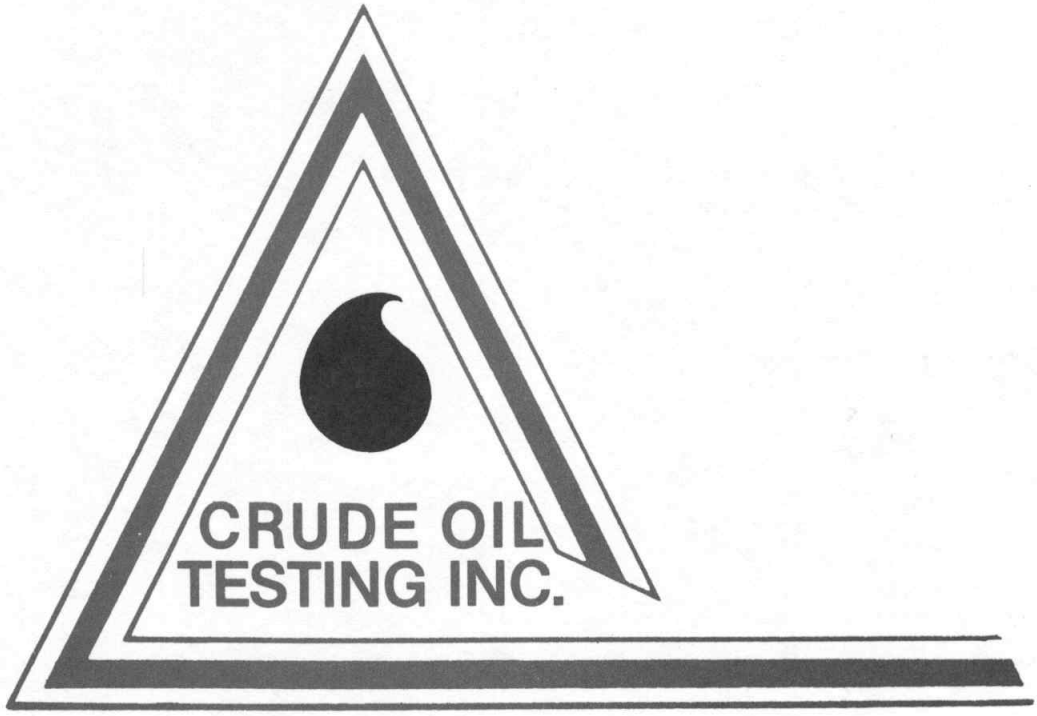


FORMATION TESTING SERVICE REPORT

CRUDE OIL TESTING, INC.

DATE 12/1/87 TEST TICKET NO. 5814

Company: National Petroleum Reserves Inc.
Company Address: 260 N Rock Road #215 Wichita KS 67206
Location: Sec. 35 Twp. 16S Range 29W Co. Lane State KS
Well Name & Number: Gill B Code E20

ENGINEERING DATA

Elevation	2809 KB	Drill Pipe Length	3253 ID 3.8 "
Mud Viscosity	43	Weight Pipe Length	1014 ID 2.76"
Mud Weight	9.6	Drill Collar Length	
Water Loss	9.6	Top Packer Depth	4295
Type of Mud	Chemical	Bottom Packer Depth	4300
Anchor Length	200	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 #	10993
Extra Equipment		Jars & Safety Joint	

REMARKS DST #1

FORMATION

Lenapah-Fort Zone Test Type Conventional
Interval 4300 To 4500 Total Depth 4500
Open 15 Shut In 15 Open 15 Shut In 15
Packer(s) Set 02:40PM Started Off Bottom 03:40PM
Blow 1st Opening Weak blow 1 inch deep in water-did not in
2nd Opening Very weak intermittent blow-flushed tool- no

RECOVERY

Total Feet 30
Recovered 30 feet of Mud with a few oil spots on top.

