



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N. Water STE 300
Wichita KS 67202

ATTN: Wes Hansen

Zodrow #1-26

26-6s-29w Sheridan KS

Start Date: 2013.10.03 @ 18:10:00

End Date: 2013.10.04 @ 02:00:20

Job Ticket #: 55130 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.10.08 @ 11:27:36



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company
 250 N. Water STE 300
 Wichita KS 67202
 ATTN: Wes Hansen

26-6s-29w Sheridan KS

Zodrow #1-26

Job Ticket: 55130

DST#: 1

Test Start: 2013.10.03 @ 18:10:00

GENERAL INFORMATION:

Formation: **LKC " D "**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:11:20
 Time Test Ended: 02:00:20
 Interval: **3936.00 ft (KB) To 3950.00 ft (KB) (TVD)**
 Total Depth: 3950.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ryan Nichols
 Unit No: 41
 Reference Elevations: 2753.00 ft (KB)
 2742.00 ft (CF)
 KB to GR/CF: 11.00 ft

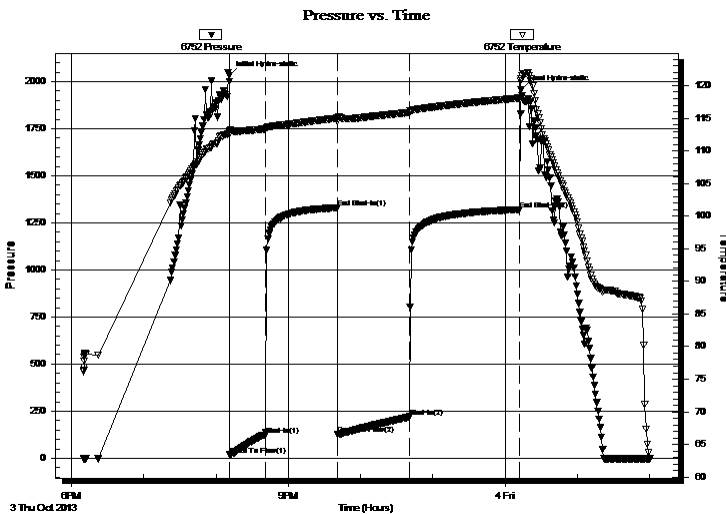
Serial #: 6752

Inside

Press @ Run Depth: 220.02 psig @ 3937.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.10.03 End Date: 2013.10.04 Last Calib.: 2013.10.04
 Start Time: 18:10:01 End Time: 02:00:20 Time On Btm: 2013.10.03 @ 20:11:10
 Time Off Btm: 2013.10.04 @ 00:13:09

TEST COMMENT: 30 IF - Surface blow built to BoB @ 25 mins
 60 ISI - No return
 60 FF - Surface blow started @ 3 mins built to BoB @ 29 mins
 90 FSI - No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2030.19	113.05	Initial Hydro-static
1	18.10	112.72	Open To Flow (1)
30	123.65	113.34	Shut-In(1)
90	1330.30	115.02	End Shut-In(1)
90	126.62	114.51	Open To Flow (2)
150	220.02	115.88	Shut-In(2)
241	1320.25	118.10	End Shut-In(2)
242	1956.20	121.02	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
424.00	MCW - 5%M - 95%W	3.69
50.00	MCW w/oil spots - 5%M - 95%W	0.70

Gas Rates

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



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DRILL STEM TEST REPORT

Murfin Drilling Company

250 N. Water STE 300
Wichita KS 67202

ATTN: Wes Hansen

26-6s-29w Sheridan KS

Zodrow #1-26

Job Ticket: 55130

DST#: 1

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Deviated: No Whipstock: ft (KB)

Time Tool Opened: 20:11:20

Time Test Ended: 02:00:20

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 41

Interval: 3936.00 ft (KB) To 3950.00 ft (KB) (TVD)

Reference Elevations: 2753.00 ft (KB)

Total Depth: 3950.00 ft (KB) (TVD)

2742.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8322 Outside

Press @ Run Depth: psig @ 3937.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.10.03

End Date:

2013.10.04

Last Calib.:

