WESTERN

P. O. BOX 1599
WICHITA, KANSAS 67201

Company Graves Drilling Company, Incorporation Lease & Well No. Unrein #1

Elevation 2309 Kelly Bush. Formation Cherokee Effective Pay Ft. Ticket No. 20812

Date 12-6-74 Sec. 10 Twp. 16S Range 21W County Ness State Kansas

Test Approved by Harold Steincamp Western Representative Kenneth Cheney

Formation Test No. 1 O.K. X Misrun - Interval Tested From 4145' to 4145' Total Depth 4145'

Size Main Hole 7 7/8 Rat Hole - Conv. - B.T. X Damaged - Yes No Conv. X B.T. - Damaged - Yes X No

Top Packer Depth 4110 Ft. Size 6 3/4 Bottom Packer Depth 4115 Ft. Size 6 3/4

Straddle - Conv. - B.T. - Damaged - Yes - No Packer Depth - Ft. Size -

Tool Size 5½OD Tool Joint Size 4½FH Anchor Length 30 Ft. Size 5½OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 4137 Ft. Clock No. 6774 Depth 4139 Ft. Clock No. 10874

Top Make Kuster Cap. 4150 No. 2606 Inside Outside Bottom Make Kuster Cap. 4150 No. 1567 Inside Outside

Below Straddle: Depth - Rec. No. - Clock No. - Inside Outside Depth - Ft. Rec. No. - Clock No. - Inside Outside

Time Set Packer 11:59 P. M

Tool Open I.F.P. From 12:00A M. to 12:15A M. - Hr. 15 Min. From (B) 25 P.S.I. To (C) 25 P.S.I.

Tool Closed I.C.I.P. From 12:15A to 1:00A M. - Hr. 45 Min (D) 34 P.S.I.

Tool Open F.F.P. From 1:00A M. to 1:30A M. - Hr. 30 Min. From (E) 28 P.S.I. To (F) 26 P.S.I.

Tool Closed F.C.I.P. From 1:30A M. to 2:00A M. - Hr. 30 Min. (G) 30 P.S.I.

Initial Hydrostatic Pressure (A) 2136 P.S.I. Final Hydrostatic Pressure (H) 2125 P.S.I. Maximum Temp.

INFORMATION

BLOW Weak for 15 minutes

Did Well Flow Yes X No Recovery Total Ft. 5' Drilling Mud

Reversed Out - Yes X No Mud Type Salt Viscosity 48 Weight 9.7 Water Loss 6.2 cc. Chlorides 53,000P.P.M.

EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint NO Jars: Size No In. Make - Ser. No. -

Dual Packer Yes Did Packers Hold Yes Did Tool Plug? No Where? -

DRILLING CONTRACTOR DUB Drilling, Inc. Length Drill Pipe 3110 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4½ In.

Length Weight Pipe 955 Ft. I.D. Weight Pipe 2.7 In. Tool Joint Size 4½ In. Length Drill Collars - Ft. I.D. Drill Collars - In.

Tool Joint Size - In. Length D.S.T. Tool 50 Ft.

Remarks:

