



Home Office: Wichita, Kansas 67201

P. O. Box 1599

(316) 838-0601

Company Wells Energy Company Lease & Well No. Nichelson #1
 Elevation -- Formation Lansing Effective Pay -- Ft. Ticket No. 3428
 Date 8/24/79 Sec. 15 Twp. 30 Range 18 County Kiowa State Kansas
 Test Approved by Douglas V. Davis, Jr. Western Representative Jim Wondra

Formation Test No. 1 Interval Tested from 4392 ft. to 4412 ft. Total Depth 4412 ft.
 Packer Depth 4387 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
 Packer Depth 4392 ft. Size 6 3/4 in. Packer Depth = ft. Size - in.

Depth of Selective Zone Set -
 Top Recorder Depth (Inside) 4382 ft. Recorder Number 2607 Cap. 4150
 Bottom Recorder Depth (Outside) 4385 ft. Recorder Number 3351 Cap. 3351
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor H-30 Drilling Rig #3 Drill Collar Length 246 I. D. 2 1/4 in.
 Mud Type premix Viscosity 40 Weight Pipe Length -- I. D. - in.
 Weight 9.1 Water Loss 54 cc. Drill Pipe Length 4117 I. D. 3.8 in.
 Chlorides 22,000 P.P.M. Test Tool Length 29 ft. Tool Size 5 1/2 OD in.
 Jars: Make WTC Serial Number 410 Anchor Length 20 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: Strong blow throughout flow periods.

Recovered 30 ft. of drilling mud
 Recovered 90 ft. of mud (specks of oil)
 Recovered 150 ft. of salt water
 Recovered ft. of
 Recovered ft. of

Remarks:

Time Set Packer(s) 6:10 A.M. Time Started Off Bottom 9:55 P.M. Maximum Temperature 111
 Initial Hydrostatic Pressure 2249 P.S.I. (A)
 Initial Flow Period 30 Minutes (B) 144 P.S.I. to (C) 118 P.S.I.
 Initial Closed In Period 60 Minutes (D) 149 P.S.I.
 Final Flow Period 45 Minutes (E) 149 P.S.I. to (F) 159 P.S.I.
 Final Closed In Period 93 Minutes (G) 1305 P.S.I.
 Final Hydrostatic Pressure 2240 P.S.I. (H)

WESTERN TESTING CO., INC.

Pressure Data

Date 8/24/79 Test Ticket No. 3428
 Recorder No. 2607 Capacity 4150 Location 4382 Ft.
 Clock No. -- Elevation -- Well Temperature 111 °F

Point	Pressure	Open Tool	Time Given	Time Computed
A Initial Hydrostatic Mud	2249 P.S.I.		6:10A M	
B First Initial Flow Pressure	144 P.S.I.	First Flow Pressure	30 Mins.	30 Mins.
C First Final Flow Pressure	118 P.S.I.	Initial Closed-in Pressure	60 Mins.	60 Mins.
D Initial Closed-in Pressure	149 P.S.I.	Second Flow Pressure	45 Mins.	45 Mins.
E Second Initial Flow Pressure	149 P.S.I.	Final Closed-in Pressure	90 Mins.	93 Mins.
F Second Final Flow Pressure	159 P.S.I.			
G Final Closed-in Pressure	1305 P.S.I.			
H Final Hydrostatic Mud	2240 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: 9 Inc. of 5 mins. and a final inc. of 0 Min.
 Final Shut-In Breakdown: 30 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	144	0	118	0	149	0	159
P 2	5	116	3	123	5	152	3	199
P 3	10	110	6	125	10	153	6	328
P 4	15	108	9	129	15	153	9	470
P 5	20	112	12	131	20	153	12	604
P 6	25	114	15	133	25	154	15	710
P 7	30	118	18	135	30	156	18	799
P 8			21	137	35	157	21	858
P 9			24	140	40	158	24	902
P10			27	142	45	159	27	943
P11			30	142			30	983
P12			33	142			33	1019
P13			36	142			36	1046
P14			39	142			39	1073
P15			42	143			42	1096
P16			45	144			45	1119
P17			48	145			48	1138
P18			51	146			51	1155
P19			54	147			54	1171
P20			57	148			57	1186
			60	149			60	1201

WESTERN TESTING CO., INC.
Pressure Data

3428

Date 8/24/79 Test Ticket No. 4382
 Recorder No. 2607 Capacity 4150 Location 111 Ft.
 Block No. --- Elevation --- Well Temperature --- °F

Point	Pressure		Open Tool	Time	
				Given	Computed
A Initial Hydrostatic Mud	2249	P.S.I.		6:10A	M
B First Initial Flow Pressure	144	P.S.I.	First Flow Pressure	30	Mins. 30 Mins.
C First Final Flow Pressure	118	P.S.I.	Initial Closed-in Pressure	60	Mins. 60 Mins.
D Initial Closed-in Pressure	149	P.S.I.	Second Flow Pressure	45	Mins. 45 Mins.
E Second Initial Flow Pressure	149	P.S.I.	Final Closed-in Pressure	90	Mins. 93 Mins.
F Second Final Flow Pressure	159	P.S.I.			
G Final Closed-in Pressure	1305	P.S.I.			
H Final Hydrostatic Mud	2240	P.S.I.			

