



DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water, Ste 300
Wichita, KS 67202

ATTN: Rocky Milford

Engle #1-8

8-5s-30w Decatur,KS

Start Date: 2014.12.17 @ 03:30:00

End Date: 2014.12.17 @ 13:12:30

Job Ticket #: 61051 DST #: 1

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

Printed: 2014.12.26 @ 10:13:46



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61051

DST#: 1

ATTN: Rocky Milford

Test Start: 2014.12.17 @ 03:30:00

GENERAL INFORMATION:

Formation: **Toronto - LKC "B"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:59:00
 Time Test Ended: 13:12:30
 Interval: **3915.00 ft (KB) To 3997.00 ft (KB) (TVD)**
 Total Depth: 3997.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57
 Reference Elevations: 2917.00 ft (KB)
 2914.00 ft (CF)
 KB to GR/CF: 3.00 ft

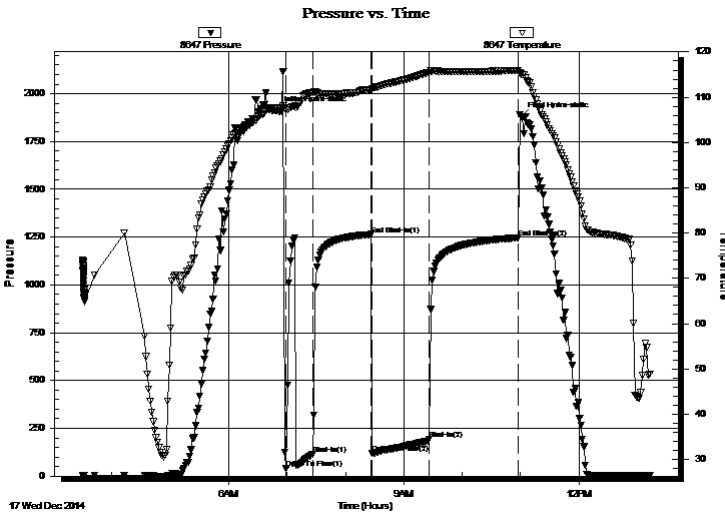
Serial #: 8647

Inside

Press@RunDepth: 194.12 psig @ 3916.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.17 End Date: 2014.12.17 Last Calib.: 2014.12.17
 Start Time: 03:30:01 End Time: 13:12:30 Time On Btm: 2014.12.17 @ 06:50:00
 Time Off Btm: 2014.12.17 @ 11:00:30

TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 6 1/4"
 60 - ISI - No Return
 60 - FF - Blow built to B.o.B in 45 min.
 90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1910.45	107.65	Initial Hydro-static
9	40.83	107.19	Open To Flow (1)
36	113.04	111.07	Shut-In(1)
96	1264.27	111.59	End Shut-In(1)
98	119.74	111.83	Open To Flow (2)
156	194.12	115.52	Shut-In(2)
248	1247.12	115.93	End Shut-In(2)
251	1878.37	115.10	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
183.00	MW 70%w , 30%m	0.90
63.00	MW 50%w , 50%m	0.85
93.00	WM 60%m, 40%w	1.30

Gas Rates

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



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DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

ATTN: Rocky Milford

Job Ticket: 61051

DST#: 1

Test Start: 2014.12.17 @ 03:30:00

GENERAL INFORMATION:

Formation: **Toronto - LKC "B"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:59:00
 Time Test Ended: 13:12:30

Test Type: Conventional Bottom Hole (Initial)
 Tester: Brandon Quintana
 Unit No: 57

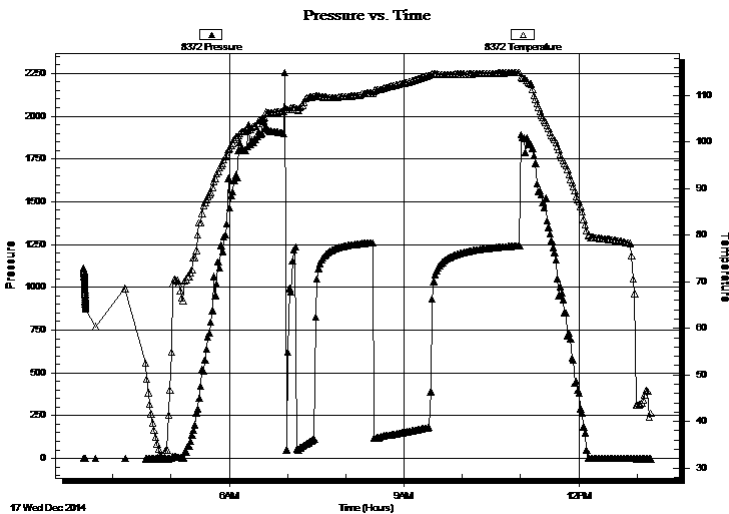
Interval: **3915.00 ft (KB) To 3997.00 ft (KB) (TVD)**
 Total Depth: 3997.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2917.00 ft (KB)
 2914.00 ft (CF)
 KB to GR/CF: 3.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 3916.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.17 End Date: 2014.12.17 Last Calib.: 2014.12.17
 Start Time: 03:30:01 End Time: 13:14:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF - Opened w/ surface blow, built to 6 1/4"
 60 - ISI - No Return
 60 - FF - Blow built to B.o.B in 45 min.
 90 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
183.00	MW 70%w, 30%m	0.90
63.00	MW 50%w, 50%m	0.85
93.00	WM 60%m, 40%w	1.30

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61051

DST#: 1

ATTN: Rocky Milford

Test Start: 2014.12.17 @ 03:30:00

Tool Information

Drill Pipe:	Length: 3705.00 ft	Diameter: 3.80 inches	Volume: 51.97 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 187.12 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.12 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3915.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	82.00 ft			
Tool Length:	110.00 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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Shut In Tool	5.00			3892.00	
Hydraulic tool	5.00			3897.00	
Jars	5.00			3902.00	
Safety Joint	3.00			3905.00	
Packer	5.00			3910.00	28.00 Bottom Of Top Packer
Packer	5.00			3915.00	
Stubb	1.00			3916.00	
Recorder	0.00	8647	Inside	3916.00	
Recorder	0.00	8372	Outside	3916.00	
Perforations	13.00			3929.00	
Change Over Sub	1.00			3930.00	
Drill Pipe	63.00			3993.00	
Change Over Sub	1.00			3994.00	
Bullnose	3.00			3997.00	82.00 Bottom Packers & Anchor

Total Tool Length: 110.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61051

DST#: 1

ATTN: Rocky Milford

Test Start: 2014.12.17 @ 03:30:00

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:

50000 ppm

Viscosity: 80.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.97 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
183.00	MW 70%w , 30%m	0.900
63.00	MW 50%w , 50%m	0.846
93.00	WM 60%m, 40%w	1.305