2013.10.04

Start Time: 18:10:01

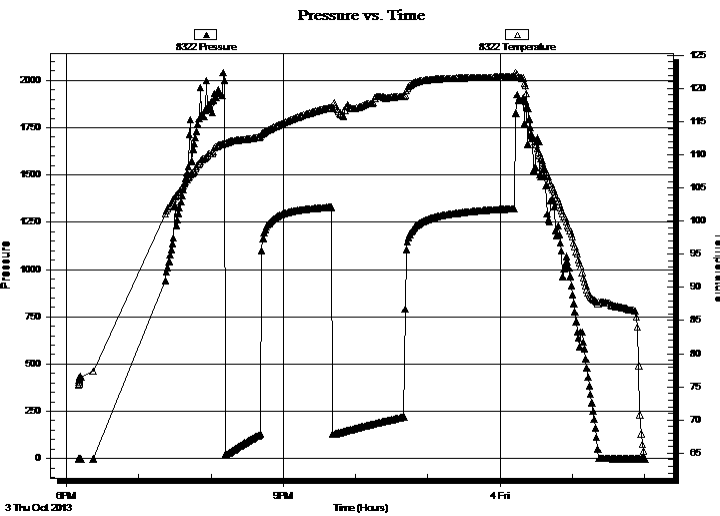
End Time:

02:00:20

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 IF - Surface blow built to BoB @ 25 mins
60 ISI - No return
60 FF - Surface blow started @ 3 mins built to BoB @ 29 mins
90 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
424.00	MCW - 5%M - 95%W	3.69
50.00	MCW w/oil spots - 5%M - 95%W	0.70

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company

26-6s-29w Sheridan KS

250 N. Water STE 300
Wichita KS 67202

Zodrow #1-26

Job Ticket: 55130

DST#: 1

ATTN: Wes Hansen

Test Start: 2013.10.03 @ 18:10:00

Tool Information

Drill Pipe:	Length: 3679.00 ft	Diameter: 3.80 inches	Volume: 51.61 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 248.00 ft	Diameter: 2.25 inches	Volume: 1.22 bbl	Weight to Pull Loose:	68000.00 lb
			<u>Total Volume: 52.83 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial	62000.00 lb
Depth to Top Packer:	3936.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	14.00 ft				
Tool Length:	41.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3910.00	
Shut In Tool	5.00			3915.00	
Hydraulic tool	5.00			3920.00	
Jars	5.00			3925.00	
Safety Joint	2.00			3927.00	
Packer	5.00			3932.00	27.00 Bottom Of Top Packer
Packer	4.00			3936.00	
Stubb	1.00			3937.00	
Recorder	0.00	6752	Inside	3937.00	
Recorder	0.00	8322	Outside	3937.00	
Perforations	10.00			3947.00	
Bullnose	3.00			3950.00	14.00 Bottom Packers & Anchor

Total Tool Length: 41.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

26-6s-29w Sheridan KS

250 N. Water STE 300
Wichita KS 67202

Zodrow #1-26

Job Ticket: 55130

DST#: 1

ATTN: Wes Hansen

Test Start: 2013.10.03 @ 18:10:00

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:

7500 ppm

Viscosity: 74.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
424.00	MCW - 5%M - 95%W	3.688
50.00	MCW w/oil spots - 5%M - 95%W	0.701

Total Length: 474.00 ft Total Volume: 4.389 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

