CRUDE OIL TESTING, INC.

DATE 3/30/85 TEST TICKET NO. 5098

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 22 Twp. 6S Range 20W Co. Rooks State KS
Well Name & Number: Chapman #1 Code E19

ENGINEERING DATA

Elevation	2181 KB	Drill Pipe Length	2882 ID 3.8 "
Mud Viscosity	50	Weight Pipe Length	
Mud Weight	9.5	Drill Collar Length	418 ID 2.25"
Water Loss	6.8	Top Packer Depth	
Type of Mud	Drispac	Bottom Packer Depth	3318
Anchor Length	22	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 #	13255
Extra Equipment			None

REMARKS DST #1

FORMATION

Topeka Zone Lower Test Type Conventional
Interval 3318 To 3340 Total Depth 3340
Open 30 Shut In 30 Open 30 Shut In 30
Packer(s) Set 09:03AM Started Off Bottom 11:05AM
Blow 1st Opening Fair off bottom of bucket in 14 min.
2nd Opening Fair off bottom of bucket in 18 min.

RECOVERY

Total Feet 315
Recovered 315 feet of 20% mud 80% water

CALCULATED RECOVERY

Gas Oil Water 315 Mud
Gravity (Oil) Test Water Chlorides 28,000 PPM
Test Area Temperature 102F Mud System Chlorides 22,000 PPM

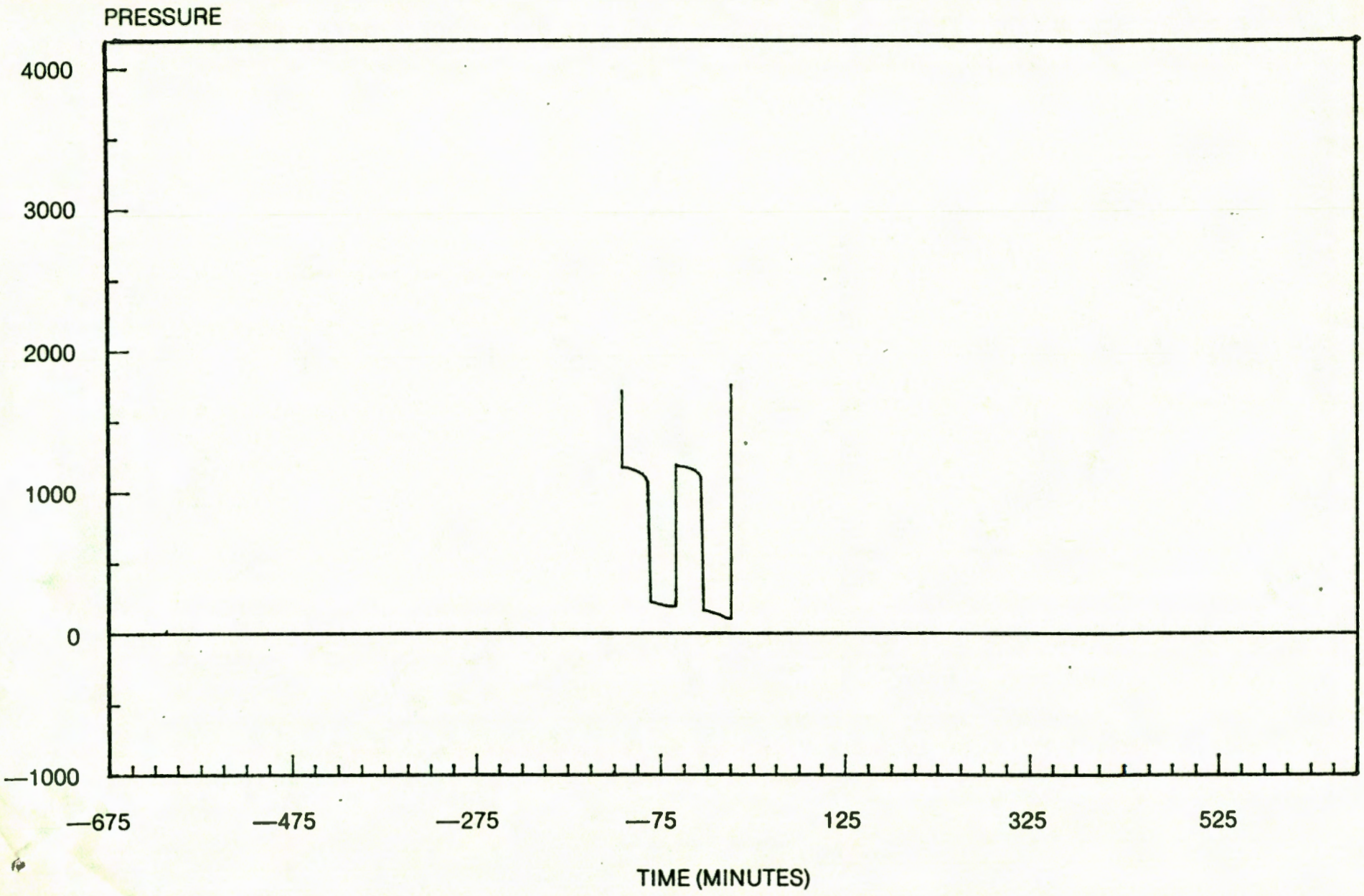
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	1706	1702	PSI
(B) First Initial Flow Pressure	46	47	PSI
(C) First Final Flow Pressure	93	110	PSI
(D) Initial Closed-In Pressure	1111	1137	PSI
(E) Second Initial Flow Pressure	128	136	PSI
(F) Second Final Flow Pressure	163	169	PSI
(G) Final Closed-In Pressure	1111	1124	PSI
(H) Final Hydrostatic Mud	1683	1663	PSI

CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie TEST 5098

DST 1 03/30/85



PRESSURE BREAKDOWN

TEST TICKET NO. 5098

DST Number: 1 Recorder Number: 13255 Clock Number: 25113

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	46	0	109	0	136	0	168
3	48	3	1055	3	136	3	1019
6	53	6	1079	6	136	6	1055
9	65	9	1096	9	138	9	1075
12	75	12	1106	12	143	12	1088
15	81	15	1114	15	149	15	1096
18	87	18	1121	18	153	18	1105
21	92	21	1126	21	160	21	1111
24	99	24	1129	24	164	24	1118
27	106	27	1133	27	168	27	1121
30	109	30	1136			30	1124
						31	1124

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 1 TEST TICKET NO. 5098

WELL NAME: Chapman #1 WELL LOCATION: 22-6S-20W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	2882.00	3.826	4.50
4	Drill Collar - 6"	418.00	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
6	Anchor	18.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	3340.40		

CRUDE OIL TESTING, INC.

DATE 3/31/85 TEST TICKET NO. 5105

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 22 Twp. 6S Range 20W Co. Rooks State KS
Well Name & Number: Chapman #1 Code E19

ENGINEERING DATA

Elevation	2181 KB	Drill Pipe Length	2922 ID 3.8 "
Mud Viscosity	43	Weight Pipe Length	
Mud Weight	9.5	Drill Collar Length	418 ID 2.25"
Water Loss	6.4	Top Packer Depth	3363
Type of Mud	Drispac	Bottom Packer Depth	3368
Anchor Length	56	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 #	13255
Extra Equipment		None	

REMARKS

DST #2
Tool slid 4' to bottom before opening.

FORMATION

Toronto Zone Top Test Type Conventional
Interval 3368 To 3424 Total Depth 3424
Open 30 Shut In 30 Open 30 Shut In 30
Packer(s) Set 01:18AM Started Off Bottom 03:20AM
Blow 1st Opening Fair off bottom of bucket in 25 min.
2nd Opening Fair building to 8 inches in bucket.

