WESTERN TESTERS

P. O. BOX 1599 PHONE (316) 838-0601

WICHITA, KANSAS 67201

Company Range Oil Company, Inc. Lease & Well No. Shields #2

Elevation - Formation Admire Effective Pay - Ft. Ticket No. 316

Date 7-30-78 Sec. 15 Twp. 33S Range 4E County Cowley State Kansas

Test Approved by Stephen M. Kreidler Western Representative William K. Hager

Formation Test No. 1 Interval Tested from 660 ft. to 690 ft. Total Depth 690 ft.

Packer Depth 655 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Packer Depth 660 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -

Top Recorder Depth (Inside) 680 ft. Recorder Number 1558 Cap. 4200

Bottom Recorder Depth (Outside) 685 ft. Recorder Number 1559 Cap. 4200

Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Range Oil Company, Inc. Drill Collar Length 255 I. D. 2.8 in.

Mud Type Chem Viscosity 31 Weight Pipe Length - I. D. - in.

Weight 9.1 Water Loss 20 cc. Drill Pipe Length 385 I. D. 4½XH in.

Chlorides 1,000 P.P.M. Test Tool Size 5½OD in. Tool Joint Size 4½FH in.

Jars: Make - Serial Number - Anchor Length 30 ft. Size 5½OD in.

Did Well Flow? No Reversed Out - Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7 7/8 in.

Blow: Very weak blow on initial flow period. Strong blow decreasing to weak on final flow period.

Recovered 20 ft. of mud.

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks: Gas to surface on final flow period, but to weak to gauge.

Time Set Packer(s) 6:00 A.M. ~~P.M.~~ Time Started Off Bottom 8:00 ~~A.M.~~ P.M. Maximum Temperature 84

Initial Hydrostatic Pressure ..... (A) 333 P.S.I.

Initial Flow Period ..... Minutes 30 (B) 51 P.S.I. to (C) 27 P.S.I.

Initial Closed In Period ..... Minutes 30 (D) 256 P.S.I.

Final Flow Period ..... Minutes 30 (E) 59 P.S.I. to (F) 26 P.S.I.

Final Closed In Period ..... Minutes 30 (G) 263 P.S.I.

Final Hydrostatic Pressure ..... (H) 331 P.S.I.

WESTERN TESTING CO., INC.
Pressure Data

Date 7-30-78 Test Ticket No. 316

Recorder No. 1558 Capacity 4200 Location 680 Ft.

Clock No. - Elevation - Well Temperature 84 °F

Point		Pressure		Time Given		Time Computed	
A	Initial Hydrostatic Mud	333 P.S.I.	Open Tool	6:00A.	M		
B	First Initial Flow Pressure	51 P.S.I.	First Flow Pressure	30	Mins.	30	Mins.
C	First Final Flow Pressure	27 P.S.I.	Initial Closed-in Pressure	30	Mins.	30	Mins.
D	Initial Closed-in Pressure	256 P.S.I.	Second Flow Pressure	30	Mins.	30	Mins.
E	Second Initial Flow Pressure	59 P.S.I.	Final Closed-in Pressure	30	Mins.	33	Mins.
F	Second Final Flow Pressure	26 P.S.I.					
G	Final Closed-in Pressure	263 P.S.I.					
H	Final Hydrostatic Mud	331 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: 10 Inc.
of 3 mins. and a
final inc. of 0 Min.

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

Final Shut-In
Breakdown: 11 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point	Mins.	Press.	Point	Minutes	Press.	Point	Minutes	Press.	Point	Minutes	Press.
P 1	0	51		0	27		0	59		0	26
P 2	5	36		3	27		5	42		3	141
P 3	10	30		6	55		10	32		6	202
P 4	15	28		9	127		15	28		9	228
P 5	20	27		12	187		20	28		12	240
P 6	25	27		15	215		25	26		15	248
P 7	30	27		18	233		30	26		18	253
P 8				21	244					21	257
P 9				24	250					24	259
P10				27	254					27	262
P11				30	256					30	263
P12										33	263
P13											
P14											
P15											
P16											
P17											
P18											
P19											
P20											

RH #316

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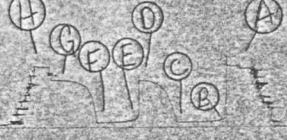

WESTERN TESTERS

P. O. BOX 1599 PHONE (316) 838-0601

WICHITA, KANSAS 67201

Company Range Oil Company, Inc. Lease & Well No. Shields #2

Elevation 1177 Kelly Bushing Formation Kansas City Effective Pay -------- Ft. Ticket No. 317

Date 8/2/78 Sec. 15 Twp. 33S Range 4E County Cowley State Kansas

Test Approved by Stephen M. Kreidler Western Representative Tim Wilson

Formation Test No. 2 Interval Tested from 2560' ft. to 2580' ft. Total Depth 2580' ft.

