



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Verna Poore #1-7

7-1s-35w Rawlins,KS

Start Date: 2014.08.12 @ 14:13:15

End Date: 2014.08.12 @ 21:00:00

Job Ticket #: 59114 DST #: 1

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

Printed: 2014.08.19 @ 17:19:57



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 59114

DST#: 1

ATTN: Keith Reavis

Test Start: 2014.08.12 @ 14:13:15

GENERAL INFORMATION:

Formation: **Stutler**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:15:00

Time Test Ended: 21:00:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Mike Roberts

Unit No: 65

Interval: 3818.00 ft (KB) To 3940.00 ft (KB) (TVD)

Reference Elevations: 3215.00 ft (KB)

Total Depth: 3940.00 ft (KB) (TVD)

3210.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8846 Inside

Press@RunDepth: 78.96 psig @ 3822.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.08.12

End Date:

2014.08.12

Last Calib.: 2014.08.12

Start Time: 14:13:15

End Time:

21:00:00

Time On Btm: 2014.08.12 @ 16:14:30

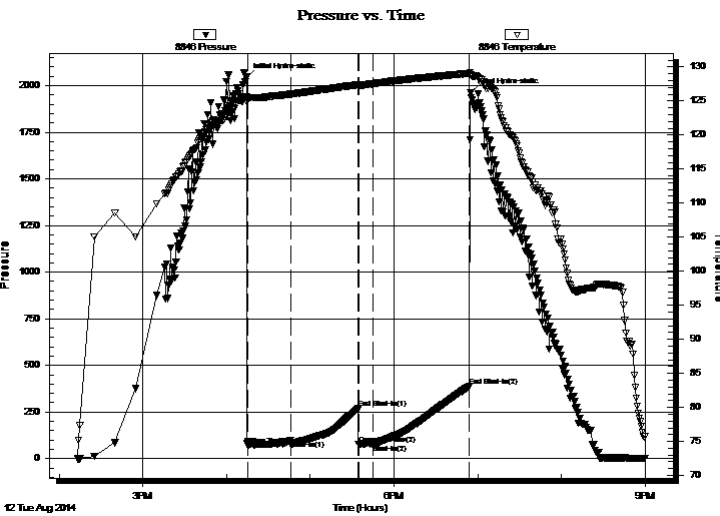
Time Off Btm: 2014.08.12 @ 18:55:00

TEST COMMENT: IF: Built to weak surface blow

IS: No return blow

FF: No blow

FS: No return blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2042.20	125.55	Initial Hydro-static
1	73.72	125.37	Open To Flow (1)
32	97.99	126.01	Shut-In(1)
80	269.41	127.39	End Shut-In(1)
80	77.52	127.33	Open To Flow (2)
91	78.96	127.54	Shut-In(2)
160	387.10	129.06	End Shut-In(2)
161	1962.65	128.90	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud 100% m	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

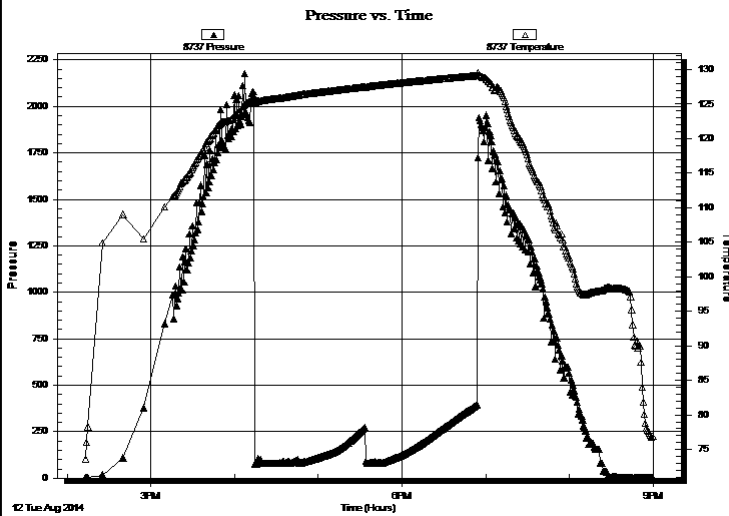
7-1s-35w Rawlins,KS
Verna Poore #1-7
Job Ticket: 59114 **DST#: 1**
Test Start: 2014.08.12 @ 14:13:15

GENERAL INFORMATION:

Formation: **Stutler**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:15:00
Time Test Ended: 21:00:00
Interval: **3818.00 ft (KB) To 3940.00 ft (KB) (TVD)**
Total Depth: 3940.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Mike Roberts
Unit No: 65
Reference Elevations: 3215.00 ft (KB)
3210.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8737 Outside
Press@RunDepth: psig @ 3822.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.08.12 End Date: 2014.08.12 Last Calib.: 2014.08.12
Start Time: 14:13:15 End Time: 21:00:00 Time On Btm:
Time Off Btm:

TEST COMMENT: IF:Built to weak surface blow
IS:No return blow
FF:No blow
FS:No return blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
2.00	mud 100% m	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 59114

DST#: 1

ATTN: Keith Reavis

Test Start: 2014.08.12 @ 14:13:15

Tool Information

Drill Pipe:	Length: 3790.00 ft	Diameter: 3.80 inches	Volume: 53.16 bbl	Tool Weight:	1500.00 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: 122.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 53.76 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	122.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	3818.00 ft			Final	64000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	122.00 ft				
Tool Length:	150.00 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			3791.00	
Shut In Tool	5.00			3796.00	
Hydraulic tool	5.00			3801.00	
Jars	5.00			3806.00	
Safety Joint	3.00			3809.00	
Packer	5.00			3814.00	28.00 Bottom Of Top Packer
Packer	4.00			3818.00	
Stubb	1.00			3819.00	
Perforations	3.00			3822.00	
Recorder	0.00	8846	Inside	3822.00	
Recorder	0.00	8737	Outside	3822.00	
Change Over Sub	1.00			3823.00	
Blank Spacing	96.00			3919.00	
Change Over Sub	1.00			3920.00	
Perforations	15.00			3935.00	
Bullnose	5.00			3940.00	122.00 Bottom Packers & Anchor
Total Tool Length:	150.00				



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 59114

DST#: 1

ATTN: Keith Reavis

Test Start: 2014.08.12 @ 14:13:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	mud 100% m	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:

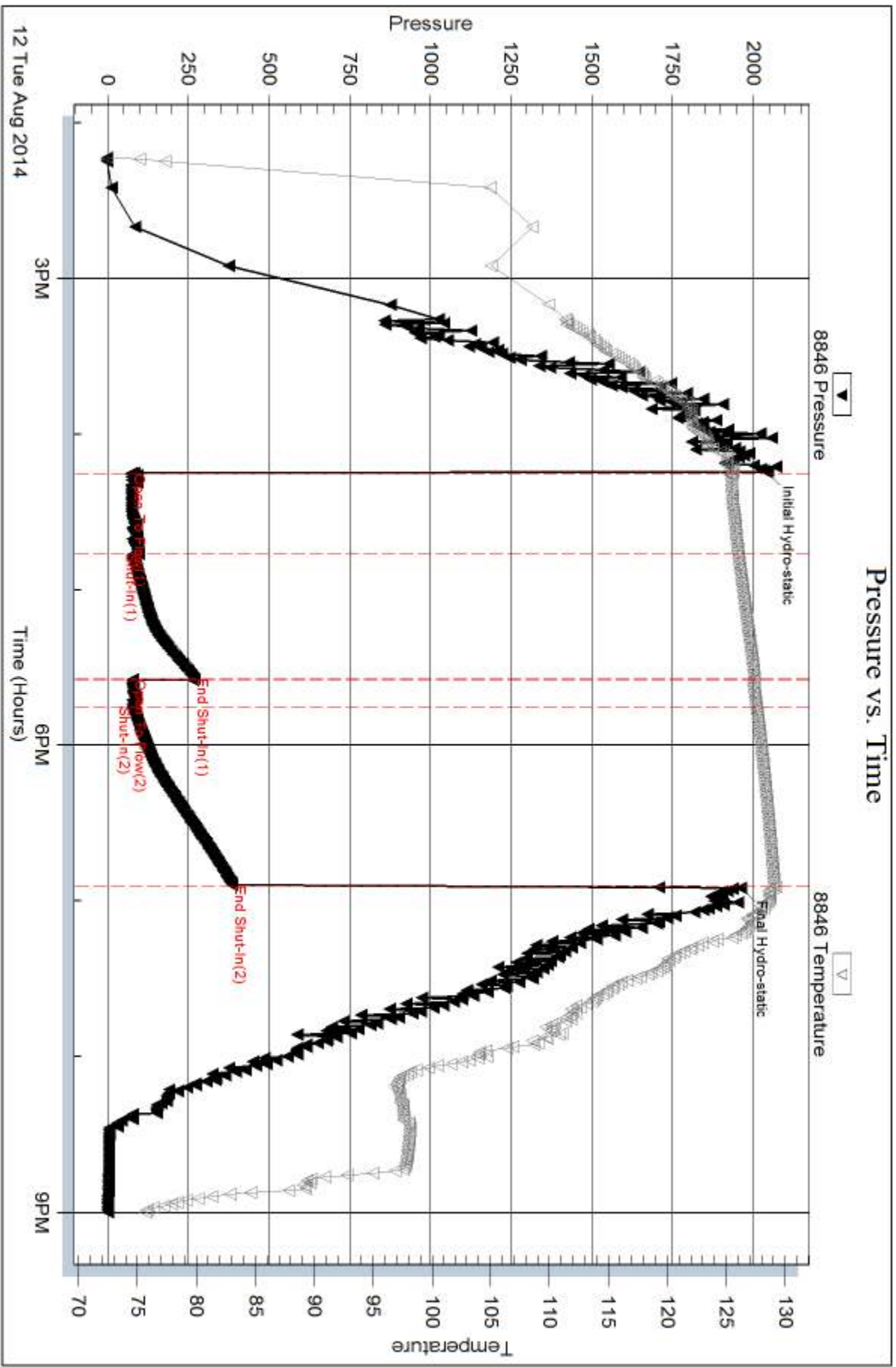
Serial #: 8846

Inside

Murfin Drilling Co. Inc.

Verna Poore #1-7

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 59114

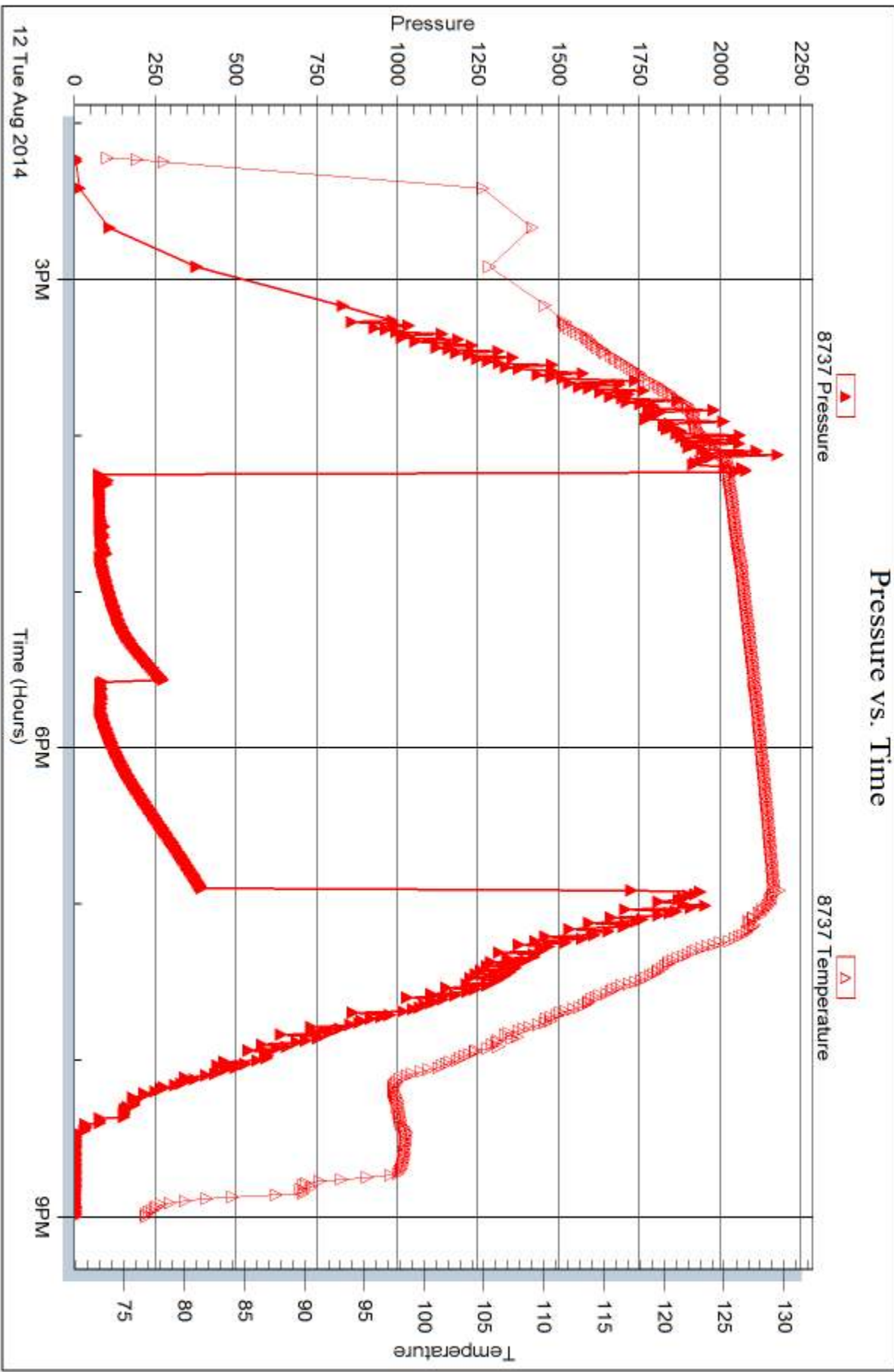
Printed: 2014.08.19 @ 17:20:45

Serial #: 8737

Outside Murfin Drilling Co. Inc.

Verna Poore #1-7

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 59114

Printed: 2014.08.19 @ 17:20:45



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Verna Poore #1-7

7-1s-35w Rawlins,KS

Start Date: 2014.08.13 @ 23:49:00

End Date: 2014.08.14 @ 07:40:00

Job Ticket #: 60130 DST #: 2

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

Printed: 2014.08.19 @ 17:18:08



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

7-1s-35w Rawlins,KS
Verna Poore #1-7
Job Ticket: 60130 **DST#: 2**
Test Start: 2014.08.13 @ 23:49:00

GENERAL INFORMATION:

Formation: **LKC "A-B"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:09:00
Time Test Ended: 07:40:00
Interval: **4130.00 ft (KB) To 4210.00 ft (KB) (TVD)**
Total Depth: 4210.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Donovan Baumann
Unit No: 66
Reference Elevations: 3215.00 ft (KB)
3210.00 ft (CF)
KB to GR/CF: 5.00 ft

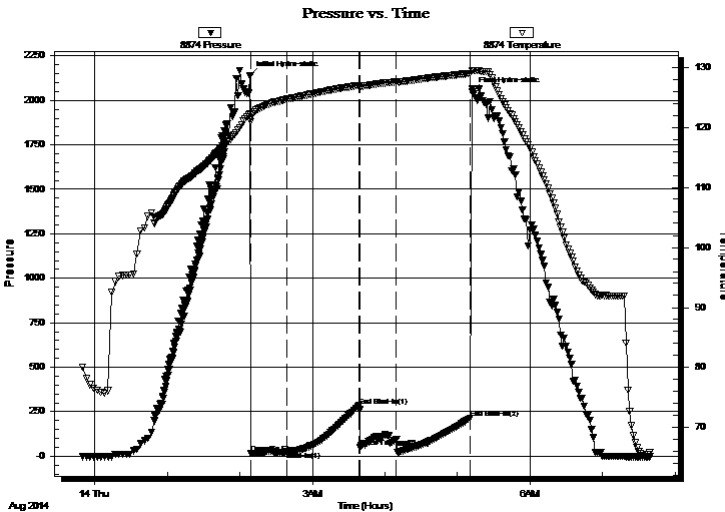
Serial #: 8874

Inside

Press@RunDepth: 95.65 psig @ 4131.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.08.13 End Date: 2014.08.14 Last Calib.: 2014.08.14
Start Time: 23:50:00 End Time: 07:40:00 Time On Btm: 2014.08.14 @ 02:08:30
Time Off Btm: 2014.08.14 @ 05:12:30