FORM WTC-3

WESTERN TESTING CO., INC.
Pressure Data

Date 12-8-74 Test Ticket No. 20812

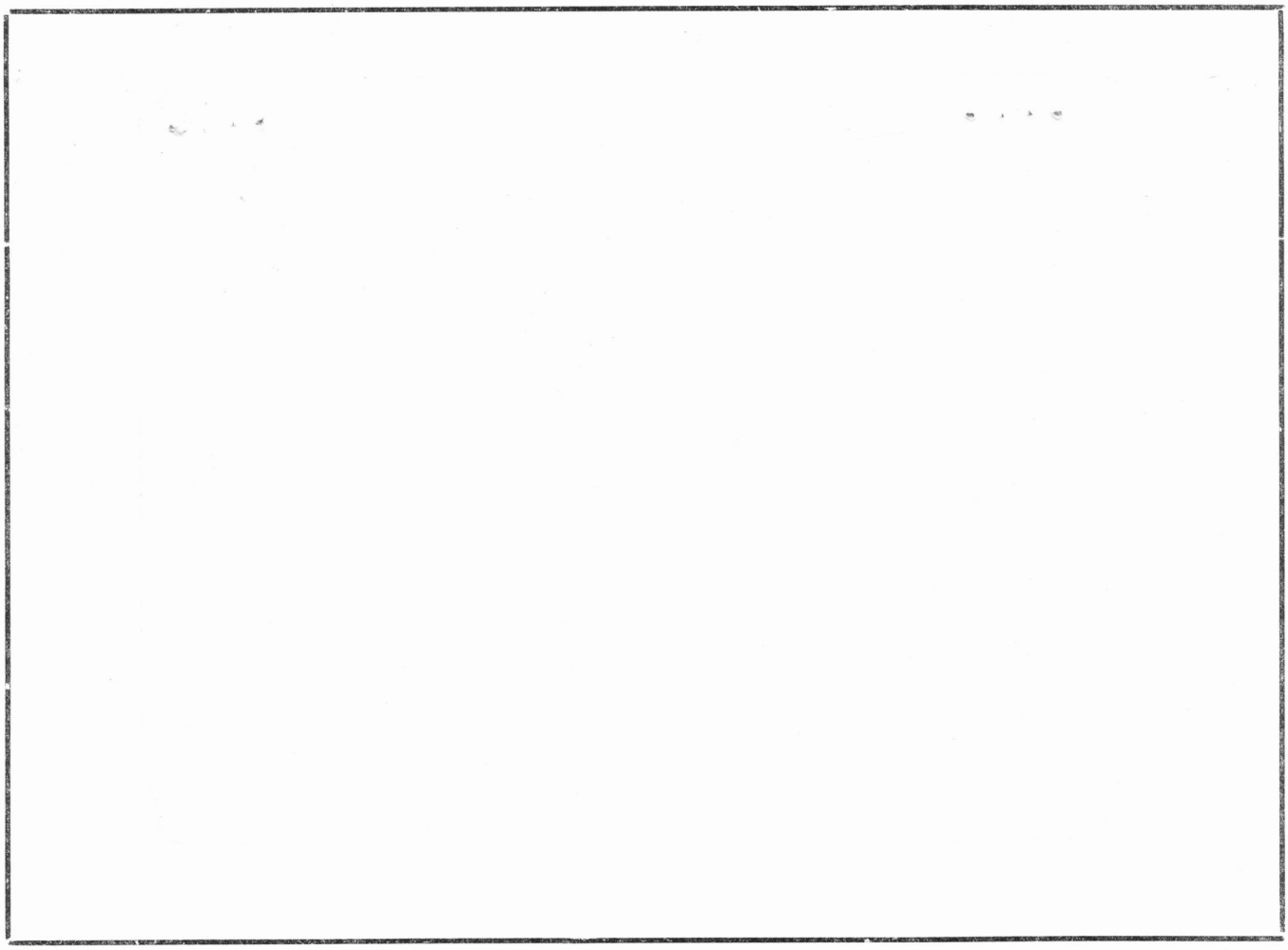
Recorder No. 2606 Capacity 4150 Location 4137 Ft.

Clock No. 6774 Elevation 2309 Kelly Bush. Well Temperature °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2136 P.S.I.	Open Tool	11:59 P.M	
B First Initial Flow Pressure	25 P.S.I.	First Flow Pressure	15 Mins.	15 Mins.
C First Final Flow Pressure	25 P.S.I.	Initial Closed-in Pressure	45 Mins.	45 Mins.
D Initial Closed-in Pressure	34 P.S.I.	Second Flow Pressure	30 Mins.	30 Mins.
E Second Initial Flow Pressure	28 P.S.I.	Final Closed-in Pressure	30 Mins.	30 Mins.
F Second Final Flow Pressure	26 P.S.I.			
G Final Closed-in Pressure	30 P.S.I.			
H Final Hydrostatic Mud	2125 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: 3 Inc.		Breakdown: 15 Inc.		Breakdown: 6 Inc.		Breakdown: 9 Inc.	
of 5 mins. and a		of 3 mins. and a		of 5 mins. and a		of 3 mins. and a	
final inc. of 0 Min.		final inc. of 0 Min.		final inc. of 0 Min.		final inc. of 0 Min.	
Point Mins.	**Press.**	**Point Minutes**	**Press.**	**Point Minutes**	**Press.**	**Point Minutes**	**Press.**
P 1 0	25	0	25	0	28	0	26
P 2 5	25	3	25	5	28	3	27
P 3 10	25	6	25	10	27	6	27
P 4 15	25	9	25	15	27	12	27
P 5 20		12	25	20	26	15	28
P 6 25		15	26	25	26	18	28
P 7 30		18	26	30	26	21	29
P 8		21	27	35		24	29
P 9		24	27	40		27	30
P10		27	28	45		30	30
P11		30	29			33	
P12		33	30			36	
P13		36	31			39	
P14		39	32			42	
P15		42	33			45	
P16		45	34				
P17							
P18							
P19							
P20							



