

TK# 21707

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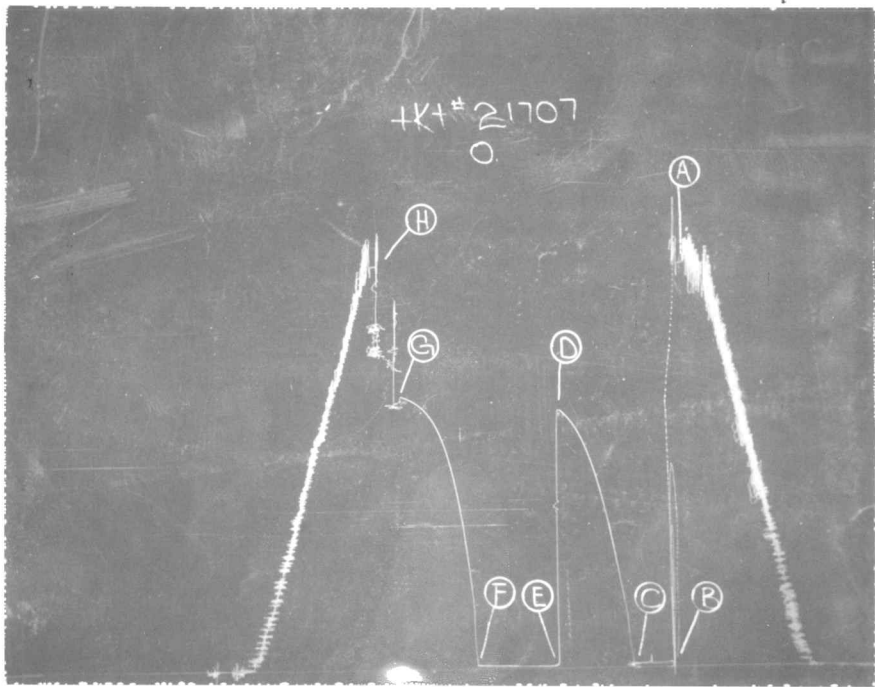
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Home Office: Wichita, Kansas 67201
P. O. Box 1599 (316) 838-0601

Company Keener Oil Company Lease & Well No. Jane Walter #1
Elevation 1666 Kelly Bush. Formation Mississippi Effective Pay 6 Ft. Ticket No. 21707
Date 11-6-76 Sec. 3 Twp. 29S Range 8W County Kingman State Kansas
Test Approved by Eldon J. Schierling Western Representative Bill Hager
Formation Test No. 1 O.K. ☒ Misrun ☐ Interval Tested From 4135' to 4140' Total Depth 4140'
Size Main Hole 7 7/8 Rat Hole ☐ Conv. ☒ B.T. ☐ Damaged ☐ Yes ☒ No Conv. ☐ B.T. ☒ Damaged ☐ Yes ☒ No
Top Packer Depth 4130 Ft. Size 6 3/4 Bottom Packer Depth 4135 Ft. Size 6 3/4
Straddle ☐ Conv. ☐ B.T. ☐ Damaged ☐ Yes ☐ No Packer Depth ☐ Ft. Size ☐
Tool Size 5 1/2 OD Tool Joint Size 4 1/2 FH Anchor Length 5 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.
RECORDERS Depth 4124 Ft. Clock No. 4763 Depth 4127 Ft. Clock No. 9712
Top Make Kuster Cap. 4150 No. 2604 ☐ Inside ☐ Outside Bottom Make Kuster Cap. 4000 No. 3660 ☐ Inside ☐ Outside
Below Straddle: Depth ☐ Rec. No. ☐ Clock No. ☐ ☐ Inside ☐ Outside Depth ☐ Ft. Rec. No. ☐ Clock No. ☐ ☐ Inside ☐ Outside
Time Set Packer 1:34A M
Tool Open I.F.P. From 1:36A M. to 2:06A M. - Hr. 30 Min. From (B) 24 P.S.I. To (C) 22 P.S.I.
Tool Closed I.C.I.P. From 2:06A M. to 3:06A M. - Hr. 60 Min (D) 1392 P.S.I.
Tool Open F.F.P. From 3:06A M. to 4:06A M. - Hr. 60 Min. From (E) 22 P.S.I. To (F) 19 P.S.I.
Tool Closed F.C.I.P. From 4:06A M. to 5:06A M. - Hr. 60 Min. (G) 1470 P.S.I.
Initial Hydrostatic Pressure (A) 2210 P.S.I. Final Hydrostatic Pressure (H) 2188 P.S.I. Maximum Temp. 124

