

Company Howell Oil Company, Inc. Lease & Well No. Grabs #1
Elevation ----- Formation Mississippi Effective Pay ---- Ft. Ticket No. 7596
Date 10/20/80 Sec. 13 Twp. 31S Range 9W County Harper State Kansas
Test Approved by Lee Paulsen Western Representative Stuart Stover
Formation Test No. 1 Interval Tested from 4389 ft. to 4410 ft. Total Depth 4410 ft.
Packer Depth 4384 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
Packer Depth 4389 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.
Depth of Selective Zone Set -
Top Recorder Depth (Inside) 4394 ft. Recorder Number 11018 Cap 4425
Bottom Recorder Depth (Outside) 4399 ft. Recorder Number 11019 Cap 4500
Below Straddle Recorder Depth - ft. Recorder Number - Cap -
Drilling Contractor Dunbar Drilling Drill Collar Length 120 I. D. 2 1/4 in.
Mud Type Viscosity 46 Weight Pipe Length - I. D. - in.
Weight 9.8 Water Loss 10.8 cc. Drill Pipe Length - I. D. 4.0 in.
Chlorides 35,000 P.P.M. Test Tool Length 21 ft. Tool Size 3 1/2 in.
Jars: Make - Serial Number - Anchor Length 21 ft. Size 4 1/2 in.
Did Well Flow? - Reversed Out - Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 in.

Initial flow period strong blow. Gas to surface in forty minutes on final flow period--
Blow: not measureable.

Recovered 90 ft. of gassy oil specked mud
Recovered 120 ft. of gassy oil specked watery mud

Chlorides 50,000 ppm

Recovered ft. of
Recovered ft. of
Recovered ft. of

Remarks:

Time Set Packer(s) 3:40 A.M. Time Started Off Bottom 6:40 P.M. Maximum Temperature 118°
Initial Hydrostatic Pressure (A) 2416 P.S.I.
Initial Flow Period Minutes 25 (B) 109 P.S.I. to (C) 89 P.S.I.
Initial Closed In Period Minutes 27 (D) 298 P.S.I.
Final Flow Period Minutes 55 (E) 118 P.S.I. to (F) 108 P.S.I.
Final Closed In Period Minutes 63 (G) 258 P.S.I.
Final Hydrostatic Pressure (H) 2260 P.S.I.

11018-7596

KA # 7596

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WESTERN TESTING CO., INC.

Pressure Data

Date 10-20-80 Recorder No. 11018 Capacity 4425 Test Ticket No. 7596 Location 4394 Ft.
 Clock No. - Elevation - Well Temperature 118 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2416 P.S.I.	Open Tool	3:40A	M 25
B First Initial Flow Pressure	109 P.S.I.	First Flow Pressure	30 Mins.	27 Mins.
C First Final Flow Pressure	89 P.S.I.	Initial Closed-in Pressure	30 Mins.	55 Mins.
D Initial Closed-in Pressure	298 P.S.I.	Second Flow Pressure	60 Mins.	63 Mins.
E Second Initial Flow Pressure	118 P.S.I.	Final Closed-in Pressure	60 Mins.	
F Second Final Flow Pressure	108 P.S.I.			
G Final Closed-in Pressure	258 P.S.I.			
H Final Hydrostatic Mud	2260 P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>5</u> Inc.		Breakdown: <u>9</u> Inc.		Breakdown: <u>11</u> Inc.		Breakdown: <u>21</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>109</u>	<u>0</u>	<u>89</u>	<u>0</u>	<u>118</u>	<u>0</u>	<u>108</u>
P 2 <u>5</u>	<u>93</u>	<u>3</u>	<u>98</u>	<u>5</u>	<u>107</u>	<u>3</u>	<u>116</u>
P 3 <u>10</u>	<u>89</u>	<u>6</u>	<u>113</u>	<u>10</u>	<u>102</u>	<u>6</u>	<u>129</u>
P 4 <u>15</u>	<u>89</u>	<u>9</u>	<u>138</u>	<u>15</u>	<u>100</u>	<u>9</u>	<u>138</u>
P 5 <u>20</u>	<u>89</u>	<u>12</u>	<u>167</u>	<u>20</u>	<u>100</u>	<u>12</u>	<u>158</u>
P 6 <u>25</u>	<u>89</u>	<u>15</u>	<u>196</u>	<u>25</u>	<u>100</u>	<u>15</u>	<u>176</u>
P 7		<u>18</u>	<u>228</u>	<u>30</u>	<u>100</u>	<u>18</u>	<u>188</u>
P 8		<u>21</u>	<u>256</u>	<u>35</u>	<u>102</u>	<u>21</u>	<u>207</u>
P 9		<u>24</u>	<u>273</u>	<u>40</u>	<u>104</u>	<u>24</u>	<u>220</u>
P10		<u>27</u>	<u>298</u>	<u>45</u>	<u>106</u>	<u>27</u>	<u>229</u>
P11				<u>50</u>	<u>107</u>	<u>30</u>	<u>233</u>
P12				<u>55</u>	<u>108</u>	<u>33</u>	<u>240</u>
P13						<u>36</u>	<u>242</u>
P14						<u>39</u>	<u>245</u>
P15						<u>42</u>	<u>247</u>
P16						<u>45</u>	<u>249</u>
P17						<u>48</u>	<u>250</u>
P18						<u>51</u>	<u>252</u>
P19						<u>54</u>	<u>254</u>
P20						<u>57</u>	<u>256</u>
						<u>60</u>	<u>258</u>
						<u>63</u>	<u>258</u>



WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No. 7596

P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201

Elevation _____ Formation MISSISSIPPI Eff. Pay _____ Ft.

District Pratt Date 10-20-80 Customer Order No. _____
COMPANY NAME Howell Oil Co., Inc.
ADDRESS P.O. Box 2091 HUTCHINSON, KS. 67501
LEASE AND WELL NO. GRASS #1 COUNTY HARPER STATE KS Sec. 13 Twp. 31S Rge. 9W
Mail Invoice To SAME No. Copies Requested REG
Co. Name _____ Address _____
Mail Charts To SAME No. Copies Requested REG
Address _____

Formation Test No. 1 Interval Tested from 4389 ft. to 4410 ft. Total Depth 4410 ft.
Packer Depth 4384 ft. Size 6 3/4 in. Packer Depth _____ ft. Size _____ in.
Packer Depth 4389 ft. Size 6 3/4 in. Packer Depth _____ ft. Size _____ in.
Depth of Selective Zone Set _____
Top Recorder Depth (Inside) 4394 ft. Recorder Number 11018 Cap. 4425
Bottom Recorder Depth (Outside) 4399 ft. Recorder Number 11019 Cap. 4500
Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____
Drilling Contractor Dunbar Drill Collar Length 120 I. D. 2 1/4 in.
Mud Type _____ Viscosity 46 Weight Pipe Length _____ I. D. _____ in.
Weight 9.8 Water Loss 10.8 cc. Drill Pipe Length _____ I. D. 4.0 in.
Chlorides 35,000 P.P.M. Test Tool Length 21 ft. Tool Size 3 1/2 in.
Jars: Make _____ Serial Number _____ Anchor Length 21 ft. Size 4 1/2 in.
Did Well Flow? _____ Reversed Out _____ Surface Choke Size 1/2 in. Bottom Choke Size 1/2 in.
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 in.

Blow: Strong how GTS IN 40 MINUTES ON 2ND Final flow
Flow period NOT MEASURABLE
Recovered 90 ft. of Gassy oil specked mud
Recovered 120 ft. of Gassy oil specked watery mud
Recovered _____ ft. of _____
Recovered _____ ft. of _____
Recovered _____ ft. of _____
Remarks: CHLORIDES - 50000 PPM

Time On Location 11:30 A.M. Time Pick Up Tool 1:30 A.M. Time Off Location 10:00 A.M.
Time Set Packer(s) 3:40 P.M. Time Started Off Bottom 6:40 P.M. Maximum Temperature 118°
Initial Hydrostatic Pressure _____ (A) 2411 P.S.I.
Initial Flow Period _____ Minutes 30 (B) 88 P.S.I. to (C) 77 P.S.I.
Initial Closed In Period _____ Minutes 30 (D) 244 P.S.I.
Final Flow Period _____ Minutes 60 (E) 100 P.S.I. to (F) 100 P.S.I.
Final Closed In Period _____ Minutes 60 (G) 274 P.S.I.
Final Hydrostatic Pressure _____ (H) 2227 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By Lee Paulsen
Signature of Customer or his authorized representative

Western Representative Stuart Stover

FIELD INVOICE

Open Hole Test \$ 400.00
Misrun \$ _____
Straddle Test \$ _____
Jars \$ _____
Selective Zone \$ _____
Safety Joint \$ _____
Standby \$ _____
Evaluation \$ _____
Extra Packer \$ _____
Circ. Sub. \$ _____
Mileage 45 \$ 33.75
Fluid Sampler \$ _____
Extra Charts \$ _____
Insurance \$ _____
TOTAL \$ 633.75

WESTERN TESTING CO., INC.