PRESSURE BREAKDOWN

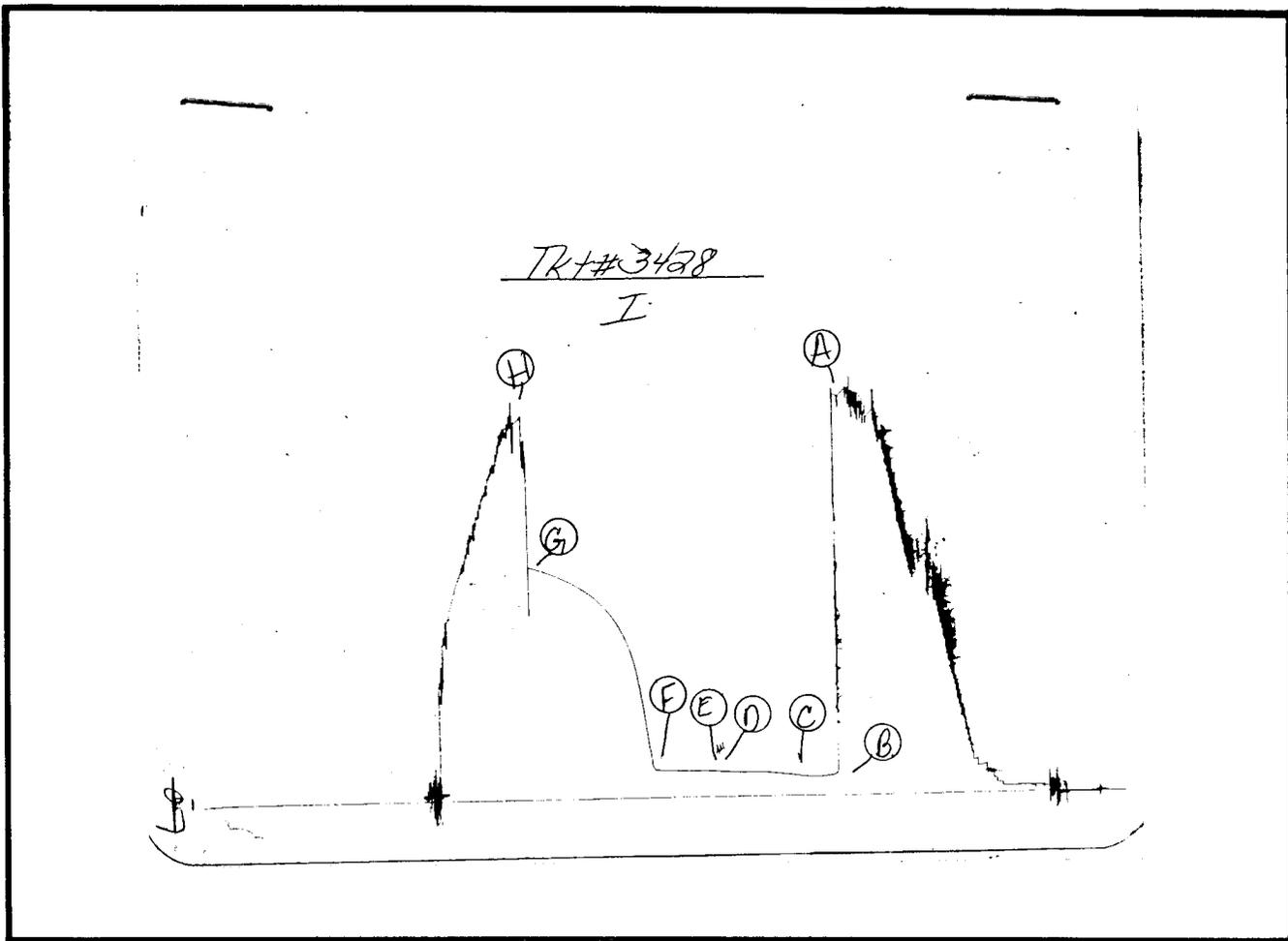
First Flow Pressure Breakdown: <u>6</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	Initial Shut-In Breakdown: <u>20</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.	Second Flow Pressure Breakdown: <u>9</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	Final Shut-In Breakdown: <u>30</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.
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Point Mins.	First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1							63	1211
P 2							66	1219
P 3							69	1234
P 4							72	1244
P 5							75	1253
P 6							78	1265
P 7							81	1274
P 8							84	1282
P 9							87	1290
P10							90	1295
P11							93	1305
P12								
P13								
P14								
P15								
P16								
P17								
P18								
P19								
P20								

NOMENCLATURE

b	== Approximate Radius of Investigation	Feet
b¹	== Approximate Radius of Investigation (Net Pay Zone h ¹).....	Feet
D.R.	== Damage Ratio	—
EI	== Elevation	Feet
GD	== B.T. Gauge Depth (From Surface Reference).....	Feet
h	== Interval Tested	Feet
h¹	== Net Pay Thickness	Feet
K	== Permeability	md
K¹	== Permeability (From Net Pay Zone h ¹)	md
m	== Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF¹	== Maximum Indicated Flow Rate	MCF/D
OF²	== Minimum Indicated Flow Rate	MCF/D
OF³	== Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF⁴	== Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P^S	== Extrapolated Static Pressure	Psig.
P^F	== Final Flow Pressure	Psig.
P^{DT}	== Potentiometric Surface (Fresh Water*)	Feet
Q	== Average Adjusted Production Rate During Test	bbls/day
Q¹	== Theoretical Production w/Damage Removed	bbls/day
Q^g	== Measured Gas Production Rate	MCF/D
R	== Corrected Recovery	bbls
r^w	== Radius of Well Bore	Feet
t	== Flow Time	Minutes
t^o	== Total Flow Time	Minutes
T	== Temperature Rankine	°R
Z	== Compressibility Factor	—
u	== Viscosity Gas or Liquid	CP
Log	== Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.



This is an actual photograph of recorder chart.

POINT	PRESSURE		PSI
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	2257	2249	PSI
(B) First Initial Flow Pressure	116	144	PSI
(C) First Final Flow Pressure	116	118	PSI
(D) Initial Closed-in Pressure	148	149	PSI
(E) Second Initial Flow Pressure	148	149	PSI
(F) Second Final Flow Pressure	158	159	PSI
(G) Final Closed-in Pressure	1300	1305	PSI
(H) Final Hydrostatic Mud	2236	2240	PSI



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Nichelson #1

Company Wells Energy Company Lease & Well No. ---
 Elevation 2212 Kelly Bushing Formation Marmaton Effective Pay --- Ft. Ticket No. 2871
 Date 8/26/79 Sec. 15 Twp 30S Range 18W County Kiowa State Kansas
 Test Approved by Douglas V. Davis, Jr. Western Representative Roger Lisenby

Formation Test No. 2 Interval Tested from 4838 ft. to 4870 ft. Total Depth 4870 ft.
 Packer Depth 4833 ft. Size 6 3/4 in. Packer Depth 4838 ft. Size 6 3/4 in.
 Packer Depth - ft. Size - in. Packer Depth - ft. Size - in.
 Depth of Selective Zone Set ---

Top Recorder Depth (Inside) 4862 ft. Recorder Number 1051 Cap. 4250
 Bottom Recorder Depth (Outside) 4865 ft. Recorder Number 969 Cap. 4200
 Below Straddle Recorder Depth - ft. Recorder Number - Cap. -

Drilling Contractor H-30 Drilling Rig #3 Drill Collar Length 245 I. D. 2 1/4 in.
 Mud Type premix Viscosity 45 Weight Pipe Length - I. D. - in.
 Weight 9.4 Water Loss 10.4 cc. Drill Pipe Length 4571 I. D. 3.8 in.
 Chlorides 20,000 P.P.M. Test Tool Length 22 ft. Tool Size 5 1/2 in.
 Jars: Make --- Serial Number --- Anchor Length 32 ft. Size 5 1/2 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 XH in.

