CRUDE OIL TESTING, INC.

DATE 8/22/84 TEST TICKET NO. 4398

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 26 Twp. 16S Range 22W Co. Ness State KS
Well Name & Number: #1 P. Ummel Code E4

ENGINEERING DATA

Elevation	2393 KB	Drill Pipe Length	4174 ID 3.8 "
Mud Viscosity	45	Weight Pipe Length	
Mud Weight	9.5	Drill Collar Length	93 ID 2.25"
Water Loss	10.2	Top Packer Depth	4289
Type of Mud	Starch	Bottom Packer Depth	4294
Anchor Length	15	Tool Joint Size	4.5 XH
Hole Size	7 7/8	Test Tool Size	5 1/2
Casing Size	8 5/8	Packer Size	6 3/4
Surface Choke	3/4	Reversed Out	No
Bottom Choke	3/4	Recorder #	11084
Extra Equipment			None

REMARKS

DST #1
Mud pit sample 30000 ppm.

FORMATION

Cherokee S. Zone Top — Test Type Conventional
Interval 4294 To 4309 — Total Depth 4309
Open 30 Shut In 45 — Open 30 Shut In 45
Packer(s) Set 12:28AM — Started Off Bottom 03:00PM
Blow 1st Opening Strong increasing blow off bottom in 3 min.
2nd Opening Strong increasing blow off bottom in 4 min.

RECOVERY

Total Feet 1620
Recovered 1140 feet of Oil cut salt water
Recovered 480 feet of Salt water

CALCULATED RECOVERY

Gas 171 Oil 123 Water 1262.4 Mud 63.6
Gravity (Oil) Test Water Chlorides 44,000 PPM
Test Area Temperature 124F Mud System Chlorides 32,000 PPM

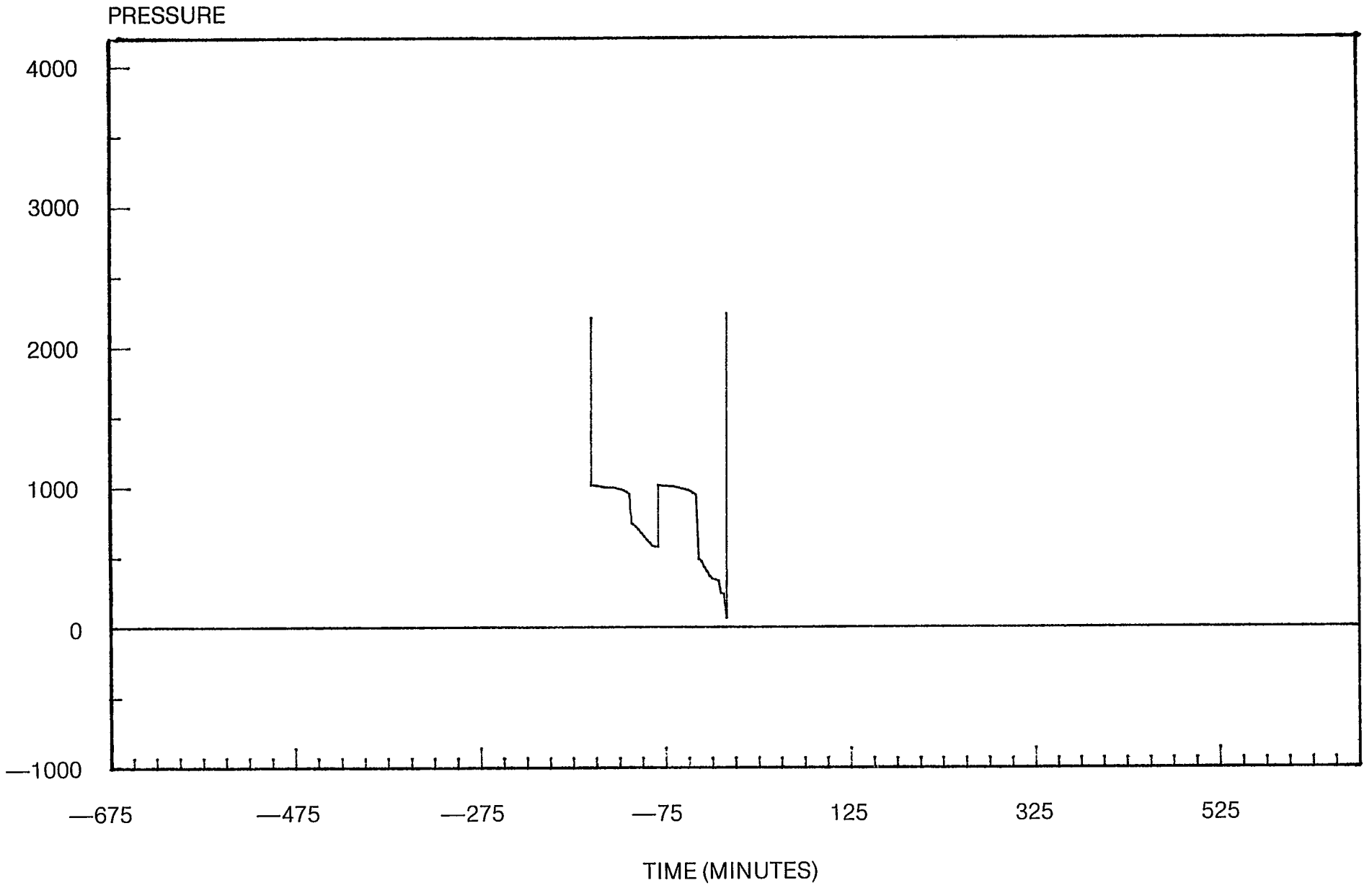
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	2284	2242	PSI
(B) First Initial Flow Pressure	252	68	PSI
(C) First Final Flow Pressure	482	485	PSI
(D) Initial Closed-In Pressure	1024	1013	PSI
(E) Second Initial Flow Pressure	591	572	PSI
(F) Second Final Flow Pressure	732	740	PSI
(G) Final Closed-In Pressure	1024	1012	PSI
(H) Final Hydrostatic Mud	2263	2212	PSI

CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie TEST 4398

DST 1 08/22/84



PRESSURE BREAKDOWN

TEST TICKET NO. 4398

DST Number: 1 Recorder Number: 11084 Clock Number: 22337

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	64	0	484	0	571	0	739
3	233	3	943	3	573	3	948
6	240	6	957	6	579	6	964
9	329	9	970	9	602	9	974
12	337	12	979	12	624	12	982
15	344	15	985	15	648	15	986
18	363	18	990	18	673	18	992
21	398	21	995	21	697	21	994
24	430	24	999	24	717	24	994
27	469	27	1003	27	733	27	995
30	484	30	1005	28	739	30	998
		33	1007			33	1001
		36	1009			36	1005
		39	1010			39	1009
		42	1012			42	1011
		44	1012			45	1011

CRUDE OIL TESTING INC TEST 4398 DST 1

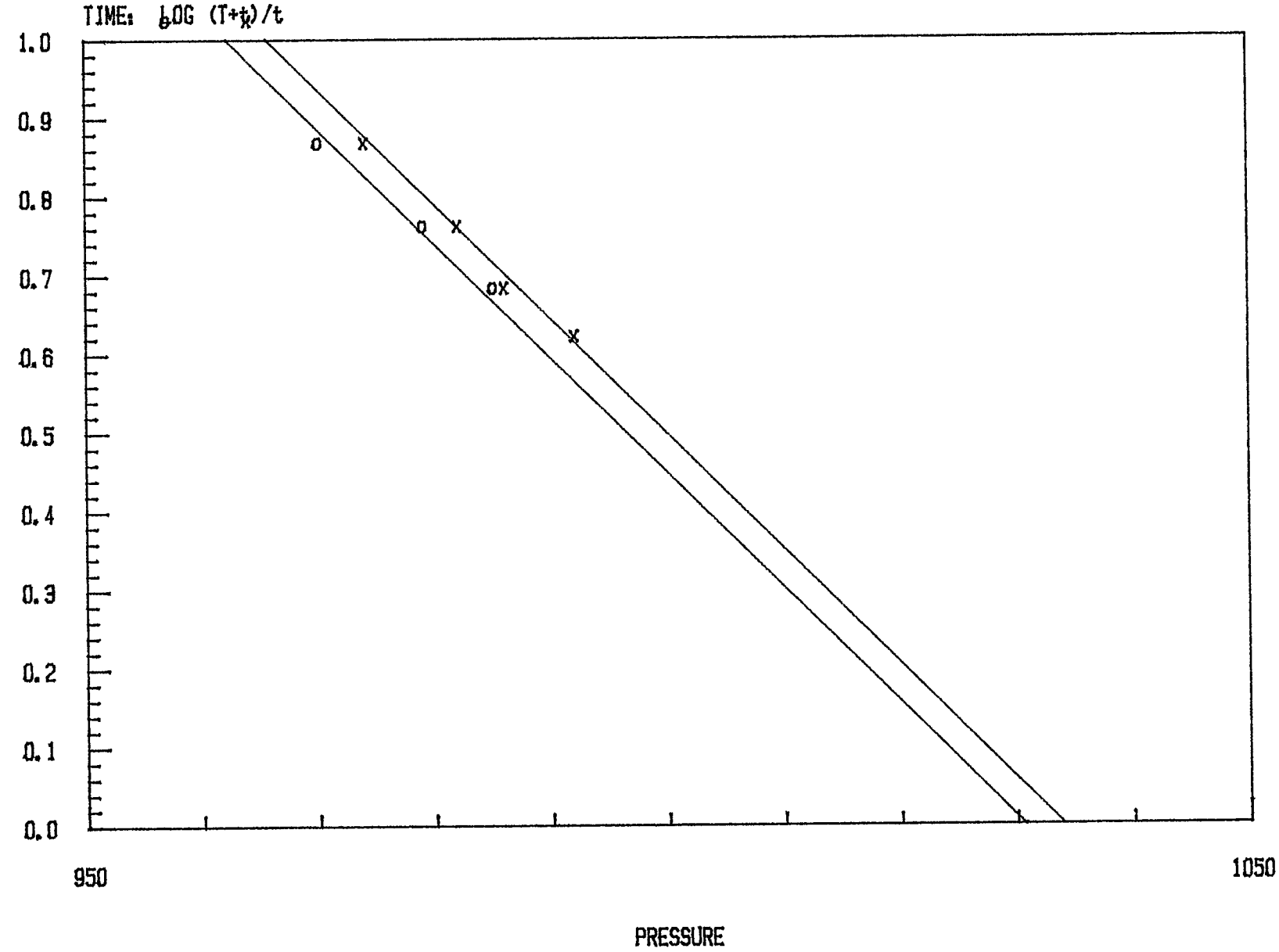
FOR: A. Scott Ritchie 8/22/84

o = Initial Shut-In

oooo

x = Final Shut-In

xxxx



ZONE EVALUATION - Page 1

DST NUMBER 1 TEST TICKET NO. 4398

Company: A. Scott Ritchie Date: 8/22/84

Drill Collar Feet	Drill Collar ID	Weight Pipe Feet	Weight Pipe ID	Drill Pipe Feet	Drill Pipe ID	Average ID	Gals/ Foot
93	2.250	0	0.000	30	3.800	2.6280	0.282

Bbls Recovered/Test = 0.8537 Est Bbls/Day = 21.1953 T = 58

Initial Shut-In

PRESS.	TIME	T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
985	15	3.867	4.867	0.58734	0.68723
979	12	4.833	5.833	0.68425	0.76592
970	9	6.444	7.444	0.80919	0.87183
957	6	9.667	10.667	0.98528	1.02803
943	3	19.333	20.333	1.28631	1.30821

Final Shut-In

Press.	Time	T/t	(T+t)/t	Log T/t	Log (T+t)/t
992	18	3.222	4.222	0.50816	0.62554
986	15	3.867	4.867	0.58734	0.68723
982	12	4.833	5.833	0.68425	0.76592
974	9	6.444	7.444	0.80919	0.87183
964	6	9.667	10.667	0.98528	1.02803