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2082	2136	PSI
(B)	First Initial Flow Pressure	21	25	PSI
(C)	First Final Flow Pressure	21	25	PSI
(D)	Initial Closed-in Pressure	31	34	PSI
(E)	Second Initial Flow Pressure	21	28	PSI
(F)	Second Final Flow Pressure	21	26	PSI
(G)	Final Closed-in Pressure	21	30	PSI
(H)	Final Hydrostatic Mud	2073	2125	PSI

P. O. BOX 1599
WICHITA, KANSAS 67201

Company Graves Drilling Company, Incorporated Lease & Well No. Unrein #1

Elevation 2309 Kelly Bush. Formation Cherokee Effective Pay Ft. Ticket No. 20813

Date 12-9-74 Sec. 10 Twp. 16S Range 21W County Ness State Kansas

Test Approved by Harold Steincamp Western Representative Kenneth Cheney

Formation Test No. 2 O.K. X Misrun - Interval Tested From 4114' to 4163' Total Depth 4163'

Size Main Hole 7 7/8 Rat Hole - Conv. - B.T. X Damaged - Yes X No Conv. X B.T. - Damaged - Yes X No

Top Packer Depth 4109 Ft. Size 6 3/4 Bottom Packer Depth 4114 Ft. Size 6 3/4

Straddle - Conv. - B.T. - Damaged - Yes - No Packer Depth - Ft. Size -

Tool Size 5½OD Tool Joint Size 4½FH Anchor Length 49 Ft. Size 5½OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 4155 Ft. Clock No. 6774 Depth 4157 Ft. Clock No. 10874

Top Make Kuster Cap. 4150 No. 2606 Inside ~~Outside~~ Bottom Make Kuster Cap. 4150 No. 1567 ~~Inside~~ Outside

Below Straddle: Depth - Rec. No. - Clock No. - Inside Outside Depth - Ft. Rec. No. - Clock No. - Inside Outside

Time Set Packer 12:44 A.M

Tool Open I.F.P. From 12:45 A.M. to 1:00 A.M. - Hr. 15 Min. From (B) 53 P.S.I. To (C) 81 P.S.I.

Tool Closed I.C.I.P. From 1:00 A.M. to 1:45 A.M. - Hr. 45 Min (D) 795 P.S.I.

Tool Open F.F.P. From 1:45 A.M. to 3:15 A.M. 1- Hr. 30 Min. From (E) 96 P.S.I. To (F) 187 P.S.I.

Tool Closed F.C.I.P. From 3:15 A.M. to 4:00 A.M. - Hr. 45 Min. (G) 622 P.S.I.

Initial Hydrostatic Pressure (A) 2188 P.S.I. Final Hydrostatic Pressure (H) 2172 P.S.I. Maximum Temp. 121

INFORMATION

BLOW Good throughout test

Did Well Flow - Yes X No Recovery Total Ft. 40' free oil (43.5 Gravity) 180'oil cut mud 120' muddy water slightly oil cut

Reversed Out - Yes X No Mud Type Salt Viscosity 45 Weight 9.8 Water Loss 7.2 cc. Chlorides 53,000 P.P.M.

EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint No Jars: Size - In. Make - Ser. No. -

Dual Packer Yes Did Packers Hold? Yes Did Tool Plug? No Where? -

DRILLING CONTRACTOR D N B Drlg. Co. Length Drill Pipe? 3139 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4½F.H. In.

Length Weight Pipe 955 Ft. I.D. Weight Pipe 2.7 In. Tool Joint Size 4½ In. Length Drill Collars - Ft. I.D. Drill Collars - In.

Tool Joint Size - In. Length D.S.T. Tool 69 Ft.

Remarks:

WESTERN TESTING CO., INC.
Pressure Data

Date 12-9-74 Test Ticket No. 20813

Recorder No. 2606 Capacity 4150 Location 4155 Ft.

Clock No. 6774 Elevation 2309 Kelly Bush. Well Temperature 121 °F

Point	Pressure	
A Initial Hydrostatic Mud	2188	P.S.I.
B First Initial Flow Pressure	53	P.S.I.
C First Final Flow Pressure	81	P.S.I.
D Initial Closed-in Pressure	795	P.S.I.
E Second Initial Flow Pressure	96	P.S.I.
F Second Final Flow Pressure	200	P.S.I.
G Final Closed-in Pressure	622	P.S.I.
H Final Hydrostatic Mud	2172	P.S.I.

	Time Given	Time Computed
Open Tool	12:44A M	
First Flow Pressure	15 Mins.	20 Mins.
Initial Closed-in Pressure	45 Mins.	42 Mins.
Second Flow Pressure	90 Mins.	90 Mins.
Final Closed-in Pressure	45 Mins.	45 Mins.

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 4 Inc. of 5 mins. and a final inc. of 0 Min.

Point Mins.	Press.
P 1 0	53
P 2 5	59
P 3 10	64
P 4 15	71
P 5 20	81
P 6 25	
P 7 30	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 14 Inc. of 3 mins. and a final inc. of 0 Min.

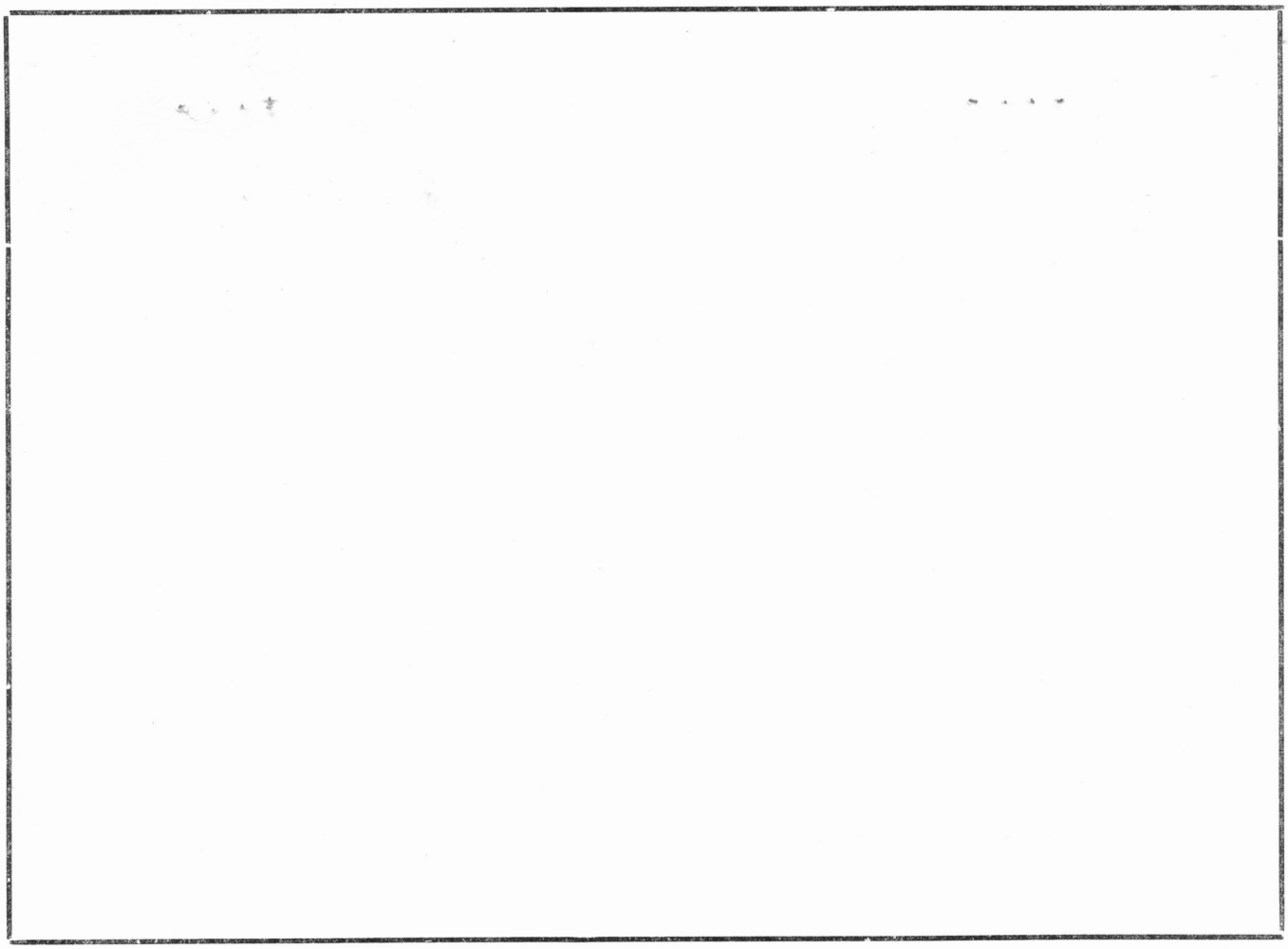
Point Minutes	Press.
0	81
3	396
6	475
9	508
12	546
15	584
18	618
21	643
24	674
27	700
30	725
33	745
36	765
39	784
42	795
45	

