WESTERN TESTERS

Home Office: Great Bend, Kansas

P. O. Box 793 GLadstone 3-7903

Company Pickrell Drilling Company Lease & Well No. Rankin #1

Elevation 2362' D.F. Ticket Number 3594

Date 10-25-63 Sec. 13 Twp. 21 Range 24 County Hodgeman State Kansas

Test Approved by Dan Bowles Western Representative Jack Toelkes

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Formation Test No. 1 O.K. X Misrun ____ Interval Tested From 4353' to 4390' Total Depth 4390'

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

Packer Depth 4348 Ft. Size 6 3/4" Packer Depth 4353 Ft. Size 6 3/4"

Straddle ____ Yes ____ No X Conv. ____ B.T. ____ Damaged ____ Yes ____ No

Packer Depth ____ Ft Size ____

Tool Size 5½" OD Tool Jt. Size 4½" FH Anchor Length 37 Ft. Size 5½" OD

RECORDERS Depth 4381 Ft Clock No. 6892 Depth 4384 Ft. Clock No. 120

Top Make Amerada Cap. 3150# No. 1562 Inside ~~Outside~~ Bottom Make Western Cap. 4000# No. 57 ~~Inside~~ Outside

Below Straddle: Depth ____ Clock No ____ Inside Outside Depth ____ Ft. Clock No. ____ Inside Outside

Top Make ____ Cap. ____ No. ____ Inside Outside Bottom Make ____ Cap. ____ No. ____ Inside Outside

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Time Set Packer 3:16P M

Tool Open I.F.P. From 3:18P M to 3:20P M - Hr. 2 Min. From (B) 28 P.S.I. To (C) 29 P.S.I.

Tool Closed I.C.I.P. From 3:20P M. to 3:50P M. - Hr. 30 Min. (D) 1360 P.S.I.

Tool Open F.F.P. From 3:50P M. to 4:50P M. 1 Hr. - Min. From (E) 42 P.S.I. To (F) 71 P.S.I.

Tool Closed F.C.I.P. From 4:50P M. to 5:20P M. - Hr. 30 Min. (G) 742 P.S.I.

Inital Hydrostatic Pressure (A) 2379 P.S.I. Final Hydrostatic Pressure (H) 2352 P.S.I.

SURFACE INFORMATION Size Choke 3/4 In. Max. Press. P.S.I. Time Description of Flow

____ ____ ____ M. ____

____ ____ ____ M. ____

____ ____ ____ M. ____

BLOW Strong throughout test Bottom Choke Size 3/4 in.

Did Well Flow ____ Yes X No Recovery Total Ft. 105' Oil cut gassy mud - 750' G.I.P.

Reversed Out ____ Yes X No Mud Type Starch Viscosity 45 Weight 10. Maximum Temp. 123 °F Mud

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Jars: Size No Make ____ Ser. No. ____

Type Circ. Sub. Plug Did Tool Plug? No Where? ____ Did Packer Hold? Yes

Length Drill Pipe 3434 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe 900 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ____ ft.

I. D. Drill Collars ____ in. Length D. S. T. Tool 56 ft.

Remarks

W.T.C. Clock stopped

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WESTERN TESTING CO., INC.
Pressure Data

Date 10-25-63 Test Ticket No. 3594

Recorder No. 1562 Capacity 3150# Location 4381 Ft.

Clock No. 6892 Elevation 2362' D.F. Well Temperature 123 °F

Point		Pressure		Time Given		Time Computed	
A	Initial Hydrostatic Mud	2379 P.S.I.	Opened Tool	3:16P	M	3:16 PM	
B	First Initial Flow Pressure	28 P.S.I.	First Flow Pressure	2	Mins.	3	Mins.
C	First Final Flow Pressure	29 P.S.I.	Initial Closed-in Pressure	30	Mins.	28	Mins.
D	Initial Closed-in Pressure	1360 P.S.I.	Second Flow Pressure	60	Mins.	59	Mins.
E	Second Initial Flow Pressure	42 P.S.I.	Final Closed-in Pressure	30	Mins.	30	Mins.
F	Second Final Flow Pressure	71 P.S.I.					
G	Final Closed-in Pressure	742 P.S.I.					
H	Final Hydrostatic Mud	2352 P.S.I.					

PRESSURE BREAKDOWN

First Flow Press.
Breakdown: 1 Inc.
of 3 mins. and a
final inc. of - Min.

