

Flow Time	1st 15	Min.	2nd 60	Min.	Date	3-17-64	Ticket Number	399310 S
Closed In Press. Time	1st 30	Min.	2nd 60	Min.	Kind of Job	OPEN HOLE TEST	Halliburton District	PRATT
Pressure Readings	Field			Office Corrected	Tester	MR. SHAUERS	Witness	MR. SHANK
Depth Top Gauge	3519	Ft.	NO	Blanked Off	Drilling Contractor	COMPANY TOOLS		
BT. P.R.D. No.	533		12	Hour Clock	Elevation	1884' K.B.	Top Packer	-
Initial Hydro Mud Pressure	1837		1828		Total Depth	3555'	Bottom Packer	3529'
Initial Closed in Pres.	1332		1324		Interval Tested	3529'-3555'	Formation Tested	KANSAS CITY
Initial Flow Pres.	19	1	20		Casing or Hole Size	7 7/8"	Casing Perfs. { Top	
	28	2	21				Bot.	
Final Flow Pres.	19	1	27		Surface Choke	1"	Bottom Choke	3/4"
Final Closed in Pres.	1322		1322		Size & Kind Drill Pipe	4 1/2" F.H.	I.D. - LENGTH	
Final Hydro Mud Pressure	1808		1811		Mud Weight	9.8	Mud Viscosity	40
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	100	Anchor Size	ID 3.84" X 26'
BT. P.R.D. No.				Hour Clock	Depths Mea. From	KELLY BUSHINGS	Depth of Tester Valve	3518' Ft.
Initial Hydro Mud Pres.					TYPE AMOUNT		Depth Back Pres. Valve	Ft.
Initial Closed in Pres.					Cushion	-		Ft.
Initial Flow Pres.		1			Recovered	100	Feet of Gas cut mud	
Final Flow Pres.		2			Recovered		Feet of	
Final Closed in Pres.		1			Recovered		Feet of	
Final Hydro Mud Pres.		2			Recovered		Feet of	
Depth Bot. Gauge	3551	Ft.	YES	Blanked Off	Oil A.P.I. Gravity	-	Water Spec. Gravity	-
BT. P.R.D. No.	534		12	Hour Clock	Gas Gravity	-	Surface Pressure	psi
Initial Hydro Mud Pres.	1857		1842		Tool Opened	2:52 AM	A.M. Tool Closed	5:37 AM P.M.
Initial Closed in Pres.	1335		1331		Remarks Opened tool at 2:52 for 15 minute 1st flow			
Initial Flow Pres.	19	1	36		with good blow. Closed tool at 3:07 for 30 min.			
Final Flow Pres.	29	2	34		initial closed in pressure. Reopened tool at 3:3			
Final Closed in Pres.	1325		1328		for 60 minute 2nd flow with good blow; gas to			
Final Hydro Mud Pres.	1817		1818		surface at 3:38. Closed tool for 60 minute final			
					dosed in pressure at 4:37.			

FORMATION TEST DATA

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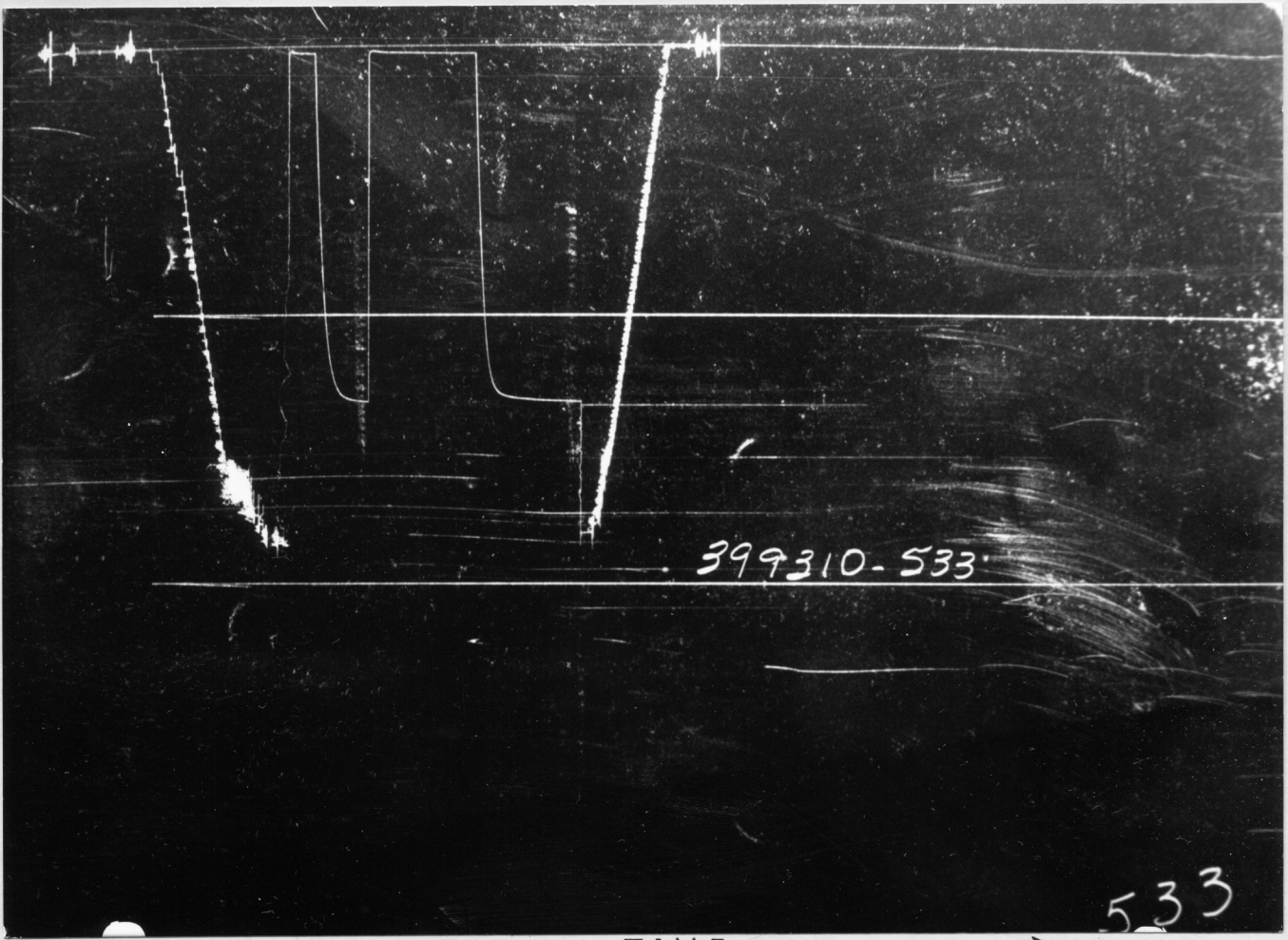
BYERS #1
 Lease Name
 Well No.
 Test No.
 FIELD AREA
 COUNTY
 STAFFORD
 STATE
 KANSAS
 Owner's District
 STICKLE DRILLING COMPANY
 Lease Owner/Company Name

Legal Location
 Sec. - Twp. - Rng.
 SEC. 21 - 24 - 12

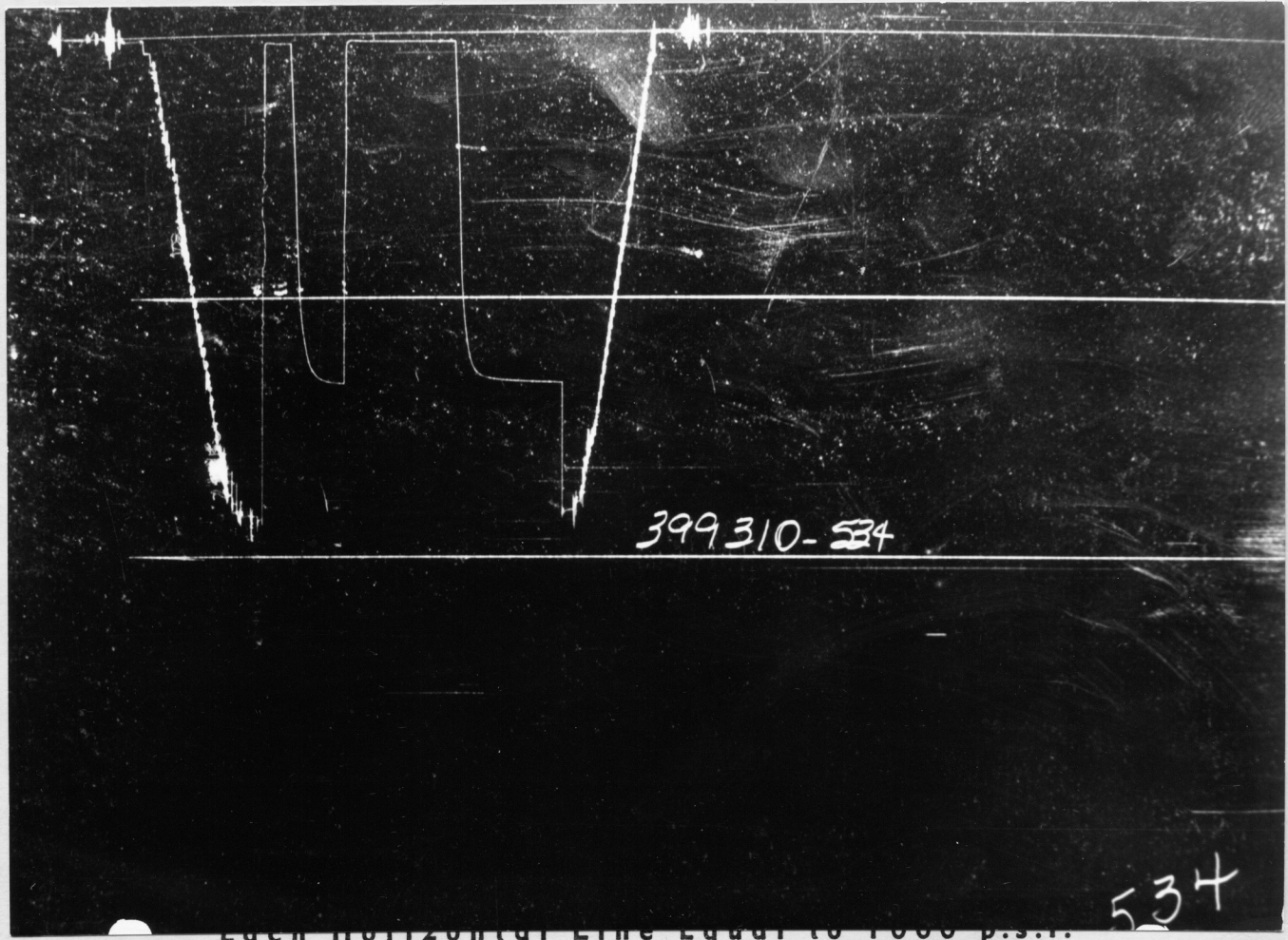
Gauge No. 533		Depth 3519'			Clock 12 hour		Ticket No. 399310			
First Flow Period		Initial Closed In Pressure			Second Flow Period		Final Closed In Pressure			
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{e}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{e}$	PSIG Temp. Corr.	
P ₀	.000	20	.000		27	.000	21	.000		29
P ₁	.020	23	.0217		626	.104	25	.042		1047
P ₂	.040	26	.0434		985	.208	27	.084		1276
P ₃	.060	25	.0651		1176	.312	29	.126		1303
P ₄	.080	27	.0868		1260	.416	29	.168		1309
P ₅	.100	27	.1085		1297			.210		1313
P ₆			.1302		1311			.252		1316
P ₇			.1519		1318			.294		1319
P ₈			.1736		1321			.336		1320
P ₉			.1953		1324			.378		1321
P ₁₀			.2170		1324			.420		1322
Gauge No. 534		Depth 3551'			Clock 12 hour					
P ₀	.000	36	.000		36	.000	34	.000		35
P ₁	.102	36	.0214		590	.428	35	.0423		1132
P ₂			.0428		1063			.0846		1287
P ₃			.0642		1215			.1269		1309
P ₄			.0856		1279			.1692		1316
P ₅			.1070		1307			.2115		1319
P ₆			.1284		1319			.2538		1322
P ₇			.1498		1326			.2961		1324
P ₈			.1712		1329			.3384		1325
P ₉			.1926		1331			.3807		1326
P ₁₀			.2140		1331			.4230		1328
Reading Interval 3		3			15		6 Minutes			
REMARKS:										

SPECIAL PRESSURE DATA

↑
PRESSURE
↓



← TIME →



Each horizontal line equal to 1000 p.s.i.