Total Length: 339.00 ft Total Volume: 3.051 bbl

Num Fluid Samples: 0

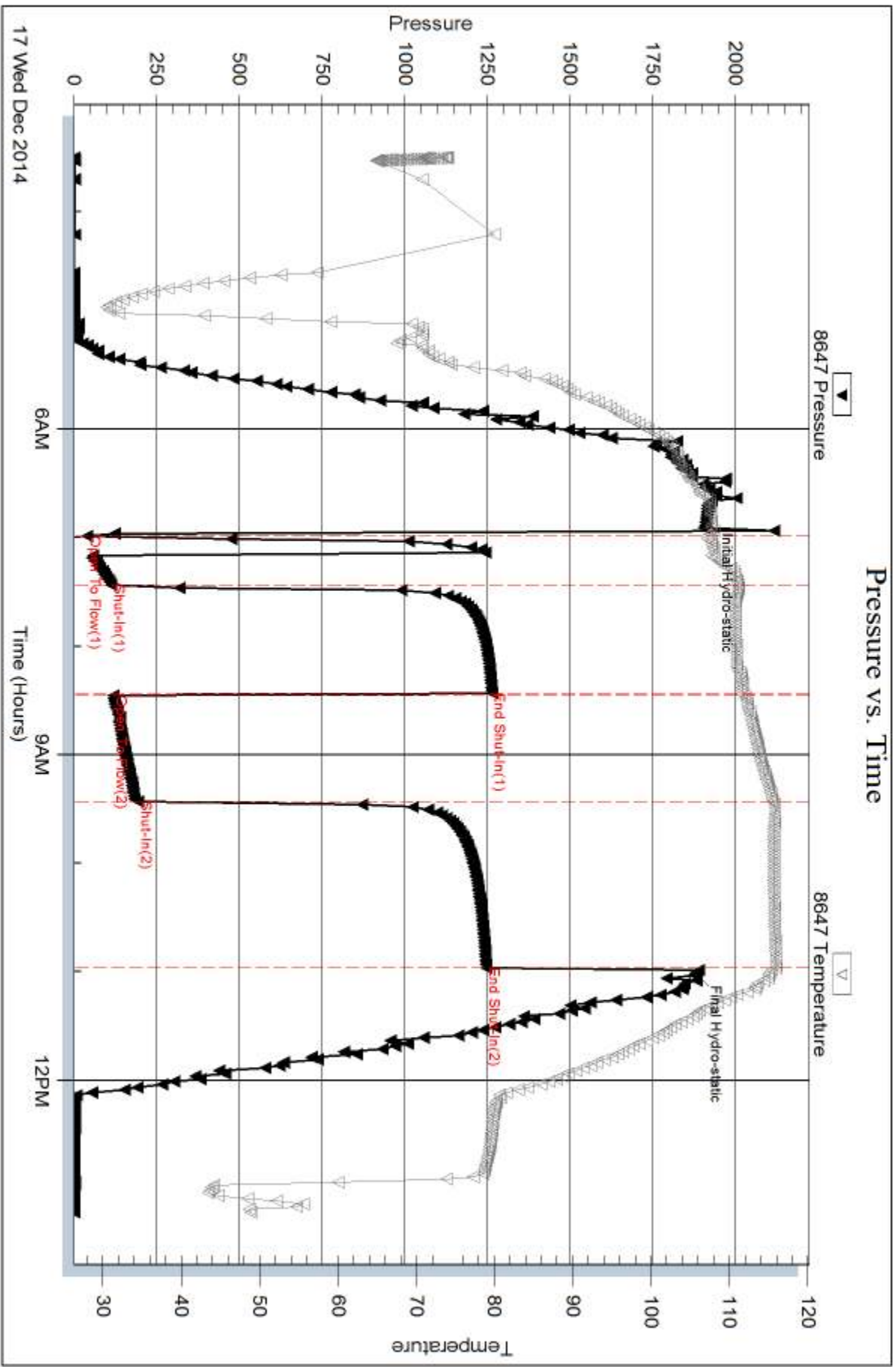
Num Gas Bombs: 0

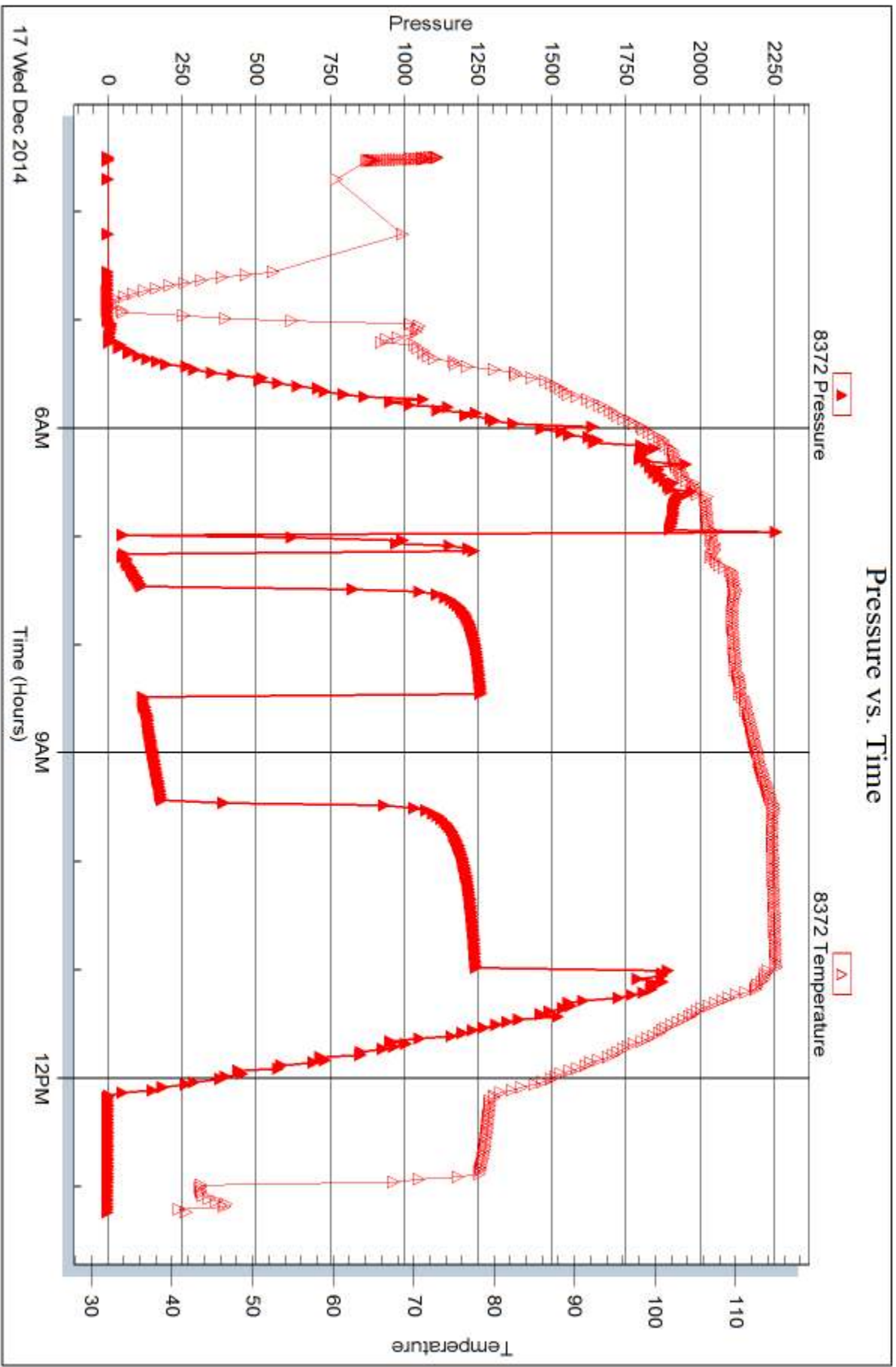
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .456 @ 23.5 Chlorides 50,000ppm







DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water, Ste 300
Wichita, KS 67202

ATTN: Rocky Milford

Engle #1-8

8-5s-30w Decatur,KS

Start Date: 2014.12.17 @ 00:18:00

End Date: 2014.12.17 @ 08:43:00

Job Ticket #: 61052 DST #: 2

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

Printed: 2014.12.26 @ 10:13:26

Murfin Drlg. Co., Inc. 8-5s-30w Decatur,KS Engle #1-8 DST # 2 LKC "D - Prime"G" 2014.12.17



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61052

DST#: 2

ATTN: Rocky Milford

Test Start: 2014.12.17 @ 00:18:00

GENERAL INFORMATION:

Formation: **LKC "D - Prime "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:17:00

Time Test Ended: 08:43:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 4016.00 ft (KB) To 4052.00 ft (KB) (TVD)

Reference Elevations: 2917.00 ft (KB)

Total Depth: 4052.00 ft (KB) (TVD)

2914.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 3.00 ft

Serial #: 8647

Inside

Press@RunDepth: 199.29 psig @ 4017.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.17

End Date:

2014.12.17

Last Calib.: 2014.12.18

Start Time: 00:18:01

End Time:

08:43:00

Time On Btm: 2014.12.17 @ 03:15:30

Time Off Btm: 2014.12.17 @ 06:18:30

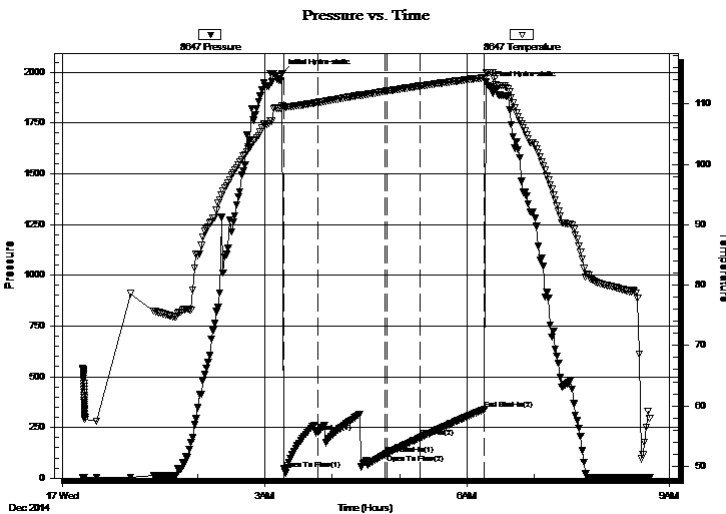
TEST COMMENT: 30 - IF - Opened w/ surface blow , stayed right above surface

60 - ISI - No Return

30 - FF - No Blow

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1992.87	109.62	Initial Hydro-static
2	45.38	109.49	Open To Flow (1)
32	225.67	110.23	Shut-In(1)
92	115.56	112.08	End Shut-In(1)
93	119.81	112.12	Open To Flow (2)
123	199.29	112.97	Shut-In(2)
180	339.16	114.36	End Shut-In(2)
183	1934.60	115.22	Final Hydro-static

Recovery

Gas Rates

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

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



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250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61052

DST#: 2

ATTN: Rocky Milford

Test Start: 2014.12.17 @ 00:18:00

GENERAL INFORMATION:

Formation: **LKC "D - Prime "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:17:00

Time Test Ended: 08:43:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 4016.00 ft (KB) To 4052.00 ft (KB) (TVD)

Total Depth: 4052.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2917.00 ft (KB)

2914.00 ft (CF)

KB to GR/CF: 3.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 4017.00 ft (KB)

Start Date: 2014.12.17

End Date: 2014.12.17

Start Time: 00:18:01

End Time: 08:44:30

Capacity: 8000.00 psig

Last Calib.: 2014.12.18

Time On Btm:

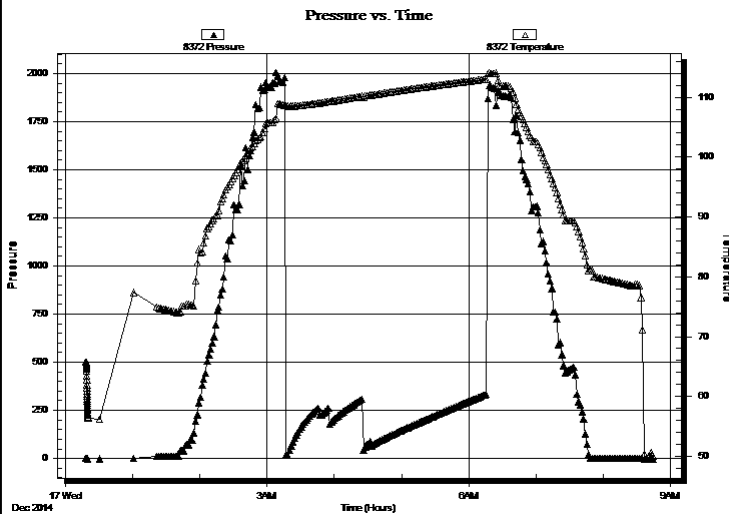
Time Off Btm:

TEST COMMENT: 30 - IF - Opened w/ surface blow , stayed right above surface

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)
2.00	100% mud	0.01

Gas Rates

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



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DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61052

DST#: 2

ATTN: Rocky Milford

Test Start: 2014.12.17 @ 00:18:00

Tool Information

Drill Pipe:	Length: 3833.00 ft	Diameter: 3.80 inches	Volume: 53.77 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 187.12 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose:	75000.00 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	32.12 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4016.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	36.00 ft				
Tool Length:	64.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3993.00	
Hydraulic tool	5.00			3998.00	
Jars	5.00			4003.00	
Safety Joint	3.00			4006.00	
Packer	5.00			4011.00	28.00 Bottom Of Top Packer
Packer	5.00			4016.00	
Packer - Shale	0.00			4016.00	
Stubb	1.00			4017.00	
Recorder	0.00	8647	Inside	4017.00	
Recorder	0.00	8372	Outside	4017.00	
Perforations	32.00			4049.00	
Bullnose	3.00			4052.00	36.00 Bottom Packers & Anchor

Total Tool Length: 64.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61052

DST#: 2

ATTN: Rocky Milford

Test Start: 2014.12.17 @ 00:18:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	100% mud	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

