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ORIGINAL

CRUDE OIL TESTING, INC.

JAN 04 2005

DATE 4/11/85

TEST TICKET NO. 5014

Company: ~~CONFIDENTIAL~~ ~~CONFIDENTIAL~~

Company Address: 125 N. Market Suite 950 Wichita KS 67202

Location: Sec. 6 Twp. 14S Range 27W Co. Gove

State KS

Well Name & Number: Hutton #1

Code E9

ENGINEERING DATA	Elevation	2582	KB	Drill Pipe Length	3317	ID 3.8 "
	Mud Viscosity	48		Weight Pipe Length	567	ID 2.76 "
	Mud Weight	9.6		Drill Collar Length		
	Water Loss	17		Top Packer Depth	3901	
	Type of Mud	Chemical		Bottom Packer Depth	3906	
	Anchor Length	96		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 #	11085	
	Extra Equipment			None		

REMARKS DST #1

FORMATION Lansing Zone 140 160 180 Test Type Conventional
Interval 3906 To 4002 Total Depth 4002
Open 30 Shut In 45 Open 30 Shut In 45
Packer(s) Set 03:38PM Started Off Bottom 06:10PM
Blow 1st Opening Weak to good off bottom in 28 min.
2nd Opening Weak to good off bottom in 25 min.

RECOVERY Total Feet 194
Recovered 194 feet of Gassy oil cut watery mud

CALCULATED RECOVERY Gas 18.9 Oil 35.9 Water 60.85 Mud 78.35
Gravity (Oil) Test Water Chlorides 35,000 PPM
Test Area Temperature 106F Mud System Chlorides 15,000 PPM

		FIELD READING	OFFICE READING	
PRESSURE	(A) Initial Hydrostatic Mud	2069	2075	PSI
	(B) First Initial Flow Pressure	99	114	PSI
	(C) First Final Flow Pressure	132	129	PSI
	(D) Initial Closed-In Pressure	1267	1282	PSI
	(E) Second Initial Flow Pressure	154	168	PSI
	(F) Second Final Flow Pressure	165	175	PSI
	(G) Final Closed-In Pressure	1267	1273	PSI
	(H) Final Hydrostatic Mud	2058	2028	PSI

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CRUDE OIL TESTING INC.

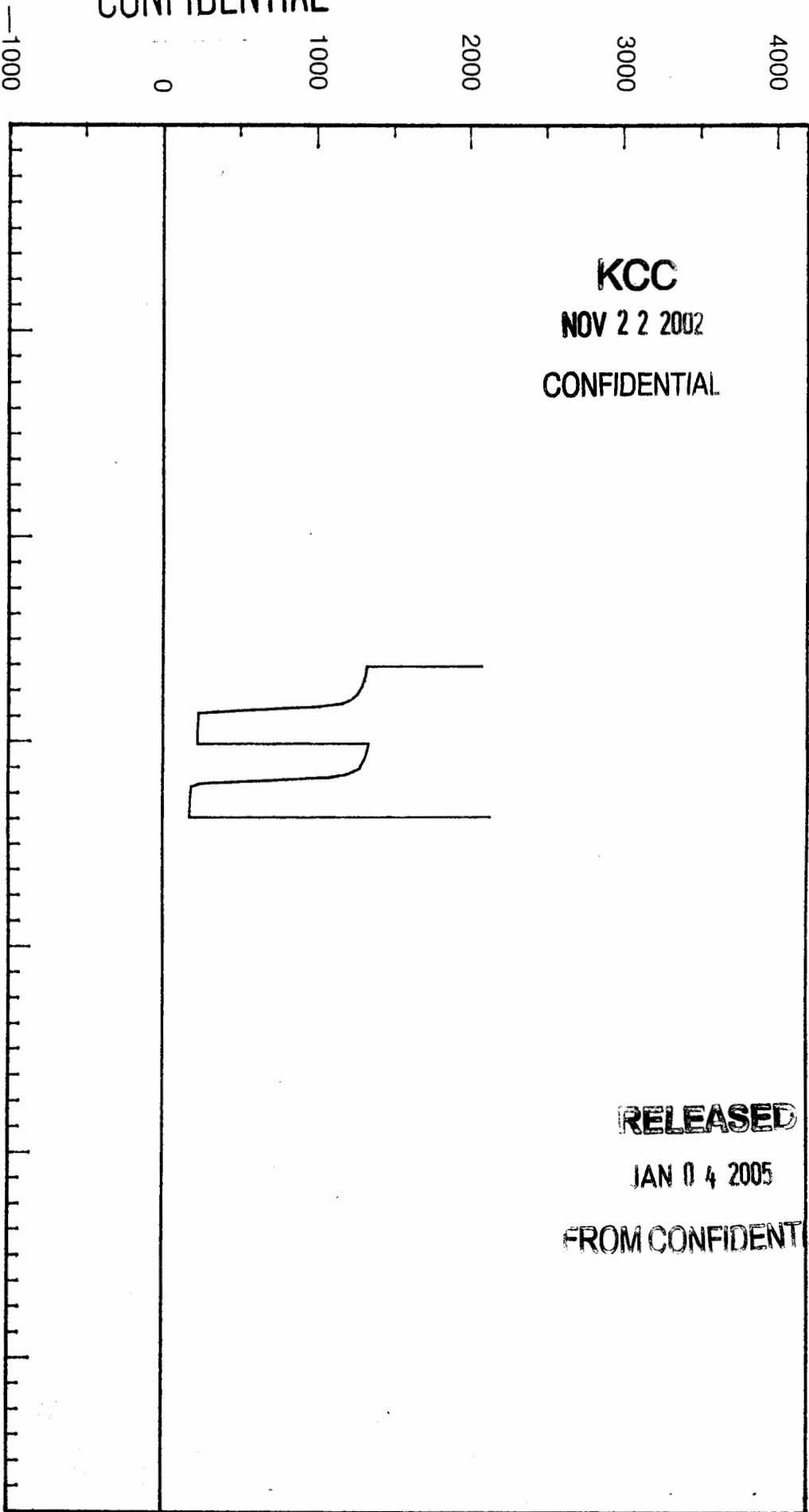
FOR: A. Scott Ritchie

TEST 5014

DST 1

04/11/85

PRESSURE



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TIME (MINUTES)