TEST COMMENT: 30 - IF - Surface blow built to 1/4"
60 - ISI - No return
30 - FF - Weak surface blow
60 - FSI - No return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2139.91	122.22	Initial Hydro-static
1	16.12	120.94	Open To Flow (1)
31	28.95	124.65	Shut-In(1)
90	283.83	126.97	End Shut-In(1)
91	50.82	126.89	Open To Flow (2)
121	95.65	127.57	Shut-In(2)
182	213.41	128.97	End Shut-In(2)
184	2048.10	129.42	Final Hydro-static

Recovery

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

Gas Rates

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



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DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

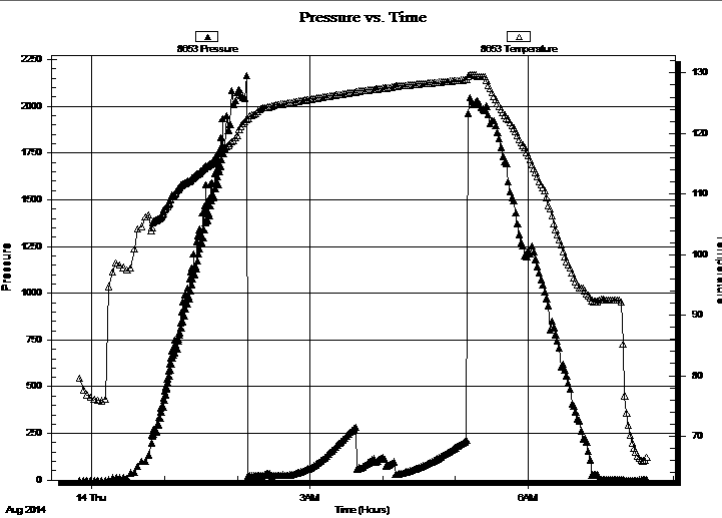
7-1s-35w Rawlins,KS
Verna Poore #1-7
Job Ticket: 60130 **DST#: 2**
Test Start: 2014.08.13 @ 23:49:00

GENERAL INFORMATION:

Formation: **LKC "A-B"**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 02:09:00 Tester: Donovan Baumann
 Time Test Ended: 07:40:00 Unit No: 66
Interval: 4130.00 ft (KB) To 4210.00 ft (KB) (TVD) Reference Elevations: 3215.00 ft (KB)
 Total Depth: 4210.00 ft (KB) (TVD) 3210.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 5.00 ft

Serial #: 8653 **Outside**
 Press@RunDepth: psig @ 4131.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.08.13 End Date: 2014.08.14 Last Calib.: 2014.08.14
 Start Time: 23:50:00 End Time: 07:38:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow built to 1/4"
 60 - ISI - No return
 30 - FF - Weak surface blow
 60 - FSI - No return



PRESSURE SUMMARY

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

Recovery

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

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 60130

DST#: 2

ATTN: Keith Reavis

Test Start: 2014.08.13 @ 23:49:00

Tool Information

Drill Pipe:	Length: 3930.00 ft	Diameter: 3.80 inches	Volume: 55.13 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose:	70000.00 lb
			<u>Total Volume: 56.05 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4130.00 ft			Final	66000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	80.00 ft				
Tool Length:	108.00 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			4103.00	
Shut In Tool	5.00			4108.00	
Hydraulic tool	5.00			4113.00	
Jars	5.00			4118.00	
Safety Joint	3.00			4121.00	
Packer	5.00			4126.00	28.00 Bottom Of Top Packer
Packer	4.00			4130.00	
Stubb	1.00			4131.00	
Recorder	0.00	8653	Outside	4131.00	
Recorder	0.00	8874	Inside	4131.00	
Perforations	9.00			4140.00	
Change Over Sub	1.00			4141.00	
Drill Pipe	63.00			4204.00	
Change Over Sub	1.00			4205.00	
Bullnose	5.00			4210.00	80.00 Bottom Packers & Anchor

Total Tool Length: 108.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 60130

DST#: 2

ATTN: Keith Reavis

Test Start: 2014.08.13 @ 23:49:00

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: 90.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	Mud	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:

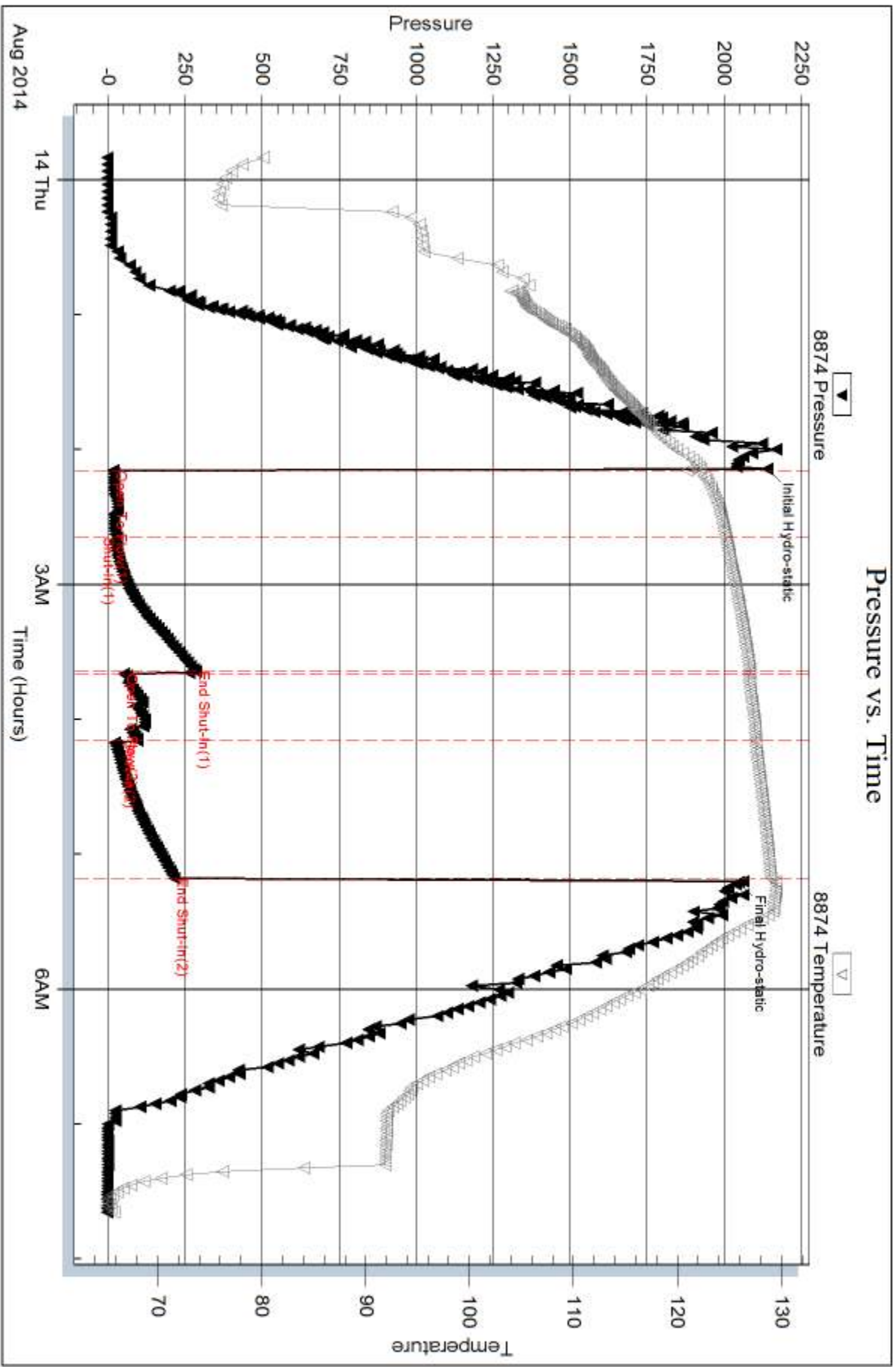
Serial #: 8874

Inside

Murfin Drilling Co. Inc.