Time Option is Log (T+t)/t

IP(0)	IP(1)	FP(0)	FP(1)	M	Kh/B	DR	Q1	Pts
1040.8	959.6	1036.6	965.3	71.2	48.378	1.578	33.446	1,3
1041.1	959.7	1035.4	965.1	70.3	49.010	1.586	33.606	1-3
1042.0	959.4	1035.6	965.0	70.7	48.779	1.583	33.548	1-4
1030.7	962.2	1034.0	965.6	68.3	50.444	1.603	33.969	1-5

Graph Data For Points

Initial Time	Initial Pressure	Final Time	Final Pressure
0.6872	985	0.6255	992
0.7659	979	0.6872	986
0.8718	970	0.7659	982
1.0280	957	0.8718	974
1.3082	943	1.0280	964

Graph Data For Lines

0	1030.66	0	1033.96
1	962.16	1	965.64

ZONE EVALUATION - Page 2

DST Number 1 TEST TICKET NO. 4398

Company: A. Scott Ritchie Date: 8/22/84

P.S.I. Slope Cycle (From Log $\frac{T + t}{t}$)

$M = G_0 - G_1$ 68.32

Damage Ratio:

$DR = .183 \frac{Ps - Pf}{M}$ 1.60

Effective Pay:

$\frac{Kh}{B} = \frac{162.6\ Q}{M}$ 50.44 Md. Ft.

Theoretical Potential With
Damage Removed (for DR greater than 1):

$Q_1 = Q\ DR$ 33.97 Bbls/Day

Production: 0.85 Bbls/Hour

$Q = \frac{1440\ R}{T}$ 21.20 Bbls/Day

These calculations are based upon information furnished by you and taken from drill stem test pressure charts and are furnished for your information. In furnishing such calculations and evaluations, Crude Oil Testing Inc. is merely expressing an opinion. You agree that Crude Oil Testing Inc. makes no warranty as to the accuracy of such calculations or opinions, and Crude Oil Testing Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise in connection with such calculations and opinions.

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 1 TEST TICKET NO. 4398

WELL NAME: #1 P. Ummel WELL LOCATION: 26-16S-22W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	4174.00	3.826	4.50
4	Drill Collar - 6"	93.00	2.250	6.00
8	Circulating Sub	1.00	3.000	5.00
7	Changeover Sub	2.00	3.000	5.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	11.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4305.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 1

TEST TICKET NO. 4398

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	60	25.00	15.00	5.00	3.00	20.00	12.00
2	60	15.00	9.00	5.00	3.00	20.00	12.00
3	60	30.00	18.00	10.00	6.00	20.00	12.00
4	60	20.00	12.00	10.00	6.00	10.00	6.00
5	60	15.00	9.00	15.00	9.00	5.00	3.00
6	60	5.00	3.00	20.00	12.00	5.00	3.00
7	60	5.00	3.00	20.00	12.00	5.00	3.00
8	60	10.00	6.00	20.00	12.00	5.00	3.00
9	60	25.00	15.00	15.00	9.00	0.00	0.00
10	60	25.00	15.00	15.00	9.00	0.00	0.00
11	60	10.00	6.00	10.00	6.00	0.00	0.00
12	60	5.00	3.00	5.00	3.00	0.00	0.00
13	60	5.00	3.00	5.00	3.00	0.00	0.00
14	120	5.00	6.00	5.00	6.00	0.00	0.00
15	120	35.00	42.00	15.00	18.00	0.00	0.00
16	120	5.00	6.00	5.00	6.00	0.00	0.00
17	120	0.00	0.00	0.00	0.00	5.00	6.00
18	120	0.00	0.00	0.00	0.00	3.00	3.60
19	120	0.00	0.00	0.00	0.00	0.00	0.00
20	120	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	1620	10.56	171.00	7.59	123.00	3.93	63.60

Sample #	**** Water *** %	Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	50.00	30.00	44,000		
2	60.00	36.00	44,000		
3	40.00	24.00	44,000		
4	60.00	36.00	44,000		
5	65.00	39.00	44,000		
6	70.00	42.00			
7	70.00	42.00			
8	65.00	39.00			
9	60.00	36.00			
10	60.00	36.00			
11	80.00	48.00			
12	90.00	54.00			
13	90.00	54.00			
14	90.00	108.00			
15	50.00	60.00	44,000		
16	90.00	108.00			
17	95.00	114.00			
18	97.00	116.40			
19	100.00	120.00			
20	100.00	120.00			
TOTAL	77.93	1262.40			

CRUDE OIL TESTING, INC.

