FLUID SAMPLER DATA

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.

		RESISTIVITY		CHLORIDE CONTENT
Recovery Water	@	°F.		ppm
Recovery Mud	@	°F.		
Recovery Mud Filtrate	@	°F.		ppm
Mud Pit Sample	@	°F.		
Mud Pit Sample Filtrate	@	°F.		ppm
Mud Weight	9.8	vis	42	cp

Date 9-20-71 Ticket Number 404944
Kind of Job OPEN HOLE Halliburton District EL DORADO
Tester W. E. MACY Witness R. MILLER / M. OVERALL
Drilling Contractor WHITE & ELLIS DRILLING INC. SM S

EQUIPMENT & HOLE DATA

Formation Tested Viola
Elevation 1414' KB Ft.
Net Productive Interval 3' Ft.
All Depths Measured From Kelly bushing
Total Depth 2500' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 145' I.D. 2.25"
Drill Pipe Length 2307' I.D. 3.826"
Packer Depth(s) 2473' Ft.
Depth Tester Valve 2460' Ft.

Cushion TYPE AMOUNT Ft. Depth Back Pres. Valve
Surface Choke 1/4" Bottom Choke 3/4"

Recovered 120 Feet of mud cut oil
Recovered 240 Feet of oil cut mud
Recovered 232 Feet of slightly oil cut mud
Recovered Feet of
Recovered Feet of

Meas. From Tester Valve

Remarks Tool opened for first flow - packer not holding. Closed tool and reopened packer holding with fair blow building to good blow in 30 minutes. Closed for 30 minute first closed in pressure. Tool reopened for 60 minute second flow with a good blow building to strong in12 minutes, strong blow throughout last 48 minutes. Closed for 30 minute second closed in pressure.

TEMPERATURE	Gauge No. 737 Depth: 2461 Ft.	Gauge No. 397 Depth: 2495 Ft.	Gauge No. Depth: Ft.	TIME
	12 Hour Clock	12 Hour Clock	Hour Clock	Tool Opened 20th A.M. 2355 P.M.
Est. 95 °F.	Blanked Off no	Blanked Off yes	Blanked Off	Tool Closed A.M. 0225 P.M.
Actual °F.	Pressures	Pressures	Pressures	

	Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic	-	1226	1237	1242				
First Period Flow Initial	-	189	212	208			___	___
First Period Flow Final	-	213	221	231			30	30
First Period Closed in	-	788	803	802			30	30
Second Period Flow Initial	-	217	230	231			___	___
Second Period Flow Final	-	274	283	286			60	60
Second Period Closed in	-	789	803	802			30	30
Third Period Flow Initial							___	___
Third Period Flow Final								
Third Period Closed in								
Final Hydrostatic	-	1216	1219	1230			___	___

Legal Location Sec. - Twp. - Rng. 30 25 5E
Lease Name MURRAY A
Well No. 98
Test No. 1
Tested Interval 2473-2500'
Field Area EL DORADO
County BUTLER
State KANSAS
Lease Owner/Company Name CITIES SERVICE OIL COMPANY

Gauge No.	737		Depth	2461'		Clock No.	7101		12 hour	Ticket No.	404944	
	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"	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.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.000	189	.000		213	.000	217	.000		274					
1	.0335	194	.0203		780	.0672	223	.0208		777					
2	.0670	198	.0406		784	.1344	234	.0416		783					
3	.1005	202	.0609		786	.2016	244	.0624		785					
4	.1340	207	.0812		787	.2688	254	.0832		787					
5	.1675	210	.1015		787	.3360	263	.1040		788					
6	.2010	213	.1218		788	.4030	274	.1248		789					
7			.1421		788			.1456		789					
8			.1624		788			.1664		789					
9			.1827		788			.1872		789					
10			.2030		788			.2080		789					
11															
12															
13															
14															
15															

Gauge No.	397		Depth	2495'		Clock No.	3228	12 hour					
0	.000	208	.000		231	.000	231	.000		286					
1	.0337	212	.0202		794	.0682	239	.0206		790					
2	.0674	216	.0404		798	.1364	248	.0412		795					
3	.1011	220	.0606		800	.2046	258	.0618		797					
4	.1348	223	.0808		801	.2728	268	.0824		798					
5	.1685	226	.1010		802	.3410	277	.1030		799					
6	.2020	231	.1212		802	.4090	286	.1236		800					
7			.1414		802			.1442		801					
8			.1616		802			.1648		801					
9			.1818		802			.1854		802					
10			.2020		802			.2060		802					
11															
12															
13															
14															
15															
Reading Interval	5		3			10		3							Minutes

