



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Paul Gunzelman

Beckman 'A' #1-16

16-7s-29w Sheridan,KS

Start Date: 2013.11.05 @ 15:00:00

End Date: 2013.11.05 @ 23:43:00

Job Ticket #: 55190 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.11.12 @ 08:17:45



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.

16-7s-29w Sheridan,KS

250 N Water STE #300
Wichita, KS 67202

Beckman 'A' #1-16

ATTN: Paul Gunzelman

Job Ticket: 55190

DST#: 1

Test Start: 2013.11.05 @ 15:00:00

GENERAL INFORMATION:

Formation: **LKC "E,F"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:26:30

Time Test Ended: 23:43:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4034.00 ft (KB) To 4058.00 ft (KB) (TVD)

Total Depth: 4058.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2876.00 ft (KB)

2871.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8874 Inside

Press @ Run Depth: 16.25 psig @ 4035.00 ft (KB)

Start Date: 2013.11.05

End Date: 2013.11.05

Start Time: 15:01:00

End Time: 23:43:00

Capacity: 8000.00 psig

Last Calib.: 2013.11.05

Time On Btm: 2013.11.05 @ 18:26:00

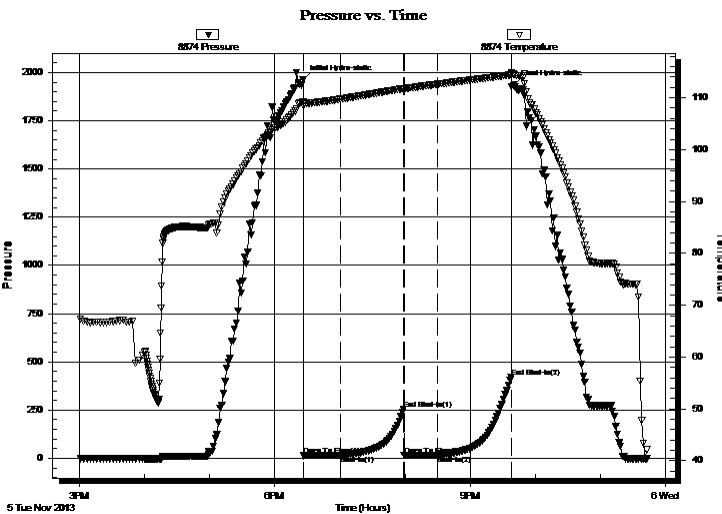
Time Off Btm: 2013.11.05 @ 21:40:30

TEST COMMENT: 30 - IF- 1/4" Blow built to 1/2"

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1964.26	109.16	Initial Hydro-static
1	13.37	108.40	Open To Flow (1)
34	15.67	109.72	Shut-In(1)
93	255.27	111.78	End Shut-In(1)
93	15.41	111.67	Open To Flow (2)
124	16.25	112.62	Shut-In(2)
192	420.80	114.41	End Shut-In(2)
195	1936.21	114.41	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM 100M (oil spots)	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.
250 N Water STE #300
Wichita, KS 67202
ATTN: Paul Gunzelman

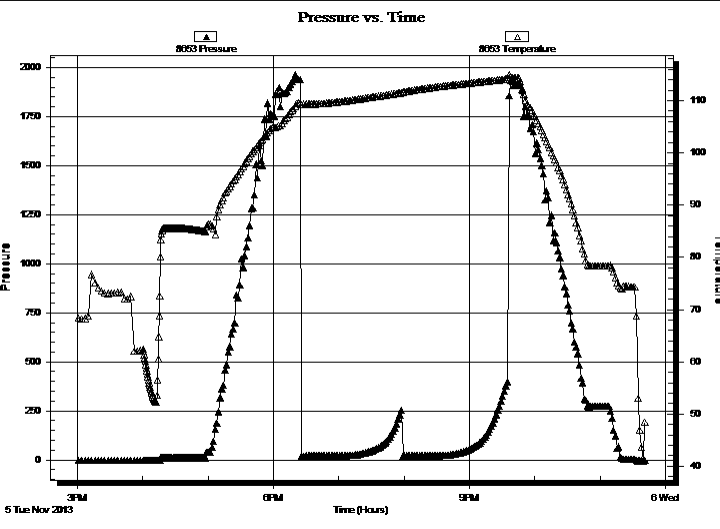
16-7s-29w Sheridan,KS
Beckman 'A' #1-16
Job Ticket: 55190 **DST#: 1**
Test Start: 2013.11.05 @ 15:00:00