DATE 8/23/84 TEST TICKET NO. 4399

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 26 Twp. 16S Range 22W Co. Ness State KS
Well Name & Number: #1 P. Ummel Code E4

ENGINEERING DATA

Elevation	2393 KB	Drill Pipe Length	4237 ID 3.8 "
Mud Viscosity	39	Weight Pipe Length	
Mud Weight	9.6	Drill Collar Length	93 ID 2.25"
Water Loss	12	Top Packer Depth	4325
Type of Mud	Starch	Bottom Packer Depth	4330
Anchor Length	65	Tool Joint Size	4.5 XH
Hole Size	7 7/8	Test Tool Size	5 1/2
Casing Size	8 5/8	Packer Size	6 3/4
Surface Choke	3/4	Reversed Out	No
Bottom Choke	3/4	Recorder #	11084
Extra Equipment			None

REMARKS

DST #2
Mud pit sample 30000 ppm.
Tool slid 15' to bottom. Lost about 20' of mud when tool opened.

FORMATION

Mississippi Zone — Test Type Conventional
Interval 4330 To 4395 — Total Depth 4395
Open 45 Shut In 45 — Open 45 Shut In 45
Packer(s) Set 10:58AM — Started Off Bottom 02:00PM
Blow 1st Opening Weak increasing blow to 5 inches in bucket.
2nd Opening Weak increasing blow to 1.5 in. in bucket.

RECOVERY

Total Feet 360
Recovered 360 feet of See breakdown sheet

CALCULATED RECOVERY

Gas Oil Water 285 Mud 75
Gravity (Oil) Test Water Chlorides 22,000 PPM
Test Area Temperature 122F Mud System Chlorides 34,000 PPM

