



Home Office: Wichita, Kansas 67201

P.O. Box 1599

(316) 262-5861

Company Graves Drilling Company, Inc. Lease & Well No. Norstrom #1
Elevation 1330 Kelly Bushing Formation Mississippi Effective Pay - Ft. Ticket No. 11516
Date 8/28/81 Sec. 32 Twp. 17S Range 1W County McPherson State Kansas
Test Approved by R. M. Lineham Western Representative Vernon Wondra
Formation Test No. 1 Interval Tested from 2653 ft. to 2666 ft. Total Depth 2666 ft.
Packer Depth 2648 ft. Size 6 5/8 in. Packer Depth - ft. Size - in.
Packer Depth 2653 ft. Size 6 5/8 in. Packer Depth - ft. Size - in.
Depth of Selective Zone Set -
Top Recorder Depth (Inside) 2656 ft. Recorder Number 6074 Cap. 5100
Bottom Recorder Depth (Outside) 2659 ft. Recorder Number 1562 Cap. 4450
Below Straddle Recorder Depth - ft. Recorder Number - Cap. -
Drilling Contractor Range Drlg. Co. Inc. Rig#1 Drill Collar Length 119 I. D. 2 1/4 in.
Mud Type chemical Viscosity 42 Weight Pipe Length - I. D. - in.
Weight 10.1 Water Loss 15.8 cc. Drill Pipe Length 2513 I. D. 3.8 in.
Chlorides 2,500 P.P.M. Test Tool Length 21 ft. Tool Size 5 1/2 OD in.
Jars: Make - Serial Number - Anchor Length 13 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: Very weak blow; died in five minutes on initial flow period; flushed tool; few bubbles/
No blow on final flow period.

Recovered 5 ft. of mud with few specks of oil

Recovered - ft. of -

Recovered - ft. of -

Recovered - ft. of -

Recovered - ft. of -

Remarks: Left tool open twentyfive minutes on first flow period because of rig repairs.

Read bottom chart.

Time Set	Packer(s)	Time Started	Off Bottom	Maximum Temperature
<u>12:50</u>	<u>A.M.</u>	<u>2:00</u>	<u>A.M.</u>	<u>100°</u>
	<u>P.M.</u>		<u>P.M.</u>	
Initial Hydrostatic Pressure		(A)	<u>1439</u>	<u>P.S.I.</u>
Initial Flow Period	Minutes	<u>25</u>	(B)	<u>36</u> <u>P.S.I. to (C)</u> <u>37</u> <u>P.S.I.</u>
Initial Closed In Period	Minutes	<u>27</u>	(D)	<u>396</u> <u>P.S.I.</u>
Final Flow Period	Minutes	<u>15</u>	(E)	<u>37</u> <u>P.S.I. to (F)</u> <u>37</u> <u>P.S.I.</u>
Final Closed In Period	Minutes	<u>--</u>	(G)	<u>--</u> <u>P.S.I.</u>
Final Hydrostatic Pressure		(H)	<u>1423</u>	<u>P.S.I.</u>

WESTERN TESTING CO., INC.

Pressure Data

Date 8/28/81 Test Ticket No. 11516
 Recorder No. 1562 Capacity 4450 Location 2659 Ft.
 Clock No. - Elevation 1330 Kelly Bushing Well Temperature 100 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	1439	P.S.I.	12:50P	M
B First Initial Flow Pressure	36	P.S.I.	25	Mins.
C First Final Flow Pressure	37	P.S.I.	30	Mins.
D Initial Closed-in Pressure	396	P.S.I.	15	Mins.
E Second Initial Flow Pressure	37	P.S.I.	--	Mins.
F Second Final Flow Pressure	37	P.S.I.		
G Final Closed-in Pressure	--	P.S.I.		
H Final Hydrostatic Mud	1423	P.S.I.		