INFORMATION

BLOW Strong blow throughout test. Gas to surface in 22 minutes during final flow period.

See attached sheet for gas measurements.

Did Well Flow - Yes ☒ No ☐ Recovery Total Ft. 40' of gas cut drilling mud.

Reversed Out - Yes ☒ No ☐ Mud Type Starch Viscosity 40 Weight 9.7 Water Loss 6.8 cc. Chlorides 60,000 PPM

EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint Yes Jars: Size 4 1/2 OD In. Make WTC Ser. No. 403

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

DRILLING CONTRACTOR H-30 Drlg., Inc. Length Drill Pipe? 3303 Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4 1/2 FH In

Length Weight Pipe 796 Ft. I.D. Weight Pipe 3 In. Tool Joint Size 4 1/2 FH In. Length Drill Collars - Ft. I.D. Drill Collars - In

Tool Joint Size - In. Length D.S.T. Tool 41 Ft.

Remarks: Read outside recorder #3660.



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

GAS FLOW REPORT

Date 11-6-76 Ticket 21707 Company Keener Oil Company
Well Name and No. Jane Walter #1 Dst No. 1 Interval Tested 4135' - 4140'
County Kingman State Kansas Sec. 3 Twp. 29S Rg. 8W

Time Gauge Pre-Flow	Time Gauge in Min.	P.S.I. on Merla Orifice Well Tester	P.S.I. on Pitot Tester	P.S.I. on Side Static Tester	P.S.I. on U-Tube Tester	Description of Flow
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PRE FLOW

SECOND FLOW

3:48AM	42 min.	4" of water				3,370 C.F.P.D.
3:58AM	52 min.	4" of water				3,370 C.F.P.D.
4:08AM	62 min.	4" of water				3,370 C.F.P.D.

Gas to surface in 22 minutes. All measurements were taken with a 2" merla orifice well tester with a 1/4" choke.

GAS BOTTLE

Serial No. - Date Bottle Filled 11-6-76 Date to be Invoiced 11-6-76

Requisition and Provisions for high pressure stainless steel gas bottles. Western Testing Co., Inc. shall not be liable for damage of any kind to property or personnel of the one whom gas bottle is filled or for any loss suffered or sustained directly or indirectly through the use of these bottles. By signing of this ticket showing receipt of a gas testing bottle, the undersigned agrees for himself and as agent for operator, to return this bottle to Western Testing Co., Inc. within thirty (30) days free of charge, or be invoiced in the amount of \$75.00 (total charge). Should valve or seal plug be missing or damaged beyond repair, operator shall be invoiced for repairs at our invoiced price.

All charges subject to 1% per month, equal to 12% interest per annum after 30 days from date of invoice. Any expense incurred for collection will be added to the original amount.

COMPANY'S NAME Keener Oil Company

Authorized by Eldon J. Schierling

WESTERN TESTING CO., INC.