REMARKS:

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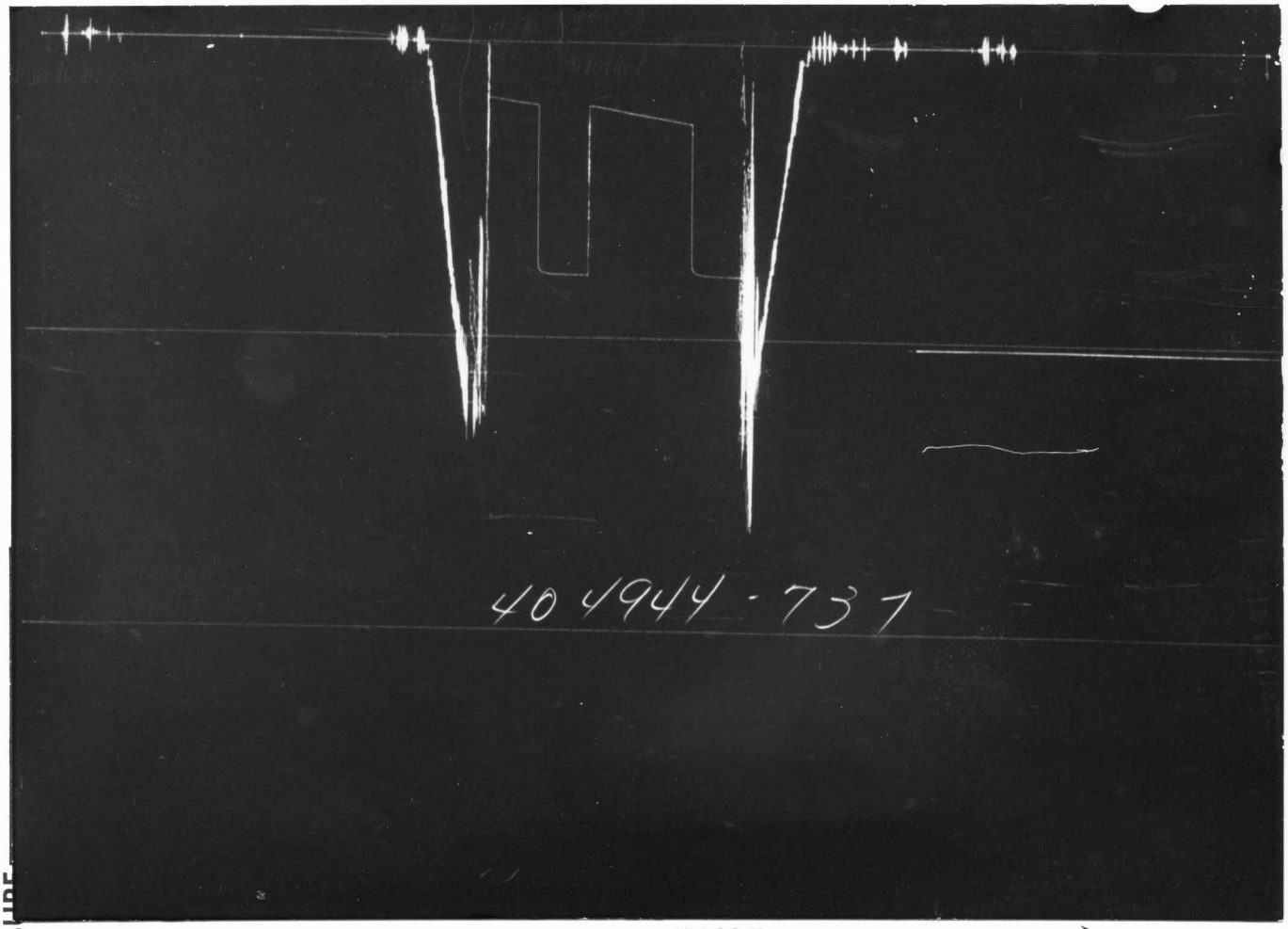
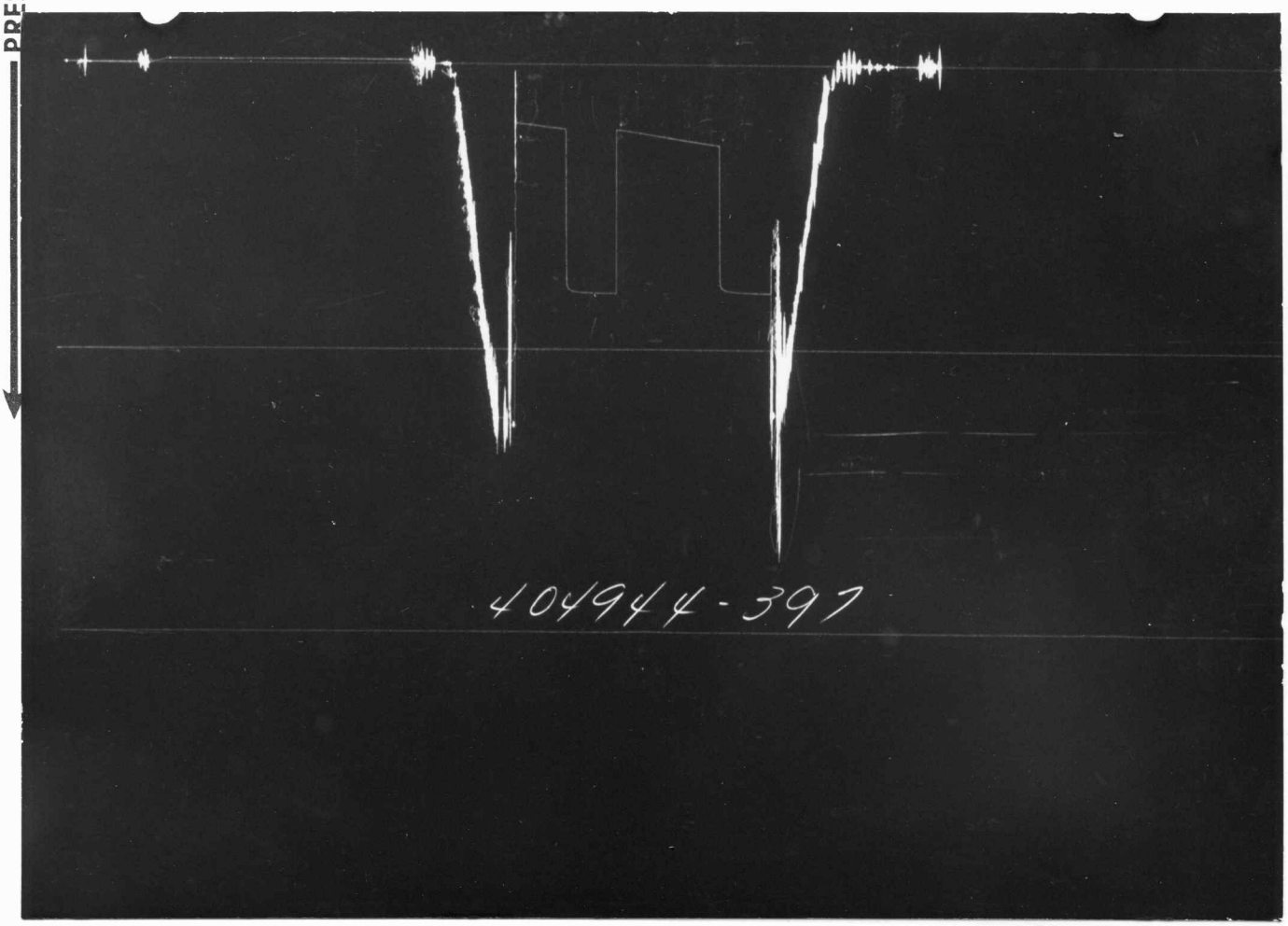
404944

