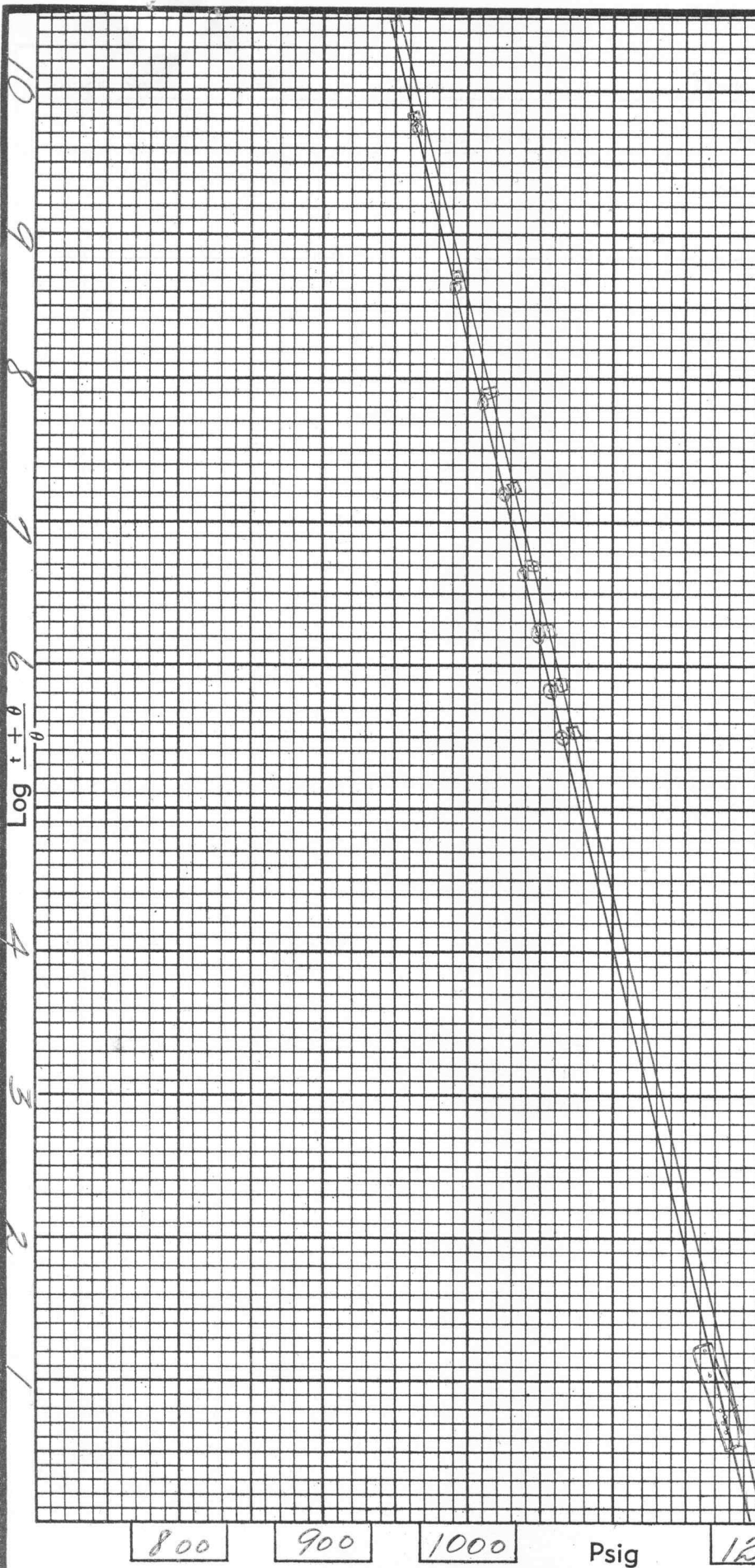
KANSAS

Gauge No. 585			Depth 3735'			Clock 12 hour		Ticket No. 419213		
First Flow Period			Initial Closed In Pressure			Second Flow Period		Final Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.
P ₀	.000	210	.000	-----	1142	.000	202	.000	-----	154
P ₁	.0053	174	.0204	.410	1086	.106	133	.0179	1.423	834
P ₂	.0106	157	.0408	.251	1125	.212	140	.0358	1.138	922
P ₃	.0159	147	.0612	.183	1142	.318	146	.0537	.977	965
P ₄	.0212	143	.0816	.144	1152	.424	154	.0716	.867	992
P ₅	.0265	141	.1020	.119	1159			.0895	.785	1011
P ₆	.032	142	.1224	.101	1163			.1074	.720	1027
P ₇			.1428	.088	1167			.1253	.666	1039
P ₈			.1632	.078	1169			.1432	.622	1049
P ₉			.1836	.070	1172			.1611	.583	1058
P ₁₀			.204	.063	1173			.179	.550	1066