Pressure Data

Date 11-6-76 Test Ticket No. 21707
Recorder No. 3660 Capacity 4000 Location 4127 Ft.
Clock No. 9712 Elevation 1666 Kelly Bushing Well Temperature 124 °F

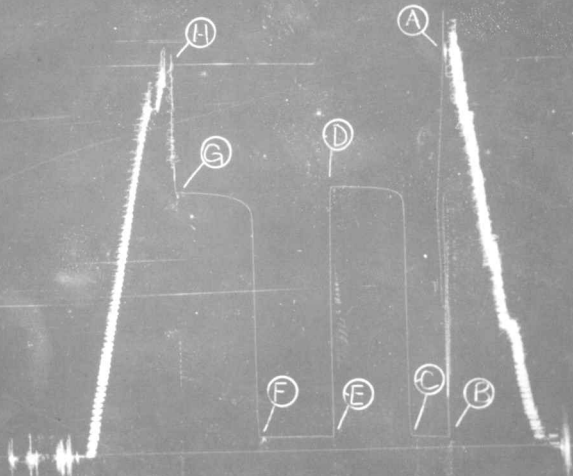
Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2210</u> P.S.I.	<u>1:34A.</u>	<u>M</u>
B First Initial Flow Pressure	<u>24</u> P.S.I.	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>22</u> P.S.I.	<u>60</u> Mins.	<u>54</u> Mins.
D Initial Closed-in Pressure	<u>1392</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>22</u> P.S.I.	<u>60</u> Mins.	<u>54</u> Mins.
F Second Final Flow Pressure	<u>19</u> P.S.I.		
G Final Closed-in Pressure	<u>1470</u> P.S.I.		
H Final Hydrostatic Mud	<u>2188</u> P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>6</u> Inc.		Breakdown: <u>18</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>18</u> Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>24</u>	<u>0</u>	<u>22</u>	<u>0</u>	<u>22</u>	<u>0</u>	<u>19</u>
P 2 <u>5</u>	<u>22</u>	<u>3</u>	<u>168</u>	<u>5</u>	<u>12</u>	<u>3</u>	<u>403</u>
P 3 <u>10</u>	<u>22</u>	<u>6</u>	<u>340</u>	<u>10</u>	<u>12</u>	<u>6</u>	<u>623</u>
P 4 <u>15</u>	<u>22</u>	<u>9</u>	<u>453</u>	<u>15</u>	<u>12</u>	<u>9</u>	<u>793</u>
P 5 <u>20</u>	<u>22</u>	<u>12</u>	<u>569</u>	<u>20</u>	<u>12</u>	<u>12</u>	<u>933</u>
P 6 <u>25</u>	<u>22</u>	<u>15</u>	<u>687</u>	<u>25</u>	<u>13</u>	<u>15</u>	<u>1038</u>
P 7 <u>30</u>	<u>22</u>	<u>18</u>	<u>792</u>	<u>30</u>	<u>14</u>	<u>18</u>	<u>1118</u>
P 8		<u>21</u>	<u>901</u>	<u>35</u>	<u>15</u>	<u>21</u>	<u>1187</u>
P 9		<u>24</u>	<u>990</u>	<u>40</u>	<u>16</u>	<u>24</u>	<u>1245</u>
P10		<u>27</u>	<u>1066</u>	<u>45</u>	<u>16</u>	<u>27</u>	<u>1293</u>
P11		<u>30</u>	<u>1137</u>	<u>50</u>	<u>17</u>	<u>30</u>	<u>1331</u>
P12		<u>33</u>	<u>1191</u>	<u>55</u>	<u>18</u>	<u>33</u>	<u>1361</u>
P13		<u>36</u>	<u>1239</u>	<u>60</u>	<u>19</u>	<u>36</u>	<u>1392</u>
P14		<u>39</u>	<u>1283</u>			<u>39</u>	<u>1410</u>
P15		<u>42</u>	<u>1317</u>			<u>42</u>	<u>1428</u>
P16		<u>45</u>	<u>1347</u>			<u>45</u>	<u>1440</u>
P17		<u>48</u>	<u>1373</u>			<u>48</u>	<u>1452</u>
P18		<u>51</u>	<u>1392</u>			<u>51</u>	<u>1462</u>
P19		<u>54</u>	<u>1392</u>			<u>54</u>	<u>1470</u>
P20							