CONFIDENTIAL PRESSURE BREAKDOWN

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TEST TICKET NO. 5014

DST Number: 1 Recorder Number: 11085 Clock Number: 19124

First Flow Pressure	Initial Shut-In	Second Flow Pressure	Final Shut-In
Mins. Press.	Mins. Press.	Mins. Press.	Mins. Press.
0 113	0 129	0 167	0 175
3 115	3 185	3 167	3 533
6 117	6 638	6 167	6 962
9 117	9 1035	9 167	9 1111
12 118	12 1136	12 168	12 1161
15 118	15 1186	15 169	15 1188
18 119	18 1223	18 170	18 1210
21 121	21 1231	21 172	21 1223
24 123	24 1244	24 174	24 1235
27 126	27 1254	27 175	27 1244
30 129	30 1261	30 175	30 1251
	33 1268		33 1256
	36 1274		36 1263
	39 1278		39 1266
	42 1281		42 1269
			45 1273
			46 1273

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o = Initial
Shut-In

x = Final
Shut-In

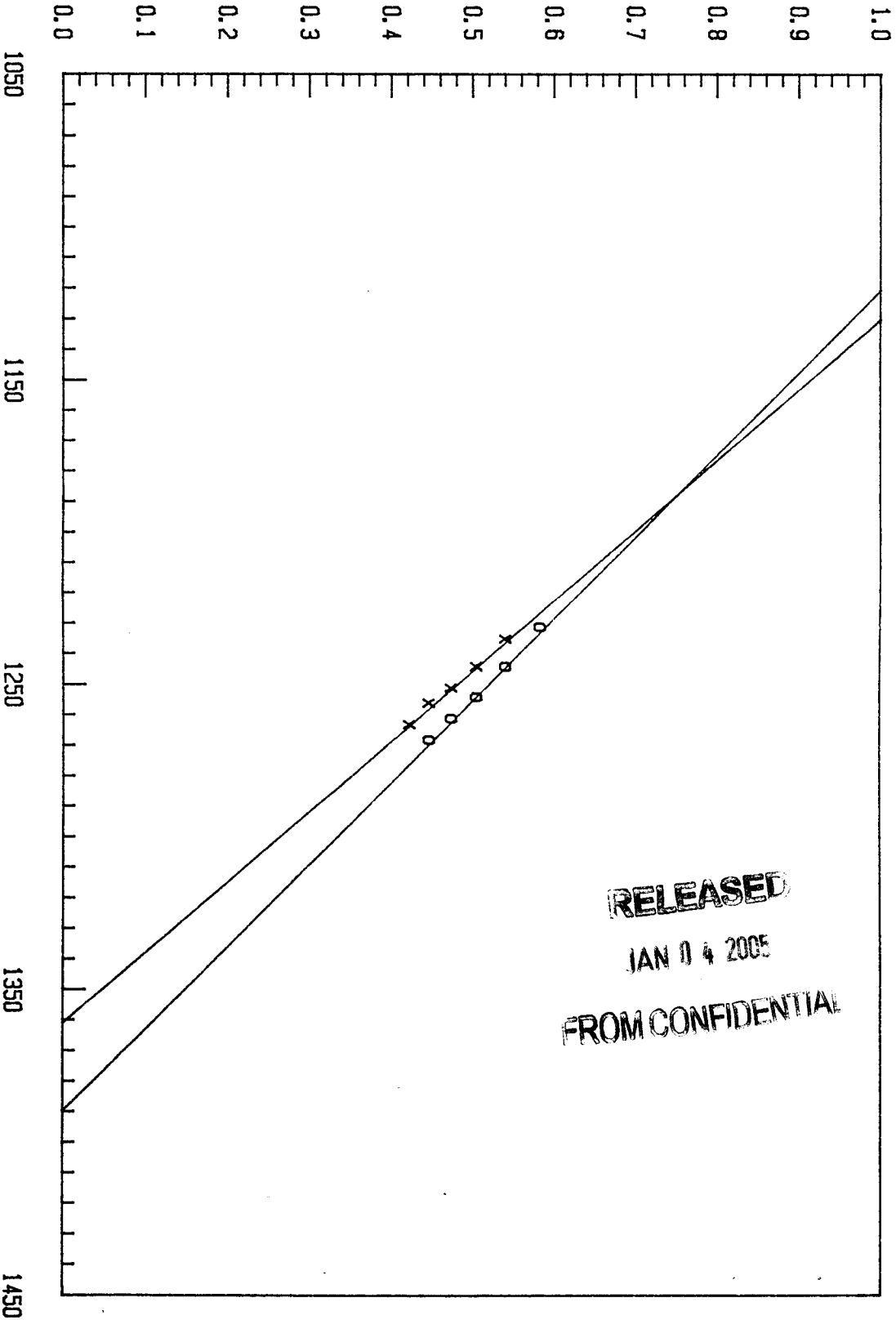
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CRUDE OIL TESTING INC TEST 5014 DST 1

FOR: A. Scott Ritchie

4/11/85

TIME: LOG (T+c)/t



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PRESSURE

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ZONE EVALUATION - Page 1

DST NUMBER 1

TEST TICKET NO. 5014

Company: A. Scott Ritchie

Date: 4/11/85

Drill Collar Feet	ID	Weight Pipe Feet	Pipe ID	Drill Pipe Feet	Pipe ID	Average ID	Gals/ Foot
0	0.000	36	2.760	0	3.800	2.7600	0.311

Bbls Recovered/Test = 0.2657 Est Bbls/Day = 6.3758 T = 60

PRESS.	TIME	Initial Shut-In			
		T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
1268	33	1.818	2.818	0.25964	0.44997
1261	30	2.000	3.000	0.30103	0.47712
1254	27	2.222	3.222	0.34679	0.50816
1244	24	2.500	3.500	0.39794	0.54407
1231	21	2.857	3.857	0.45593	0.58627