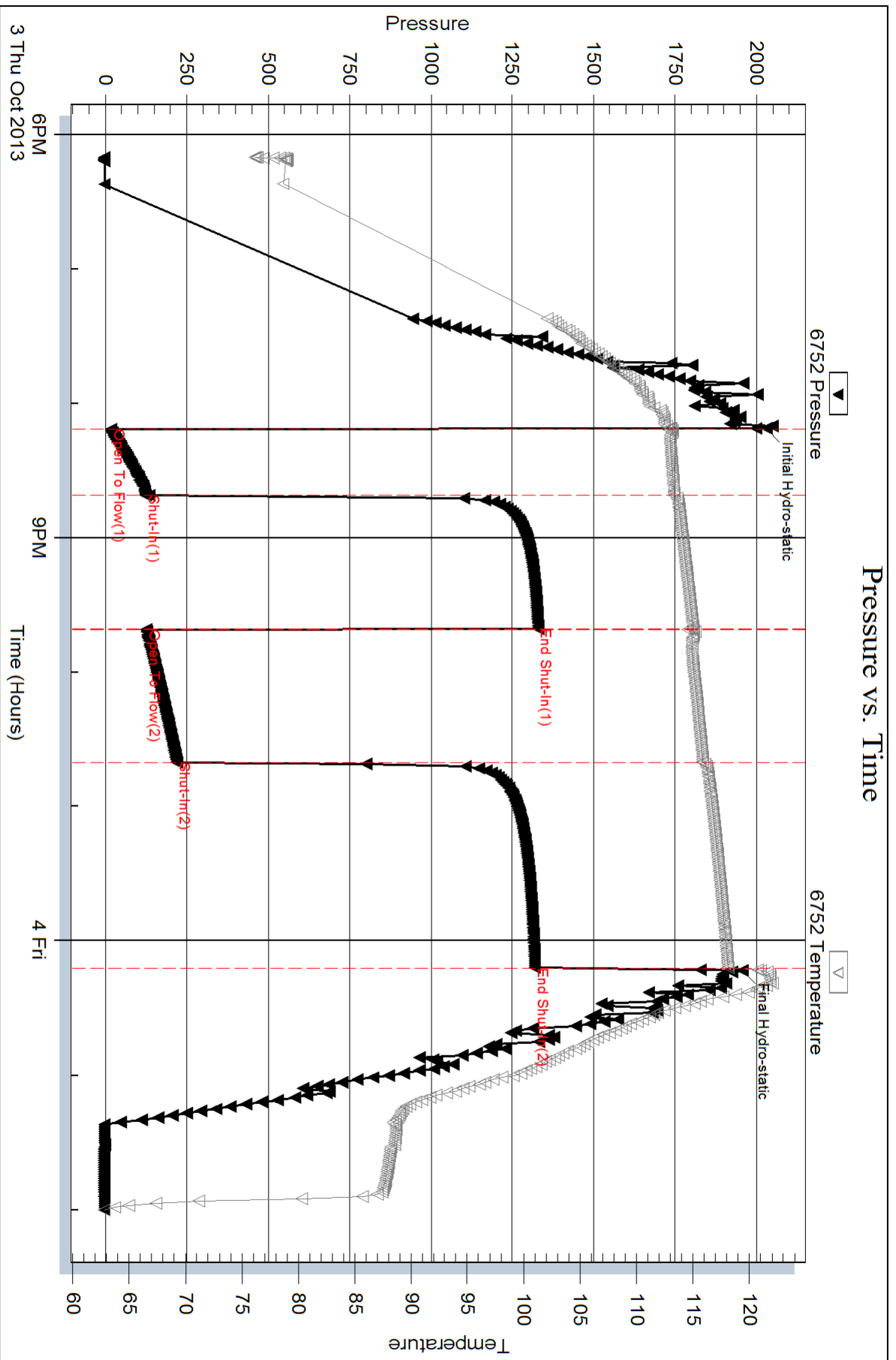
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = 9.55 @ 61 DEG F