GENERAL INFORMATION:

Formation: **LKC "E,F"**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 18:26:30 Tester: Kevin Mack
 Time Test Ended: 23:43:00 Unit No: 66
Interval: 4034.00 ft (KB) To 4058.00 ft (KB) (TVD) Reference Elevations: 2876.00 ft (KB)
 Total Depth: 4058.00 ft (KB) (TVD) 2871.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 5.00 ft

Serial #: 8653 Outside
 Press @ Run Depth: psig @ 4035.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.11.05 End Date: 2013.11.05 Last Calib.: 2013.11.05
 Start Time: 15:01:00 End Time: 23:41:00 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF- 1/4" Blow built to 1/2"
 60 - IS- No Return
 30 - FF- No Blow
 60 - FS- No Return



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

Recovery		
Length (ft)	Description	Volume (bbl)
5.00	OSM 100M (oil spots)	0.02

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

16-7s-29w Sheridan,KS

250 N Water STE #300
Wichita, KS 67202

Beckman 'A' #1-16

Job Ticket: 55190

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2013.11.05 @ 15:00:00

Tool Information

Drill Pipe:	Length: 3917.00 ft	Diameter: 3.80 inches	Volume: 54.95 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: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 55.55 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4034.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	52.00 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			4007.00	
Shut In Tool	5.00			4012.00	
Hydraulic tool	5.00			4017.00	
Jars	5.00			4022.00	
Safety Joint	3.00			4025.00	
Packer	5.00			4030.00	28.00 Bottom Of Top Packer
Packer	4.00			4034.00	
Stubb	1.00			4035.00	
Recorder	0.00	8653	Outside	4035.00	
Recorder	0.00	8874	Inside	4035.00	
Perforations	18.00			4053.00	
Bullnose	5.00			4058.00	24.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

16-7s-29w Sheridan,KS

250 N Water STE #300
Wichita, KS 67202

Beckman 'A' #1-16

Job Ticket: 55190

DST#: 1

ATTN: Paul Gunzelman

Test Start: 2013.11.05 @ 15:00:00

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:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	OSM 100M (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:

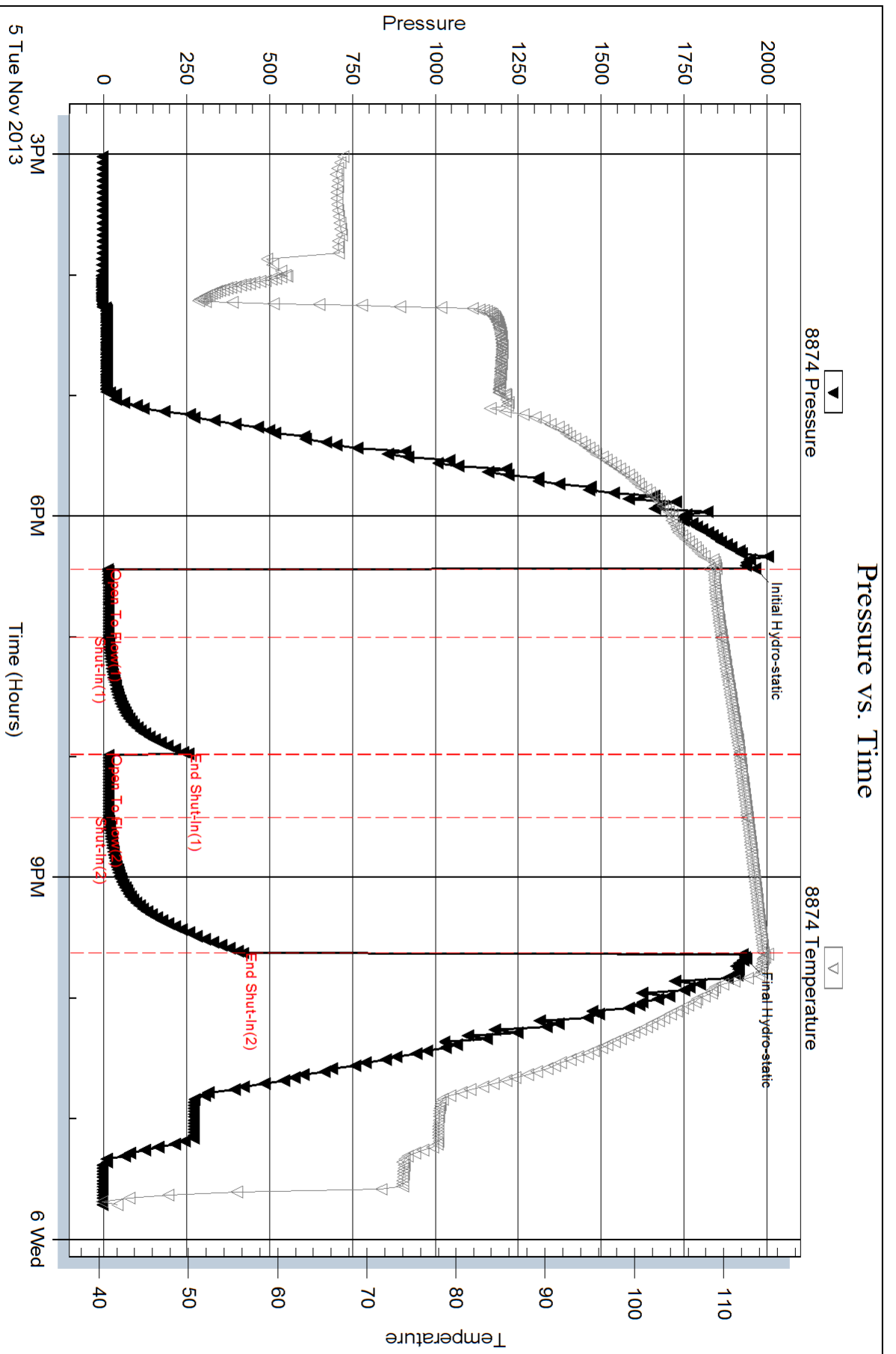
Serial #: 8874

Inside

Murfin Drilling Co.