BYERS

Lease Name

Well No.

Test No.

STICKLE DRILLING COMPANY
Lease Owner/Company Name

KANSAS
Owner's District

Flow Time	1st 15	Min.	2nd 60	Min.	Date	3-17-64	Ticket Number	399311 S
Closed In Press. Time	1st 30	Min.	2nd 60	Min.	Kind of Job	Open Hole	Halliburton District	Pratt
Pressure Readings	Field		Office Corrected		Tester	G.L. Shauers	Witness	Charley Shank
Depth Top Gauge	3560	Ft.	no	Blanked Off	Drilling Contractor	Company tools		
BT. P.R.D. No.	533		12	Hour Clock	Elevation	1884' KB	Top Packer	
Initial Hydro Mud Pressure	1856		1840		Total Depth	3591'	Bottom Packer	3569'
Initial Closed in Pres.	1322		1323		Interval Tested	3569-3591' (6')	Formation Tested	Kansas City
Initial Flow Pres.	28	1	33		Casing or Hole Size	7 7/8"	Casing Perfs.	Top
	48	2	43					Bot.
Final Flow Pres.	38	1	48		Surface Choke	1"	Bottom Choke	3/4"
Final Closed in Pres.	1313		1314		Size & Kind Drill Pipe	4 1/2" API FH	Drill Collars Above Tester	I.D. - LENGTH 2 1/4" x 140'
Final Hydro Mud Pressure	1837		1831		Mud Weight	9.8	Mud Viscosity	40
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	108	Anchor Size & Length	ID 3.81" X OD 5" 22'
BT. P.R.D. No.				Hour Clock	Depths Mea. From	Kelly bushing	Depth of Tester Valve	3559 Ft.
Initial Hydro Mud Pres.					TYPE AMOUNT		Depth Back Pres. Valve	Ft.
Initial Closed in Pres.					Cushion			
Initial Flow Pres.		1			Recovered	270	Feet of	slight oil & gas cut watery mud with show of free oil
Final Flow Pres.		2			Recovered		Feet of	
Final Closed in Pres.		1			Recovered		Feet of	
Final Hydro Mud Pres.		2			Recovered		Feet of	
Initial Hydro Mud Pres.					Oil A.P.I. Gravity		Water Spec. Gravity	1.135
Depth Bot. Gauge	3586	Ft.	yes	Blanked Off	Gas Gravity		Surface Pressure	psi
BT. P.R.D. No.	534		12	Hour Clock	Tool Opened	2:25 PM	A.M. P.M. Tool Closed	5:10 PM A.M. P.M.
Initial Hydro Mud Pres.	1877		1852		Remarks	Open tool at 2:25 with a strong blow,		
Initial Closed in Pres.	1335		1330			gas to surface in 10 mins. Closed 2:40		
Initial Flow Pres.	38	1	47			for 30 mins. Reopen 3:10 gauged 60 maf		
Final Flow Pres.	48	2	55			in 5 mins and throughout test. Closed 4:10		
Final Closed in Pres.	1325		1316			for 60 mins. Off bottom 5:10.		
Final Hydro Mud Pres.	1857		1843					

Legal Location Sec. - Twp. - Rng. SEC. 21 - 24 - 12 Field/ORTH STAR NORTH County STAFFORD State KANSAS

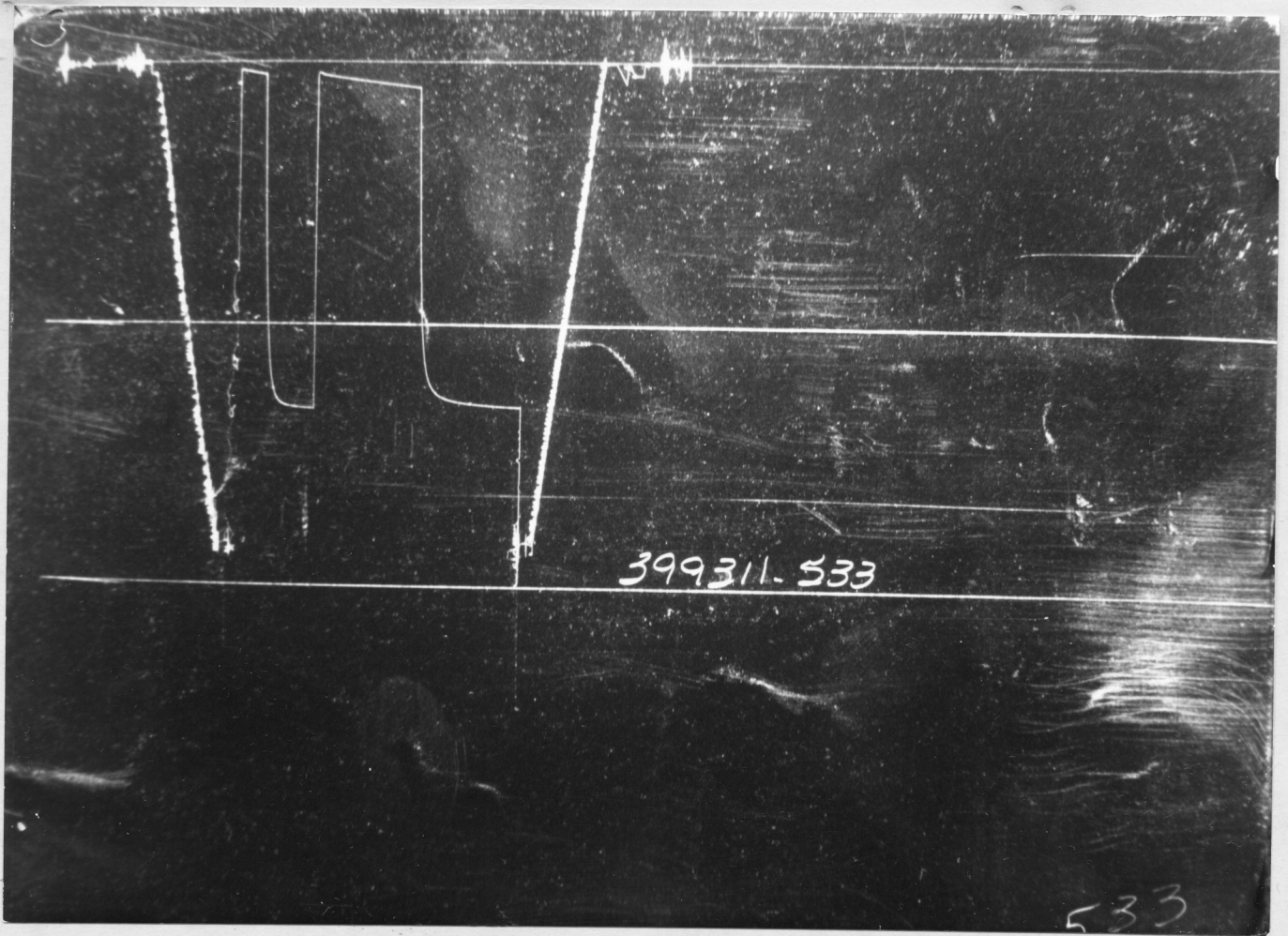
FORMATION TEST DATA

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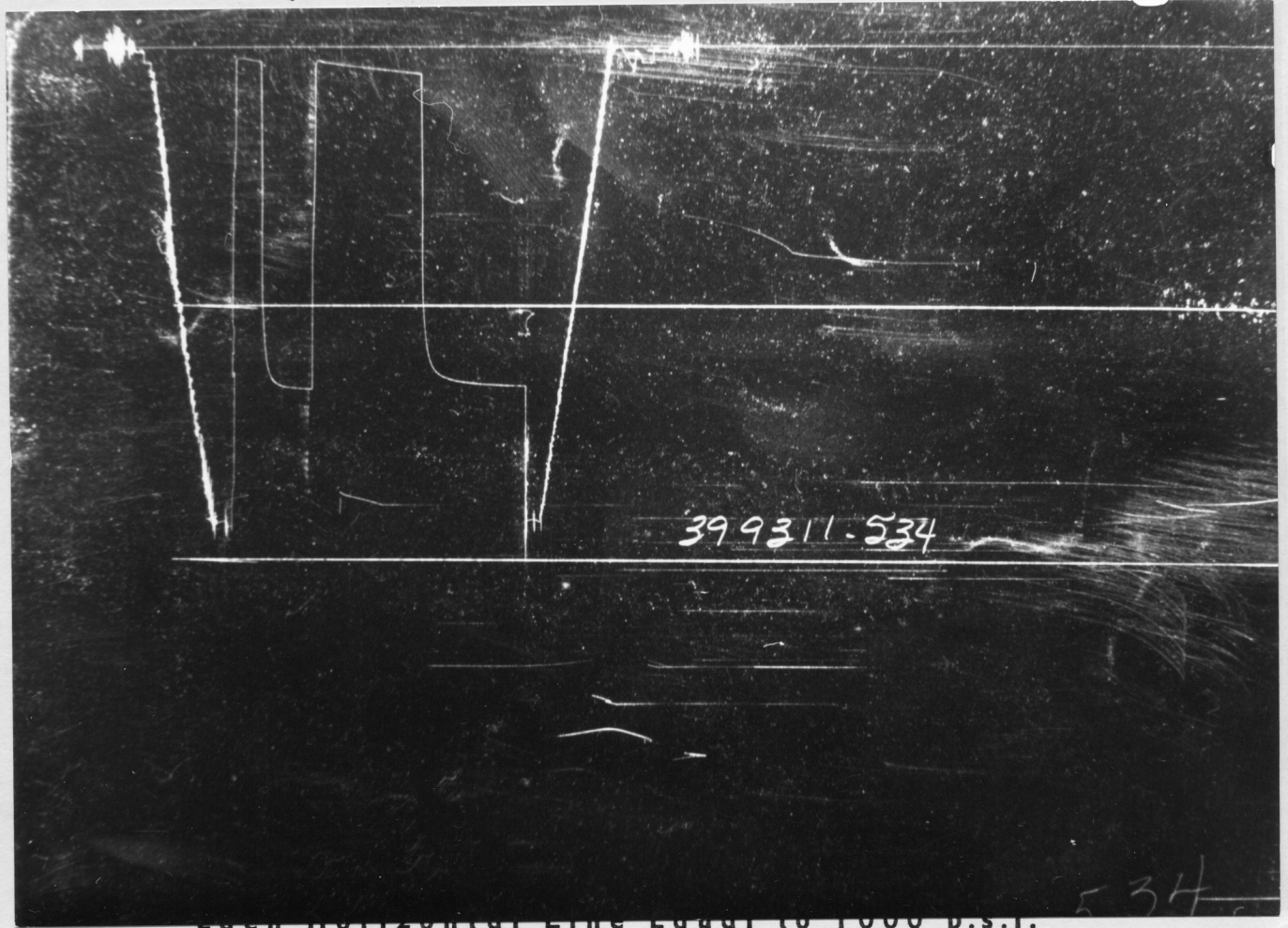
Gauge No.		533		Depth		3560'		Clock		12 hour		Ticket No.		399311	
First Flow Period			Initial Closed In Pressure			Second Flow Period			Final Closed In Pressure						
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{e}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{e}$	PSIG Temp. Corr.					
P ₀	.000	33	.000		48	.000	43	.000		99					
P ₁	.0208	35	.0215		953	.1038	62	.0425		1190					
P ₂	.0416	38	.0430		1222	.2076	76	.0850		1267					
P ₃	.0624	42	.0645		1287	.3114	86	.1275		1287					
P ₄	.0832	45	.0860		1306	.4150	99	.1700		1295					
P ₅	.1040	48	.1075		1313			.2125		1302					
P ₆			.1290		1317			.2560		1305					
P ₇			.1505		1320			.2975		1307					
P ₈			.1720		1322			.3400		1310					
P ₉			.1935		1322			.3825		1312					
P ₁₀			.2150		1323			.4250		1314					
Gauge No.		534		Depth		3586'		Clock		12 hour					
P ₀	.000	47	.000		56	.000	55	.000		106					
P ₁	.020	44	.0218		1109	.1063	70	.0428		1220					
P ₂	.040	47	.0436		1267	.2126	83	.0856		1275					
P ₃	.060	51	.0654		1303	.3189	95	.1284		1292					
P ₄	.080	53	.0872		1316	.4250	106	.1712		1301					
P ₅	.100	56	.1090		1321			.2140		1307					
P ₆			.1308		1325			.2568		1310					
P ₇			.1526		1327			.2996		1312					
P ₈			.1744		1328			.3424		1314					
P ₉			.1962		1329			.3852		1315					
P ₁₀			.2180		1330			.4280		1316					
Reading Interval		3		3		15		6		Minutes					
REMARKS:															

SPECIAL PRESSURE DATA

PRESSURE



TIME



Each horizontal line equal to 1000 p.s.i.