Second Flow Pressure
Breakdown: 18 Inc. of 5 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	96
5	102
10	108
15	115
20	123
25	129
30	135
35	141
40	147
45	153
50	158
55	162
60	168
65	175
70	180
75	185
80	189
85	193
90	200

Final Shut-In
Breakdown: 14 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	200
3	396
6	446
12	494
15	508
18	520
21	531
24	540
27	550
30	562
33	572
36	585
39	598
42	609
45	622



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2135	2188	PSI
(B)	First Initial Flow Pressure	41	53	PSI
(C)	First Final Flow Pressure	68	81	PSI
(D)	Initial Closed-in Pressure	779	795	PSI
(E)	Second Initial Flow Pressure	93	96	PSI
(F)	Second Final Flow Pressure	187	200	PSI
(G)	Final Closed-in Pressure	624	622	PSI
(H)	Final Hydrostatic Mud	2125	2172	PSI

P. O. BOX 1599
WICHITA, KANSAS 67201

Company Graves Drilling Company, Incorporated Lease & Well No. Union #1

Elevation 2309 Kelly Bush. Formation Cherokee Effective Pay 3 Ft. Ticket No. 20814

Date 12-9-74 Sec. 10 Twp. 16S Range 21W County Ness State Kansas

Test Approved by Harold Steincamp Western Representative Kenneth Cheney

Formation Test No. 3 O.K. X Misrun - Interval Tested From 4202' to 4205' Total Depth 4205'

Size Main Hole 7 7/8 Rat Hole - Conv. yes B.T. - Damaged - Yes yes No Conv. - B.T. yes Damaged - Yes no No

Top Packer Depth 4197' Ft. Size 6 3/4 Bottom Packer Depth 4202' Ft. Size 6 3/4

Straddle - Conv. - B.T. - Damaged - Yes - No Packer Depth - Ft. Size -

Tool Size 5 1/2o.d. Tool Joint Size 4 1/2f.h. Anchor Length 3 Ft. Size 5 1/2o.d. Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 4178' Ft. Clock No. 6774 Depth 4189' Ft. Clock No. 10874

Top Make Kuster Cap. 4150 No. 2606 Inside Outside Bottom Make Kuster Cap. 4150 No. 1567 Inside Outside

Below Straddle: Depth - Rec. No. - Clock No. - Inside Outside Depth - Ft. Rec. No. - Clock No. - Inside Outside

Time Set Packer 8:49 PM

Tool Open I.F.P. From 8:50p M. to 9005P M. - Hr. 15 Min. From (B) 6 P.S.I. To (C) 6 P.S.I.