Packer Depth 2555 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Packer Depth 2560 ft. Size 6 3/4 in. Packer Depth -- ft. Size -- in.

Depth of Selective Zone Set ----

Top Recorder Depth (Inside) 2573 ft. Recorder Number 1559 Cap. 4200

Bottom Recorder Depth (Outside) 2576 ft. Recorder Number 1558 Cap. 4200

Below Straddle Recorder Depth -- ft. Recorder Number -- Cap. --

Drilling Contractor Range Oil Company #1 Drill Collar Length 252 I. D. 2¼ in.

Mud Type chemical Viscosity 35 Weight Pipe Length -- I. D. -- in.

Weight 9.6 Water Loss 13.6 cc. Drill Pipe Length 2289 I. D. 3.8 in.

Chlorides 2,000 P.P.M. Test Tool Size 5½ in. Tool Joint Size 4½FH in.

Jars: Make -- Serial Number -- Anchor Length 20 ft. Size 5½ in.

Did Well Flow? No Reversed Out No Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7 7/8 in.

Blow: Very weak 17 minutes.

Recovered 5 ft. of drilling mud

Recovered ft. of

Recovered ft. of

Recovered ft. of

Recovered ft. of

Remarks:

Time Set Packer(s) 3:04 A.M. ~~P.M.~~ Time Started Off Bottom 5:07 A.M. ~~P.M.~~ Maximum Temperature 82

Initial Hydrostatic Pressure ..... (A) 1324 P.S.I.

Initial Flow Period ..... Minutes 30 (B) 5 P.S.I. to (C) 7 P.S.I.

Initial Closed In Period ..... Minutes 30 (D) 240 P.S.I.

Final Flow Period ..... Minutes 30 (E) 31 P.S.I. to (F) 17 P.S.I.

Final Closed In Period ..... Minutes 30 (G) 113 P.S.I.

Final Hydrostatic Pressure ..... (H) 1305 P.S.I.

WESTERN TESTING CO., INC.
Pressure Data

Date 8/2/78 Test Ticket No. 317

Recorder No. 1559 Capacity 4200 Location 2573 Ft.

Clock No. --- Elevation 1177 Kelly Bushing Well Temperature 82 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	1324	P.S.I.	Open Tool 3:04A M	
B First Initial Flow Pressure	5	P.S.I.	First Flow Pressure 30 Mins.	30 Mins.
C First Final Flow Pressure	7	P.S.I.	Initial Closed-in Pressure 30 Mins.	30 Mins.
D Initial Closed-in Pressure	240	P.S.I.	Second Flow Pressure 30 Mins.	30 Mins.
E Second Initial Flow Pressure	31	P.S.I.	Final Closed-in Pressure 30 Mins.	33 Mins.
F Second Final Flow Pressure	17	P.S.I.		
G Final Closed-in Pressure	113	P.S.I.		
H Final Hydrostatic Mud	1305	P.S.I.		

PRESSURE BREAKDOWN

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

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

Initial Shut-In
Breakdown: 10 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point Minutes	Press.
0	7
3	7
6	9
9	17
12	24
15	32
18	50
21	76
24	129
27	192
30	240

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

Point Minutes	Press.
0	31
5	18
10	18
15	18
20	18
25	17
30	17

Final Shut-In
Breakdown: 11 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point Minutes	Press.
0	17
3	17
6	16
9	17
12	23
15	25
18	35
21	44
24	52
27	73
30	94
33	113

TK# 317
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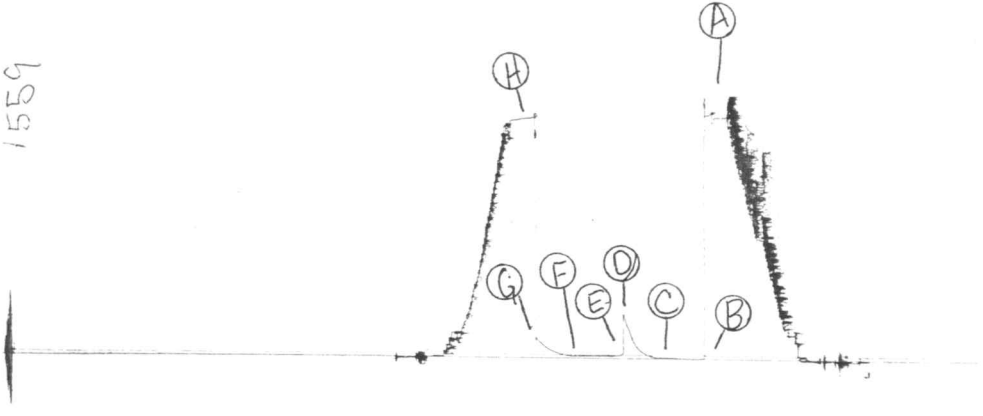
1559



WESTERN TESTERS

P. O. BOX 1599 PHONE (316) 838-0601

WICHITA, KANSAS 67201

Company: Range Oil Company, Inc. Lease & Well No.: Shields #2

Elevation: 1177 Kelly Bushing Formation: Kansas City Effective Pay: ------- Ft. Ticket No.: 1851

Date: 8/2/78 Sec.: 15 Twp.: 33S Range: 4E County: Cowley State: Kansas

Test Approved by: Stephen M. Kreidler Western Representative: Will K. Hager

Formation Test No.: 3 Interval Tested from: 2574' ft. to: 2605' ft. Total Depth: 2605' ft.