Tkt # 21708

I





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

Company Keener Oil Company Lease & Well No. Jane Walter #1
Elevation 1666 Kelly Bush. Formation Mississippi Effective Pay - Ft. Ticket No. 21708
Date 11-6-76 Sec. 3 Twp. 29S Range 8W County Kingman State Kansas
Test Approved by Eldon J. Schierling Western Representative Bill Hager
Formation Test No. 2 O.K. ☒ Misrun ☐ Interval Tested From 4135' to 4145' Total Depth 4145'
Size Main Hole 7 7/8 Rat Hole ☐ Conv. ☒ B.T. ☐ Damaged ☐ Yes ☒ No Conv. ☐ B.T. ☒ Damaged ☐ Yes ☒ No
Top Packer Depth 4130 Ft. Size 6 3/4 Bottom Packer Depth 4135 Ft. Size 6 3/4
Straddle ☐ Conv. ☐ B.T. ☐ Damaged ☐ Yes ☐ No Packer Depth ☐ Ft. Size ☐
Tool Size 5 1/2 OD Tool Joint Size 4 1/2 FH Anchor Length 10 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.
RECORDERS Depth 4138 Ft. Clock No. 4763 Depth 4141 Ft. Clock No. 9712
Top Make Kuster Cap. 4150 No. 2604 Inside ☐ Outside ☒ Bottom Make Kuster Cap. 4000 No. 3660 Inside ☐ Outside ☒
Below Straddle: Depth ☐ Rec. No. ☐ Clock No. ☐ Inside ☐ Outside ☐ Depth ☐ Ft. Rec. No. ☐ Clock No. ☐ Inside ☐ Outside ☐
Time Set Packer 4:56P. M
Tool Open I.F.P. From 4:58P M. to 5:28P M. - Hr. 30 Min. From (B) 61 P.S.I. To (C) 68 P.S.I.
Tool Closed I.C.I.P. From 5:28P M. to 6:28P M. - Hr. 60 Min (D) 1496 P.S.I.
Tool Open F.F.P. From 6:28P M. to 7:28P M. - Hr. 60 Min. From (E) 68 P.S.I. To (F) 77 P.S.I.
Tool Closed F.C.I.P. From 7:28P M. to 8:28P M. - Hr. 60 Min. (G) 1479 P.S.I.
Initial Hydrostatic Pressure (A) 2215 P.S.I. Final Hydrostatic Pressure (H) 2202 P.S.I. Maximum Temp. 124

INFORMATION

BLOW Strong blow throughout test. Gas to surface in 3 minutes. See attached sheet for gas measurements.

Did Well Flow ☐ Yes ☒ No Recovery Total Ft. 70' of watery gas cut mud.

Reversed Out ☐ Yes ☒ No Mud Type Starch Viscosity 40 Weight 9.7 Water Loss 6.8 cc. Chlorides 60,000 PPM
EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint ☒ Yes Jars: Size 4 1/2 OD In. Make WTC Ser. No. 403
Dual Packer ☒ Yes Did Packers Hold? ☒ Yes Did Tool Plug? ☐ No Where? ☐
DRILLING CONTRACTOR H-30 Drllg, Inc. Length Drill Pipe? ☐ Ft. I.D. Drill Pipe 3.8 In. Tool Joint Size 4 1/2 FH In.
Length Weight Pipe 796 Ft. I.D. Weight Pipe 3 In. Tool Joint Size 4 1/2 FH In. Length Drill Collars ☐ Ft. I.D. Drill Collars ☐ In.
Tool Joint Size ☐ In. Length D.S.T. Tool 39 Ft.

