



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

Company Graves Drilling Co., Inc. Lease & Well No. Kostner #4
Elevation 1442 Kelly Bushing Formation Mississippi Effective Pay - Ft. Ticket No. 25679
Date 5-7-77 Sec. 36 Twp. 28S Range 6W County Kingman State Kansas
Test Approved by Fredrick W. Stump Western Representative Lonnie J. Cline
Formation Test No. 1 O.K. ☒ Misrun ☐ Interval Tested From 3894' to 3907' Total Depth 3907'
Size Main Hole 77/8 Rat Hole ☐ Conv. ☒ B.T. ☐ Damaged ☐ Yes ☒ No Conv. ☐ B.T. ☒ Damaged ☐ Yes ☒ No
Top Packer Depth 3889 Ft. Size 6 3/4 Bottom Packer Depth 3894 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 13 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.
RECORDERS Depth 3897 Ft. Clock No. 4763 Depth 3900 Ft. Clock No. 9726
Top Make Kuster Cap. 4150 No. 2604 Inside ☒ Outside ☐ Bottom Make Kuster Cap. 4150 No. 2606 Inside ☒ Outside ☐
Below Straddle: Depth ☐ Rec. No. ☐ Clock No. ☐ Inside ☐ Outside ☐ Depth ☐ Ft. Rec. No. ☐ Clock No. ☐ Inside ☐ Outside ☐
Time Set Packer 2:20 A M
Tool Open I.F.P. From 2:21 A.M. to 2:36 A.M. - Hr. 15 Min. From (B) 19 P.S.I. To (C) 23 P.S.I.
Tool Closed I.C.I.P. From 2:36 A.M. to 3:21 A.M. - Hr. 45 Min (D) 1125 P.S.I.
Tool Open F.F.P. From 3:21 A.M. to 4:21 A.M. 1 Hr. - Min. From (E) 19 P.S.I. To (F) 77 P.S.I.
Tool Closed F.C.I.P. From 4:21 A.M. to 5:05 A.M. - Hr. 45 Min. (G) 1021 P.S.I.
Initial Hydrostatic Pressure (A) 1947 P.S.I. Final Hydrostatic Pressure (H) 1899 P.S.I. Maximum Temp. 122

INFORMATION

BLOW Strong blow throughout test. Gas To surface in 1 hour. See attached sheet for gas measurements.

Did Well Flow - Yes ☒ No ☐ Recovery Total Ft. 186' total recovery. 126' gas cut mud, 60' gas cut muddy water.

Reversed Out - Yes ☒ No ☐ Mud Type starch Viscosity 41 Weight 9.2 Water Loss 4.8 cc. Chlorides 29,500 P.P.M.

EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint ☐ Jars: Size ☐ In. Make ☐ Ser. No. ☐

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

DRILLING CONTRACTOR Graves Drilling Co., Inc Length Drill Pipe? 3506 Ft. I.D. Drill Pipe 3.9 In. Tool Joint Size 4 1/2 FH In.

Length Weight Pipe 275 Ft. I.D. Weight Pipe 3 In. Tool Joint Size 4 1/2 FH In. Length Drill Collars 91 Ft. I.D. Drill Collars 2 1/4 In.

Tool Joint Size 4 1/2 In. Length D.S.T. Tool 35 Ft.

Remarks:

Chlorides - 64,000 P.P.M.

WESTERN TESTING CO., INC.