Beckman 'A' #1-16

DST Test Number: 1

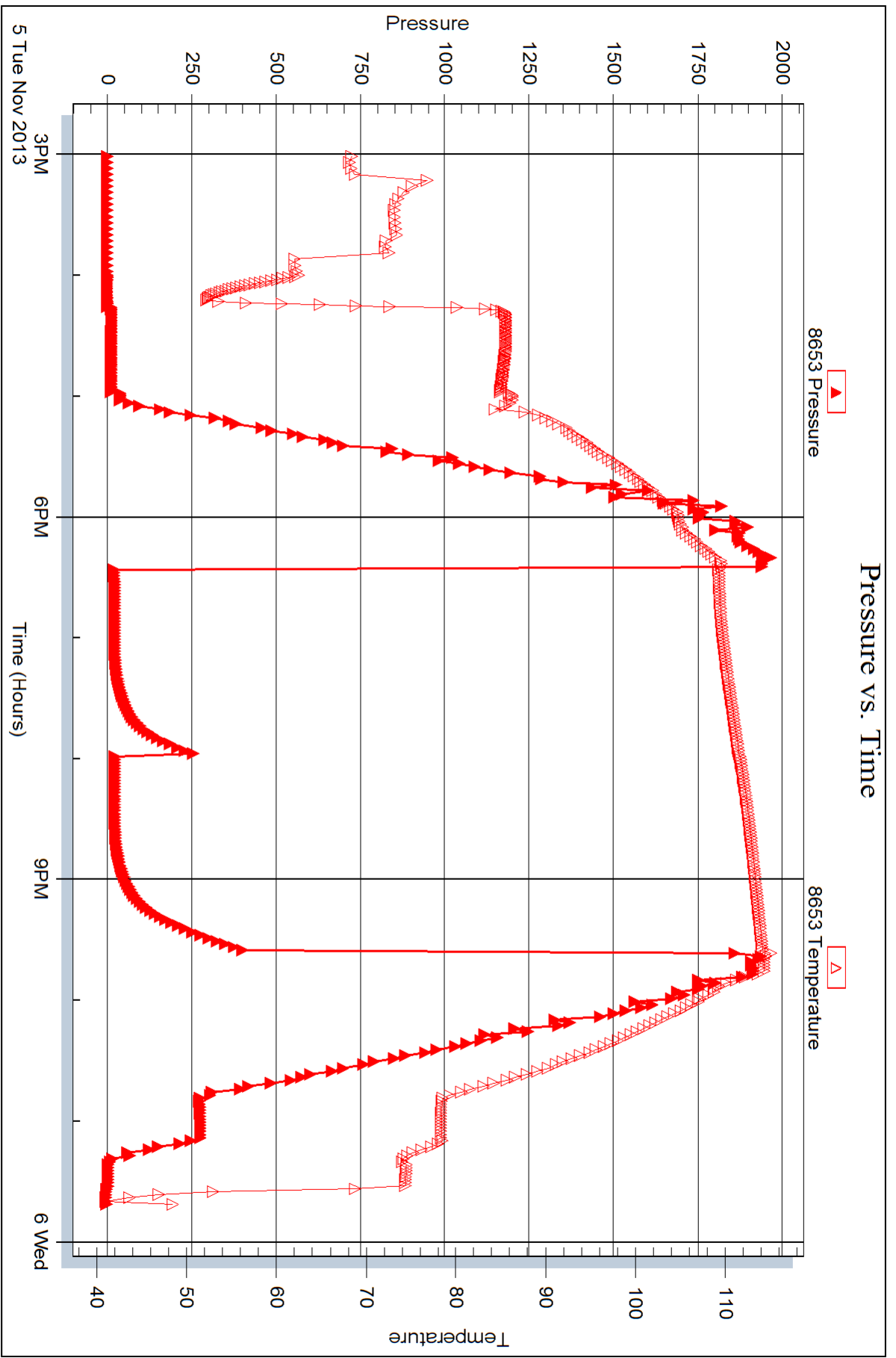


Serial #: 8653

Outside Murfin Drilling Co.

Beckman 'A' #1-16

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 55190

Printed: 2013.11.12 @ 08:17:47



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co.**

250 N Water STE #300
Wichita, KS 67202

ATTN: Paul Gunzelman

Beckman 'A' #1-16

16-7s-29w Sheridan,KS

Start Date: 2013.11.06 @ 13:47:00

End Date: 2013.11.06 @ 20:47:00

Job Ticket #: 55191 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.11.12 @ 08:17:06



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.

16-7s-29w Sheridan,KS

250 N Water STE #300
Wichita, KS 67202

Beckman 'A' #1-16

ATTN: Paul Gunzelman

Job Ticket: 55191

DST#: 2

Test Start: 2013.11.06 @ 13:47:00

GENERAL INFORMATION:

Formation: **LKC "I,J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:44:40

Time Test Ended: 20:47:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4112.00 ft (KB) To 4150.00 ft (KB) (TVD)

Reference Elevations: 2876.00 ft (KB)

Total Depth: 4150.00 ft (KB) (TVD)

2871.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8874 Inside

Press @ Run Depth: 16.86 psig @ 4113.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.11.06

End Date:

2013.11.06

Last Calib.:

2013.11.06

Start Time: 13:48:00

End Time:

20:47:00

Time On Btm:

2013.11.06 @ 15:44:30

Time Off Btm:

2013.11.06 @ 18:50:30

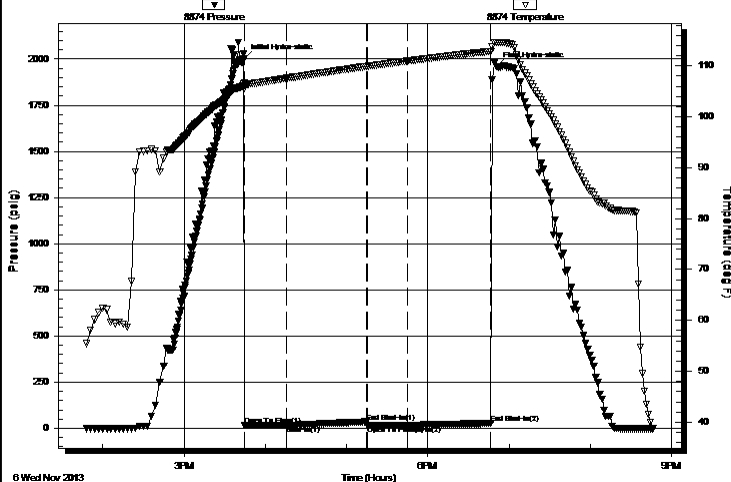
TEST COMMENT: 30 - IF- 1/8" Blow built to 1/4"

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2003.48	106.65	Initial Hydro-static
1	14.55	105.47	Open To Flow (1)
31	15.46	107.56	Shut-In(1)
90	34.79	109.89	End Shut-In(1)
91	16.27	109.90	Open To Flow (2)
121	16.86	110.97	Shut-In(2)
182	26.29	112.87	End Shut-In(2)
186	1957.93	114.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud 100M	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co.

16-7s-29w Sheridan,KS

250 N Water STE #300
Wichita, KS 67202

Beckman 'A' #1-16

Job Ticket: 55191

DST#: 2

ATTN: Paul Gunzelman

Test Start: 2013.11.06 @ 13:47:00

GENERAL INFORMATION:

Formation: **LKC "I,J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:44:40

Time Test Ended: 20:47:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Kevin Mack

Unit No: 66

Interval: 4112.00 ft (KB) To 4150.00 ft (KB) (TVD)

Reference Elevations: 2876.00 ft (KB)

Total Depth: 4150.00 ft (KB) (TVD)

2871.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8653 Outside

Press @ Run Depth: psig @ 4113.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.11.06

End Date:

2013.11.06

Last Calib.:

2013.11.06

Start Time: 13:48:00

End Time:

20:45:00

Time On Btm:

Time Off Btm:

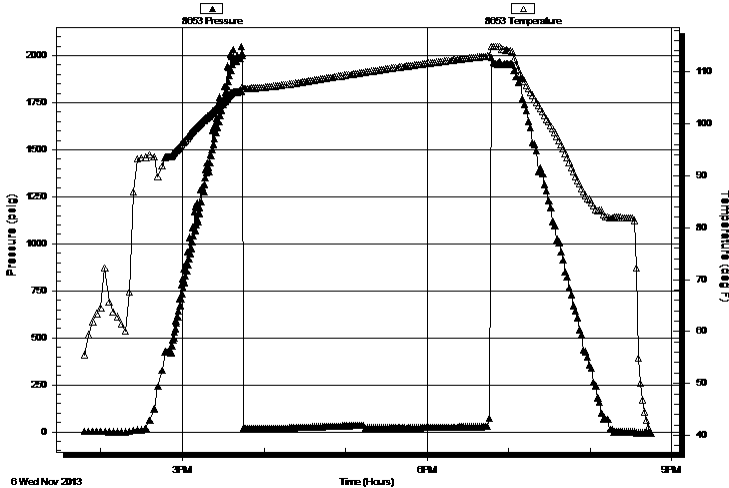
TEST COMMENT: 30 - IF- 1/8" Blow built to 1/4"

60 - IS- No Return

30 - FF- No Blow

60 - FS- No Return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud 100M	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co.

16-7s-29w Sheridan,KS

250 N Water STE #300
Wichita, KS 67202

Beckman 'A' #1-16

Job Ticket: 55191

DST#: 2

ATTN: Paul Gunzelman

Test Start: 2013.11.06 @ 13:47:00

Tool Information

Drill Pipe:	Length: 3978.00 ft	Diameter: 3.80 inches	Volume: 55.80 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: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 56.40 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	4112.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	38.00 ft			
Tool Length:	66.00 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			4085.00	
Shut In Tool	5.00			4090.00	
Hydraulic tool	5.00			4095.00	
Jars	5.00			4100.00	
Safety Joint	3.00			4103.00	
Packer	5.00			4108.00	28.00 Bottom Of Top Packer
Packer	4.00			4112.00	
Stubb	1.00			4113.00	
Recorder	0.00	8653	Outside	4113.00	
Recorder	0.00	8874	Inside	4113.00	
Perforations	1.00			4114.00	
Change Over Sub	1.00			4115.00	
Drill Pipe	31.00			4146.00	
Change Over Sub	1.00			4147.00	
Bullnose	3.00			4150.00	38.00 Bottom Packers & Anchor

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co.

