

Company W. L. Kirkman, Inc. Lease & Well No. Otto Hoeme #4
 Elevation ----- Formation Indian Cave Effective Pay -- Ft. Ticket No. 3492
 Date 1/30/80 Sec. 20 Twp. 26S Range 12W County Pratt State Kansas
 Test Approved by Terry Michael Western Representative Mike Tritt

Formation Test No. 1 Interval Tested from 2683 ft. to 2720 ft. Total Depth 2720 ft.
 Packer Depth 2678 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Packer Depth 2383 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Depth of Selective Zone Set -

Top Recorder Depth (Inside) 2690 ft. Recorder Number 3354 Cap. 4200
 Bottom Recorder Depth (Outside) 2693 ft. Recorder Number 2605 Cap. 4150
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor H-30, Inc. Drilling Rig #3 Drill Collar Length 285 I. D. 2 1/2 in.
 Mud Type starch Viscosity 34 Weight Pipe Length - I. D. - in.
 Weight 9.6 Water Loss 12.4 cc. Drill Pipe Length 2386 I. D. 3.8 in.
 Chlorides NC P.P.M. Test Tool Length 20 ft. Tool Size 5 1/2 OD in.
 Jars: Make NO Serial Number - Anchor Length 37 ft. Size 5 1/2 OD 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. Tool Joint Size 4 1/2 FH in.

Blow: Weak blow decreasing to very weak on first and second flow periods.

Recovered 135 ft. of slightly gas cut mud
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____

Remarks: Slid tool ten feet to bottom.

Time Set Packer(s) 2:05 ~~P.M.~~ ^{A.M.} Time Started Off Bottom 4:10 ~~P.M.~~ ^{A.M.} Maximum Temperature 97°
 Initial Hydrostatic Pressure (A) 1384 P.S.I.
 Initial Flow Period Minutes 30 (B) 63 P.S.I. to (C) 71 P.S.I.
 Initial Closed In Period Minutes 30 (D) 211 P.S.I.
 Final Flow Period Minutes 30 (E) 88 P.S.I. to (F) 179 P.S.I.
 Final Closed In Period Minutes 30 (G) 639 P.S.I.
 Final Hydrostatic Pressure (H) 1318 P.S.I.

WESTERN TESTING CO., INC.
Pressure Data

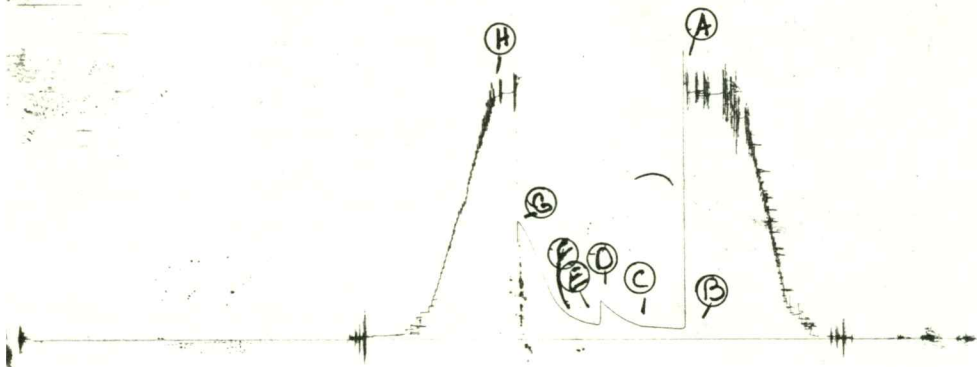
Date 1/30/80 Test Ticket No. 3492
 Recorder No. 3354 Capacity 4200 Location 2690 Ft.
 Clock No. ----- Elevation ----- Well Temperature 97 °F

Point	Pressure		Time Given	Time Computed
A. Initial Hydrostatic Mud	<u>1384</u> P.S.I.	Open Tool	<u>2:05A</u> M	
B. First Initial Flow Pressure	<u>63</u> P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C. First Final Flow Pressure	<u>71</u> P.S.I.	Initial Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
D. Initial Closed-in Pressure	<u>211</u> P.S.I.	Second Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
E. Second Initial Flow Pressure	<u>88</u> P.S.I.	Final Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
F. Second Final Flow Pressure	<u>179</u> P.S.I.			
G. Final Closed-in Pressure	<u>639</u> P.S.I.			
H. Final Hydrostatic Mud	<u>1318</u> P.S.I.			