CALCULATED RECOVERY

Gas	Oil	Water	Mud 30
Gravity (Oil)		Test Water Chlorides	PPM
Test Area Temperature	118F	Mud System Chlorides	8,000 PPM

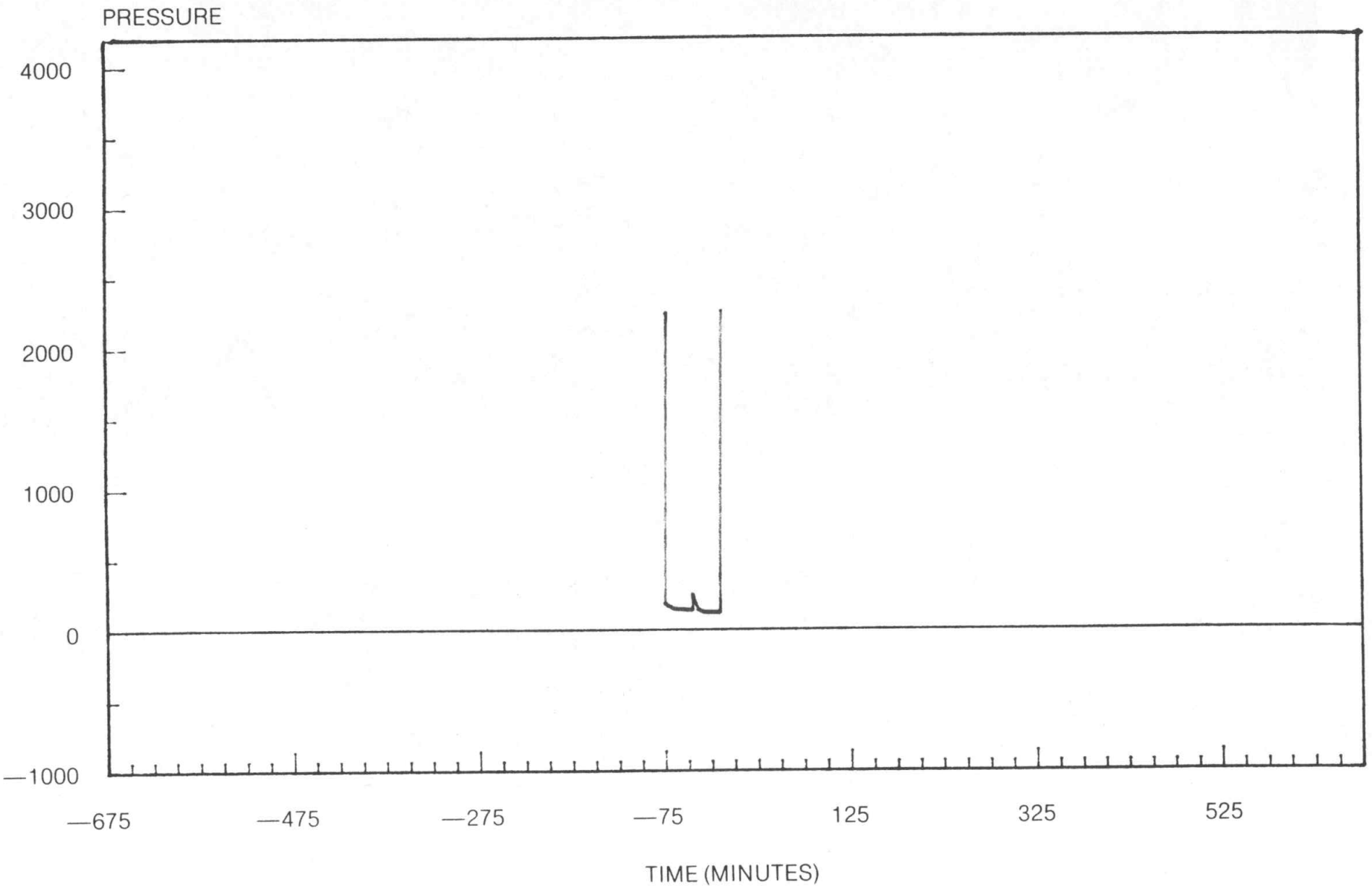
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	2271	2270	PSI
(B) First Initial Flow Pressure	130	132	PSI
(C) First Final Flow Pressure	130	132	PSI
(D) Initial Closed-In Pressure	250	255	PSI
(E) Second Initial Flow Pressure	141	147	PSI
(F) Second Final Flow Pressure	141	150	PSI
(G) Final Closed-In Pressure	196	193	PSI
(H) Final Hydrostatic Mud	2250	2250	PSI

CRUDE OIL TESTING INC.

