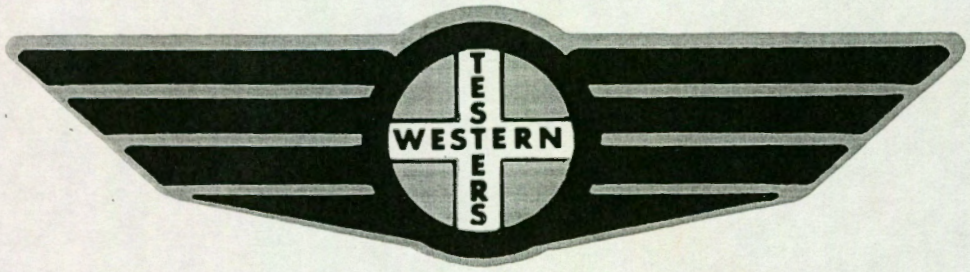
FORMATION TEST REPORT



Home Office:
P. O. Box 1599

Wichita, Kansas 67201
Phone (316) 838-0601

COMPANY Walters Drilling Co. LEASE AND WELL NO. Phelps #1 SEC. 17 TWP. 17S RGE. 24W TEST NO. 1 DATE 11-6-76

#1 Phelps 11-6-76

WESTERN TESTERS

Home Office: Wichita, Kansas 67201
P. O. Box 1599 (316) 838-0601

Company Walters Drilling Co. Lease & Well No. Phelps #1

Elevation 2473 Kelly Bush. Formation Sand Effective Pay - Ft. Ticket No. 24448

Date 11-6-76 Sec. 17 Twp. 17S Range 24W County Ness State Kansas

Test Approved by Alfred James Western Representative Keven Strutt

Formation Test No. 1 O.K. X Misrun - Interval Tested From 4396' to 4420' Total Depth 4420'

Size Main Hole 7 7/8 Rat Hole 12¼ Conv. X B.T. - Damaged - Yes X No Conv. - B.T. X Damaged - Yes X

Top Packer Depth 4391 Ft. Size 6 3/4 Bottom Packer Depth 4396 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 24 Ft. Size 5½OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4

RECORDERS Depth 4410 Ft. Clock No. 6774 Depth 4413 Ft. Clock No. 6806

Top Make Kuster Cap. 4300 No. 1566 Inside ~~Outside~~ Bottom Make Kuster Cap. 4150 No. 2607 Outside

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

Time Set Packer 6:43P. M

Tool Open I.F.P. From 6:45P M. to 7:15P M - Hr. 30 Min. From (B) 19 P.S.I. To (C) 20

Tool Closed I.C.I.P. From 7:15P M. to 8:15P M - Hr. 60 Min (D) 1274

Tool Open F.F.P. From 8:15P M. to 8:45P M - Hr. 30 Min. From (E) 50 P.S.I. To (F) 43

Tool Closed F.C.I.P. From 8:45P M. to 9:45P M - Hr. 60 Min. (G) 1253

Initial Hydrostatic Pressure (A) 2241 P.S.I. Final Hydrostatic Pressure (H) 2232 P.S.I. Maximum Temp. 120

INFORMATION

BLOW Very weak blow throughout initial flow period. No blow on final flow period, flushed 5 minutes into final flow period, no blow.

Did Well Flow - Yes X No Recovery Total Ft. 15' of clean oil, 40' of heavy oil cut mud.

Reversed Out - Yes X No Mud Type Drispac Viscosity 50 Weight 9.4 Water Loss 10.1 cc. Chlorides 9,000 PPM

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

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

DRILLING CONTRACTOR Slawson Drlg. Co., Inc. Length Drill Pipe? 3718 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4½FH

Length Weight Pipe 316 Ft. I.D. Weight Pipe 2.76 In. Tool Joint Size 4½FH In. Length Drill Collars - Ft. I.D. Drill Collars -

Tool Joint Size - In. Length D.S.T. Tool 44 Ft.

Remarks:

WESTERN TESTING CO., INC.

Pressure Data

Date 11-6-76 Test Ticket No. 24448

Recorder No. 1566 Capacity 4300 Location 4410 Ft.

Clock No. 6774 Elevation 2473 Kelly Bushing Well Temperature 120 °F

Point	Pressure			Time Given	Time Computed
Initial Hydrostatic Mud	2241	P.S.I.	Open Tool	6:43P. M	
First Initial Flow Pressure	19	P.S.I.	First Flow Pressure	30 Mins.	30 Mins.
First Final Flow Pressure	20	P.S.I.	Initial Closed-in Pressure	60 Mins.	60 Mins.
Initial Closed-in Pressure	1274	P.S.I.	Second Flow Pressure	30 Mins.	30 Mins.
Second Initial Flow Pressure	50	P.S.I.	Final Closed-in Pressure	60 Mins.	57 Mins.
Second Final Flow Pressure	43	P.S.I.			
Final Closed-in Pressure	1253	P.S.I.			
Final Hydrostatic Mud	2232	P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure

Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

Point Mins.	Press.
0	19
5	19
10	19
15	19
20	19
25	19
30	20

Initial Shut-In

Breakdown: 20 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	20
3	41
6	104
9	292
12	601
15	787
18	938
21	1026
24	1083
27	1128
30	1163
33	1186
36	1205
39	1223
42	1233
45	1244
48	1253
51	1259
54	1268
57	1272
60	1274

Second Flow Pressure

Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

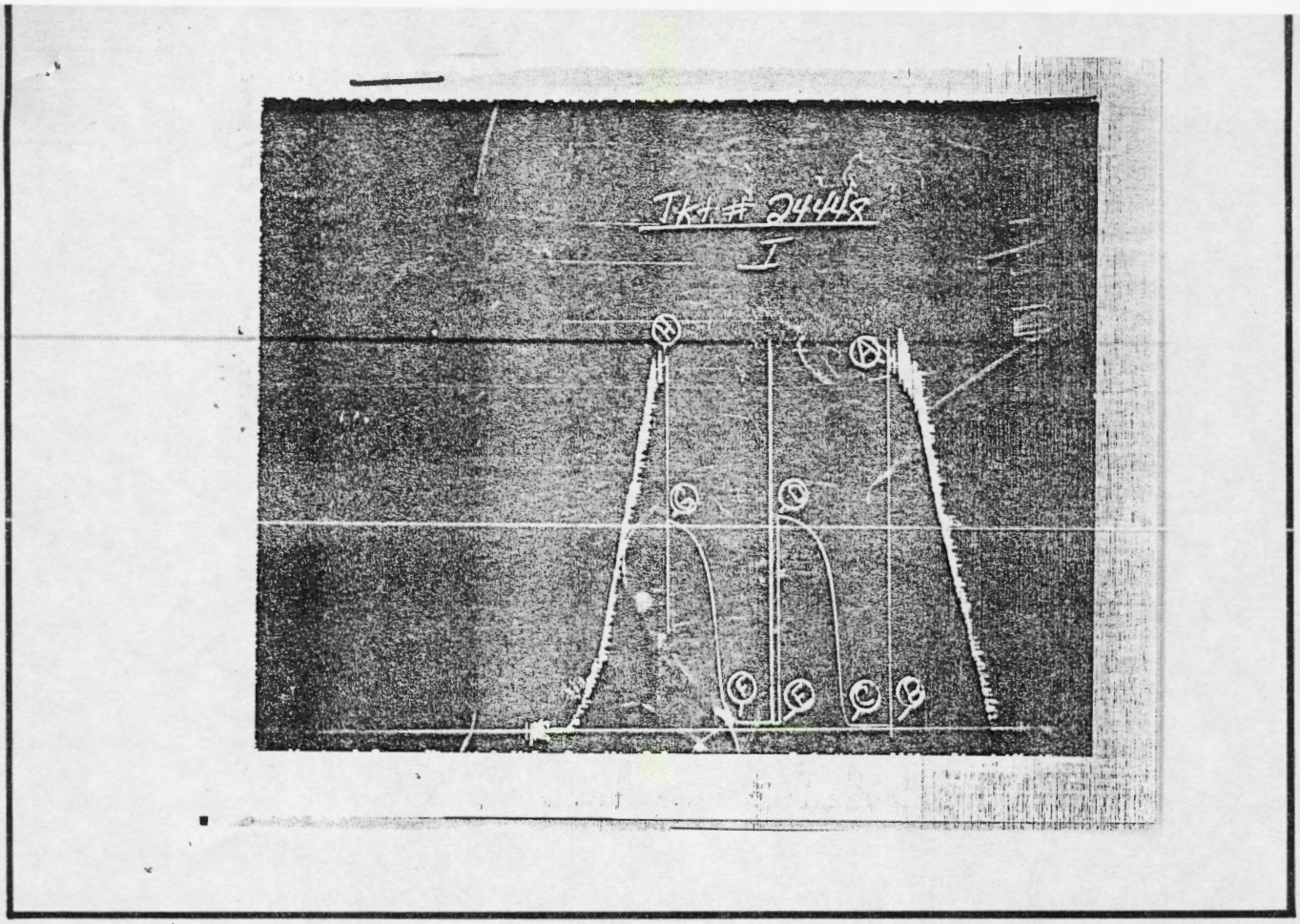
Point Minutes	Press.
0	50
5	37
10	43
15	43
20	43
25	43
30	43

Flushed Tool

Final Shut-In

Breakdown: 19 Inc. of 3 mins. and a final inc. of 0 Min.

Point Minutes	Press.
0	43
3	60
6	93
9	140
12	218
15	409
18	680
21	852
24	963
27	1036
30	1088
33	1131
36	1158
39	1182
42	1201
45	1218
48	1230
51	1240
54	1248
57	1253



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2221	2241	PSI
(B)	First Initial Flow Pressure	32	19	PSI
(C)	First Final Flow Pressure	32	20	PSI
(D)	Initial Closed-in Pressure	1270	1274	PSI
(E)	Second Initial Flow Pressure	32	50	PSI
(F)	Second Final Flow Pressure	43	43	PSI
(G)	Final Closed-in Pressure	1248	1253	PSI
(H)	Final Hydrostatic Mud	2200	2232	PSI

COMPANY Walters Drilling Co. LEASE AND WELL NO. Phelps #1 SEC. 17 TWP. 17S RGE. 24W TEST NO. 1 DATE 11-9-78

MILLER TESTING COMPANY

Box 547

GREAT BEND, KANSAS

Company WALTERS DRILLING CO.