Flow Time	1st 15 Min.	2nd 60 Min.	Date	3-18-64	Ticket Number	399312 - S
Closed In Press. Time	1st 30 Min.	2nd 60 Min.	Kind of Job	OPEN HOLE	Halliburton District	PRATT, KS.
Pressure Readings	Field	Office Corrected	Tester	SHAUERS	Witness	SHANK
Depth Top Gauge	3657' Ft.	NO Blanked Off	Drilling Contractor	COMPANY TOOLS	Top Packer	-
BT. P.R.D. No.	533	12 Hour Clock	Elevation	1884' K.B.	Bottom Packer	3669'
Initial Hydro Mud Pressure	1914	1945	Total Depth	3694' (NET PAY 8')	Formation Tested	KANSAS CITY
Initial Closed in Pres.	1360	1360	Interval Tested	3669' - 3694'	Casing or Hole Size	7 7/8"
Initial Flow Pres.	48 67	1 58 2 102	Surface Choke	1"	Bottom Choke	3/4"
Final Flow Pres.	76 201	1 73 2 204	Size & Kind Drill Pipe	4 1/2" API F.H.	Drill Collars Above Tester	2 1/4" - 140'
Final Closed in Pres.	1351	1348	Mud Weight	9.7	Mud Viscosity	44
Final Hydro Mud Pressure	1894	1909	Temperature	104 °F Actual	Anchor Size & Length	ID 3.84" x 25' OD 5"
Depth Cen. Gauge		Blanked Off	Depths Mea. From	KELLY BUSHING	Depth of Tester Valve	3658' Ft.
BT. P.R.D. No.		Hour Clock	Cushion	NONE	Depth Back Pres. Valve	- Ft.
Initial Hydro Mud Pres.			Recovered	750' Feet of	gassy oil	
Initial Closed in Pres.			Recovered			
Initial Flow Pres.		1	Recovered			
Final Flow Pres.		2	Recovered			
Final Closed in Pres.			Recovered			
Final Hydro Mud Pres.			Oil A.P.I. Gravity	33	Water Spec. Gravity	-
Depth Bot. Gauge	3689' Ft.	YES Blanked Off	Gas Gravity	-	Surface Pressure	0# psi
BT. P.R.D. No.	534	12 Hour Clock	Tool Opened	10:36 AM A.M.	Tool Closed	1:21 PM A.M.
Initial Hydro Mud Pres.	1956	1943	Remarks Tool opened @ 10:36 AM for a 15 minute first			
Initial Closed in Pres.	1364	1365	flow with a strong blow. Gas to the surface in 8			
Initial Flow Pres.	57 67	1 84 2 109	minutes - gauged 42 mcf in 5 minutes. Tool closed			
Final Flow Pres.	77 202	1 73 2 209	@ 10:51. Rotated tool for a 30 minute initial closed			
Final Closed in Pres.	1354	1354	in pressure. Tool reopened @ 11:21 - gas gauged 73			
Final Hydro Mud Pres.	1926	1913	mcf in 2 minutes - 49 mcf in 5 minutes - 34 mcf in 10			
minutes - gradually decreasing to a fair blow at the end of the test. Tool closed @ 12:21. Took a 60 minute final						

FORMATION TEST DATA

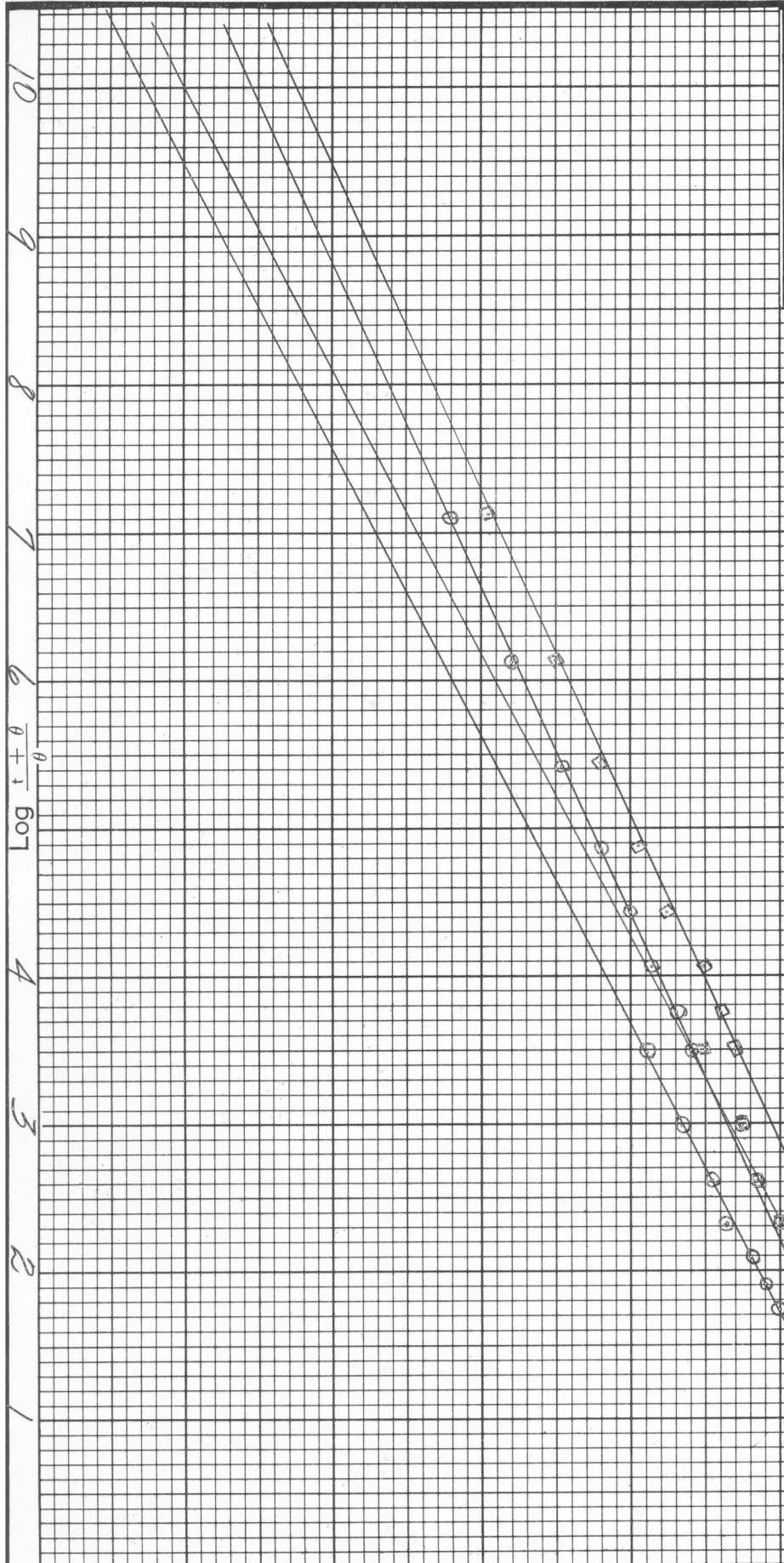
closed in pressure. Off bottom @ 1:21. 5

Legal Location SE-SE-NE - 21 - 24 - 12
 Well No. 1
 Test No. 3
 Field Area NORTH STAR NORTH
 County STAFFORD
 State KANSAS
 Lease Name BYERS
 Lease Owner/Company Name STICKLE DRILLING COMPANY
 Owner's District KANSAS

Gauge No. 533		Depth 3657'				Clock 12 hour		Ticket No. 399312		
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	58	.000	-----	73	.000	102	.000	-----	204
P ₁	.0216	44	.0218	.775	1009	.1035	110	.0421	1.127	1234
P ₂	.0432	49	.0436	.541	1305	.2070	145	.0842	.857	1302
P ₃	.0648	56	.0654	.423	1333	.3105	177	.1263	.710	1316
P ₄	.0864	62	.0872	.350	1342	.414	204	.1684	.613	1324
P ₅	.108	73	.1090	.300	1347			.2105	.542	1331
P ₆			.1308	.261	1351			.2526	.487	1336
P ₇			.1526	.232	1353			.2947	.443	1340
P ₈			.1744	.209	1356			.3368	.407	1343
P ₉			.1962	.190	1358			.3789	.376	1346
P ₁₀			.218	.175	1360			.421	.350	1348
Gauge No. 534		Depth 3689'				Clock 12 hour				
P ₀	.000	84	.000	-----	73	.000	109	.000	-----	209
P ₁	.022	50	.0222	.775	1224	.1055	115	.0427	1.129	1262
P ₂	.044	53	.0444	.541	1323	.2110	148	.0854	.859	1309
P ₃	.066	59	.0666	.424	1341	.3165	181	.1281	.712	1321
P ₄	.088	66	.0888	.350	1350	.422	209	.1708	.614	1330
P ₅	.110	73	.1110	.299	1355			.2135	.543	1336
P ₆			.1332	.261	1357			.2562	.488	1341
P ₇			.1554	.232	1360			.2989	.444	1345
P ₈			.1776	.209	1362			.3416	.408	1349
P ₉			.1998	.190	1364			.3843	.377	1352
P ₁₀			.222	.175	1365			.427	.351	1354
Reading Interval 3		3				15		6 Minutes		
REMARKS:										