Gauge No. 297			Depth 3768'			Clock 12 hour				
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t + \theta}{\theta}$	PSIG Temp. Corr.
P ₀	.000	238	.000	-----	1144	.000	219	.000	-----	157
P ₁	.0052	176	.019	.420	1079	.105	137	.0175	1.428	801
P ₂	.0104	160	.038	.259	1130	.210	138	.0350	1.143	919
P ₃	.0156	151	.057	.189	1147	.315	149	.0525	.982	963
P ₄	.0208	146	.076	.149	1157	.420	157	.0700	.872	993
P ₅	.0260	144	.095	.123	1164			.0875	.789	1016
P ₆	.031	144	.114	.104	1168			.1050	.724	1032
P ₇			.133	.091	1172			.1225	.670	1045
P ₈			.152	.081	1175			.1400	.625	1056
P ₉			.171	.072	1177			.1575	.587	1065
P ₁₀			.190	.066	1178			.175	.554	1072
Reading Interval 1			3			15		3		Minutes

REMARKS:

SPECIAL PRESSURE DATA



TICKET NO.	419213	
BT GAUGE NO.	INITIAL	FINAL
585		
297		

EXTRAPOLATED PRESSURE GRAPH

Gas Production

B.T. Gauge Numbers			585	297	Ticket Number 8-18-64	419213
Initial Hydrostatic			PRESSURE 2039	PRESSURE 2077	Elevation	1561' ft.
Final Hydrostatic			2022	2031	Production Initial	m cu. ft.
1st Flow	Initial	Time — — — —	210	238	Rate Final	m cu. ft.
	Final	6	142	144	Hole Size	7.87 in.
Initial Closed In Pressure			30	1173	1178	Footage Tested
						NET 21 ft.
2nd Flow	Initial	— — — —	202	219	Mud Weight	10.3 lbs. gal.
	Final	60	154	157	Gas Viscosity	.014 cp
Final Closed In Pressure			30	1066	1072	Gas Gravity
						.60 —
Extrapolated Static Pressure	Initial		—	—	Gas Compressibility	.85 —
	Final		1195	1204	TEMP.	107
Slope Per Cycle P-10	Initial		—	—		
	Final		958	965		