Point Mins.	Press.
P 1 0	28
P 2 3	29
P 3	
P 4	
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In
Breakdown: 9 Inc.
of 3 mins. and a
final inc. of 1 Min.

Point Minutes	Press.
0	29
3	109
6	272
9	1080
12	1223
15	1281
18	1311
21	1334
24	1348
27	1357
28	1360

Second Flow Pressure
Breakdown: 11 Inc.
of 5 mins. and a
final inc. of 4 Min.

Point Minutes	Press.
0	42
5	44
10	48
15	51
20	54
25	58
30	60
35	62
40	64
45	67
50	69
55	70
59	71

Final Shut-In
Breakdown: 10 Inc.
of 3 mins. and a
final inc. of - Min.

Point Minutes	Press.
0	71
3	92
6	119
9	149
12	188
15	237
18	311
21	413
24	531
27	653
30	742

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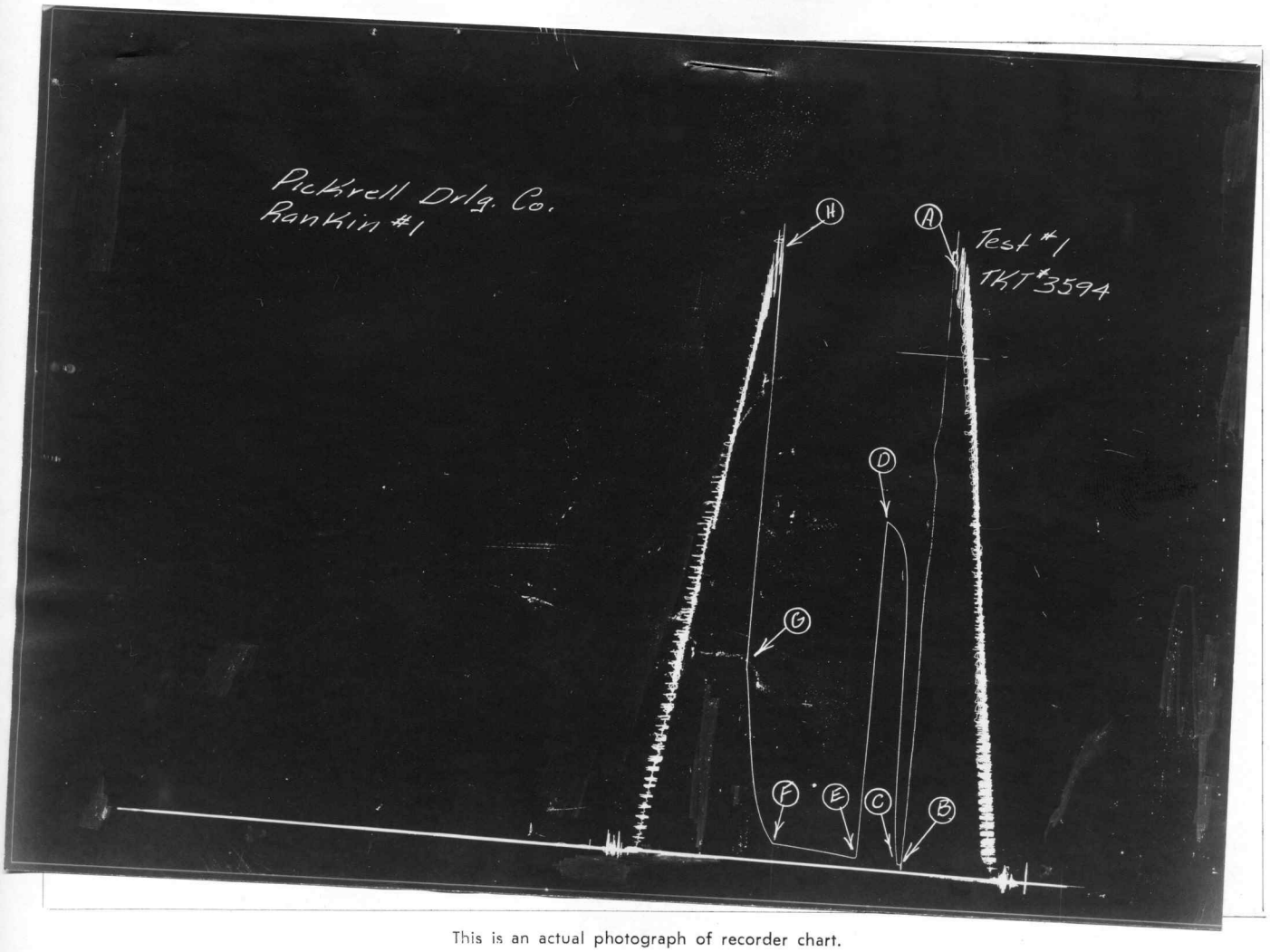

This is an actual photograph of recorder chart.