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	5"		1'	
Water Cushion Valve				
Drill Pipe	4½"	3.826"	2307'	
Drill Collars	6"	2.25"	145'	
Handling Sub & Choke Assembly				
Dual CIP Valve	5"	.87"	5'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	2460'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.75"	4'	2461'
Hydraulic Jar	5"	1"	5'	
VR Safety Joint				
Pressure Equalizing Crossover				
Packer Assembly	6 3/4"	1"	4'	2473'
Distributor				
Packer Assembly				
Flush Joint Anchor	4 3/4"		24'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case	5"	3.75"	4'	2495'
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

TIME



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

FLUID SAMPLER DATA

Sampler Pressure _____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas _____
cc. Oil _____
cc. Water _____
cc. Mud _____
Tot. Liquid cc. _____
Gravity 37.8 ° API @ 60 °F.
Gas/Oil Ratio _____ cu. ft./bbl.

	RESISTIVITY		CHLORIDE CONTENT
Recovery Water	____ @ ____ °F.		____ ppm
Recovery Mud	____ @ ____ °F.		
Recovery Mud Filtrate	____ @ ____ °F.		____ ppm
Mud Pit Sample	____ @ ____ °F.		
Mud Pit Sample Filtrate	____ @ ____ °F.		____ ppm
Mud Weight	9.4	vis 38	cp

Date 9-21-71 Ticket Number 404945
Kind of Job OPEN HOLE Halliburton District EL DORADO
Tester MR. MACY Witness MR. OVERALL / MR. MILLER
Drilling Contractor WHITE AND ELLIS DRILLING, INC. DR S

EQUIPMENT & HOLE DATA

Formation Tested Viola
Elevation 1414' KB Ft.
Net Productive Interval 20' Ft.
All Depths Measured From Kelly Bushing
Total Depth 2521' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 145' I.D. 2.25"
Drill Pipe Length 2338' I.D. 3.826"
Packer Depth(s) 2497'-2501' Ft.
Depth Tester Valve 2489' Ft.

Cushion TYPE AMOUNT Ft. Depth Back Pres. Valve Surface Choke 1/4" Bottom Choke 3/4"

Recovered 65 Feet of oil
Recovered 56 Feet of muddy oil
Recovered 210 Feet of oil cut mud
Recovered 30 Feet of oil cut muddy water
Recovered Feet of

Meas. From Tester Valve

Remarks Opened tool for 28 minute first flow with a fair blow building slowly to a good blow. Closed tool for 31 minute first closed in pressure. Reopened tool for 60 minute second flow with a good blow building to a strong blow in 12 minutes, strong throughout the last 48 minutes. Closed tool for 31 minute second closed in pressure.

TEMPERATURE	Gauge No. 737		Gauge No. 397		Gauge No.		TIME	
	Depth: 2502 Ft.		Depth: 2516 Ft.		Depth: Ft.			
	12 Hour Clock		12 Hour Clock		Hour Clock		Tool Opened A.M. 12:20 P.M.	
Est. 95 °F.	Blanked Off No		Blanked Off Yes		Blanked Off			
Actual °F.	Pressures		Pressures		Pressures		Tool Closed A.M. 14:50 P.M.	
	Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		1237	1245.5	1244				
First Period Flow Initial		26	35.3	35			____	____
First Period Flow Final		89	97.2	96			30	28
First Period Closed in		805	812.2	810			30	31
Second Period Flow Initial		90	97.2	98			____	____
Second Period Flow Final		143	150.2	149			60	60
Second Period Closed in		803	812.2	807			30	31
Third Period Flow Initial							____	____
Third Period Flow Final								
Third Period Closed in								
Final Hydrostatic		1209	1226.0	1215			____	____

Legal Location Sec. - Twp. - Rng. 30-25S-5E
Lease Name MURRAY
Well No. 98
Test No. 2
Tested Interval 2501'-2521'
Field Area ELDORADO
County BUTLER
State KANSAS
Lease Owner/Company Name CITIES SERVICE OIL CORPORATION

PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 83429 15M 4/69—33, 34-13

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Gauge No.	737		Depth	2502'		Clock No.	7101		12 hour	Ticket No.	404945			
	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"	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.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.000	26	.000		89	.000	90	.000		143					
1	.0345	44	.0203		783	.0662	98	.0202		787					
2	.0690	57	.0406		795	.1324	107	.0404		795					
3	.1035	70	.0609		799	.1986	116	.0606		797					
4	.1380	79	.0812		801	.2648	126	.0808		800					
5	.1725	85	.1015		802	.3310	133	.1010		801					
6	.1930	89*	.1218		803	.3970	143	.1212		802					
7			.1421		804			.1414		803					
8			.1624		805			.1616		803					
9			.1827		805			.1818		803					
10			.2100		805**			.2080		803***					
11															
12															
13															
14															
15															