Verna Roore #1-7

DST Test Number: 2

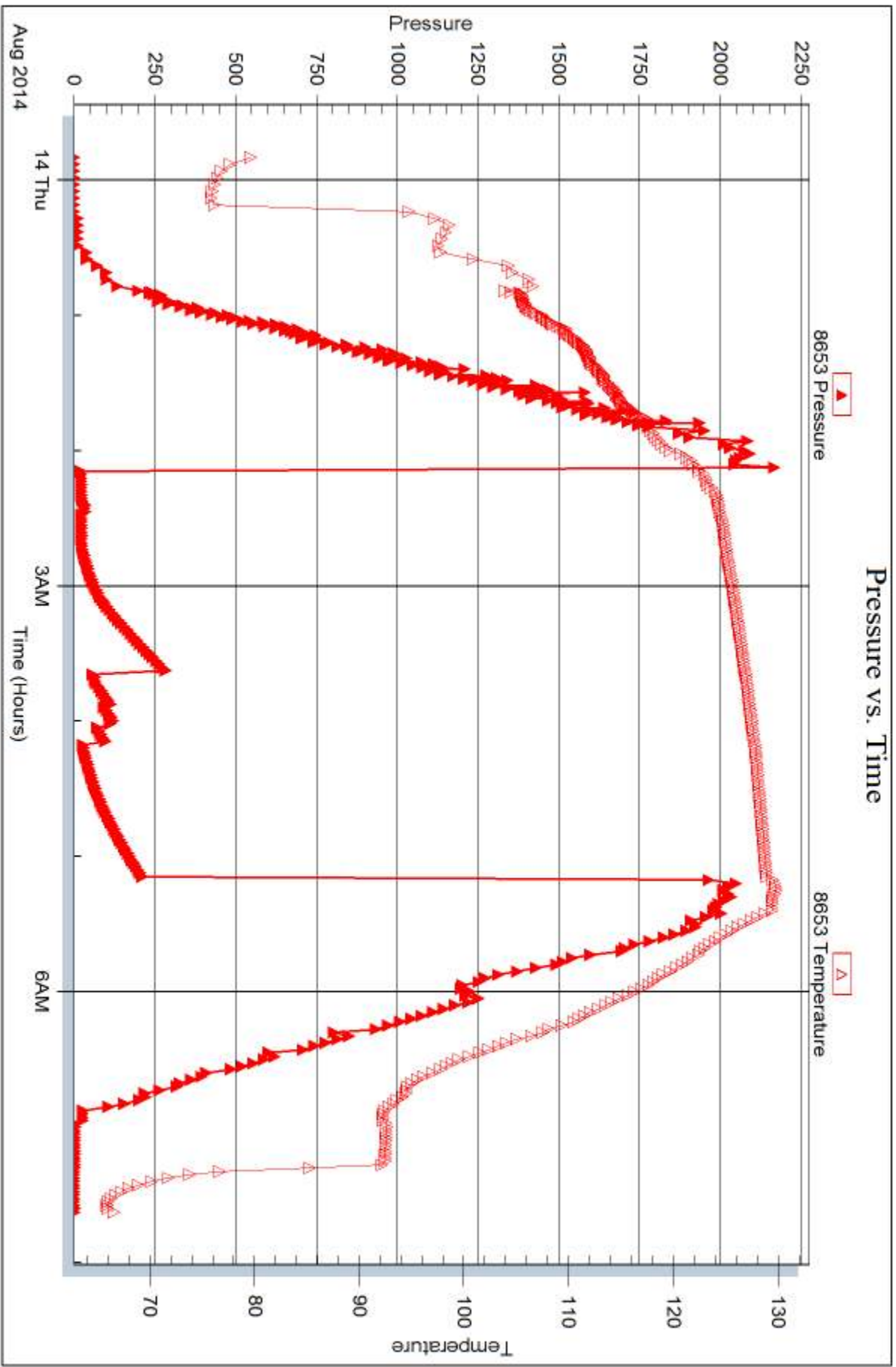


Serial #: 8653

Outside Murfin Drilling Co. Inc.

Verna Poore #1-7

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Verna Poore #1-7

7-1s-35w Rawlins,KS

Start Date: 2014.08.14 @ 08:44:00

End Date: 2014.08.14 @ 19:40:00

Job Ticket #: 60131 DST #: 3

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

Printed: 2014.08.19 @ 17:16:17

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

Verna Poore #1-7

DST # 3

LKC "D-G"

2014.08.14



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

7-1s-35w Rawlins,KS
Verna Poore #1-7
Job Ticket: 60131 **DST#: 3**
Test Start: 2014.08.14 @ 08:44:00

GENERAL INFORMATION:

Formation: **LKC "D-G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:18:00
Time Test Ended: 19:40:00
Interval: **4188.00 ft (KB) To 4290.00 ft (KB) (TVD)**
Total Depth: 4290.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Donovan Baumann
Unit No: 66
Reference Elevations: 3215.00 ft (KB)
3210.00 ft (CF)
KB to GR/CF: 5.00 ft

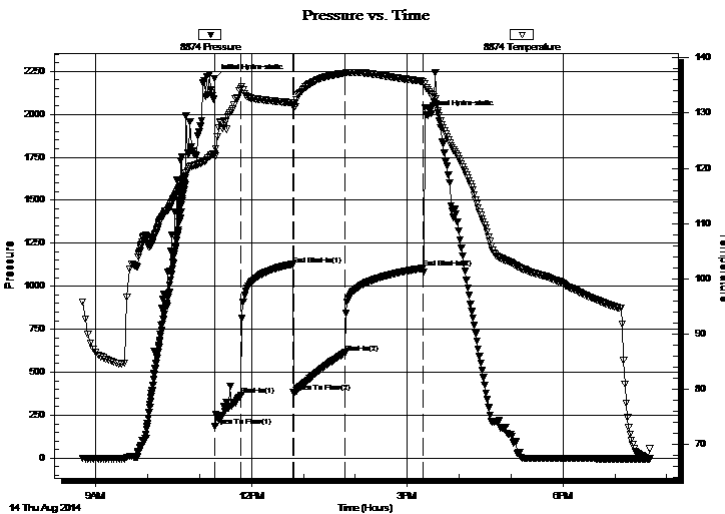
Serial #: 8874

Inside

Press@RunDepth: 613.49 psig @ 4189.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.08.14 End Date: 2014.08.14 Last Calib.: 2014.08.15
Start Time: 08:45:00 End Time: 19:40:00 Time On Btm: 2014.08.14 @ 11:17:30
Time Off Btm: 2014.08.14 @ 15:22:00

TEST COMMENT: 30 - IF - Surface blow built to BOB in 3 1/2 min
60 - ISI - Return built to 6 1/4"
60 - FF - Surface blow built to BOB in 4 min.
90 - FSI - Return built to BOB in 14 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2206.57	122.57	Initial Hydro-static
1	185.41	122.21	Open To Flow (1)
31	365.78	134.55	Shut-In(1)
91	1125.19	131.86	End Shut-In(1)
91	382.18	131.38	Open To Flow (2)
151	613.49	137.22	Shut-In(2)
241	1104.84	135.74	End Shut-In(2)
245	1996.16	134.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
252.00	MCO - 65o - 35M	1.83
378.00	OCWM - 20o - 25W - 55M	5.30
63.00	MCW - 80W - 20M	0.88
378.00	MCO - 950 - 5M	5.30
252.00	Oil - 100o	3.53

Gas Rates

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



DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.
 250 N Water STE 300
 Wichita KS 67202
 ATTN: Keith Reavis

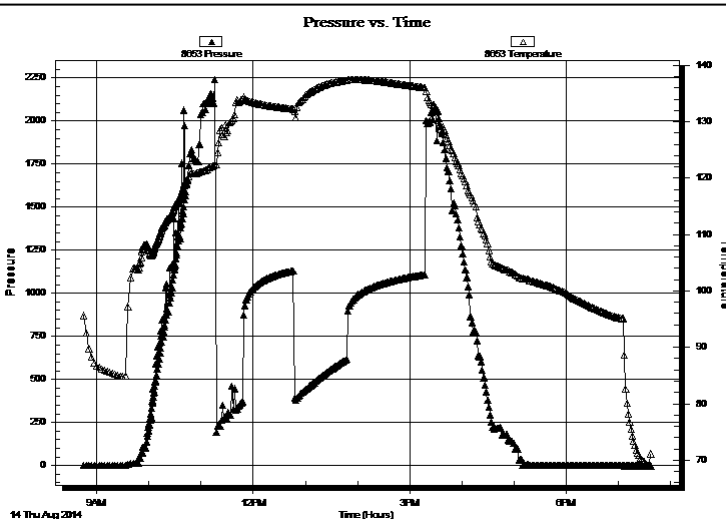
7-1s-35w Rawlins,KS
Verna Poore #1-7
 Job Ticket: 60131 **DST#: 3**
 Test Start: 2014.08.14 @ 08:44:00

GENERAL INFORMATION:

Formation: LKC "D-G"		Test Type: Conventional Bottom Hole (Initial)
Deviated: No Whipstock:	ft (KB)	Tester: Donovan Baumann
Time Tool Opened: 11:18:00		Unit No: 66
Time Test Ended: 19:40:00		
Interval: 4188.00 ft (KB) To 4290.00 ft (KB) (TVD)		Reference Elevations: 3215.00 ft (KB)
Total Depth: 4290.00 ft (KB) (TVD)		3210.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Good	KB to GR/CF: 5.00 ft

Serial #: 8653	Outside				
Press@RunDepth: psig @	4189.00 ft (KB)	Capacity:	8000.00 psig		
Start Date:	2014.08.14	End Date:	2014.08.14	Last Calib.:	2014.08.15
Start Time:	08:45:00	End Time:	19:37:30	Time On Btm:	
				Time Off Btm:	

TEST COMMENT: 30 - IF - Surface blow built to BOB in 3 1/2 min
 60 - ISI - Return built to 6 1/4"
 60 - FF - Surface blow built to BOB in 4 min.
 90 - FSI - Return built to BOB in 14 min.