16-7s-29w Sheridan,KS

250 N Water STE #300
Wichita, KS 67202

Beckman 'A' #1-16

Job Ticket: 55191

DST#: 2

ATTN: Paul Gunzelman

Test Start: 2013.11.06 @ 13:47:00

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud 100M	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

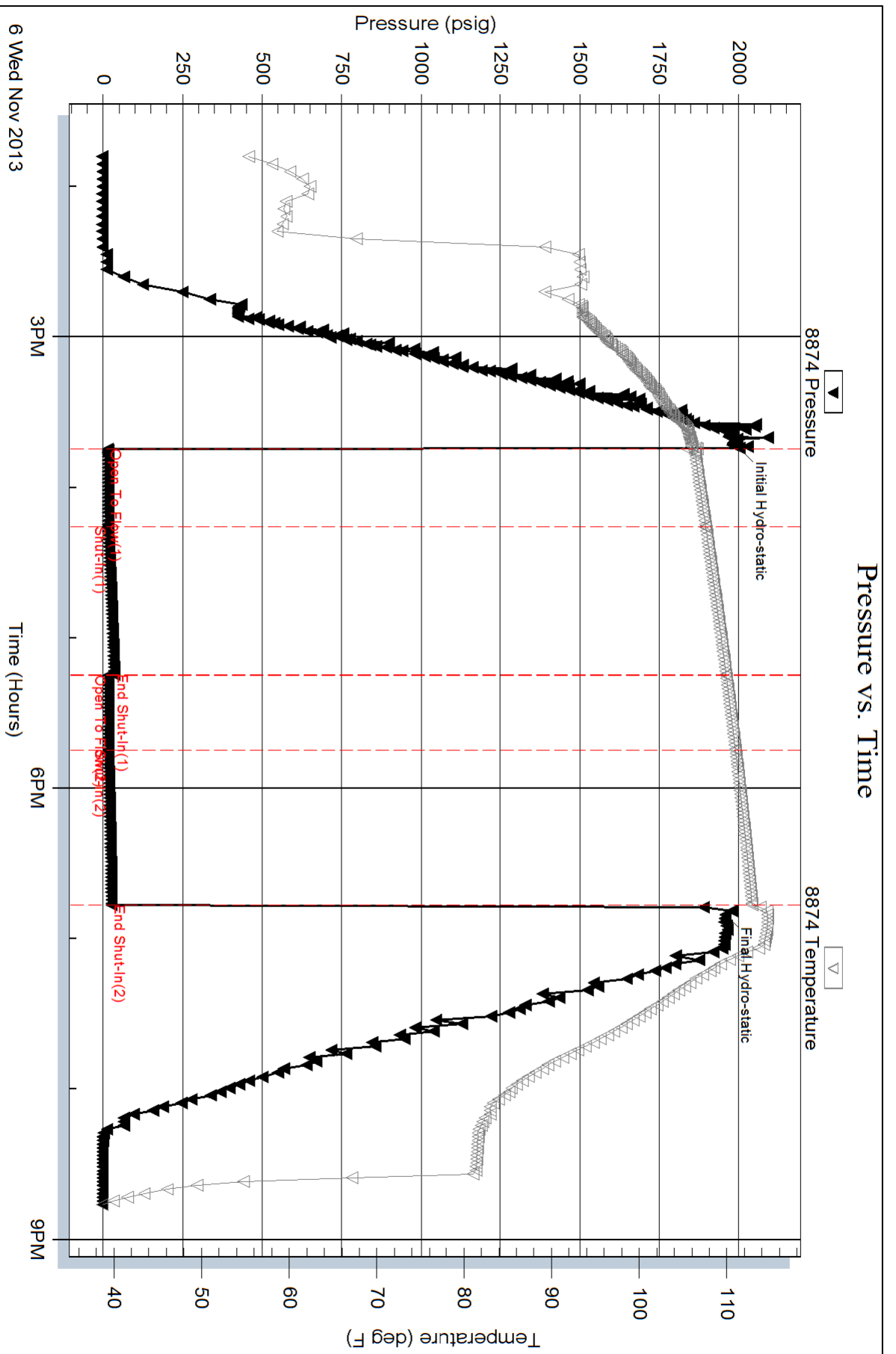
Serial #: 8874

Inside

Murfin Drilling Co.