PRESSURE BREAKDOWN

Point Mins.	First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
	Breakdown:	Inc.	Breakdown:	Inc.	Breakdown:	Inc.	Breakdown:	Inc.
	of <u>6</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>63</u>	<u>0</u>	<u>71</u>	<u>0</u>	<u>88</u>	<u>0</u>	<u>179</u>	
P 2 <u>5</u>	<u>57</u>	<u>3</u>	<u>76</u>	<u>5</u>	<u>84</u>	<u>3</u>	<u>207</u>	
P 3 <u>10</u>	<u>61</u>	<u>6</u>	<u>82</u>	<u>10</u>	<u>94</u>	<u>6</u>	<u>243</u>	
P 4 <u>15</u>	<u>63</u>	<u>9</u>	<u>93</u>	<u>15</u>	<u>105</u>	<u>9</u>	<u>285</u>	
P 5 <u>20</u>	<u>65</u>	<u>12</u>	<u>101</u>	<u>20</u>	<u>123</u>	<u>12</u>	<u>333</u>	
P 6 <u>25</u>	<u>69</u>	<u>15</u>	<u>114</u>	<u>25</u>	<u>145</u>	<u>15</u>	<u>384</u>	
P 7 <u>30</u>	<u>71</u>	<u>18</u>	<u>127</u>	<u>30</u>	<u>179</u>	<u>18</u>	<u>439</u>	
P 8		<u>21</u>	<u>141</u>			<u>21</u>	<u>492</u>	
P 9		<u>24</u>	<u>158</u>			<u>24</u>	<u>541</u>	
P10		<u>27</u>	<u>183</u>			<u>27</u>	<u>596</u>	
P11		<u>30</u>	<u>211</u>			<u>30</u>	<u>639</u>	
P12								
P13								
P14								
P15								
P16								
P17								
P18								
P19								
P20								

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Company W.L. Kirkman, Inc. Lease & Well No. Otto Hoeme #4
 Elevation 1918 Kelly Bush. Formation Upper Severy Effective Pay _____ Ft. Ticket No. 3764
 Date 1-31-80 Sec. 20 Twp. 26S Range 12W County Pratt State Kansas
 Test Approved by Terry Michael Western Representative Vernon Wondra

Formation Test No. 2 Interval Tested from 3122 ft. to 3138 ft. Total Depth 3138 ft.
 Packer Depth 3117 ft. Size 6 3/4 in. Packer Depth _____ ft. Size _____ in.
 Packer Depth 3122 ft. Size 6 3/4 in. Packer Depth _____ ft. Size _____ in.
 Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 3128 ft. Recorder Number 10979 Cap. 4100
 Bottom Recorder Depth (Outside) 3131 ft. Recorder Number 1563 Cap. 4200
 Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____

Drilling Contractor H-30 Drlg. Co. (#3) Drill Collar Length 245 I. D. 2 1/4 in.
 Mud Type Starch Viscosity 35 Weight Pipe Length _____ I. D. _____ in.
 Weight 9.7 Water Loss 5.6 cc. Drill Pipe Length 2856 I. D. 3.8 in.
 Chlorides - P.P.M. Test Tool Length 21 ft. Tool Size 5 1/2 OD in.
 Jars: Make _____ Serial Number _____ Anchor Length 16 ft. Size 5 1/2 OD 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. Tool Joint Size 4 1/2 FH in.

Blow: Weak blow died in 10 minutes.

Recovered 220 ft. of mud
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____

Remarks: Slid tool 20' to bottom, piked up fluid while sliding. Tool shut-in extra time because of rig repairs.

Time Set Packer(s) 10:50 ^{A.M.}/_{P.M.} Time Started Off Bottom 11:45 ^{A.M.}/_{P.M.} Maximum Temperature _____
 Initial Hydrostatic Pressure _____ (A) 1635 P.S.I.
 Initial Flow Period _____ Minutes 15 (B) 69 P.S.I. to (C) 447 P.S.I.
 Initial Closed In Period _____ Minutes 39 (D) 1095 P.S.I.
 Final Flow Period _____ Minutes _____ (E) _____ P.S.I. to (F) _____ P.S.I.
 Final Closed In Period _____ Minutes _____ (G) _____ P.S.I.
 Final Hydrostatic Pressure _____ (H) 1648 P.S.I.