Tool Closed I.C.I.P. From 9:05p M. to 9:50 p M. - Hr. 45 Min (D) 13 P.S.I.

Tool Open F.F.P. From 9:50p M. to 10:50p M. 1 Hr. - Min. From (E) 9 P.S.I. To (F) 12 P.S.I.

Tool Closed F.C.I.P. From 10:50 M. to 11:45p M. - Hr. 45 Min. (G) - P.S.I.

Initial Hydrostatic Pressure (A) 2167 P.S.I. Final Hydrostatic Pressure (H) 2157 P.S.I. Maximum Temp. 122

INFORMATION

BLOW Very weak for 25 minutes and died

Did Well Flow - Yes No No Recovery Total Ft. 5' Thin drilling mud

Reversed Out - Yes No No Mud Type Salt Viscosity 47 Weight 9.7 Water Loss 8.0 cc. Chlorides 39,000 P.P.M.

EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint No Jars: Size - In. Make - Ser. No. -

Dual Packer Yes Did Packers Hold? Yes Did Tool Plug? No Where? -----

DRILLING CONTRACTOR D.N.B. Drlg. Co. Length Drill Pipe? 3219 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4 1/2 F.H. In.

Length Weight Pipe 955 Ft. I.D. Weight Pipe 2.7 In. Tool Joint Size 4 1/2 F.H. In. Length Drill Collars -- Ft. I.D. Drill Collars -- In.

Tool Joint Size -- In. Length D.S.T. Tool 31 Ft.

Remarks:

WESTERN TESTING CO., INC.
Pressure Data

Date 12-9-74 Test Ticket No. 20814

Recorder No. 2606 Capacity 4150 Location 4187 Ft.

Clock No. 6774 Elevation 2309 Kelly Bushing Well Temperature 122 °F

Point		Pressure		Time Given	Time Computed
A	Initial Hydrostatic Mud	2167	P.S.I.	Open Tool 8:49 P.M.	
B	First Initial Flow Pressure	6	P.S.I.	First Flow Pressure 15 Mins.	15 Mins.
C	First Final Flow Pressure	6	P.S.I.	Initial Closed-in Pressure 45 Mins.	42 Mins.
D	Initial Closed-in Pressure	13	P.S.I.	Second Flow Pressure 60 Mins.	60 Mins.
E	Second Initial Flow Pressure	9	P.S.I.	Final Closed-in Pressure 45 Mins.	45 Mins.
F	Second Final Flow Pressure	12	P.S.I.		
G	Final Closed-in Pressure	10	P.S.I.		
H	Final Hydrostatic Mud	2157	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 3 Inc. of 5 mins. and a final inc. of 0 Min.

Point Mins.	Press.
P 1 0	6
P 2 5	6
P 3 10	6
P 4 15	
P 5 20	
P 6 25	
P 7 30	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 14 Inc. of 3 mins. and a final inc. of 0 Min.

