



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N Water Suite 300
Wichita, KS 67202+1216

ATTN: Robert Hendrix

Janet # 1-36

36-29S-41W Stanton,KS

Start Date: 2017.11.20 @ 11:06:00

End Date: 2017.11.20 @ 18:44:02

Job Ticket #: 62087 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.11.22 @ 14:09:07



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company
 250 N Water Suite 300
 Wichita, KS 67202+1216
 ATTN: Robert Hendrix

36-29S-41W Stanton,KS
Janet # 1-36
 Job Ticket: 62087 **DST#: 1**
 Test Start: 2017.11.20 @ 11:06:00

GENERAL INFORMATION:

Formation: **Morrow Sand**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:25:32
 Time Test Ended: 18:44:02
 Interval: **5109.00 ft (KB) To 5162.00 ft (KB) (TVD)**
 Total Depth: 5162.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 3362.00 ft (KB)
 3351.00 ft (CF)
 KB to GR/CF: 11.00 ft

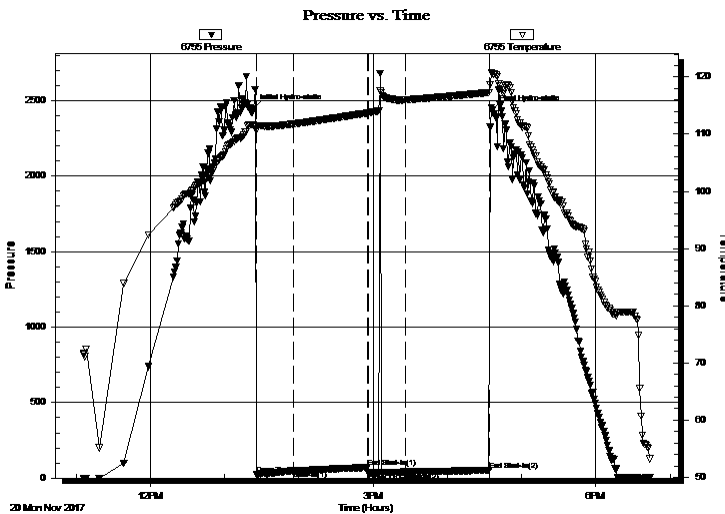
Serial #: 6755

Inside

Press@RunDepth: 41.00 psig @ 5158.42 ft (KB) Capacity: psig
 Start Date: 2017.11.20 End Date: 2017.11.20 Last Calib.: 2017.11.20
 Start Time: 11:06:01 End Time: 18:44:02 Time On Btm: 2017.11.20 @ 13:23:17
 Time Off Btm: 2017.11.20 @ 16:36:17

TEST COMMENT: IFP 30 Minutes Few bubbles at open then dead
 ISI 60 Minutes No blow back
 FFP 30 Minutes Dead no blow - Flushed tool no help
 FSI 60 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2446.00	111.56	Initial Hydro-static
3	22.78	110.66	Open To Flow (1)
32	48.70	111.78	Shut-In(1)
92	70.01	113.69	End Shut-In(1)
93	31.66	113.70	Open To Flow (2)
123	41.00	116.00	Shut-In(2)
191	52.15	117.30	End Shut-In(2)
193	2437.51	120.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	Mud 100%	0.22

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



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Murfin Drilling Company
 250 N Water Suite 300
 Wichita, KS 67202+1216
 ATTN: Robert Hendrix

36-29S-41W Stanton,KS
Janet # 1-36
 Job Ticket: 62087 **DST#: 1**
 Test Start: 2017.11.20 @ 11:06:00

GENERAL INFORMATION:

Formation: **Morrow Sand**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:25:32
 Time Test Ended: 18:44:02
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 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 3362.00 ft (KB)
 3351.00 ft (CF)
 KB to GR/CF: 11.00 ft