WESTERN TESTING CO., INC.
Pressure Data

Date 1-31-80 Test Ticket No. 3764
 Recorder No. 10979 Capacity 4100 Location 3128 Ft.
 Clock No. - Elevation 1918 Kelly Bushing Well Temperature - °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1635</u> P.S.I.	Open Tool	<u>10:50A.</u> M	
B First Initial Flow Pressure	<u>69</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>447</u> P.S.I.	Initial Closed-in Pressure	<u>50</u> Mins.	<u>39</u> Mins.
D Initial Closed-in Pressure	<u>1095</u> P.S.I.	Second Flow Pressure	<u>-</u> Mins.	<u>-</u> Mins.
E Second Initial Flow Pressure	<u>-</u> P.S.I.	Final Closed-in Pressure	<u>-</u> Mins.	<u>-</u> Mins.
F Second Final Flow Pressure	<u>-</u> P.S.I.			
G Final Closed-in Pressure	<u>-</u> P.S.I.			
H Final Hydrostatic Mud	<u>1648</u> P.S.I.			

PRESSURE BREAKDOWN

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

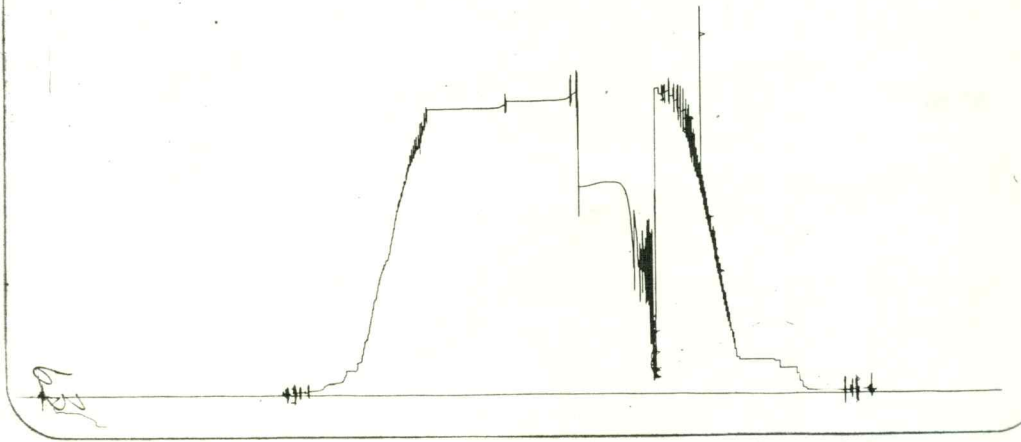
Initial Shut-In
 Breakdown: 13 Inc.
 of 3 mins. and a
 final inc. of 0 Min.