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
252.00	MCO - 65o - 35M	1.83
378.00	OCWM - 20o - 25W - 55M	5.30
63.00	MCW - 80W - 20M	0.88
378.00	MCO - 95o - 5M	5.30
252.00	Oil - 100o	3.53

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 60131

DST#: 3

ATTN: Keith Reavis

Test Start: 2014.08.14 @ 08:44:00

Tool Information

Drill Pipe:	Length: 3992.00 ft	Diameter: 3.80 inches	Volume: 56.00 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose:	74000.00 lb
			<u>Total Volume: 56.92 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial	64000.00 lb
Depth to Top Packer:	4188.00 ft			Final	74000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	102.00 ft				
Tool Length:	130.00 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			4161.00	
Shut In Tool	5.00			4166.00	
Hydraulic tool	5.00			4171.00	
Jars	5.00			4176.00	
Safety Joint	3.00			4179.00	
Packer	5.00			4184.00	28.00 Bottom Of Top Packer
Packer	4.00			4188.00	
Stubb	1.00			4189.00	
Recorder	0.00	8653	Outside	4189.00	
Recorder	0.00	8874	Inside	4189.00	
Perforations	31.00			4220.00	
Change Over Sub	1.00			4221.00	
Drill Pipe	63.00			4284.00	
Change Over Sub	1.00			4285.00	
Bullnose	5.00			4290.00	102.00 Bottom Packers & Anchor

Total Tool Length: 130.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 60131

DST#: 3

ATTN: Keith Reavis

Test Start: 2014.08.14 @ 08:44:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
252.00	MCO - 65o - 35M	1.831
378.00	OCWM - 20o - 25W - 55M	5.302
63.00	MCW - 80W - 20M	0.884
378.00	MCO - 950 - 5M	5.302
252.00	Oil - 100o	3.535

Total Length: 1323.00 ft Total Volume: 16.854 bbl

Num Fluid Samples: 0

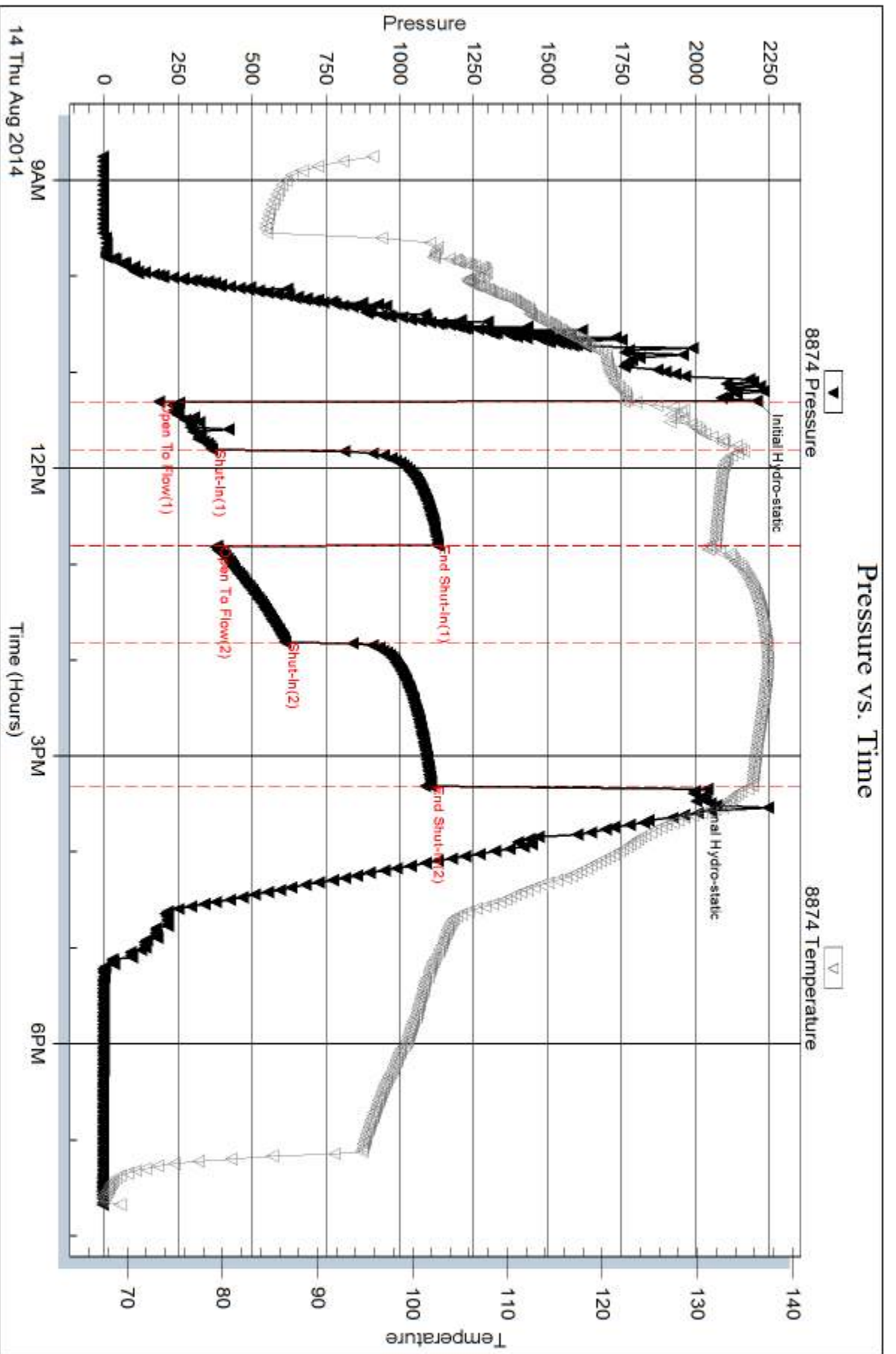
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