Pressure Data

Date 10-20 Recorder No. 11018 Capacity 4425 Test Ticket No. 7596 Location 4394 Ft.
 Clock No. _____ Elevation _____ Well Temperature 118 °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2416</u> P.S.I.	<u>3:40</u> A _M	
B First Initial Flow Pressure	<u>109</u> P.S.I.	<u>30</u> Mins.	<u>25</u> Mins.
C First Final Flow Pressure	<u>89</u> P.S.I.	<u>30</u> Mins.	<u>27</u> Mins.
D Initial Closed-in Pressure	<u>298</u> P.S.I.	<u>60</u> Mins.	<u>55</u> Mins.
E Second Initial Flow Pressure	<u>118</u> P.S.I.	<u>60</u> Mins.	<u>63</u> Mins.
F Second Final Flow Pressure	<u>108</u> P.S.I.		
G Final Closed-in Pressure	<u>258</u> P.S.I.		
H Final Hydrostatic Mud	<u>2260</u> P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>5</u> Inc.		Breakdown: <u>9</u> Inc.		Breakdown: <u>11</u> Inc.		Breakdown: <u>21</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	<u>109</u>	0	<u>89</u>	0	<u>118</u>	0	<u>108</u>
P 2 5	<u>93</u>	3	<u>98</u>	5	<u>107</u>	3	<u>116</u>
P 3 10	<u>89</u>	6	<u>113</u>	10	<u>102</u>	6	<u>129</u>
P 4 15	<u>(</u>	9	<u>138</u>	15	<u>100</u>	9	<u>138</u>
P 5 20	<u>(</u>	12	<u>167</u>	20	<u>(</u>	12	<u>158</u>
P 6 25	<u>89</u>	15	<u>196</u>	25	<u>(</u>	15	<u>176</u>
P 7 30		18	<u>228</u>	30	<u>100</u>	18	<u>188</u>
P 8 35		21	<u>256</u>	35	<u>102</u>	21	<u>207</u>
P 9 40		24	<u>273</u>	40	<u>104</u>	24	<u>220</u>
P 10 45		27	<u>298</u>	45	<u>1086</u>	27	<u>229</u>
P 11 50		30		50	<u>107</u>	30	<u>233</u>
P 12 55		33		55	<u>108</u>	33	<u>240</u>
P 13 60		36		60		36	<u>242</u>
P 14		39		65		39	<u>2485</u>
P 15		42		70		42	<u>2487</u>
P 16		45		75		45	<u>249</u>
P 17		48		80		48	<u>250</u>
P 18		51		85		51	<u>252</u>
P 19		54		90		54	<u>254</u>
P 20		57				57	<u>256</u>
		60				60	<u>258</u>
						63	<u>258</u>

WESTERN TESTING CO., INC.

Pressure Data

Date 10-20-80 Test Ticket No. 7596
 Recorder No. 11018 Capacity 4425 Location _____ Ft.
 Clock No. _____ Elevation _____ Well Temperature 118 °F

Point	Pressure		Time Given	Time Computed
A. Initial Hydrostatic Mud <u>2293</u>	P.S.I.	Open Tool	M	
B. First Initial Flow Pressure	P.S.I.	First Flow Pressure	Mins.	Mins.
C. First Final Flow Pressure	P.S.I.	Initial Closed-in Pressure	Mins.	Mins.
D. Initial Closed-in Pressure	P.S.I.	Second Flow Pressure	Mins.	Mins.
E. Second Initial Flow Pressure	P.S.I.	Final Closed-in Pressure	Mins.	Mins.
F. Second Final Flow Pressure	P.S.I.			
G. Final Closed-in Pressure	P.S.I.			
H. Final Hydrostatic Mud <u>2255</u>	P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>5</u> mins. and a		of <u>5</u> mins. and a		of <u>5</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>113</u>	<u>0</u>	<u>91</u>	<u>0</u>	<u>124</u>	<u>0</u>	<u>100</u>
P 2 <u>5</u>		<u>5</u>		<u>5</u>		<u>5</u>	<u>131</u>
P 3 <u>10</u>		<u>10</u>		<u>10</u>		<u>10</u>	<u>164</u>
P 4 <u>15</u>		<u>15</u>		<u>15</u>		<u>15</u>	<u>195</u>
P 5 <u>20</u>		<u>20</u>		<u>20</u>		<u>20</u>	<u>213</u>
P 6 <u>25</u>		<u>25</u>		<u>25</u>		<u>25</u>	<u>224</u>
P 7 <u>30</u>	<u>82</u>	<u>30</u>	<u>291</u>	<u>30</u>		<u>30</u>	<u>237</u>
P 8 <u>35</u>		<u>35</u>		<u>35</u>		<u>35</u>	<u>242</u>
P 9 <u>40</u>		<u>40</u>		<u>40</u>		<u>40</u>	<u>244</u>
P10 <u>45</u>		<u>45</u>		<u>45</u>		<u>45</u>	<u>246</u>
P11 <u>50</u>		<u>50</u>		<u>50</u>		<u>50</u>	<u>248</u>
P12 <u>55</u>		<u>55</u>		<u>55</u>		<u>55</u>	<u>251</u>
P13 <u>60</u>		<u>60</u>		<u>60</u>	<u>100</u>	<u>60</u>	<u>253</u>
P14				<u>65</u>		<u>65</u>	
P15				<u>70</u>		<u>70</u>	
P16				<u>75</u>		<u>75</u>	
P17				<u>80</u>		<u>80</u>	
P18				<u>85</u>		<u>85</u>	
P19				<u>90</u>		<u>90</u>	
P20							