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Press.	Time	Final Shut-In			
		T/t	(T+t)/t	Log T/t	Log (T+t)/t
1263	36	1.667	2.667	0.22185	0.42597
1256	33	1.818	2.818	0.25964	0.44997
1251	30	2.000	3.000	0.30103	0.47712
1244	27	2.222	3.222	0.34679	0.50816
1235	24	2.500	3.500	0.39794	0.54407

IP(0)	IP(1)	FP(0)	FP(1)	M	Time Option is Log (T+t)/t			
					Kh/B	DR	Q1	Pts
1376.3	1135.7	1362.9	1128.3	234.6	4.419	1.827	11.648	1,3
1375.9	1135.7	1362.0	1128.5	233.5	4.440	1.831	11.673	1-3
1381.7	1129.2	1358.6	1132.8	225.8	4.591	1.859	11.853	1-4
1389.8	1120.5	1360.9	1129.9	231.0	4.488	1.840	11.731	1-5

Graph Data For Points

Initial		Final	
Time	Pressure	Time	Pressure
0.4499	1268	0.4259	1263
0.4771	1261	0.4499	1256
0.5081	1254	0.4771	1251
0.5440	1244	0.5081	1244
0.5862	1231	0.5440	1235

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Graph Data For Lines

0	1389.77	0	1360.91
1	1120.50	1	1129.94

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ZONE EVALUATION - ~~FROM~~ CONFIDENTIAL

DST Number 1

TEST TICKET NO. 5014

Company: A. Scott Ritchie

Date: 4/11/85

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

$$M = G_0 - G_1$$

230.97

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Damage Ratio:

$$DR = .183 \frac{P_s - P_f}{M}$$

1.84

Effective Pay:

$$\frac{Kh}{B} = \frac{162.6 Q}{M}$$

4.49 Md. Ft.

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

$$Q_1 = Q DR$$

11.73 Bbls/Day

Production:

0.27 Bbls/Hour

$$Q = \frac{1440 R}{T}$$

6.38 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.

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EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 1

TEST TICKET NO. 5014

WELL NAME: Hutton #1

WELL LOCATION: 6-14S-27W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3317.00	3.826	4.50
3	Weight Pipe	567.00	2.760	4.50
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	92.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4003.75		

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CALCULATED RECOVERY ANALYSIS

ORIGINAL

DST Number: 1

TEST TICKET NO. 5014

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	5	0.00	0.00	25.00	1.25	55.00	2.75
2	63	10.00	6.30	25.00	15.75	40.00	25.20
3	63	10.00	6.30	20.00	12.60	45.00	28.35
4	63	10.00	6.30	10.00	6.30	35.00	22.05
TOTAL	<u>194</u>	9.74	<u>18.90</u>	18.51	<u>35.90</u>	40.39	<u>78.35</u>

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	20.00	1.00			
2	25.00	15.75			
3	25.00	15.75			
4	45.00	28.35			
TOTAL	31.37	<u>60.85</u>			

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CRUDE OIL TESTING, INC.

DATE 4/12/85

TEST TICKET NO. 5015

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 6 Twp. 14S Range 27W Co. Gove State KS
 Well Name & Number: Hutton #1 Code E9

ENGINEERING DATA	Elevation 2582 KB	Drill Pipe Length 3342	ID 3.8 "
	Mud Viscosity 48	Weight Pipe Length 630	ID 2.76 "
	Mud Weight 9.6	Drill Collar Length	
	Water Loss 17	Top Packer Depth 3988	
	Type of Mud Chemical	Bottom Packer Depth 3993	
	Anchor Length 37	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 # 11085	
	Extra Equipment	None	

REMARKS DST #2
 Blow came back on final shutin.

FORMATION Lansing Zone 200' Test Type Conventional
 Interval 3993 To 4030 Total Depth 4030
 Open 30 Shut In 45 Open 30 Shut In 45
 Packer(s) Set 04:57AM Started Off Bottom 07:30AM
 Blow 1st Opening Strong blow off bottom in 11 min.
 2nd Opening Strong steady blow off bottom.

RECOVERY Total Feet 136
 Recovered 136 feet of Gassy oil cut mud
 Recovered 819 feet of Gas in pipe

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CALCULATED RECOVERY Gas 49.75 Oil 30.35 Water Mud 55.9
 Gravity (Oil) Test Water Chlorides PPM
 Test Area Temperature 108F Mud System Chlorides 15,000 PPM

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	FIELD READING	OFFICE READING	
PRESSURE (A) Initial Hydrostatic Mud	2069	2071	PSI
(B) First Initial Flow Pressure	77	84	PSI
(C) First Final Flow Pressure	77	92	PSI
(D) Initial Closed-In Pressure	1191	1196	PSI
(E) Second Initial Flow Pressure	110	113	PSI
(F) Second Final Flow Pressure	110	118	PSI
(G) Final Closed-In Pressure	1170	1173	PSI
(H) Final Hydrostatic Mud	2058	1998	PSI

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CRUDE OIL TESTING INC.