RECOVERY

Total Feet 216
Recovered 216 feet of 15% mud 85% water - slight show of oil

CALCULATED RECOVERY

Gas Oil Water 216 Mud
Gravity (Oil) Test Water Chlorides 26,000 PPM
Test Area Temperature 106F Mud System Chlorides 4,000 PPM

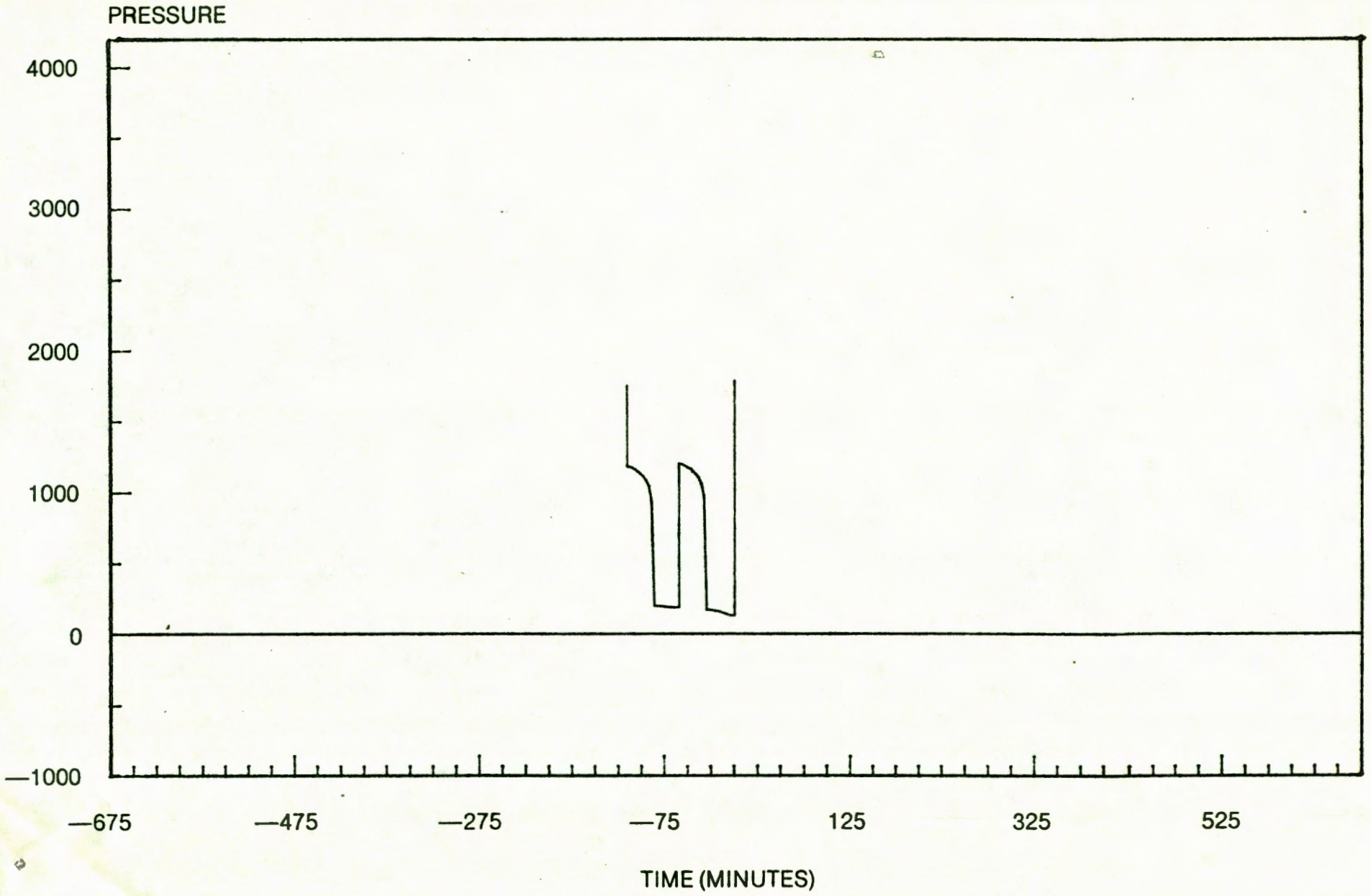
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	1717	1725	PSI
(B) First Initial Flow Pressure	70	70	PSI
(C) First Final Flow Pressure	93	111	PSI
(D) Initial Closed-In Pressure	1146	1144	PSI
(E) Second Initial Flow Pressure	116	128	PSI
(F) Second Final Flow Pressure	140	142	PSI
(G) Final Closed-In Pressure	1112	1128	PSI
(H) Final Hydrostatic Mud	1694	1695	PSI

CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie TEST 5105

DST 2 03/31/85



PRESSURE BREAKDOWN

TEST TICKET NO. 5105

DST Number: 2 Recorder Number: 13255 Clock Number: 25113

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	69	0	110	0	128	0	142
3	69	3	922	3	128	3	875
6	72	6	1003	6	128	6	986
9	80	9	1048	9	129	9	1028
12	87	12	1073	12	130	12	1056
15	95	15	1093	15	132	15	1074
18	100	18	1108	18	136	18	1090
21	103	21	1119	21	137	21	1105
24	107	24	1132	24	139	24	1116
27	109	27	1140	27	142	27	1124
30	110	30	1143			30	1127

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 2 TEST TICKET NO. 5105

WELL NAME: Chapman #1 WELL LOCATION: 22-6S-20W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	2922.00	3.826	4.50
4	Drill Collar - 6"	418.00	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	52.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	3419.75		

CRUDE OIL TESTING, INC.

DATE 3/31/85 TEST TICKET NO. 5106

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 22 Twp. 6S Range 20W Co. Rooks State KS
Well Name & Number: Chapman #1 Code E19

ENGINEERING DATA

Elevation	2181 KB	Drill Pipe Length	2991 ID 3.8 "
Mud Viscosity	44	Weight Pipe Length	
Mud Weight	9.6	Drill Collar Length	418 ID 2.25"
Water Loss	7.6	Top Packer Depth	3427
Type of Mud	Drispac	Bottom Packer Depth	3432
Anchor Length	43	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 #	13255
Extra Equipment		None	

REMARKS DST #3

FORMATION

Lansing Zone 35 & 50 Test Type Conventional
Interval 3432 To 3475 Total Depth 3475
Open 30 Shut In 45 Open 30 Shut In 45
Packer(s) Set 02:38PM Started Off Bottom 05:10PM
Blow 1st Opening Weak building to 4 inches in bucket.
2nd Opening Weak building to 4 inches in bucket.

RECOVERY

Total Feet 40
Recovered 40 feet of Oil cut mud
Recovered 60 feet of Gas in pipe

CALCULATED RECOVERY

Gas Oil 12 Water Mud 28
Gravity (Oil) Test Water Chlorides PPM
Test Area Temperature 108F Mud System Chlorides 4,000 PPM