Remarks:



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

GAS FLOW REPORT

Date 11-6-76 Ticket 21708 Company Keener Oil Company
Well Name and No. Jane Walter #1 Dst No. 2 Interval Tested 4135' - 4145'
County Kingman State Kansas Sec. 3 Twp. 29S Rg. 8W

Time Gauge Pre-Flow	Time Gauge in Min.	P.S.I. on Merla Orifice Well Tester	P.S.I. on Pitot Tester	P.S.I. on Side Static Tester	P.S.I. on U-Tube Tester	Description of Flow
PRE FLOW						
5:08PM	10 min.	40" of water	1	1/4" choke		278,000 C.F.P.D.
5:18PM	20 min.	56" of water	1	1/4" choke		329,000 C.F.P.D.
5:28PM	30 min.	64" of water	1	1/4" choke		352,000 C.F.P.D.
Gas to surface in 3 minutes.						

SECOND FLOW

6:33PM	5 min.	82" of water	1	1/4" choke		398,000 C.F.P.D.
6:38PM	10 min.	88" of water	1	1/4" choke		412,000 C.F.P.D.
6:43PM	15 min.	90" of water	1	1/4" choke		417,000 C.F.P.D.
6:48PM	20 min.	90" of water	1	1/4" choke		417,000 C.F.P.D.
6:53PM	25 min.	90" of water	1	1/4" choke		417,000 C.F.P.D.
6:58PM	30min.	90" of water	1	1/4" choke		417,000 C.F.P.D.
7:08PM	40 min.	92" of water	1	1/4" choke		422,000 C.F.P.D.
7:18PM	50 min.	92" of water	1	1/4" choke		422,000 C.F.P.D.
7:28PM	60 min.	92" of water	1	1/4" choke		422,000 C.F.P.D.
All measurements were taken with a 2" merla orifice well tester.						

GAS BOTTLE

Serial No. - Date Bottle Filled 11-6-76 Date to be Invoiced 11-6-76

Requisition and Provisions for high pressure stainless steel gas bottles. Western Testing Co., Inc. shall not be liable for damage of any kind to property or personnel of the one whom gas bottle is filled or for any loss suffered or sustained directly or indirectly through the use of these bottles. By signing of this ticket showing receipt of a gas testing bottle, the undersigned agrees for himself and as agent for operator, to return this bottle to Western Testing Co., Inc. within thirty (30) days free of charge, or be invoiced in the amount of \$75.00 (total charge). Should valve or seal plug be missing or damaged beyond repair, operator shall be invoiced for repairs at our invoiced price.

All charges subject to 1% per month, equal to 12% interest per annum after 30 days from date of invoice. Any expense incurred for collection will be added to the original amount.

COMPANY'S NAME Keener Oil Company

Authorized by Eldon J. Schierling

WESTERN TESTING CO., INC.

Pressure Data

Date 11-6-76 Test Ticket No. 21708
 Recorder No. 2604 Capacity 4150 Location 4138 Ft.
 Clock No. 4763 Elevation 1666 Kelly Bushing Well Temperature 124 °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2215</u> P.S.I.	<u>4:56P.</u> M	
B First Initial Flow Pressure	<u>61</u> P.S.I.	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>68</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
D Initial Closed-in Pressure	<u>1496</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>68</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
F Second Final Flow Pressure	<u>77</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
G Final Closed-in Pressure	<u>1479</u> P.S.I.		
H Final Hydrostatic Mud	<u>2202</u> 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.