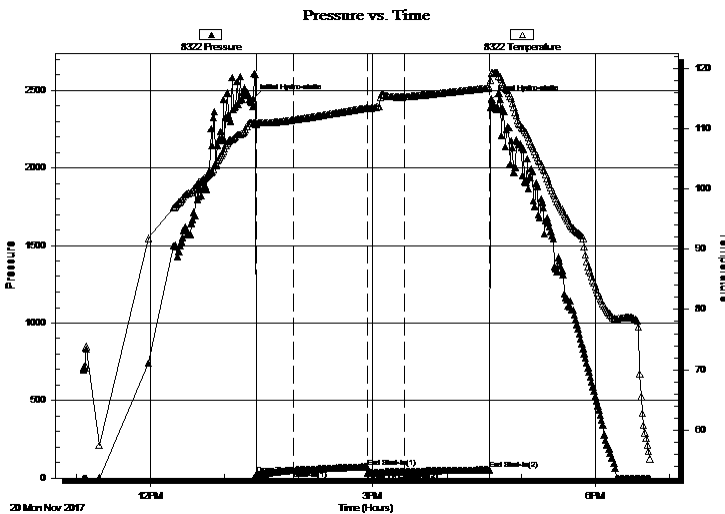
Serial #: 8322

Outside

Press@RunDepth: 54.62 psig @ 5159.42 ft (KB) Capacity: psig
 Start Date: 2017.11.20 End Date: 2017.11.20 Last Calib.: 2017.11.20
 Start Time: 11:06:01 End Time: 18:44:02 Time On Btm: 2017.11.20 @ 13:23:17
 Time Off Btm: 2017.11.20 @ 16:36:17

TEST COMMENT: IFP 30 Minutes Few bubbles at open then dead
 ISI 60 Minutes No blow back
 FFP 30 Minutes Dead no blow - Flushed tool no help
 FSI 60 Minutes No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2447.65	110.93	Initial Hydro-static
3	22.67	110.65	Open To Flow (1)
33	51.58	111.44	Shut-In(1)
92	73.10	113.39	End Shut-In(1)
93	32.96	113.38	Open To Flow (2)
123	42.93	115.28	Shut-In(2)
191	54.62	116.77	End Shut-In(2)
193	2439.47	119.26	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
45.00	Mud 100%	0.22

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company
250 N Water Suite 300
Wichita, KS 67202+1216
ATTN: Robert Hendrix

36-29S-41W Stanton,KS
Janet # 1-36
Job Ticket: 62087 **DST#: 1**
Test Start: 2017.11.20 @ 11:06:00

Tool Information

Drill Pipe:	Length: 4833.00 ft	Diameter: 3.80 inches	Volume: 67.79 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 273.00 ft	Diameter: 2.25 inches	Volume: 1.34 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 69.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	5109.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	53.42 ft			
Tool Length:	81.42 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			5086.00	
Hydraulic tool	5.00			5091.00	
Jars	6.00			5097.00	
Safety Joint	2.00			5099.00	
Packer - Shale	5.00			5104.00	
Packer	5.00			5109.00	28.00 Bottom Of Top Packer
Anchor	15.00			5124.00	
Change Over Sub	1.00			5125.00	
Drill Pipe	31.42			5156.42	
Change Over Sub	1.00			5157.42	
Recorder	1.00	6755	Inside	5158.42	
Recorder	1.00	8322	Outside	5159.42	
Bullnose	3.00			5162.42	53.42 Anchor Tool

Total Tool Length: 81.42



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company
250 N Water Suite 300
Wichita, KS 67202+1216
ATTN: Robert Hendrix

36-29S-41W Stanton,KS
Janet # 1-36
Job Ticket: 62087 **DST#: 1**
Test Start: 2017.11.20 @ 11:06:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 65.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2950.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