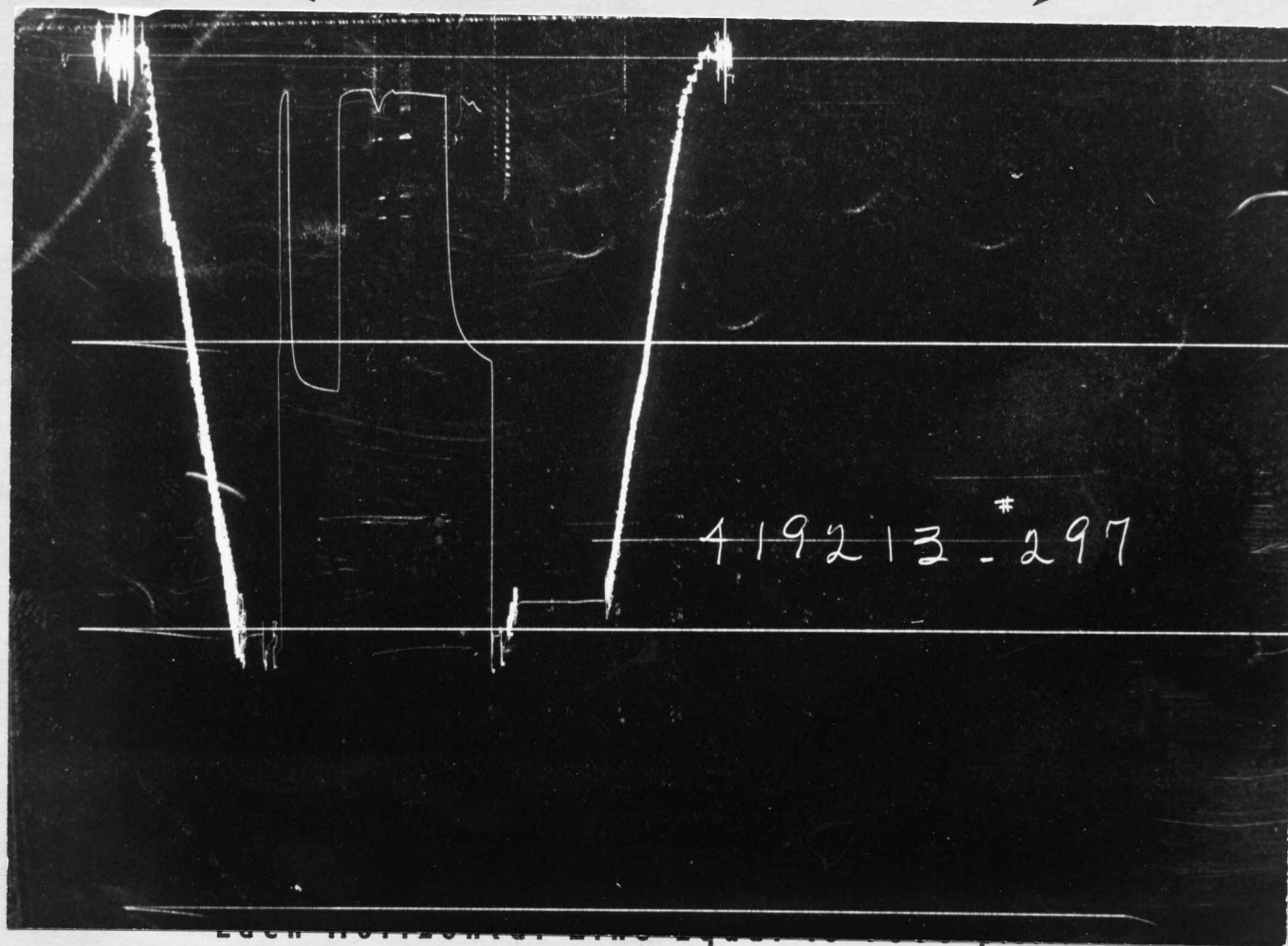
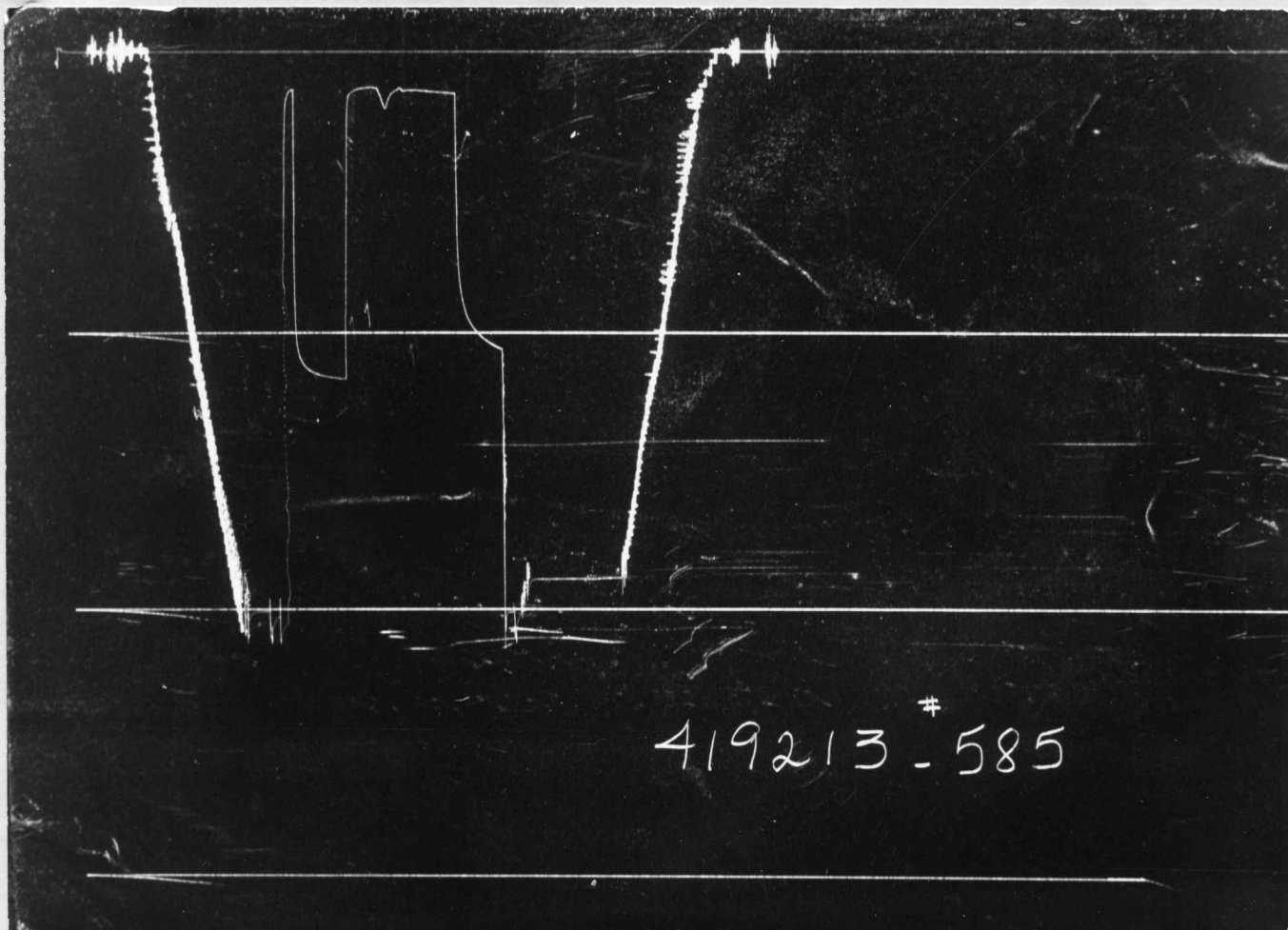
Remarks: _____