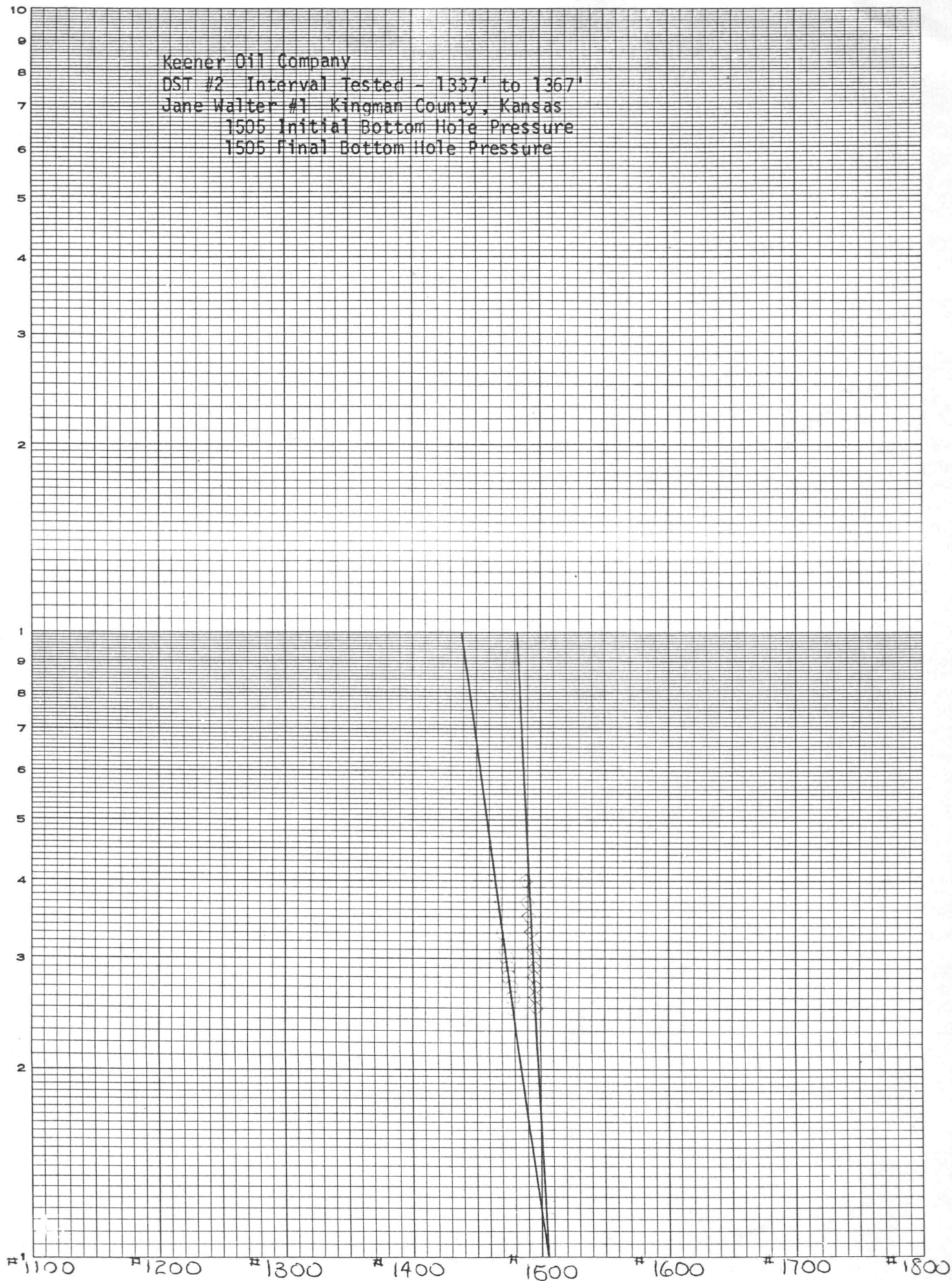
Final Shut-In
 Breakdown: 20 Inc.
 of 3 mins. and a
 final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>61</u>	<u>0</u>	<u>68</u>	<u>0</u>	<u>68</u>	<u>0</u>	<u>77</u>
P 2 <u>5</u>	<u>58</u>	<u>3</u>	<u>1418</u>	<u>5</u>	<u>75</u>	<u>3</u>	<u>1353</u>
P 3 <u>10</u>	<u>60</u>	<u>6</u>	<u>1448</u>	<u>10</u>	<u>75</u>	<u>6</u>	<u>1393</u>
P 4 <u>15</u>	<u>62</u>	<u>9</u>	<u>1460</u>	<u>15</u>	<u>75</u>	<u>9</u>	<u>1414</u>
P 5 <u>20</u>	<u>66</u>	<u>12</u>	<u>1469</u>	<u>20</u>	<u>75</u>	<u>12</u>	<u>1427</u>
P 6 <u>25</u>	<u>67</u>	<u>15</u>	<u>1473</u>	<u>25</u>	<u>76</u>	<u>15</u>	<u>1437</u>
P 7 <u>30</u>	<u>68</u>	<u>18</u>	<u>1477</u>	<u>30</u>	<u>76</u>	<u>18</u>	<u>1443</u>
P 8		<u>21</u>	<u>1481</u>	<u>35</u>	<u>76</u>	<u>21</u>	<u>1450</u>