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

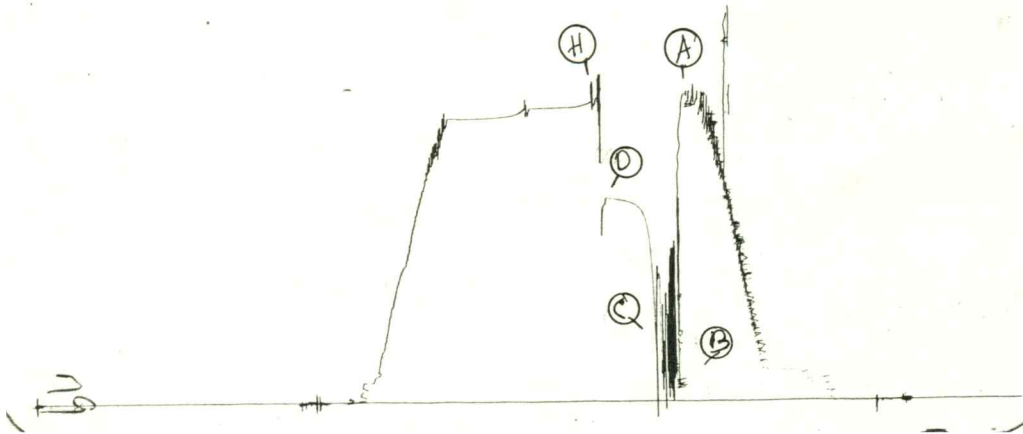
Final Shut-In
 Breakdown: _____ Inc.
 of 3 mins. and a
 final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>69</u>	<u>0</u>	<u>447</u>				
P 2 <u>5</u> Plugging Action		<u>3</u>	<u>660</u>				
P 3 <u>10</u> Plugging Action		<u>6</u>	<u>875</u>				
P 4 <u>15</u>	<u>47</u>	<u>9</u>	<u>983</u>				
P 5 _____		<u>12</u>	<u>1029</u>				
P 6 _____		<u>15</u>	<u>1051</u>				
P 7 _____		<u>18</u>	<u>1066</u>				
P 8 _____		<u>21</u>	<u>1074</u>				
P 9 _____		<u>24</u>	<u>1078</u>				
P10 _____		<u>27</u>	<u>1083</u>				
P11 _____		<u>30</u>	<u>1087</u>				
P12 _____		<u>33</u>	<u>1091</u>				
P13 _____		<u>36</u>	<u>1093</u>				
P14 _____		<u>39</u>	<u>1095</u>				
P15 _____							
P16 _____							
P17 _____							
P18 _____							
P19 _____							
P20 _____							

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Company W.L. Kirkman, Inc. Lease & Well No. Otto Hoeme #4
 Elevation 1918 Kelly Bush Formation Upper Severy Effective Pay - Ft. Ticket No. 3765
 Date 1-31-80 Sec. 20 Twp. 26S Range 12W County Pratt State Kansas
 Test Approved by Terry Michael Western Representative Vernon Wondra

Formation Test No. 3 Interval Tested from 3122 ft. to 3138 ft. Total Depth 3138 ft.
 Packer Depth 3117 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Packer Depth 3122 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Depth of Selective Zone Set -

Top Recorder Depth (Inside) 3128 ft. Recorder Number 10979 Cap. 4100
 Bottom Recorder Depth (Outside) 3131 ft. Recorder Number 1563 Cap. 4200
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor H-30 Drlg. Co. (#3) Drill Collar Length 245 I. D. 2 1/4 in.
 Mud Type Starch Viscosity 38 Weight Pipe Length - I. D. - in.
 Weight 9.1 Water Loss 5.6 cc. Drill Pipe Length 2856 I. D. 3.8 in.
 Chlorides - P.P.M. Test Tool Length 21 ft. Tool Size 5 1/2 OD in.
 Jars: Make - Serial Number - Anchor Length 16 ft. Size 5 1/2 OD 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. Tool Joint Size 4 1/2 FH in.

Blow: Weak blow throughout test.

Recovered 90 ft. of thin mud
 Recovered ft. of
 Recovered ft. of
 Recovered ft. of
 Recovered ft. of

Remarks:

Time Set Packer(s) 11:00 ~~A.M.~~ P.M. Time Started Off Bottom 1:00 ~~A.M.~~ P.M. Maximum Temperature 100
 Initial Hydrostatic Pressure 1660 P.S.I. (A)
 Initial Flow Period 30 Minutes (B) 55 P.S.I. to (C) 25 P.S.I.
 Initial Closed In Period 33 Minutes (D) 727 P.S.I.
 Final Flow Period 30 Minutes (E) 55 P.S.I. to (F) 46 P.S.I.
 Final Closed In Period 30 Minutes (G) 633 P.S.I.
 Final Hydrostatic Pressure 1605 P.S.I. (H)

WESTERN TESTING CO., INC.

Pressure Data

Date 1-31-80 Test Ticket No. 3765
 Recorder No. 10979 Capacity 4100 Location 3128 Ft.
 Clock No. - Elevation 1918 Kelly Bushing Well Temperature 100 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	1660	P.S.I.	11:00P.	M
B First Initial Flow Pressure	55	P.S.I.	30	Mins. 30 Mins.
C First Final Flow Pressure	25	P.S.I.	30	Mins. 33 Mins.
D Initial Closed-in Pressure	727	P.S.I.	30	Mins. 30 Mins.
E Second Initial Flow Pressure	55	P.S.I.	30	Mins. 30 Mins.
F Second Final Flow Pressure	46	P.S.I.		
G Final Closed-in Pressure	633	P.S.I.		
H Final Hydrostatic Mud	1605	P.S.I.		