SPECIAL PRESSURE DATA

TICKET NO.	399312	
BT GAUGE NO.	INITIAL	FINAL
533	○	○
534	◇	◇



1280 1300 1320 Psig 1360 1380 1400

EXTRAPOLATED PRESSURE GRAPH

Liquid Production

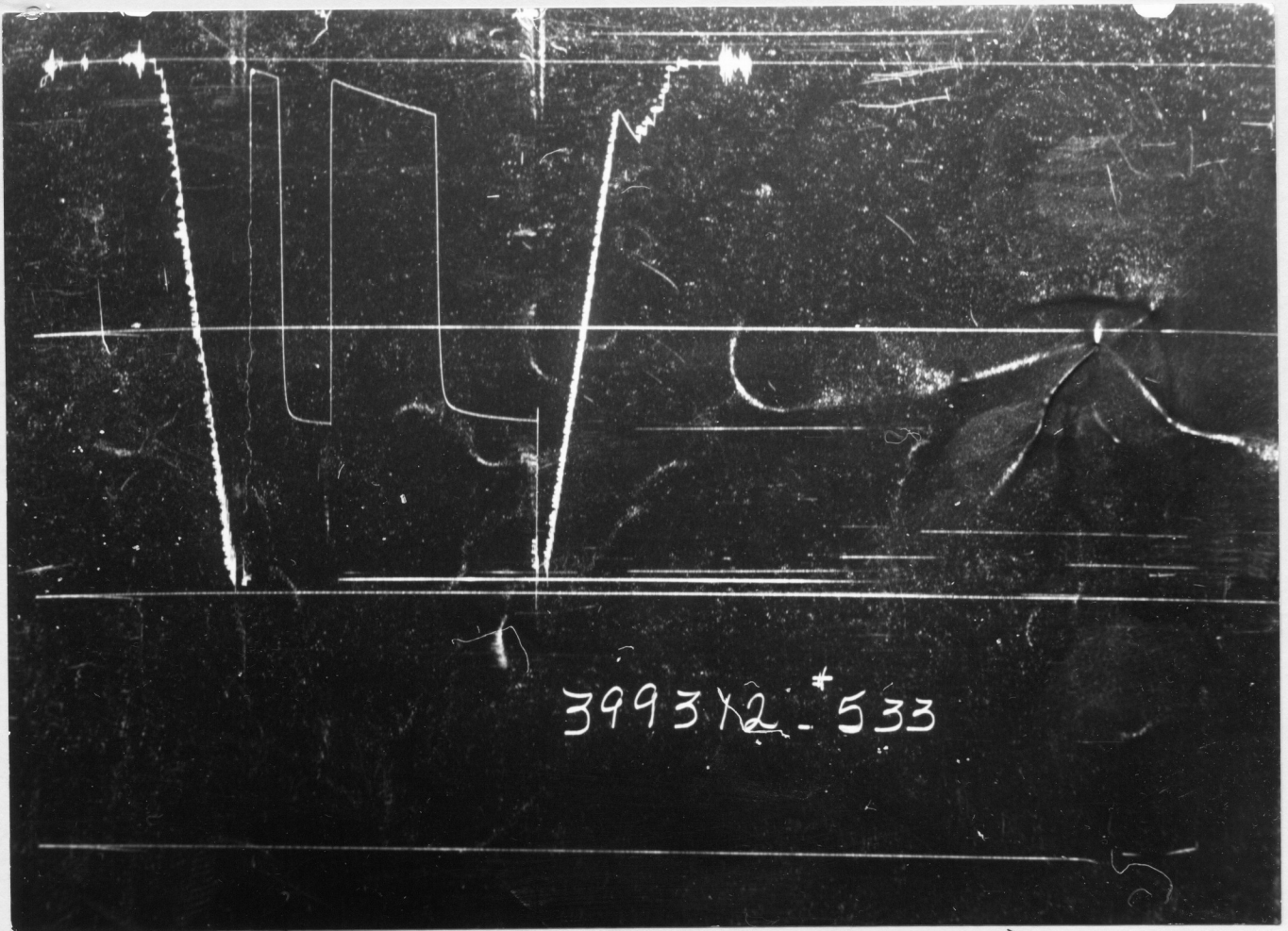
B.T. Gauge Numbers		533	534	Ticket Number 3-18-64	399312	
Initial Hydrostatic		PRESSURE 1945	PRESSURE 1943	Elevation	1884 ft.	
Final Hydrostatic		1909	1913	Indicated Production	1st Flow bbls. day	
1st Flow	Initial	Time ----- 58	84		Total Flow bbls. day	
	Final	15	73	Drill Collar Length	140 ft.	
Initial Closed In Pressure		30	1360	1365	Drill Collar I.D.	2.25 in.
2nd Flow	Initial	----- 102	109	Drill Pipe Factor	.01422 bbls. ft.	
	Final	60	204	209	Hole Size	7.87 in.
Final Closed In Pressure		60	1348	1354	Footage Tested	NET 8' ft.
Extrapolated Static Pressure	Initial	1378	1384	Mud Weight	9.7 lbs. gal.	
	Final	1380	1386	Viscosity, Oil or Water	6.0 cp	
Slope ^{XXXXX} _{psi/cycle} P=10	Initial	1275	1280	Oil API Gravity	33	
	Final	1289	1295	Water Specific Gravity	-	

Remarks: _____

SUMMARY		Gauge No. 533 / 3657' Depth		Gauge No. 534 / 3689' Depth		Units
Product	Equation	Initial	Final	Initial	Final	
Production	$Q = \frac{1440 R}{t}$	108.	114.	99.	114.	bbls. day
Transmissability	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$	171.	205.	155.	205.	md. ft. cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	1030.	1232.	931.	1232.	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$	-	-	-	-	md.
Permeability	$K_r = \frac{Kh}{h_r}$	128.	154.	116.	154.	md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$	2.31	2.36	2.30	2.36	-
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$	252.	271.	228.	272.	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$	-	-	-	-	ft.
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$	43.9	107.5	41.8	107.5	ft.
Potentiometric Surface *	$Pot. = EI - GD + 2.319 P_s$	1422.	1427.	1404.	1409.	ft.

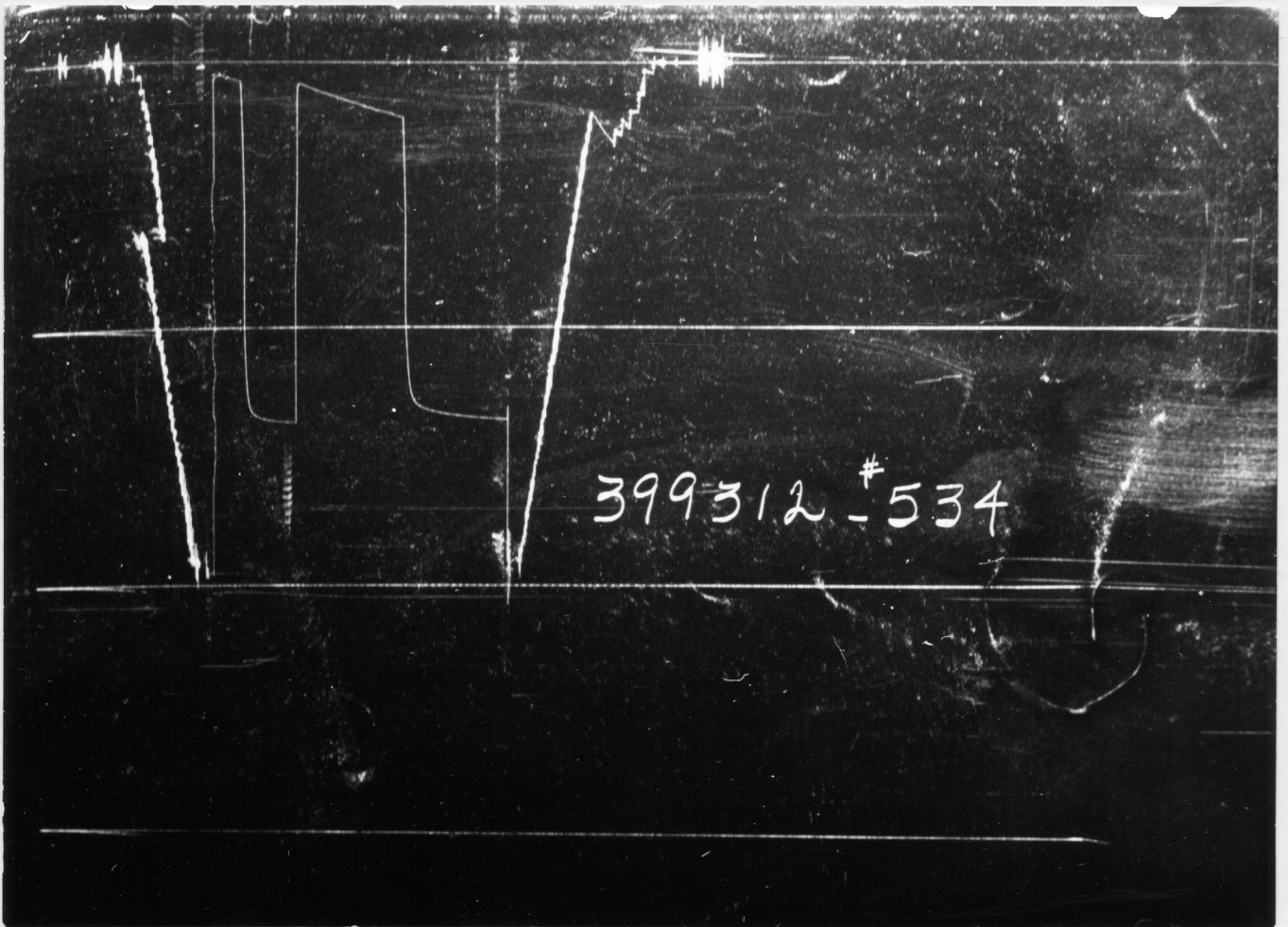
NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Halliburton is merely expressing its opinion. You agree that Halliburton makes 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.

↑
PRESSURE
↓



399312-533

← TIME →



399312-534

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

Flow Time	1st Min.	2nd Min.	Date	Ticket Number	Legal Location
15		17	3-19-64	399313 S	SE
Closed In Press. Time	1st Min.	2nd Min.	Kind of Job	Halliburton District	Sec. - Twp. - Rng.
30		60	OPEN HOLE	PRATT	SE SE NE
Pressure Readings	Field	Office Corrected	Tester	Witness	21
			G. L. SHAUERS	CHARLEY SHANK	24
Depth Top Gauge	Ft.	Blanked Off	Drilling Contractor	Top Packer	12
3888		No	COMPANY TOOLS	3899'	
BT. P.R.D. No.		Hour Clock	Elevation	Bottom Packer	Field Area
533		12	1884' KB	3904'	North
Initial Hydro Mud Pressure			Total Depth	Formation Tested	Star
2019		2021	3914'	Viola	North
Initial Closed in Pres.			Interval Tested	Casing or Hole Size	County
981		991	3904-3914'	7 7/8"	STAFFORD
Initial Flow Pres.			Surface Choke	Bottom Choke	State
259	1	2 59	1"	3/4"	KANSAS
451	2	4 65	Size & Kind Drill Pipe	Drill Collars Above Tester	Owner's District
451	1	4 52	4 1/2" API FH	2 1/4" X -140'	
Final Flow Pres.			Mud Weight	Mud Viscosity	
697	2	7 06	9.8	38	
Final Closed in Pres.			Temperature	Anchor, Size & Length	
981		987	115	ID 3.84" OD 5" X 10'	
Final Hydro Mud Pressure			Depth Mea. From	Depth of Tester Valve	
2000		2018	KB	3889'	
Depth Cen. Gauge	Ft.	Blanked Off	TYPE AMOUNT		
			Cushion	Depth Back Pres. Valve	
BT. P.R.D. No.		Hour Clock			
			Recovered	945 Feet of Gassy Oil in pipe	
Initial Hydro Mud Pres.					
			Recovered	Feet of	
Initial Closed in Pres.					
			Recovered	Feet of	
Initial Flow Pres.					
			Recovered	Feet of	
Final Flow Pres.					
			Recovered	Feet of	
Final Closed in Pres.			Oil A.P.I. Gravity	Water Spec. Gravity	
			41		
Final Hydro Mud Pres.			Gas Gravity	Surface Pressure	
Depth Bot. Gauge	Ft.	Blanked Off	Tool Opened	A.M. P.M.	Tool Closed
3910		Yes	9:03 PM		11:05 PM
BT. P.R.D. No.		Hour Clock	Remarks		
534		12	Tool opened at 9:03, gas to the surface in		
Initial Hydro Mud Pres.			3 minutes, gauged 340 MCF at 9:08, 240 MCF at		
2056		2028	9:10, too small to measure in 15 minutes. Closed		
Initial Closed in Pres.			at 9:18, open at 9:48, oil to surface at 10:00.		
993		993	Closed at 10:05, off bottom at 11:05, waited		
Initial Flow Pres.			until daylight to pull pipe.		
337	1	4 15			
501	2	4 75			
Final Flow Pres.					
473	1	4 88			
704	2	7 04			
Final Closed in Pres.					
993		989			
Final Hydro Mud Pres.					
2026		2 023			

FORMATION TEST DATA

BYERS Lease Name
 SE SE NE 21 24 12
 Well No. 1
 Test No. 4
 Field Area North Star North County STAFFORD State KANSAS
 STICKLE DRILLING COMPANY Lease Owner/Company Name
 KANSAS Owner's District