Open Tool
 First Flow Pressure
 Initial Closed-in Pressure
 Second Flow Pressure
 Final Closed-in Pressure

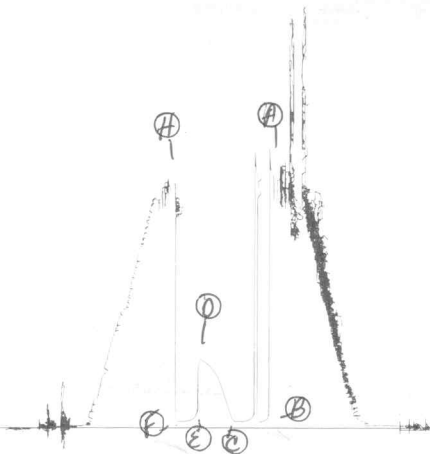
PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: <u>5</u> Inc.		Breakdown: <u>9</u> Inc.		Breakdown: <u>3</u> Inc.		Breakdown: <u>0</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>36</u>	<u>0</u>	<u>37</u>	<u>0</u>	<u>37</u>		
P 2 <u>5</u>	<u>36</u>	<u>3</u>	<u>65</u>	<u>5</u>	<u>37</u>		
P 3 <u>10</u>	<u>FLUSHED TOOL</u>	<u>6</u>	<u>131</u>	<u>10</u>	<u>37</u>		
P 4 <u>15</u>	<u>45</u>	<u>9</u>	<u>207</u>	<u>15</u>	<u>37</u>		
P 5 <u>20</u>	<u>37</u>	<u>12</u>	<u>275</u>				
P 6 <u>25</u>	<u>37</u>	<u>15</u>	<u>322</u>				
P 7		<u>18</u>	<u>349</u>				
P 8		<u>21</u>	<u>374</u>				
P 9		<u>24</u>	<u>390</u>				
P10		<u>27</u>	<u>396</u>				
P11							
P12							
P13							
P14							
P15							
P16							
P17							
P18							
P19							
P20							

TKT # 11516

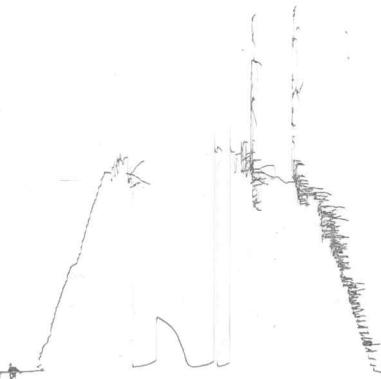
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Home Office: Wichita, Kansas 67201
P.O. Box 1599 (316) 262-5861

Company Graves Drilling Company, Inc. Lease & Well No. Norstrom #1
Elevation 1330 Kelly Bushing Formation Mississippi Effective Pay - Ft. Ticket No. 11517
Date 8/28/81 Sec. 32 Twp. 17S Range 1W County McPherson State Kansas
Test Approved by R. M. Lineham Western Representative Vernon Wondra
Formation Test No. 2 Interval Tested from 2666 ft. to 2686 ft. Total Depth 2686 ft.
Packer Depth 2661 ft. Size 6 5/8 in. Packer Depth - ft. Size - in.
Packer Depth 2666 ft. Size 6 5/8 in. Packer Depth - ft. Size - in.
Depth of Selective Zone Set -
Top Recorder Depth (Inside) 2676 ft. Recorder Number 6074 Cap. 5100
Bottom Recorder Depth (Outside) 2679 ft. Recorder Number 1562 Cap. 4450
Below Straddle Recorder Depth - ft. Recorder Number - Cap. -
Drilling Contractor Range Drlg. Co. Inc. Rig#1 Drill Collar Length 119 I. D. 2 1/4 in.
Mud Type chemical Viscosity 42 Weight Pipe Length - I. D. - in.
Weight 10.1 Water Loss 15.8 cc. Drill Pipe Length 2520 I. D. 3.8 in.
Chlorides 2,500 P.P.M. Test Tool Length 21 ft. Tool Size 5 1/2 OD in.
Jars: Make - Serial Number - 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: Fair blow throughout test.