Beckman 'A' #1-16

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 55191

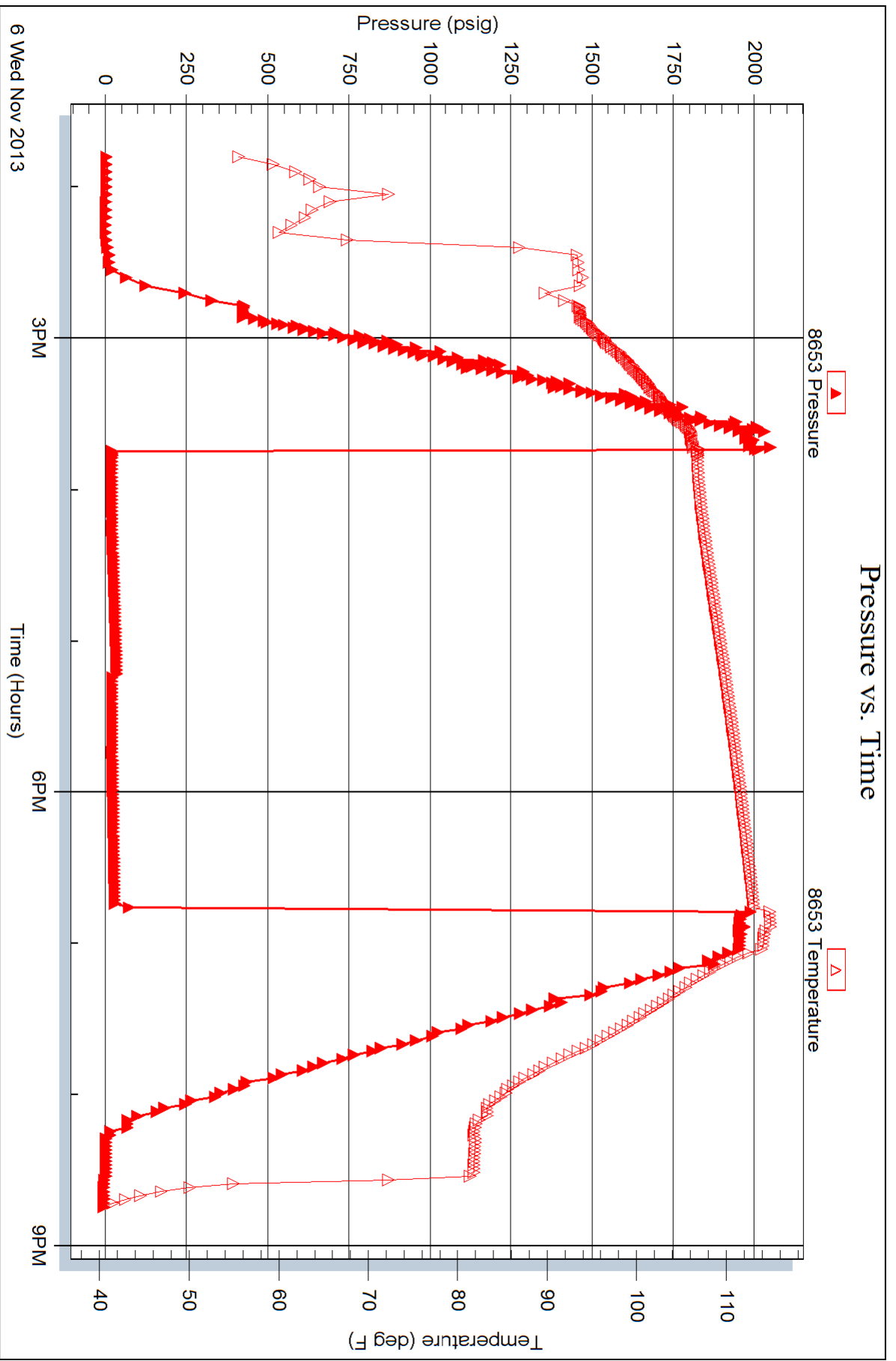
Printed: 2013.11.12 @ 08:17:08

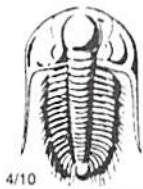
Serial #: 8653

Outside Murfin Drilling Co.

Beckman 'A' #1-16

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55190

Well Name & No. Beckman 'A' #1-16 Test No. 1 Date 11-5-13
 Company Murfin Drilling Co. Elevation 2876 KB 2871 GL
 Address 250 N Water STE # 3000 Wichita, KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Murfin #24
 Location: Sec. 16 Twp. 7S Rge. 29W Co. Sheridan State KS

Interval Tested 4034-4058 Zone Tested LKC "E-F"
 Anchor Length 24' Drill Pipe Run 3917 Mud Wt. 8.9
 Top Packer Depth 4030 Drill Collars Run 121' Vis 65
 Bottom Packer Depth 4034 Wt. Pipe Run 0 WL 6.0
 Total Depth 4058 Chlorides 1600 ppm System LCM 3#

Blow Description IF - 1/4" Blow built to 1/2"
ISI - No Return
FF - No Blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>OSM</u>	<u>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	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 114 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>1964</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>1:15 PM</u>
(B) First Initial Flow <u>13</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:00 PM</u>
(C) First Final Flow <u>15</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>6:30 PM</u>
(D) Initial Shut-In <u>255</u>	<input checked="" type="checkbox"/> Circ Sub <u>NIC</u>	T-Pulled <u>9:30 PM</u>
(E) Second Initial Flow <u>15</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>11:50 PM</u>
(F) Second Final Flow <u>16</u>	<input checked="" type="checkbox"/> Mileage <u>80RT</u> 124	Comments _____