Packer Depth: 2569' ft. Size: 6 3/4 in. Packer Depth: -- ft. Size: -- in.

Packer Depth: 2574 ft. Size: 6 3/4 in. Packer Depth: -- ft. Size: -- in.

Depth of Selective Zone Set: ----

Top Recorder Depth (Inside): 2584' ft. Recorder Number: 1558' Cap.: 4200

Bottom Recorder Depth (Outside): 2587' ft. Recorder Number: 1559' Cap.: 4200

Below Straddle Recorder Depth: -- ft. Recorder Number: -- Cap.: --

Drilling Contractor: Range Oil Company, Inc. Drill Collar Length: 255' I. D.: 2.8 in.

Mud Type: chemical Viscosity: 46 Weight Pipe Length: -- I. D.: -- in.

Weight: 9.6 Water Loss: 12.0 cc. Drill Pipe Length: 2299 I. D.: 4½XH in.

Chlorides: 1,500 P.P.M. Test Tool Size: 4½FH in. Tool Joint Size: 4½FH in.

Jars: Make: -- Serial Number: -- Anchor Length: 31 ft. Size: 5½ in.

Did Well Flow?: No Reversed Out: No Surface Choke Size: 3/4 in. Bottom Choke Size: 3/4 in.

Main Hole Size: 7 7/8 in.

Blow: Very weak blow throughout test.

Recovered: 30 ft. of: mud

Recovered: 30 ft. of: very slightly oil and gas cut mud

Recovered: ____ ft. of:

Recovered: ____ ft. of:

Recovered: ____ ft. of:

Remarks: Thermometer broke while on bottom

Time Set Packer(s): 1:55 ~~A.M.~~ P.M. Time Started Off Bottom: 4:40 ~~A.M.~~ P.M. Maximum Temperature: N/A

Initial Hydrostatic Pressure			(A)	1341	P.S.I.	
Initial Flow Period	Minutes 30		(B)	40	P.S.I. to (C)	44 P.S.I.
Initial Closed In Period	Minutes 30		(D)	531	P.S.I.	
Final Flow Period	Minutes 45		(E)	101	P.S.I. to (F)	65 P.S.I.
Final Closed In Period	Minutes 60		(G)	656	P.S.I.	
Final Hydrostatic Pressure			(H)	1320	P.S.I.	

WESTERN TESTING CO., INC.

Pressure Data

Date 8/2/78 Test Ticket No. 1851

Recorder No. 1558 Capacity 4200 Location 2584 F

Clock No. ------ Elevation 1177 Kelly Bushing Well Temperature °

Point		Pressure			Time Given		Time Computed	
A	Initial Hydrostatic Mud	1341	P.S.I.	Open Tool	1:55P	M		
B	First Initial Flow Pressure	40	P.S.I.	First Flow Pressure	30	Mins.	30	Min
C	First Final Flow Pressure	44	P.S.I.	Initial Closed-in Pressure	30	Mins.	30	Min
D	Initial Closed-in Pressure	531	P.S.I.	Second Flow Pressure	45	Mins.	45	Min
E	Second Initial Flow Pressure	101	P.S.I.	Final Closed-in Pressure	60	Mins.	57	Min
F	Second Final Flow Pressure	65	P.S.I.					
G	Final Closed-in Pressure	656	P.S.I.					
H	Final Hydrostatic Mud	1320	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: 10 Inc.
of 3 mins. and a
final inc. of 0 Min.

Second Flow Pressure
Breakdown: 9 Inc.
of 5 mins. and a
final inc. of 0 Min.

Final Shut-In
Breakdown: 19 Inc.
of 3 mins. and a
final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	40	0	44	0	101	0	65
P 2 5	37	3	45	5	67	3	68
P 3 10	37	6	53	10	61	6	74
P 4 15	37	9	65	15	61	9	84
P 5 20	40	12	91	20	61	12	106
P 6 25	40	15	152	25	63	15	135
P 7 30	44	18	253	30	63	18	179
P 8		21	367	35	63	21	226
P 9		24	428	40	63	24	291
P10		27	498	45	65	27	359
P11		30	531			30	411
P12						33	458
P13						36	498
P14						39	533
P15						42	560
P16						45	587
P17						48	608
P18						51	625
P19						54	643
P20						57	656

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TK# 1851

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