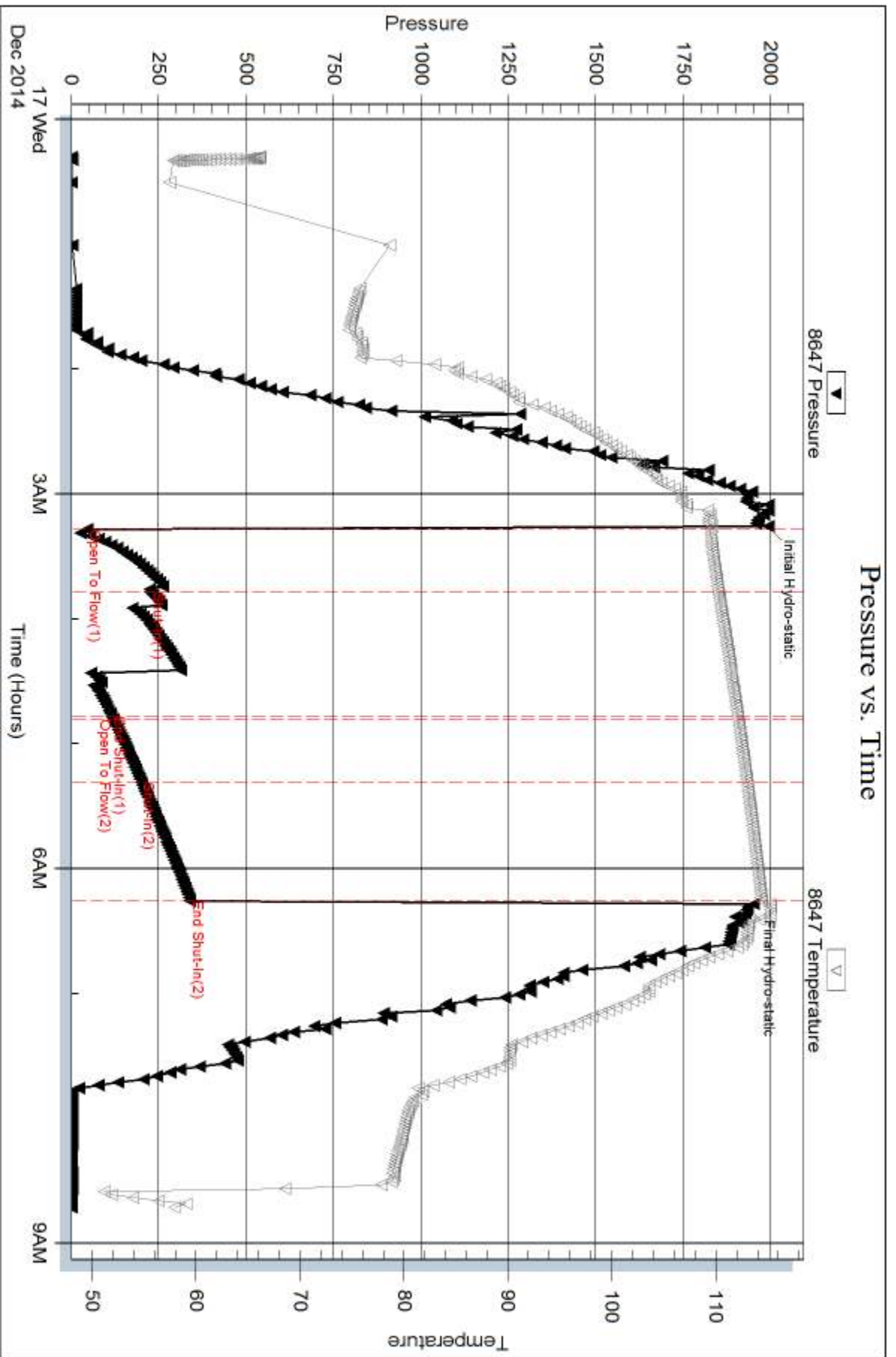
Num Gas Bombs: 0

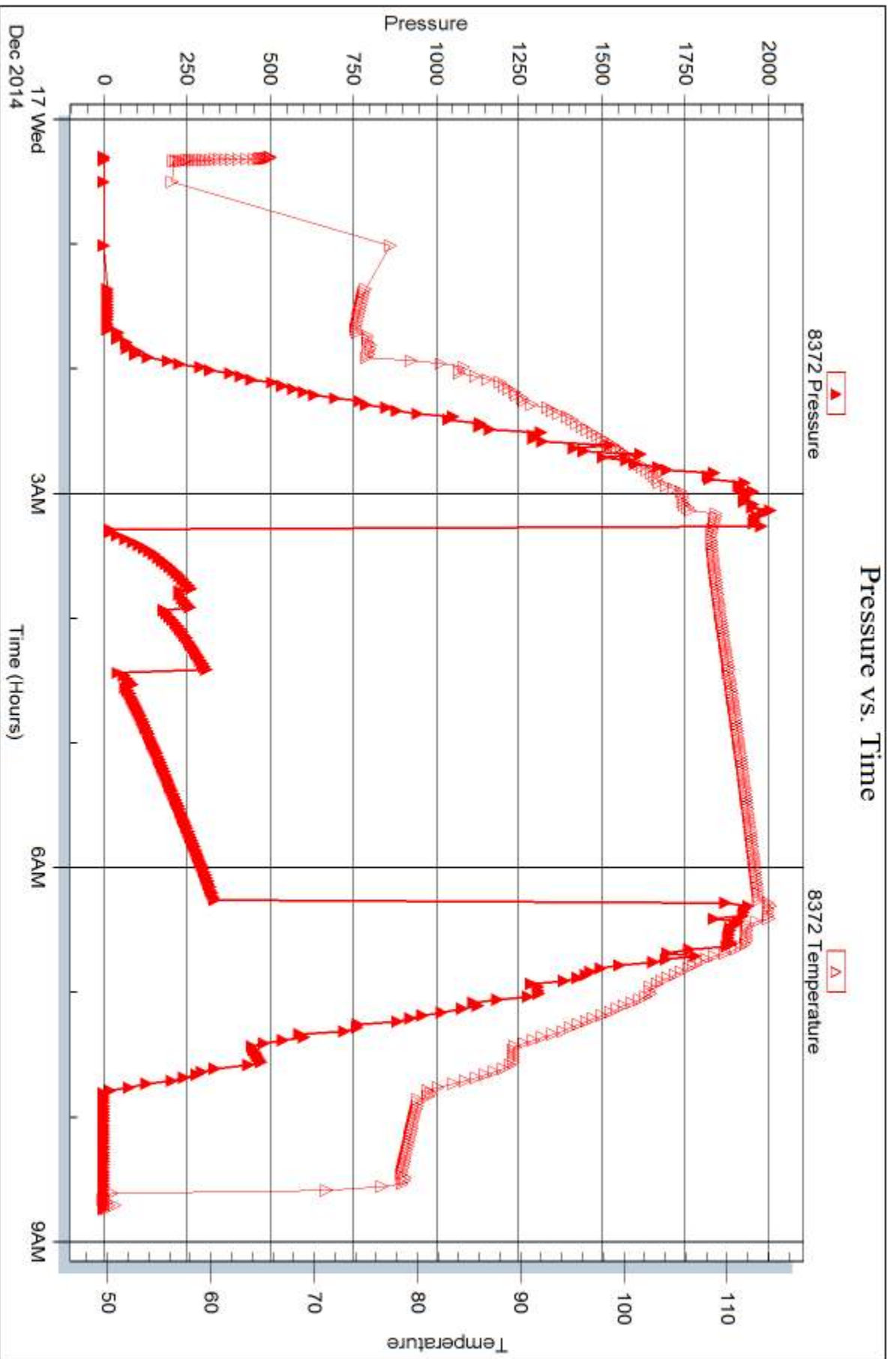
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water, Ste 300
Wichita, KS 67202

ATTN: Rocky Milford

Engle #1-8

8-5s-30w Decatur,KS

Start Date: 2014.12.18 @ 00:00:00

End Date:

Job Ticket #: 61053

DST #: 3

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

Printed: 2014.12.26 @ 10:13:04



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61053

DST#: 3

ATTN: Rocky Milford

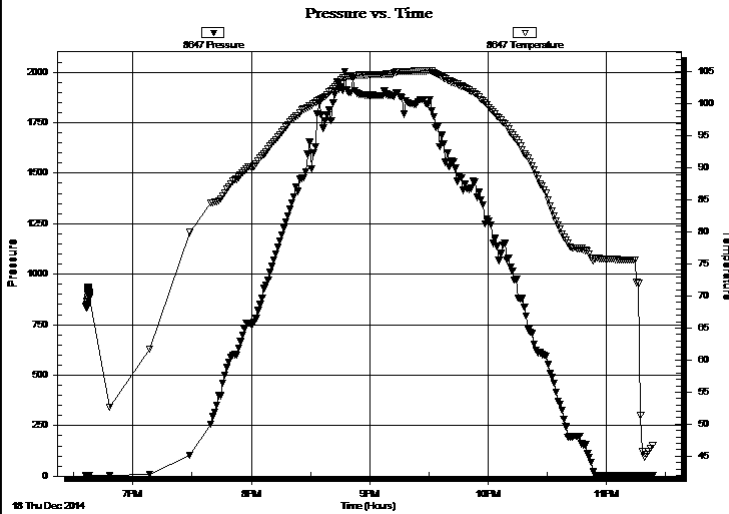
Test Start: 2014.12.18 @ 00:00:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: Tester: Brandon Quintana
 Time Test Ended: Unit No: 57
 Interval: **4063.00 ft (KB) To 4130.00 ft (KB) (TVD)**
 Reference Elevations: 2917.00 ft (KB)
 Total Depth: 4130.00 ft (KB) (TVD) 2914.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 3.00 ft

Serial #: 8647 Inside
 Press@RunDepth: psig @ 4064.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.18 End Date: 2014.12.18 Last Calib.: 2014.12.18
 Start Time: 18:36:01 End Time: 23:23:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: MISRUN



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61053

DST#: 3

ATTN: Rocky Milford

Test Start: 2014.12.18 @ 00:00:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended:

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 4063.00 ft (KB) To 4130.00 ft (KB) (TVD)

Reference Elevations: 2917.00 ft (KB)

Total Depth: 4130.00 ft (KB) (TVD)

2914.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 3.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 4064.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.18

End Date:

2014.12.18

Last Calib.:

2014.12.18

Start Time: 18:36:01

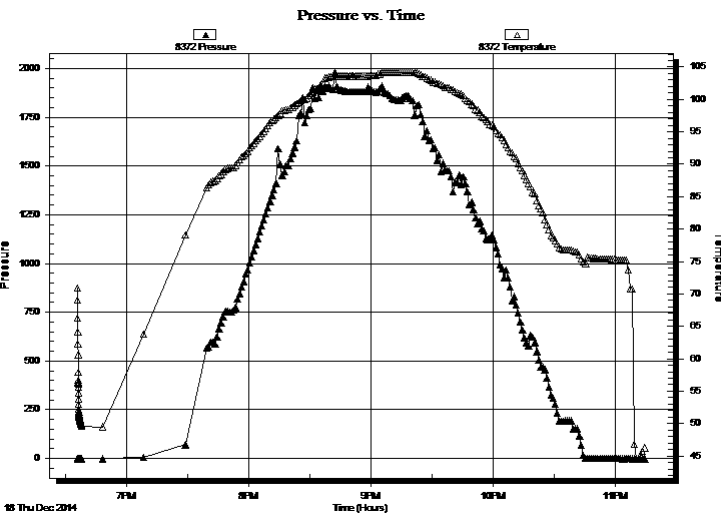
End Time:

23:15:00

Time On Btm:

Time Off Btm:

TEST COMMENT: MISRUN



PRESSURE SUMMARY

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

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61053

DST#: 3

ATTN: Rocky Milford

Test Start: 2014.12.18 @ 00:00:00

Tool Information

Drill Pipe:	Length: 3864.00 ft	Diameter: 3.80 inches	Volume: 54.20 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 187.12 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose:	lb
			<u>Total Volume:</u>	Tool Chased	ft
			- bbl	String Weight: Initial	lb
Drill Pipe Above KB:	16.12 ft			Final	lb
Depth to Top Packer:	4063.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	67.00 ft				
Tool Length:	95.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			4040.00	
Hydraulic tool	5.00			4045.00	
Jars	5.00			4050.00	
Safety Joint	3.00			4053.00	
Packer	5.00			4058.00	28.00 Bottom Of Top Packer
Packer	5.00			4063.00	
Packer - Shale	0.00			4063.00	
Stubb	1.00			4064.00	
Recorder	0.00	8647	Inside	4064.00	
Recorder	0.00	8372	Outside	4064.00	
Perforations	30.00			4094.00	
Change Over Sub	1.00			4095.00	
Drill Pipe	31.00			4126.00	
Change Over Sub	1.00			4127.00	
Bullnose	3.00			4130.00	67.00 Bottom Packers & Anchor

Total Tool Length: 95.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61053

DST#: 3

ATTN: Rocky Milford

Test Start: 2014.12.18 @ 00:00:00

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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