Blow: Weak, decreasing blow throughout first opening. No blow second opening.

Recovered 8 ft. of mud
 Recovered ft. of
 Recovered ft. of
 Recovered ft. of
 Recovered ft. of

Remarks:

Time Set Packer(s)	<u>5:36</u>	<u>A.M.</u>	Time Started Off Bottom	<u>9:20</u>	<u>A.M.</u>	Maximum Temperature	<u>120</u>
		<u>P.M.</u>			<u>P.M.</u>		
Initial Hydrostatic Pressure			(A)	<u>2382</u>		<u>P.S.I.</u>	
Initial Flow Period			Minutes	<u>30</u>	(B)	<u>101</u>	<u>P.S.I. to (C) 91 P.S.I.</u>
Initial Closed In Period			Minutes	<u>60</u>	(D)	<u>91</u>	<u>P.S.I.</u>
Final Flow Period			Minutes	<u>45</u>	(E)	<u>91</u>	<u>P.S.I. to (F) 91 P.S.I.</u>
Final Closed In Period			Minutes	<u>90</u>	(G)	<u>91</u>	<u>P.S.I.</u>
Final Hydrostatic Pressure			(H)	<u>2350</u>		<u>P.S.I.</u>	

WESTERN TESTING CO., INC.
Pressure Data

Date 8/26/79 Test Ticket No. 2871
 Recorder No. 1051 Capacity 4250 Location 4862 Ft.
 Clock No. -- Elevation 2212 Kelly Bushing Well Temperature 120 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2382	P.S.I.	5:36A	M
B First Initial Flow Pressure	101	P.S.I.	30	30 Mins.
C First Final Flow Pressure	91	P.S.I.	60	60 Mins.
D Initial Closed-in Pressure	91	P.S.I.	45	45 Mins.
E Second Initial Flow Pressure	91	P.S.I.	90	90 Mins.
F Second Final Flow Pressure	91	P.S.I.		
G Final Closed-in Pressure	91	P.S.I.		
H Final Hydrostatic Mud	2350	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure Breakdown: <u>6</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	Initial Shut-In Breakdown: <u>20</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.	Second Flow Pressure Breakdown: <u>9</u> Inc. of <u>5</u> mins. and a final inc. of <u>0</u> Min.	Final Shut-In Breakdown: <u>30</u> Inc. of <u>3</u> mins. and a final inc. of <u>0</u> Min.
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Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1	0	101	0	91	0	91	91
P 2	5	95	3	91	5	91	91
P 3	10	82	6	91	10	91	91
P 4	15	91	9	91	15	91	91
P 5	20	91	12	91	20	91	91
P 6	25	91	15	91	25	91	91
P 7	30	91	18	91	30	91	91
P 8			21	91	35	91	91
P 9			24	91	40	91	91
P10			27	91	45	91	91
P11			30	91			91
P12			33	91			91
P13			36	91			91
P14			39	91			91
P15			42	91			91
P16			45	91			91
P17			48	91			91
P18			51	91			91
P19			54	91			91
P20			57	91			91
			60	91			91

WESTERN TESTING CO., INC.
Pressure Data

Date 8/26/79 Test Ticket No. 2871
 Recorder No. 1051 Capacity 4250 Location 4862 Ft.
 Clock No. -- Elevation 2212 Kelly Bushing Well Temperature 120 °F
 Point Pressure Time Given Time Computed
 A Initial Hydrostatic Mud 2382 P.S.I. Open Tool 5:36A M
 B First Initial Flow Pressure 101 P.S.I. First Flow Pressure 30 Mins. 30 Mins.
 C First Final Flow Pressure 91 P.S.I. Initial Closed-in Pressure 60 Mins. 60 Mins.
 D Initial Closed-in Pressure 91 P.S.I. Second Flow Pressure 45 Mins. 45 Mins.
 E Second Initial Flow Pressure 91 P.S.I. Final Closed-in Pressure 90 Mins. 90 Mins.
 F Second Final Flow Pressure 91 P.S.I.
 G Final Closed-in Pressure 91 P.S.I.
 H Final Hydrostatic Mud 2350 P.S.I.

PRESSURE BREAKDOWN

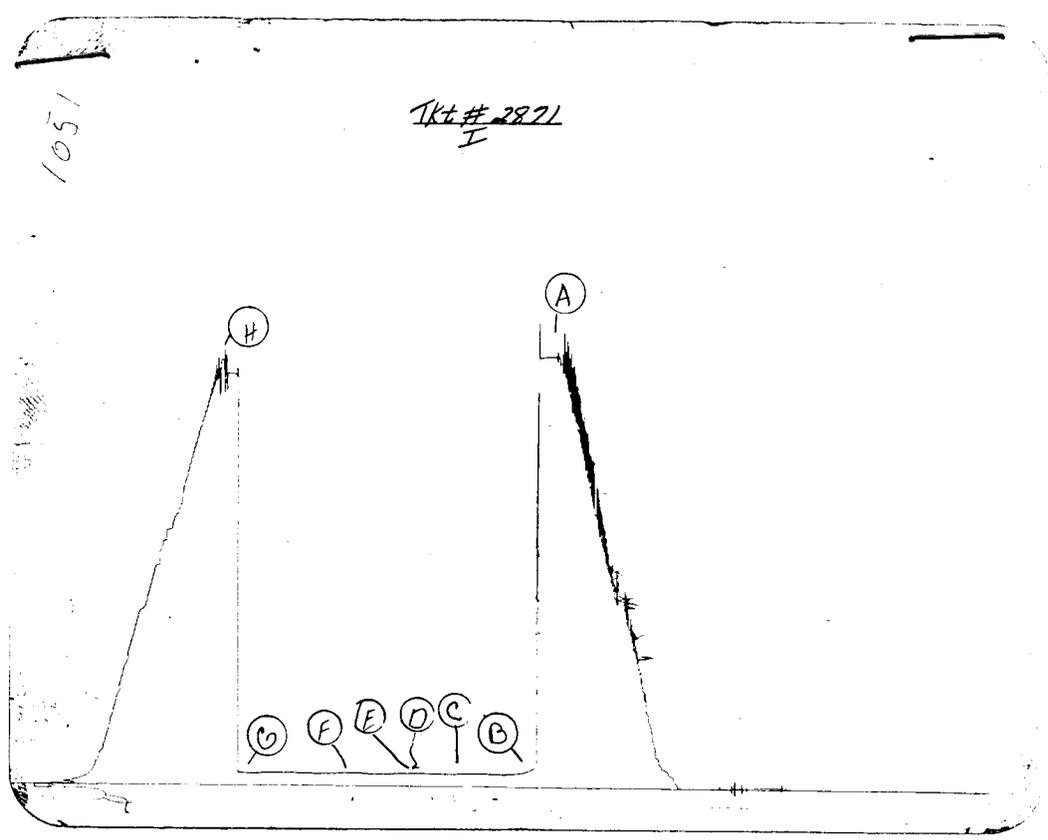
First Flow Pressure Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.
Initial Shut-In Breakdown: 20 Inc. of 3 mins. and a final inc. of 0 Min.
Second Flow Pressure Breakdown: 9 Inc. of 5 mins. and a final inc. of 0 Min.
Final Shut-In Breakdown: 30 Inc. of 3 mins. and a final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1						63	91
P 2						66	91
P 3						69	91
P 4						72	91
P 5						75	91
P 6						78	91
P 7						81	91
P 8						84	91
P 9						87	91
P10						90	91
P11							
P12							
P13							
P14							
P15							
P16							
P17							
P18							
P19							
P20							