Lease and Well No. PHELPS #2

County NESS State KANSAS Date MAY 11, 1977

Formation Test No. 2 Total Depth 4463 Elev. 2473 K. B.

Interval Tested 4423 To 4463 Anchor Length 40'

Size Hole 7 7/8 Size Drill Pipe 4 1/2 F H Size Packer 6 3/4

Mud Weight 9.4 Viscosity 46 Water Loss 11 c.c. Bottom Hole Temp. 118 °F

Chokes: Top 1/2 Bottom 1/2 Ticket No. 14930

Length of Drill Collar I. D. Length Flexweight 270 I. D. 2.76

RECOVERY

WEAK BLOW DIED IN 25 MINUTES.
(PACKERS HELD AFTER THIRD TRY) SECOND OPENING
WEAK BLOW

25 FEET OF OIL .36 BBLS .36 BO
160 FEET SLIGHTLY OIL AND GAS CUT MUD 2.28 BBLS (7% OIL, 5% WATER, 88% MUD) .16 BO .11 BW 2.01 BM
60 FEET OF SLIGHTLY OIL AND GAS CUT MUD .95 BBLS (13% OIL, 26% WATER, 61% MUD) .12 BO .25 BW .58 BM

Lease and Well No. PHELPS #2 C NE SE 17-17S-24W Formation Test No. 2

Walters Phelps #2 17-17-24

Ness Co Ks.

MILLER

TESTING COMPANY

DRILL STEM TEST REPORT

Home Office: Wichita, Kansas 67201
P. O. Box 1599 (316) 838-0601

Company Walters Drilling Co. Lease & Well No. Phelps #1

Elevation 2473 Kelly Bush. Formation Sand Effective Pay - Ft. Ticket No. 24449

Date 11-7-76 Sec. 17 Twp. 17S Range 24W County Ness State Kansas

Test Approved by Alfred James Western Representative Keven Strutt

Formation Test No. 2 O.K. X Misrun - Interval Tested From 4420' to 4440' Total Depth 4440'

Size Main Hole 7 7/8 Rat Hole 12¼ Conv. X B.T. - Damaged - Yes X No Conv. - B.T. X Damaged - Yes X No

Top Packer Depth 4415 Ft. Size 6 3/4 Bottom Packer Depth 4420 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 20 Ft. Size 5½OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

RECORDERS Depth 4430 Ft. Clock No. 6774 Depth 4433 Ft. Clock No. 6806

Top Make Kuster Cap. 4300 No. 1566 Inside ~~Outside~~ Bottom Make Kuster Cap. 4150 No. 2607 ~~Inside~~ Outside

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

Time Set Packer 8:43A. M

Tool Open I.F.P. From 8:45A M. to 9:15A M. - Hr. 30 Min. From (B) 114 P.S.I. To (C) 509 P.S.I.

Tool Closed I.C.I.P. From 9:15A M. to 10:15A M. - Hr. 60 Min (D) 1244 P.S.I.

Tool Open F.F.P. From 10:15A M. to 11:15A M. - Hr. 60 Min. From (E) 554 P.S.I. To (F) 916 P.S.I.

Tool Closed F.C.I.P. From 11:15 M. to 12:15P M. - Hr. 60 Min. (G) 1236 P.S.I.

Initial Hydrostatic Pressure (A) 2226 P.S.I. Final Hydrostatic Pressure (H) 2215 P.S.I. Maximum Temp. 114

INFORMATION

BLOW Strong blow, off bottom of bucket in one minute, throughout initial flow period. Strong blow, slightly decreasing the last 15 minutes during final flow period.

Did Well Flow - Yes X No Recovery Total Ft. 2610' total recovery. 140' of gas in pipe, 2345' of sligh gassy clean oil with some froggy oil in spots, 90' of slightly gassy heavy oil cut mud, 35' of slightly gassy mud cut oil.

