

Company Associated Petroleum Consultants, Inc. Lease & Well No. Rutherford #1
 Elevation 1340 Rotary Bushing Indian Cave Formation Effective Pay - Ft. Ticket No. 13733
 Date 11/16/81 Sec. 3 Twp. 29S Range 11W County Pratt State Kansas
 Test Approved by W. Bryce Bidleman Western Representative Jim Wondra

Formation Test No. 1 Interval Tested from 2647 ft. to 2668 ft. Total Depth 2668 ft.
 Packer Depth 2642 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Packer Depth 2647 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.

Depth of Selective Zone Set -
 Top Recorder Depth (Inside) 2658 ft. Recorder Number 2607 Cap. 4150
 Bottom Recorder Depth (Outside) 2661 ft. Recorder Number 3351 Cap. 4000
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Heartland Drlg. Rig #1 Drill Collar Length 465 I. D. 2 3/4 in.
 Mud Type premix-starch Viscosity 36 Weight Pipe Length - I. D. - in.
 Weight 9.4 Water Loss 13.6 cc. Drill Pipe Length 2158 I. D. 3.8 in.
 Chlorides 27,000 P.P.M. Test Tool Length 24 ft. Tool Size 5 1/2 OD in.
 Jars: Make - Serial Number - Anchor Length 21 ft. Size 5 1/2 OD 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. Tool Joint Size 4 1/2 FH in.

Blow: Weak blow throughout initial flow period. No blow on final flow period.

Recovered 20 ft. of drilling mud
 Recovered ft. of
 Recovered ft. of
 Recovered ft. of
 Recovered ft. of

Remarks:

Time Set	Packer(s)	AM P.M.	Time Started	Off Bottom	AM P.M.	Maximum Temperature
	<u>6:45</u>	AM P.M.	<u>8:45</u>		AM P.M.	<u>101°</u>
Initial Hydrostatic Pressure				<u>1359</u>	P.S.I.	
Initial Flow Period			Minutes <u>30</u>	(B) <u>78</u>	P.S.I. to (C) <u>78</u>	P.S.I.
Initial Closed In Period			Minutes <u>30</u>	(D) <u>76</u>	P.S.I.	
Final Flow Period			Minutes <u>30</u>	(E) <u>74</u>	P.S.I. to (F) <u>70</u>	P.S.I.
Final Closed In Period			Minutes <u>30</u>	(G) <u>70</u>	P.S.I.	
Final Hydrostatic Pressure				<u>1291</u>	P.S.I.	

WESTERN TESTING CO., INC.

Pressure Data

Date 11/16/81 Test Ticket No. 13733
 Recorder No. 2607 Capacity 4150 Location 2658 Ft.
 Clock No. --- Elevation 1340 Rotary Bushing Well Temperature 101 °F

Point	Pressure			Time Given	Time Computed
				6:45P	M
A Initial Hydrostatic Mud	1359	P.S.I.	Open Tool	30	30
B First Initial Flow Pressure	78	P.S.I.	First Flow Pressure	30	30
C First Final Flow Pressure	78	P.S.I.	Initial Closed-in Pressure	30	30
D Initial Closed-in Pressure	76	P.S.I.	Second Flow Pressure	30	30
E Second Initial Flow Pressure	74	P.S.I.	Final Closed-in Pressure		
F Second Final Flow Pressure	70	P.S.I.			
G Final Closed-in Pressure	70	P.S.I.			
H Final Hydrostatic Mud	1291	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.

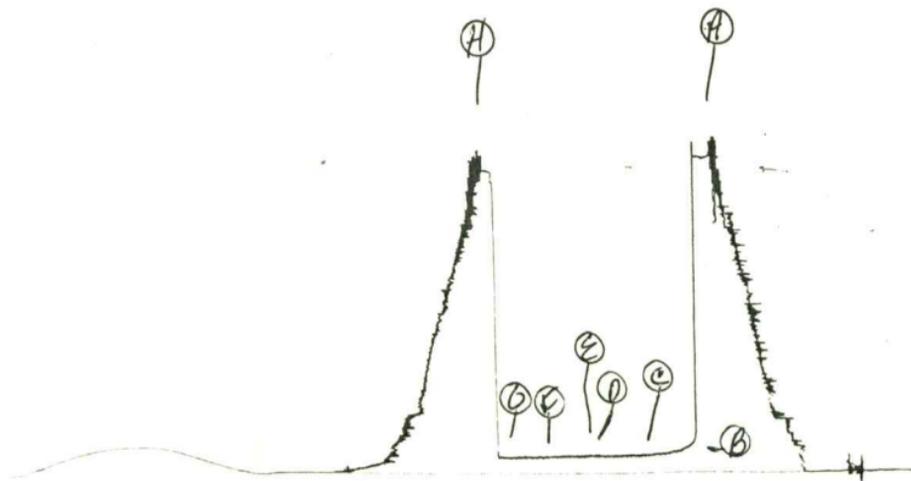
Second Flow Pressure
 Breakdown: 6 Inc.
 of 5 mins. and a
 final inc. of 0 Min.