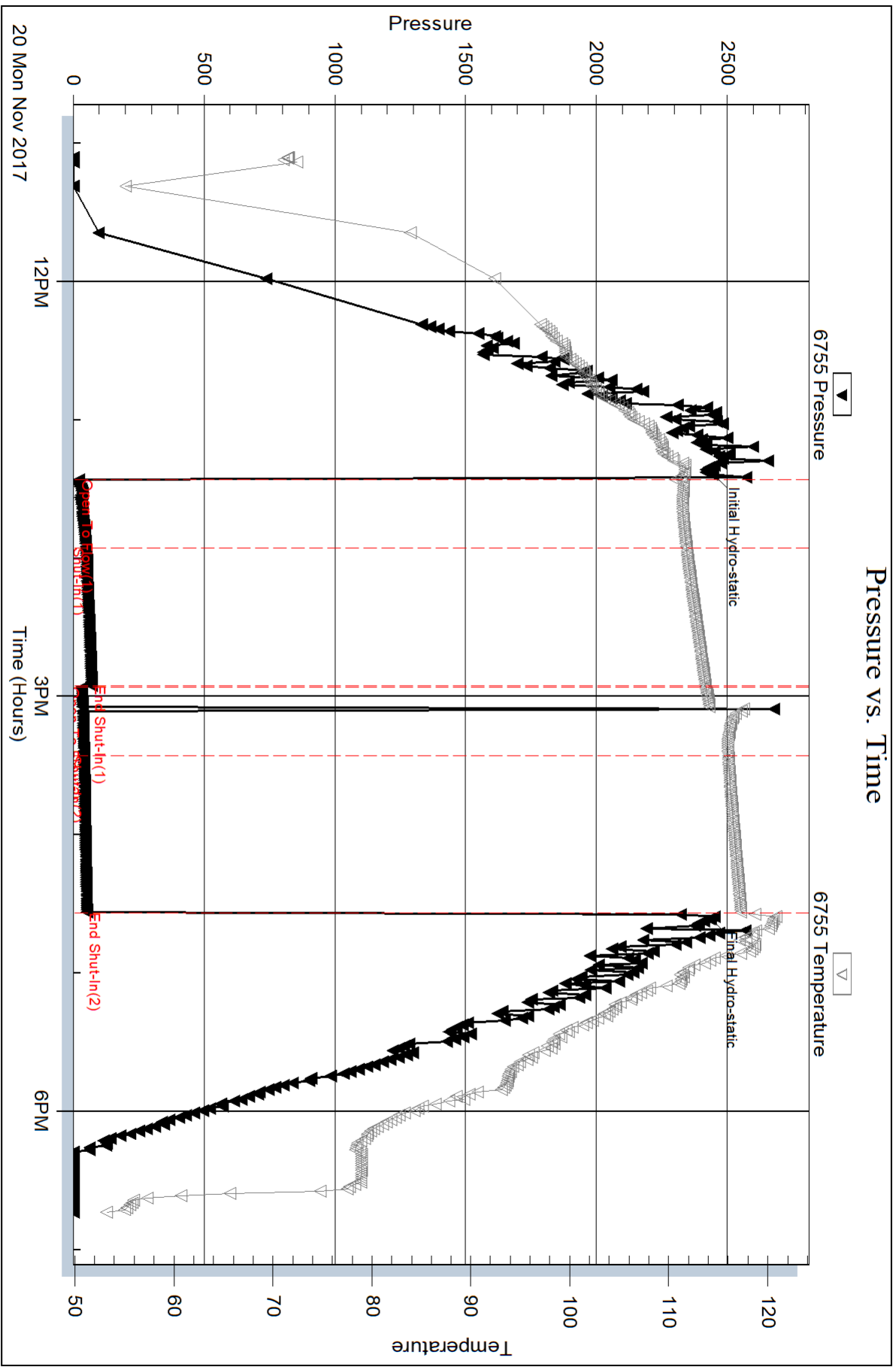
Length ft	Description	Volume bbl
45.00	Mud 100%	0.221