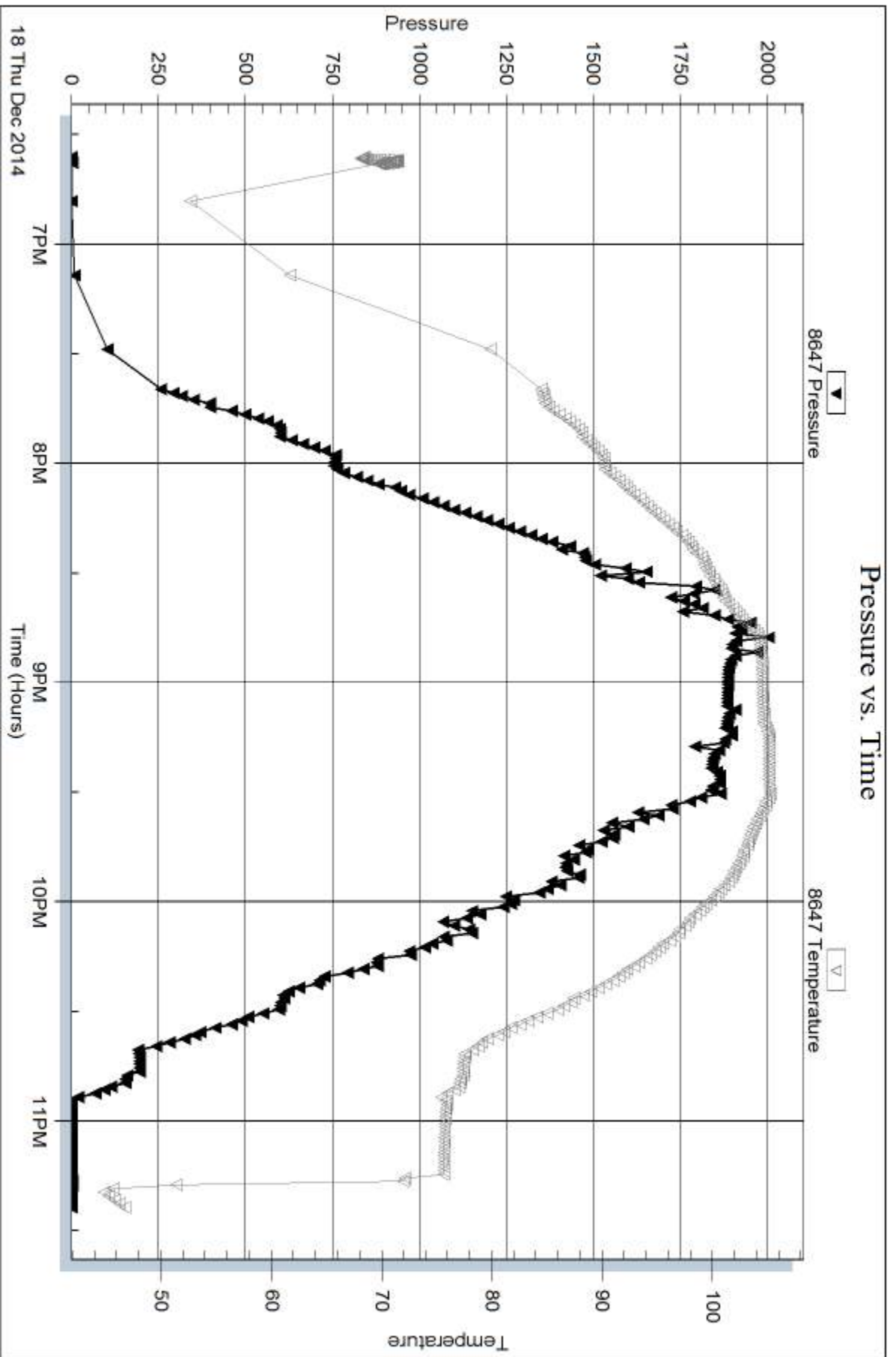
Length ft	Description	Volume bbbl

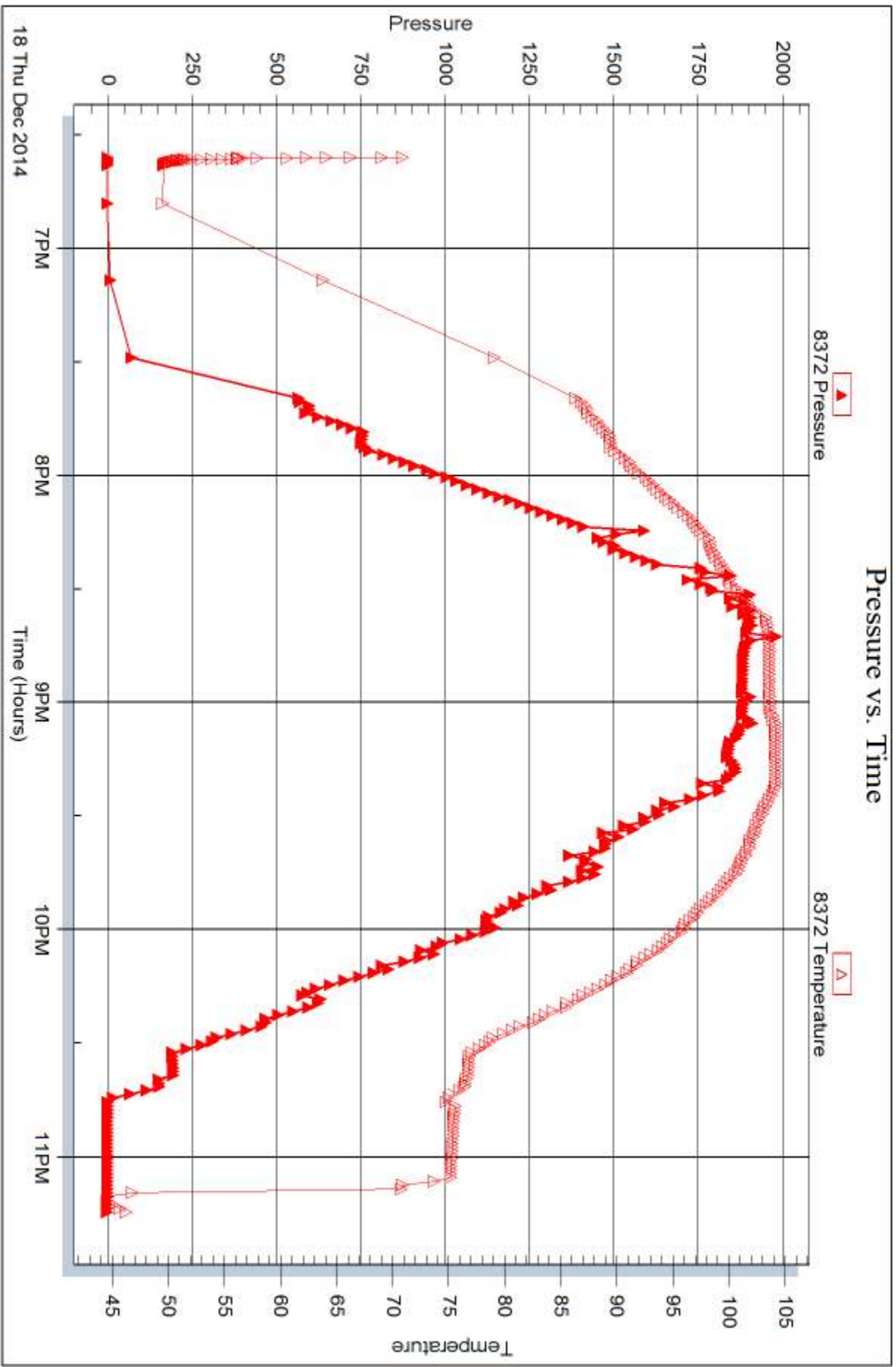
Total Length: ft Total Volume: bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water, Ste 300
Wichita, KS 67202

ATTN: Rocky Milford

Engle #1-8

8-5s-30w Decatur,KS

Start Date: 2014.12.19 @ 07:45:00

End Date: 2014.12.19 @ 15:52:30

Job Ticket #: 61054 DST #: 4

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

Printed: 2014.12.26 @ 10:12:27



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61054

DST#: 4

ATTN: Rocky Milford

Test Start: 2014.12.19 @ 07:45:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:41:30

Time Test Ended: 15:52:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 57

Interval: 4063.00 ft (KB) To 4130.00 ft (KB) (TVD)

Reference Elevations: 2917.00 ft (KB)

Total Depth: 4130.00 ft (KB) (TVD)

2914.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 3.00 ft

Serial #: 8647

Inside

Press@RunDepth: 69.66 psig @ 4064.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.19

End Date:

2014.12.19

Last Calib.: 2014.12.19

Start Time: 07:45:01

End Time:

15:52:30

Time On Btm: 2014.12.19 @ 09:36:30

Time Off Btm: 2014.12.19 @ 13:42:30

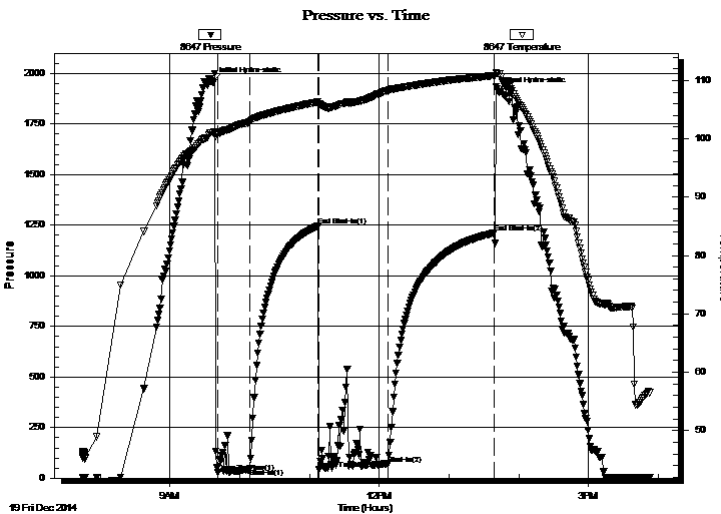
TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 2 1/4"

60 - ISI - No Return

60 - FF - Blow built to 3"

90 - FSI - Return built to 1/2"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1957.59	101.08	Initial Hydro-static
5	27.37	100.92	Open To Flow (1)
32	45.99	102.94	Shut-In(1)
91	1246.23	106.32	End Shut-In(1)
92	44.56	105.94	Open To Flow (2)
151	69.66	108.26	Shut-In(2)
242	1210.95	110.87	End Shut-In(2)
246	1909.62	111.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
91.00	100% mud	0.45

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61054

DST#: 4

ATTN: Rocky Milford

Test Start: 2014.12.19 @ 07:45:00

Tool Information

Drill Pipe:	Length: 3864.88 ft	Diameter: 3.80 inches	Volume: 54.21 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 187.12 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4063.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	67.80 ft			
Tool Length:	95.80 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			4040.00	
Hydraulic tool	5.00			4045.00	
Jars	5.00			4050.00	
Safety Joint	3.00			4053.00	
Packer	5.00			4058.00	28.00 Bottom Of Top Packer
Packer	5.00			4063.00	
Packer - Shale	0.00			4063.00	
Stubb	1.00			4064.00	
Recorder	0.00	8647	Inside	4064.00	
Recorder	0.00	8372	Outside	4064.00	
Perforations	30.00			4094.00	
Change Over Sub	1.00			4095.00	
Drill Pipe	31.80			4126.80	
Change Over Sub	1.00			4127.80	
Bullnose	3.00			4130.80	67.80 Bottom Packers & Anchor

Total Tool Length: 95.80



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 61054

DST#: 4

ATTN: Rocky Milford

Test Start: 2014.12.19 @ 07:45:00

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: 52.00 sec/qt

Cushion Volume: bbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure: psig

Salinity: 2100.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
91.00	100%mud	0.448