Reversed Out X Yes - No Mud Type Drispac Viscosity 50 Weight 9.4 Water Loss 10.1 cc. Chlorides 9,000 PPM

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

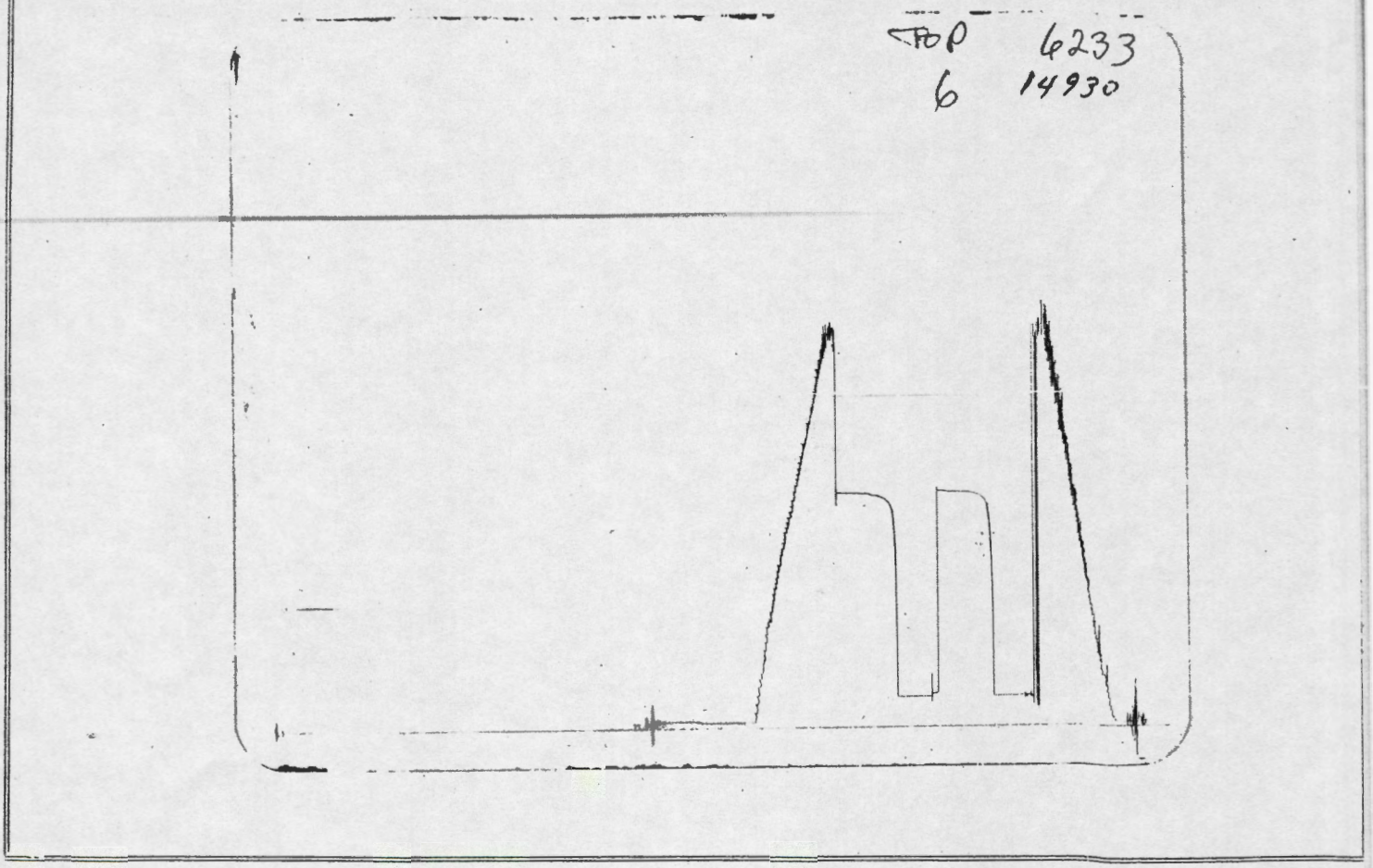
Dual Packer Yes Did Packers Hold? Yes Did Tool Plug? No Where? -

DRILLING CONTRACTOR Slawson Drlg. Co., Inc. Length Drill Pipe? 3750 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4½FH In.

Length Weight Pipe 316 Ft. I.D. Weight Pipe 2.76 In. Tool Joint Size 4½FH In. Length Drill Collars - Ft. I.D. Drill Collars - In.

Tool Joint Size - In. Length D.S.T. Tool 40 Ft.