PRESSURE BREAKDOWN

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

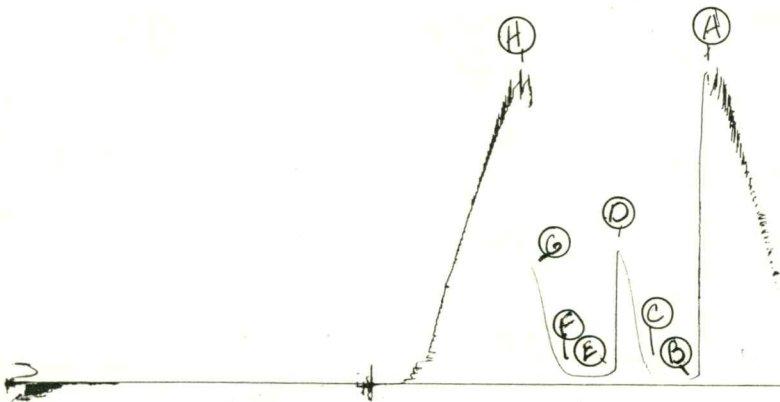
Initial Shut-In
 Breakdown: 11 Inc.
 of 3 mins. and a
 final inc. of 0 Min.

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

Final Shut-In
 Breakdown: 10 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	55	0	25	0	55	0	46
P 2 5	34	3	34	5	55	3	54
P 3 10	27	6	50	10	44	6	65
P 4 15	25	9	76	15	44	9	94
P 5 20	25	12	113	20	44	12	132
P 6 25	25	15	187	25	44	15	187
P 7 30	25	18	305	30	46	18	271
P 8		21	456			21	267
P 9		24	569			24	479
P10		27	660			27	567
P11		30	706			30	633
P12		33	727				
P13							
P14							
P15							
P16							
P17							
P18							
P19							
P20							

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Company W.L. Kirkman, Inc. Lease & Well No. Otto Home #4
 Elevation 1918 Kelly Bush Formation Lower Severy Effective Pay - Ft. Ticket No. 3766
 Date 2-1-80 Sec. 20 Twp. 26S Range 12W County Pratt State Kansas
 Test Approved by Terry Michael Western Representative Vernon Wondra

Formation Test No. 4 Interval Tested from 3139 ft. to 3148 ft. Total Depth 3148 ft.
 Packer Depth 3134 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Packer Depth 3139 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Depth of Selective Zone Set -

Top Recorder Depth (Inside) 3140 ft. Recorder Number 10979 Cap. 4100
 Bottom Recorder Depth (Outside) 3143 ft. Recorder Number 1563 Cap. 4200
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -
 Drilling Contractor H-30 Drllg. Co., Inc. (#3) Drill Collar Length 245 I. D. 2 1/4 in.
 Mud Type Starch Viscosity 38 Weight Pipe Length - I. D. - in.
 Weight 9.1 Water Loss 5.6 cc. Drill Pipe Length 2873 I. D. 3.8 in.
 Chlorides - P.P.M. Test Tool Length 21 ft. Tool Size 5 1/2 OD in.
 Jars: Make - Serial Number - Anchor Length 9 ft. Size 5 1/2 OD 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. Tool Joint Size 4 1/2 FH in.

Blow: Good blow throughout initial flow period. Fair blow throughout final flow period.

Recovered 500 ft. of water
 Recovered - ft. of -
 Recovered - ft. of -
 Recovered - ft. of -
 Recovered - ft. of -

Remarks: -

Time Set Packer(s) 1:15 ~~AM~~ P.M. Time Started Off Bottom 3:15 ~~AM~~ P.M. Maximum Temperature 110
 Initial Hydrostatic Pressure (A) 1643 P.S.I.
 Initial Flow Period Minutes 30 (B) 68 P.S.I. to (C) 166 P.S.I.
 Initial Closed In Period Minutes 30 (D) 781 P.S.I.
 Final Flow Period Minutes 30 (E) 210 P.S.I. to (F) 246 P.S.I.
 Final Closed In Period Minutes 30 (G) 775 P.S.I.
 Final Hydrostatic Pressure (H) 1627 P.S.I.