Total Length: 91.00 ft Total Volume: 0.448 bbl

Num Fluid Samples: 0

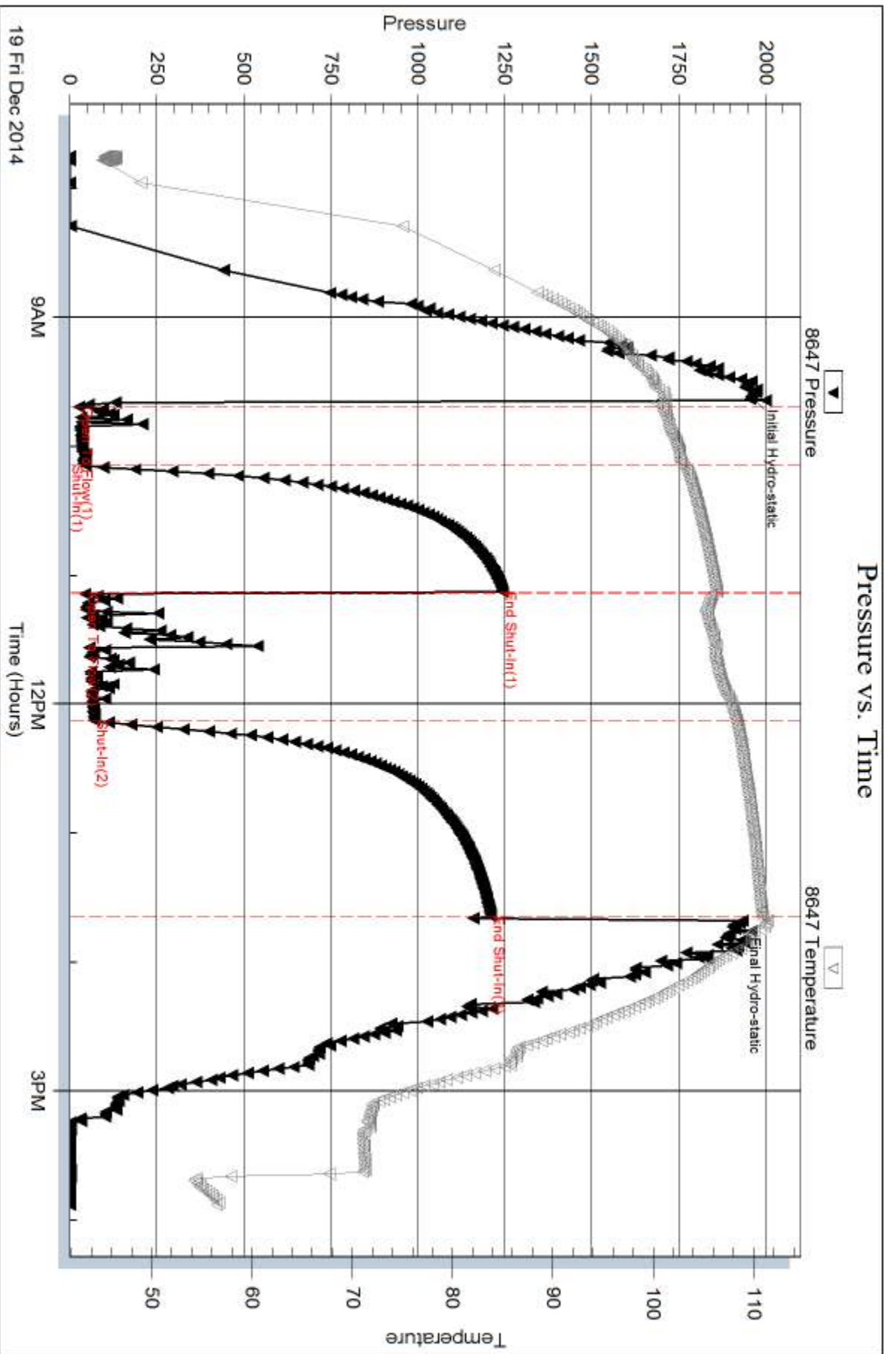
Num Gas Bombs: 0

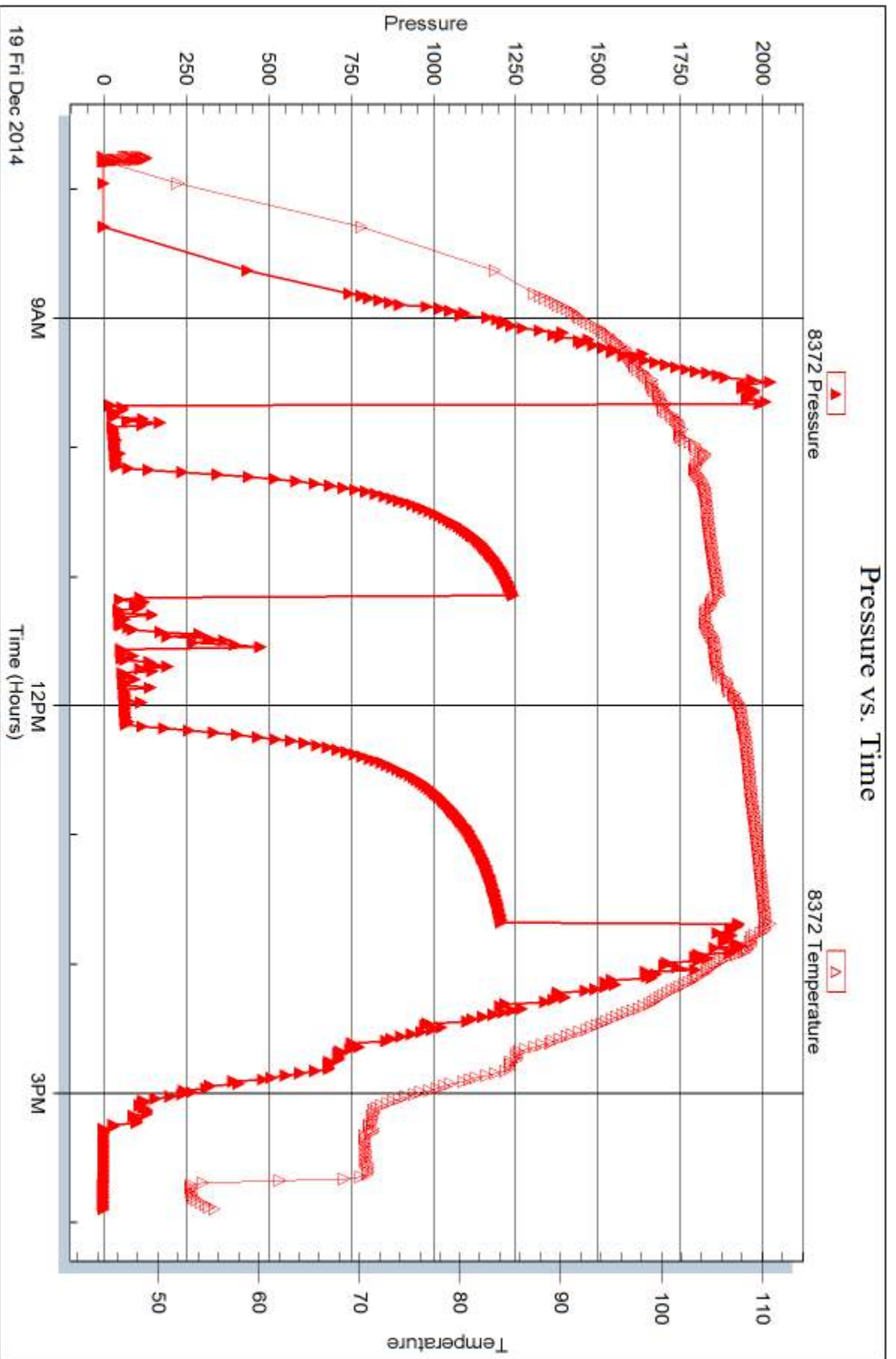
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water, Ste 300
Wichita, KS 67202

ATTN: Rocky Milford

Engle #1-8

8-5s-30w Decatur,KS

Start Date: 2014.12.20 @ 03:22:00

End Date: 2014.12.20 @ 11:27:30

Job Ticket #: 62137 DST #: 5

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

Printed: 2014.12.26 @ 10:11:37



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 62137

DST#: 5

ATTN: Rocky Milford

Test Start: 2014.12.20 @ 03:22:00

GENERAL INFORMATION:

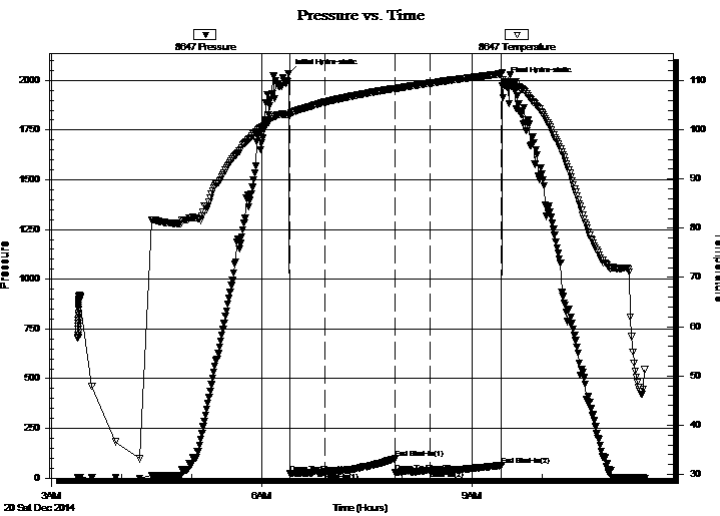
Formation: **LKC "K-L"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:23:30
 Time Test Ended: 11:27:30
 Interval: **4127.00 ft (KB) To 4185.00 ft (KB) (TVD)**
 Total Depth: 4185.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Donovan Baumann
 Unit No: 46
 Reference Elevations: 2917.00 ft (KB)
 2914.00 ft (CF)
 KB to GR/CF: 3.00 ft

Serial #: 8647

Inside

Press@RunDepth: 39.68 psig @ 4128.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.20 End Date: 2014.12.20 Last Calib.: 2014.12.20
 Start Time: 03:22:01 End Time: 11:27:30 Time On Btm: 2014.12.20 @ 06:23:00
 Time Off Btm: 2014.12.20 @ 09:27:00

TEST COMMENT: 30 - IF - Weak surface blow built to 1 in. in 10 min. & stayed for the 30 min. (In Deisel)
 60 - ISI - No return
 30 - FF - No surface blow
 60 - FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2034.97	103.10	Initial Hydro-static
1	24.08	103.08	Open To Flow (1)
31	31.07	105.63	Shut-In(1)
91	98.04	108.40	End Shut-In(1)
91	27.47	108.39	Open To Flow (2)
121	39.68	109.48	Shut-In(2)
182	64.19	111.37	End Shut-In(2)
184	1993.46	109.30	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud - 100M	0.05

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

250 N. Water, Ste 300
Wichita, KS 67202

ATTN: Rocky Milford

8-5s-30w Decatur, KS

Engle #1-8

Job Ticket: 62137

DST#: 5

Test Start: 2014.12.20 @ 03:22:00

GENERAL INFORMATION:

Formation: **LKC "K-L"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:23:30

Time Test Ended: 11:27:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 46

Interval: 4127.00 ft (KB) To 4185.00 ft (KB) (TVD)

Total Depth: 4185.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 2917.00 ft (KB)

2914.00 ft (CF)

KB to GR/CF: 3.00 ft

Serial #: 8372 Outside

Press@RunDepth: psig @ 4128.00 ft (KB)

Start Date: 2014.12.20

End Date: 2014.12.20

Start Time: 03:22:01

End Time: 11:29:30

Capacity: 8000.00 psig

Last Calib.: 2014.12.20

Time On Btm:

Time Off Btm:

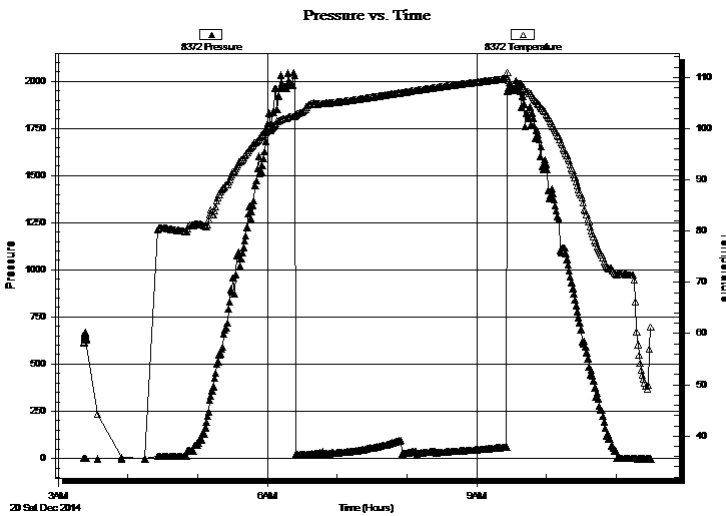
TEST COMMENT: 30 - IF - Weak surface blow built to 1 in. in 10 min. & stayed for the 30 min. (In Deisel)

60 - ISI - No return

30 - FF - No surface blow

60 - FSI - No return

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud - 100M	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 62137

DST#: 5

ATTN: Rocky Milford

Test Start: 2014.12.20 @ 03:22:00

Tool Information

Drill Pipe:	Length: 3928.00 ft	Diameter: 3.80 inches	Volume: 55.10 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: 90000.00 lb
			<u>Total Volume: 56.02 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4127.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	86.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4104.00	
Hydraulic tool	5.00			4109.00	
Jars	5.00			4114.00	
Safety Joint	3.00			4117.00	
Packer	5.00			4122.00	28.00 Bottom Of Top Packer
Packer	5.00			4127.00	
Stubb	1.00			4128.00	
Recorder	0.00	8647	Inside	4128.00	
Recorder	0.00	8372	Outside	4128.00	
Perforations	21.00			4149.00	
Change Over Sub	1.00			4150.00	
Drill Pipe	31.00			4181.00	
Change Over Sub	1.00			4182.00	
Bullnose	3.00			4185.00	58.00 Bottom Packers & Anchor

Total Tool Length: 86.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 62137

DST#: 5

ATTN: Rocky Milford

Test Start: 2014.12.20 @ 03:22:00

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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 24000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud - 100M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

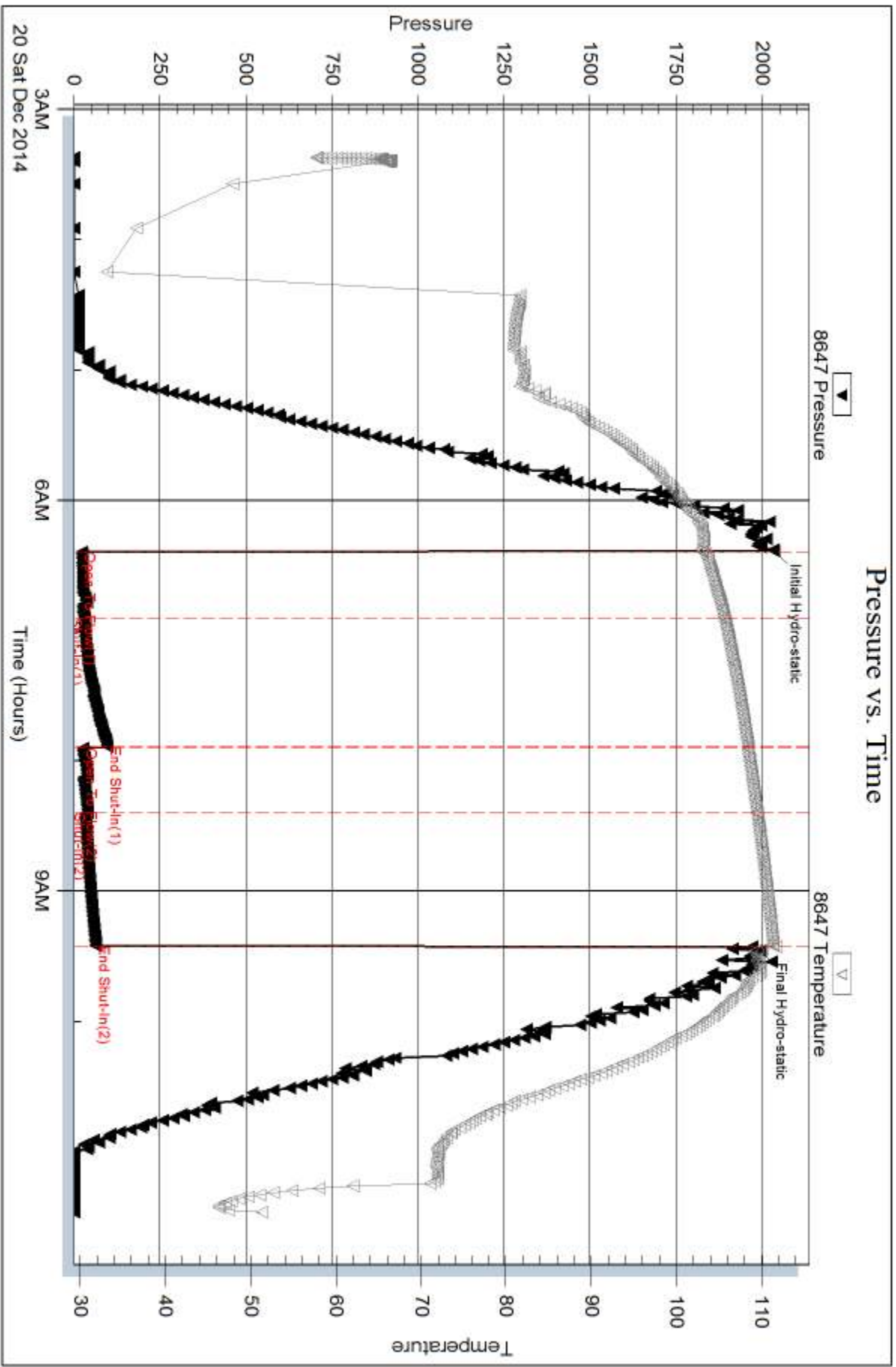
Num Gas Bombs: 0

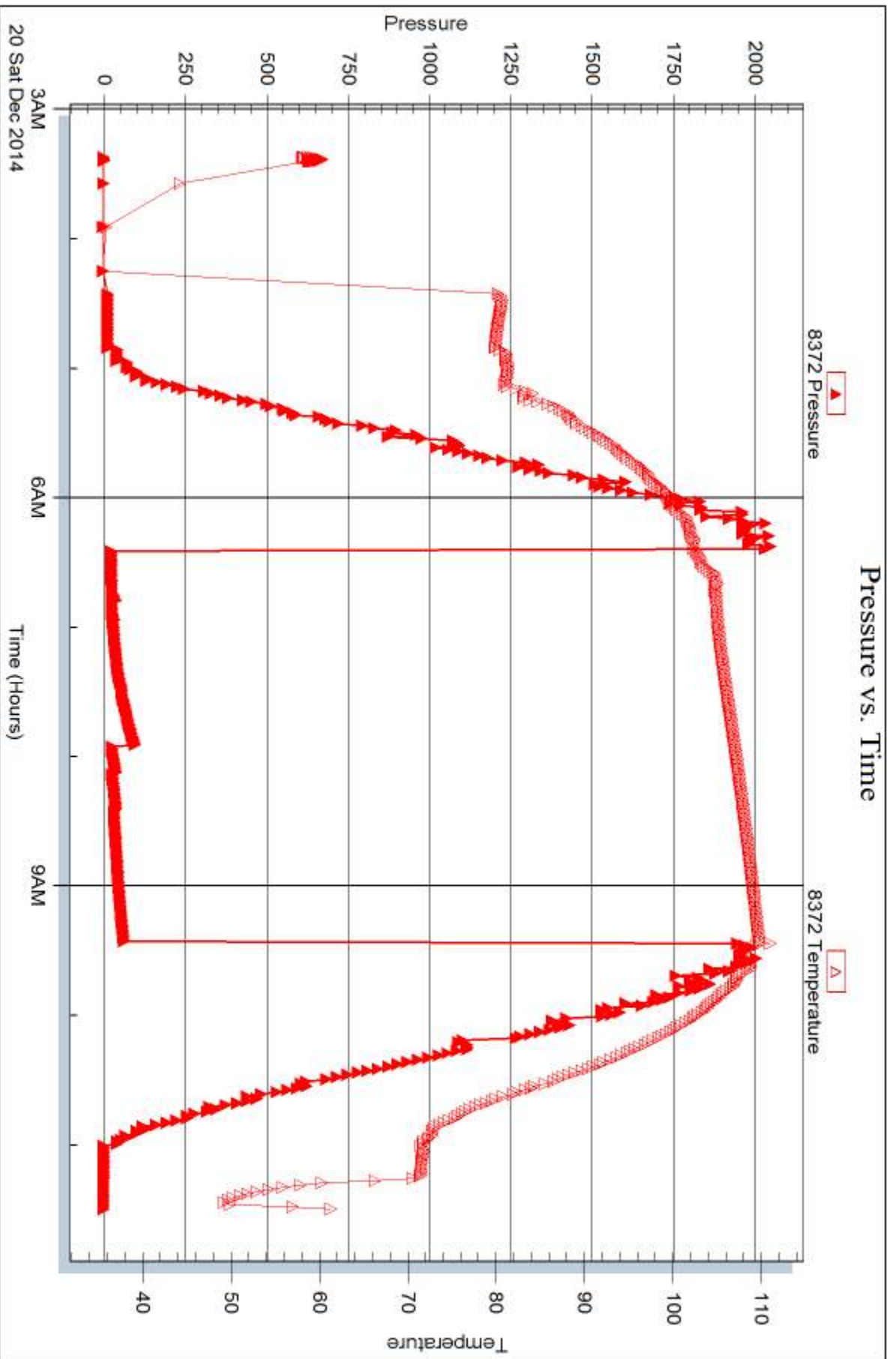
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drlg. Co., Inc.**

250 N. Water, Ste 300
Wichita, KS 67202

ATTN: Rocky Milford

Engle #1-8

8-5s-30w Decatur,KS

Start Date: 2014.12.21 @ 07:22:00

End Date: 2014.12.21 @ 14:57:00

Job Ticket #: 62138 DST #: 6

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

Printed: 2014.12.26 @ 10:10:15



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 62138

DST#: 6

ATTN: Rocky Milford

Test Start: 2014.12.21 @ 07:22:00

GENERAL INFORMATION:

Formation: **Verdigris**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:49:00

Time Test Ended: 14:57:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 46

Interval: 4375.00 ft (KB) To 4405.00 ft (KB) (TVD)

Reference Elevations: 2917.00 ft (KB)

Total Depth: 4405.00 ft (KB) (TVD)

2914.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 3.00 ft

Serial #: 8647

Inside

Press@RunDepth: 25.58 psig @ 4376.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.12.21

End Date:

2014.12.21

Last Calib.:

2014.12.21

Start Time: 07:22:01

End Time:

14:57:00

Time On Btm:

2014.12.21 @ 09:48:30

Time Off Btm:

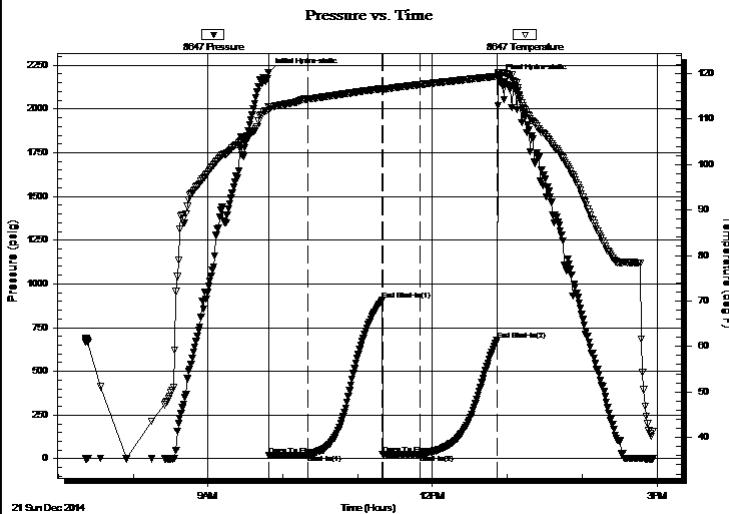
2014.12.21 @ 12:53:00

TEST COMMENT: 30 - IF - Weak surface blow built to 1 in. in 30 min. (In Deisel)

60 - ISI - No return

30 - FF - Weak surface blow built to 1/4 in. in 15 min. and stayed for the remainder

60 - FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2209.20	112.69	Initial Hydro-static
1	19.81	111.88	Open To Flow (1)
32	22.73	114.41	Shut-In(1)
91	905.87	116.67	End Shut-In(1)
92	24.11	116.29	Open To Flow (2)
122	25.58	117.55	Shut-In(2)
183	678.43	119.38	End Shut-In(2)
185	2173.14	120.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	OCM - 70M - 30o	0.07

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.