POINT		PRESSURE	
(A)	Initial Hydrostatic Mud	2379	PSI
(B)	First Initial Flow Pressure	28	PSI
(C)	First Final Flow Pressure	29	PSI
(D)	Initial Closed-in Pressure	1360	PSI
(E)	Second Initial Flow Pressure	42	PSI
(F)	Second Final Flow Pressure	71	PSI
(G)	Final Closed-in Pressure	742	PSI
(H)	Final Hydrostatic Mud	2352	PSI

Company Pickrell Drilling Company Lease and Well No. Rankin #1 Sec. 13 Twp. 21 Rge. 24 Test No. 1 Date 10-25-6

WESTERN TESTERS

Home Office: Great Bend, Kansas

P. O. Box 793 GLadstone 3-7903

Company Pickrell Drilling Company Lease & Well No. Rankin #1

Elevation 2362' D.F. Ticket Number 3595

Date 10-26-63 Sec. 13 Twp. 21S Range 24W County Hodgeman State Kansas

Test Approved by Dan Bowles Western Representative Jack Toelkes

Formation Test No. 2 O.K. X Misrun ____ Interval Tested From 4448' to 4480' Total Depth 4480'

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

Packer Depth 4448 Ft. Size 6 3/4" Packer Depth 4443 Ft. Size 6 3/4"

Straddle ____ Yes ____ No X Conv. ____ B.T. ____ Damaged ____ Yes ____ No

Packer Depth ____ Ft Size ____

Tool Size 5½" OD Tool Jt. Size 4½" FH Anchor Length 32 Ft. Size 5½" OD

RECORDERS Depth 4451 Ft Clock No. 6892 Depth 4454 Ft. Clock No. 140

Top Make Amerada Cap. 3150# No. 1562 Inside ~~Outside~~ Bottom Make Western Cap. 4000# No. 57 Inside Outside

Below Straddle: Depth ____ Clock No ____ Inside Outside Depth ____ Ft. Clock No. ____ Inside Outside

Top Make ____ Cap. ____ No. ____ Inside Outside Bottom Make ____ Cap. ____ No. ____ Inside Outside

Time Set Packer 2:02 P M

Tool Open I.F.P. From 2:04P M to 2:07P M - Hr. 3 Min. From (B) 10 P.S.I. To (C) 12 P.S.I.

Tool Closed I.C.I.P. From 2:07P M. to 2:37P M. - Hr. 30 Min. (D) 31 P.S.I.

Tool Open F.F.P. From 2:37P M. to 3:37P M. 1 Hr. - Min. From (E) 17 P.S.I. To (F) 17 P.S.I.

Tool Closed F.C.I.P. From 3:37P M. to 4:07P M. - Hr. 30 Min. (G) 70 P.S.I.

Inital Hydrostatic Pressure (A) 2435 P.S.I. Final Hydrostatic Pressure (H) 2417 P.S.I.

SURFACE INFORMATION Size Choke 3/4 In. Max. Press. P.S.I. Time Description of Flow

____ ____ ____ M. ____

____ ____ ____ M. ____

____ ____ ____ M. ____

BLOW Very weak 3 mins.

Did Well Flow ____ Yes X No Recovery Total Ft. 15' Drilling Mud Bottom Choke Size 3/4 in.

Reversed Out ____ Yes X No Mud Type Starch Viscosity 47 Weight 10.1 Maximum Temp. 125 °F Mud

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Jars: Size No Make ____ Ser. No. ____

Type Circ. Sub. Plug Did Tool Plug? No Where? ____ Did Packer Hold? Yes

Length Drill Pipe 3529 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe 900 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ____ ft.

I. D. Drill Collars ____ in. Length D. S. T. Tool 51 ft.

Remarks

WESTERN TESTING CO., INC.
Pressure Data

Date 10-26-63 Test Ticket No. 3595

Recorder No. 1562 Capacity 3150# Location 4451 Ft.