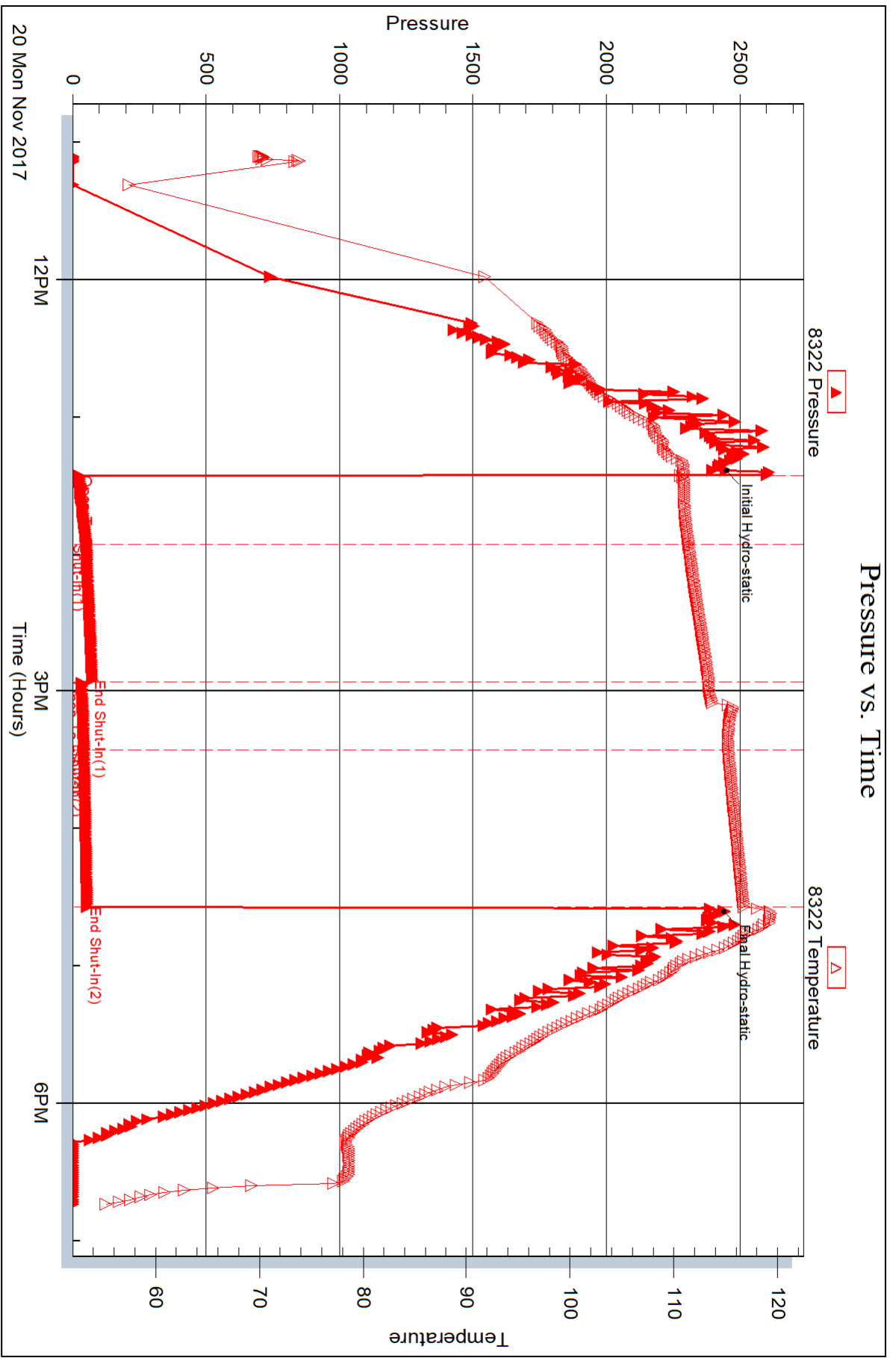
Total Length: 45.00 ft Total Volume: 0.221 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N Water Suite 300
Wichita, KS 67202+1216

ATTN: Robert Hendrix

Janet # 1-36

36-29S-41W Stanton,KS

Start Date: 2017.11.21 @ 17:16:00

End Date: 2017.11.22 @ 02:22:02

Job Ticket #: 62088 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.11.22 @ 14:08:23



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DRILL STEM TEST REPORT

Murfin Drilling Company
 250 N Water Suite 300
 Wichita, KS 67202+1216
 ATTN: Robert Hendrix

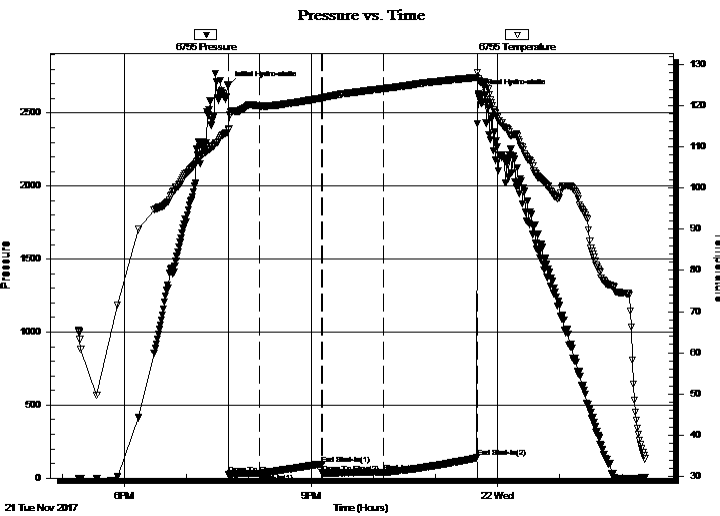
36-29S-41W Stanton,KS
Janet # 1-36
 Job Ticket: 62088 **DST#: 2**
 Test Start: 2017.11.21 @ 17:16:00

GENERAL INFORMATION:

Formation: **Keyes**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 19:40:47 Tester: Ken Swinney
 Time Test Ended: 02:22:02 Unit No: 72
 Interval: **5379.00 ft (KB) To 5521.00 ft (KB) (TVD)** Reference Elevations: 3362.00 ft (KB)
 Total Depth: 5521.00 ft (KB) (TVD) 3351.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

Serial #: 6755 Inside
 Press@RunDepth: 38.20 psig @ 5516.64 ft (KB) Capacity: psig
 Start Date: 2017.11.21 End Date: 2017.11.22 Last Calib.: 2017.11.22
 Start Time: 17:16:01 End Time: 02:22:02 Time On Btm: 2017.11.21 @ 19:40:17
 Time Off Btm: 2017.11.21 @ 23:41:17

TEST COMMENT: IFP 30 Minutes Blow at 1/4" at open/ Died in 5 minutes
 ISI 60 Minutes No blow back
 FFP 60 Minutes Surface blow died in 3 minutes
 FSI 90 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2691.48	114.03	Initial Hydro-static
1	26.28	114.40	Open To Flow (1)
31	32.39	119.92	Shut-In(1)
91	97.21	121.79	End Shut-In(1)
91	32.04	121.78	Open To Flow (2)
150	38.20	124.12	Shut-In(2)
240	139.55	126.84	End Shut-In(2)
241	2631.71	126.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Mud 100%	0.25

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



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Murfin Drilling Company
 250 N Water Suite 300
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 ATTN: Robert Hendrix

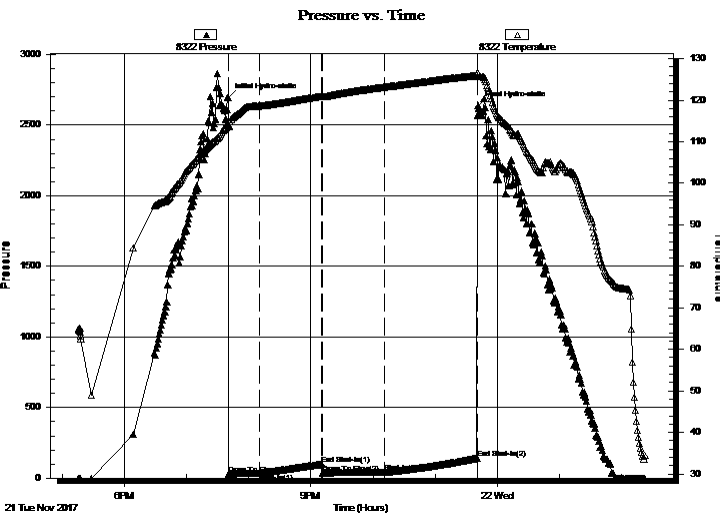
36-29S-41W Stanton,KS
Janet # 1-36
 Job Ticket: 62088 **DST#: 2**
 Test Start: 2017.11.21 @ 17:16:00

GENERAL INFORMATION:

Formation: **Keys**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 19:40:47
 Time Test Ended: 02:22:02
 Interval: **5379.00 ft (KB) To 5521.00 ft (KB) (TVD)**
 Total Depth: 5521.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 3362.00 ft (KB)
 3351.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 8322 Outside
 Press@RunDepth: 143.06 psig @ 5517.64 ft (KB) Capacity: psig
 Start Date: 2017.11.21 End Date: 2017.11.22 Last Calib.: 2017.11.22
 Start Time: 17:16:01 End Time: 02:22:02 Time On Btm: 2017.11.21 @ 19:40:32
 Time Off Btm: 2017.11.21 @ 23:41:17

TEST COMMENT: IFP 30 Minutes Blow at 1/4" at open/ Died in 5 minutes
 ISI 60 Minutes No blow back
 FFP 60 Minutes Surface blow died in 3 minutes
 FSI 90 Minutes No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2694.74	114.18	Initial Hydro-static
1	29.01	113.56	Open To Flow (1)
30	34.73	118.63	Shut-In(1)
90	100.25	120.98	End Shut-In(1)
91	35.15	120.97	Open To Flow (2)
151	40.86	123.19	Shut-In(2)
240	143.06	125.98	End Shut-In(2)
241	2636.33	126.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	Mud 100%	0.25

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company
250 N Water Suite 300
Wichita, KS 67202+1216
ATTN: Robert Hendrix

36-29S-41W Stanton,KS
Janet # 1-36
Job Ticket: 62088 **DST#: 2**
Test Start: 2017.11.21 @ 17:16:00