250 N. Water, Ste 300
Wichita, KS 67202

ATTN: Rocky Milford

8-5s-30w Decatur, KS

Engle #1-8

Job Ticket: 62138

DST#: 6

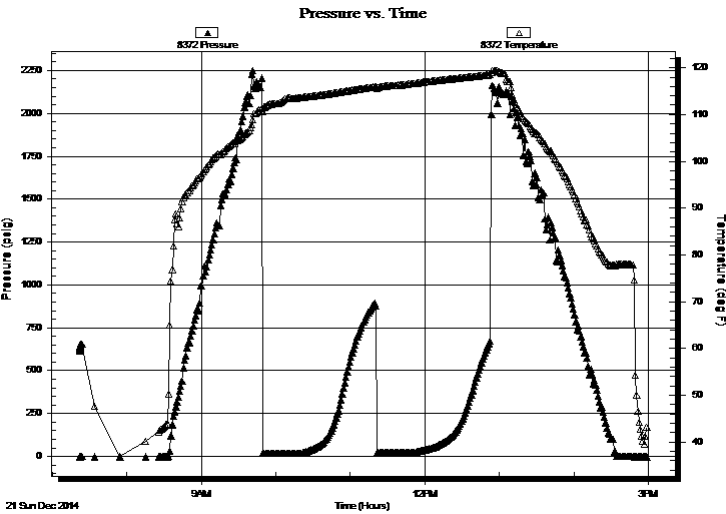
Test Start: 2014.12.21 @ 07:22:00

GENERAL INFORMATION:

Formation: **Verdigris**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:49:00
 Time Test Ended: 14:57:00
Interval: 4375.00 ft (KB) To 4405.00 ft (KB) (TVD)
 Total Depth: 4405.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Donovan Baumann
 Unit No: 46
 Reference Elevations: 2917.00 ft (KB)
 2914.00 ft (CF)
 KB to GR/CF: 3.00 ft

Serial #: 8372 Outside
 Press@RunDepth: psig @ 4376.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.12.21 End Date: 2014.12.21 Last Calib.: 2014.12.21
 Start Time: 07:22:01 End Time: 14:58:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF - Weak surface blow built to 1 in. in 30 min. (In Deisel)
 60 - ISI - No return
 30 - FF - Weak surface blow built to 1/4 in. in 15 min. and stayed for the remainder
 60 - FSI - No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
15.00	OCM - 70M - 30o	0.07

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 62138

DST#: 6

ATTN: Rocky Milford

Test Start: 2014.12.21 @ 07:22:00

Tool Information

Drill Pipe:	Length: 4182.00 ft	Diameter: 3.80 inches	Volume: 58.66 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: 59.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4375.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	30.00 ft			
Tool Length:	58.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			4352.00	
Hydraulic tool	5.00			4357.00	
Jars	5.00			4362.00	
Safety Joint	3.00			4365.00	
Packer	5.00			4370.00	28.00 Bottom Of Top Packer
Packer	5.00			4375.00	
Stubb	1.00			4376.00	
Recorder	0.00	8647	Inside	4376.00	
Recorder	0.00	8372	Outside	4376.00	
Perforations	26.00			4402.00	
Bullnose	3.00			4405.00	30.00 Bottom Packers & Anchor

Total Tool Length: 58.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drlg. Co., Inc.

8-5s-30w Decatur, KS

250 N. Water, Ste 300
Wichita, KS 67202

Engle #1-8

Job Ticket: 62138

DST#: 6

ATTN: Rocky Milford

Test Start: 2014.12.21 @ 07:22:00

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: 5.99 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	OCM - 70M - 30o	0.074

Total Length: 15.00 ft Total Volume: 0.074 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

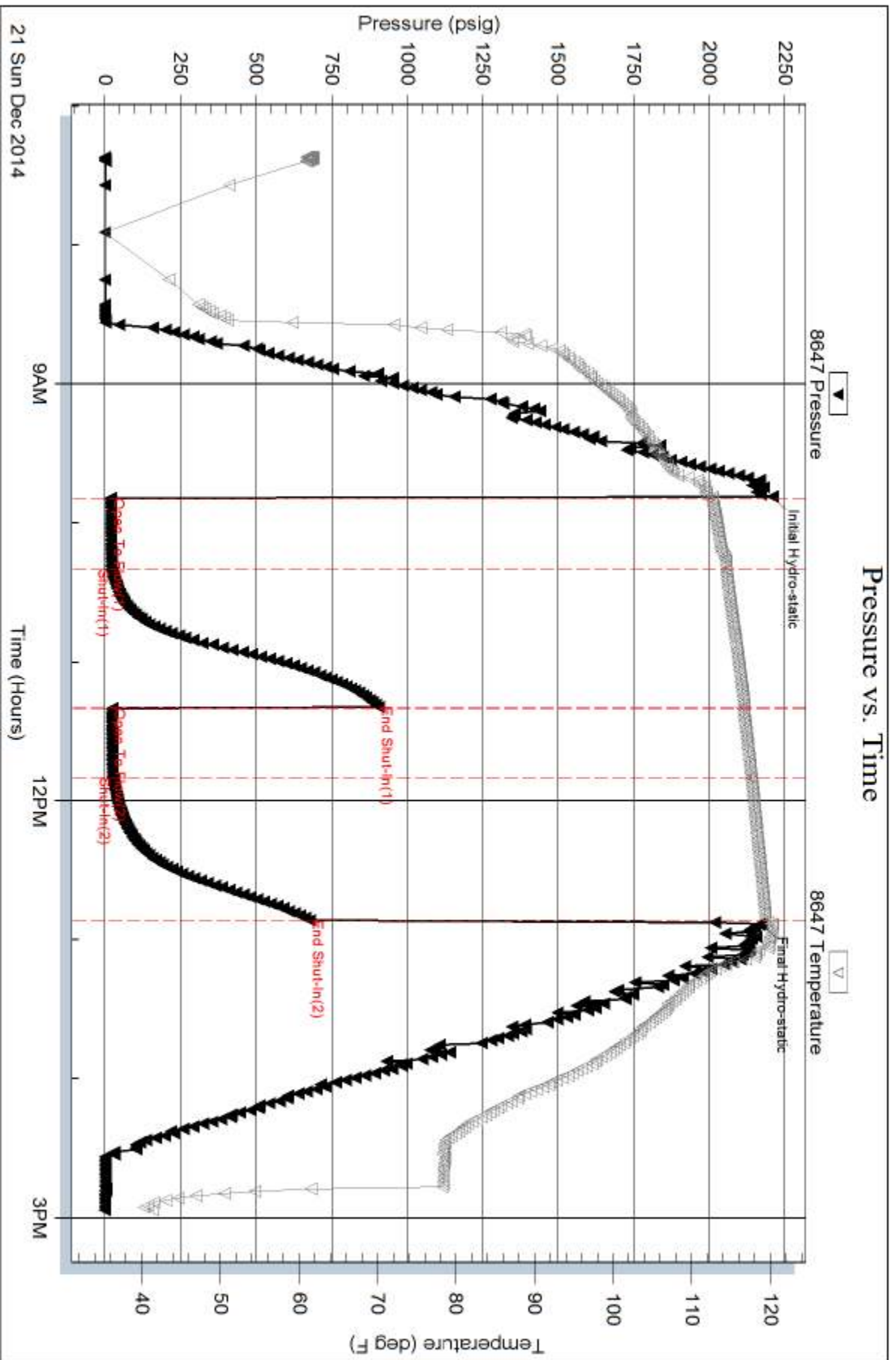
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



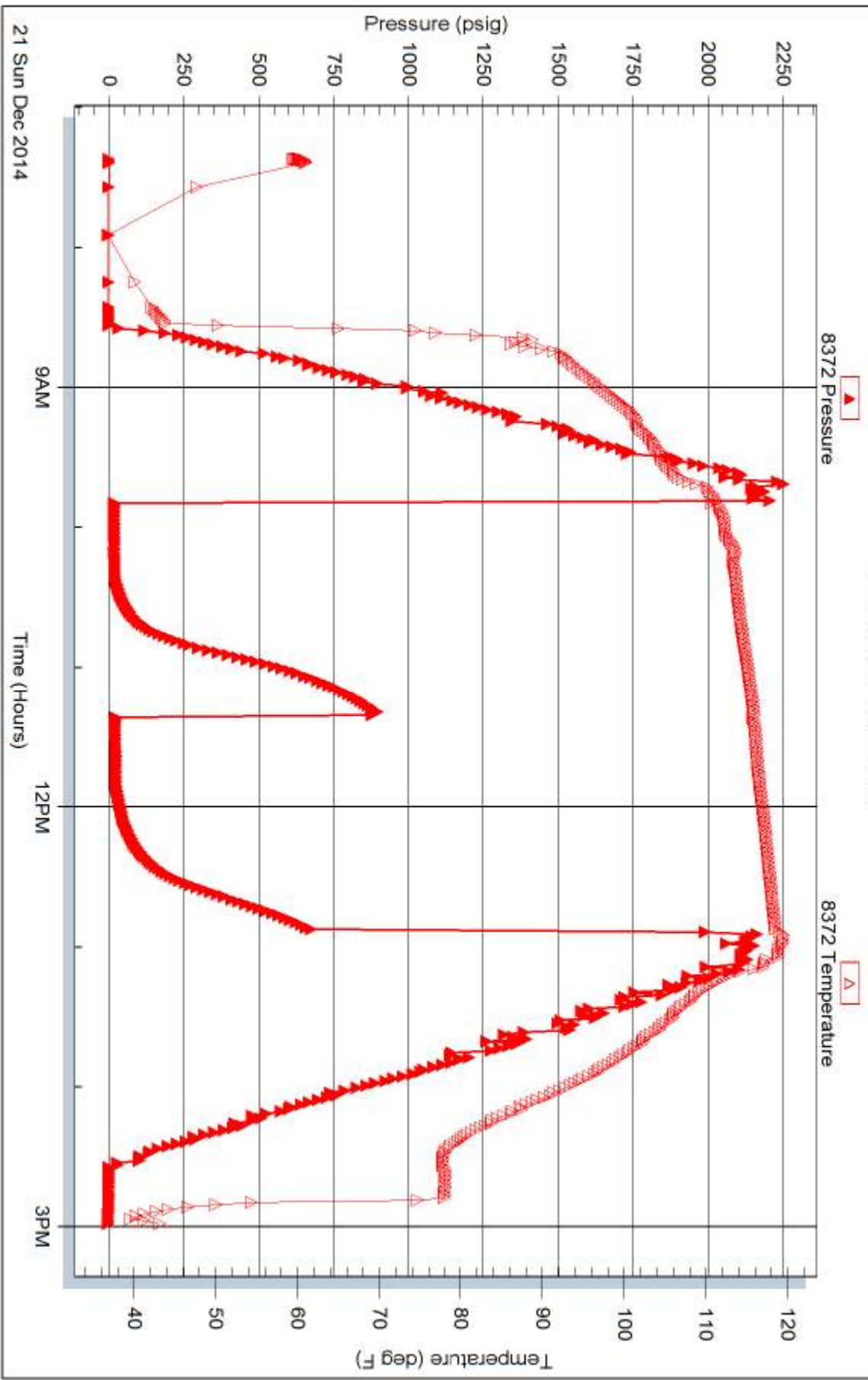
Serial #: 8372

Outside Murfin Drfg. Co., Inc.