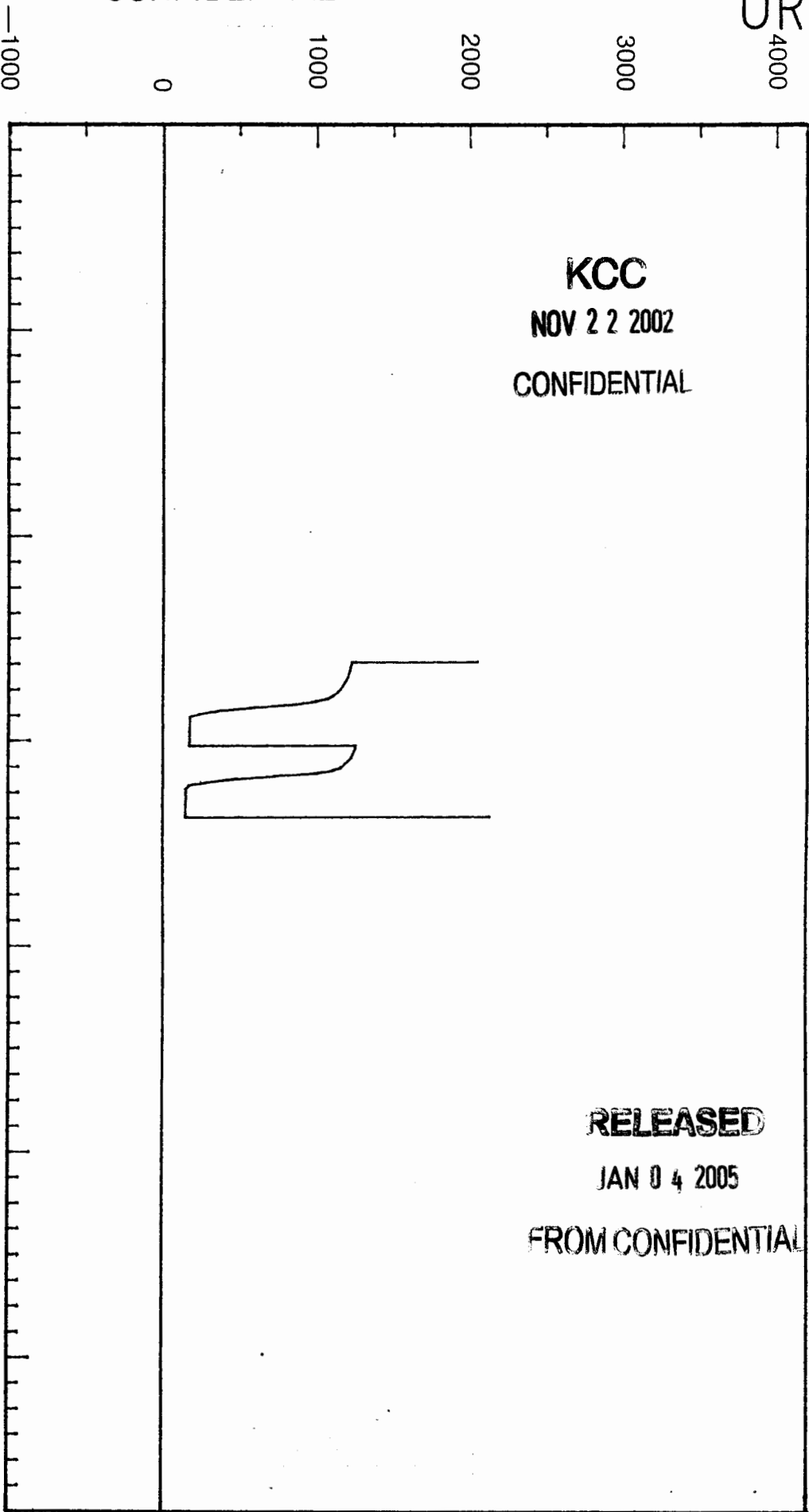
FOR: A. Scott Ritchie

TEST 5015

DST 2

04/12/85

PRESSURE



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TIME (MINUTES)

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PRESSURE BREAKDOWN

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TEST TICKET NO. 5015

DST Number: 2 Recorder Number: 11085 Clock Number: 19124

First Flow Pressure	Initial Shut-In	Second Flow Pressure	Final Shut-In
Mins. Press.	Mins. Press.	Mins. Press.	Mins. Press.
0 84	0 91	0 112	0 118
3 85	3 111	3 113	3 185
6 85	6 226	6 114	6 303
9 85	9 394	9 114	9 517
12 86	12 666	12 114	12 802
15 86	15 946	15 114	15 943
18 88	18 1049	18 115	18 1017
21 88	21 1100	21 117	21 1053
24 88	24 1126	24 118	24 1081
27 90	27 1146	27 118	27 1100
28 91	30 1163	28 118	30 1113
	33 1175		33 1126
	36 1184		36 1137
	39 1193		39 1147
	42 1196		42 1154
			45 1160
			48 1165
			51 1171
			54 1173