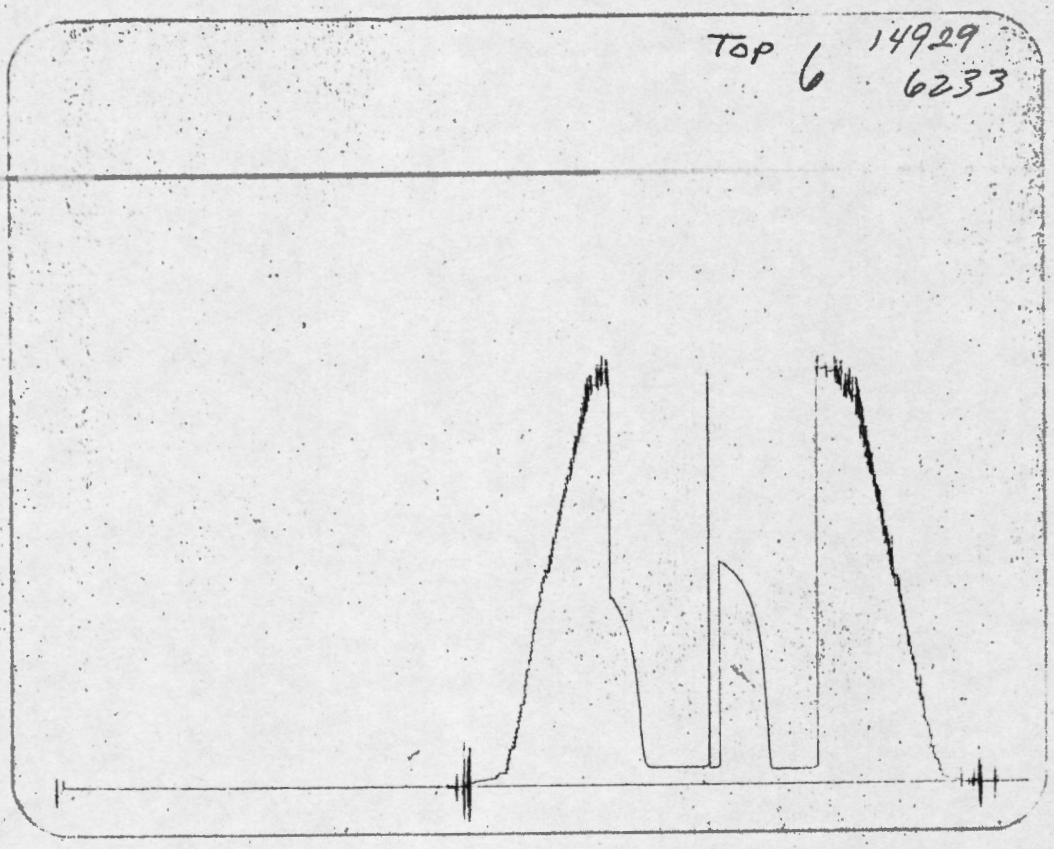
Remarks: 38° gravity oil.



Tool Open: 1st Flow ___ hr. 30 mins: Shut-in Initial ___ hr. 45 min: 2nd Flow ___ hr. 30 min: Shut-in Final ___ hr. 45 min.

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	2217	2221
(B) Initial 1st Flow Pressure	91	162
(C) Final 1st Flow Pressure	163	173
(D) Initial Shut-in Pressure	1304	1313
(E) Initial 2nd Flow Pressure	173	173
(F) Final 2nd Flow Pressure	163	173
(G) Final Shut-in Pressure	1304	1307
(H) Final Hydrostatic Pressure	2197	2187

14930



Tool Open: 1st Flow ___ hr. 30 mins: Shut-in Initial ___ hr. 45 min: 2nd Flow ___ hr. 45 min: Shut-in Final ___ hr. 30 min.

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	2157	2137
(B) Initial 1st Flow Pressure	71	77
(C) Final 1st Flow Pressure	71	77
(D) Initial Shut-in Pressure	1155	1151
(E) Initial 2nd Flow Pressure	71	83
(F) Final 2nd Flow Pressure	81	91
(G) Final Shut-in Pressure	976	976
(H) Final Hydrostatic Pressure	2108	2117

14929

WESTERN TESTING CO., INC.

Pressure Data

Test Ticket No. 24449

Date 11-7-76

Recorder No. 1566 Capacity 4300 Location 4430 Ft.

Clock No. 6774 Elevation 2473 Kelly Bush. Well Temperature 114 °F

Point	Pressure			Time Given	Time Computed
Initial Hydrostatic Mud	2226	P.S.I.	Open Tool	8:43P M	
First Initial Flow Pressure	114	P.S.I.	First Flow Pressure	30 Mins.	30 Mins.
First Final Flow Pressure	509	P.S.I.	Initial Closed-in Pressure	60 Mins.	60 Mins.
Initial Closed-in Pressure	1244	P.S.I.	Second Flow Pressure	60 Mins.	60 Mins.
Second Initial Flow Pressure	554	P.S.I.	Final Closed-in Pressure	60 Mins.	60 Mins.
Second Final Flow Pressure	916	P.S.I.			
Final Closed-in Pressure	1236	P.S.I.			
Final Hydrostatic Mud	2215	P.S.I.			