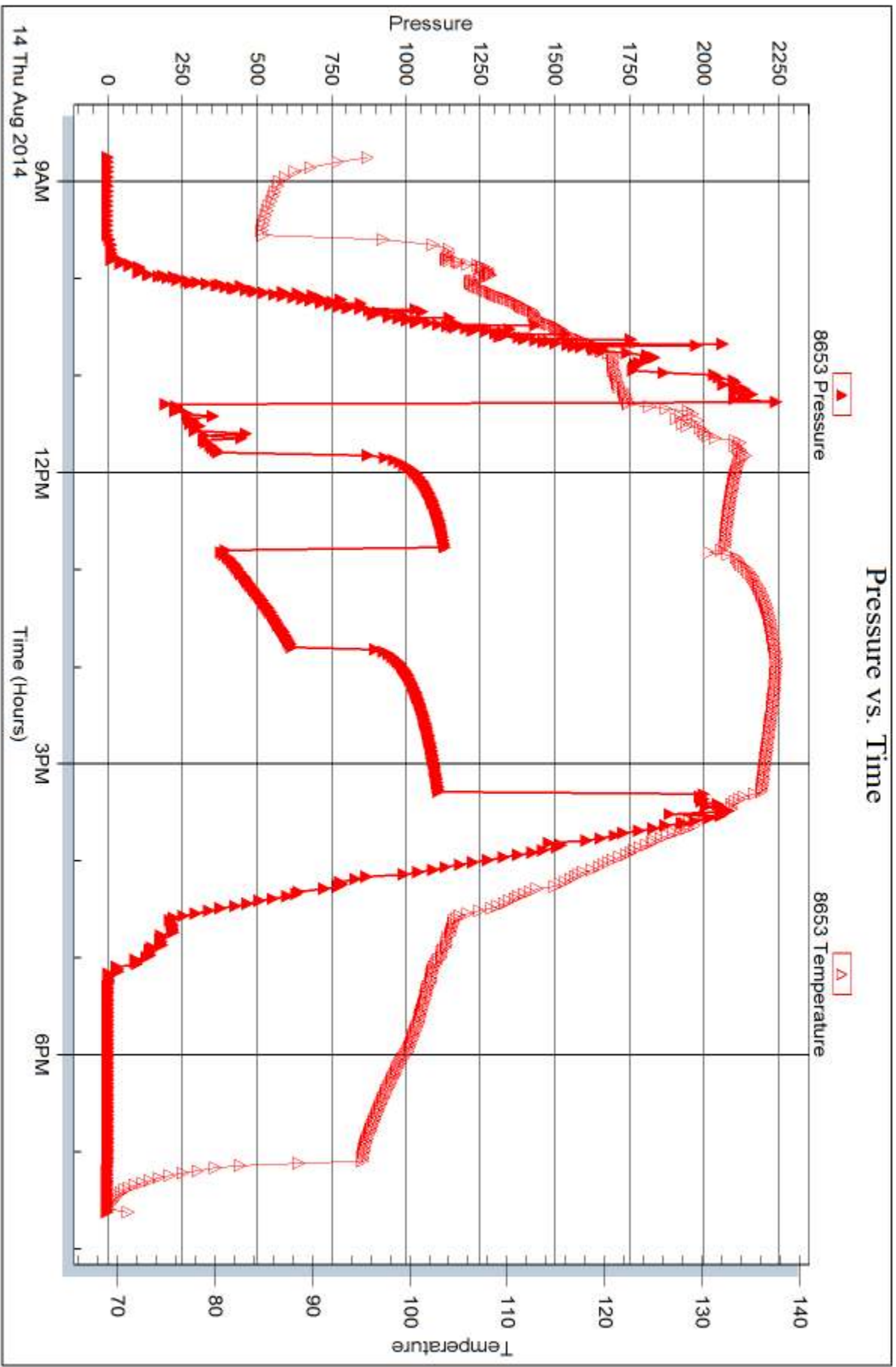


Serial #: 8653

Outside Murfin Drilling Co. Inc.

Verna Roore #1-7

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 60131

Printed: 2014.08.19 @ 17:17:12



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N Water STE 300
Wichita KS 67202

ATTN: Keith Reavis

Verna Poore #1-7

7-1s-35w Rawlins,KS

Start Date: 2014.08.16 @ 00:06:00

End Date: 2014.08.16 @ 10:19:00

Job Ticket #: 60132 DST #: 4

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

Printed: 2014.08.19 @ 17:15:09



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.
250 N Water STE 300
Wichita KS 67202
ATTN: Keith Reavis

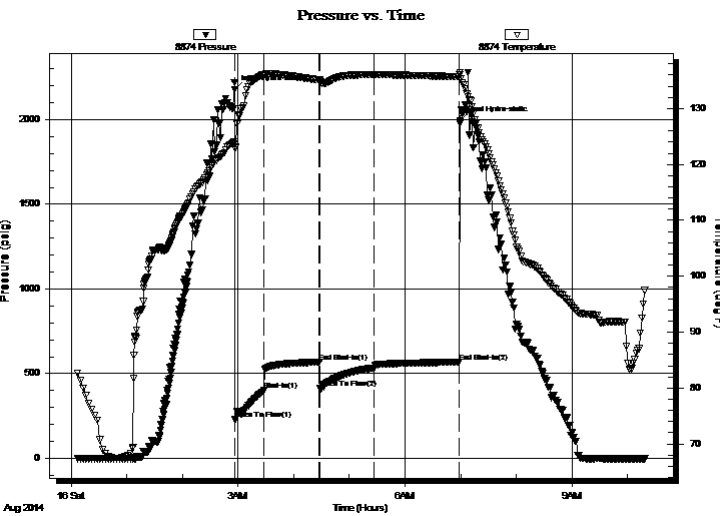
7-1s-35w Rawlins,KS
Verna Poore #1-7
Job Ticket: 60132 **DST#: 4**
Test Start: 2014.08.16 @ 00:06:00

GENERAL INFORMATION:

Formation: **LSG "G-J"**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened: 02:57:00 Tester: Donovan Baumann
Time Test Ended: 10:19:00 Unit No: 66
Interval: 4288.00 ft (KB) To 4390.00 ft (KB) (TVD) Reference Elevations: 3215.00 ft (KB)
Total Depth: 4390.00 ft (KB) (TVD) 3210.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 5.00 ft

Serial #: 8874 Inside
Press@RunDepth: 534.07 psig @ 4289.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.08.16 End Date: 2014.08.16 Last Calib.: 2014.08.16
Start Time: 00:07:00 End Time: 10:19:00 Time On Btm: 2014.08.16 @ 02:56:30
Time Off Btm: 2014.08.16 @ 06:59:30

TEST COMMENT: 30 - IF - valve shut
60 - ISI - Return built to BOB in 10 mi.
60 - FF - Surface blow built to BOB right after turning the tool
90 - FSI - Return built to BOB in 30 min



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2175.73	124.02	Initial Hydro-static
1	228.07	122.92	Open To Flow (1)
31	399.26	135.87	Shut-In(1)
91	566.36	135.11	End Shut-In(1)
92	412.58	135.04	Open To Flow (2)
151	534.07	136.08	Shut-In(2)
242	567.60	135.67	End Shut-In(2)
243	1991.34	136.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
438.00	WMCO - 65o - 30M - 5W	4.44
315.00	MCGO - 25M - 60o - 15G	4.42
126.00	MCGO - 20M - 60o - 20G	1.77
126.00	MCGO - 20M - 65o - 15G	1.77
189.00	gassy oil - 90o - 10G	2.65
191.00	Oil - 100o	2.68

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 60132

DST#: 4

ATTN: Keith Reavis

Test Start: 2014.08.16 @ 00:06:00

GENERAL INFORMATION:

Formation: **LSG "G-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:57:00

Time Test Ended: 10:19:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 66

Interval: 4288.00 ft (KB) To 4390.00 ft (KB) (TVD)

Total Depth: 4390.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3215.00 ft (KB)

3210.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8653 Outside

Press@RunDepth: psig @ 4289.00 ft (KB)

Start Date: 2014.08.16

End Date:

2014.08.16

Start Time: 00:07:00

End Time:

10:17:00

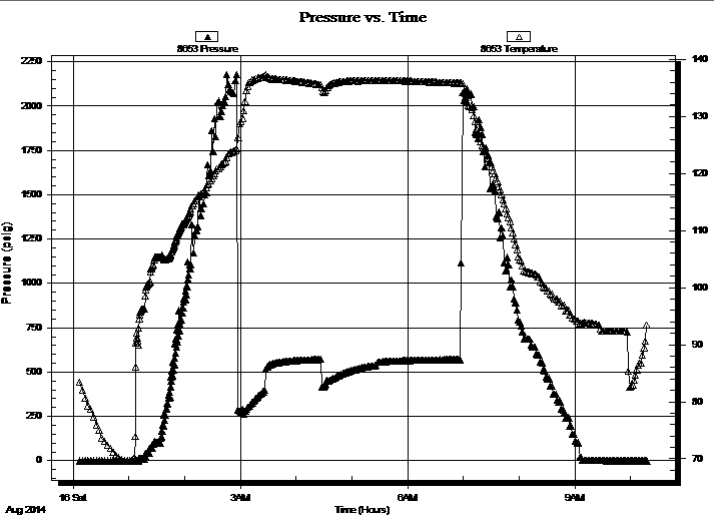
Capacity: 8000.00 psig

Last Calib.: 2014.08.16

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF - valve shut
60 - ISI - Return built to BOB in 10 mi.
60 - FF - Surface blow built to BOB right after turning the tool
90 - FSI - Return built to BOB in 30 min



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
438.00	WMCO - 65o - 30M - 5W	4.44
315.00	MCGO - 25M - 60o - 15G	4.42
126.00	MCGO - 20M - 60o - 20G	1.77
126.00	MCGO - 20M - 65o - 15G	1.77
189.00	gassy oil - 90o - 10G	2.65
191.00	Oil - 100o	2.68