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x = Final
Shut-In

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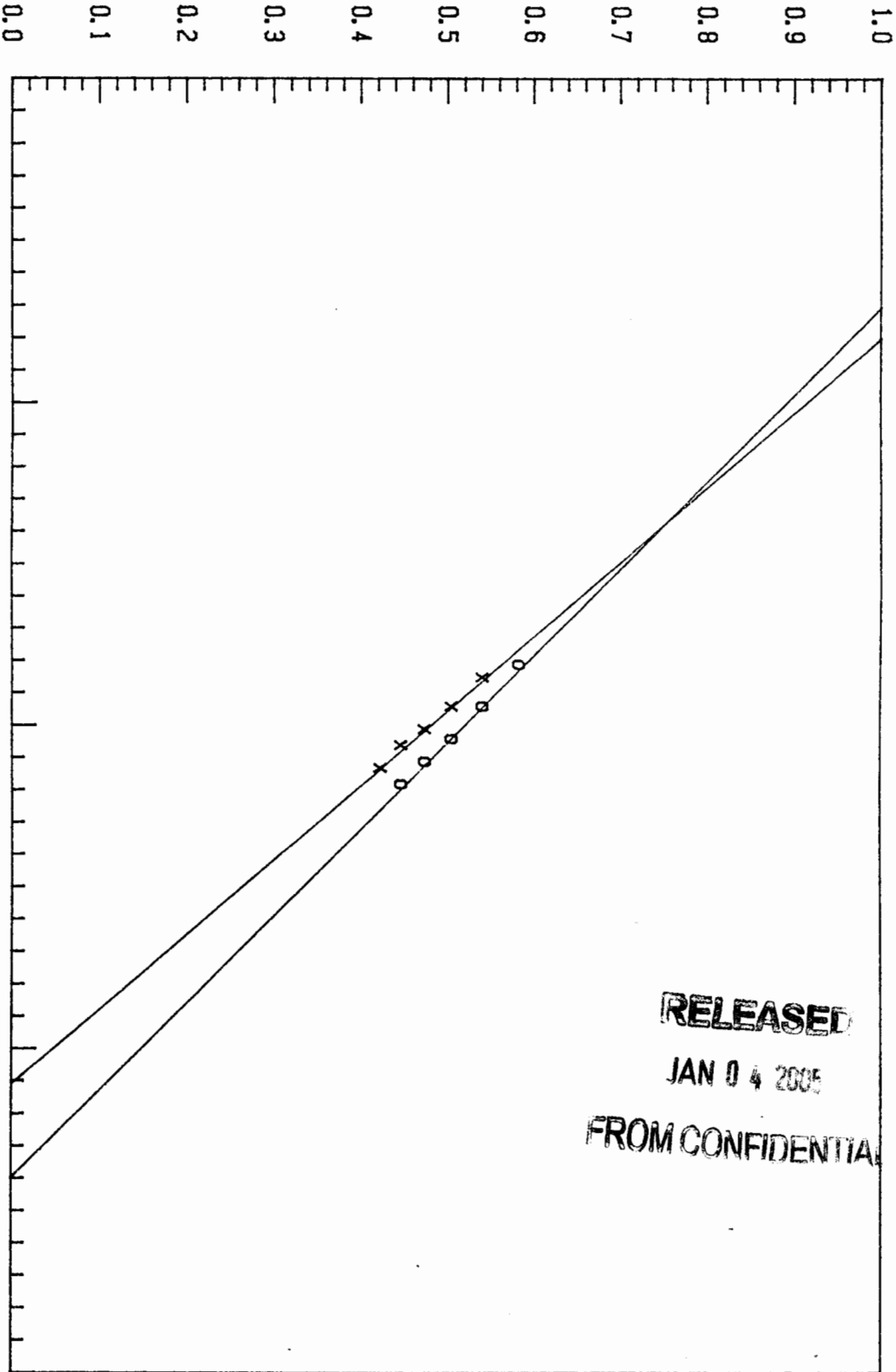
o = Initial
Shut-In

CRUDE OIL TESTING INC TEST 5014 DST 1

FOR: A. Scott Ritchie

4/11/85

TIME: LOG (T+t)/t



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PRESSURE

1050 1150 1250 1350 1450

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ZONE EVALUATION - Page 1

DST NUMBER 2

TEST TICKET NO. 5015

Company: A. Scott Ritchie

Date: 4/12/85

Drill Collar Feet	ID	Weight Pipe Feet	Pipe ID	Drill Pipe Feet	Pipe ID	Average ID	Gals/ Foot
0	0.000	30	2.760	0	3.800	2.7600	0.311

Bbls Recovered/Test = 0.2406 Est Bbls/Day = 6.1876 T = 56

PRESS.	TIME	Initial Shut-In			
		T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
1193	39	1.436	2.436	0.15712	0.38666
1184	36	1.556	2.556	0.19189	0.40749
1175	33	1.697	2.697	0.22967	0.43088
1163	30	1.867	2.867	0.27107	0.45738
1146	27	2.074	3.074	0.31682	0.48771

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Press.	Time	Final Shut-In			
		T/t	(T+t)/t	Log T/t	Log (T+t)/t
1171	51	1.098	2.098	0.04062	0.32181
1165	48	1.167	2.167	0.06695	0.33579
1160	45	1.244	2.244	0.09498	0.35111
1154	42	1.333	2.333	0.12494	0.36798
1147	39	1.436	2.436	0.15712	0.38666

IP(0)	IP(1)	Time Option is Log (T+t)/t				DR	Q1	Pts
		FP(0)	FP(1)	M	Kh/B			
1350.4	943.3	1291.8	916.3	375.5	2.679	1.502	9.291	1,3
1350.0	943.4	1291.3	916.6	374.7	2.685	1.503	9.297	1-3
1355.7	935.0	1287.6	924.1	363.5	2.768	1.518	9.393	1-4
1371.3	912.6	1287.8	923.6	364.2	2.762	1.517	9.387	1-5

Graph Data For Points

Initial		Final	
Time	Pressure	Time	Pressure
0.3866	1193	0.3218	1171
0.4074	1184	0.3357	1165
0.4308	1175	0.3511	1160
0.4573	1163	0.3679	1154
0.4877	1146	0.3866	1147

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Graph Data For Lines

0	1371.26	0	1287.85
1	912.62	1	923.63

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ZONE EVALUATION - Page 2

DST Number 2

TEST TICKET NO. 5015

Company: A. Scott Ritchie

Date: 4/12/85

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

$$M = G_0 - G_1$$

364.21

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Damage Ratio:

$$DR = .183 \frac{P_s - P_f}{M}$$

1.52

Effective Pay:

$$\frac{Kh}{B} = \frac{162.6 Q}{M}$$

2.76 Md. Ft.

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

$$Q_1 = Q DR$$

9.39 Bbls/Day

Production:

0.24 Bbls/Hour

$$Q = \frac{1440 R}{T}$$

6.19 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.

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EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 2

TEST TICKET NO. 5015

WELL NAME: Hutton #1

WELL LOCATION: 6-14S-27W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3342.00	3.826	4.50
3	Weight Pipe	630.00	2.760	4.50
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	33.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4032.75		

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CALCULATED RECOVERY ANALYSIS

DST Number: 2

TEST TICKET NO. 5015

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	10	25.00	2.50	20.00	2.00	55.00	5.50
2	63	30.00	18.90	30.00	18.90	40.00	25.20
3	63	45.00	28.35	15.00	9.45	40.00	25.20
TOTAL	<u>136</u>	36.58	<u>49.75</u>	22.32	<u>30.35</u>	41.10	<u>55.90</u>

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	0.00	0.00			
2	0.00	0.00			
3	0.00	0.00			
TOTAL	0.00	<u>0.00</u>			

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CRUDE OIL TESTING, INC.