Gauge No. 533			Depth 3888			Clock 12 hour		Ticket No. 399313		
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	259	.000	-	452	.000	465	.000	-	706
P ₁	.021	271	.0100	1.0607	966*	.0268	518	.020	1.0773	975*
			.0202	.7922	976			.0432	.7831	979
P ₂	.042	304	.0404	.5561	983	.0536	583	.0864	.5483	983
P ₃	.063	350	.0606	.4365	985	.0805	646	.1296	.4297	984
P ₄	.084	403	.0808	.3616	987	.1140	706**	.1728	.3555	985
P ₅	.105	452	.1010	.3095	988			.2160	.3040	985
P ₆			.1212	.2709	989			.2592	.2659	985
P ₇			.1414	.2411	990			.3024	.2365	986
P ₈			.1616	.2174	991			.3456	.2131	986
P ₉			.1818	.1979	991			.3888	.1940	987
P ₁₀			.2020	.1817	991			.4320	.1780	987

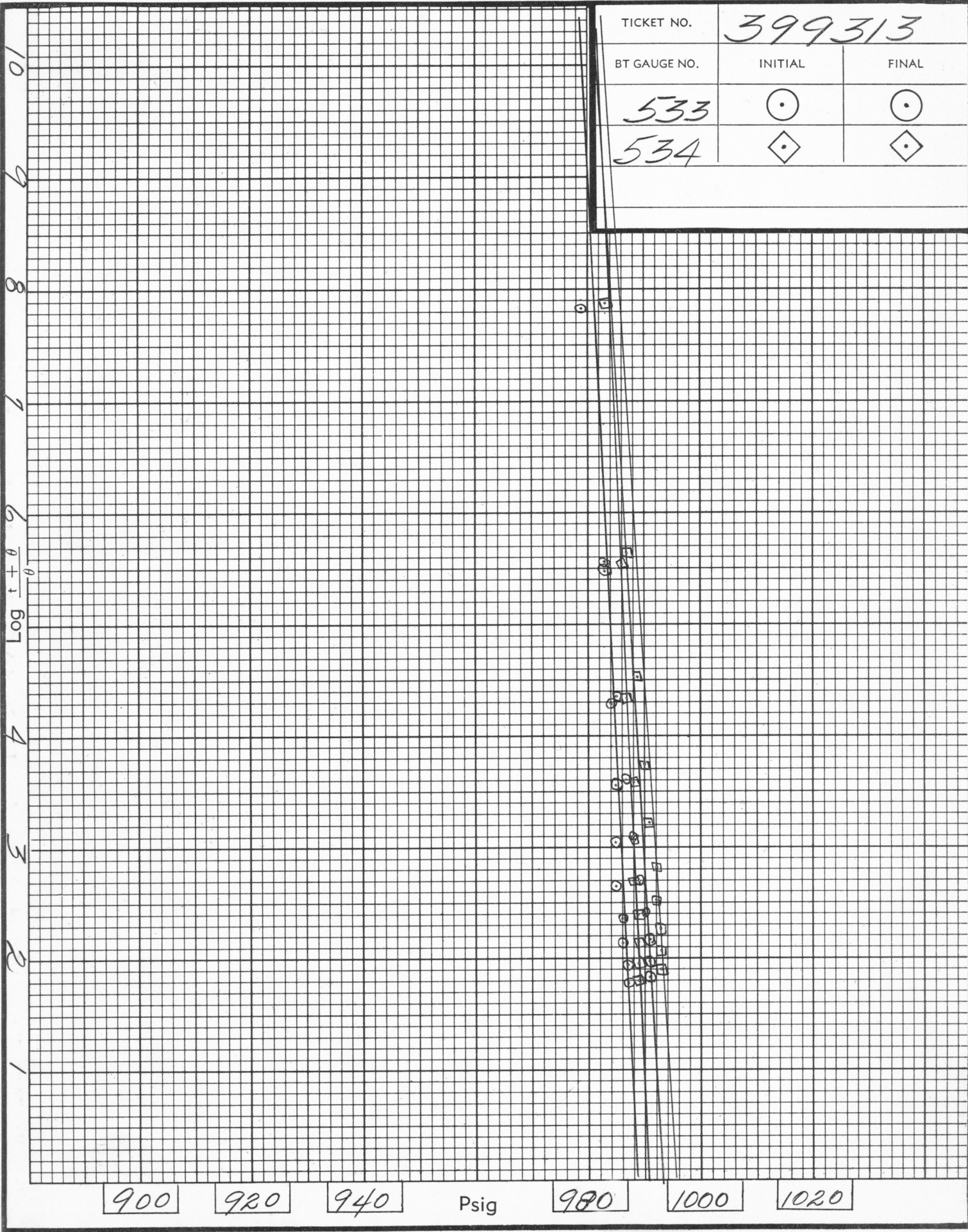
Gauge No. 534			Depth 3910			Clock 12 hour				
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	
P ₀	.000	415	.000	-	488	.000	475	.000	-	704
P ₁	.022	364	.010	1.0791	977*	.0264	524	.020	1.0827	978*
			.020	.8129	983			.0432	.7880	983
P ₂	.044	369	.040	.5740	987	.0527	586	.0864	.5526	986
P ₃	.066	401	.060	.4523	989	.0791	647	.1296	.4334	987
P ₄	.088	444	.080	.3756	990	.1120	704**	.1728	.3588	988
P ₅	.110	488	.100	.3222	991			.2160	.3070	988
P ₆			.120	.2825	992			.2592	.2686	988
P ₇			.140	.2518	992			.3024	.2390	989
P ₈			.160	.2272	993			.3456	.2154	989
P ₉			.180	.2071	993			.3888	.1961	989
P ₁₀			.200	.1903	993			.4320	.1800	989

Reading Interval 3 3 4 6 Minutes

REMARKS: * Uneven intervals. ** Last interval = 5 minutes.

SPECIAL PRESSURE DATA

TICKET NO.	399313	
BT GAUGE NO.	INITIAL	FINAL
533	○	○
534	◇	◇



EXTRAPOLATED PRESSURE GRAPH

Liquid Production

B.T. Gauge Numbers			533	534	Ticket Number	3-19-64	399313
Initial Hydrostatic			PRESSURE	PRESSURE	Elevation		1884 ft.
			2021	2028			
Final Hydrostatic			2018	2023	Indicated Production		1st Flow - bbls. day
1st Flow	Initial	Time	259	415	Total Flow		- bbls. day
	Final	15	452	488	Drill Collar Length		140 ft.
Initial Closed In Pressure			30	991	Drill Collar I.D.		2.25 in.
2nd Flow	Initial	Time	465	475	Drill Pipe Factor		.01422 bbls. ft.
	Final	17	706	704	Hole Size		7.87 in.
Final Closed In Pressure			60	987	Footage Tested		Net 4' ft.
Extrapolated Static Pressure	Initial		993	996	Mud Weight		9.8 lbs. gal.
	Final		989	991	Viscosity, Oil or Water		3.4 cp
Slope per foot P-10	Initial		981	984	Oil API Gravity		41
	Final		979	981	Water Specific Gravity		-