SUMMARY		BT Gauge Number Depth	585/3735'	BT Gauge Number Depth	297 / 3768'	
Product	Equation	Initial	Final	Initial	Final	Units
Transmissability	$\frac{Kh}{\mu} = \frac{1637 Q_e ZT}{m}$		1134		1117	md. ft. cp
Theoretical Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$		15.89		15.64	md. ft.
Average Effective	$K = \frac{Kh}{h}$		.756		.744	md.
Permeability	$K_1 = \frac{Kh}{h_1}$					md.
Indicated Flow Capacity	$(Kh)_2 = \frac{3200 Q_e \mu ZT \text{ Log}(0.472 b/r_w)}{P_s^2 - P_F^2}$		11.83		11.63	md. ft.
Damage Ratio	$DR = \frac{\text{Theo. Flow Cap}}{\text{Indicated Flow Cap}} \frac{Kh}{(Kh)_2}$		1.34		1.34	—
Indicated	$OF_1 = \frac{Q_e P_s^2}{P_s^2 - P_F^2} \quad \text{Max.}$		746.		746	MCFD
Flow Rate	$OF_2 = \frac{Q_e P_s}{\sqrt{P_s^2 - P_F^2}} \quad \text{Min.}$		740.		740	MCFD
Theoretical	$OF_3 = OF_1 DR \quad \text{Max.}$		1002		1004	MCFD
Potential Rate	$OF_4 = OF_2 DR \quad \text{Min.}$		993		995	MCFD
Approx. Radius of Investigation	$b \approx \sqrt{Kt} \text{ or } \sqrt{Kt_0}$		7.39		7.34	ft.
	$b_1 \approx \sqrt{K_1 t} \text{ or } \sqrt{K_1 t_0}$					ft.
Potentiometric Surface *	Pot. = (EI — GD) + (2.319 Ps)		597.		585.	ft.