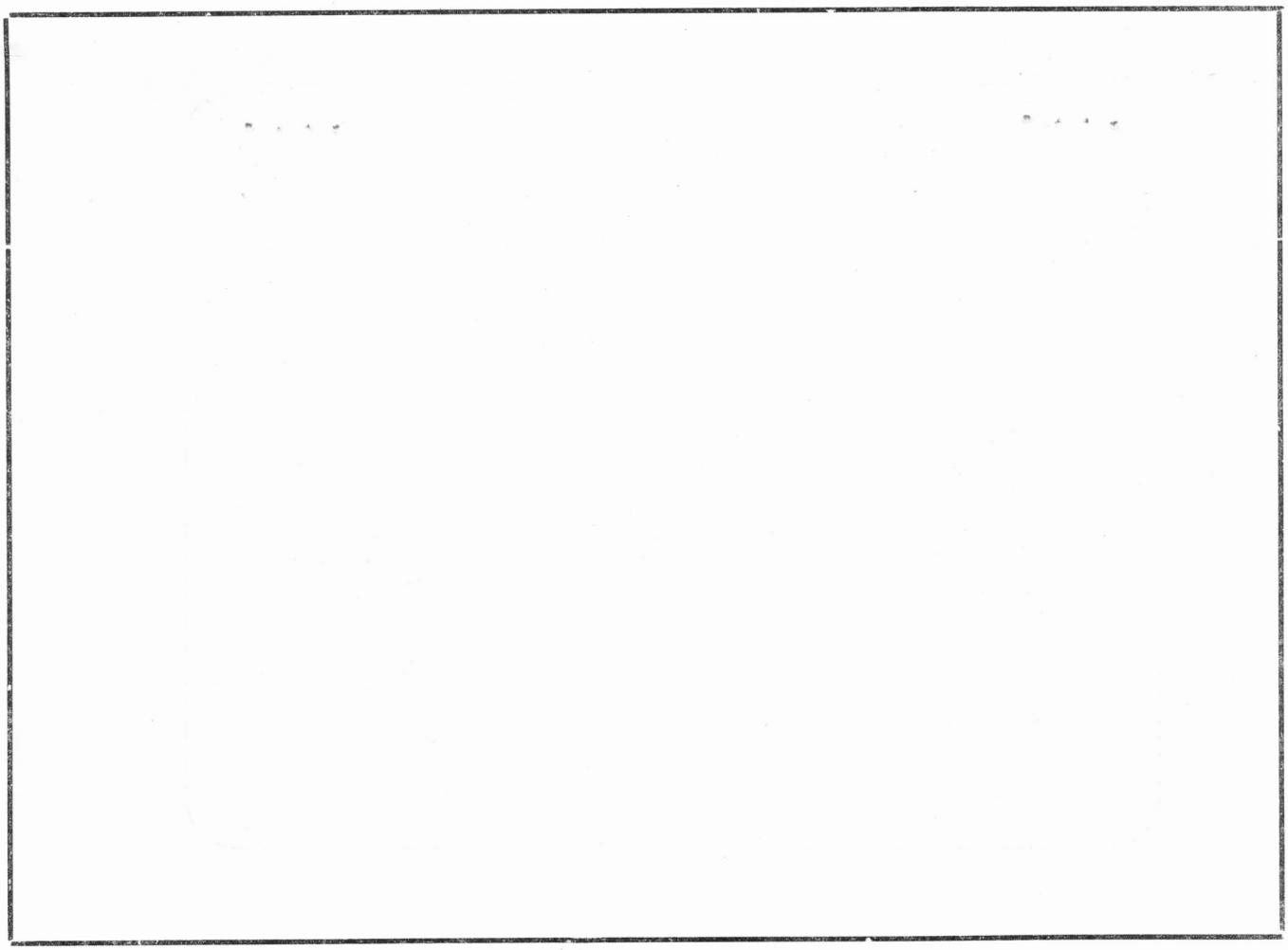
Point Minutes	Press.
0	6
3	7
6	7
9	7
12	8
15	9
18	9
21	10
24	11
27	11
30	11
33	12
36	12
39	13
42	13
45	

Second Flow Pressure
Breakdown: 12 Inc. of 5 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	9
5	9
10	9
15	9
20	10
25	10
30	10
35	11
40	11
45	11
50	12
55	12
60	12

Final Shut-In
Breakdown: 15 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
	12
3	10
6	8
9	8
12	7
15	7
18	7
21	7
24	8
27	8
30	9
33	9
36	9
39	9
42	10
45	



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2205	2167	PSI
(B)	First Initial Flow Pressure	10	6	PSI
(C)	First Final Flow Pressure	10	6	PSI
(D)	Initial Closed-in Pressure	10	13	PSI
(E)	Second Initial Flow Pressure	10	9	PSI
(F)	Second Final Flow Pressure	10	12	PSI
(G)	Final Closed-in Pressure	10	10	PSI
(H)	Final Hydrostatic Mud	2195	2157	PSI