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

Point Mins.	First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
	Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1	0	78	0	78	0	74	0	70
P 2	5	78	3	78	5	74	3	70
P 3	10	78	6	77	10	74	6	70
P 4	15	78	9	76	15	74	9	70
P 5	20	78	12	75	20	73	12	70
P 6	25	78	15	74	25	72	15	70
P 7	30	78	18	74	30	70	18	70
P 8			21	75			21	70
P 9			24	75			24	70
P 10			27	76			27	70
P 11			30	76			30	70
P 12								
P 13								
P 14								
P 15								
P 16								
P 17								
P 18								
P 19								
P 20								

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Company Associated Petroleum Consultants, Inc. Lease & Well No. Rutherford #1
 Elevation 1340 Rotary Bushing Indian Cave Formation Effective Pay - Ft. Ticket No. 13734
 Date 11/17/81 Sec. 3 Twp. 29S Range 11W County Pratt State Kansas
 Test Approved by W. Bryce Bidleman Western Representative Jim Wondra

Formation Test No. 2 Interval Tested from 2662 ft. to 2678 ft. Total Depth 2678 ft.
 Packer Depth 2657 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Packer Depth 2662 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Depth of Selective Zone Set -

Top Recorder Depth (Inside) 2668 ft. Recorder Number 2607 Cap. 4150
 Bottom Recorder Depth (Outside) 2671 ft. Recorder Number 3351 Cap. 4000
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor Heartland Drlg. Rig #1 Drill Collar Length 465 I. D. 2 1/4 in.
 Mud Type premix-starch Viscosity 36 Weight Pipe Length - I. D. - in.
 Weight 9.4 Water Loss 13.6 cc. Drill Pipe Length 2173 I. D. 3.8 in.
 Chlorides 27,000 P.P.M. Test Tool Length 24 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 No 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 initial flow period. No blow on final flow period.

Recovered 150 ft. of drilling mud
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____

Remarks: Packer failure initial shut-in.
False reading on initial shut-in.

Time Set Packer(s)	<u>6:45</u>	P.M. <u>A.M.</u>	Time Started Off Bottom	<u>9:00</u>	P.M. <u>A.M.</u>	Maximum Temperature	<u>101°</u>
Initial Hydrostatic Pressure	(A)	<u>1365</u>			P.S.I.		
Initial Flow Period	Minutes	<u>30</u>	(B)	<u>93</u>	P.S.I. to (C)	<u>93</u>	P.S.I.
Initial Closed In Period	Minutes	<u>42</u>	(D)	<u>1486 *</u>	P.S.I.		
Final Flow Period	Minutes	<u>35</u>	(E)	<u>169 +</u>	P.S.I. to (F)	<u>158 +</u>	P.S.I.
Final Closed In Period	Minutes	<u>30</u>	(G)	<u>137</u>	P.S.I.		
Final Hydrostatic Pressure	(H)	<u>1322</u>			P.S.I.		

WESTERN TESTING CO., INC.

Pressure Data

Date 11/17/81

Test Ticket No. 13734

Recorder No. 2607

Capacity 4150

Location 2668 Ft.

Clock No. - Elevation

1340 Rotary Bushing

Well Temperature 101 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1365</u> P.S.I.	Open Tool	<u>6:45</u> A	M
B First Initial Flow Pressure	<u>93</u> P.S.I.	First Flow Pressure	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>93</u> P.S.I.	Initial Closed-in Pressure	<u>45</u> Mins.	<u>42</u> Mins.
D Initial Closed-in Pressure	<u>1486 *</u> P.S.I.	Second Flow Pressure	<u>30</u> Mins.	<u>35</u> Mins.
E Second Initial Flow Pressure	<u>169 +</u> P.S.I.	Final Closed-in Pressure	<u>30</u> Mins.	<u>30</u> Mins.
F Second Final Flow Pressure	<u>158 +</u> P.S.I.			
G Final Closed-in Pressure	<u>137</u> P.S.I.			
H Final Hydrostatic Mud	<u>1322</u> P.S.I.			

* PRESSURES QUESTIONABLE DUE TO HYDROSTATIC TRAP
 + PRESSURES QUESTIONABLE DUE TO PARTIAL HYDRO-STATIC TRAP.

PRESSURE BREAKDOWN

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

Initial Shut-In
 Breakdown: 14 Inc.
 of 3 mins. and a
 final inc. of 0 Min.

Second Flow Pressure
 Breakdown: 7 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>93</u>	<u>0</u>	<u>93</u>	<u>0</u>	<u>169 +</u>	<u>0</u>	<u>158 +</u>
P 2 <u>5</u>	<u>93</u>	<u>3</u>	<u>1245*</u>	<u>5</u>	<u>169 +</u>	<u>3</u>	<u>144</u>
P 3 <u>10</u>	<u>93</u>	<u>6</u>	<u>1255*</u>	<u>10</u>	<u>165 +</u>	<u>6</u>	<u>141</u>
P 4 <u>15</u>	<u>93</u>	<u>9</u>	<u>1259*</u>	<u>15</u>	<u>162 +</u>	<u>9</u>	<u>137</u>
P 5 <u>20</u>	<u>93</u>	<u>12</u>	<u>1477*</u>	<u>20</u>	<u>160 +</u>	<u>12</u>	<u>136</u>
P 6 <u>25</u>	<u>93</u>	<u>15</u>	<u>1490*</u>	<u>25</u>	<u>159 +</u>	<u>15</u>	<u>135</u>
P 7 <u>30</u>	<u>93</u>	<u>18</u>	<u>1497*</u>	<u>30</u>	<u>158 +</u>	<u>18</u>	<u>135</u>
P 8		<u>21</u>	<u>1499*</u>	<u>35</u>	<u>158 +</u>	<u>21</u>	<u>136</u>
P 9		<u>24</u>	<u>1501*</u>			<u>24</u>	<u>136</u>
P10		<u>27</u>	<u>1499*</u>			<u>27</u>	<u>137</u>
P11		<u>30</u>	<u>1497*</u>			<u>30</u>	<u>137</u>
P12		<u>33</u>	<u>1495*</u>				
P13		<u>36</u>	<u>1490*</u>				
P14		<u>39</u>	<u>1488*</u>				
P15		<u>42</u>	<u>1486*</u>				
P16							
P17							
P18							
P19							
P20							

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