Clock No. 6892 Elevation 2362' D.F. Well Temperature 125 °F

Point		Pressure	
A	Initial Hydrostatic Mud	2435	P.S.I.
B	First Initial Flow Pressure	10	P.S.I.
C	First Final Flow Pressure	12	P.S.I.
D	Initial Closed-in Pressure	31	P.S.I.
E	Second Initial Flow Pressure	17	P.S.I.
F	Second Final Flow Pressure	17	P.S.I.
G	Final Closed-in Pressure	70	P.S.I.
H	Final Hydrostatic Mud	2417	P.S.I.

	Time Given	Time Computed
Opened Tool	2:02P M	2:02 PM
First Flow Pressure	3 Mins.	3 Mins.
Initial Closed-in Pressure	30 Mins.	28 Mins.
Second Flow Pressure	60 Mins.	61 Mins.
Final Closed-in Pressure	30 Mins.	30 Mins.

PRESSURE BREAKDOWN

First Flow Press.

Breakdown: 1 Inc.
of 3 mins. and a
final inc. of - Min.

Point Mins.	Press.
P 1 0	10
P 2 3	12
P 3	
P 4	
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In

Breakdown: 9 Inc.
of 3 mins. and a
final inc. of 1 Min.

Point Minutes	Press.
0	12
3	13
6	13
9	14
12	14
15	15
18	17
21	21
24	25
27	28
28	31

Second Flow Pressure

Breakdown: 12 Inc.
of 5 mins. and a
final inc. of 1 Min.

Point Minutes	Press.
0	17
5	17
10	17
15	17
20	17
25	17
30	17
35	17
40	17
45	17
50	17
55	17
60	17
61	17

Final Shut-In

Breakdown: 10 Inc.
of 3 mins. and a
final inc. of - Min.

Point Minutes	Press.
0	17
3	54
6	55
9	56
12	57
15	58
18	60
21	64
24	66
27	68
30	70

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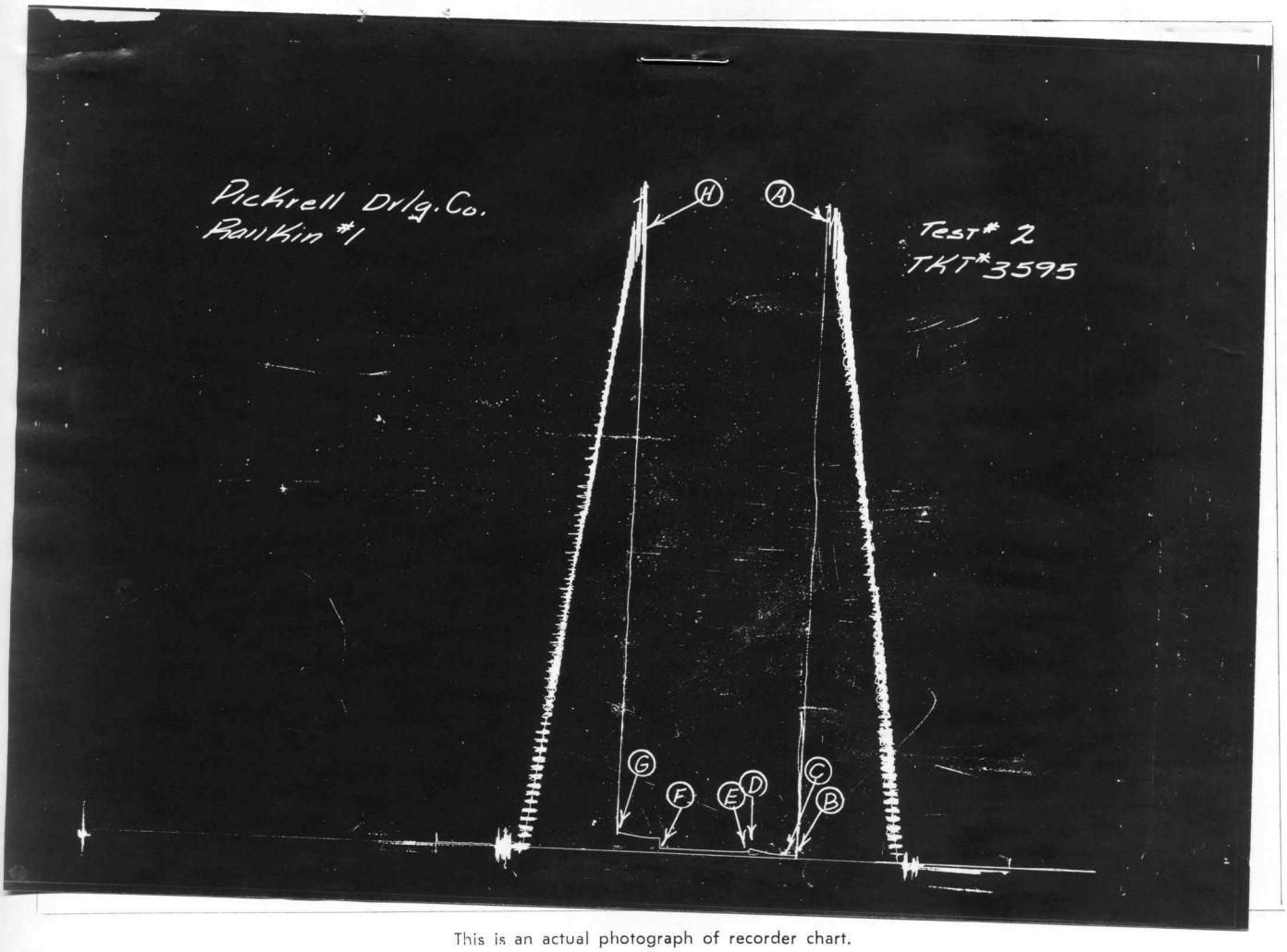