Tool Information

Drill Pipe:	Length: 5090.00 ft	Diameter: 3.80 inches	Volume: 71.40 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 273.00 ft	Diameter: 2.25 inches	Volume: 1.34 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 72.74 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	5379.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	141.64 ft			
Tool Length:	169.64 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			5356.00	
Hydraulic tool	5.00			5361.00	
Jars	6.00			5367.00	
Safety Joint	2.00			5369.00	
Packer - Shale	5.00			5374.00	
Packer	5.00			5379.00	28.00 Bottom Of Top Packer
Anchor	9.00			5388.00	
Change Over Sub	1.00			5389.00	
Drill Pipe	125.64			5514.64	
Change Over Sub	1.00			5515.64	
Recorder	1.00	6755	Inside	5516.64	
Recorder	1.00	8322	Outside	5517.64	
Bullnose	3.00			5520.64	141.64 Anchor Tool

Total Tool Length: 169.64



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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company
250 N Water Suite 300
Wichita, KS 67202+1216
ATTN: Robert Hendrix

36-29S-41W Stanton,KS
Janet # 1-36
Job Ticket: 62088 **DST#: 2**
Test Start: 2017.11.21 @ 17:16:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 61.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.19 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1050.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	Mud 100%	0.246

Total Length: 50.00 ft Total Volume: 0.246 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:

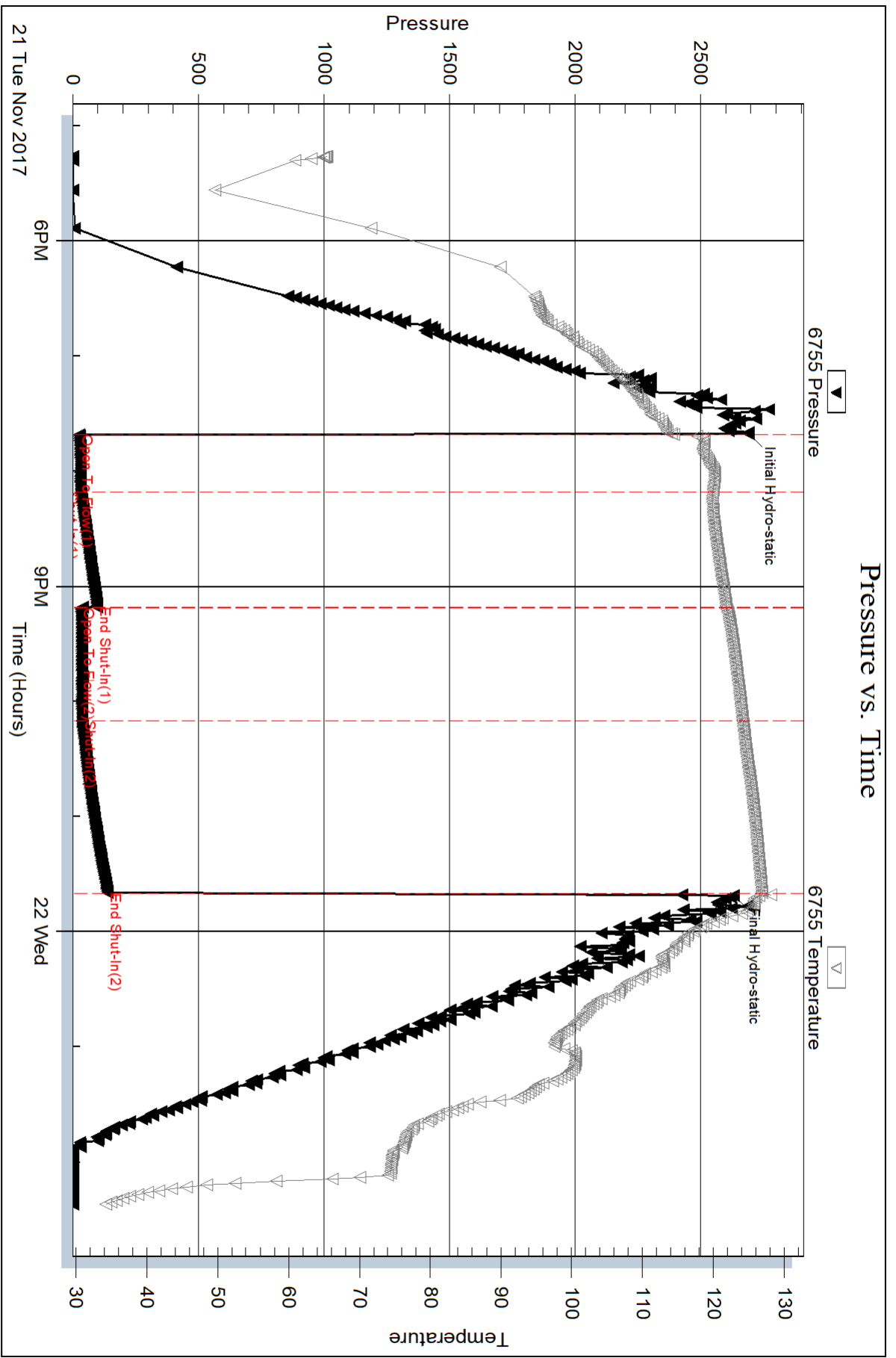
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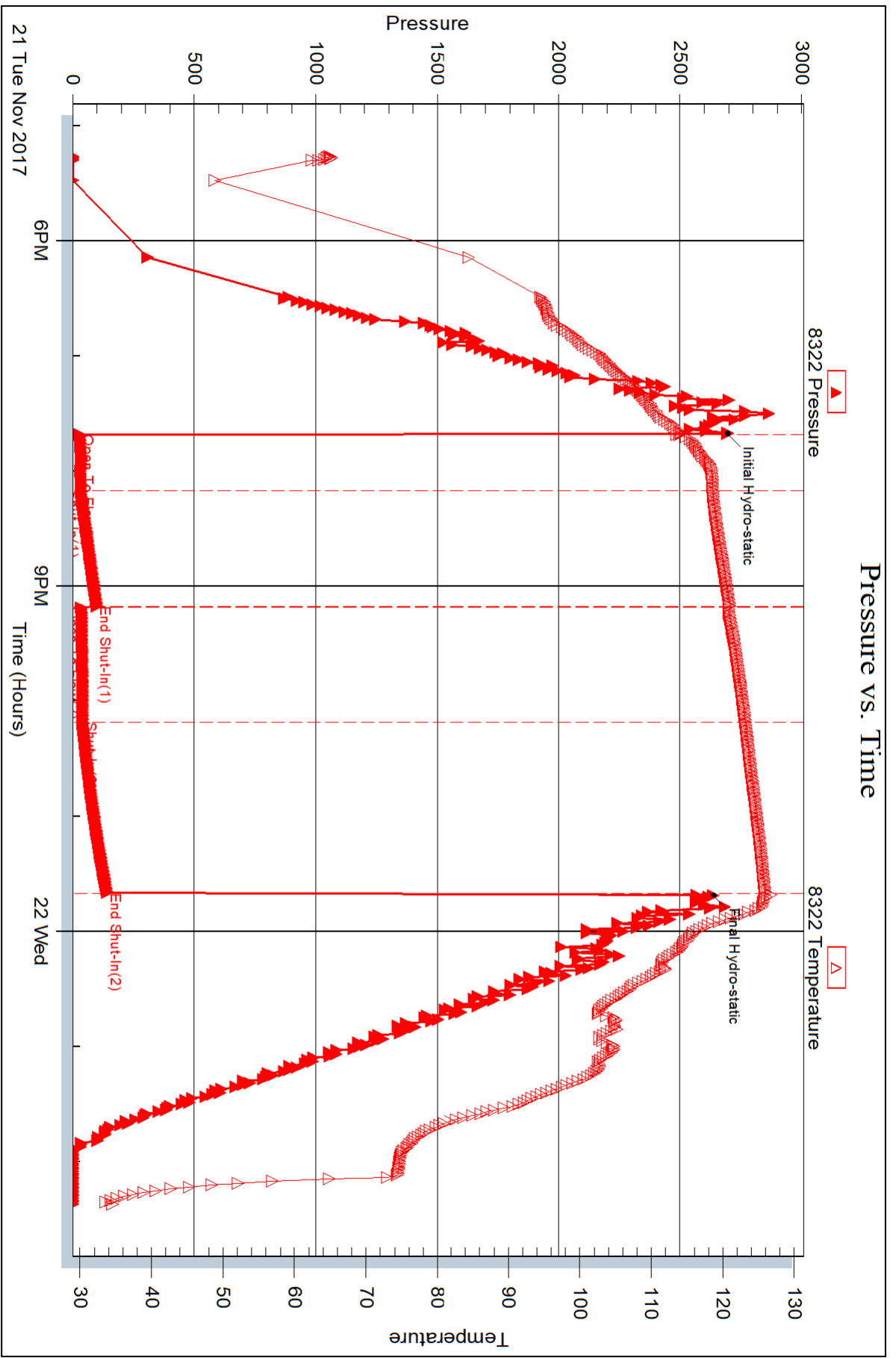
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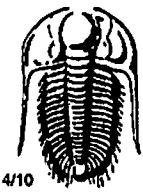
Murfin Drilling Company