ORIGINAL

DATE 4/13/85

TEST TICKET NO. 5016

Company: A. Scott Ritchie
Company Address: 125 N. Market Suite 950 Wichita KS 67202
Location: Sec. 6 Twp. 14S Range 27W Co. Gove State KS
Well Name & Number: Hutton #1 Code E9

ENGINEERING DATA Elevation 2582 KB Drill Pipe Length 3610 ID 3.8 "
Mud Viscosity 45 Weight Pipe Length 598 ID 2.76 "
Mud Weight 9.8 Drill Collar Length
Water Loss 16 Top Packer Depth 4225
Type of Mud Chemical Bottom Packer Depth 4230
Anchor Length 58 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 # 11085
Extra Equipment None

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REMARKS DST #3

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FORMATION Fort Scott Zone Test Type Conventional
Interval 4230 To 4288 Total Depth 4288
Open 45 Shut In 45 Open 45 Shut In 45
Packer(s) Set 12:52PM Started Off Bottom 03:55PM
Blow 1st Opening Weak to fair blow 5 inches in bucket.
2nd Opening Fair steady blow 6 inches in bucket.

RECOVERY Total Feet 20
Recovered 20 feet of Slightly oil spotted mud
Recovered 230 feet of Gas in pipe

CALCULATED RECOVERY Gas .8 Oil .2 Water 2 Mud 17
Gravity (Oil) Test Water Chlorides 16,000 PPM
Test Area Temperature 112F Mud System Chlorides 13,000 PPM

PRESSURE (A) Initial Hydrostatic Mud 2241 PSI
(B) First Initial Flow Pressure 77 PSI
(C) First Final Flow Pressure 77 PSI
(D) Initial Closed-In Pressure 165 PSI
(E) Second Initial Flow Pressure 88 PSI
(F) Second Final Flow Pressure 88 PSI
(G) Final Closed-In Pressure 132 PSI
(H) Final Hydrostatic Mud 2231 PSI

FIELD READING OFFICE READING

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EQUIPMENT DATA

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TOOL SEQUENCE REPORT

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DST Number: 3

TEST TICKET NO. 5016

WELL NAME: Hutton #1

WELL LOCATION: 6-14S-27W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3610.00	3.826	4.50
3	Weight Pipe	598.00	2.760	4.50
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	54.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4289.75		

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CALCULATED RECOVERY ANALYSIS

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DST Number: 3

TEST TICKET NO. 5016

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	20	4.00	0.80	1.00	0.20	85.00	17.00
TOTAL	<u>20</u>	4.00	<u>0.80</u>	1.00	<u>0.20</u>	85.00	<u>17.00</u>

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	10.00	2.00	16,000		
TOTAL	10.00	<u>2.00</u>			

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CRUDE OIL TESTING ~~CONFIDENTIAL~~

DATE 4/14/85

TEST TICKET NO. 5017

Company: A. Scott Ritchie
 Company Address: 125 N. Market Suite 950 Wichita KS 67202
 Location: Sec. 6 Twp. 14S Range 27W Co. Gove State KS
 Well Name & Number: Hutton #1 Code E9

ENGINEERING DATA	Elevation 2582 KB	Drill Pipe Length 3710	ID 3.8 "
	Mud Viscosity 44	Weight Pipe Length 598	ID 2.76 "
	Mud Weight 9.8	Drill Collar Length	
	Water Loss 13.6	Top Packer Depth 4325	
	Type of Mud Chemical	Bottom Packer Depth 4330	
	Anchor Length 28	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 # 1105	
	Extra Equipment	None	

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REMARKS DST #4

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FORMATION	Mississippi Zone	Test Type Conventional
	Interval 4330 To 4358	Total Depth 4358
	Open 45 Shut In 45	Open 45 Shut In 45
	Packer(s) Set 06:57AM	Started Off Bottom 10:00AM
	Blow 1st Opening Weak to fair blow 8 inches in bucket.	
	2nd Opening Fair steady blow 8 inches in bucket.	

RECOVERY Total Feet 196
 Recovered 83 feet of Clean gassy oil
 Recovered 113 feet of Muddy oil
 Recovered 50 feet of Gas in pipe

CALCULATED RECOVERY	Gas 18.9	Oil 95.05	Water 9.45	Mud 72.45
	Gravity (Oil) 38		Test Water Chlorides	PPM
	Test Area Temperature 114F	Mud System Chlorides	13,000	PPM

		FIELD READING	OFFICE READING	
PRESSURE	(A) Initial Hydrostatic Mud	2274	2282	PSI
	(B) First Initial Flow Pressure	77	74	PSI
	(C) First Final Flow Pressure	88	91	PSI
	(D) Initial Closed-In Pressure	1191	1133	PSI
	(E) Second Initial Flow Pressure	110	112	PSI
	(F) Second Final Flow Pressure	132	134	PSI
	(G) Final Closed-In Pressure	1061	1072	PSI
	(H) Final Hydrostatic Mud	2263	2265	PSI

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CRUDE OIL TESTING INC.

