



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

Company Graves Drilling Co., Inc. Lease & Well No. Krase #1
Elevation - Formation - Effective Pay - Ft. Ticket No. 21745
Date 11-24-76 Sec. 17 Twp. 28S Range 5W 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 3816' to 3846' Total Depth 3846'
Size Main Hole 7 7/8 Rat Hole ☐ Conv. ☒ B.T. ☐ Damaged ☐ Yes ☒ No Conv. ☐ B.T. ☒ Damaged ☒ Yes ☐ No
Top Packer Depth 3811 Ft. Size 6 3/4 Bottom Packer Depth 3816 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 30 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.
RECORDERS Depth 3838 Ft. Clock No. 6799 Depth 3841 Ft. Clock No. 8376
Top Make Kuster Cap. 4150 No. 2606 Inside 0000 Bottom Make Kuster Cap. 4000 No. 3351 Inside 0000
Below Straddle: Depth - Rec. No. - Clock No. - Inside - Depth - Ft. Rec. No. - Clock No. - Inside -
Time Set Packer 7:55P. M
Tool Open I.F.P. From 8:04P. M. to 8:19P. M. - Hr. 15 Min. From (B) 58 P.S.I. To (C) 54 P.S.I.
Tool Closed I.C.I.P. From 8:19P. M. to 9:04P. M. - Hr. 45 Min (D) 1126 P.S.I.
Tool Open F.F.P. From 9:04P. M. to 10:04P. M. - Hr. 60 Min. From (E) 69 P.S.I. To (F) 89 P.S.I.
Tool Closed F.C.I.P. From 10:04P. M. to 10:40P. M. - Hr. 45 Min. (G) 973 P.S.I.
Initial Hydrostatic Pressure (A) 2025 P.S.I. Final Hydrostatic Pressure (H) 2025 P.S.I. Maximum Temp. 119

INFORMATION

BLOW Strong blow throughout test. Gas to surface in 17 minutes.

Did Well Flow ☐ Yes ☒ No Recovery Total Ft. 190' of gas cut mud.

Reversed Out ☐ Yes ☒ No Mud Type Impermex Viscosity 58 Weight 9.6 Water Loss 16.8 cc. Chlorides 53,000 PPM
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 Drlg. Co., Inc. Length Drill Pipe? 3367 Ft. I.D. Drill Pipe 3.9 In. Tool Joint Size 4 1/2 FH In.
Length Weight Pipe 305 Ft. I.D. Weight Pipe 3.9 In. Tool Joint Size 4 1/2 FH In. Length Drill Collars 122 Ft. I.D. Drill Collars 2 1/4 In.
Tool Joint Size 4 1/2 H-90 Length D.S.T. Tool 52 Ft.

Remarks:

WESTERN TESTING CO., INC.

Pressure Data

Date 11-24-76 Test Ticket No. 21745
 Recorder No. 2606 Capacity 4150 Location 3838 Ft.
 Clock No. 6799 Elevation - Well Temperature 119 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	<u>2025</u> P.S.I.	Open Tool	<u>7:55P.</u> M	
B First Initial Flow Pressure	<u>58</u> P.S.I.	First Flow Pressure	<u>15</u> Mins.	<u>15</u> Mins.
C First Final Flow Pressure	<u>54</u> P.S.I.	Initial Closed-in Pressure	<u>45</u> Mins.	<u>45</u> Mins.
D Initial Closed-in Pressure	<u>1126</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>55</u> Mins.
E Second Initial Flow Pressure	<u>69</u> P.S.I.	Final Closed-in Pressure	<u>45</u> Mins.	<u>48</u> Mins.
F Second Final Flow Pressure	<u>89</u> P.S.I.			
G Final Closed-in Pressure	<u>973</u> P.S.I.			
H Final Hydrostatic Mud	<u>2025</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>16</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>58</u>	<u>0</u>	<u>54</u>	<u>0</u>	<u>69</u>	<u>0</u>	<u>89</u>
P 2 <u>5</u>	<u>48</u>	<u>3</u>	<u>258</u>	<u>5</u>	<u>54</u>	<u>3</u>	<u>191</u>
P 3 <u>10</u>	<u>52</u>	<u>6</u>	<u>410</u>	<u>10</u>	<u>56</u>	<u>6</u>	<u>293</u>
P 4 <u>15</u>	<u>54</u>	<u>9</u>	<u>560</u>	<u>15</u>	<u>58</u>	<u>9</u>	<u>385</u>
P 5		<u>12</u>	<u>684</u>	<u>20</u>	<u>59</u>	<u>12</u>	<u>469</u>
P 6		<u>15</u>	<u>780</u>	<u>25</u>	<u>62</u>	<u>15</u>	<u>546</u>
P 7		<u>18</u>	<u>865</u>	<u>30</u>	<u>67</u>	<u>18</u>	<u>616</u>
P 8		<u>21</u>	<u>929</u>	<u>35</u>	<u>71</u>	<u>21</u>	<u>680</u>
P 9		<u>24</u>	<u>971</u>	<u>40</u>	<u>75</u>	<u>24</u>	<u>734</u>
P10		<u>27</u>	<u>1010</u>	<u>45</u>	<u>79</u>	<u>27</u>	<u>777</u>
P11		<u>30</u>	<u>1041</u>	<u>50</u>	<u>82</u>	<u>30</u>	<u>819</u>
P12		<u>33</u>	<u>1064</u>	<u>55</u>	<u>87</u>	<u>33</u>	<u>854</u>
P13		<u>36</u>	<u>1085</u>	<u>60</u>	<u>89</u>	<u>36</u>	<u>886</u>
P14		<u>39</u>	<u>1101</u>			<u>39</u>	<u>915</u>
P15		<u>42</u>	<u>1116</u>			<u>42</u>	<u>938</u>
P16		<u>45</u>	<u>1126</u>			<u>45</u>	<u>958</u>
P17						<u>48</u>	<u>973</u>
P18							
P19							
P20							