FOR: NATIONAL PETROLEUM RESERVE TEST 5814

DST #1 12/01/87



PRESSURE BREAKDOWN

TEST TICKET NO. 5814

DST Number: 1 Recorder Number: 10993 Clock Number: 19124

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	131	0	131	0	147	0	150
3	131	3	133	3	147	3	152
6	131	6	139	6	147	6	157
9	131	9	152	9	149	9	166
12	131	12	196	12	150	12	176
15	131	15	255	15	150	15	192

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 1 TEST TICKET NO. 5814

WELL NAME: Gill B WELL LOCATION: 35-16s-29w

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3253.00	3.826	4.50
3	Weight Pipe	1014.00	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
12	Jars	7.00	3.000	5.00
13	Safety Joint	2.31	3.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	196.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4500.06		

CRUDE OIL TESTING, INC.

DATE 12/2/87 TEST TICKET NO. 5815

Company: National Petroleum Reserves Inc.
Company Address: 260 N Rock Road #215 Wichita KS 67206
Location: Sec. 35 Twp. 16S Range 29W Co. Lane State KS
Well Name & Number: Gill B Code E20

ENGINEERING DATA

Elevation	2809 KB	Drill Pipe Length	3424 ID 3.8 "
Mud Viscosity	44	Weight Pipe Length	1014 ID 2.76"
Mud Weight	9.6	Drill Collar Length	
Water Loss	9.6	Top Packer Depth	4459
Type of Mud	Chemical	Bottom Packer Depth	4464
Anchor Length	116	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 #	10993
Extra Equipment		Safety Joint	

REMARKS DST #2

FORMATION

Johnson-Cher Zone Test Type Conventional
Interval 4464 To 4580 Total Depth 4580
Open 30 Shut In 30 Open 30 Shut In 30
Packer(s) Set 10:30AM Started Off Bottom 12:30PM
Blow 1st Opening Weak blow building to 3 inches in water
2nd Opening No blow-flushed tool-very weak blow thru/ ou

RECOVERY

Total Feet 130
Recovered 68 feet of slightly oil cut mud
Recovered 62 feet of water cut mud

CALCULATED RECOVERY

Gas Oil .68 Water 17.54 Mud 111.78
Gravity (Oil) Test Water Chlorides 11,000 PPM
Test Area Temperature 119F Mud System Chlorides 8,000 PPM