Pressure vs. Time

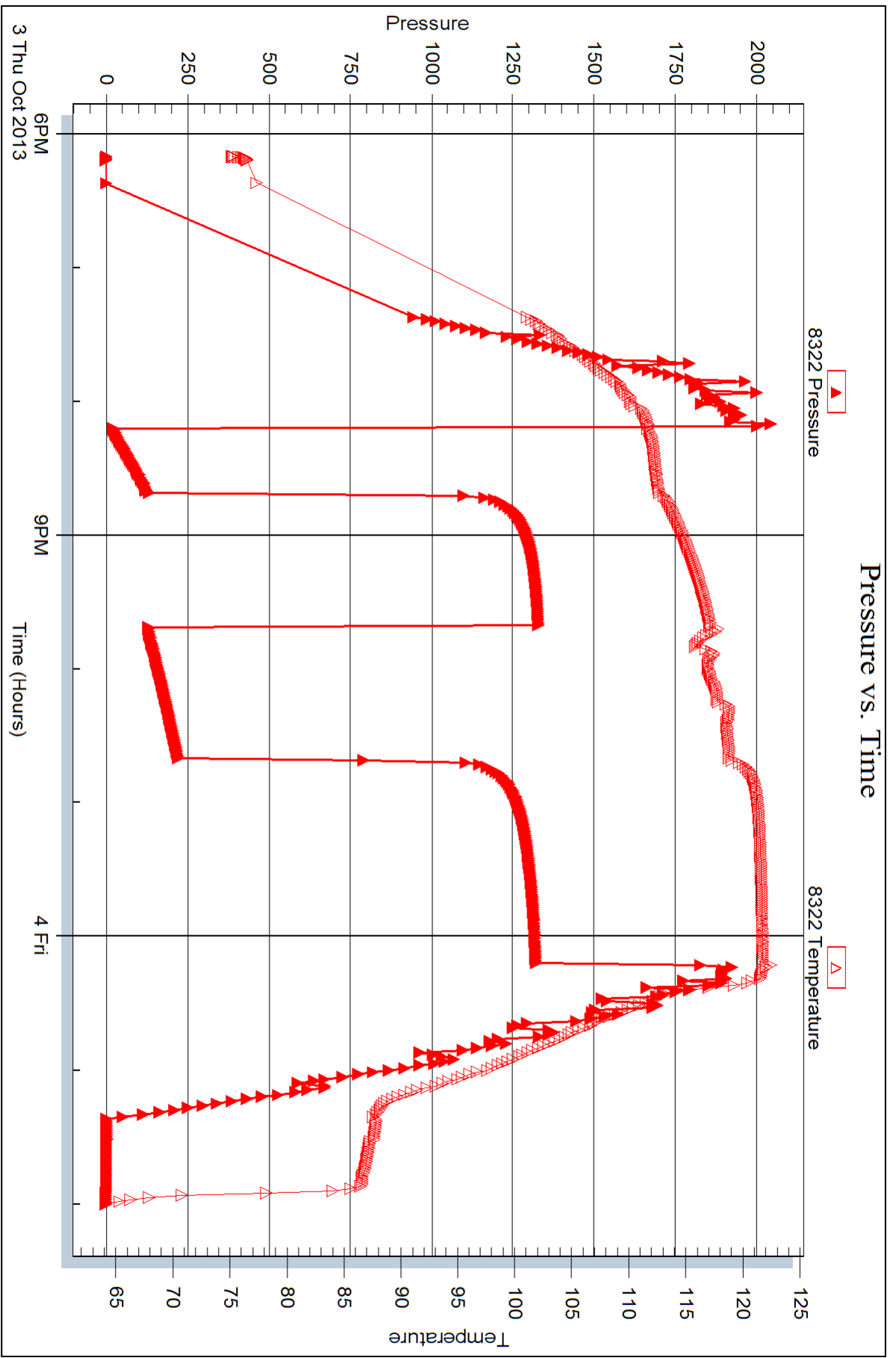


Serial #: 8322

Outside Murfin Drilling Company

Zodrow #1-26

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 55130

Printed: 2013.10.08 @ 11:27:38



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N. Water STE 300
Wichita KS 67202

ATTN: Wes Hansen

Zodrow #1-26

26-6s-29w Sheridan KS

Start Date: 2013.10.04 @ 17:10:00

End Date: 2013.10.05 @ 00:45:20

Job Ticket #: 55131 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.10.08 @ 11:26:57



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Company

26-6s-29w Sheridan KS

250 N. Water STE 300
Wichita KS 67202

Zodrow #1-26

Job Ticket: 55131

DST#: 2

ATTN: Wes Hansen

Test Start: 2013.10.04 @ 17:10:00

GENERAL INFORMATION:

Formation: **LKC " J "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:46:10

Time Test Ended: 00:45:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 41

Interval: 4026.00 ft (KB) To 4060.00 ft (KB) (TVD)

Reference Elevations: 2753.00 ft (KB)

Total Depth: 4060.00 ft (KB) (TVD)

2742.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6752 Inside

Press @ Run Depth: 28.36 psig @ 4027.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.10.04

End Date:

2013.10.05

Last Calib.: 2013.10.05

Start Time: 17:10:01

End Time:

00:45:20

Time On Btm: 2013.10.04 @ 19:45:40

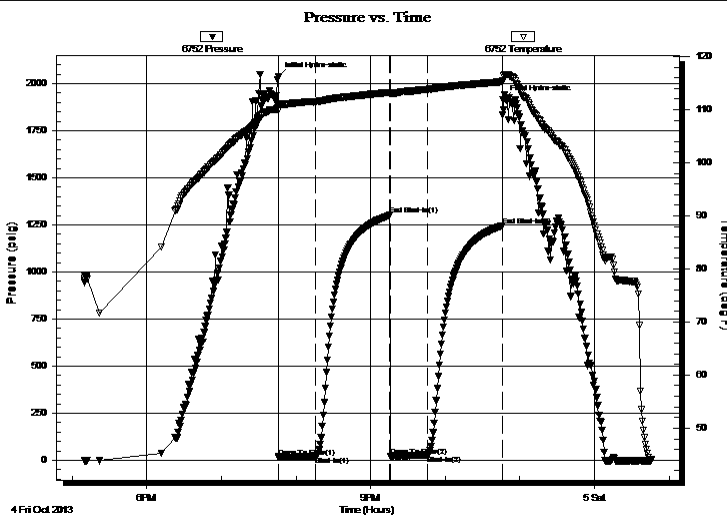
Time Off Btm: 2013.10.04 @ 22:46:20

TEST COMMENT: 30 IF - Surface blow built to 1/2"

60 ISI - No return

30 FF - No blow

60 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2034.63	110.74	Initial Hydro-static
1	15.66	110.82	Open To Flow (1)
31	20.32	111.44	Shut-In(1)
90	1300.87	113.24	End Shut-In(1)
91	21.60	113.00	Open To Flow (2)
121	28.36	113.81	Shut-In(2)
180	1245.70	115.23	End Shut-In(2)
181	1911.93	115.34	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/oil spots	0.02

Gas Rates

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

* Recovery from multiple tests



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DRILL STEM TEST REPORT

Murfin Drilling Company

26-6s-29w Sheridan KS

250 N. Water STE 300
Wichita KS 67202

Zodrow #1-26

Job Ticket: 55131

DST#: 2

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GENERAL INFORMATION:

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Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:46:10

Time Test Ended: 00:45:20

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 41

Interval: 4026.00 ft (KB) To 4060.00 ft (KB) (TVD)

Total Depth: 4060.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2753.00 ft (KB)

2742.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8322 Outside

Press @ Run Depth: psig @ 4027.00 ft (KB)

Start Date: 2013.10.04

End Date:

2013.10.05

Start Time: 17:10:01

End Time:

00:45:20

Capacity: 8000.00 psig

Last Calib.:

2013.10.05

Time On Btm:

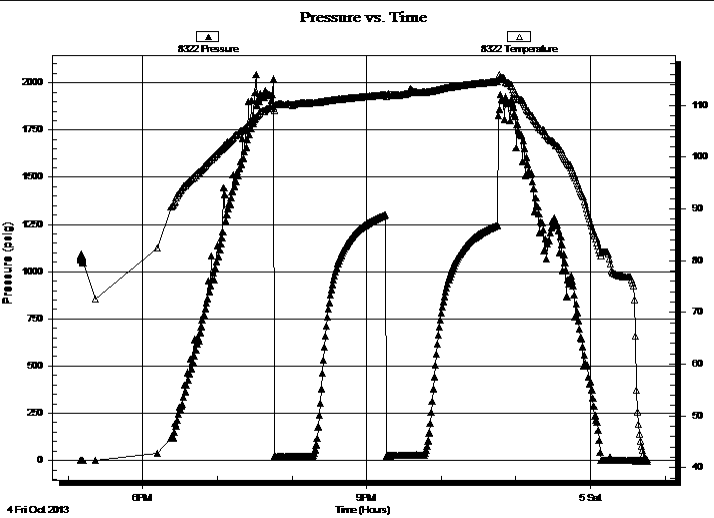
Time Off Btm:

TEST COMMENT: 30 IF - Surface blow built to 1/2"

60 ISI - No return

30 FF - No blow

60 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud w/oil spots	0.02

Gas Rates

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

* Recovery from multiple tests



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company

26-6s-29w Sheridan KS

250 N. Water STE 300
Wichita KS 67202

Zodrow #1-26

Job Ticket: 55131

DST#: 2

ATTN: Wes Hansen

Test Start: 2013.10.04 @ 17:10:00

Tool Information

Drill Pipe:	Length: 3771.00 ft	Diameter: 3.80 inches	Volume: 52.90 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 248.00 ft	Diameter: 2.25 inches	Volume: 1.22 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 54.12 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4026.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	61.00 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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Change Over Sub	1.00			4000.00	
Shut In Tool	5.00			4005.00	
Hydraulic tool	5.00			4010.00	
Jars	5.00			4015.00	
Safety Joint	2.00			4017.00	
Packer	5.00			4022.00	27.00 Bottom Of Top Packer
Packer	4.00			4026.00	
Stubb	1.00			4027.00	
Recorder	0.00	6752	Inside	4027.00	
Recorder	0.00	8322	Outside	4027.00	
Perforations	30.00			4057.00	
Bullnose	3.00			4060.00	34.00 Bottom Packers & Anchor