PRESSURE BREAKDOWN

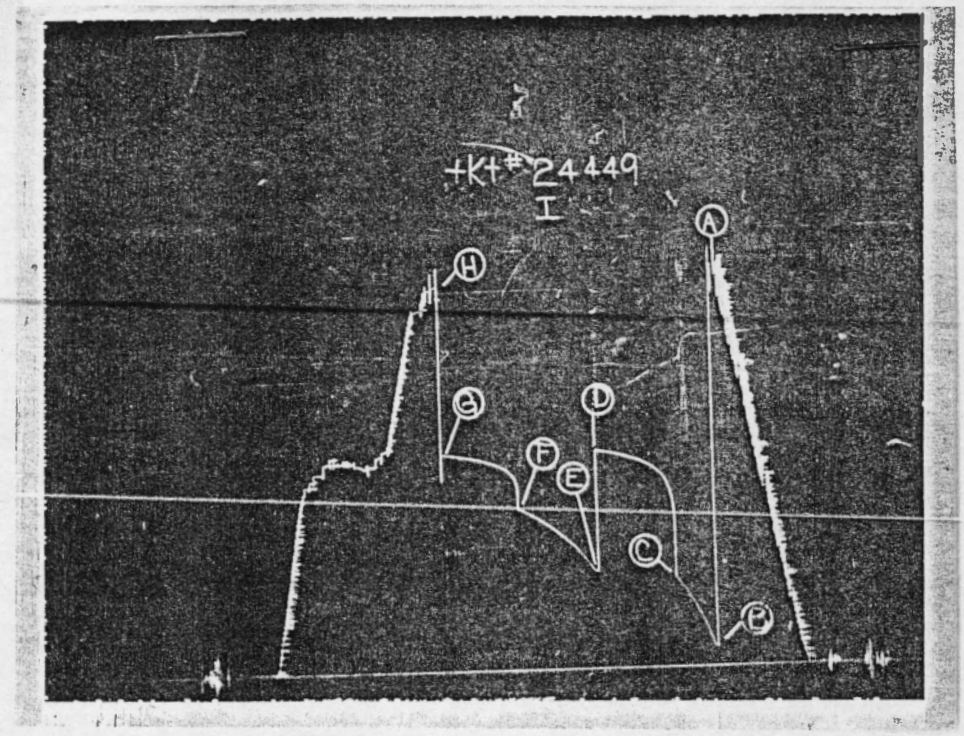
First Flow Pressure
Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

Initial Shut-In
Breakdown: 20 Inc. of 3 mins. and a final inc. of 0 Min.

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

Final Shut-In
Breakdown: 20 Inc. of 3 mins. and a final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P1 0	114	0	509	0	554	0	916
P2 5	188	3	1011	5	579	3	1101
P3 10	272	6	1068	10	626	6	1124
P4 15	344	9	1098	15	671	9	1141
P5 20	405	12	1118	20	710	12	1154
P6 25	463	15	1137	25	746	15	1165
P7 30	509	18	1150	30	776	18	1173
P8		21	1163	35	804	21	1182
P9		24	1175	40	832	24	1188
P10		27	1184	45	854	27	1195
P11		30	1190	50	877	39	1201
P12		33	1199	55	895	33	1205
P13		36	1205	60	916	36	1210
P14		39	1212			39	1214
P15		42	1218			42	1218
P16		45	1225			45	1223
P17		48	1229			48	1225
P18		51	1233			51	1229
P19		54	1236			54	1231
P20		57	1240			57	1233
WTC - 4		60	1244			60	1236



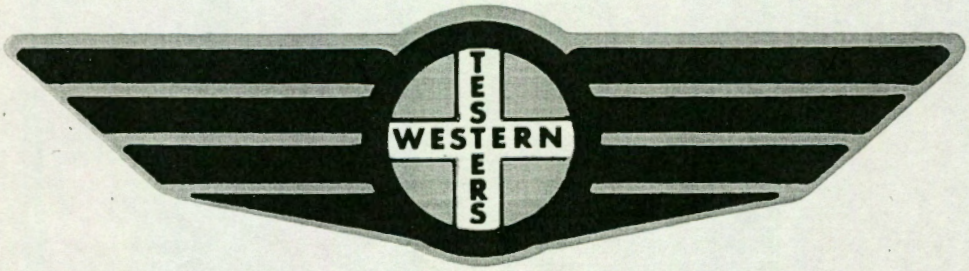
This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2221	2226	PSI
(B)	First Initial Flow Pressure	108	114	PSI
(C)	First Final Flow Pressure	509	509	PSI
(D)	Initial Closed-in Pressure	1248	1244	PSI
(E)	Second Initial Flow Pressure	551	554	PSI
(F)	Second Final Flow Pressure	905	916	PSI
(G)	Final Closed-in Pressure	1227	1236	PSI
(H)	Final Hydrostatic Mud	2200	2215	PSI

ANY Walters Drilling Co. LEASE AND WELL NO.

FORMATION TEST REPORT

Walters Drilling #1 Phelps NW SE 17-17-24W Ness Co. Ks.



Home Office:
P. O. Box 1599

Wichita, Kansas 67201
Phone (316) 838-0601

WESTERN TESTERS

Home Office: Wichita, Kansas 67201
P. O. Box 1599 (316) 838-0601

ompany Walters Drilling Co. Lease & Well No. Phelps #1

levation 2473 Kelly Bush. Formation Sand Effective Pay - Ft. Ticket No. 24450

ate 11-8-76 Sec. 17 Twp. 17S Range 24W County Ness State Kansas

est Approved by Alfred James Western Representative Keven Strutt

ormation Test No. 3 O.K. X Misrun - Interval Tested From 4440' to 4455' Total Depth 4455'

ze Main Hole 7 7/8 Rat Hole 12¼ Conv. X B.T. - Damaged - Yes X No Conv. - B.T. X Damaged - Yes X No

op Packer Depth 4435 Ft. Size 6 3/4 Bottom Packer Depth 4440 Ft. Size 6 3/4

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

ol Size 5½OD Tool Joint Size 4½FH Anchor Length 15 Ft. Size 5½OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.