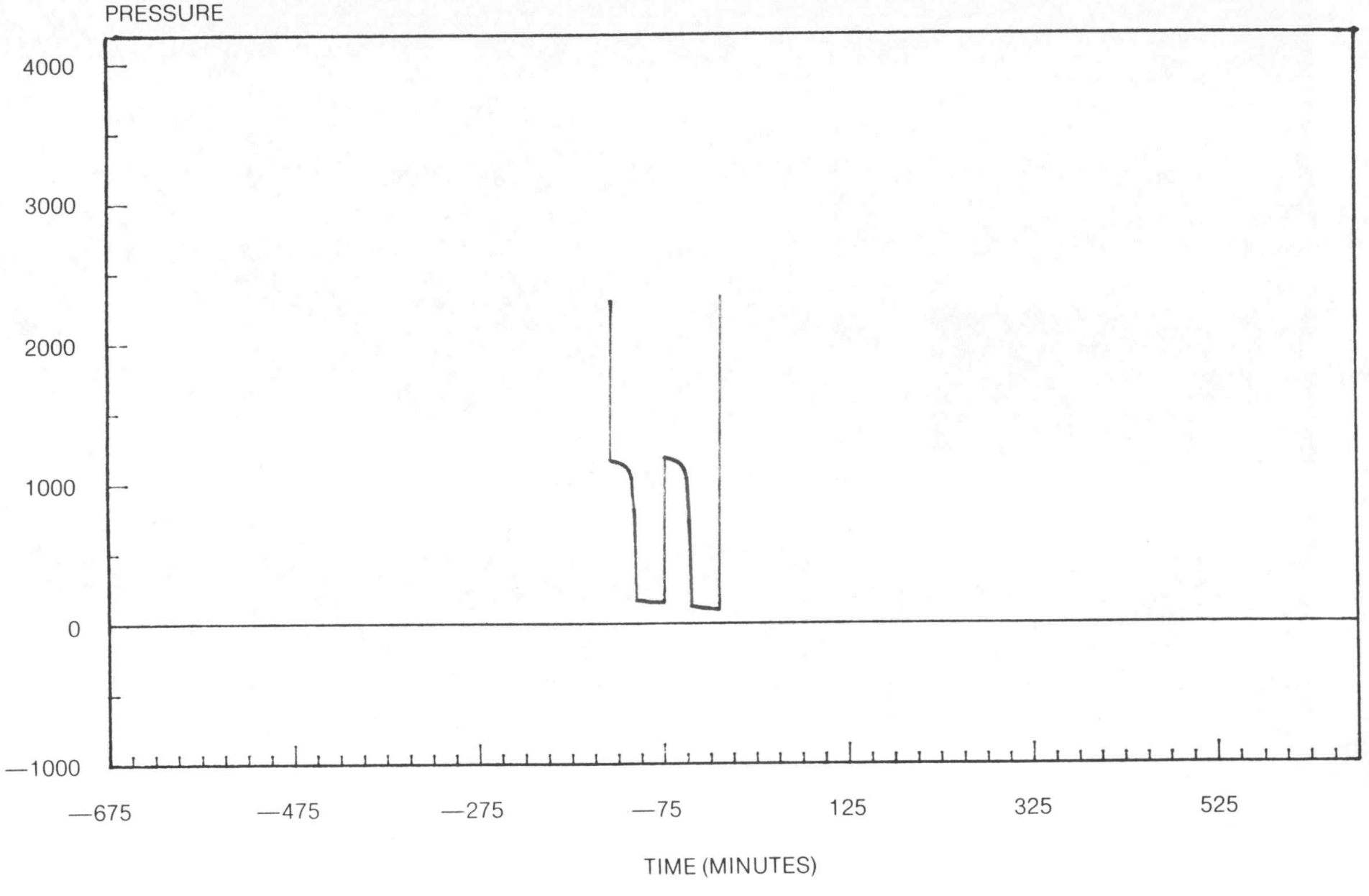
PRESSURE

	FIELD READING	OFFICE READING	
(A) Initial Hydrostatic Mud	2346	2338	PSI
(B) First Initial Flow Pressure	109	105	PSI
(C) First Final Flow Pressure	130	127	PSI
(D) Initial Closed-In Pressure	1189	1181	PSI
(E) Second Initial Flow Pressure	141	154	PSI
(F) Second Final Flow Pressure	163	167	PSI
(G) Final Closed-In Pressure	1167	1162	PSI
(H) Final Hydrostatic Mud	2293	2299	PSI

CRUDE OIL TESTING INC.

FOR: NATIONAL PETROLEUM RESERVE TEST 5815

DST #2 12/02/87



PRESSURE BREAKDOWN

TEST TICKET NO. 5815

DST Number: 2 Recorder Number: 10993 Clock Number: 19124

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Mins.	Press.	Mins.	Press.	Mins.	Press.	Mins.	Press.
0	104	0	126	0	153	0	166
3	104	3	733	3	153	3	812
6	104	6	1040	6	153	6	1041
9	108	9	1108	9	153	9	1094
12	110	12	1137	12	153	12	1118
15	112	15	1153	15	153	15	1132
18	114	18	1163	18	156	18	1140
21	116	21	1171	21	160	21	1147
24	120	24	1178	24	162	24	1153
27	123	27	1182	27	164	27	1157
30	126	30	1187	30	166	30	1162

EQUIPMENT DATA

TOOL SEQUENCE REPORT

DST Number: 2 TEST TICKET NO. 5815

WELL NAME: Gill B WELL LOCATION: 35-16s-29w

Tool #	Tool	Length	I.D.	O.D.
1	Drill Pipe - 4.5"	3424.00	3.826	4.50
3	Weight Pipe	1014.00	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
13	Safety Joint	2.31	3.000	5.00
14	Packer	5.35	1.530	6.75
14	Packer	5.35	1.530	6.75
6	Anchor	112.00	2.750	5.00
15	Recorder Carrier	1.00		5.00
16	Bull Plug	2.00		5.00
	Total Depth	4580.06		