This is an actual photograph of recorder chart.

POINT		PRESSURE	
(A)	Initial Hydrostatic Mud	2435	PSI
(B)	First Initial Flow Pressure	10	PSI
(C)	First Final Flow Pressure	12	PSI
(D)	Initial Closed-in Pressure	31	PSI
(E)	Second Initial Flow Pressure	17	PSI
(F)	Second Final Flow Pressure	17	PSI
(G)	Final Closed-in Pressure	70	PSI
(H)	Final Hydrostatic Mud	2417	PSI

Company Pickrell Drilling Company Lease and Well No. Rankin #1 Sec. 13 Twp. 21S Rge. 24W Test No. 2 Date 10-26-

WESTERN TESTERS

Home Office: Great Bend, Kansas

P. O. Box 793 GLadstone 3-7903

Company Pickrell Drilling Company Lease & Well No. Rankin #1

Elevation 2362' D.F. Ticket Number 3596

Date 10-27-63 Sec. 13 Twp. 21S Range 24W County Hodgeman State Kansas

Test Approved by Dan Bowles Western Representative Jack Toelkes

Formation Test No. 3 O.K. X Misrun ____ Interval Tested From 4477' to 4497' Total Depth 4497'

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

Packer Depth 4472 Ft. Size 6 3/4" Packer Depth 4477 Ft. Size 6 3/4"

Straddle ____ Yes ____ No X Conv. ____ B.T. ____ Damaged ____ Yes ____ No

Packer Depth ____ Ft Size ____

Tool Size 5½" OD Tool Jt. Size 4½" FH Anchor Length 20 Ft. Size 5½" OD

RECORDERS Depth 4490 Ft Clock No. 6892 Depth 4493 Ft. Clock No. 140

Top Make Amerada Cap. 3150# No. 1562 Inside ~~Outside~~ Bottom Make Western Cap. 4000# No. 57 ~~Inside~~ Outside

Below Straddle: Depth ____ Clock No. ____ Inside Outside Depth ____ Ft. Clock No. ____ Inside Outside

Top Make ____ Cap. ____ No. ____ Inside Outside Bottom Make ____ Cap. ____ No. ____ Inside Outside

Time Set Packer 3:30 A M

Tool Open I.F.P. From 3:32A M to 3:35A M - Hr. 3 Min. From (B) 15 P.S.I. To (C) 15 P.S.I.

Tool Closed I.C.I.P. From 3:35A M. to 4:05A M. - Hr. 30 Min. (D) 15 P.S.I.

Tool Open F.F.P. From 4:05A M. to 5:05A M. 1 Hr. - Min. From (E) 15 P.S.I. To (F) 15 P.S.I.

Tool Closed F.C.I.P. From 5:05A M. to 5:35A M. - Hr. 30 Min. (G) 15 P.S.I.