P 9		<u>24</u>	<u>1483</u>	<u>40</u>	<u>77</u>	<u>24</u>	<u>1454</u>
P10		<u>27</u>	<u>1485</u>	<u>45</u>	<u>77</u>	<u>27</u>	<u>1458</u>
P11		<u>30</u>	<u>1487</u>	<u>50</u>	<u>77</u>	<u>30</u>	<u>1462</u>
P12		<u>33</u>	<u>1489</u>	<u>55</u>	<u>77</u>	<u>33</u>	<u>1465</u>
P13		<u>36</u>	<u>1491</u>	<u>60</u>	<u>77</u>	<u>36</u>	<u>1469</u>
P14		<u>39</u>	<u>1492</u>			<u>39</u>	<u>1471</u>
P15		<u>42</u>	<u>1493</u>			<u>42</u>	<u>1472</u>
P16		<u>45</u>	<u>1494</u>			<u>45</u>	<u>1473</u>
P17		<u>48</u>	<u>1495</u>			<u>48</u>	<u>1474</u>
P18		<u>51</u>	<u>1495</u>			<u>51</u>	<u>1475</u>
P19		<u>54</u>	<u>1496</u>			<u>54</u>	<u>1476</u>
P20		<u>57</u>	<u>1496</u>			<u>57</u>	<u>1478</u>
		<u>60</u>	<u>1496</u>			<u>60</u>	<u>1479</u>