Remarks: _____

SUMMARY

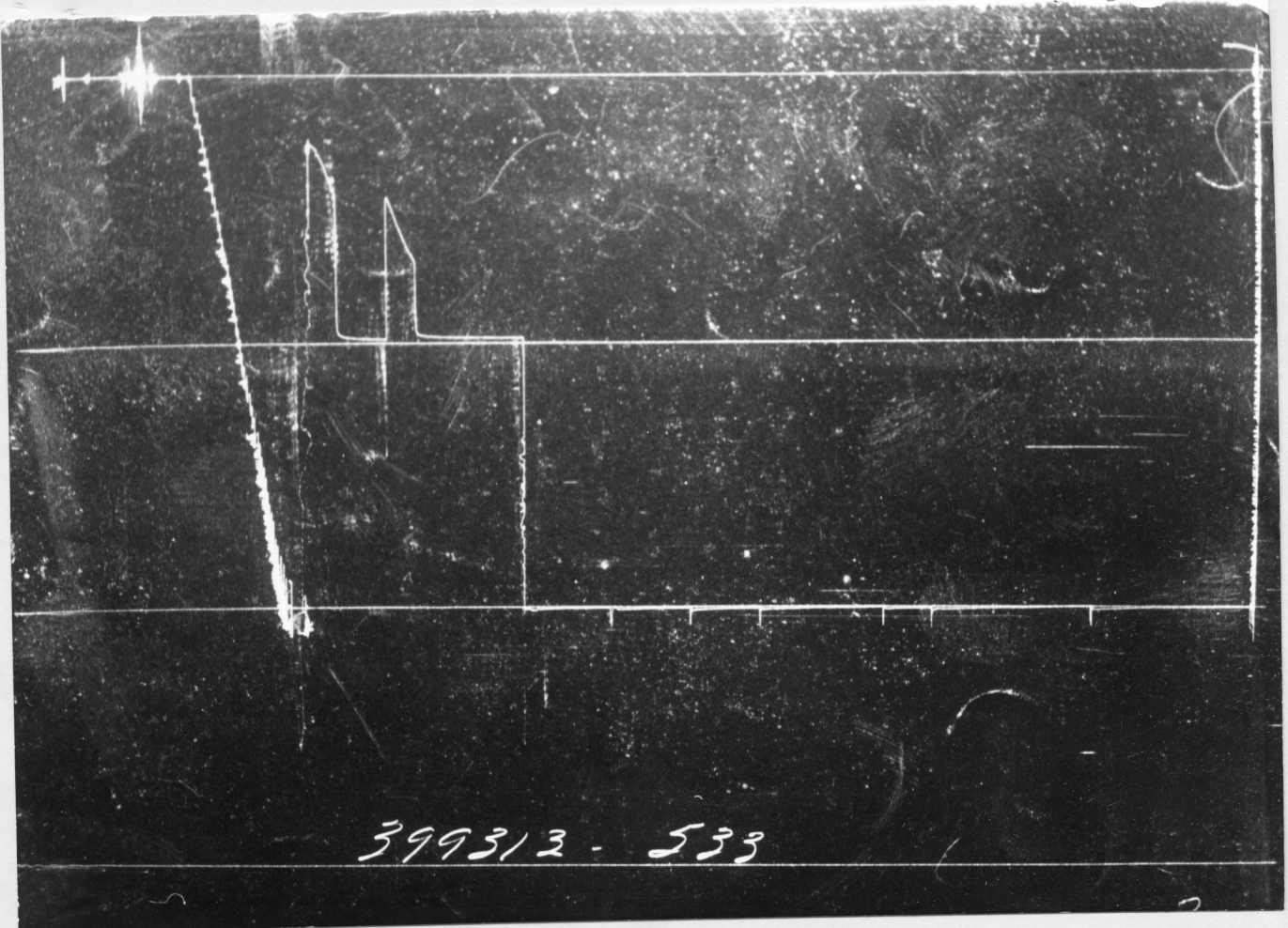
Gauge No. 533
Depth 3888

Gauge No. 534
Depth 3910

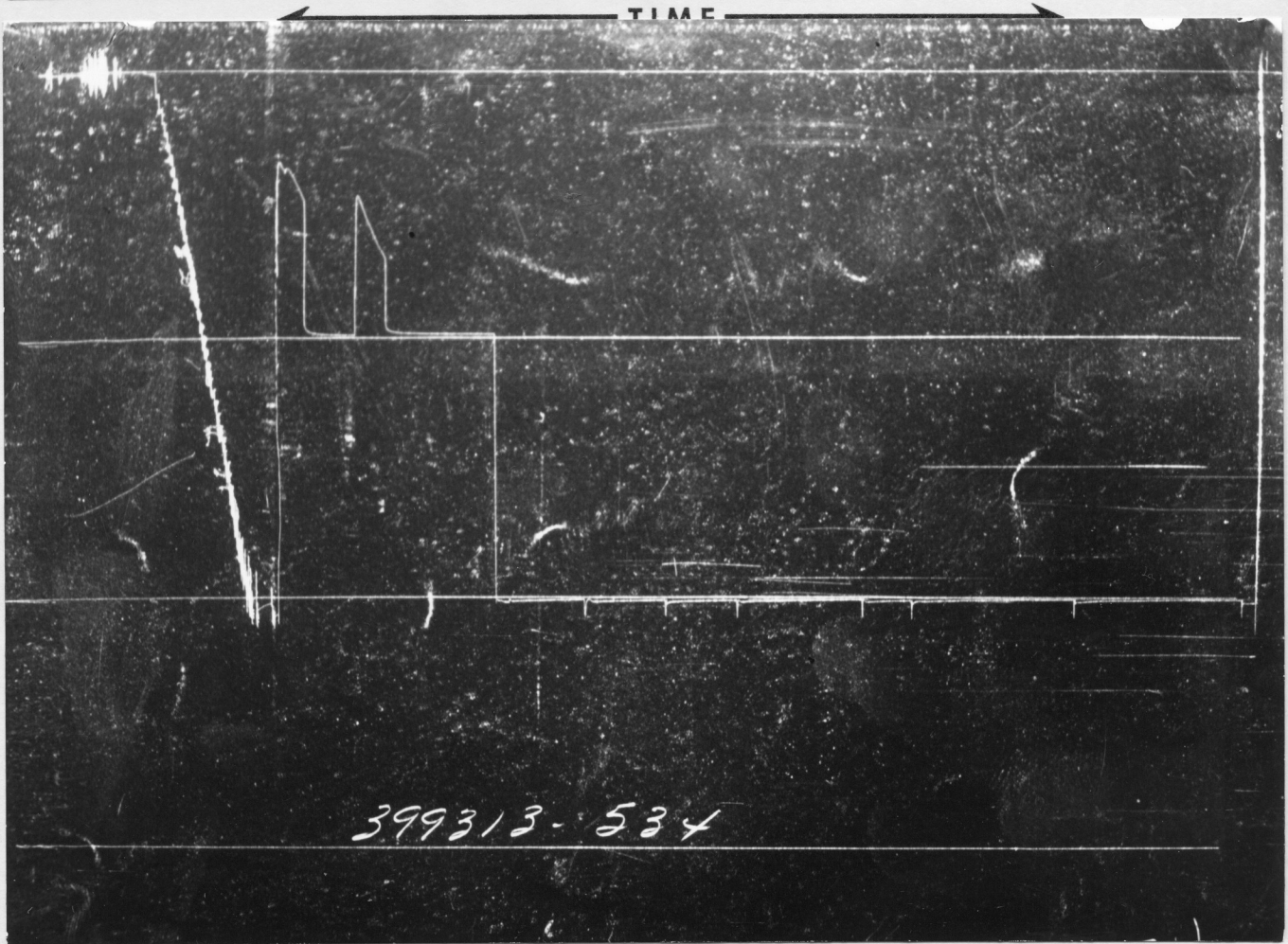
Product	Equation	Initial	Final	Initial	Final	Units
Production	$Q = \frac{1440 R}{t}$	870.	834.	596.	798.	bbls. day
Transmissability	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$	11788.	13563.	8076.	12986.	md. ft. / cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	40081	46115	27459	44153	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$	-	-	-	-	md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$	8.25	5.18	7.74	5.25	-
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$	7177.	4320.	4617.	4194.	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$	-	-	-	-	ft.
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$	387.	557.	320.	545.	ft.
Potentiometric Surface *	$Pot. = EI - GD + 2.319 Ps$	298.	289.	283.	272.	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.

↑
PRESSURE
↓



399313-533



399313-534

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

BYERS

Lease Name

Well No.

5

Test No.

STICKLE DRILLING COMPANY
Lease Owner/Company Name

KANSAS

Owner's District

Legal Location
Sec. - Twp. - Rng.

SEC. 21 - 24 - 12

Field Area
NORTH STAR NORTH

County

STAFFORD

State

KANSAS

Flow Time	1st 15	Min.	2nd 60	Min.	Date	3-20-64	Ticket Number	399314 S
Closed In Press. Time	1st 30	Min.	2nd 60	Min.	Kind of Job	OPEN HOLE TEST	Halliburton District	PRATT
Pressure Readings	Field		Office Corrected		Tester	MR. SHAUERS	Witness	MR. SHAIK
Depth Top Gauge	3942	Ft.	no	Blanked Off	Drilling Contractor	COMPANY TOOLS		
BT. P.R.D. No.	533		12	Hour Clock	Elevation	1884' K.B.	Top Packer	3951'
Initial Hydro Mud Pressure	2048		2040		Total Depth	3970'	Bottom Packer	3956'
Initial Closed in Pres.	971		968		Interval Tested	3956'-3970'	Formation Tested	VIOLA
Initial Flow Pres.	9	1	17		Casing or Hole Size	7 7/8"	Casing Perfs.	Top
	28	2	42					Bot.
Final Flow Pres.	28	1	31		Surface Choke	1"	Bottom Choke	3/4"
Final Closed in Pres.	933		945		Size & Kind Drill Pipe	4 1/2" F.H.	Drill Collars Above Tester	I.D. - LENGTH 2 1/4" x 140'
Final Hydro Mud Pressure	2028		2028		Mud Weight	9.8	Mud Viscosity	43
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	106	Anchor Size & Length	ID 3.84" OD 5.00" X 14'
BT. P.R.D. No.				Hour Clock	Depths Mea. From	KELLY BUSHINGS	Depth of Tester Valve	3941' Ft.
Initial Hydro Mud Pres.					TYPE AMOUNT		Depth Back Pres. Valve	- Ft.
Initial Closed in Pres.					Cushion	-	Recovered	120 Feet of MUD
Initial Flow Pres.		1			Recovered		Recovered	Feet of
Final Flow Pres.		1			Recovered		Recovered	Feet of
Final Closed in Pres.		2			Recovered		Recovered	Feet of
Final Hydro Mud Pres.					Oil A.P.I. Gravity	-	Water Spec. Gravity	-
Depth Bot. Gauge	3966	Ft.	yes	Blanked Off	Gas Gravity	-	Surface Pressure	- psi
BT. P.R.D. No.	534		12	Hour Clock	Tool Opened	9:53 PM	A.M. P.M. Tool Closed	12:38 AM A.M. P.M.
Initial Hydro Mud Pres.	2086		2047		Remarks Opened tool at 9:53 for 15 minute 1st flow			
Initial Closed in Pres.	983		975		with weak blow. Closed tool at 10:08 for 30 min.			
Initial Flow Pres.	29	1	30		initial closed in pressure. Reopened tool for 60			
Final Flow Pres.	38	2	54		minute 2nd flow at 10:38 with weak blow throughout			
Final Closed in Pres.	48	1	40		test. Closed tool at 11:38 for 60 minute final			
Final Hydro Mud Pres.	2056		2036		closed in pressure.			