Inital Hydrostatic Pressure (A) 2441 P.S.I. Final Hydrostatic Pressure (H) 2428 P.S.I.

SURFACE INFORMATION	Size Choke 3/4 In.	Max. Press. P.S.I.	Time	Description of Flow
			____ M.	
			____ M.	
			____ M.	

BLOW Very weak 3 mins.

Did Well Flow ____ Yes X No Recovery Total Ft. 10' Drilling Mud Bottom Choke Size 3/4 in.

Reversed Out ____ Yes X No Mud Type Starch Viscosity 47 Weight 10.1 Maximum Temp. 125+ °F Mud

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Jars: Size No Make ____ Ser. No. ____

Type Circ. Sub. Plug Did Tool Plug? No Where? ____ Did Packer Hold? Yes

Length Drill Pipe 3558 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe 900 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ____ ft.

I. D. Drill Collars ____ in. Length D. S. T. Tool 39 ft.

Remarks

Flushed tool after 10 mins. - OK

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WESTERN TESTING CO., INC.
Pressure Data

Date 10-27-63 Test Ticket No. 3596

Recorder No. 1562 Capacity 3150# Location 4490 Ft.

Clock No. 6892 Elevation 2362' D.F. Well Temperature 125 °F

Point		Pressure			Time Given	Time Computed
A	Initial Hydrostatic Mud	2441 P.S.I.		Opened Tool	3:30 A M	3:30 AM
B	First Initial Flow Pressure	15 P.S.I.		First Flow Pressure	3 Mins.	3 Mins.
C	First Final Flow Pressure	15 P.S.I.		Initial Closed-in Pressure	30 Mins.	27 Mins.
D	Initial Closed-in Pressure	15 P.S.I.		Second Flow Pressure	60 Mins.	60 Mins.
E	Second Initial Flow Pressure	15 P.S.I.		Final Closed-in Pressure	30 Mins.	29 Mins.
F	Second Final Flow Pressure	15 P.S.I.				
G	Final Closed-in Pressure	15 P.S.I.				
H	Final Hydrostatic Mud	2428 P.S.I.				

PRESSURE BREAKDOWN

First Flow Press.
Breakdown: 1 Inc.
of 3 mins. and a
final inc. of - Min.

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

Initial Shut-In
Breakdown: 9 Inc.
of 3 mins. and a
final inc. of - Min.

Point Minutes	Press.
0	15
3	15
6	15
9	15
12	15
15	15
18	15
21	15
24	15
27	15

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

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

Final Shut-In
Breakdown: 9 Inc.
of 3 mins. and a
final inc. of 2 Min.

Point Minutes	Press.
0	15
3	15
6	15
9	15
12	15
15	15
18	15
21	15
24	15
27	15
29	15

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WESTERN TESTERS

Home Office: Great Bend, Kansas

P. O. Box 793 GLadstone 3-7903

Company Pickrell Drilling Company Lease & Well No. Rankin #1

Elevation 2362' D.F. Ticket Number 3597

Date 10-27-63 Sec. 13 Twp. 21S Range 24W County Hodgeman State Kansas

Test Approved by Dan Bowles Western Representative Jack Toelkes

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Formation Test No. 4 O.K. X Misrun ____ Interval Tested From 4495' to 4515' Total Depth 4515'

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

Packer Depth 4490 Ft. Size 6 3/4" Packer Depth 4495 Ft. Size 6 3/4"

Straddle ____ Yes ____ No X Conv. ____ B.T. ____ Damaged ____ Yes ____ No

Packer Depth ____ Ft Size ____

Tool Size 5½" OD Tool Jt. Size 4½" FH Anchor Length 20 Ft. Size 5½" OD

RECORDERS Depth 4508 Ft Clock No. 6892 Depth 4511 Ft. Clock No. 140

Top Make Amerada Cap. 3150# No. 1562 Inside ~~Outside~~ Bottom Make Western Cap. 4000# No. 57 ~~Inside~~ Outside

Below Straddle: Depth ____ Clock No ____ Inside Outside Depth ____ Ft. Clock No. ____ Inside Outside

Top Make ____ Cap. ____ No. ____ Inside Outside Bottom Make ____ Cap. ____ No. ____ Inside Outside

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Time Set Packer 5:08 P M

Tool Open I.F.P. From 5:10P M to 5:13P M - Hr. 3 Min. From (B) 18 P.S.I. To (C) 18 P.S.I.