Engle #1-8

DST Test Number: 6

Pressure vs. Time





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **61051**

Well Name & No. Engle #1-8 Test No. 1 Date 12-17-14
 Company Murfin Drlg. Co., Inc. Elevation 2917 KB 2912 GL
 Address 250 N. Water, STE 300 Wichita KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 8 Twp. 5s Rge. 30W Co. Decatur State KS

Interval Tested 3915-3997 Zone Tested Toronto - LKC "B"
 Anchor Length 82' Drill Pipe Run 3765 Mud Wt. 8.7
 Top Packer Depth 3910 Drill Collars Run 187.12 Vis 80
 Bottom Packer Depth 3915 Wt. Pipe Run — WL 6
 Total Depth 3997 Chlorides 700 ppm System LCM 6
 Blow Description IF- Opened w/ surface blow. built to 6 1/4"
ISI- No Return
FF- Blow built to B.O.B in 45 min.
FBI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
93	wm		40	60	
63	mw		50	50	
183	MW		70	30	

Rec Total 339 BHT 115 Gravity _____ API RW .456 @ 23.5 °F Chlorides 50,000 ppm

(A) Initial Hydrostatic 1910 Test 1150 T-On Location 2:16 AM
 (B) First Initial Flow 40 Jars 250 T-Started 3:30 AM
 (C) First Final Flow 113 Safety Joint 75 T-Open 7:02 AM
 (D) Initial Shut-In 1264 Circ Sub _____ T-Pulled 11:02 AM
 (E) Second Initial Flow 119 Hourly Standby X1 .75h T-Out 1:18 PM
 (F) Second Final Flow 194 Mileage 48 R.T. 74.40 Comments _____
 (G) Final Shut-In 1247 Sampler _____
 (H) Final Hydrostatic 1878 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1624.40
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1624.40

Approved By _____

Our Representative Burditt

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61052

Well Name & No. Engle #1-8 Test No. 2 Date 12-17-14
 Company Murfin Drilg. Co., Inc. Elevation 2917 KB 2912 GL
 Address 250 N. Water, STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky M. Ford Rig Murfin #7
 Location: Sec. 8 Twp. 5S Rge. 30W Co. Decatur State KS

Interval Tested 4016-4052 Zone Tested LKC 'D Prime' - 'G'
 Anchor Length 36 Drill Pipe Run 3833 Mud Wt. 9.3
 Top Packer Depth 4011 Drill Collars Run 187.12 Vis 55
 Bottom Packer Depth 4016 Wt. Pipe Run — WL 6.4
 Total Depth 4052 Chlorides 1000 ppm System LCM 6

Blow Description IF- Opened w/ surface blow, stayed right above surface
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

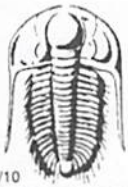
Rec Total 2 BHT 114 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1992</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>11:36 PM</u>
(B) First Initial Flow <u>46</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>12:18 AM</u>
(C) First Final Flow <u>225</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>3:19 AM</u>
(D) Initial Shut-In <u>115</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>6:19 AM</u>
(E) Second Initial Flow <u>119</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>8:46 AM</u>
(F) Second Final Flow <u>199</u>	<input checked="" type="checkbox"/> Mileage <u>48 R.T.</u> <u>74.40</u>	Comments _____
(G) Final Shut-In <u>339</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1934</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input checked="" type="checkbox"/> Ruined Packer <u>X1</u> <u>320</u>
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Accessibility _____	Total <u>2019.40</u>
	Sub Total <u>1699.40</u>	MP/DST Disc't _____

Approved By _____ Our Representative Bruce O. H.

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. 61053

Well Name & No. Engle #1-8 Test No. 3 Date 12-18-14
 Company Murfin Drlg. Co., Inc Elevation 2917 KB 2912 GL
 Address 250 N. Water. STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 8 Twp. 5S Rge. 30W Co. Decatur State KS

Interval Tested 4063-4130 Zone Tested LKC "H-3"
 Anchor Length 67' Drill Pipe Run — Mud Wt. 9
 Top Packer Depth 4058 Drill Collars Run 187.12 Vis 52
 Bottom Packer Depth 4063 Wt. Pipe Run — WL 6.8
 Total Depth 4130 Chlorides 2100 ppm System LCM 7

Blow Description IF-
IS-
FF-
FSI-

MIS RUN

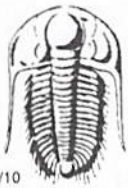
Rec	Feet of	%gas	%oil	%water	%mud

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

(A) Initial Hydrostatic _____	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>6:03 PM</u>
(B) First Initial Flow _____	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>6:36 PM</u>
(C) First Final Flow _____	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>—</u>
(D) Initial Shut-In _____	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>—</u>
(E) Second Initial Flow _____	<input type="checkbox"/> Hourly Standby _____	T-Out <u>11:25 PM</u>
(F) Second Final Flow _____	<input checked="" type="checkbox"/> Mileage <u>48 R.T.</u> <u>74.40</u>	Comments <u>Hit bridge</u>
(G) Final Shut-In _____	<input type="checkbox"/> Sampler _____	<u>going into hole</u>
(H) Final Hydrostatic _____	<input type="checkbox"/> Straddle _____	<u>about 110' from fd.</u>
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>X1</u> <u>250</u>	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Final Flow <u>—</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Shut-In <u>—</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1699.40</u>
	Sub Total <u>1699.40</u>	MP/DST Disc't _____

Approved By _____ Our Representative Burd Oit

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61054

Well Name & No. Engle #1-8 Test No. 4 Date _____
 Company Murfin Drlg. Co., Inc. Elevation 2917 KB 2912 GL _____
 Address 250 N. Water, STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 8 Twp. 5S Rge. 30W Co. Decatur State KS

Interval Tested 4063 - 4130 Zone Tested LKC "H-J"
 Anchor Length 67' Drill Pipe Run 3864.88 Mud Wt. 9
 Top Packer Depth 4058 Drill Collars Run 187.12 Vis 52
 Bottom Packer Depth 4063 Wt. Pipe Run — WL 6.8
 Total Depth 4130 Chlorides 2100 ppm System LCM 7

Blow Description IF - Opened w/ surface blow, built to 2 1/4"
ISI - No Return
FF - Blow built to 3"
FSI - ~~Blow~~ Return built to 1/2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>91</u>	<u>Mud w/ few oil spots in tool</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 91 BHT 110 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1957 Test 1250 T-On Location 7:44AM
 (B) First Initial Flow 27 Jars 250 T-Started 7:45AM
 (C) First Final Flow 45 Safety Joint 75 T-Open 9:41AM
 (D) Initial Shut-In 1246 Circ Sub _____ T-Pulled 1:41PM
 (E) Second Initial Flow 44 Hourly Standby _____ T-Out 3:55 PM
 (F) Second Final Flow 69 Mileage 48 R.T. 74.40 Comments _____
 (G) Final Shut-In 1210 Sampler _____
 (H) Final Hydrostatic 1909 Straddle _____

Shale Packer x1 250 Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1899.40
 Sub Total 1899.40 MP/DST Disc't _____

Approved By _____ Our Representative Bud Oitz

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **62137**

Well Name & No. Engle #1-8 Test No. 5 Date 12-20-14
 Company Murfin Drilling Co., Inc Elevation 2917 KB 2912 GL
 Address 250 N. Water St. #300 Wichita, KS, 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #7
 Location: Sec. 8 Twp. 5S Rge. 30W Co. Decatur State KS

Interval Tested 4127' - 4185' Zone Tested LKC "K-L"
 Anchor Length 58' Drill Pipe Run 3928 Mud Wt. 9
 Top Packer Depth 4122' Drill Collars Run 187.12 Vis 54
 Bottom Packer Depth 4127' Wt. Pipe Run 0 WL 6
 Total Depth 4185' Chlorides 2400 ppm System LCM #6
 Blow Description IF - weak surface blow built to 1 in. in 10 min, & stayed full the 30.
(in diesel)
ISF - NO return
FF - NO surface blow
FSF - NO return

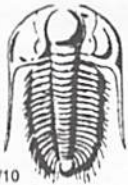
Rec	Feet of	%gas	%oil	%water	%mud
10	mud			100	

Rec Total 10 BHT 111 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2035</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>2:33 am</u>
(B) First Initial Flow <u>24</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:22 am</u>
(C) First Final Flow <u>31</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>6:24 am</u>
(D) Initial Shut-In <u>98</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>9:26 am</u>
(E) Second Initial Flow <u>27</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>11:29 am</u>
(F) Second Final Flow <u>40</u>	<input checked="" type="checkbox"/> Mileage <u>48 RT</u> 74.40	Comments _____
(G) Final Shut-In <u>64</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1993</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input checked="" type="checkbox"/> Ruined Packer <u>320</u>
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>1969.40</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1649.40</u>	

Approved By _____ Our Representative Gregory Baumgardner

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 62138

Well Name & No. Engle # 1-8 Test No. 6 Date 12-21-14
 Company Murfin Drilg. Co., Inc Elevation 2917 KB 2912 GL
 Address 250 N. water STE 300 Wichita, KS, 67202
 Co. Rep / Geo. Rocky M. Iford Rig Murfin #7
 Location: Sec. 8 Twp. 5S Rge. 30w Co. Decatur State KS

Interval Tested 4375' - 4405' Zone Tested verdigris
 Anchor Length 30' Drill Pipe Run 4182 Mud Wt. 9.1
 Top Packer Depth 4370' Drill Collars Run 181.12 Vis 50
 Bottom Packer Depth 4375' Wt. Pipe Run 0 WL 6
 Total Depth 4405' Chlorides 2200 ppm System LCM #5
 Blow Description IF- weak surface blow built to 1 in. in 30 min. (In Deisel)
ISI- NO return
FF- weak surface blow built to 1/4 in. in 15 min. & stayed for the remainder
FSI- NO return

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>OCM</u>		<u>30</u>	<u>70</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 15 BHT 119 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2209</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>6:20am</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>7:22am</u>
(C) First Final Flow <u>23</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>9:50am</u>
(D) Initial Shut-In <u>906</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>12:55pm</u>
(E) Second Initial Flow <u>24</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>2:58pm</u>
(F) Second Final Flow <u>26</u>	<input checked="" type="checkbox"/> Mileage <u>48 RT</u> 74.40	Comments _____
(G) Final Shut-In <u>678</u>	<input type="checkbox"/> Sampler _____	<input type="checkbox"/> Ruined Shale Packer _____
(H) Final Hydrostatic <u>2173</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Total <u>1649.40</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	MP/DST Disc't _____
	<input type="checkbox"/> Accessibility _____	
	Sub Total <u>1649.40</u>	

Approved By _____ Our Representative Gonarcw Baumann

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