Pressure Data

Date 5-7-77 Test Ticket No. 25679
 Recorder No. 2604 Capacity 4150 Location 3897 Ft.
 Clock No. 4763 Elevation 1442 Kelly Bushing Well Temperature 122 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1947</u> P.S.I.	Open Tool	<u>2:20</u> A M	
B First Initial Flow Pressure	<u>19</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>23</u> P.S.I.	Initial Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
D Initial Closed-in Pressure	<u>1125</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>19</u> P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	<u>51</u> Mins.
F Second Final Flow Pressure	<u>77</u> P.S.I.			
G Final Closed-in Pressure	<u>1021</u> P.S.I.			
H Final Hydrostatic Mud	<u>1899</u> P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>3</u> Inc.		Breakdown: <u>15</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>17</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>19</u>	<u>0</u>	<u>23</u>	<u>0</u>	<u>19</u>	<u>0</u>	<u>77</u>
P 2 <u>5</u>	<u>15</u>	<u>3</u>	<u>387</u>	<u>5</u>	<u>21</u>	<u>3</u>	<u>544</u>
P 3 <u>10</u>	<u>19</u>	<u>6</u>	<u>722</u>	<u>10</u>	<u>28</u>	<u>6</u>	<u>740</u>
P 4 <u>15</u>	<u>23</u>	<u>9</u>	<u>895</u>	<u>15</u>	<u>36</u>	<u>9</u>	<u>841</u>
P 5		<u>12</u>	<u>1004</u>	<u>20</u>	<u>45</u>	<u>12</u>	<u>895</u>
P 6		<u>15</u>	<u>1044</u>	<u>25</u>	<u>49</u>	<u>15</u>	<u>920</u>
P 7		<u>18</u>	<u>1069</u>	<u>30</u>	<u>55</u>	<u>18</u>	<u>941</u>
P 8		<u>21</u>	<u>1084</u>	<u>35</u>	<u>60</u>	<u>21</u>	<u>954</u>
P 9		<u>24</u>	<u>1096</u>	<u>40</u>	<u>62</u>	<u>24</u>	<u>964</u>
P10		<u>27</u>	<u>1105</u>	<u>45</u>	<u>66</u>	<u>27</u>	<u>973</u>
P11		<u>30</u>	<u>1109</u>	<u>50</u>	<u>70</u>	<u>30</u>	<u>983</u>
P12		<u>33</u>	<u>1113</u>	<u>55</u>	<u>75</u>	<u>33</u>	<u>992</u>
P13		<u>36</u>	<u>1117</u>	<u>60</u>	<u>77</u>	<u>36</u>	<u>998</u>
P14		<u>39</u>	<u>1119</u>			<u>39</u>	<u>1002</u>
P15		<u>42</u>	<u>1123</u>			<u>42</u>	<u>1008</u>
P16		<u>45</u>	<u>1125</u>			<u>45</u>	<u>1013</u>
P17						<u>48</u>	<u>1017</u>
P18						<u>51</u>	<u>1021</u>
P19							
P20							



Home Office: Wichita, Kansas 67201
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GAS FLOW REPORT

Date 5-7-77 Ticket 25679 Company Graves Drilling Co., Inc.
Well Name and No. Kostner #4 Dst No. 1 Interval Tested 3894' - 3907'
County Kingman State Kansas Sec. 36 Twp. 28S Rg. 6W

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						

SECOND FLOW

3:31 AM	10 min.	76 inches	of water		1/4" choke	14,600	C.F.P.D.
3:41 AM	20 min.	6 PSIG			1/4" choke	22,900	C.F.P.D.
3:51 AM	30 min.	8 PSIG			1/4" choke	27,00	C.F.P.D.
4:01 AM	40 min.	9.5PSIG			1/4" choke	29,900	C.F.P.D.
4:11 AM	50 min.	10.5PSIG			1/4" choke	31,600	C.F.P.D.
4:21 AM	60 min.	11 PSIG			1/4" choke	32,400	C.F.P.D.

GAS BOTTLE

Serial No. _____ Date Bottle Filled 5-7-77 Date to be Invoiced 5-7-77

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.