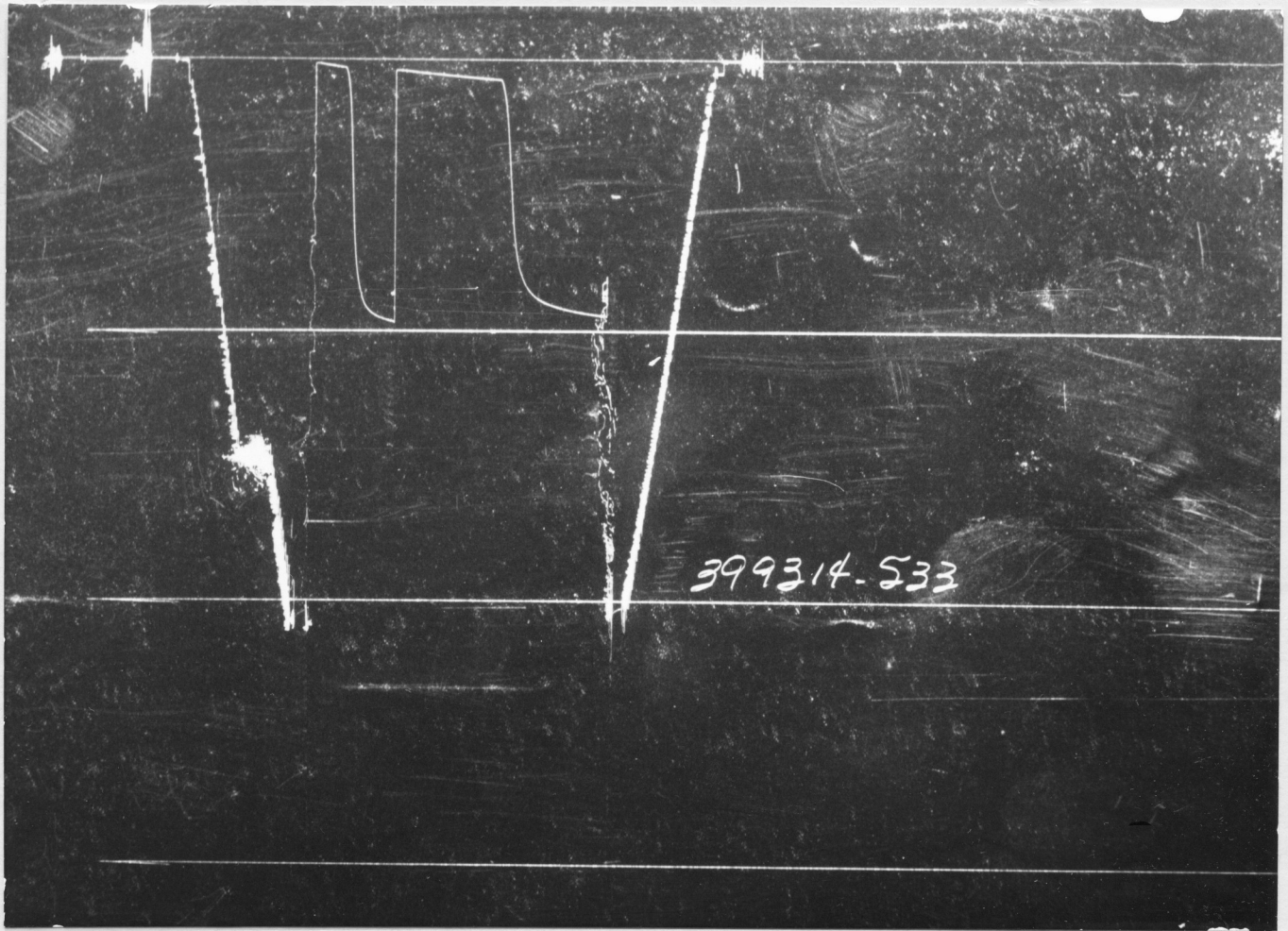
FORMATION TEST DATA

5

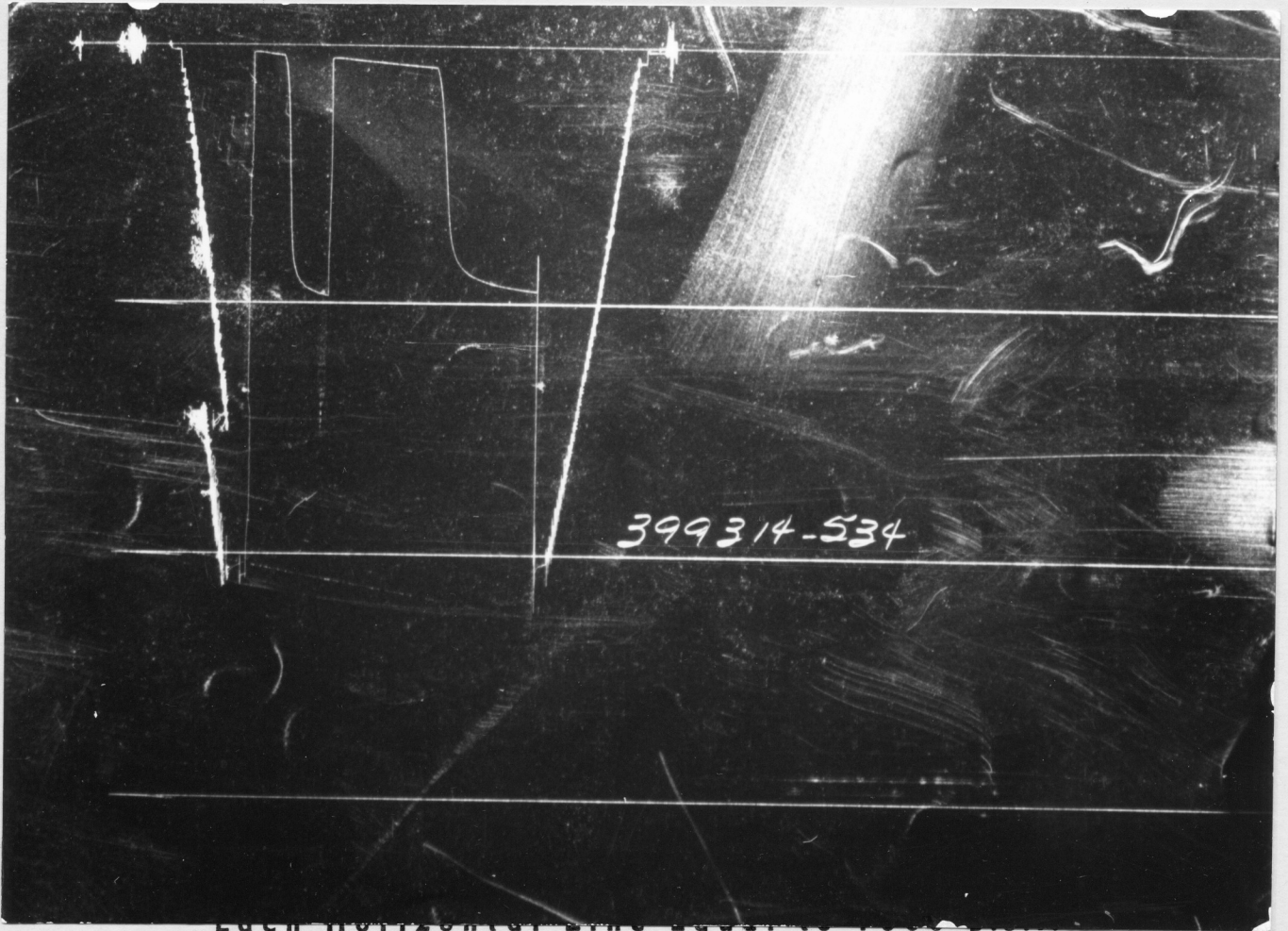
Gauge No.		533		Depth		3942'		Clock		12 hour		Ticket No.		399314	
First Flow Period			Initial Closed In Pressure			Second Flow Period			Final Closed In Pressure						
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{\phi}$	PSIG Temp. Corr.					
P ₀	.000	17	.000		31	.000	42	.000		76					
P ₁	.0232	17	.020		150	.103	50	.0423		448					
P ₂	.0464	21	.040		647	.206	59	.0846		790					
P ₃	.0696	25	.060		831	.309	67	.1269		863					
P ₄	.0928	28	.080		902	.412	76	.1692		892					
P ₅	.1160	31	.100		928			.2115		907					
P ₆			.120		942			.2538		920					
P ₇			.140		952			.2961		928					
P ₈			.160		958			.3384		935					
P ₉			.180		963			.3807		940					
P ₁₀			.200		968			.4230		945					
Gauge No.		534		Depth		3966'		Clock		12 hour					
P ₀	.000	30	.000		40	.000	54	.000		85					
P ₁	.025	28	.0191		152	.1065	58	.0421		475					
P ₂	.050	31	.0382		716	.2130	68	.0842		821					
P ₃	.075	35	.0573		880	.3195	76	.1263		879					
P ₄	.100	38	.0764		921	.4260	85	.1684		904					
P ₅	.125	40	.0955		940			.2105		919					
P ₆			.1146		950			.2526		930					
P ₇			.1337		959			.2947		937					
P ₈			.1528		965			.3368		944					
P ₉			.1719		971			.3789		950					
P ₁₀			.1910		975			.4210		955					
Reading Interval		3		3		15		6		Minutes					
REMARKS:															

SPECIAL PRESSURE DATA

PRESSURE



TIME



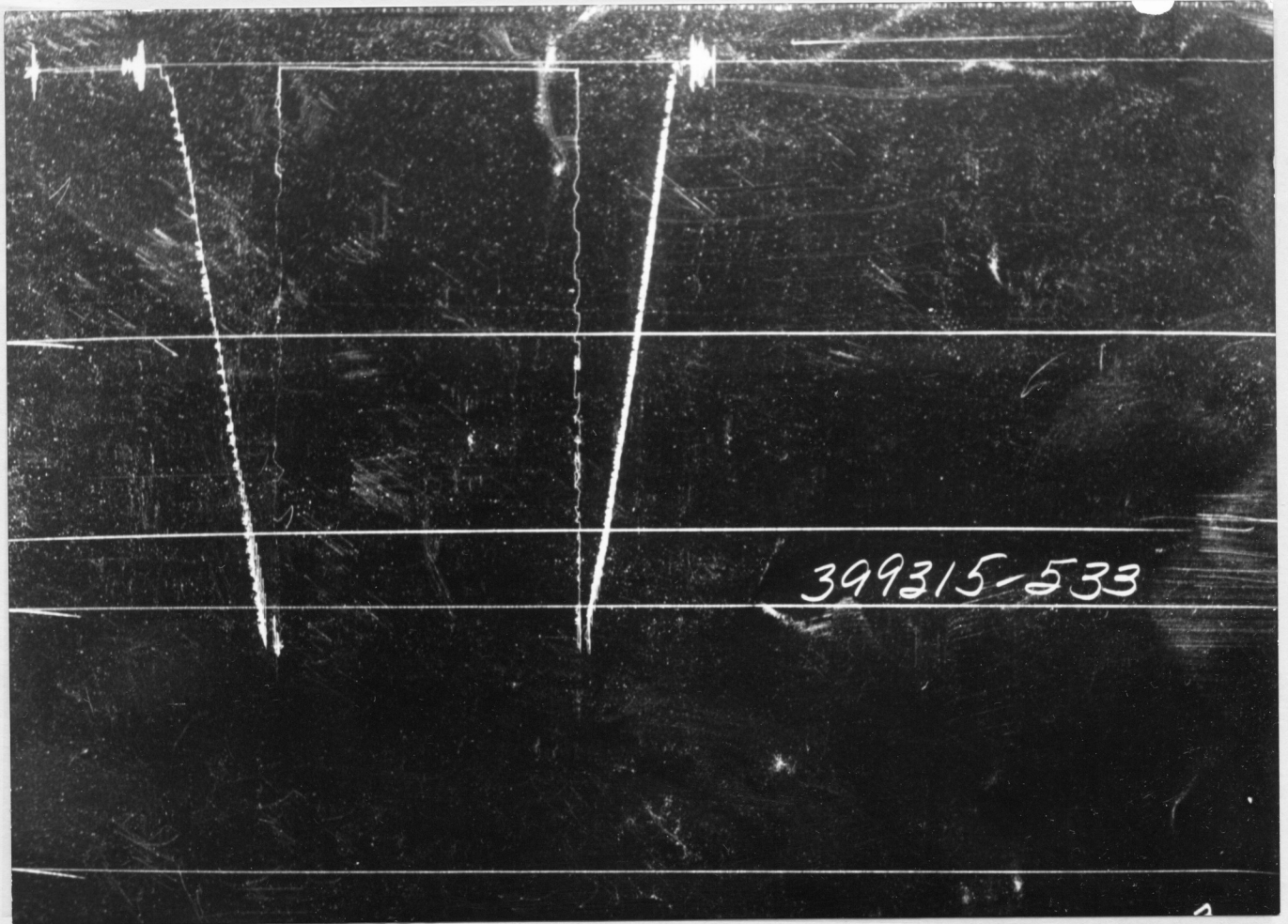
EACH HORIZONTAL LINE IS ONE EQUALLY SPACED

Flow Time	1st 15	Min.	2nd 60	Min.	Date	3-22-64	Ticket Number	399315	Legal Location Sec. - Twp. - Rng. SE SE NE 21-21-12
Closed In Press. Time	1st 30	Min.	2nd 60	Min.	Kind of Job	Open Hole	Halliburton District	Pratt	
Pressure Readings	Field		Office Corrected		Tester	G.L. Shauers	Witness	Charley Shank	
Depth Top Gauge	4041	Ft.	no	Blanked Off	Drilling Contractor	Company tools			
BT. P.R.D. No.	533		12	Hour Clock	Elevation	1884' KB	Top Packer	4050'	
Initial Hydro Mud Pressure	2115		2077		Total Depth	4070'	Bottom Packer	4055'	
Initial Closed in Pres.	19		22		Interval Tested	4055-4070' (15')	Formation Tested	Simpson	
Initial Flow Pres.	9	1	16		Casing or Hole Size	7 7/8"	Casing Perfs.	Top	
	9	2	19					Bot.	
Final Flow Pres.	9	1	16		Surface Choke	1"	Bottom Choke	3/4"	
	9	2	24						
Final Closed in Pres.	19		31		Size & Kind Drill Pipe	4 1/2" API FH	Drill Collars Above Tester	I.D. - LENGTH 2 1/4" x 140'	
Final Hydro Mud Pressure	2086		2077		Mud Weight	9.8	Mud Viscosity	43	
Depth Cen. Gauge		Ft.		Blanked Off	Temperature	109	*F Est. Anchor Size & Length	ID 3.84" X 15' OD 5"	
BT. P.R.D. No.				Hour Clock	Depths Mea. From	Kelly bushing	Depth of Tester Valve	4040 Ft.	
Initial Hydro Mud Pres.					TYPE AMOUNT		Depth Back Pres. Valve	Ft.	
Initial Closed in Pres.					Cushion				
Initial Flow Pres.		1			Recovered	20	Feet of mud	Mea. From Tester Valve	
Final Flow Pres.		2			Recovered		Feet of		
Initial Flow Pres.		1			Recovered		Feet of		
Final Flow Pres.		2			Recovered		Feet of		
Final Closed in Pres.					Recovered		Feet of		
Final Hydro Mud Pres.					Oil A.P.I. Gravity		Water Spec. Gravity		
Depth Bot. Gauge	4066	Ft.	yes	Blanked Off	Gas Gravity		Surface Pressure	psi	
BT. P.R.D. No.	534		12	Hour Clock	Tool Opened	4:48 am	A.M. Tool Closed	7:33 am A.M.	
Initial Hydro Mud Pres.	2126		2082		Remarks	Open tool at 4:48 with a weak blow			
Initial Closed in Pres.	29		29			for 15 mins. Closed at 5:03 for 30 mins.			
Initial Flow Pres.	19	1	25			Reopen at 5:33 with no blow. Closed at 6:33			
Final Flow Pres.	19	2	28			for 60 mins. Off bottom 7:33.			
Final Closed in Pres.	29		39			No special reading adaptable.			
Final Hydro Mud Pres.	2096		2082						