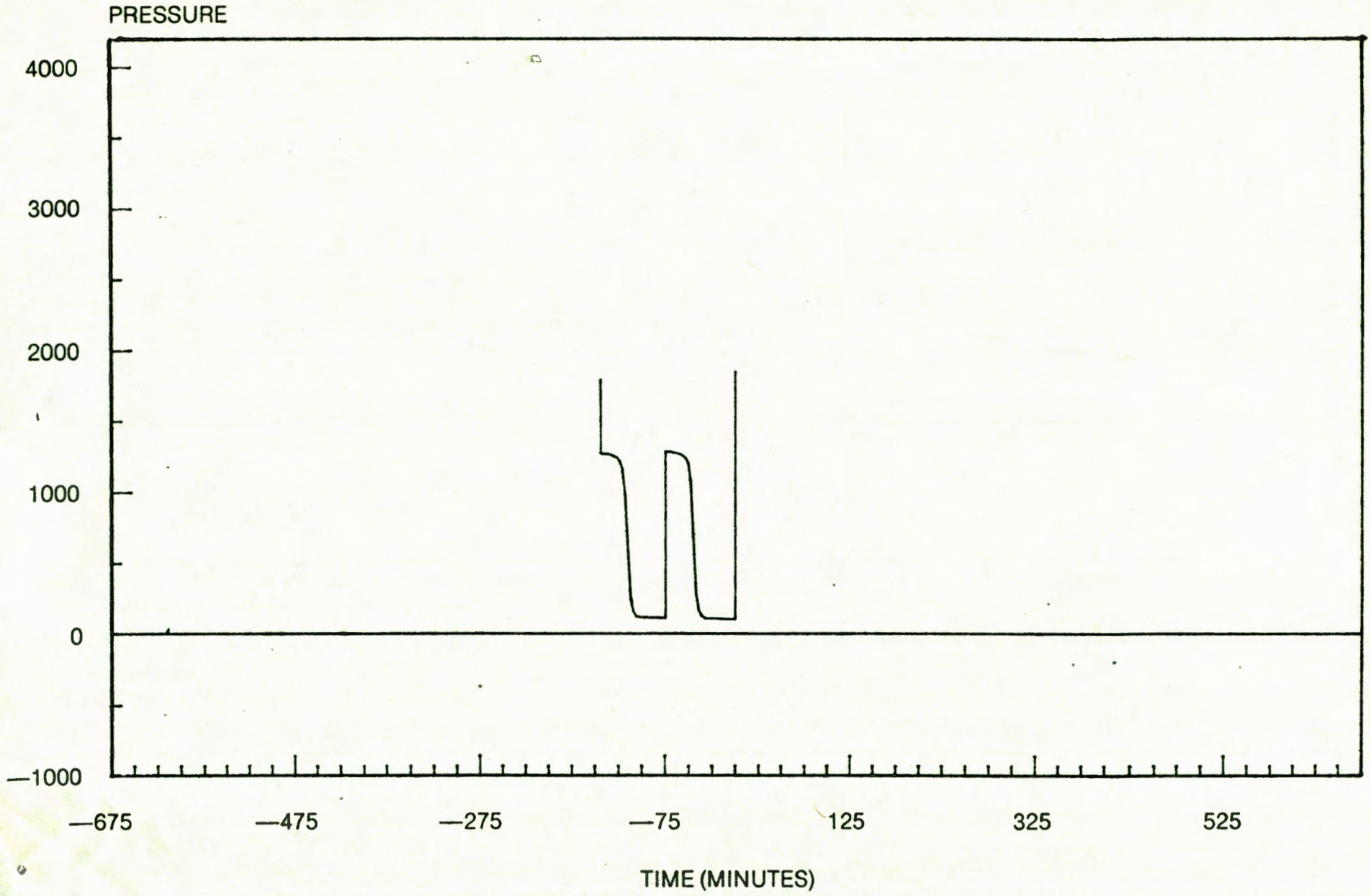
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	1832	1786	PSI
(B) First Initial Flow Pressure	35	40	PSI
(C) First Final Flow Pressure	46	45	PSI
(D) Initial Closed-In Pressure	1226	1227	PSI
(E) Second Initial Flow Pressure	46	52	PSI
(F) Second Final Flow Pressure	58	58	PSI
(G) Final Closed-In Pressure	1203	1217	PSI
(H) Final Hydrostatic Mud	1809	1735	PSI

CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie TEST 5106

DST 3 03/31/85



PRESSURE BREAKDOWN

TEST TICKET NO. 5106

DST Number: 3 Recorder Number: 13255 Clock Number: 25113

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	39	0	45	0	52	0	58
3	39	3	50	3	52	3	66
6	39	6	67	6	52	6	97
9	39	9	102	9	54	9	189
12	40	12	218	12	54	12	533
15	41	15	622	15	54	15	925
18	43	18	1023	18	55	18	1110
21	44	21	1152	21	57	21	1164
24	44	24	1184	24	57	24	1187
27	45	27	1201	27	58	27	1197
30	45	30	1212	28	58	30	1206
		33	1217			33	1211
		36	1220			36	1212
		39	1225			39	1214
		42	1225			42	1217
		45	1227				

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 3 TEST TICKET NO. 5106

WELL NAME: Chapman #1 WELL LOCATION: 22-6S-20W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	2991.00	3.826	4.50
4	Drill Collar - 6"	418.00	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	39.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	3475.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 3 TEST TICKET NO. 5106

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	40	0.00	0.00	30.00	12.00	70.00	28.00
TOTAL	40	0.00	0.00	30.00	12.00	70.00	28.00

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	0.00	0.00			
TOTAL	0.00	0.00			

CRUDE OIL TESTING, INC.

DATE 4/1/85 TEST TICKET NO. 5107

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 22 Twp. 6S Range 20W Co. Rooks State KS
Well Name & Number: Chapman #1 Code E19

ENGINEERING DATA

Elevation	2181 KB	Drill Pipe Length	3032 ID 3.8 "
Mud Viscosity	44	Weight Pipe Length	
Mud Weight	9.6	Drill Collar Length	418 ID 2.25"
Water Loss	7.6	Top Packer Depth	3468
Type of Mud	Drispac	Bottom Packer Depth	3473
Anchor Length	25	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 #	13255
Extra Equipment		None	

REMARKS DST #4

FORMATION Lansing Zone 70 & 90 Test Type Conventional
Interval 3473 To 3498 Total Depth 3498
Open 30 Shut In 45 Open 30 Shut In 45
Packer(s) Set 03:08AM Started Off Bottom 05:40AM
Blow 1st Opening Fair building to 8 inches in bucket.
2nd Opening Fair building to 6 inches in bucket.

RECOVERY
Total Feet 236
Recovered 10 feet of Clean oil
Recovered 226 feet of Salt water
Recovered 60 feet of Gas in pipe

CALCULATED RECOVERY
Gas Oil 10 Water 226 Mud
Gravity (Oil) Test Water Chlorides 32,000 PPM
Test Area Temperature 110F Mud System Chlorides 4,000 PPM