Total Tool Length: 61.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

26-6s-29w Sheridan KS

250 N. Water STE 300
Wichita KS 67202

Zodrow #1-26

Job Ticket: 55131

DST#: 2

ATTN: Wes Hansen

Test Start: 2013.10.04 @ 17:10:00

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: 66.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud w /oil spots	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

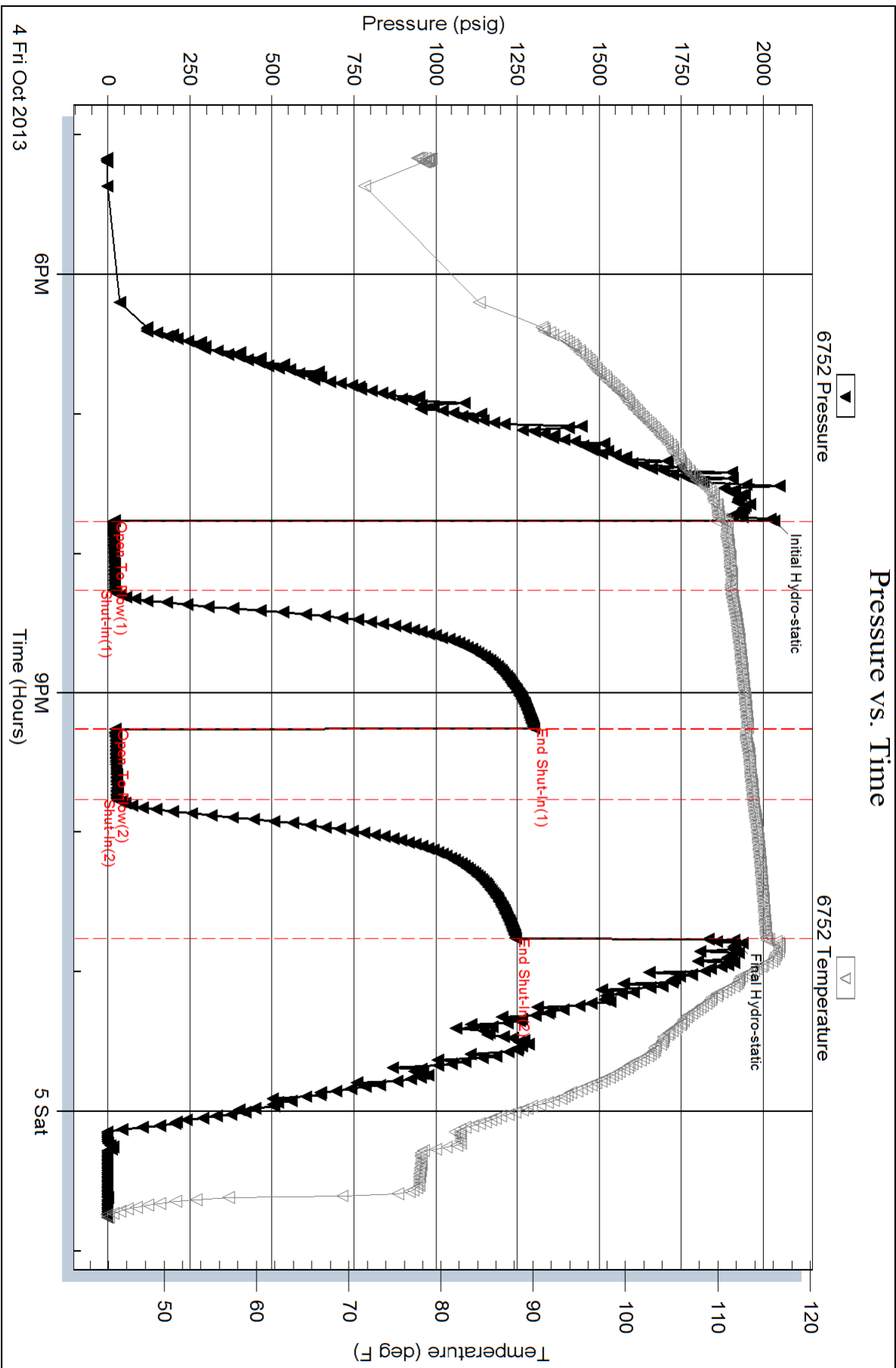
Serial #: 6752

Inside

Murfin Drilling Company

Zodrow #1-26

DST Test Number: 2

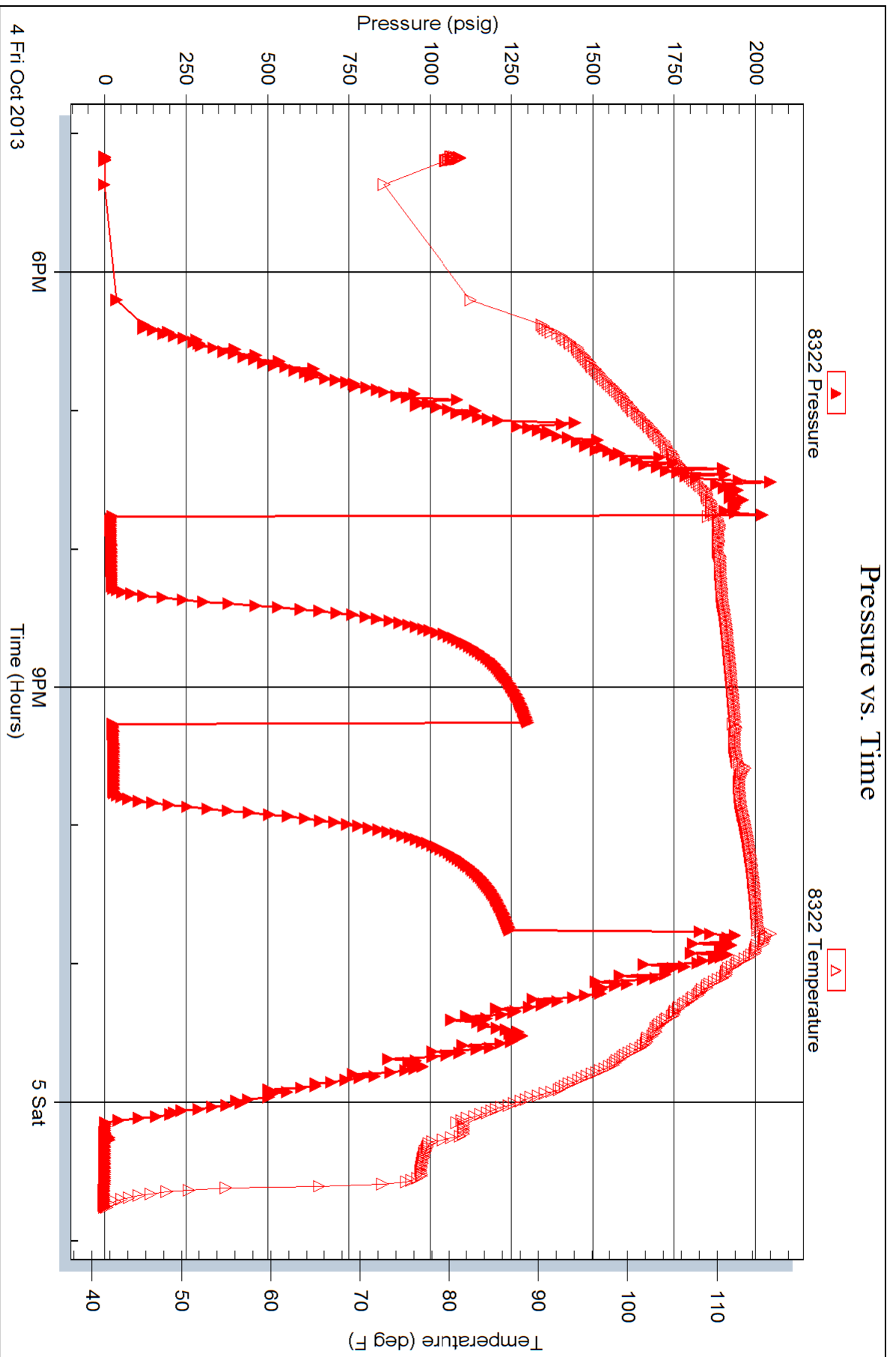


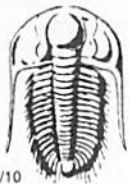
Serial #: 8322

Outside Murfin Drilling Company

Zodrow #1-26

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **55130**

Well Name & No. Zodrow # 1-26 Test No. 1 Date 1/3/13
 Company Murfin Drilling Company Elevation 2753 KB ~~2742~~ GL
 Address 250 N. Water STE 300 Wichita, KS 67202
 Co. Rep / Geo. Wes Hansen Rig Murfin # 2
 Location: Sec. 26 Twp. 6S Rge. 29W Co. Sheridan State KS

Interval Tested 3936' - 3950 Zone Tested LKC 11D"
 Anchor Length 14' Drill Pipe Run 3674' Mud Wt. 9.1
 Top Packer Depth 3931 Drill Collars Run 234' Vis 74
 Bottom Packer Depth 3936 Wt. Pipe Run 0' WL 5.6
 Total Depth 3950 Chlorides 1300 ppm System LCM 6