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GAS FLOW REPORT

Date 11-24-76 Ticket 21745 Company Graves Drilling Co., Inc.
Well Name and No. Kruse #1 Dst No. 1 Interval Tested 3816' - 3846'
County Kingman State Kansas Sec. 17 Twp. 28S Rg. 5W

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						
Gas to surface in 17 minutes.						

SECOND FLOW						
9:14PM	10 min.	26" of water	1/4" orifice	8,560 C.F.P.D.		
9:24PM	20 min.	32" of water	1/4" orifice	9,500 C.F.P.D.		
9:34PM	30 min.	32" of water	1/4" orifice	9,500 C.F.P.D.		
9:44PM	40 min.	32" of water	1/4" orifice	9,500 C.F.P.D.		
9:54PM	50 min.	30" of water	1/4" orifice	9,200 C.F.P.D.		
10:04PM	60 min.	30" of water	1/4" orifice	9,200 C.F.P.D.		

GAS BOTTLE

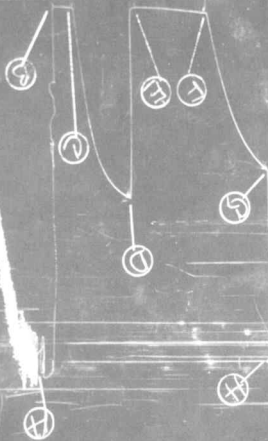
Serial No. - Date Bottle Filled 11-24-76 Date to be Invoiced 11-24-76

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



IKT A21745
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Company Graves Drilling Co., Inc. Lease & Well No. Kruse #1
Elevation - Formation - Effective Pay - Ft. Ticket No. 21746
Date 11-25-76 Sec. 17 Twp. 28S Range 5W County Kingman State Kansas
Test Approved by Fredrick W. Stump Western Representative Lonnie Cline
Formation Test No. 2 O.K. ☒ Misrun ☐ Interval Tested From 3848' to 3875' Total Depth 3875'
Size Main Hole 7 7/8 Hole - Conv. ☒ B.T. ☐ Damaged ☐ Yes ☒ No Conv. ☐ B.T. ☒ Damaged ☒ Yes ☐ No
Top Packer Depth 3843 Ft. Size 6 3/4 Bottom Packer Depth 3848 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 27 Ft. Size 5 1/2 OD Surface Choke Size 3/4 In. Bottom Choke Size 3/4 In.
RECORDERS Depth 3867 Ft. Clock No. 6799 Depth 3870 Ft. Clock No. 8376
Top Make Kuster Cap. 4150 No. 2606 Inside 7 1/2 Bottom Make Kuster Cap. 4000 No. 3351 Inside 7 1/2
Below Straddle: Depth - Rec. No. - Clock No. - Inside - Depth - Ft. Rec. No. - Clock No. - Inside -
Time Set Packer 12:37P. M
Tool Open I.F.P. From 12:40P M. to 12:55P M. - Hr. 15 Min. From (B) 60 P.S.I. To (C) 48 P.S.I.
Tool Closed I.C.I.P. From 12:55P M. to 1:40P M. - Hr. 45 Min (D) 1101 P.S.I.
Tool Open F.F.P. From 1:40P M. to 2:40P M. - Hr. 60 Min. From (E) 93 P.S.I. To (F) 100 P.S.I.
Tool Closed F.C.I.P. From 2:40P M. to 3:25P M. - Hr. 45 Min. (G) 925 P.S.I.
Initial Hydrostatic Pressure (A) 2038 P.S.I. Final Hydrostatic Pressure (H) 2019 P.S.I. Maximum Temp. 120

INFORMATION

BLOW Strong Blow throughout test.