NOMENCLATURE

b	== Approximate Radius of Investigation	Feet
b¹	== Approximate Radius of Investigation (Net Pay Zone h ¹)	Feet
D.R.	== Damage Ratio	—
EI	== Elevation	Feet
GD	== B.T. Gauge Depth (From Surface Reference)	Feet
h	== Interval Tested	Feet
h¹	== Net Pay Thickness	Feet
K	== Permeability	md
K¹	== Permeability (From Net Pay Zone h ¹)	md
m	== Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF¹	== Maximum Indicated Flow Rate	MCF/D
OF²	== Minimum Indicated Flow Rate	MCF/D
OF³	== Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF⁴	== Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P^S	== Extrapolated Static Pressure	Psig.
P^F	== Final Flow Pressure	Psig.
P^{OT}	== Potentiometric Surface (Fresh Water*)	Feet
Q	== Average Adjusted Production Rate During Test	bbls/day
Q¹	== Theoretical Production w/Damage Removed	bbls/day
Q^g	== Measured Gas Production Rate	MCF/D
R	== Corrected Recovery	bbls
r^w	== Radius of Well Bore	Feet
t	== Flow Time	Minutes
t^o	== Total Flow Time	Minutes
T	== Temperature Rankine	°R
Z	== Compressibility Factor	—
u	== Viscosity Gas or Liquid	CP
Log	== Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.



This is an actual photograph of recorder chart.

POINT	PRESSURE		PSI
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	2380	2382	PSI
(B) First Initial Flow Pressure	107	101	PSI
(C) First Final Flow Pressure	62	91	PSI
(D) Initial Closed-in Pressure	75	91	PSI
(E) Second Initial Flow Pressure	75	91	PSI
(F) Second Final Flow Pressure	64	91	PSI
(G) Final Closed-in Pressure	75	91	PSI
(H) Final Hydrostatic Mud	2283	2350	PSI



Home Office: Wichita, Kansas 67201

P. O. Box 1599

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Nichelson #1

Company Wells Energy Company Lease & Well No. _____
 Elevation 2212 Kelly Bushing Formation Cherokee Effective Pay _____ Ft. Ticket No. 2872
 Date 8/27/79 Sec. 15 Twp. 30S Range 18W County Kiowa State Kansas
 Test Approved by Douglas V. Davis, Jr. Western Representative Roger Lisenby

Formation Test No. 3 Interval Tested from 4961 ft. to 4990 ft. Total Depth 4990 ft.
 Packer Depth 4956 ft. Size 6 3/4 in. Packer Depth 4961 ft. Size 6 3/4 in.
 Packer Depth _____ ft. Size _____ in. Packer Depth _____ ft. Size _____ in.

Depth of Selective Zone Set _____
 Top Recorder Depth (Inside) 4981 ft. Recorder Number 1051 Cap. 4250
 Bottom Recorder Depth (Outside) 4984 ft. Recorder Number 969 Cap. 4200
 Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____

Drilling Contractor H-30 Drilling Rig #3 Drill Collar Length 245 I. D. 2 1/4 in.
 Mud Type premix Viscosity 46 Weight Pipe Length _____ I. D. _____ in.
 Weight 9.3 Water Loss 10.8 cc. Drill Pipe Length 4684 I. D. 3.8 in.
 Chlorides 21,000 P.P.M. Test Tool Length 32 ft. Tool Size 4 3/4 in.
 Jars: Make WTC Serial Number 410 Anchor Length 29 ft. Size 5 1/2 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 XH in.

Blow: Very weak blow; died in seventeen minutes first opening. No blow second opening.
Flushed tool, still no blow.

Recovered 10 ft. of mud
 Recovered _____ ft. of _____
 Remarks: Tool slid eight feet to bottom.

Time Set Packer(s) 7:05 A.M. Time Started Off Bottom 11:05 A.M. Maximum Temperature 123
 Initial Hydrostatic Pressure (A) 2573 P.S.I.
 Initial Flow Period Minutes 30 (B) 127 P.S.I. to (C) 91 P.S.I.
 Initial Closed In Period Minutes 60 (D) 120 P.S.I.
 Final Flow Period Minutes 45 (E) 114 P.S.I. to (F) 62 P.S.I.
 Final Closed In Period Minutes 111 (G) 65 P.S.I.
 Final Hydrostatic Pressure (H) 2562 P.S.I.

WESTERN TESTING CO., INC.