 Blow Description IF - Surface blow built to Bob @ 25 mins
ISI - No return
FF - Surface blow started @ 3 mins built to Bob @ 29 mins
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
50	MCW w/oil spots		95	5	
424	MCW		95	5	

Rec Total 474' BHT 118° Gravity — API RW 9.55 @ 61° F Chlorides 7500 ppm

(A) Initial Hydrostatic 2030 Test 1150 T-On Location 17:00
 (B) First Initial Flow 18 Jars 250 T-Started 18:10
 (C) First Final Flow 124 Safety Joint 75 T-Open 20:11
 (D) Initial Shut-In 1330 Circ Sub NC T-Pulled 00:11
 (E) Second Initial Flow 127 Hourly Standby NC T-Out 02:00
 (F) Second Final Flow 220 Mileage 48 RT 74.40
 (G) Final Shut-In 1320 Sampler _____
 (H) Final Hydrostatic 1956 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

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

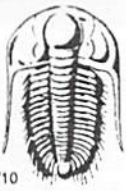
Sub Total 1549.40

Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1549.40
 MP/DST Disc't _____

Approved By _____

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. **55131**

Well Name & No. Zodrow #1-26 Test No. 2 Date 10/4/13
 Company Murfin Drilling Company Elevation 2753 KB 2742 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Wes Hansen Rig Murfin # 2
 Location: Sec. 26 Twp. 65 Rge. 29W Co. Sheridan State OKS