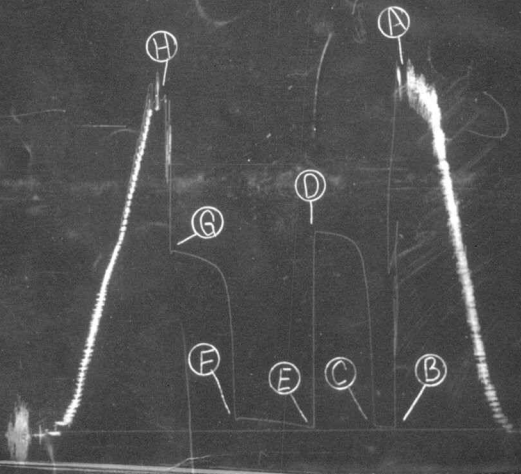
All charges subject to 1% per month, equal to 12% interest per annum after 30 days from date of invoice. Any expense incurred for collection will be added to the original amount.

COMPANY'S NAME Graves Drilling Co., Inc.

Authorized by Fredrick W. Stump

TK+ # 25679

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P. O. Box 1599 (316) 838-0601

Company Graves Drilling Co., Inc. Lease & Well No. Kostner #4
Elevation 1442 Kelly Bushing Formation Mississippi Effective Pay - Ft. Ticket No. 25680
Date 5-7-77 Sec. 36 Twp. 28S Range 6W County Kingman State Kansas
Test Approved by Fredrick W. Stump Western Representative Lonnie J. Cline
Formation Test No. 2 O.K. ☒ Misrun ☐ Interval Tested From 3909' to 3925' Total Depth 3925'
Size Main Hole 77/8 Rat Hole ☐ Conv. ☒ B.T. ☐ Damaged ☐ Yes ☒ No Conv. ☐ B.T. ☒ Damaged ☒ Yes ☐ No
Top Packer Depth 3904 Ft. Size 6 3/4 Bottom Packer Depth 3909 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 16 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.
RECORDERS Depth 3917 Ft. Clock No. 4763 Depth 3920 Ft. Clock No. 9726
Top Make Kuster Cap. 4150 No. 2604 ☐ Inside ☒ Outside Bottom Make Kuster Cap. 4150 No. 2606 ☐ Inside ☒ Outside
Below Straddle: Depth ☐ Rec. No. ☐ Clock No. ☐ ☐ Inside ☒ Outside Depth ☐ Ft. Rec. No. ☐ Clock No. ☐ ☐ Inside ☒ Outside
Time Set Packer 4:00 P.M.
Tool Open I.F.P. From 4:02 P.M. to 4:12 P.M. - Hr. 10 Min. From (B) 224 P.S.I. To (C) 290 P.S.I.
Tool Closed I.C.I.P. From 4:12 P.M. to 4:57 P.M. - Hr. 45 Min (D) 1167 P.S.I.
Tool Open F.F.P. From 4:57 P.M. to 5:08 P.M. - Hr. 11 Min. From (E) 361 P.S.I. To (F) 406 P.S.I.
Tool Closed F.C.I.P. From 5:08 P.M. to 5:58 P.M. - Hr. 45 Min. (G) 1165 P.S.I.
Initial Hydrostatic Pressure (A) 1947 P.S.I. Final Hydrostatic Pressure (H) 1916 P.S.I. Maximum Temp. 128

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. 120' oil, 20' water, flowed mud in 6 minutes on final flow period, flowed oil in 8 minutes.
Reversed Out ☒ Yes ☐ No Mud Type starch Viscosity 49 Weight 9.2 Water Loss 10.8 cc. Chlorides 35,000 P.P.M.
EXTRA EQUIPMENT: Type Circ. Sub. Pin Safety Joint ☐ Jars: Size ☐ In. Make ☐ Ser. No. ☐
Dual Packer Yes Did Packers Hold? Yes Did Tool Plug? No Where? ☐
DRILLING CONTRACTOR Company Tools Length Drill Pipe? 3521 Ft. I.D. Drill Pipe 3.9 In. Tool Joint Size 4 1/2 FH In.
Length Weight Pipe 275 Ft. I.D. Weight Pipe 3 In. Tool Joint Size 4 1/2 XH In. Length Drill Collars 91 Ft. I.D. Drill Collars 2 1/4 In.
Tool Joint Size 4 1/2 H90 In. Length D.S.T. Tool 38 Ft.