Pressure Data

Date 8/27/79 Test Ticket No. 2872
 Recorder No. 1051 Capacity 4250 Location 4981 Ft.
 Clock No. -- Elevation 2212 Kelly Bushing Well Temperature 123 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2573	P.S.I.	7:05A	M
B First Initial Flow Pressure	127	P.S.I.	30	Mins. 30 Mins
C First Final Flow Pressure	71	P.S.I.	60	Mins. 60 Mins
D Initial Closed-in Pressure	120	P.S.I.	45	Mins. 45 Mins
E Second Initial Flow Pressure	114	P.S.I.	90	Mins. 111 Mins
F Second Final Flow Pressure	62	P.S.I.		
G Final Closed-in Pressure	65	P.S.I.		
H Final Hydrostatic Mud	2562	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>6</u> Inc.		Breakdown: <u>20</u> Inc.		Breakdown: <u>9</u> Inc.		Breakdown: <u>37</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>127</u>	<u>0</u>	<u>71</u>	<u>0</u>	<u>114</u>	<u>0</u>	<u>62</u>
P 2 <u>5</u>	<u>120</u>	<u>3</u>	<u>70</u>	<u>5</u>	<u>105</u>	<u>3</u>	<u>62</u>
P 3 <u>10</u>	<u>108</u>	<u>6</u>	<u>70</u>	<u>10</u>	<u>97</u>	<u>6</u>	<u>62</u>
P 4 <u>15</u>	<u>95</u>	<u>9</u>	<u>70</u>	<u>15</u>	<u>80</u>	<u>9</u>	<u>62</u>
P 5 <u>20</u>	<u>84</u>	<u>12</u>	<u>70</u>	<u>20</u>	<u>71</u>	<u>12</u>	<u>62</u>
P 6 <u>25</u>	<u>80</u>	<u>15</u>	<u>73</u>	<u>25</u>	<u>67</u>	<u>15</u>	<u>62</u>
P 7 <u>30</u>	<u>71</u>	<u>18</u>	<u>77</u>	<u>30</u>	<u>65</u>	<u>18</u>	<u>62</u>
P 8		<u>21</u>	<u>79</u>	<u>35</u>	<u>64</u>	<u>21</u>	<u>62</u>
P 9		<u>24</u>	<u>82</u>	<u>40</u>	<u>63</u>	<u>24</u>	<u>62</u>
P10		<u>27</u>	<u>84</u>	<u>45</u>	<u>62</u>	<u>27</u>	<u>62</u>
P11		<u>30</u>	<u>86</u>			<u>30</u>	<u>62</u>
P12		<u>33</u>	<u>91</u>			<u>33</u>	<u>62</u>
P13		<u>36</u>	<u>97</u>			<u>36</u>	<u>62</u>
P14		<u>39</u>	<u>102</u>			<u>39</u>	<u>62</u>
P15		<u>42</u>	<u>105</u>			<u>42</u>	<u>62</u>
P16		<u>45</u>	<u>108</u>			<u>45</u>	<u>62</u>
P17		<u>48</u>	<u>111</u>			<u>48</u>	<u>62</u>
P18		<u>51</u>	<u>114</u>			<u>51</u>	<u>62</u>
P19		<u>54</u>	<u>116</u>			<u>54</u>	<u>62</u>
P20		<u>57</u>	<u>118</u>			<u>57</u>	<u>62</u>
		<u>60</u>	<u>120</u>			<u>60</u>	<u>62</u>

WESTERN TESTING CO., INC.

Pressure Data

Date 8/27/79 Test Ticket No. 2872
 Recorder No. 1051 Capacity 4250 Location 4981
 Clock No. -- Elevation 2212 Kelly Bushing Well Temperature 123

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2573	P.S.I.	7:05A	M
B First Initial Flow Pressure	127	P.S.I.	30 Mins	30 Min
C First Final Flow Pressure	71	P.S.I.	60 Mins	60 Min
D Initial Closed-in Pressure	120	P.S.I.	45 Mins	45 Min
E Second Initial Flow Pressure	114	P.S.I.	90 Mins	111 Min
F Second Final Flow Pressure	62	P.S.I.		
G Final Closed-in Pressure	65	P.S.I.		
H Final Hydrostatic Mud	2562	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: 9 Inc.
 of 5 mins. and a
 final inc. of 0 Min.

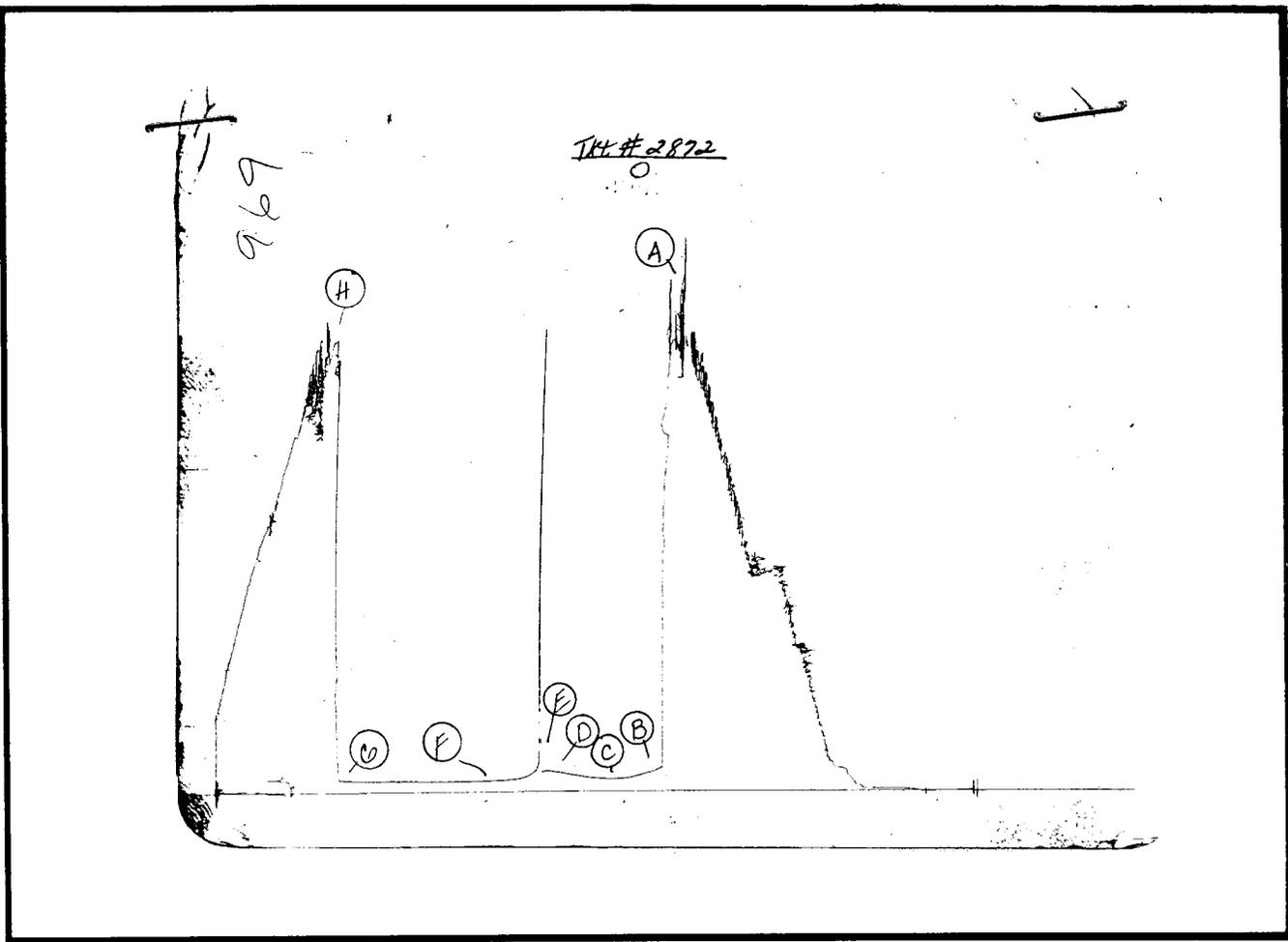
Final Shut-In
 Breakdown: 37 Inc.
 of 3 mins. and a
 final inc. of 0 Min.

Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1						63	62
P 2						66	62
P 3						69	62
P 4						72	65
P 5						75	65
P 6						78	65
P 7						81	65
P 8						84	65
P 9						87	65
P10						90	65
P11						93	65
P12						96	65
P13						99	65
P14						102	65
P15						105	65
P16						108	65
P17						111	65
P18							
P19							
P20							

NOMENCLATURE

b	== Approximate Radius of Investigation	Feet
b¹	== Approximate Radius of Investigation (Net Pay Zone h ¹).....	Feet
D.R.	== Damage Ratio	—
EI	== Elevation	Feet
GD	== B.T. Gauge Depth (From Surface Reference).....	Feet
h	== Interval Tested	Feet
h¹	== Net Pay Thickness	Feet
K	== Permeability	md
K¹	== Permeability (From Net Pay Zone h ¹)	md
m	== Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF¹	== Maximum Indicated Flow Rate	MCF/D
OF²	== Minimum Indicated Flow Rate	MCF/D
OF³	== Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF⁴	== Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P^S	== Extrapolated Static Pressure	Psig.
P^F	== Final Flow Pressure	Psig.
P^{OT}	== Potentiometric Surface (Fresh Water*)	Feet
Q	== Average Adjusted Production Rate During Test	bbls/day
Q¹	== Theoretical Production w/Damage Removed	bbls/day
Q⁹	== Measured Gas Production Rate	MCF/D
R	== Corrected Recovery	bbls
r^w	== Radius of Well Bore	Feet
t	== Flow Time	Minutes
t^o	== Total Flow Time	Minutes
T	== Temperature Rankine	°R
Z	== Compressibility Factor	—
u	== Viscosity Gas or Liquid	CP
Log	== Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.



This is an actual photograph of recorder chart.

POINT	PRESSURE		PSI
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	2444	2573	PSI
(B) First Initial Flow Pressure	107	127	PSI
(C) First Final Flow Pressure	53	91	PSI
(D) Initial Closed-in Pressure	107	120	PSI
(E) Second Initial Flow Pressure	107	114	PSI
(F) Second Final Flow Pressure	75	62	PSI
(G) Final Closed-in Pressure	64	65	PSI
(H) Final Hydrostatic Mud	2412	2562	PSI



Home Office: Wichita, Kansas 67201

P. O. Box 1599

(316) 838-0601

Company Wells Energy Company Lease & Well No. Nichelson #1
 Elevation 2212 Formation Mississippi Effective Pay -- Ft. Ticket No. 287
 Date 8/28/79 Sec 15 Twp 30S Range 18W County Kiowa State Kansas
 Test Approved by Douglas V. Davis, Jr. Western Representative Roger Lisenby

Formation Test No. 4 Interval Tested from 5018 ft. to 5035 ft. Total Depth 5035 ft.
 Packer Depth 5013 ft. Size 6 3/4 in. Packer Depth 5018 ft. Size 6 3/4 in.
 Packer Depth - ft. Size - in. Packer Depth - ft. Size - in.
 Depth of Selective Zone Set -

Top Recorder Depth (Inside) 5027 ft. Recorder Number 1051 Cap 4250
 Bottom Recorder Depth (Outside) 5030 ft. Recorder Number 969 Cap 4200
 Below Straddle Recorder Depth - ft. Recorder Number - Cap -

Drilling Contractor H-30 Drilling Rig #3 Drill Collar Length 245 I. D. 2 1/4 in.
 Mud Type premix Viscosity 48 Weight Pipe Length - I. D. - in.
 Weight 9.2 Water Loss 9.2 cc. Drill Pipe Length 4741 I. D. 3.8 in.
 Chlorides 18,000 P.P.M. Test Tool Length 32 ft. Tool Size 4 3/4 in.
 Jars: Make WTC Serial Number 410 Anchor Length 17 ft. Size 5 1/2 in.
 Did Well Flow? Gas 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 XH in.

Blow: Strong with gas to surface in seven minutes on first opening.

Recovered 120 ft. of watery slightly oil cut and heavt gas cut mud
 Recovered 60 ft. of watery oil cut and heavy gas cut mud
 Recovered 90 ft. of heavy water cut froggy oil
 Recovered 90 ft. of oily water
 Recovered 120 ft. of muddy salt water

Remarks: 480 feet total fluid chlorides 85,000 ppm

(two hour fifty minutes final fhut-in)

Time Set Packer(s)	<u>6:04</u>	<u>A.M.</u> <u>-P.M.</u>	Time Started Off Bottom	<u>2:50</u>	<u>A.M.</u> <u>P.M.</u>	Maximum Temperature	<u>125</u>
Initial Hydrostatic Pressure			(A)	<u>2539</u>	P.S.I.		
Initial Flow Period	Minutes		(B)	<u>30</u>	<u>118</u>	P.S.I. to (C)	<u>110</u> P.S.I.
Initial Closed In Period	Minutes		(D)	<u>60</u>	<u>1280</u>	P.S.I.	
Final Flow Period	Minutes		(E)	<u>135</u>	<u>176</u>	P.S.I. to (F)	<u>191</u> P.S.I.
Final Closed In Period	Minutes		(G)	<u>240</u>	<u>1296</u>	P.S.I.	
Final Hydrostatic Pressure			(H)	<u>2432</u>	P.S.I.		