NOTICE. These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Halliburton is merely expressing its opinion. You agree that Halliburton makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Halliburton shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

INTERPRETATIONS AND CALCULATIONS

↑
PRESSURE
↓



Flow Time	1st	Min.	2nd	Min.	Date	8-21-64	Ticket Number	423063 - S
Closed In Press. Time	1st	Min.	2nd	Min.	Kind of Job	OPEN HOLE	Halliburton District	PRATT
Pressure Readings	Field		Office Corrected		Tester	MR. CLINE	Witness	MR. BLACK
Depth Top Gauge	4114 Ft.		NO Blanked Off		Drilling Contractor	A. I. JACKSON DRILLING COMPANY IC		
BT. P.R.D. No.	526		12 Hour Clock		Elevation	1561' D.F.	Top Packer	4107'
Initial Hydro Mud Pressure	2278		2218		Total Depth	4137'	Bottom Packer	4112'
Initial Closed in Pres.	1453		1461		Interval Tested	4112'-4137'	Formation Tested	SIMPSON
Initial Flow Pres.	62	1	84		Casing or Hole Size	7 7/8"	Casing Perfs. { Top Bot.	-
Final Flow Pres.	265	1	262		Surface Choke	1"	Bottom Choke	3/4"
Final Closed in Pres.	1222	2	1223		Size & Kind Drill Pipe	4 1/2" F.H.	Drill Collars Above Tester	I.D. - LENGTH
Final Hydro Mud Pressure	2251		2210		Mud Weight	9.8	Mud Viscosity	50
Depth Cen. Gauge	Ft.		Blanked Off		Temperature	110 °F Est. °F Actual	Anchor Size & Length	ID OD 3.87" X 5.00" 25'
BT. P.R.D. No.			Hour Clock		Depths Mea. From	KELLY BUSHINGS	Depth of Tester Valve	4102' Ft.
Initial Hydro Mud Pres.	136		2114		Cushion	-	Depth Back Pres. Valve	- Ft.
Initial Closed in Pres.	131		2210		Recovered	2640 Feet of	Slightly muddy water	
Initial Flow Pres.	1				Recovered	Feet of		
Final Flow Pres.	1				Recovered	Feet of		
Final Closed in Pres.	130		2114		Recovered	Feet of		
Final Hydro Mud Pres.	211		2210		Oil A.P.I. Gravity	-	Water Spec. Gravity	1.155 @ 85°
Depth Bot. Gauge	4133 Ft.		YES Blanked Off		Gas Gravity	-	Surface Pressure	- psi
BT. P.R.D. No.	231		12 Hour Clock		Tool Opened	1:40 A.M. P.M.	Tool Closed	3:45 A.M. P.M.
Initial Hydro Mud Pres.	2303		2283		Remarks	Opened tool for 5 minute 1st flow. Closed		
Initial Closed in Pres.	1468		1476			tool for 30 minute initial closed in pressure.		
Initial Flow Pres.	90	1	101			Reopened tool for 60 minute 2nd flow with very		
Final Flow Pres.	270	2	301			strong blow decreasing to weak during test.		
Final Closed in Pres.	270	1	277			Closed tool for 30 minute final closed in		
Final Hydro Mud Pres.	1234	2	1238			pressure.		