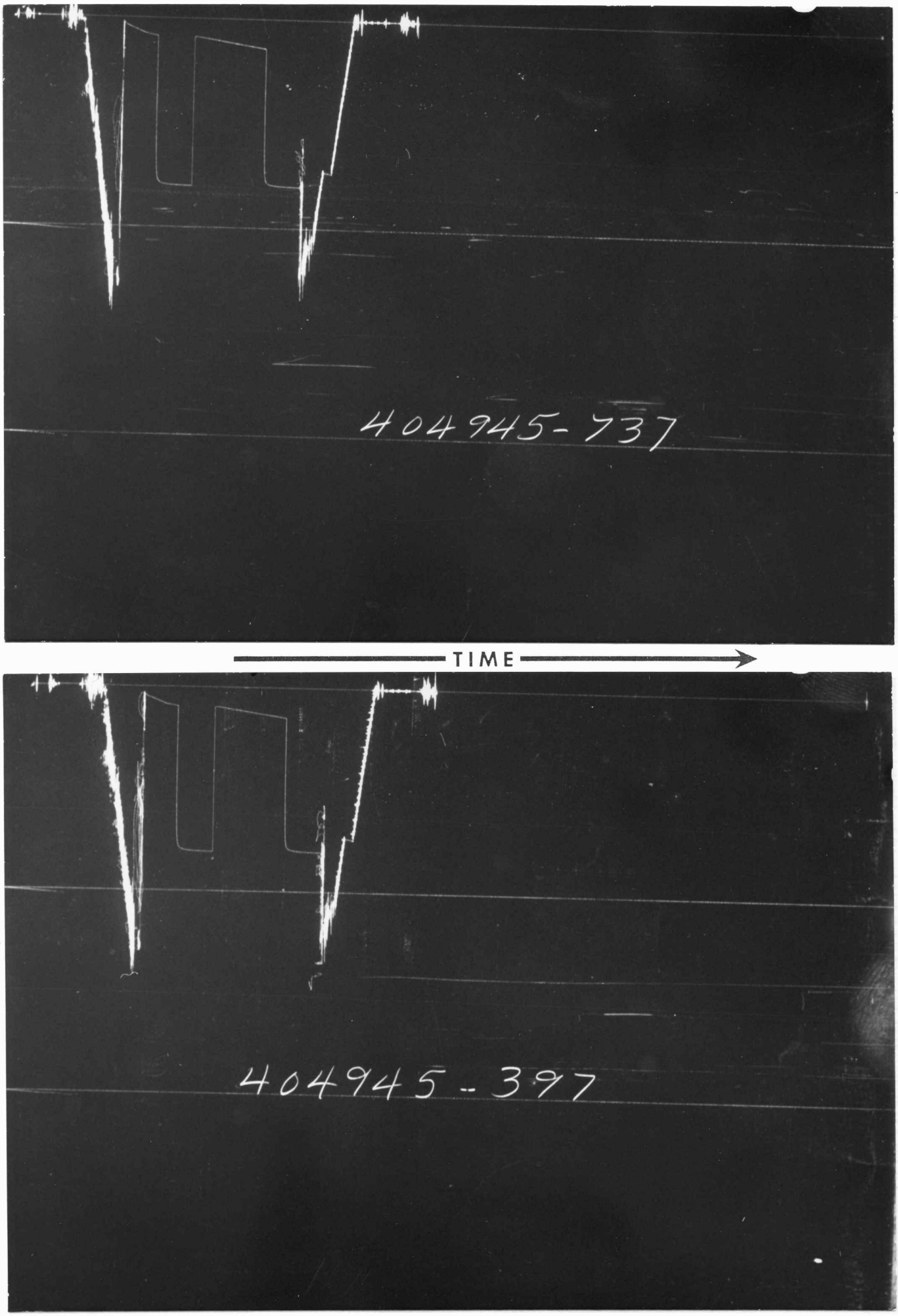
Gauge No.	397		Depth	2516'		Clock No.	3228		12 hour					
0	.000	35	.000		96	.000	98	.000		149					
1	.0345	53	.0200		791	.0665	105	.0202		794					
2	.0690	62	.0400		801	.1330	114	.0404		799					
3	.1035	78	.0600		803	.1995	122	.0606		802					
4	.1380	97	.0800		806	.2660	132	.0808		804					
5	.1725	94	.1000		807	.3325	140	.1010		805					
6	.1930	96*	.1200		808	.3990	149	.1212		806					
7			.1400		809			.1414		807					
8			.1600		810			.1616		807					
9			.1800		810			.1818		807					
10			.2070		810**			.2090		807***					
11															
12															
13															
14															
15															
Reading Interval	5		3			10		3							Minutes

REMARKS: * Last interval equal to 3 minutes **-4 minutes ***-4 minutes.

SPECIAL PRESSURE DATA

404945

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	5"		1'	
Water Cushion Valve				
Drill Pipe	4½"	3.826"	2338'	
Drill Collars	6"	2.25"	145'	
Handling Sub & Choke Assembly				
Dual CIP Valve	5"	.87"	5'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	2489'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.75"	4'	2502'
Hydraulic Jar				
VR Safety Joint				
Pressure Equalizing Crossover				
Packer Assembly	6 3/4"	1"	4'	2497'
Distributor				
Packer Assembly	6 3/4"	1"	4'	2501'
Flush Joint Anchor	4 3/4"		12'	
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case	5"	3.75"	4'	2516'
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				



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