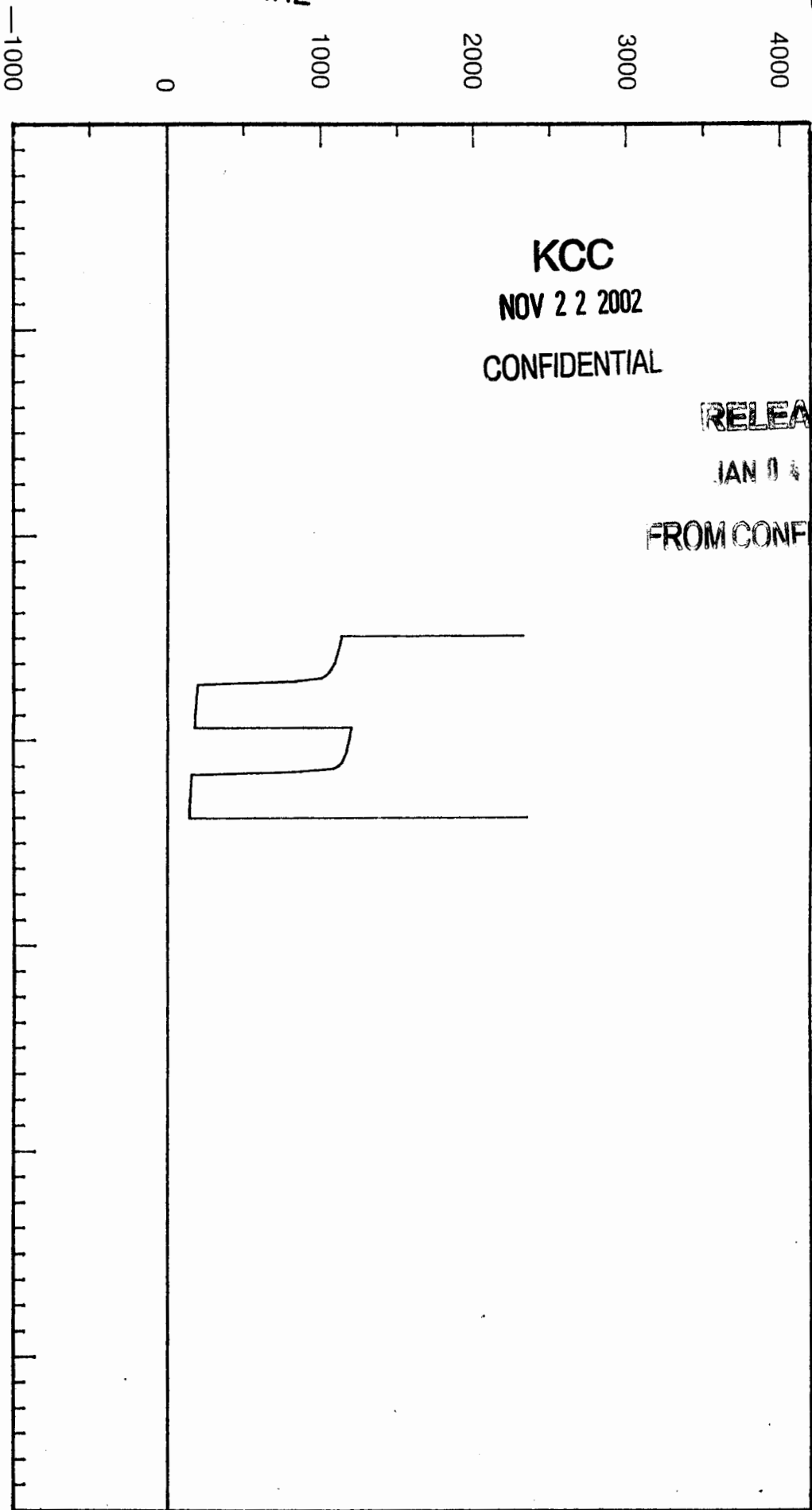
FOR: A. Scott Ritchie

TEST 5017

DST 4

04/14/85

PRESSURE



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—1000 —675 —475 —275 —75 125 325 525

TIME (MINUTES)

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PRESSURE BREAKDOWN

TEST TICKET NO. 5017

DST Number: 4 Recorder Number: 11085 Clock Number: 19124

First Flow Pressure	Initial Shut-In	Second Flow Pressure	Final Shut-In
Mins. Press.	Mins. Press.	Mins. Press.	Mins. Press.
0 74	0 90	0 111	0 133
3 75	3 802	3 114	3 772
6 75	6 1017	6 114	6 935
9 75	9 1049	9 114	9 970
12 76	12 1069	12 115	12 989
15 78	15 1078	15 117	15 1002
18 78	18 1087	18 118	18 1013
21 82	21 1096	21 120	21 1024
24 82	24 1102	24 122	24 1032
27 84	27 1105	27 123	27 1036
30 86	30 1112	30 125	30 1044
33 86	33 1116	33 128	33 1049
36 87	36 1122	36 130	36 1056
39 90	39 1125	39 131	39 1061
42 90	42 1129	42 133	42 1065
	45 1133		45 1069
	46 1133		48 1072

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CRUDE OIL TESTING INC TEST 5017 DST 4