FORMATION TEST DATA

KREIBBLE

1

3

E. H. RIGGS

Lease Owner/Company Name

WICHITA

Owner's District

Legal Location

Sec. 23 - 25S - 8W

Field Area

WILDCAT

County

RENO

State

KANSAS

Lease Name

1

3

E. H. RIGGS

Lease Owner/Company Name

WICHITA

Owner's District

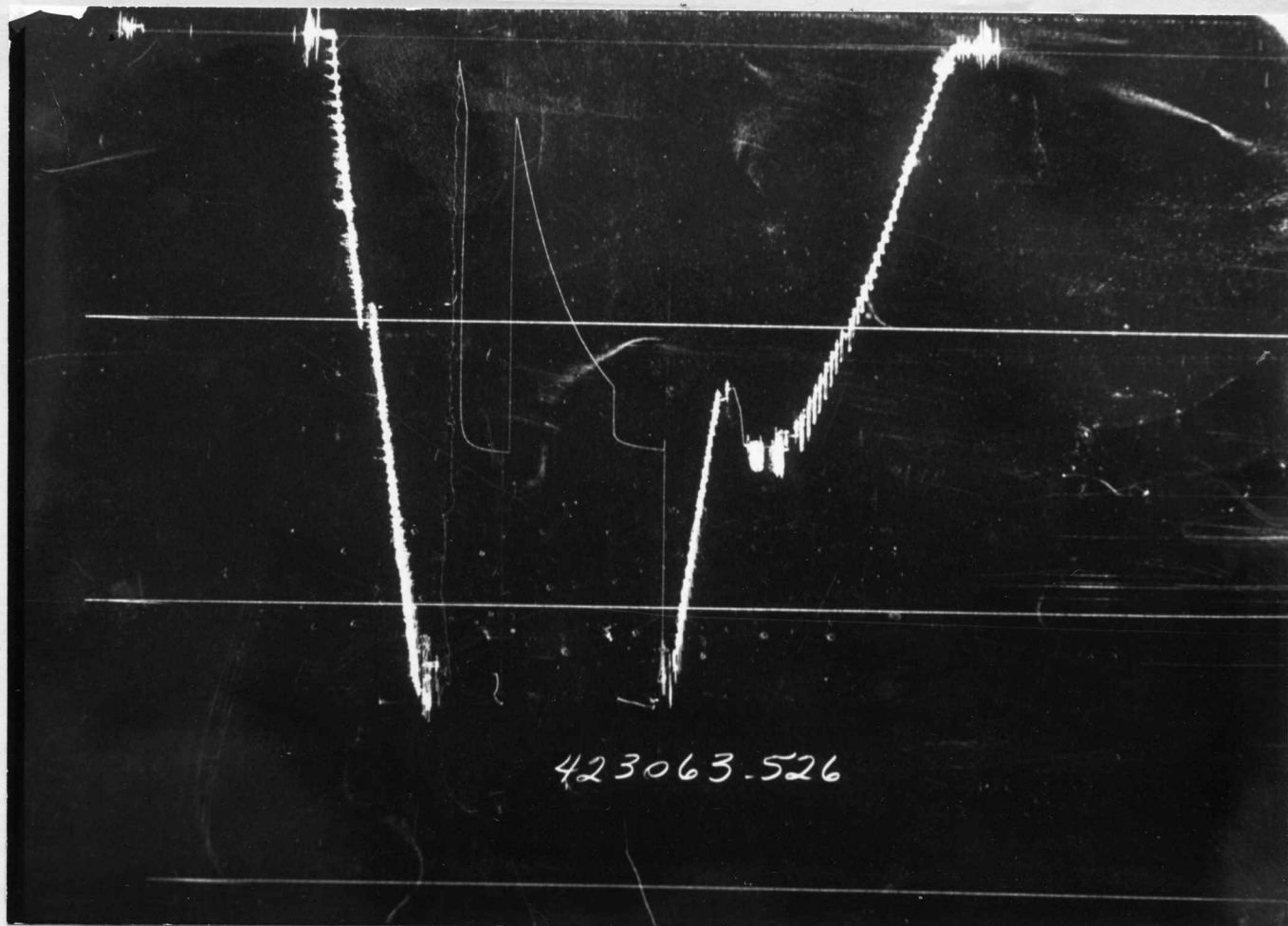
Gauge No. 526			Depth 4114			Clock 12 hour			Ticket No. 423063		
First Flow Period			Initial Closed In Pressure			Second Flow Period			Final Closed In Pressure		
Time Defl. .000"	PSIG Temp. Corr.		Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.		Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
P ₀	.000	84	.000		262	.000	285		.000		1223
P ₁	.0072	128	.019		1417	.101	670		.0201		1411
P ₂	.0144	161	.038		1434	.202	931		.0402		1420
P ₃	.0216	194	.057		1443	.303	1105		.0603		1426
P ₄	.0288	227	.076		1448	.404	1223		.0804		1431
P ₅	.0360	262	.095		1452				.1005		1434
P ₆	.0432	295	.114		1455				.1206		1437
P ₇	.0504	327	.133		1457				.1407		1439
P ₈	.0576	359	.152		1458				.1608		1440
P ₉	.0648	392	.171		1460				.1809		1442
P ₁₀	.0720	424	.190		1461				.2010		1444

Gauge No. 231			Depth 4133			Clock 12		hour		
P ₀	.000	101	.000		277	.000	301	.000		1238
P ₁	.0078	133	.020		1415	.1023	674	.0196		1425
P ₂	.0156	171	.040		1442	.2046	940	.0392		1434
P ₃	.0234	206	.060		1455	.3069	1117	.0588		1440
P ₄	.0312	244	.080		1461	.4090	1238	.0784		1444
P ₅	.0390	277	.100		1466			.0980		1448
P ₆			.120		1468			.1176		1450
P ₇			.140		1471			.1372		1452
P ₈			.160		1473			.1568		1454
P ₉			.180		1475			.1764		1456
P ₁₀			.200		1476			.1960		1457
Reading Interval 1			3			15		3 Minutes		