Keener Oil Company
DST #2 Interval Tested - 1337' to 1367'
Jane Walter #1 Kingman County, Kansas
1505 Initial Bottom Hole Pressure
1505 Final Bottom Hole Pressure

EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 341-L210 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
2 CYCLES X 10 DIVISIONS PER INCH



Gas Production

B.T. Gauge Numbers			2604	Ticket Number	21708
Initial Hydrostatic			Pressure 2215	Elevation	1666 Kelly Bush.
Final Hydrostatic			2202	Production Rate	Initial 278,000 m cu. ft.
1st Flow	Initial	Time -----	61	Final	422,000 m cu. ft.
	Final	30	68	Hole Size	7 7/8 in.
Initial Closed In Pressure			60	1496	Footage Tested 10 ft.
2nd Flow	Initial	-----	68	Mud Weight	9.7 lbs. gal.
	Final	60	77	Gas Viscosity	.018 cp
Final Closed In Pressure			60	1479	Gas Gravity .70 —
Extrapolated Static Pressure	Initial		1439 - 1505	Gas Compressibility	.82 —
	Final		1482 - 1505		
Slope Psi ² /cycle	Initial		194,304		
	Final		68,701		

Remarks: _____

SUMMARY		BT Gauge Number Depth		
Product	Equation	Initial	Final	Units
Transmissability	$\frac{Kh}{\mu} = \frac{1637 Q_r ZT}{m}$	112.160	481.532	md. ft. cp
Theoretical Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	2.018	8.667	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$	.202	.867	md.
	$K_1 = \frac{Kh}{h_1}$	.202	.867	md.
Indicated Flow Capacity	$(Kh)_2 = \frac{3200 Q_r \mu ZT \log(0.472 b/r_w)}{P_s^2 - P_r^2}$	1.550	4.821	md. ft.
Damage Ratio	$DR = \frac{\text{Theo. Flow Cap}}{\text{Indicated Flow Cap}} \frac{Kh}{(Kh)_2}$	3.129	1.798	—
Indicated Flow Rate	$OF_1 = \frac{Q_r}{P_s^2 - P_r^2} \frac{P_s^2}{P_r^2}$	278.569	423.108	MCFD
		278.285	422.556	MCFD
Theoretical Potential Rate	$OF_3 = OF_1 DR \quad \text{Max.}$	871.642	760.748	MCFD
	$OF_4 = OF_2 DR \quad \text{Min.}$	870.753	759.756	MCFD
Approx. Radius of Investigation	$b \approx \sqrt{Kt} \text{ or } \sqrt{Kt_0}$	2.462	7.212	ft.
	$b_1 \approx \sqrt{K_1 t} \text{ or } \sqrt{K_1 t_0}$	2.462	7.212	ft.
Potentiometric Surface *	$Pot. = (EI - GD) + (2.319 Ps)$			ft.

NOTICE:

These calculations are based upon information furnished by you and taken from Drill Stem Tests pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Western Testing Co., Inc., is merely expressing its opinion. You agree that Western Testing Co., Inc., make no warranty express or implied as to the accuracy of such calculations or opinions, and that Western Testing Co., Inc., shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

Gas Production

B.T. Gauge Numbers			2604	Ticket Number	21708
Initial Hydrostatic			Pressure 2215	Elevation	1666 KB. ft.
Final Hydrostatic			2202	Production Rate	Initial 278,000 m cu. ft.
1st Flow	Initial	Time -----	61		Final 422,000 m cu. ft.
	Final	30	68	Hole Size	7 7/8 in.
Initial Closed In Pressure			60	1496	Footage Tested 10 ft.
2nd Flow	Initial	-----	68	Mud Weight	9.7 lbs. gal.
	Final	60	77	Gas Viscosity	.018 cp
Final Closed In Pressure			60	1479	Gas Gravity .70 —
Extrapolated Static Pressure	Initial		1439 - 1505	Gas Compressibility	.82 —
	Final		1482 1505		
Slope Psi ² /cycle	Initial		194,304		
	Final		68,701		

Remarks: _____

SUMMARY		BT Gauge Number Depth		
Product	Equation	Initial	Final	Units
Transmissability	$\frac{Kh}{\mu} = \frac{1637 Q_r ZT}{m}$	112.160	481.532	md. ft. cp
Theoretical Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	2.018	8.667	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$	.202	.867	md.
	$K_1 = \frac{Kh}{h_1}$	.202	.867	md.
Indicated Flow Capacity	$(Kh)_s = \frac{3200 Q_r \mu ZT \log(0.472 b/r_w)}{P_s^2 - P_r^2}$	1.550	4.821	md. ft.
Damage Ratio	$DR = \frac{\text{Theo. Flow Cap}}{\text{Indicated Flow Cap}} \frac{Kh}{(Kh)_s}$	3.129	1.798	—
Indicated Flow Rate	$OF_1 = \frac{Q_r}{P_s^2 - P_r^2} P_s^2$	278.569	423.108	MCFD
		278.285	422.556	MCFD
Theoretical Potential Rate	$OF_3 = OF_1 DR \quad \text{Max.}$	871.642	760.748	MCFD
	$OF_4 = OF_2 DR \quad \text{Min.}$	870.753	759.756	MCFD
Approx. Radius of Investigation	$b \approx \sqrt{Kt} \text{ or } \sqrt{Kt_0}$	2.462	7.212	ft.
	$b_1 \approx \sqrt{K_1 t} \text{ or } \sqrt{K_1 t_0}$	2.462	7.212	ft.
Potentiometric Surface *	$Pot. = (EI - GD) + (2.319 Ps)$			ft.

NOTICE:

These calculations are based upon information furnished by you and taken from Drill Stem Tests pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Western Testing Co., Inc., is merely expressing its opinion. You agree that Western Testing Co., Inc., make no warranty express or implied as to the accuracy of such calculations or opinions, and that Western Testing Co., Inc., shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.