Tool Closed I.C.I.P. From 5:13P M. to 5:43P M. - Hr. 30 Min. (D) 1388 P.S.I.

Tool Open F.F.P. From 5:43P M. to 7:13P M. 1 Hr. 30 Min. From (E) 26 P.S.I. To (F) 87 P.S.I.

Tool Closed F.C.I.P. From 7:13P M. to 7:58P M. - Hr. 45 Min. (G) 1319 P.S.I.

Inital Hydrostatic Pressure (A) 2425 P.S.I. Final Hydrostatic Pressure (H) 2409 P.S.I.

SURFACE INFORMATION Size Choke 3/4 In. Max. Press. P.S.I. Time Description of Flow

____ ____ ____ M. ____

____ ____ ____ M. ____

____ ____ ____ M. ____

BLOW Very weak throughout test Bottom Choke Size 3/4 in.

Did Well Flow ____ Yes X No Recovery Total Ft. 150' Slightly oil spotted mdy. S.W.

Mud

Reversed Out ____ Yes X No Mud Type Starch Viscosity 45 Weight 10. Maximum Temp. 135 °F

EXTRA EQUIPMENT: Dual Packers Yes Safety Joint No Jars: Size No Make ____ Ser. No. ____

Type Circ. Sub. Plug Did Tool Plug? No Where? ____ Did Packer Hold? Yes

Length Drill Pipe 3558 ft. I.D. Drill Pipe 3.8 in. Length Weight Pipe 900 ft. I.D. Weight Pipe 2.7 in. Length Drill Collars ____ ft.

I. D. Drill Collars ____ in. Length D. S. T. Tool 39 ft.

Remarks

WESTERN TESTING CO., INC.
Pressure Data

Date 10-27-63 Test Ticket No. 3597

Recorder No. 1562 Capacity 3150# Location 4508 Ft.

Clock No. 6892 Elevation 2362' D.F. Well Temperature 135 °F

Point		Pressure		Time Given	Time Computed
A	Initial Hydrostatic Mud	2425 P.S.I.	Opened Tool	5:08 PM	5:08 PM
B	First Initial Flow Pressure	18 P.S.I.	First Flow Pressure	3 Mins.	5 Mins.
C	First Final Flow Pressure	18 P.S.I.	Initial Closed-in Pressure	30 Mins.	29 Mins.
D	Initial Closed-in Pressure	1388 P.S.I.	Second Flow Pressure	90 Mins.	88 Mins.
E	Second Initial Flow Pressure	26 P.S.I.	Final Closed-in Pressure	45 Mins.	44 Mins.
F	Second Final Flow Pressure	87 P.S.I.			
G	Final Closed-in Pressure	1319 P.S.I.			
H	Final Hydrostatic Mud	2409 P.S.I.			

PRESSURE BREAKDOWN

First Flow Press.

Breakdown: 1 Inc.

of 5 mins. and a

final inc. of — Min.

Point Mins.	Press.
P 1 0	18
P 2 5	18
P 3	
P 4	
P 5	
P 6	
P 7	
P 8	
P 9	
P10	
P11	
P12	
P13	
P14	
P15	
P16	
P17	
P18	
P19	
P20	

Initial Shut-In

Breakdown: 9 Inc.

of 3 mins. and a

final inc. of 2 Min.

Point Minutes	Press.
0	18
3	1259
6	1354
9	1370
12	1376
15	1381
18	1386
21	1387
24	1388
27	1388
29	1388

Second Flow Pressure

Breakdown: 17 Inc.

of 5 mins. and a

final inc. of 3 Min.

Point Minutes	Press.
0	26
5	28
10	31
15	34
20	37
25	42
30	45
35	50
40	53
45	57
50	61
55	65
60	69
65	72
70	75
75	99
80	82
85	85
88	87

Final Shut-In

Breakdown: 14 Inc.

of 3 mins. and a

final inc. of 2 Min.