FOR: A. Scott Ritchie

4/14/85

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o = Initial
Shut-In

0000

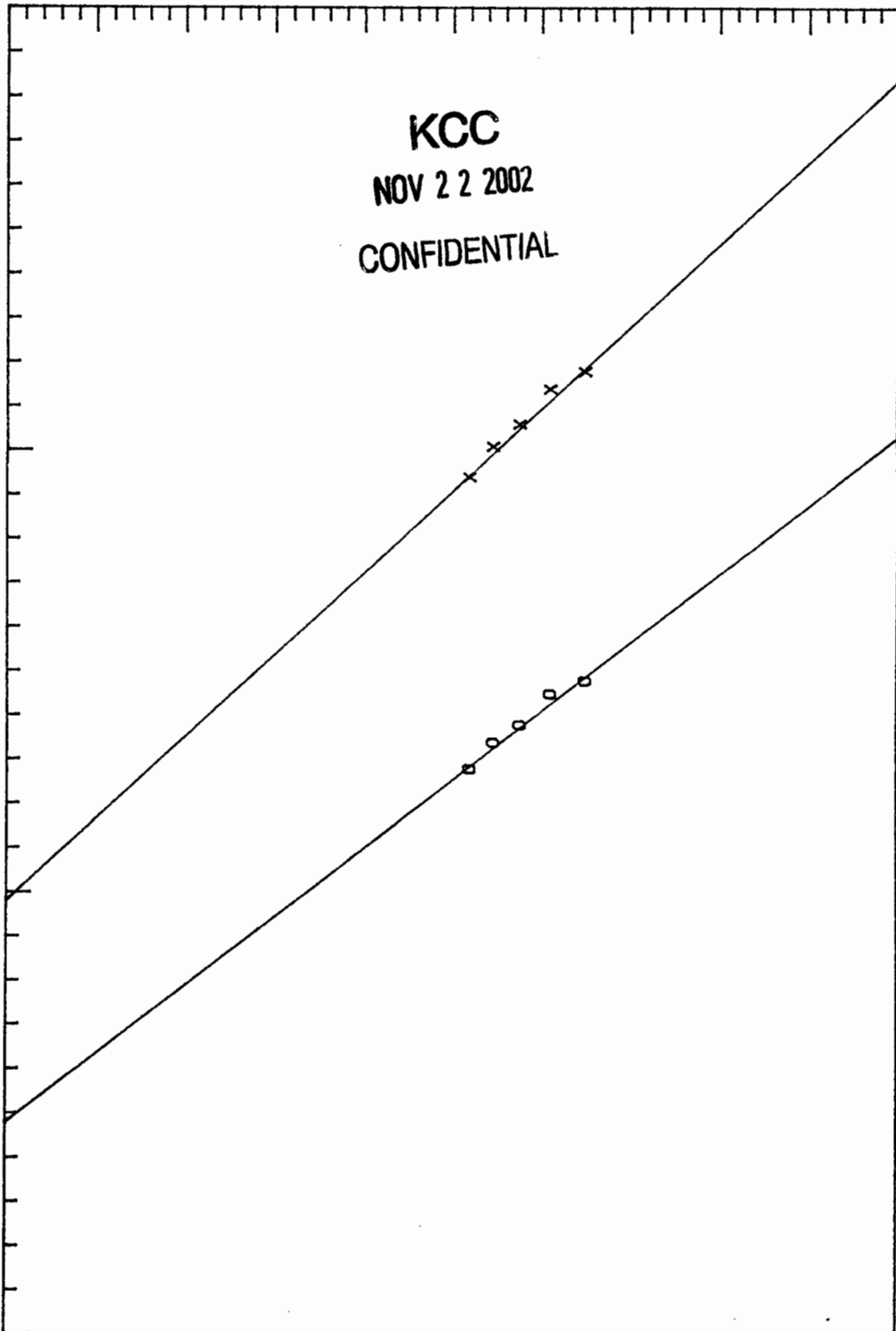
x = Final
Shut-In

xxxx

1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0

TIME: LOG (T+t)/t

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950

1050

1150

1250

PRESSURE

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DST NUMBER 4

TEST TICKET NO. 5017

Company: A. Scott Ritchie

Date: 4/14/85

Drill Collar Feet	ID	Weight Pipe Feet	Pipe ID	Drill Pipe Feet	Pipe ID	Average ID	Gals/ Foot
0	0.000	95	2.760	0	3.800	2.7600	0.311

Bbls Recovered/Test = 0.5024 Est Bbls/Day = 8.6126 T = 84

Initial Shut-In

PRESS. TIME	T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
1122 36	2.333	3.333	0.36798	0.52288
1116 33	2.545	3.545	0.40577	0.54967
1112 30	2.800	3.800	0.44716	0.57978
1105 27	3.111	4.111	0.49292	0.61396
1102 24	3.500	4.500	0.54407	0.65321

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Final Shut-In

Press. Time	T/t	(T+t)/t	Log T/t	Log (T+t)/t
1056 36	2.333	3.333	0.36798	0.52288
1049 33	2.545	3.545	0.40577	0.54967
1044 30	2.800	3.800	0.44716	0.57978
1036 27	3.111	4.111	0.49292	0.61396
1032 24	3.500	4.500	0.54407	0.65321

Time Option is Log (T+t)/t

IP(0)	IP(1)	FP(0)	FP(1)	M	Kh/B	DR	Q1	Pts
1213.9	1038.2	1166.3	955.4	210.9	6.641	1.780	15.332	1,3
1213.0	1038.1	1165.3	955.3	210.0	6.670	1.784	15.361	1-3
1216.4	1035.2	1167.5	953.5	214.1	6.542	1.768	15.231	1-4
1202.2	1046.7	1152.0	966.0	186.0	7.528	1.884	16.229	1-5

Graph Data For Points

Initial Time	Initial Pressure	Final Time	Final Pressure
0.5228	1122	0.5228	1056
0.5496	1116	0.5496	1049
0.5797	1112	0.5797	1044
0.6139	1105	0.6139	1036
0.6532	1102	0.6532	1032

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Graph Data For Lines

0	1202.16	0	1152.02
1	1046.73	1	965.99

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ZONE EVALUATION - Page 2

DST Number 4

TEST TICKET NO. 5017

Company: A. Scott Ritchie

Date: 4/14/85

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

$$M = G_0 - G_1$$

186.03

Damage Ratio:

$$DR = .183 \frac{P_s - P_f}{M}$$

1.88

Effective Pay:

$$\frac{Kh}{B} = \frac{162.6 Q}{M}$$

7.53 Md. Ft.

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

$$Q_1 = Q DR$$

16.23 Bbls/Day

Production:

$$Q = \frac{1440 R}{T}$$

0.50 Bbls/Hour

8.61 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.

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EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 4

TEST TICKET NO. 5017

WELL NAME: Hutton #1

WELL LOCATION: 6-14S-27W

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3710.00	3.826	4.50
3	Weight Pipe	598.00	2.760	4.50
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	24.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4359.75		

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CALCULATED RECOVERY ANALYSIS

DST Number: 4

TEST TICKET NO. 5017

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	10	0.00	0.00	100.00	10.00	0.00	0.00
2	63	15.00	9.45	85.00	53.55	0.00	0.00
3	63	5.00	3.15	35.00	22.05	55.00	34.65
4	63	10.00	6.30	15.00	9.45	60.00	37.80
TOTAL	<u>199</u>	9.50	<u>18.90</u>	47.76	<u>95.05</u>	36.41	<u>72.45</u>

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	0.00	0.00			
2	0.00	0.00			
3	5.00	3.15			
4	15.00	9.45			
TOTAL	6.33	<u>12.60</u>			

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