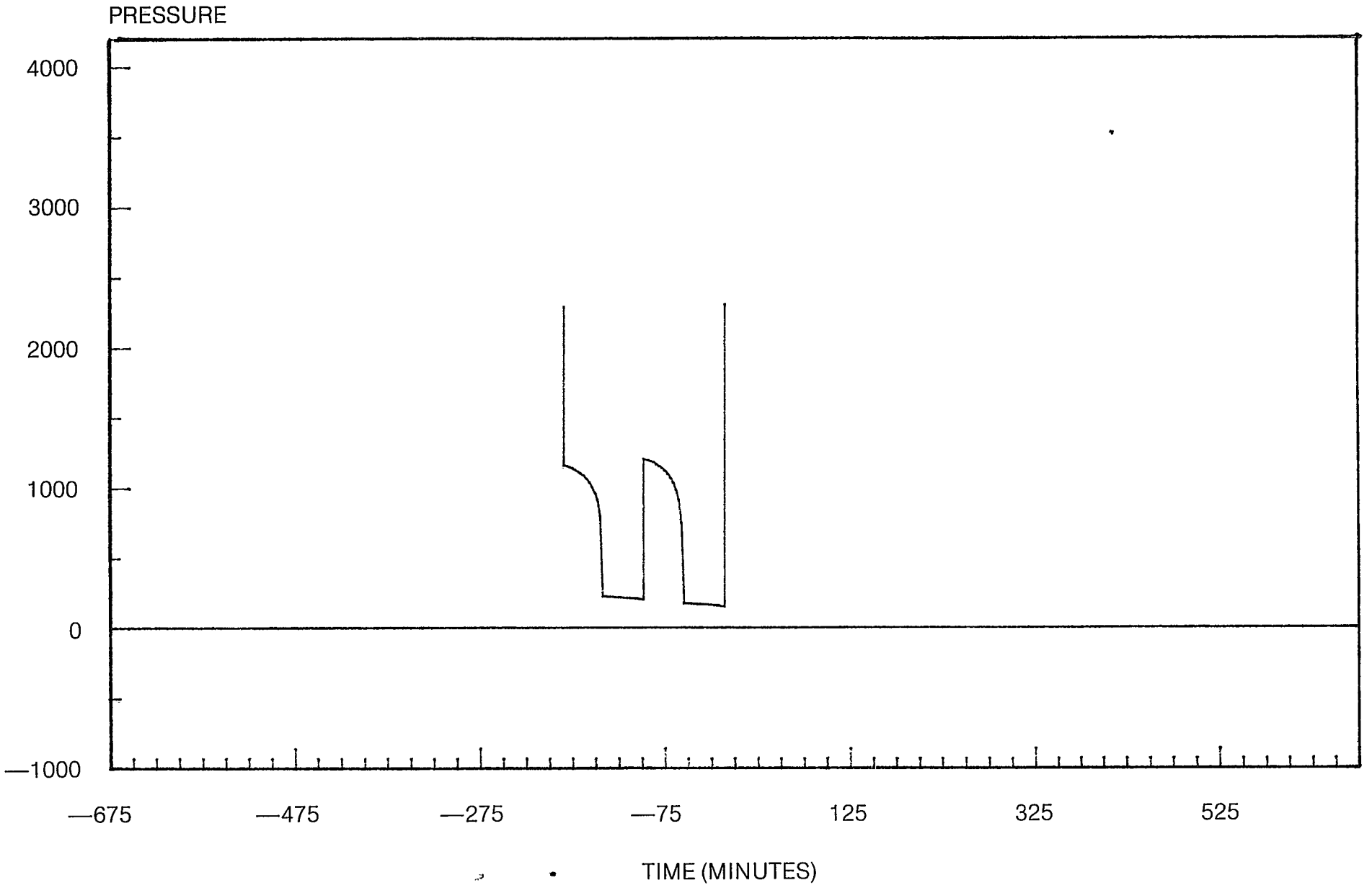
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	2317	2311	PSI
(B) First Initial Flow Pressure	154	148	PSI
(C) First Final Flow Pressure	164	170	PSI
(D) Initial Closed-In Pressure	1207	1205	PSI
(E) Second Initial Flow Pressure	208	198	PSI
(F) Second Final Flow Pressure	219	219	PSI
(G) Final Closed-In Pressure	1164	1161	PSI
(H) Final Hydrostatic Mud	2295	2295	PSI

CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie TEST 4399

DST 2 08/23/84



PRESSURE BREAKDOWN

TEST TICKET NO. 4399

DST Number: 2 Recorder Number: 11084 Clock Number: 22337

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	148	0	170	0	197	0	218
3	149	3	749	3	199	3	795
6	152	6	915	6	202	6	911
9	155	9	984	9	203	9	964
12	156	12	1036	12	204	12	1005
15	159	15	1073	15	205	15	1036
18	159	18	1101	18	206	18	1064
21	160	21	1124	21	206	21	1086
24	161	24	1140	24	208	24	1099
27	163	27	1155	27	210	27	1113
30	163	30	1168	30	211	30	1125
33	165	33	1181	33	214	33	1137
36	168	36	1189	36	214	36	1145
39	169	39	1196	39	215	39	1154
42	169	42	1202	42	217	42	1160
44	170	44	1205	44	218	43	1160

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 2 TEST TICKET NO. 4399

WELL NAME: #1 P. Ummel WELL LOCATION: 26-16S-22W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	4237.00	3.826	4.50
4	Drill Collar - 6"	93.00	2.250	6.00
8	Circulating Sub	1.00	3.000	5.00
7	Changeover Sub	2.00	3.000	5.00
9	Shut-In Tool	5.45	0.870	5.00
10	Hydraulic Tool	5.60	1.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	61.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4418.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 2

TEST TICKET NO. 4399

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	60	0.00	0.00	0.00	0.00	55.00	33.00
2	60	0.00	0.00	0.00	0.00	50.00	30.00
3	180	0.00	0.00	0.00	0.00	5.00	9.00
4	60	0.00	0.00	0.00	0.00	5.00	3.00
TOTAL	360	0.00	0.00	0.00	0.00	20.83	75.00

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	45.00	27.00			
2	50.00	30.00			
3	95.00	171.00			
4	95.00	57.00			
TOTAL	79.17	285.00			