CORDERS Depth 4445 Ft. Clock No. 6774 Depth 4448 Ft. Clock No. 6806

Top Make Kuster Cap. 4300 No. 1566 Inside ~~Outside~~ Bottom Make Kuster Cap. 4150 No. 2607 ~~Inside~~ Outside

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

ne Set Packer 11:28P. M

l Open I.F.P. From 11:30P M. to 12:00A M. - Hr. 30 Min. From (B) 45 P.S.I. To (C) 52 P.S.I.

l Closed I.C.I.P. From 12:00A M. to 1:00A M. - Hr. 60 Min (D) 1294 P.S.I.

l Open F.F.P. From 1:00A M. to 2:30A M. 1 Hr. 30 Min. From (E) 80 P.S.I. To (F) 114 P.S.I.

l Closed F.C.I.P. From 2:30A M. to 3:30A M. 1 Hr. - Min. (G) 1266 P.S.I.

al Hydrostatic Pressure (A) 2258 P.S.I. Final Hydrostatic Pressure (H) 2258 P.S.I. Maximum Temp. 120

INFORMATION

W Fair blow throughout initial flow period. Fair blow throughout final flow period.

Well Flow - Yes X No Recovery Total Ft. 160' of slightly oil speckled muddy water with some free oil in tool

sed Out - Yes X No Mud Type Drispac Viscosity 51 Weight 9.4 Water Loss 9.6 cc. Chlorides 9,000 PPM

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

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

ING CONTRACTOR Slawson Drlg. Co. Length Drill Pipe? 3750 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4½FH In.

Weight Pipe 316 Ft. I.D. Weight Pipe 2.76 In. Tool Joint Size 4½FH In. Length Drill Collars - Ft. I.D. Drill Collars - In.

oint Size - In. Length D.S.T. Tool 35 Ft.

ks:

WESTERN TESTING CO., INC.
Pressure Data

Test Ticket No. 24450

11-8-76

No. 1566 Capacity 4300 Location 4445 Ft.

6774 Elevation 2473 Kelly Bush. Well Temperature 120 °F

	Pressure			Time Given	Time Computed
l Hydrostatic Mud	2258 P.S.I.	Open Tool		11:28P. M	
Initial Flow Pressure	45 P.S.I.	First Flow Pressure		30 Mins.	30 Mins.
Final Flow Pressure	52 P.S.I.	Initial Closed-in Pressure		60 Mins.	60 Mins.
l Closed-in Pressure	1294 P.S.I.	Second Flow Pressure		90 Mins.	90 Mins.
d Initial Flow Pressure	80 P.S.I.	Final Closed-in Pressure		60 Mins.	60 Mins.
d Final Flow Pressure	114 P.S.I.				
Closed-in Pressure	1266 P.S.I.				
l Hydrostatic Mud	2258 P.S.I.				

PRESSURE BREAKDOWN

First Flow Pressure
eakdown: 6 Inc.
5 mins. and a
al inc. of 0 Min.

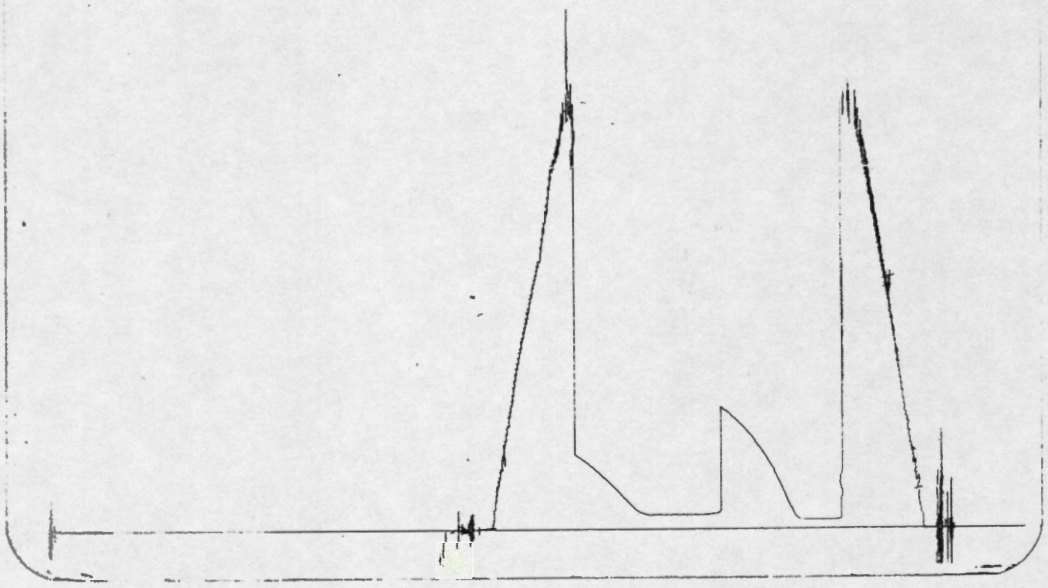
Initial Shut-In
Breakdown: 20 Inc.
of 3 mins. and a
final inc. of 0 Min.