REMARKS:

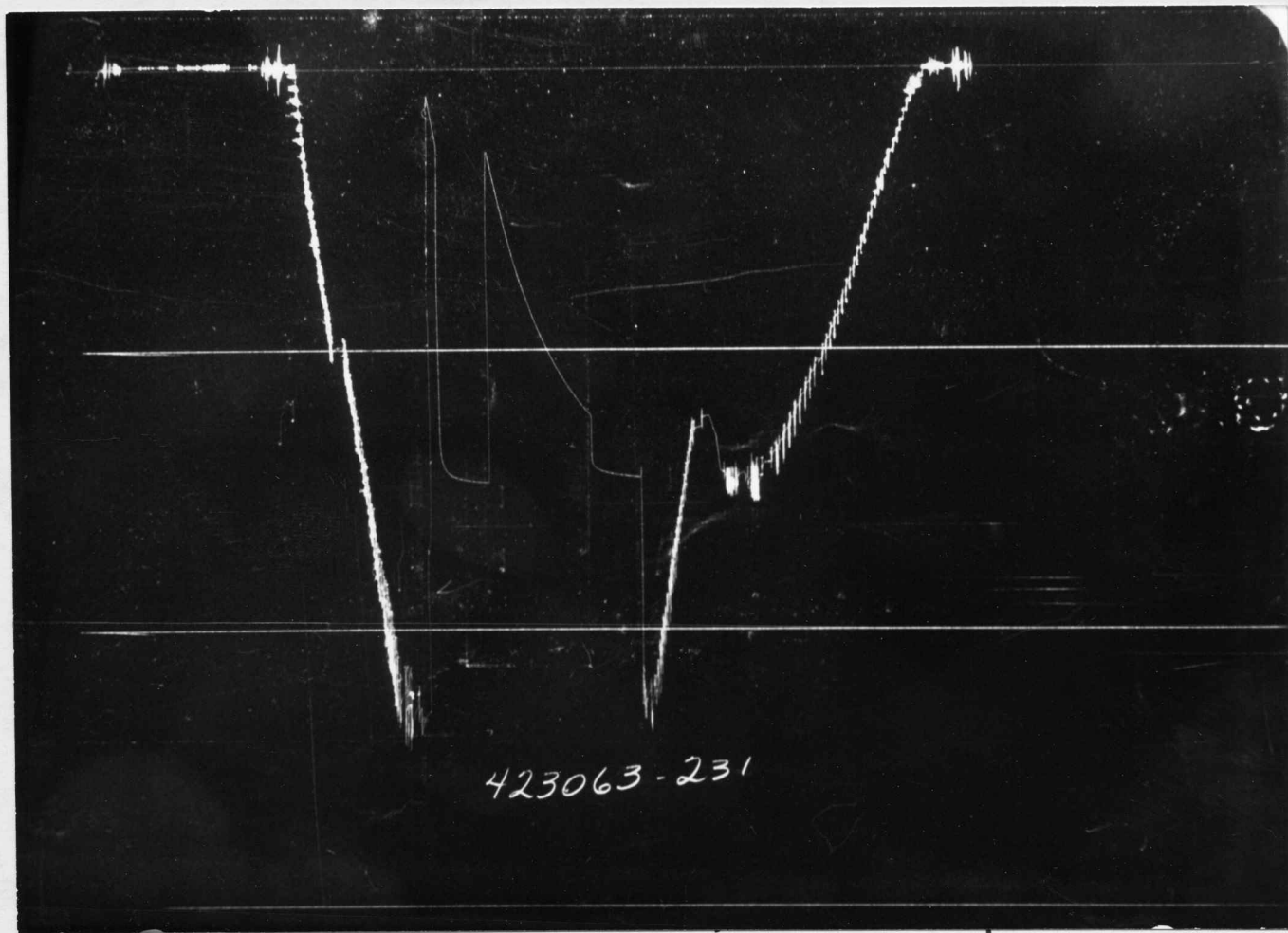
SPECIAL PRESSURE DATA

↑
PRESSURE
↓



423063.526

← TIME →



423063-231