Did Well Flow ☒ Yes ☐ No Recovery Total Ft. 185' total recovery. 65' of thin oil and gas cut mud
65' of thin oil and gas cut watery mud, 60' of watery mud.

Reversed Out ☐ Yes ☒ No Mud Type Impermex Viscosity 58 Weight 9.6 Water Loss 16.8 cc. Chlorides 53,000 PPM

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 Drllg. Co., Inc. Length Drill Pipe? 3399 Ft. I.D. Drill Pipe 3.9 In. Tool Joint Size 4 1/2 FH In.

Length Weight Pipe 305 Ft. I.D. Weight Pipe 3 In. Tool Joint Size 4 1/2 XH In. Length Drill Collars 122 Ft. I.D. Drill Collars 2 1/4 In.

Tool Joint Size 4 1/2 H-90 In. Length D.S.T. Tool 49 Ft.

Remarks:

WESTERN TESTING CO., INC.

Pressure Data

Date 11-25-76 Test Ticket No. 21746
Recorder No. 2606 Capacity 4150 Location 3867 Ft.
Clock No. 6799 Elevation - Well Temperature 120 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	2038	P.S.I.	12:37P.	M
B First Initial Flow Pressure	60	P.S.I.	15	Mins. 15 Mins.
C First Final Flow Pressure	48	P.S.I.	45	Mins. 48 Mins.
D Initial Closed-in Pressure	1101	P.S.I.	60	Mins. 60 Mins.
E Second Initial Flow Pressure	94	P.S.I.	45	Mins. 48 Mins.
F Second Final Flow Pressure	100	P.S.I.		
G Final Closed-in Pressure	925	P.S.I.		
H Final Hydrostatic Mud	2019	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>3</u> Inc.		Breakdown: <u>16</u> Inc.		Breakdown: <u>12</u> Inc.		Breakdown: <u>16</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>60</u>	<u>0</u>	<u>48</u>	<u>0</u>	<u>94</u>	<u>0</u>	<u>100</u>
P 2 <u>5</u>	<u>46</u>	<u>3</u>	<u>100</u>	<u>5</u>	<u>77</u>	<u>3</u>	<u>135</u>
P 3 <u>10</u>	<u>47</u>	<u>6</u>	<u>171</u>	<u>10</u>	<u>79</u>	<u>6</u>	<u>183</u>
P 4 <u>15</u>	<u>48</u>	<u>9</u>	<u>262</u>	<u>15</u>	<u>83</u>	<u>9</u>	<u>233</u>
P 5		<u>12</u>	<u>370</u>	<u>20</u>	<u>87</u>	<u>12</u>	<u>283</u>
P 6		<u>15</u>	<u>494</u>	<u>25</u>	<u>88</u>	<u>15</u>	<u>337</u>
P 7		<u>18</u>	<u>606</u>	<u>30</u>	<u>88</u>	<u>18</u>	<u>398</u>
P 8		<u>21</u>	<u>717</u>	<u>35</u>	<u>89</u>	<u>21</u>	<u>462</u>
P 9		<u>24</u>	<u>821</u>	<u>40</u>	<u>92</u>	<u>24</u>	<u>521</u>
P10		<u>27</u>	<u>898</u>	<u>45</u>	<u>94</u>	<u>27</u>	<u>583</u>
P11		<u>30</u>	<u>954</u>	<u>50</u>	<u>96</u>	<u>30</u>	<u>643</u>
P12		<u>33</u>	<u>996</u>	<u>55</u>	<u>98</u>	<u>33</u>	<u>703</u>
P13		<u>36</u>	<u>1027</u>	<u>60</u>	<u>100</u>	<u>36</u>	<u>761</u>
P14		<u>39</u>	<u>1056</u>			<u>39</u>	<u>811</u>
P15		<u>42</u>	<u>1075</u>			<u>42</u>	<u>854</u>
P16		<u>45</u>	<u>1091</u>			<u>45</u>	<u>892</u>
P17		<u>48</u>	<u>1101</u>			<u>48</u>	<u>925</u>
P18							
P19							
P20							

TKT #21746