CALCULATED RECOVERY ANALYSIS

DST Number: 2 TEST TICKET NO. 5815

Sample #	Total Feet	***** Gas %	**** Feet	***** Oil %	**** Feet	***** Mud %	**** Feet
1	68	0.00	0.00	1.00	0.68	96.00	65.28
2	62	0.00	0.00	0.00	0.00	75.00	46.50
TOTAL	130	0.00	0.00	0.52	0.68	85.98	111.78

Sample #	**** Water %	*** Feet	Chlorides (PPM)	Resistivity (Ohms)	Temperature (Deg)
1	3.00	2.04			
2	25.00	15.50	11,000		
TOTAL	13.49	17.54			

ZONE EVALUATION - Page 1

DST NUMBER 2 TEST TICKET NO. 5815

Company: National Petroleum Reserves Inc. Date: 12/2/87

Drill Collar Feet	Drill Collar ID	Weight Pipe Feet	Weight Pipe ID	Drill Pipe Feet	Drill Pipe ID	Average ID	Gals/ Foot
0	0.000	1	2.760	0	3.800	2.7600	0.311

Bbls Recovered/Test = 0.0050 Est Bbls/Day = 0.1208 T = 60

Initial Shut-In

PRESS.	TIME	T/t	(T+t)/t	LOG T/t	LOG (T+t)/t
1187	30	2.000	3.000	0.30103	0.47712
1182	27	2.222	3.222	0.34679	0.50816
1178	24	2.500	3.500	0.39794	0.54407
1171	21	2.857	3.857	0.45593	0.58627
1163	18	3.333	4.333	0.52288	0.63682
1153	15	4.000	5.000	0.60206	0.69897

Final Shut-In

Press.	Time	T/t	(T+t)/t	Log T/t	Log (T+t)/t
1162	30	2.000	3.000	0.30103	0.47712
1157	27	2.222	3.222	0.34679	0.50816
1153	24	2.500	3.500	0.39794	0.54407
1147	21	2.857	3.857	0.45593	0.58627
1140	18	3.333	4.333	0.52288	0.63682
1132	15	4.000	5.000	0.60206	0.69897

Time Option is Log (T+t)/t

IP(0)	IP(1)	FP(0)	FP(1)	M	Kh/B	DR	Q1	Pts
1251.1	1116.7	1226.1	1091.7	134.4	0.146	1.315	0.159	1,3
1250.6	1116.7	1225.6	1091.7	133.8	0.147	1.321	0.160	1-3
1255.3	1112.0	1226.0	1091.3	134.7	0.146	1.313	0.159	1-4
1258.2	1109.3	1226.6	1090.7	135.8	0.145	1.301	0.157	1-5
1260.3	1107.4	1225.9	1091.4	134.5	0.146	1.314	0.159	1-6

Graph Data For Points

Initial Time	Initial Pressure	Final Time	Final Pressure
0.4771	1187	0.4771	1162
0.5081	1182	0.5081	1157
0.5440	1178	0.5440	1153
0.5862	1171	0.5862	1147
0.6368	1163	0.6368	1140
0.6989	1153	0.6989	1132

Graph Data For Lines

0	1260.25	0	1225.87
1	1107.41	1	1091.37

ZONE EVALUATION - Page 2

DST Number 2 TEST TICKET NO. 5815

Company: National Petroleum Reserves Inc. Date: 12/2/87

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

$M = G_0 - G_1$ 134.51

Damage Ratio:

$DR = .183 \frac{Ps - Pf}{M}$ 1.31

Effective Pay:

$\frac{Kh}{B} = \frac{162.6\ Q}{M}$ 0.15 Md. Ft.