WESTERN TESTING CO., INC.

Pressure Data

Date 2-1-80 Test Ticket No. 3766
 Recorder No. 10979 Capacity 4100 Location 3140 Ft.
 Clock No. - Elevation 1918 Kelly Bushing Well Temperature 110 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1643</u>	P.S.I.	<u>1:15P.</u>	<u>M</u>
B First Initial Flow Pressure	<u>68</u>	P.S.I.	<u>30</u>	<u>30</u> Mins.
C First Final Flow Pressure	<u>166</u>	P.S.I.	<u>30</u>	<u>30</u> Mins.
D Initial Closed-in Pressure	<u>781</u>	P.S.I.	<u>30</u>	<u>30</u> Mins.
E Second Initial Flow Pressure	<u>210</u>	P.S.I.	<u>30</u>	<u>30</u> Mins.
F Second Final Flow Pressure	<u>246</u>	P.S.I.		
G Final Closed-in Pressure	<u>775</u>	P.S.I.		
H Final Hydrostatic Mud	<u>1627</u>	P.S.I.		

PRESSURE BREAKDOWN

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

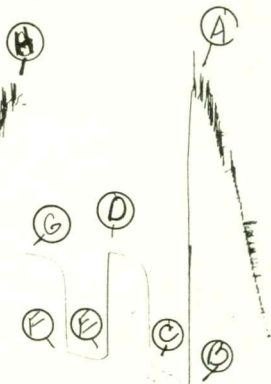
Initial Shut-In
 Breakdown: 10 Inc.
 of 3 mins. and a
 final inc. of 0 Min.

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

Final Shut-In
 Breakdown: 10 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>68</u>	<u>0</u>	<u>166</u>	<u>0</u>	<u>210</u>	<u>0</u>	<u>246</u>
P 2 <u>5</u>	<u>77</u>	<u>3</u>	<u>431</u>	<u>5</u>	<u>210</u>	<u>3</u>	<u>577</u>
P 3 <u>10</u>	<u>113</u>	<u>6</u>	<u>671</u>	<u>10</u>	<u>210</u>	<u>6</u>	<u>692</u>
P 4 <u>15</u>	<u>132</u>	<u>9</u>	<u>715</u>	<u>15</u>	<u>227</u>	<u>9</u>	<u>723</u>
P 5 <u>20</u>	<u>147</u>	<u>12</u>	<u>738</u>	<u>20</u>	<u>229</u>	<u>12</u>	<u>738</u>
P 6 <u>25</u>	<u>160</u>	<u>15</u>	<u>749</u>	<u>25</u>	<u>239</u>	<u>15</u>	<u>750</u>
P 7 <u>30</u>	<u>166</u>	<u>18</u>	<u>752</u>	<u>30</u>	<u>246</u>	<u>18</u>	<u>756</u>
P 8 _____	_____	<u>21</u>	<u>765</u>	_____	_____	<u>21</u>	<u>763</u>
P 9 _____	_____	<u>24</u>	<u>770</u>	_____	_____	<u>24</u>	<u>769</u>
P10 _____	_____	<u>27</u>	<u>776</u>	_____	_____	<u>27</u>	<u>771</u>
P11 _____	_____	<u>30</u>	<u>781</u>	_____	_____	<u>30</u>	<u>775</u>
P12 _____	_____	_____	_____	_____	_____	_____	_____
P13 _____	_____	_____	_____	_____	_____	_____	_____
P14 _____	_____	_____	_____	_____	_____	_____	_____
P15 _____	_____	_____	_____	_____	_____	_____	_____
P16 _____	_____	_____	_____	_____	_____	_____	_____
P17 _____	_____	_____	_____	_____	_____	_____	_____
P18 _____	_____	_____	_____	_____	_____	_____	_____
P19 _____	_____	_____	_____	_____	_____	_____	_____
P20 _____	_____	_____	_____	_____	_____	_____	_____

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