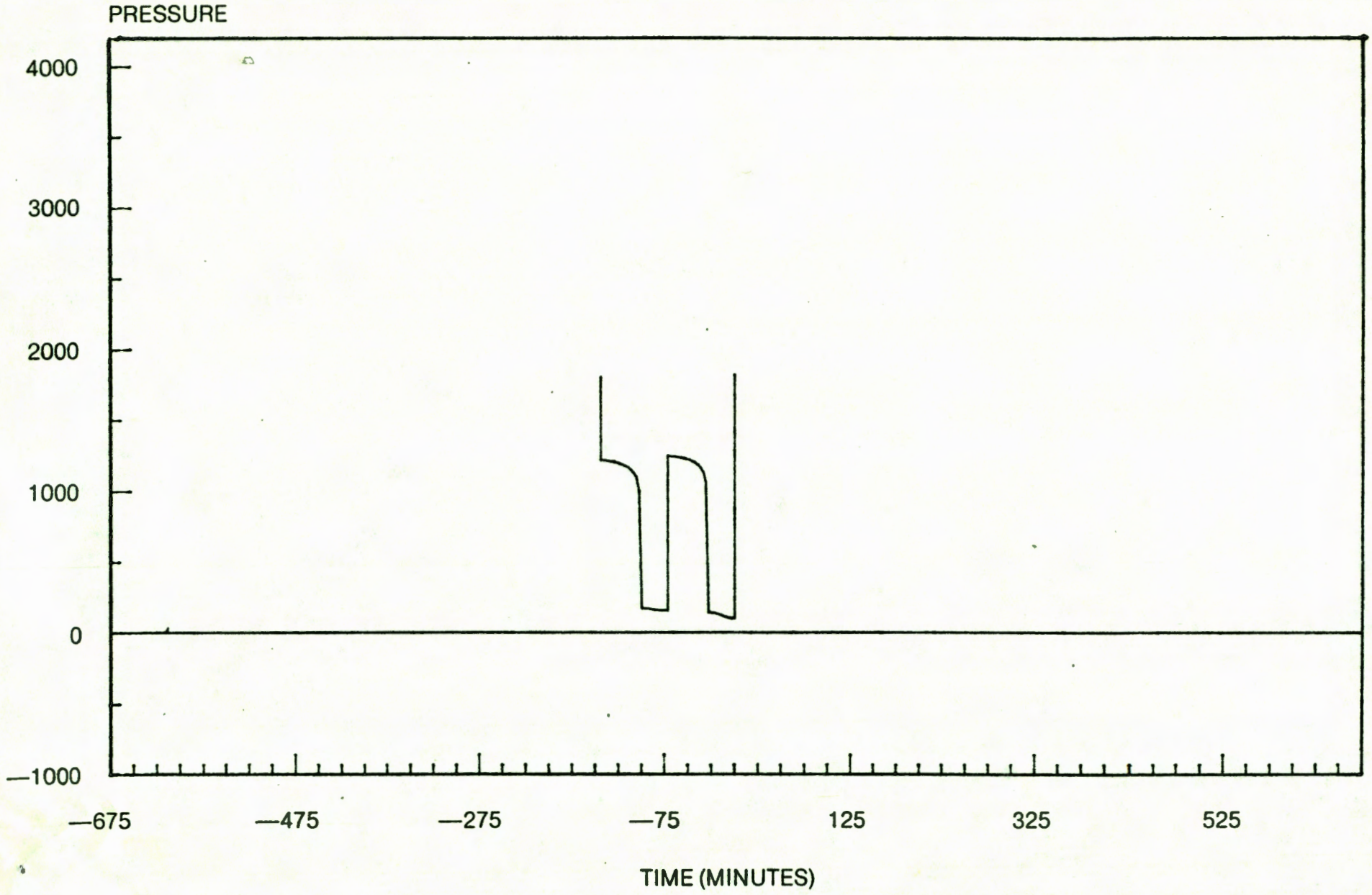
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	1763	1764	PSI
(B) First Initial Flow Pressure	35	42	PSI
(C) First Final Flow Pressure	70	87	PSI
(D) Initial Closed-In Pressure	1191	1194	PSI
(E) Second Initial Flow Pressure	93	101	PSI
(F) Second Final Flow Pressure	116	121	PSI
(G) Final Closed-In Pressure	1168	1168	PSI
(H) Final Hydrostatic Mud	1740	1750	PSI

CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie TEST 5107

DST 4 04/01/85



PRESSURE BREAKDOWN

TEST TICKET NO. 5107

DST Number: 4 Recorder Number: 13255 Clock Number: 25113

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	41	0	87	0	101	0	121
3	43	3	1011	3	102	3	951
6	46	6	1083	6	102	6	1050
9	52	9	1113	9	102	9	1078
12	59	12	1132	12	104	12	1100
15	68	15	1147	15	108	15	1116
18	74	18	1158	18	111	18	1125
21	80	21	1166	21	114	21	1134
24	82	24	1172	24	115	24	1142
27	86	27	1178	27	117	27	1148
28	87	30	1182	28	121	30	1152
		33	1186			33	1157
		36	1189			36	1160
		39	1191			39	1164
		42	1194			42	1166
		44	1194			45	1167

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 4 TEST TICKET NO. 5107

WELL NAME: Chapman #1 WELL LOCATION: 22-6S-20W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3032.00	3.826	4.50
4	Drill Collar - 6"	418.00	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	21.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	3498.75		

CRUDE OIL TESTING, INC.

DATE 4/1/85 TEST TICKET NO. 5108

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 22 Twp. 6S Range 20W Co. Rooks State KS
Well Name & Number: Chapman #1 Code E19

ENGINEERING DATA

Elevation	2181 KB	Drill Pipe Length	3082 ID 3.8 "
Mud Viscosity	41	Weight Pipe Length	
Mud Weight	9.4	Drill Collar Length	418 ID 2.25"
Water Loss	8	Top Packer Depth	3518
Type of Mud	Drispac	Bottom Packer Depth	3523
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 #	13255
Extra Equipment		None	

REMARKS

DST #5
Weak blow during both shutins.

FORMATION

Lansing Zone 140 160 180 Test Type Conventional
Interval 3523 To 3588 Total Depth 3588
Open 30 Shut In 30 Open 30 Shut In 30
Packer(s) Set 07:38PM Started Off Bottom 09:40PM
Blow 1st Opening Strong off bottom of bucket in 10 min.
2nd Opening Strong off bottom of bucket in 6 min.

RECOVERY

Total Feet 382
Recovered 382 feet of Oil cut mud - gassy
Recovered 434 feet of Gas in pipe

CALCULATED RECOVERY

Gas 87.8 Oil 176.6 Water Mud 117.6
Gravity (Oil) Test Water Chlorides PPM
Test Area Temperature 114F Mud System Chlorides 4,000 PPM

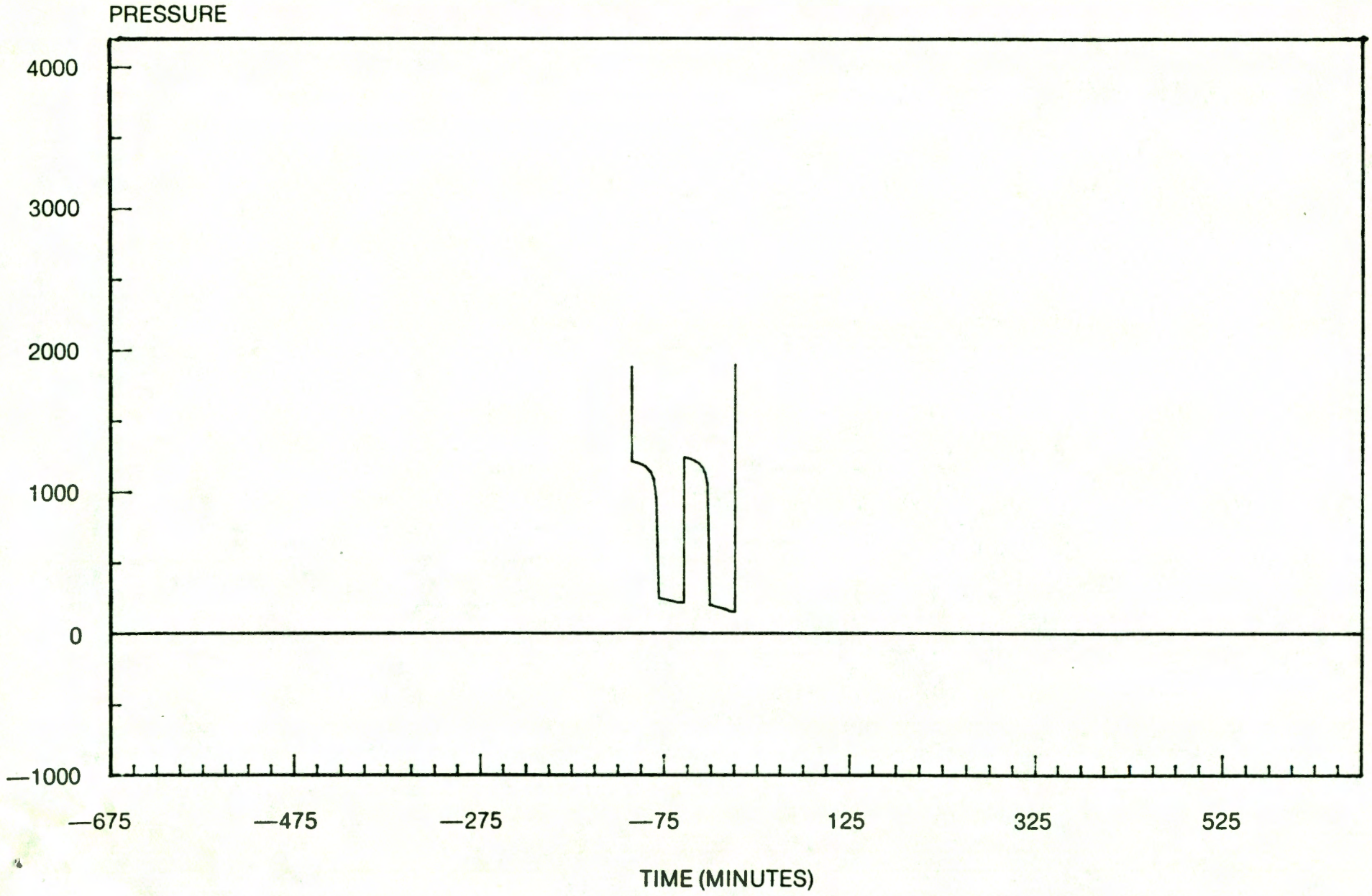
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	1844	1833	PSI
(B) First Initial Flow Pressure	70	86	PSI
(C) First Final Flow Pressure	116	136	PSI
(D) Initial Closed-In Pressure	1168	1180	PSI
(E) Second Initial Flow Pressure	140	154	PSI
(F) Second Final Flow Pressure	163	188	PSI
(G) Final Closed-In Pressure	1146	1155	PSI
(H) Final Hydrostatic Mud	1821	1821	PSI

CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie TEST 5108

DST 5 04/01/85



PRESSURE BREAKDOWN

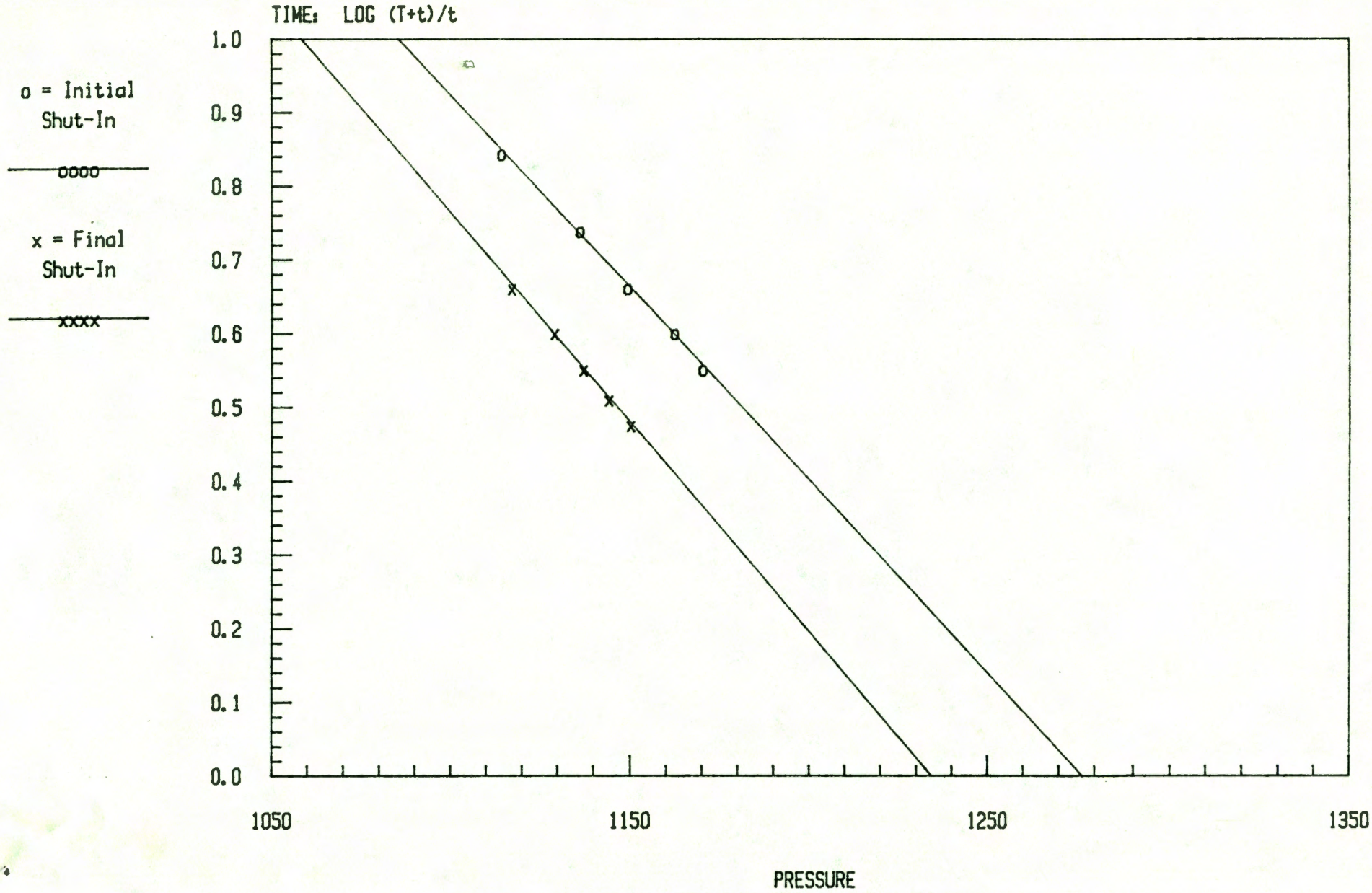
TEST TICKET NO. 5108

DST Number: 5 Recorder Number: 13255 Clock Number: 25113

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	86	0	136	0	153	0	187
3	88	3	1004	3	153	3	897
6	93	6	1080	6	154	6	1029
9	101	9	1114	9	159	9	1077
12	109	12	1136	12	164	12	1098
15	115	15	1149	15	168	15	1117
18	120	18	1162	18	174	18	1129
21	124	21	1170	21	178	21	1137
24	132	24	1175	24	182	24	1144
27	136	27	1180	27	187	27	1150
		28	1180			30	1155

CRUDE OIL TESTING INC TEST 5108 DST 5

FOR: A. Scott Ritchie 4/1/85



ZONE EVALUATION - Page 1

DST NUMBER 5 TEST TICKET NO. 5108

Company: A. Scott Ritchie Date: 4/1/85

Drill Collar Feet	Drill Collar ID	Weight Pipe Feet	Weight Pipe ID	Drill Pipe Feet	Drill Pipe ID	Average ID	Gals/ Foot
177	2.250	0	0.000	0	3.800	2.2500	0.207

Bbls Recovered/Test = 0.9650 Est Bbls/Day = 25.7331 T = 54

Initial Shut-In

PRESS.	TIME	T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
1170	21	2.571	3.571	0.41017	0.55284
1162	18	3.000	4.000	0.47712	0.60206
1149	15	3.600	4.600	0.55630	0.66276
1136	12	4.500	5.500	0.65321	0.74036
1114	9	6.000	7.000	0.77815	0.84510

Final Shut-In

Press.	Time	T/t	(T+t)/t	Log T/t	Log (T+t)/t
1150	27	2.000	3.000	0.30103	0.47712
1144	24	2.250	3.250	0.35218	0.51188
1137	21	2.571	3.571	0.41017	0.55284
1129	18	3.000	4.000	0.47712	0.60206
1117	15	3.600	4.600	0.55630	0.66276