Janet # 1-36

DST Test Number: 2







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62087

Well Name & No. Janet #1-36 Test No. 1 Date 20 NOV 17
 Company Murfin Drilling Co. Elevation 3362 KB 3351 GL
 Address 250 N Water Suite 300 Wichita Kansas 67202+0216
 Co. Rep / Geo. Robert Hendrix Rig Murfin Rig 21
 Location: Sec. 36 Twp. 29 S Rge. 41 W Co. Stanton State KS

Interval Tested 5109-5162 Zone Tested Morrow Sand
 Anchor Length 53 Drill Pipe Run 4933 Mud Wt. 9.1
 Top Packer Depth 5109 Drill Collars Run 273 Vis 65
 Bottom Packer Depth 5109 Wt. Pipe Run — WL 7.6
 Total Depth 5162 Chlorides 2950 ppm System LCM 107

Blow Description I.F. Few bubbles at open then dead
F.S.I. No blow back
F.F. Dead no blow/ Flush tool no help

F.S.I. No blow back

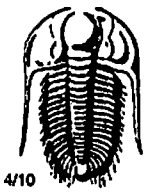
Rec	Feet of	%gas	%oil	%water	%mud
<u>45</u>	<u>Mud</u>				<u>100</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 45 BHT 117 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2446</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>9:15 am</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>11:06 am</u>
(C) First Final Flow <u>48</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>1:25 pm</u>
(D) Initial Shut-In <u>70</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>4:25 pm</u>
(E) Second Initial Flow <u>31</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>6:45 pm</u>
(F) Second Final Flow <u>41</u>	<input checked="" type="checkbox"/> Mileage <u>236</u> 96rt 72	Comments _____
(G) Final Shut-In <u>52</u>	<input type="checkbox"/> Sampler	_____
(H) Final Hydrostatic <u>2437</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer 250	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1897</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1897</u>	

Approved By [Signature] Our Representative [Signature]

TriLOBite Testing Inc. shall not be liable for damaged of any kind of 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, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62088

Well Name & No. Janet #1-36 Test No. 2 Date 21 NOV 17
 Company Murfin Drilling Co Elevation 3362 KB 3351 GL
 Address 250 N Water Suite 300 Wichita Kansas 67202+1216
 Co. Rep / Geo. Robert Hendrix Rig Murfin Rig 21
 Location: Sec. 36 Twp. 29S Rge. 41W Co. Stanton State KS

Interval Tested 5379-5520 Zone Tested Keyes
 Anchor Length 142 Drill Pipe Run 5090 Mud Wt. 9.35
 Top Packer Depth 5374 Drill Collars Run 273 Vis 61
 Bottom Packer Depth 5379 Wt. Pipe Run - WL 7.2
 Total Depth 5520 Chlorides 1050 ppm System LCM 107

Blow Description I.F. Blow at 1/4 inch at open / Died in 5 minutes
F.S.I No blow back
F.F. Surface blow died in 3 minutes
F.S.I No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 50 BHT 126 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2691</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>3:21 pm</u>
(B) First Initial Flow <u>26</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>5:16 pm</u>
(C) First Final Flow <u>32</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>7:41 pm</u>
(D) Initial Shut-In <u>97</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>11:41 pm</u>
(E) Second Initial Flow <u>32</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>2:22 am</u>
(F) Second Final Flow <u>38</u>	<input checked="" type="checkbox"/> Mileage <u>236</u> 144	Comments _____
(G) Final Shut-In <u>139</u>	<input type="checkbox"/> Sampler _____	loaded 11/22 12:10
(H) Final Hydrostatic <u>2631</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1969

Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1969
 MP/DST Disc't _____

Approved By [Signature]

Our Representative [Signature]

TriLOBite Testing Inc. shall not be liable for damaged of any kind of the property or personal 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, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.