Point Minutes	Press.
0	87
3	865
6	1207
9	1247
12	1267
15	1277
18	1285
21	1293
24	1299
27	1304
30	1307
33	1310
36	1313
39	1315
42	1318
44	1319

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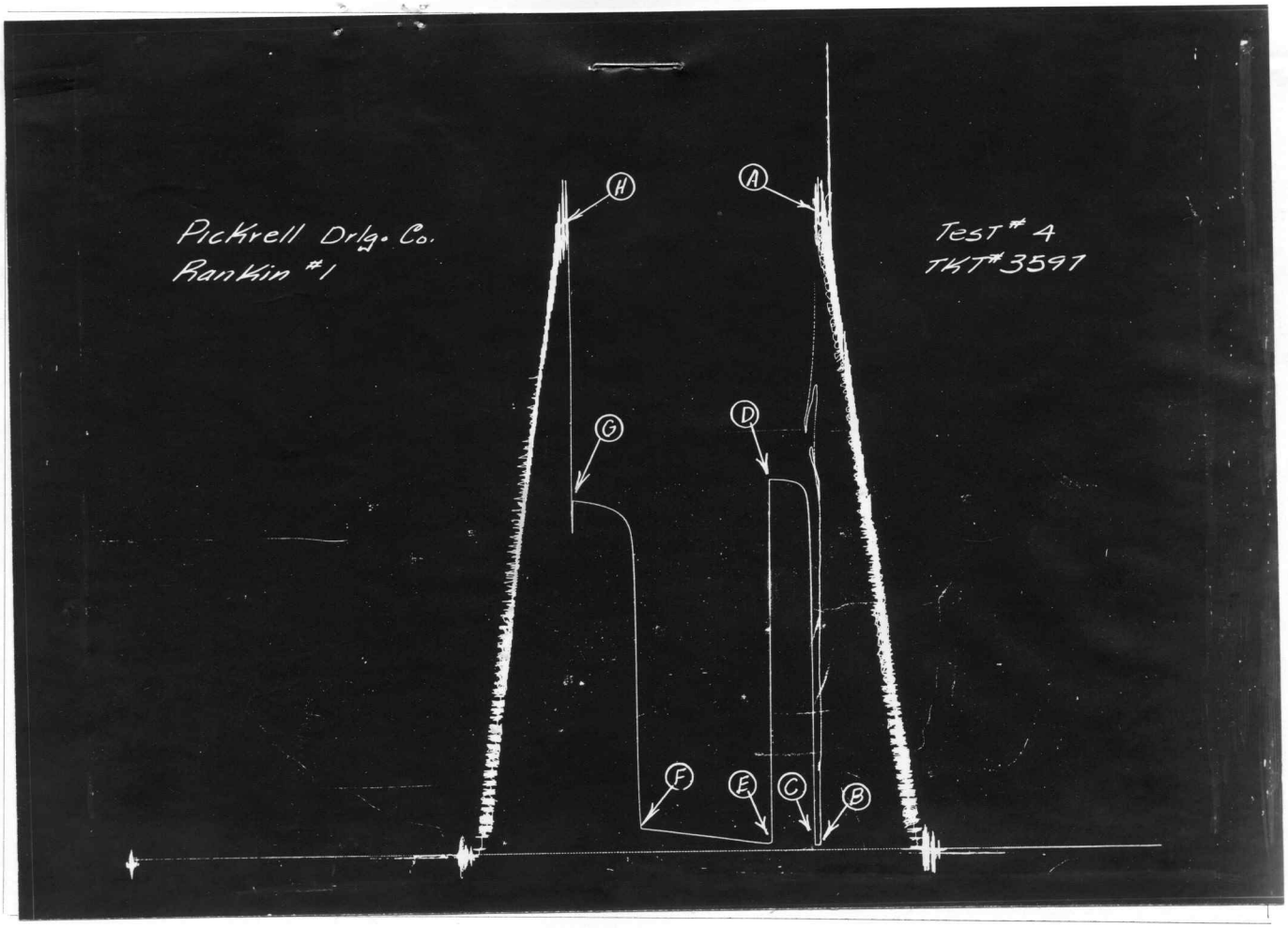

This is an actual photograph of recorder chart.

POINT		PRESSURE	
(A)	Initial Hydrostatic Mud	2425	PSI
(B)	First Initial Flow Pressure	18	PSI
(C)	First Final Flow Pressure	18	PSI
(D)	Initial Closed-in Pressure	1388	PSI
(E)	Second Initial Flow Pressure	26	PSI
(F)	Second Final Flow Pressure	87	PSI
(G)	Final Closed-in Pressure	1319	PSI
(H)	Final Hydrostatic Mud	2409	PSI

Company Pickrell Drilling Company Lease and Well No. Rankin #1 Sec. 13 Twp. 21S Rge. 24W Test No. 4 Date 10-27-6