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

GAS FLOW REPORT

Date 8/28/79 Ticket 2873 Company Wells Energy Company
 Well Name and No. Nichelson #1 Dst No. 4 Interval Tested 5018'-5035'
 County Kiowa State Kansas Sec. 15 Twp. 30S Rg. 18W

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
Gas to surface in seven minutes. PRE FLOW						
	10 min.	15" of water	1 1/4" orifice			170,000 CFPD
	20 min.	20" of water	1 1/4" orifice			196,000 CFPD
	30 min.	24" of water	1 1/4" orifice			215,000 CFPD
Instant Open 15" of water SECOND FLOW 1 1/4" orifice 170,000 CFPD						
	5 min.	45" of water	1 1/4" orifice			271,000 CFPD
	10 min.	48" of water	1 1/4" orifice			304,000 CFPD
	20 min.	40" of water	1 1/4" orifice			278,000 CFPD
	30 min.	36" of water	1 1/4" orifice			254,000 CFPD
	35 min.	37" of water	1 1/4" orifice			267,000 CFPD
	40 min.	38" of water	1 1/4" orifice			271,000 CFPD
	45 min.	39" of water	1 1/4" orifice			274,000 CFPD
	50 min.	40" of water	1 1/4" orifice			278,000 CFPD
	55 min.	41" of water	1 1/4" orifice			281,000 CFPD
	60 min.	42" of water	1 1/4" orifice			285,000 CFPD
	65 min.	43" of water	1 1/4" orifice			288,000 CFPD
	70 min.	44" of water	1 1/4" orifice			291,000 CFPD
	75 min.	45" of water	1 1/4" orifice			294,000 CFPD
	80 min.	46" of water	1 1/4" orifice			298,000 CFPD
	85 min.	47" of water	1 1/4" orifice			301,000 CFPD
	90 min.	48" of water	1 1/4" orifice			304,000 CFPD
	95 min.	49" of water	1 1/4" orifice			307,500 CFPD

GAS BOTTLE

CONTINUED TO NEXT PAGE

Serial No. _____ Date Bottle Filled _____ Date to be Invoiced _____

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.

WELLS ENERGY COMPANY
 COMPANY'S NAME _____
 Authorized by DOUGLAS V. DAVIS, JR.

WESTERN TESTING CO., INC.
Pressure Data

Date 8/28/79 Test Ticket No. 2873
 Recorder No. 1051 Capacity 4250 Location 5027
 Clock No. -- Elevation 2212 Well Temperature 125

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2529 P.S.I.	Open Tool	6:04A M	
B First Initial Flow Pressure	118 P.S.I.	First Flow Pressure	30 Mins	30 Min
C First Final Flow Pressure	110 P.S.I.	Initial Closed-in Pressure	60 Mins	60 Min
D Initial Closed-in Pressure	1280 P.S.I.	Second Flow Pressure	135 Mins	135 Min
E Second Initial Flow Pressure	176 P.S.I.	Final Closed-in Pressure	240 Mins	180 Min
F Second Final Flow Pressure	191 P.S.I.			
G Final Closed-in Pressure	1296 P.S.I.			
H Final Hydrostatic Mud	2432 P.S.I.			

PAGE ONE

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In		
Breakdown: <u>6</u> Inc.		Breakdown: <u>20</u> Inc.		Breakdown: <u>27</u> Inc.		Breakdown: <u>60</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	0	118	0	110	0	176	0	191
P 2	5	114	3	704	5	170	3	712
P 3	10	112	6	1038	10	157	6	1070
P 4	15	110	9	1144	15	148	9	1142
P 5	20	110	12	1195	20	147	12	1182
P 6	25	110	15	1214	25	144	15	1214
P 7	30	110	18	1231	30	144	18	1227
P 8			21	1243	35	144	21	1238
P 9			24	1254	40	144	24	1243
P10			27	1260	45	144	27	1250
P11			30	1265	50	151	30	1254
P12			33	1267	55	153	33	1258
P13			36	1269	60	157	36	1263
P14			39	1271	65	160	39	1265
P15			42	1273	70	163	42	1267
P16			45	1275	75	166	45	1269
P17			48	1276	80	169	48	1271
P18			51	1277	85	172	51	1271
P19			54	1278	90	174	54	1271
P20			57	1279	95	176	57	1271
			60	1280	100	177	60	1271

WESTERN TESTING CO., INC.

Pressure Data

Date 8/28/79 Test Ticket No. 2873
 Recorder No. 1051 Capacity 4250 Location 5027
 Clock No. -- Elevation 2212 Well Temperature 125

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2529	P.S.I.	6:04A	M
B First Initial Flow Pressure	118	P.S.I.	30	Mins 30 Min
C First Final Flow Pressure	110	P.S.I.	60	Mins 60 Min
D Initial Closed-in Pressure	1280	P.S.I.	135	Mins 135 Min
E Second Initial Flow Pressure	176	P.S.I.	240	Mins 180 Min
F Second Final Flow Pressure	191	P.S.I.		
G Final Closed-in Pressure	1296	P.S.I.		
H Final Hydrostatic Mud	2432	P.S.I.		

PAGE TWO

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>6</u> Inc.		Breakdown: <u>20</u> Inc.		Breakdown: <u>27</u> Inc.		Breakdown: <u>60</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				105	178	63	1273
P 2				110	181	66	1275
P 3				115	184	69	1277
P 4				120	187	72	1280
P 5				125	189	75	1282
P 6				130	190	78	1284
P 7				135	191	81	1284
P 8						84	1284
P 9						87	1284
P10						90	1284
P11						93	1284
P12						96	1284
P13						99	1284
P14						102	1284
P15						105	1284
P16						108	1284
P17						111	1286
P18						114	1287
P19						117	1288
P20						120	1290

WESTERN TESTING CO., INC.