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

$Q_1 = Q\ DR$ 0.16 Bbls/Day

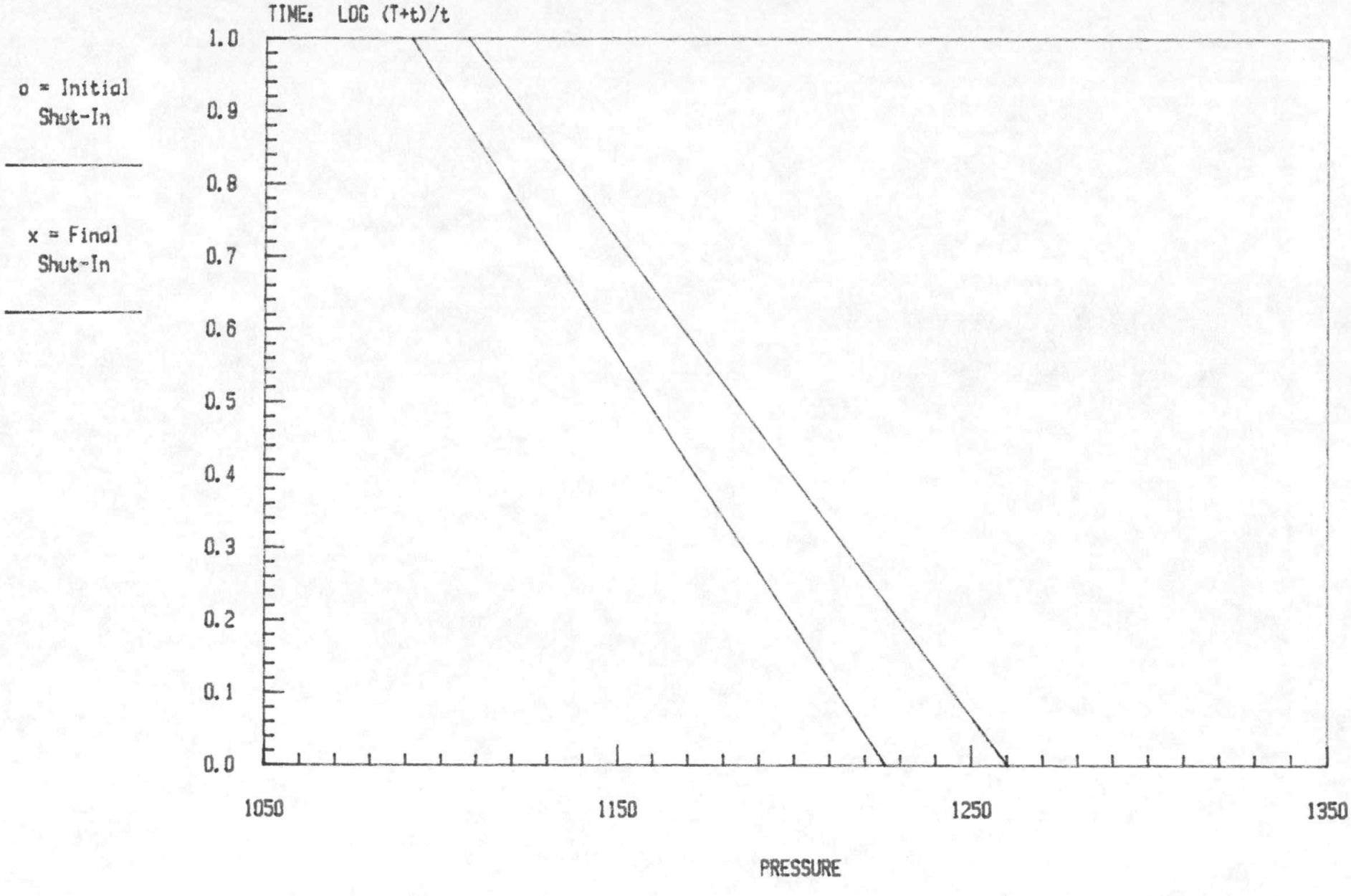
Production: 0.01 Bbls/Hour

$Q = \frac{1440\ R}{T}$ 0.12 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.

CRUDE OIL TESTING INC TEST 5815 DST 2

FOR: National Petroleum Reserves12/2/87



Bottom
H185
DST#1
10470

Top
H185
DST#1
10463

Top
S185
DST#2
10473

Bottom
S185
DST#2
10501