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

Final Shut-In
Breakdown: 20 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
0	45	0	52	0	80	0	114
5	43	3	873	5	71	3	768
10	43	6	996	10	71	6	931
15	44	9	1068	15	71	9	1013
20	45	12	1113	20	73	12	1056
25	48	15	1148	25	78	15	1094
30	52	18	1173	30	80	18	1122
		21	1193	35	82	21	1143
		24	1212	40	86	24	1163
		27	1225	45	89	27	1180
		30	1236	50	91	30	1193
		33	1246	55	95	33	1203
		36	1253	60	97	36	1214
		39	1261	65	102	39	1223
		42	1268	70	104	42	1231
		45	1272	75	106	45	1238
		48	1279	80	110	48	1244
		51	1283	85	112	51	1251
		54	1287	90	114	54	1255
		57	1289			57	1261
		60	1294			60	1266

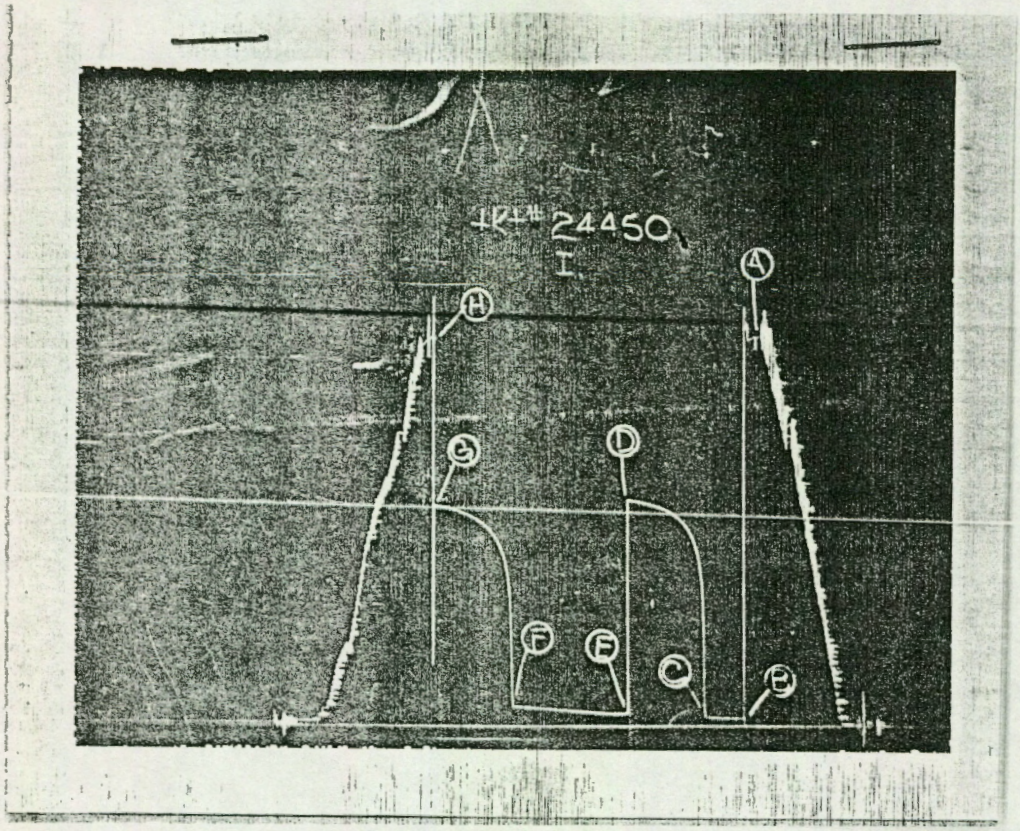
Tool 6233
6 14931



Tool Open: 1st Flow ___ hr. 30 mins: Shut-in Initial ___ hr. 60 min: 2nd Flow ___ hr. 50 min: Shut-in Final ___ hr. 60 min.

	Field Reading	Corrected Reading
(A) Initial Hydrostatic Pressure	2197	2207
(B) Initial 1st Flow Pressure	51	47
(C) Final 1st Flow Pressure	61	47
(D) Initial Shut-in Pressure	657	639
(E) Initial 2nd Flow Pressure	73	81
(F) Final 2nd Flow Pressure	73	81
(G) Final Shut-in Pressure	396	396
(H) Final Hydrostatic Pressure	2187	2147

14931



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2243	2258	PSI
(B)	First Initial Flow Pressure	43	45	PSI
(C)	First Final Flow Pressure	54	52	PSI
(D)	Initial Closed-in Pressure	1302	1294	PSI
(E)	Second Initial Flow Pressure	65	80	PSI
(F)	Second Final Flow Pressure	108	114	PSI
(G)	Final Closed-in Pressure	1259	1266	PSI
(H)	Final Hydrostatic Mud	2221	2258	PSI