Remarks:

WESTERN TESTING CO., INC.

Pressure Data

Date 5-7-77 Test Ticket No. 25680
 Recorder No. 2604 Capacity 4150 Location 3917 Ft.
 Clock No. 4763 Elevation 1442 Kelly Bushing Well Temperature 128 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1947</u> P.S.I.	Open Tool	<u>4:00</u> P M	
B First Initial Flow Pressure	<u>224</u> P.S.I.	First Flow Pressure	<u>10</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>290</u> P.S.I.	Initial Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
D Initial Closed-in Pressure	<u>1167</u> P.S.I.	Second Flow Pressure	<u>11</u> Mins.	<u>10</u> Mins.
E Second Initial Flow Pressure	<u>361</u> P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
F Second Final Flow Pressure	<u>406</u> P.S.I.			
G Final Closed-in Pressure	<u>1165</u> P.S.I.			
H Final Hydrostatic Mud	<u>1916</u> P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>3</u> Inc.		Breakdown: <u>15</u> Inc.		Breakdown: <u>2</u> Inc.		Breakdown: <u>15</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>224</u>	<u>0</u>	<u>290</u>	<u>0</u>	<u>361</u>	<u>0</u>	<u>406</u>
P 2 <u>5</u>	<u>228</u>	<u>3</u>	<u>939</u>	<u>5</u>	<u>350</u>	<u>3</u>	<u>1029</u>
P 3 <u>10</u>	<u>256</u>	<u>6</u>	<u>1102</u>	<u>10</u>	<u>406</u>	<u>6</u>	<u>1113</u>
P 4 <u>15</u>	<u>290</u>	<u>9</u>	<u>1136</u>			<u>9</u>	<u>1130</u>
P 5		<u>12</u>	<u>1144</u>			<u>12</u>	<u>1140</u>
P 6		<u>15</u>	<u>1150</u>			<u>15</u>	<u>1146</u>
P 7		<u>18</u>	<u>1155</u>			<u>18</u>	<u>1150</u>
P 8		<u>21</u>	<u>1159</u>			<u>21</u>	<u>1155</u>
P 9		<u>24</u>	<u>1161</u>			<u>24</u>	<u>1157</u>
P10		<u>27</u>	<u>1163</u>			<u>27</u>	<u>1159</u>
P11		<u>30</u>	<u>1165</u>			<u>30</u>	<u>1160</u>
P12		<u>33</u>	<u>1165</u>			<u>33</u>	<u>1161</u>
P13		<u>36</u>	<u>1166</u>			<u>36</u>	<u>1162</u>
P14		<u>39</u>	<u>1166</u>			<u>39</u>	<u>1163</u>
P15		<u>42</u>	<u>1167</u>			<u>42</u>	<u>1164</u>
P16		<u>45</u>	<u>1167</u>			<u>45</u>	<u>1165</u>
P17							
P18							
P19							
P20							



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GAS FLOW REPORT

Date 5-7-77 Ticket 25680 Company Graves Drilling Co., Inc.
Well Name and No. Kostner #4 Dst No. 2 Interval Tested 3909' - 3925'
County Kingman State Kansas Sec. 36 Twp. 28S Rg. 6W

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						
4:07 PM	5 min.	6 PSIG			1½" choke	599,000 C.F.P.D.
4:12 PM	10 min.	8 PSIG			1½" choke	700,000 C.F.P.D.

SECOND FLOW

5:02 PM	5 min.	14 PSIG			1½" choke	980,000 C.F.P.D.

GAS BOTTLE

Serial No. _____ Date Bottle Filled 5-7-77 Date to be Invoiced 5-7-77

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 Graves Drilling Co., Inc.

Authorized by Fredrick W. Stump

TK1#25680

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