Pressure Data

Date 8/28/79 Recorder No. 1051 Capacity 4250 Test Ticket No. 2873
 Location 5027
 Clock No. -- Elevation 2212 Well Temperature 125

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2529	P.S.I.	6:04A	M
B First Initial Flow Pressure	118	P.S.I.	30	Mins. 30
C First Final Flow Pressure	110	P.S.I.	60	Mins. 60
D Initial Closed-in Pressure	1280	P.S.I.	135	Mins. 135
E Second Initial Flow Pressure	176	P.S.I.	240	Mins. 180
F Second Final Flow Pressure	191	P.S.I.		
G Final Closed-in Pressure	1296	P.S.I.		
H Final Hydrostatic Mud	2432	P.S.I.		

PAGE THREE

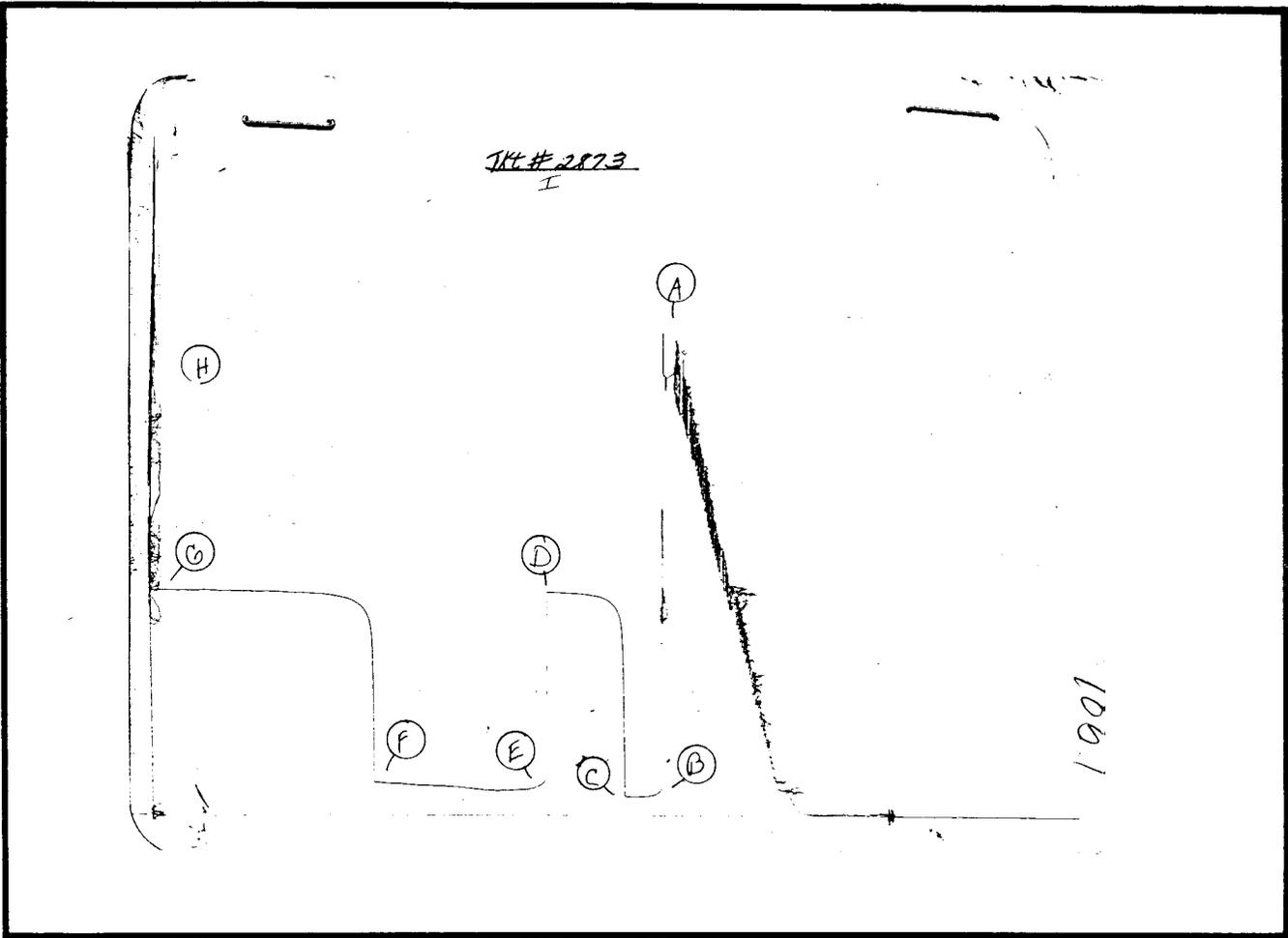
PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>6</u> Inc.		Breakdown: <u>20</u> Inc.		Breakdown: <u>27</u> Inc.		Breakdown: <u>60</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						123	1291
P 2						126	1292
P 3						129	1293
P 4						132	1294
P 5						135	1295
P 6						140	1296
P 7						145	1296
P 8						146	1296
P 9						147	1296
P10						148	1296
P11						153	1296
P12						156	1296
P13						159	1296
P14						162	1296
P15						165	1296
P16						168	1296
P17						171	1296
P18						174	1296
P19						177	1296
P20						180	1296

NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b¹	= Approximate Radius of Investigation (Net Pay Zone h ¹)	Feet
D.R.	= Damage Ratio	—
EI	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h¹	= Net Pay Thickness	Feet
K	= Permeability	md
K¹	= Permeability (From Net Pay Zone h ¹)	md
m	= Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF¹	= Maximum Indicated Flow Rate	MCF/D
OF²	= Minimum Indicated Flow Rate	MCF/D
OF³	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF⁴	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P^S	= Extrapolated Static Pressure	Psig.
P^F	= Final Flow Pressure	Psig.
P^{OT}	= Potentiometric Surface (Fresh Water*)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q¹	= Theoretical Production w/Damage Removed	bbls/day
Q^g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r^w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t^o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
u	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	2527	2539	PSI
(B) First Initial Flow Pressure	102	118	PSI
(C) First Final Flow Pressure	112	110	PSI
(D) Initial Closed-in Pressure	1302	1280	PSI
(E) Second Initial Flow Pressure	122	176	PSI
(F) Second Final Flow Pressure	194	191	PSI
(G) Final Closed-in Pressure	1333	1296	PSI
(H) Final Hydrostatic Mud	2432	2432	PSI