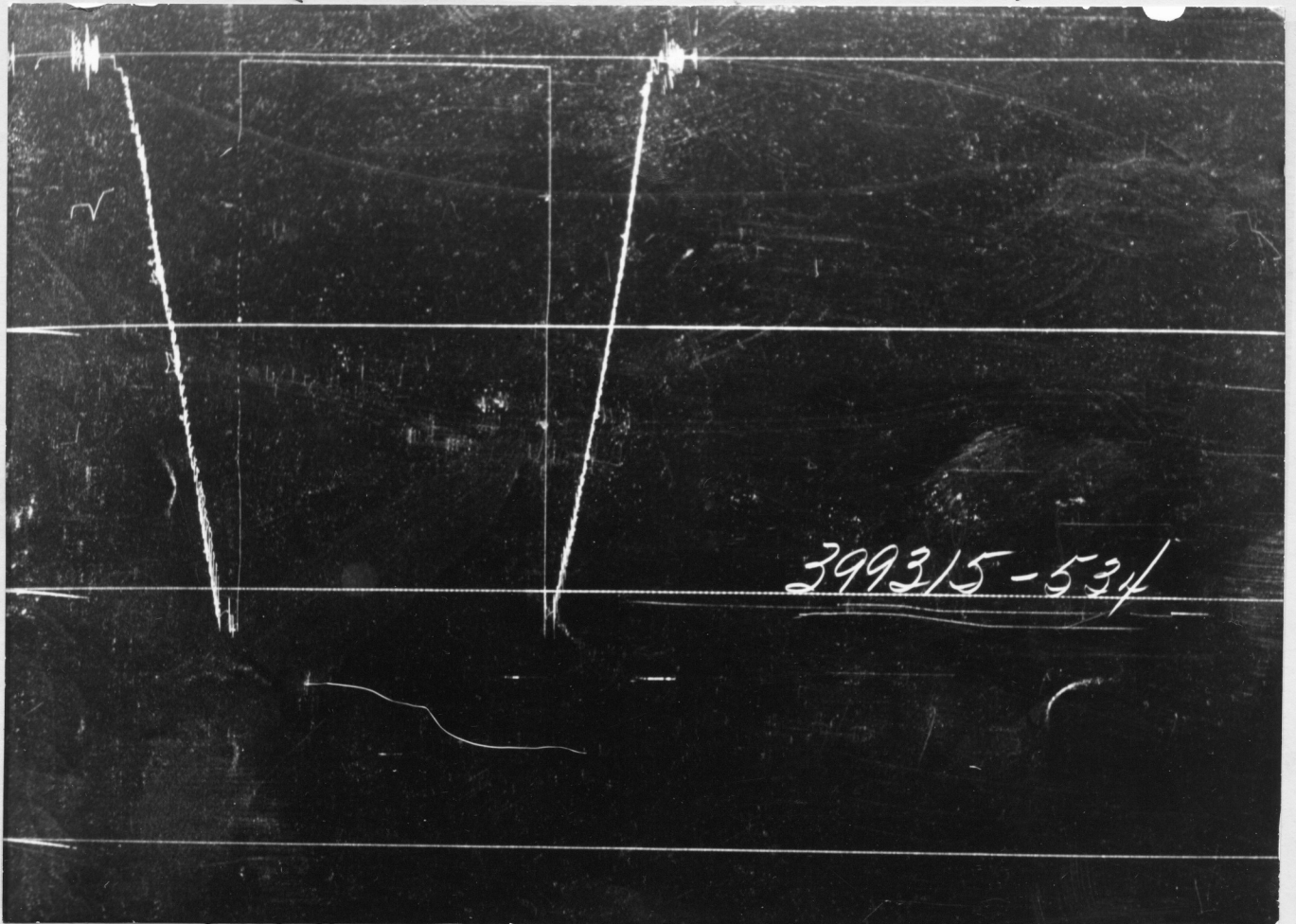
BYERS
 Lease Name
 Well No. 1
 Test No. 6
 Field Area
 NORTH STAR NORTH
 County STAFFORD
 State KANSAS
 Owner's District
 STICKLE DRILLING COMPANY
 Lease Owner/Company Name

FORMATION TEST DATA

PRESSURE



TIME



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

Flow Time	1st 15 Min.	2nd 90 Min.	Date	3-22-64	Ticket Number	399316 S
Closed In Press. Time	1st 30 Min.	2nd 90 Min.	Kind of Job	OPEN HOLE	Halliburton District	PRATT
Pressure Readings	Field	Office Corrected	Tester	G.L. SHAUERS	Witness	CHARLEY SHANK
Depth Top Gauge	4079 Ft.	no Blanked Off	Drilling Contractor	COMPANY TOOLS		
BT. P.R.D. No.	533	12 Hour Clock	Elevation	1884' KB	Top Packer	4088'
Initial Hydro Mud Pressure	2106	2085	Total Depth	4103'	Bottom Packer	4093'
Initial Closed in Pres.	1142	1142	Interval Tested	4093'-4103' (3')	Formation Tested	Arbuckle
Initial Flow Pres.	19 1 16		Casing or Hole Size	7 7/8"	Casing Perfs.	Top Bot.
Final Flow Pres.	38 1 36		Surface Choke	1"	Bottom Choke	3/4"
Final Closed in Pres.	981	989	Size & Kind Drill Pipe	4 1/2" API FH	Drill Collars Above Tester	I.D. - LENGTH 2 1/4" - 140'
Final Hydro Mud Pressure	2086	2084	Mud Weight	9.8	Mud Viscosity	44
Depth Cen. Gauge	Ft.	Blanked Off	Temperature	111	Anchor Size & Length	ID 3.84" OD 5" X 10'
BT. P.R.D. No.		Hour Clock	Depths Mea. From	Kelly Bushing	Depth of Tester Valve	4078 Ft.
Initial Hydro Mud Pres.			Cushion	--	Depth Back Pres. Valve	-- Ft.
Initial Closed in Pres.			Recovered	185	Feet of water.	
Initial Flow Pres.	1		Recovered		Feet of	
Final Flow Pres.	1		Recovered		Feet of	
Final Closed in Pres.			Recovered		Feet of	
Final Hydro Mud Pres.			Oil A.P.I. Gravity		Water Spec. Gravity	1.030
Depth Bot. Gauge	4099 Ft.	yes Blanked Off	Gas Gravity		Surface Pressure	-- psi
BT. P.R.D. No.	534	12 Hour Clock	Tool Opened	6:20 P.M.	Tool Closed	10:05 P.M.
Initial Hydro Mud Pres.	2136	2144	Remarks	Opened tool @ 6:20 for a 15 minute first flow		
Initial Closed in Pres.	1149	1142		with a weak blow increasing slightly. Closed tool		
Initial Flow Pres.	19 1 27			@ 6:35 for a 30 minute initial closed in pressure.		
Final Flow Pres.	38 1 43			Reopened tool @ 7:05 for a 90 minute second flow with		
Final Closed in Pres.	993	991		a weak blow throughout test. Closed tool @ 8:35 for		
Final Hydro Mud Pres.	2106	2142		a 90 minute final closed in pressure. Off bottom @		

FORMATION TEST DATA

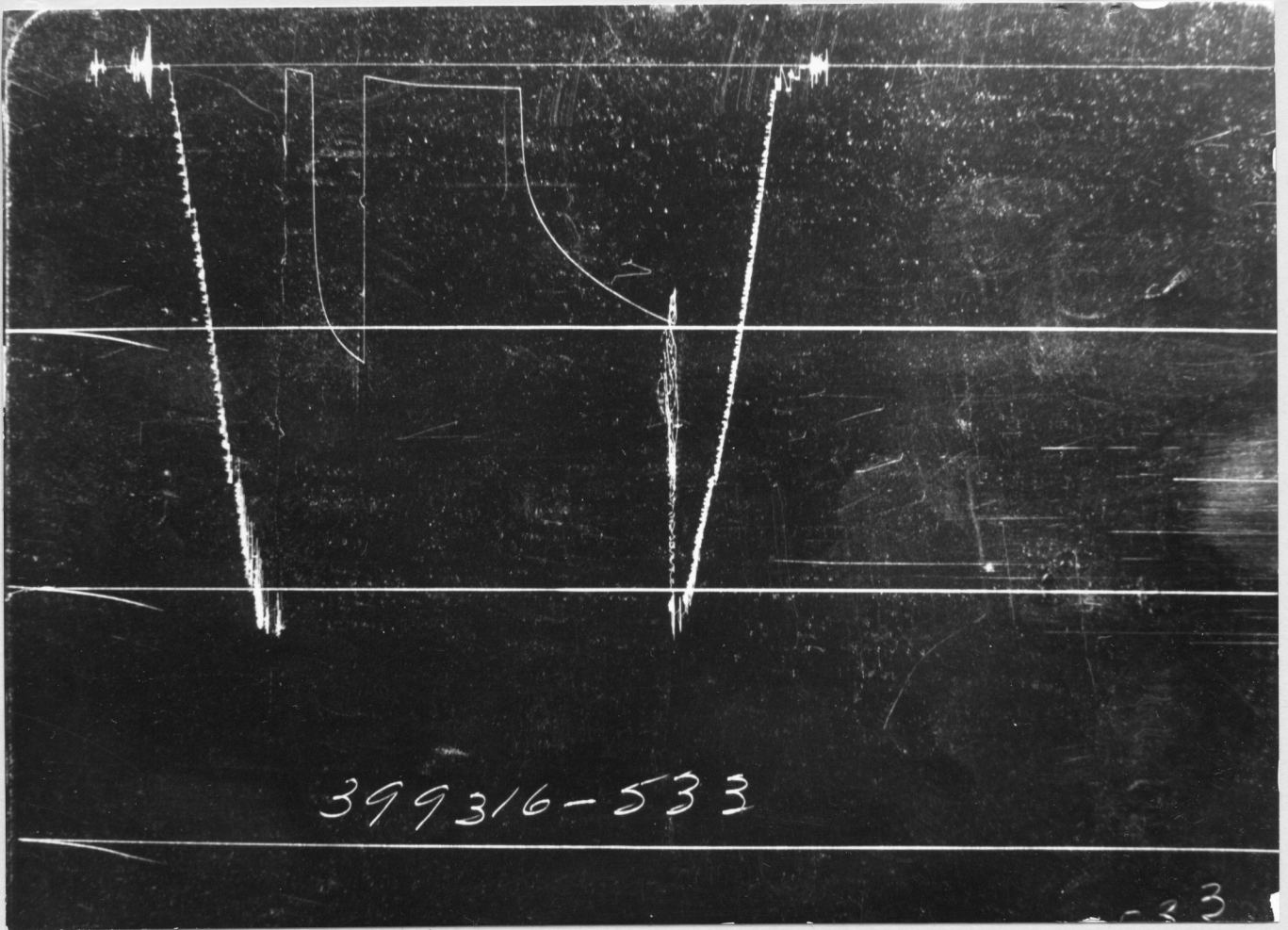
10:05.

BYERS
 Lease Name
 Well No. 1
 Test No. 7
 Field Area NORTH STAR NORTH
 County STAFFORD
 State KANSAS
 Legal Location Sec. - Twp. - Rng. SE SE NE 21 24 12
 STICKLE DRILLING COMPANY
 Lease Owner/Company Name
 Owner's District

Gauge No.		533		Depth		4041'		Clock		12 hour		Ticket No.		399316	
First Flow Period			Initial Closed In Pressure			Second Flow Period			Final Closed In Pressure						
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{e}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\phi}{e}$	PSIG Temp. Corr.						
P ₀	.000	16		36	.000		.000		47	.000				92	
P ₁	.021	18		716	.0224		.1568		56	.0633				543	
P ₂	.042	23		885	.0448		.3136		83	.1266				556	
P ₃	.063	28		965	.0672		.4704		87	.1899				725	
P ₄	.084	33		1010	.0896		.6270		92	.2532				781	
P ₅	.105	36		1046	.1120					.3165				828	
P ₆				1073	.1344					.3798				868	
P ₇				1093	.1568					.4431				903	
P ₈				1112	.1792					.5064				936	
P ₉				1127	.2016					.5697				964	
P ₁₀				1142	.2240					.6330				989	
Gauge No.		534		Depth		4066'		Clock		12 hour					
P ₀	.000	27		43	.000		.000		57	.000				97	
P ₁	.0218	25		780	.0218		.1613		75	.0634				553	
P ₂	.0436	30		918	.0436		.3226		88	.1268				662	
P ₃	.0654	35		977	.0654		.4839		92	.1902				732	
P ₄	.0872	39		1021	.0872		.6450		97	.2536				788	
P ₅	.1090	43		1050	.1090					.3170				834	
P ₆				1072	.1308					.3804				875	
P ₇				1093	.1526					.4438				909	
P ₈				1110	.1744					.5072				940	
P ₉				1128	.1962					.5706				977	
P ₁₀				1142	.2180					.6340				991	
Reading Interval		3		3		22.5		9		Minutes					
REMARKS:															

SPECIAL PRESSURE DATA

↑
PRESSURE



399316-533

← TIME →

↓
PRESSURE



399316-534

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

534