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 60132

DST#: 4

ATTN: Keith Reavis

Test Start: 2014.08.16 @ 00:06:00

Tool Information

Drill Pipe:	Length: 4088.00 ft	Diameter: 3.80 inches	Volume: 57.34 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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 58.26 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4288.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	102.00 ft			
Tool Length:	130.00 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			4261.00	
Shut In Tool	5.00			4266.00	
Hydraulic tool	5.00			4271.00	
Jars	5.00			4276.00	
Safety Joint	3.00			4279.00	
Packer	5.00			4284.00	28.00 Bottom Of Top Packer
Packer	4.00			4288.00	
Stubb	1.00			4289.00	
Recorder	0.00	8653	Outside	4289.00	
Recorder	0.00	8874	Inside	4289.00	
Perforations	31.00			4320.00	
Change Over Sub	1.00			4321.00	
Drill Pipe	63.00			4384.00	
Change Over Sub	1.00			4385.00	
Bullnose	5.00			4390.00	102.00 Bottom Packers & Anchor

Total Tool Length: 130.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

7-1s-35w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Verna Poore #1-7

Job Ticket: 60132

DST#: 4

ATTN: Keith Reavis

Test Start: 2014.08.16 @ 00:06:00

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: 72.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
438.00	WMCO - 65o - 30M - 5W	4.441
315.00	MCGO - 25M - 60o - 15G	4.419
126.00	MCGO - 20M - 60o - 20G	1.767
126.00	MCGO - 20M - 65o - 15G	1.767
189.00	gassy oil - 90o - 10G	2.651
191.00	Oil - 100o	2.679

Total Length: 1385.00 ft Total Volume: 17.724 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

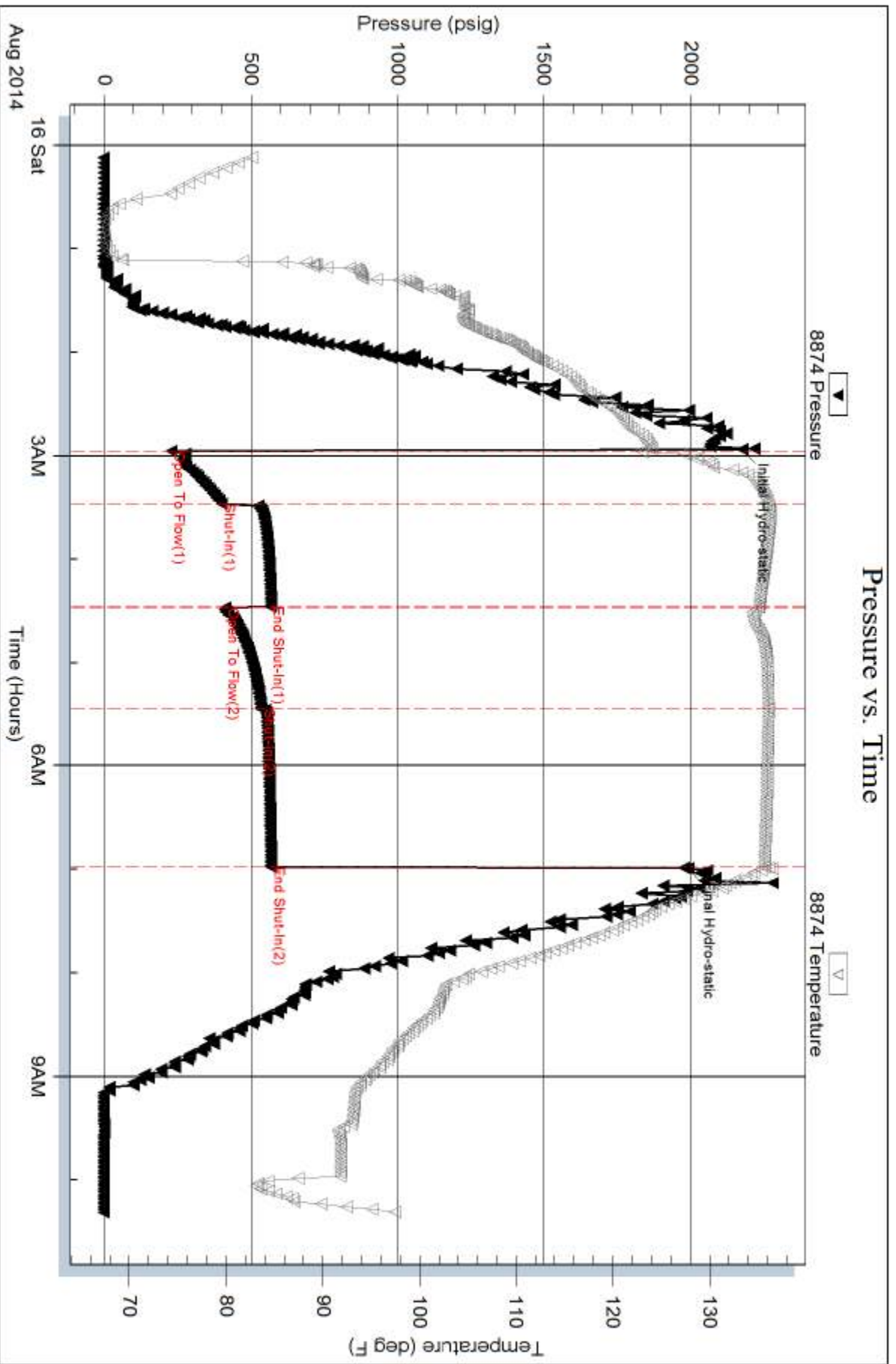
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

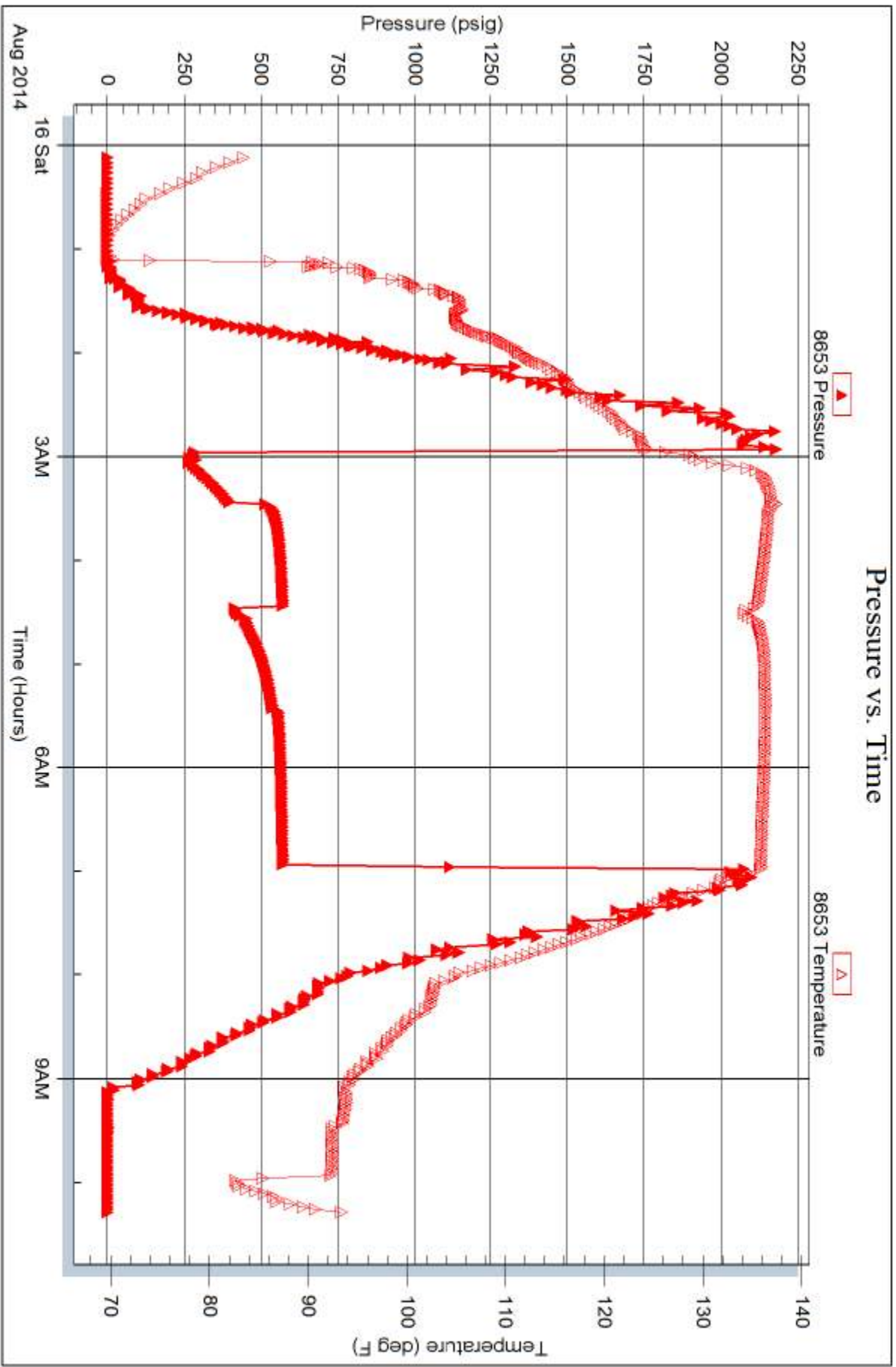


Serial #: 8653

Outside Murfin Drilling Co. Inc.