Time Option is Log (T+t)/t

IP(0)	IP(1)	FP(0)	FP(1)	M	Kh/B	DR	Q1	Pts
1275.6	1084.6	1231.9	1060.2	171.7	24.372	1.991	51.242	1,3
1276.6	1084.7	1231.9	1060.2	171.7	24.375	1.991	51.246	1-3
1272.1	1087.8	1230.1	1062.0	168.2	24.880	1.012	26.041	1-4
1276.6	1085.0	1234.2	1058.2	176.1	23.764	1.967	50.606	1-5

Graph Data For Points

Initial Time	Initial Pressure	Final Time	Final Pressure
0.5528	1170	0.4771	1150
0.6020	1162	0.5118	1144
0.6627	1149	0.5528	1137
0.7403	1136	0.6020	1129
0.8450	1114	0.6627	1117

Graph Data For Lines

0	1276.59	0	1234.24
1	1085.01	1	1058.16

ZONE EVALUATION - Page 2

DST Number 5 TEST TICKET NO. 5108

Company: A. Scott Ritchie Date: 4/1/85

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

$M = G_0 - G_1$ 176.07

Damage Ratio:

$DR = .183 \frac{Ps - Pf}{M}$ 1.97

Effective Pay:

$\frac{Kh}{B} = \frac{162.6\ Q}{M}$ 23.76 Md. Ft.

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

$Q_1 = Q\ DR$ 50.61 Bbls/Day

Production: 0.96 Bbls/Hour

$Q = \frac{1440\ R}{T}$ 25.73 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: 5 TEST TICKET NO. 5108

WELL NAME: Chapman #2 WELL LOCATION: 22-6S-20W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3082.00	3.826	4.50
4	Drill Collar - 6"	418.00	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	3588.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 5 TEST TICKET NO. 5108

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	10	10.00	1.00	30.00	3.00	60.00	6.00
2	124	10.00	12.40	45.00	55.80	45.00	55.80
3	124	30.00	37.20	45.00	55.80	25.00	31.00
4	124	30.00	37.20	50.00	62.00	20.00	24.80
TOTAL	382	22.98	87.80	46.23	176.60	30.79	117.60

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	0.00	0.00			
2	0.00	0.00			
3	0.00	0.00			
4	0.00	0.00			
TOTAL	0.00	0.00			

CRUDE OIL TESTING, INC.

DATE 4/2/85 TEST TICKET NO. 5109

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 22 Twp. 6S Range 20W Co. Rooks State KS
Well Name & Number: Chapman #1 Code E19

ENGINEERING DATA

Elevation	2181 KB	Drill Pipe Length	3158 ID 3.8 "
Mud Viscosity	43	Weight Pipe Length	
Mud Weight	9.4	Drill Collar Length	418 ID 2.25"
Water Loss	8	Top Packer Depth	3599
Type of Mud	Drispac	Bottom Packer Depth	3604
Anchor Length	53	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 #	13255
Extra Equipment		None	

REMARKS DST #6

FORMATION Conglomerate Zone Sand Test Type Conventional
Interval 3604 To 3657 Total Depth 3657
Open 45 Shut In 45 Open 45 Shut In 45
Packer(s) Set 10:33AM Started Off Bottom 01:35PM
Blow 1st Opening Weak building to 3 inches in bucket.
2nd Opening Weak building to 2 inches in bucket.

RECOVERY Total Feet 20
Recovered 20 feet of Oil cut mud

CALCULATED RECOVERY

Gas	Oil 7	Water	Mud 13
Gravity (Oil)		Test Water Chlorides	PPM
Test Area Temperature 116F		Mud System Chlorides	4,000 PPM

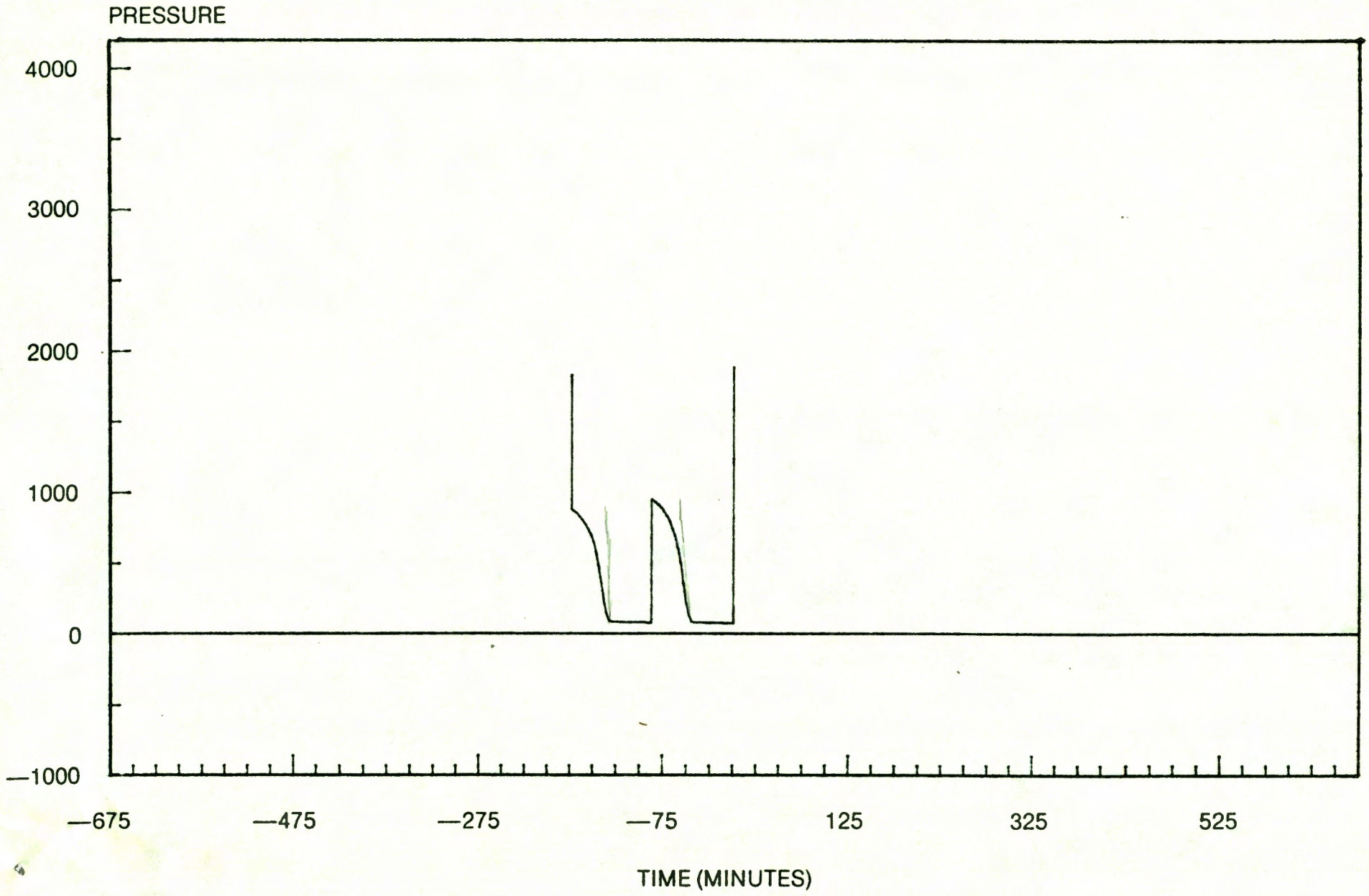
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	1855	1851	PSI
(B) First Initial Flow Pressure	46	37	PSI
(C) First Final Flow Pressure	46	44	PSI
(D) Initial Closed-In Pressure	928	918	PSI
(E) Second Initial Flow Pressure	46	43	PSI
(F) Second Final Flow Pressure	46	50	PSI
(G) Final Closed-In Pressure	836	849	PSI
(H) Final Hydrostatic Mud	1832	1800	PSI

CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie TEST 5109

DST 6 04/02/85



PRESSURE BREAKDOWN

TEST TICKET NO. 5109

DST Number: 6 Recorder Number: 13255 Clock Number: 25113

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	37	0	44	0	43	0	50
3	38	3	53	3	43	3	61
6	38	6	97	6	46	6	104
9	38	9	184	9	47	9	191
12	40	12	321	12	47	12	329
15	41	15	470	15	47	15	448
18	41	18	574	18	47	18	548
21	41	21	660	21	47	21	624
24	41	24	715	24	47	24	677
27	41	27	769	27	47	27	715
30	41	30	805	30	47	30	747
33	43	33	835	33	48	33	775
36	44	36	863	36	50	36	800
39	44	39	883	39	50	39	822
42	44	42	899	42	50	42	836
		45	916			45	849
		46	918				

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 6 TEST TICKET NO. 5109

WELL NAME: Chapman #1 WELL LOCATION: 22-6S-20W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3158.00	3.826	4.50
4	Drill Collar - 6"	418.00	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	49.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	3652.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 6 TEST TICKET NO. 5109

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	20	0.00	0.00	35.00	7.00	65.00	13.00
TOTAL	20	0.00	0.00	35.00	7.00	65.00	13.00

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	0.00	0.00			
TOTAL	0.00	0.00			

CRUDE OIL TESTING, INC.

DATE 4/2/85 TEST TICKET NO. 5110

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 22 Twp. 6S Range 20W Co. Rooks State KS
Well Name & Number: Chapman #1 Code E19

ENGINEERING DATA

Elevation	2181 KB	Drill Pipe Length	3223 ID 3.8 "
Mud Viscosity	43	Weight Pipe Length	
Mud Weight	9.4	Drill Collar Length	418 ID 2.25"
Water Loss	8	Top Packer Depth	3659
Type of Mud	Drispac	Bottom Packer Depth	3664
Anchor Length	5	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 #	13255
Extra Equipment		None	

REMARKS DST #7

FORMATION Arbuckle Zone Test Type Conventional
Interval 3664 To 3669 Total Depth 3669
Open 45 Shut In 45 Open 45 Shut In 45
Packer(s) Set 11:48PM Started Off Bottom 02:50AM
Blow 1st Opening Weak building to 4 inches in bucket.
2nd Opening Weak building to 3 inches in bucket.

RECOVERY Total Feet 129
Recovered 129 feet of Mud cut oil

CALCULATED RECOVERY

Gas	Oil 88.45	Water	Mud 40.55
Gravity (Oil)		Test Water Chlorides	PPM
Test Area Temperature 120F		Mud System Chlorides	4,000 PPM

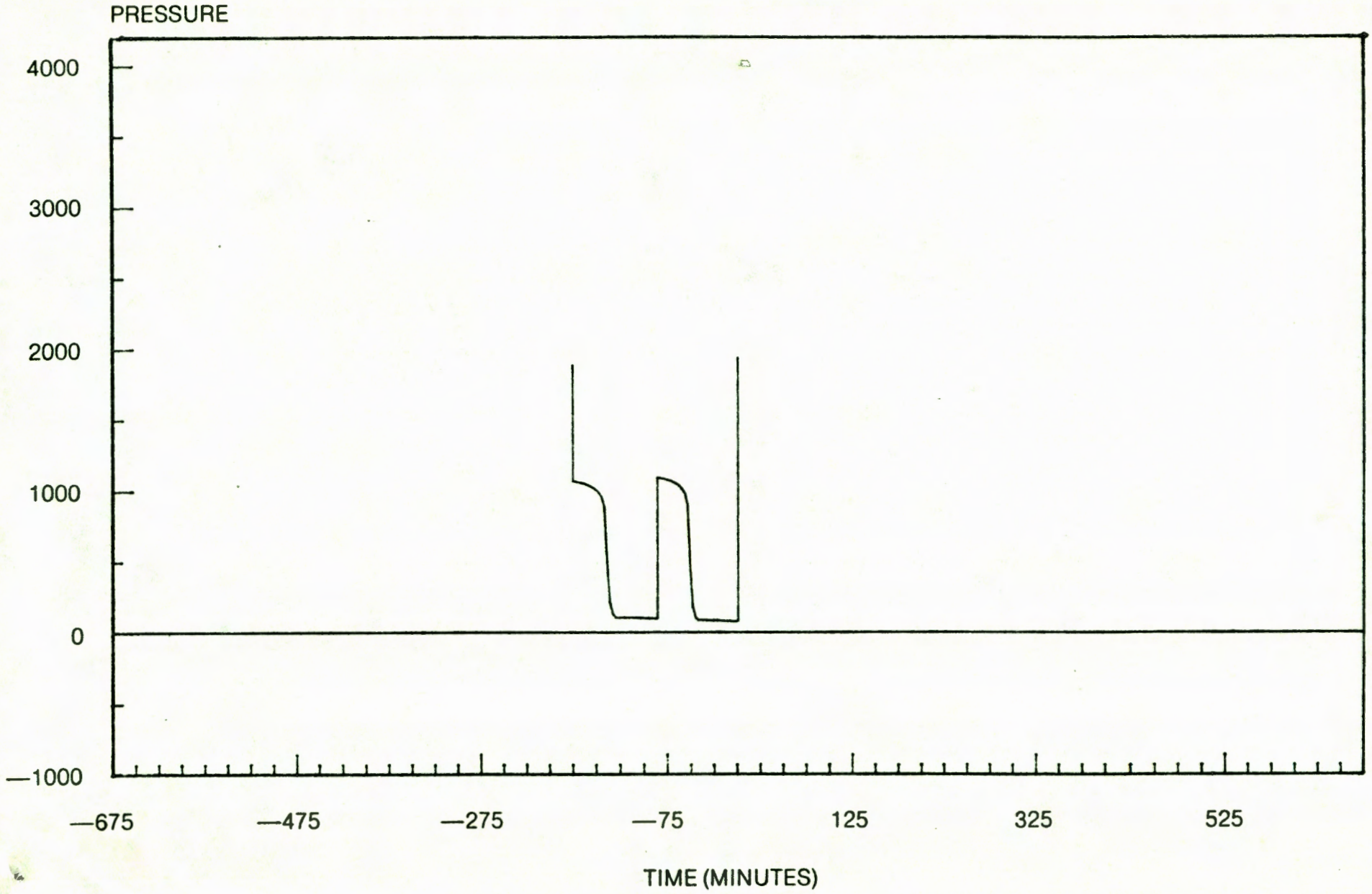
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	1866	1874	PSI
(B) First Initial Flow Pressure	23	16	PSI
(C) First Final Flow Pressure	23	29	PSI
(D) Initial Closed-In Pressure	1020	1035	PSI
(E) Second Initial Flow Pressure	35	41	PSI
(F) Second Final Flow Pressure	35	50	PSI
(G) Final Closed-In Pressure	1009	1012	PSI
(H) Final Hydrostatic Mud	1844	1829	PSI

CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie TEST 5110

DST 7 04/02/85



PRESSURE BREAKDOWN

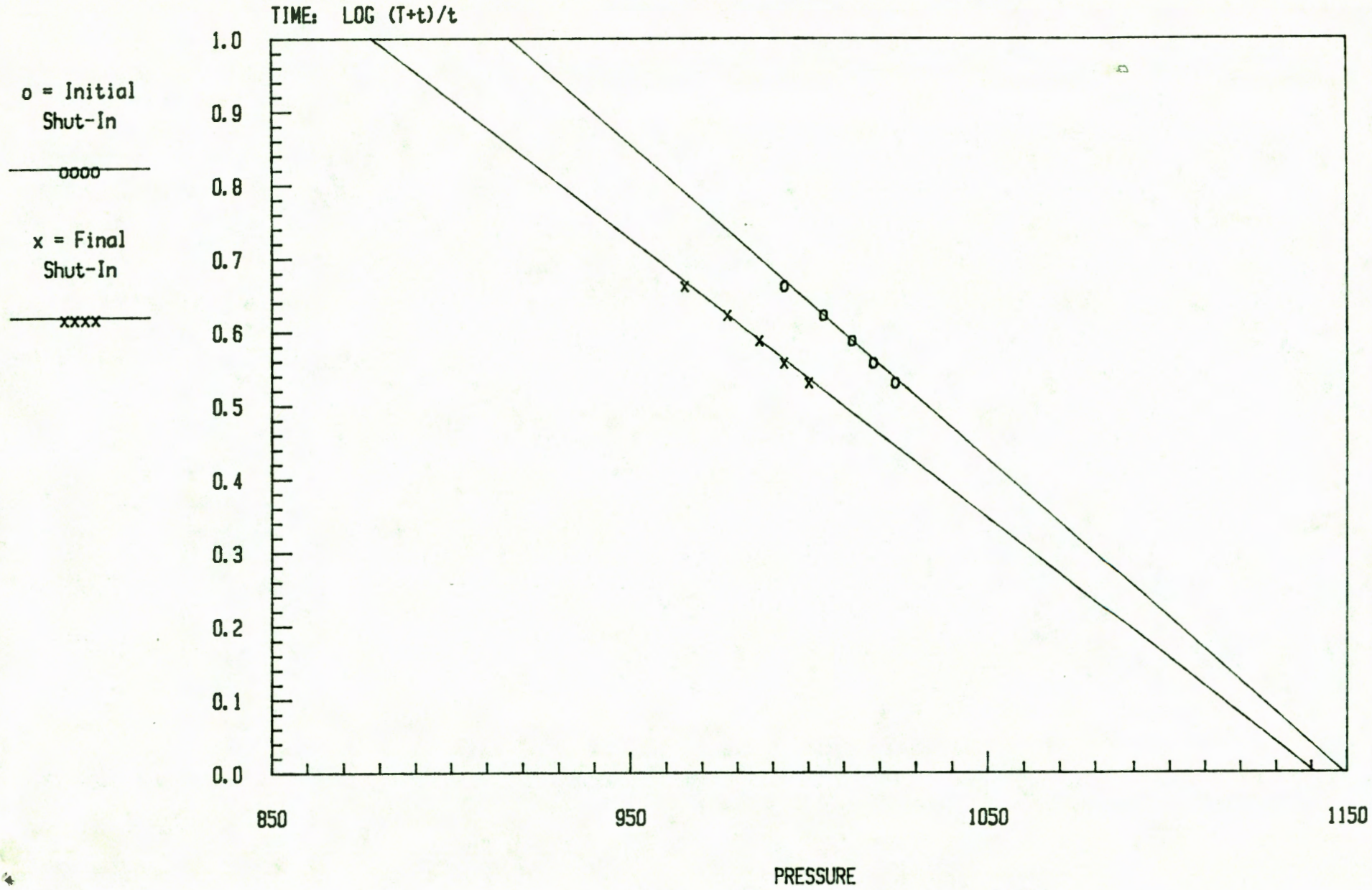
TEST TICKET NO. 5110

DST Number: 7 Recorder Number: 13255 Clock Number: 25113

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	16	0	29	0	40	0	50
3	16	3	44	3	40	3	74
6	17	6	117	6	40	6	157
9	18	9	388	9	40	9	448
12	18	12	851	12	41	12	834
15	19	15	929	15	43	15	902
18	20	18	958	18	44	18	932
21	22	21	979	21	44	21	951
24	24	24	993	24	45	24	965
27	24	27	1004	27	46	27	977
30	24	30	1012	30	46	30	986
33	25	33	1018	33	46	33	993
36	26	36	1024	36	48	36	1000
39	27	39	1029	39	48	39	1004
42	29	42	1032	42	48	42	1009
43	29	44	1034	44	50	45	1011
						46	1011

CRUDE OIL TESTING INC TEST 5110 DST 7

FOR: A. Scott Ritchie 4/2/85



ZONE EVALUATION - Page 1

DST NUMBER 7 TEST TICKET NO. 5110

Company: A. Scott Ritchie Date: 4/2/85

Drill Collar Feet	Drill Collar ID	Weight Pipe Feet	Weight Pipe ID	Drill Pipe Feet	Drill Pipe ID	Average ID	Gals/ Foot
88	2.250	0	0.000	0	3.800	2.2500	0.207

Bbls Recovered/Test = 0.3000 Est Bbls/Day = 4.9653 T = 87

Initial Shut-In

PRESS.	TIME	T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
1024	36	2.417	3.417	0.38322	0.53360
1018	33	2.636	3.636	0.42101	0.56067
1012	30	2.900	3.900	0.46240	0.59106
1004	27	3.222	4.222	0.50816	0.62554
993	24	3.625	4.625	0.55931	0.66511

Final Shut-In

Press.	Time	T/t	(T+t)/t	Log T/t	Log (T+t)/t
1000	36	2.417	3.417	0.38322	0.53360
993	33	2.636	3.636	0.42101	0.56067
986	30	2.900	3.900	0.46240	0.59106
977	27	3.222	4.222	0.50816	0.62554
965	24	3.625	4.625	0.55931	0.66511

Time Option is Log (T+t)/t

IP(0)	IP(1)	FP(0)	FP(1)	M	Kh/B	DR	Q1	Pts
1135.4	926.6	1130.0	886.4	243.6	3.314	1.687	8.378	1,3
1135.2	926.6	1129.7	886.4	243.4	3.317	1.688	8.382	1-3
1139.1	923.4	1132.4	884.2	248.3	3.252	1.674	8.314	1-4
1148.8	915.9	1140.8	877.7	263.2	3.068	1.636	8.125	1-5

Graph Data For Points

Initial Time	Initial Pressure	Final Time	Final Pressure
0.5336	1024	0.5336	1000
0.5606	1018	0.5606	993
0.5910	1012	0.5910	986
0.6255	1004	0.6255	977
0.6651	993	0.6651	965

Graph Data For Lines

0	1148.78	0	1140.83
1	915.95	1	877.67

ZONE EVALUATION - Page 2

DST Number 7 TEST TICKET NO. 5110

Company: A. Scott Ritchie Date: 4/2/85

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

$M = G_0 - G_1$ 263.16

Damage Ratio:

$DR = .183 \frac{Ps - Pf}{M}$ 1.64

Effective Pay:

$\frac{Kh}{B} = \frac{162.6\ Q}{M}$ 3.07 Md. Ft.

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

$Q_1 = Q\ DR$ 8.12 Bbls/Day

Production: 0.30 Bbls/Hour

$Q = \frac{1440\ R}{T}$ 4.97 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: 7 TEST TICKET NO. 5110

WELL NAME: Chapman #1 WELL LOCATION: 22-6S-20W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3223.00	3.826	4.50
4	Drill Collar - 6"	418.00	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	1.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	3669.75		

CALCULATED RECOVERY ANALYSIS

DST Number: 7 TEST TICKET NO. 5110

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	67	0.00	0.00	95.00	63.65	5.00	3.35
2	62	0.00	0.00	40.00	24.80	60.00	37.20
TOTAL	129	0.00	0.00	68.57	88.45	31.43	40.55

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	0.00	0.00			
2	0.00	0.00			
TOTAL	0.00	0.00			