(G) Final Shut-In <u>420</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>1936</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Extra Copies

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

Sub Total 1699 Total 1699 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. 55191

Well Name & No. Beckman 'A' #1-16 Test No. 2 Date 11-6-13
 Company Murfin Drilling Co. Elevation 2876 KB 2871 GL
 Address 250 N Water STE #300 Wichita, KS 67202
 Co. Rep / Geo. Paul Gunzelman Rig Murfin #24
 Location: Sec. 16 Twp. 7S Rge 29W Co. Sheridan State KS

Interval Tested 4112-4150 Zone Tested LKC "I, J"
 Anchor Length 38' Drill Pipe Run 3978' Mud Wt. 8.9
 Top Packer Depth 4108 Drill Collars Run 121' Vis 58
 Bottom Packer Depth 4112 Wt. Pipe Run 0 WL 6.0
 Total Depth 4150 Chlorides 1,500 ppm System LCM 2#

Blow Description IF-1/8" Blow built to
ISI-NO Return
FF-NO Blow
FSI-NO Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</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 2 BHT 113 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 20003 Test 1250 T-On Location 1:20 PM
 (B) First Initial Flow 14 Jars 250 T-Started 1:47 PM
 (C) First Final Flow 15 Safety Joint 75 T-Open 3:45 PM
 (D) Initial Shut-In 34 Circ Sub NIL T-Pulled 6:45 PM
 (E) Second Initial Flow 16 Hourly Standby T-Out 8:50 PM
 (F) Second Final Flow 16 Mileage 80RT 248 Comments
 (G) Final Shut-In 26 Sampler loaded tools 11/7 15:45
 (H) Final Hydrostatic 1957 Straddle Ruined Shale Packer
 Shale Packer Ruined Packer
 Extra Packer Extra Copies
 Extra Recorder Sub Total 0
 Day Standby Total 1823
 Accessibility MP/DST Disc't

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Sub Total 1823

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.