Verna Poore #1-7

DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 60132

Printed: 2014.08.19 @ 17:15:33



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59114

Well Name & No. Verna 1-7 Test No. 1 Date 8-12-14
 Company Murton Drilling Co Inc. Elevation 3215 KB 3210 GL _____
 Address 250. N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Keith Reavis Rig Murton 7
 Location: Sec. 7 Twp. 1 Rge. 35 Co. Rawlins State KS

Interval Tested 3818-3940 Zone Tested Statler
 Anchor Length ~~3818~~ 122 Drill Pipe Run ~~122~~ 3790 Mud Wt. 9.1
 Top Packer Depth ~~3818~~ 3813 Drill Collars Run 187 Vis 63
 Bottom Packer Depth 3818 Wt. Pipe Run Ø WL 7.2
 Total Depth 3940 Chlorides 700 ppm System LCM 4

Blow Description DF: Weak surface Blow
IS: NO Return Blow
FF: NO Blow
FS: NO Return Blow

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 128 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2042</u>	<input checked="" type="checkbox"/> Test <u>1150.00</u>	T-On Location <u>1:45</u>
(B) First Initial Flow <u>73</u>	<input checked="" type="checkbox"/> Jars <u>250.00</u>	T-Started <u>2:13 KS Time</u>
(C) First Final Flow <u>97</u>	<input type="checkbox"/> Safety Joint <u>75.00</u>	T-Open <u>15:15</u>
(D) Initial Shut-In <u>269</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>18:15</u>
(E) Second Initial Flow <u>77</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>21:00</u>
(F) Second Final Flow <u>78</u>	<input checked="" type="checkbox"/> Mileage <u>260RT 403.00</u>	Comments <u>Motel / Night</u>
(G) Final Shut-In <u>387</u>	<input type="checkbox"/> Sampler <u>110rt 170.50</u>	
(H) Final Hydrostatic <u>1962</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 10
 Final Shut-In 70

Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility 1645.50
 Sub Total 1828.97

Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1645.50
 MP/DST Disc't _____

Approved By Keith Reavis Our Representative Mike Robert

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **60130**

Well Name & No. Verna # 1-7 Test No. 2 Date 8-13-14
 Company Murfin Drilling Co., Inc. Elevation 3215 KB 3210 GL
 Address 250 N. water STE 300 Wichita, KS, 67202
 Co. Rep / Geo. Keith Reavis Rig Murfin #7
 Location: Sec. 7 Twp. 1S Rge. 35W Co. Rawlins State KS

Interval Tested 4130' - 4210' Zone Tested LKC "A+B"
 Anchor Length 80 Drill Pipe Run 3930' Mud Wt. 9.2
 Top Packer Depth 4125' Drill Collars Run 1870 Vis 64
 Bottom Packer Depth 4130' Wt. Pipe Run 0 WL 8.4
 Total Depth 4210' Chlorides 600 ppm System LCM 4#
 Blow Description IF - Surface blow built to 1/4"
ISI - NO return
FF - weak surface 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 _____ BHT 129 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2140 Test 1250 T-On Location 10:50pm
 (B) First Initial Flow 16 Jars 250 T-Started 11:49p.m.
 (C) First Final Flow 29 Safety Joint 75 T-Open 2:09 a.m.
 (D) Initial Shut-In 284 Circ Sub n/c T-Pulled 5:10 a.m.
 (E) Second Initial Flow 51 Hourly Standby _____ T-Out 7:40 a.m.
 (F) Second Final Flow 96 Mileage 110 R/T 170.50 Comments _____
 (G) Final Shut-In 213 Sampler _____
 (H) Final Hydrostatic 2048 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1745.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1745.50

Approved By _____ Our Representative Dencrow Benmann

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. 60131

Well Name & No. Verna #1-7 Test No. 3 Date 8-14-14
 Company Murfin Drilling Co., Inc Elevation 3215 KB 3210 GL
 Address 250 N. Water STE 300 Wichita, KS, 67202
 Co. Rep / Geo. Keith Reavis Rig Murfin #7
 Location: Sec. 7 Twp. 1S Rge. 35W Co. Rawlins State KS

Interval Tested 4188' - 4290' Zone Tested LKC "D+G"
 Anchor Length 102' Drill Pipe Run 3992' Mud Wt. 9.4
 Top Packer Depth 4183' Drill Collars Run 187 Vis 50
 Bottom Packer Depth 4188' Wt. Pipe Run Ø WL 10
 Total Depth 4290' Chlorides 700 ppm System LCM 4#
 Blow Description IF - Surface blow built to BOB in 3 1/2 min.
ISI - Return built to
FF - Surface blow built to BOB in 4 min
FSI - Return built to BOB in 14 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>252</u>	<u>oil</u>	<u>100</u>			
<u>378</u>	<u>MCO</u>	<u>95</u>			<u>5</u>
<u>63</u>	<u>mcw</u>		<u>80</u>		<u>20</u>
<u>378</u>	<u>OCWM</u>	<u>20</u>	<u>25</u>		<u>55</u>
<u>252</u>	<u>mco</u>	<u>65</u>			<u>35</u>

Rec Total 1323 BHT 136 Gravity _____ API RW .2 @ 69 ° F Chlorides 39000 ppm
 (A) Initial Hydrostatic 2207 Test 1250 T-On Location 7:50 p.m.
 (B) First Initial Flow 185 Jars 250 T-Started 8:44 p.m.
 (C) First Final Flow 366 Safety Joint 75 T-Open 11:18 p.m.
 (D) Initial Shut-In 1125 Circ Sub n/c T-Pulled 3:18 a.m.
 (E) Second Initial Flow 382 Hourly Standby _____ T-Out 7:40 a.m.
 (F) Second Final Flow 613 Mileage 110 R/T 170.50 Comments _____
 (G) Final Shut-In 1105 Sampler _____
 (H) Final Hydrostatic 1996 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90
 Sub Total 0
 Total 1745.50
 MP/DST Disc't _____
 Sub Total 1745.50

Approved By _____ Our Representative Jonathan Reavis

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 60132

Well Name & No. Verna Poore #1-7 Test No. 4 Date 8-15-14
 Company Murfin Drilling Co., Inc Elevation 3215 KB 3210 GL
 Address 250 N. water STE 300 Wichita, KS, 67202
 Co. Rep / Geo. Keith Reavis Rig Murfin #7
 Location: Sec. 7 Twp. 1S Rge. 35w Co. Rawlins State KS

Interval Tested 4288' - 4390' Zone Tested LSG "G-J"
 Anchor Length 102' Drill Pipe Run 4088' Mud Wt. 8.8
 Top Packer Depth 4283' Drill Collars Run 187' Vis 72
 Bottom Packer Depth 4288' Wt. Pipe Run 0 WL 8
 Total Depth 4390' Chlorides 2,000 ppm System LCM 16#

Blow Description IF - Valveshut
ISF - Return built to BoB in 10 min.
FF - Surface blow built to BoB right after turning tool
FSI - Return built to BoB in 30 min

Rec	Feet of	%gas	%oil	%water	%mud
191	oil	100			
189	gassy oil	10	90		
126	mcgo	15	65	20	
120	mcgo	20	60	20	
315	mcgo	15	60	25	
Rec Total	1385	BHT	136	Gravity	API RW

Gravity 43 @ 60 ° F Chlorides _____ ppm

(A) Initial Hydrostatic 2176 Test 1250 T-On Location 10:35pm
 (B) First Initial Flow 228 Jars 250 T-Started 12:06a.m.
 (C) First Final Flow 399 Safety Joint 75 T-Open 2:57am
 (D) Initial Shut-In 566 Circ Sub n/c T-Pulled 6:58a.m
 (E) Second Initial Flow 413 Hourly Standby _____ T-Out 10:19am
 (F) Second Final Flow 534 Mileage 110 R/T 170.50 Comments _____
 (G) Final Shut-In 568 Sampler _____
 (H) Final Hydrostatic 1991 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1745.50
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1745.50

Approved By _____

Our Representative Jameson Baumann

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