Recovered 300 ft. of gas
Recovered 270 ft. of muddy water - trace of oil (Chlorides 42,000 ppm)
Recovered - ft. of -
Recovered - ft. of -
Recovered - ft. of -

Remarks: -

Time Set Packer(s) 9:55 ~~A.M.~~ P.M. Time Started Off Bottom 12:40 ~~A.M.~~ P.M. Maximum Temperature 101°
Initial Hydrostatic Pressure 1443 P.S.I.
Initial Flow Period 15 Minutes (B) 81 P.S.I. to (C) 87 P.S.I.
Initial Closed In Period 45 Minutes (D) 394 P.S.I.
Final Flow Period 60 Minutes (E) 123 P.S.I. to (F) 153 P.S.I.
Final Closed In Period 51 Minutes (G) 388 P.S.I.
Final Hydrostatic Pressure 1405 P.S.I. (H)

WESTERN TESTING CO., INC.

Pressure Data

11517

Date 8/28/81

Recorder No. 6074

5100

Test Ticket No. 2676

Capacity Location 2676 Ft.

Clock No. - Elevation 1330 Kelly Bushing Well Temperature 101 °F

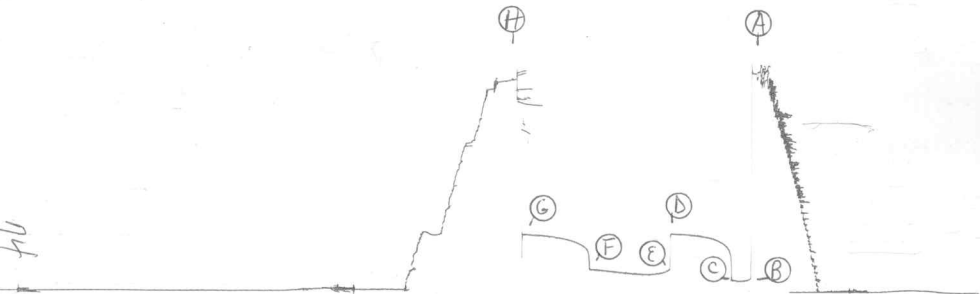
Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	1443 P.S.I.	9:55P	M
B First Initial Flow Pressure	81 P.S.I.	15 Mins.	15 Mins.
C First Final Flow Pressure	87 P.S.I.	45 Mins.	45 Mins.
D Initial Closed-in Pressure	394 P.S.I.	60 Mins.	60 Mins.
E Second Initial Flow Pressure	123 P.S.I.	45 Mins.	51 Mins.
F Second Final Flow Pressure	153 P.S.I.		
G Final Closed-in Pressure	388 P.S.I.		
H Final Hydrostatic Mud	1405 P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: 3 Inc.		Breakdown: 15 Inc.		Breakdown: 12 Inc.		Breakdown: 17 Inc.	
of 5 mins. and a		of 3 mins. and a		of 5 mins. and a		of 3 mins. and a	
final inc. of 0 Min.		final inc. of 0 Min.		final inc. of 0 Min.		final inc. of 0 Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	81	0	87	0	123	0	153
P 2 5	81	3	297	5	123	3	294
P 3 10	81	6	325	10	123	6	315
P 4 15	87	9	340	15	123	9	327
P 5		12	356	20	123	12	340
P 6		15	363	25	125	15	348
P 7		18	371	30	129	18	356
P 8		21	373	35	133	21	361
P 9		24	381	40	138	24	365
P10		27	384	45	143	27	371
P11		30	386	50	148	30	373
P12		33	388	55	153	33	378
P13		36	390	60	153	36	381
P14		39	392			39	383
P15		42	393			42	384
P16		45	394			45	385
P17						48	386
P18						51	388
P19							
P20							

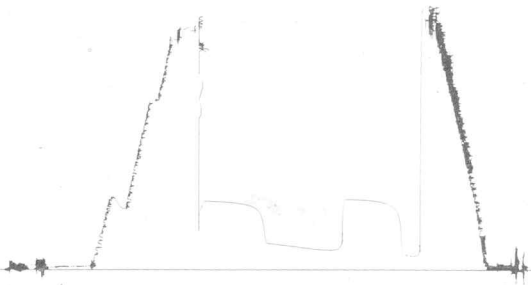
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