Interval Tested 4026 - 4060 Zone Tested LKC "J"
 Anchor Length 34' Drill Pipe Run 3771' Mud Wt. 9.0
 Top Packer Depth 4021 Drill Collars Run 235' Vis 66
 Bottom Packer Depth 4026 Wt. Pipe Run 0' WL 6.0
 Total Depth 4060 Chlorides 1300 ppm System LCM 6

Blow Description IF - Surface blow built to 1/2"
ISI - No return
FF - No blow
FST - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>Mud whirl spots</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 Total 5' BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2035 Test 1250 T-On Location 18:30
 (B) First Initial Flow 16 Jars 250 T-Started 17:10
 (C) First Final Flow 20 Safety Joint 75 T-Open 19:45
 (D) Initial Shut-In 1301 Circ Sub NC T-Pulled 22:45
 (E) Second Initial Flow 22 Hourly Standby _____ T-Out 00:45
 (F) Second Final Flow 28 Mileage 48 RT 148.80 Comments Loaded tools
 (G) Final Shut-In 1246 Sampler _____ 13:15 on 10/6/13
 (H) Final Hydrostatic 1912 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____

Initial Open 30 Extra Packer _____ Extra Copies _____
 Initial Shut-In 60 Extra Recorder _____ Sub Total 800
 Final Flow 30 Day Standby 1d 12.5h Total 2523.80
 Final Shut-In 60 Accessibility _____ MP/DST Disc't _____
 Sub Total 1723.80

Approved By _____ 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.