



DRILL STEM TEST REPORT

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

250 N. Water Suite 300
Wichita, KS 67202

ATTN: Rocky Milford

HMZ #2-29

29-1s-36w Rawlins,KS

Start Date: 2014.04.11 @ 18:28:00

End Date: 2014.04.12 @ 03:03:15

Job Ticket #: 56990 DST #: 1

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

Printed: 2014.04.19 @ 12:32:07

Murfin Drilling Co., Inc.
29-1s-36w Rawlins,KS
HMZ #2-29
DST # 1
Stotler
2014.04.11



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N. Water Suite 300
 Wichita, KS 67202
 ATTN: Rocky Milford

29-1s-36w Rawlins, KS

HMZ #2-29

Job Ticket: 56990

DST#: 1

Test Start: 2014.04.11 @ 18:28:00

GENERAL INFORMATION:

Formation: **Stotler**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:45:45
 Time Test Ended: 03:03:15
 Interval: **3858.00 ft (KB) To 4015.00 ft (KB) (TVD)**
 Total Depth: 4015.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: James Winder
 Unit No: 57
 Reference Elevations: 3308.00 ft (KB)
 3303.00 ft (CF)
 KB to GR/CF: 5.00 ft

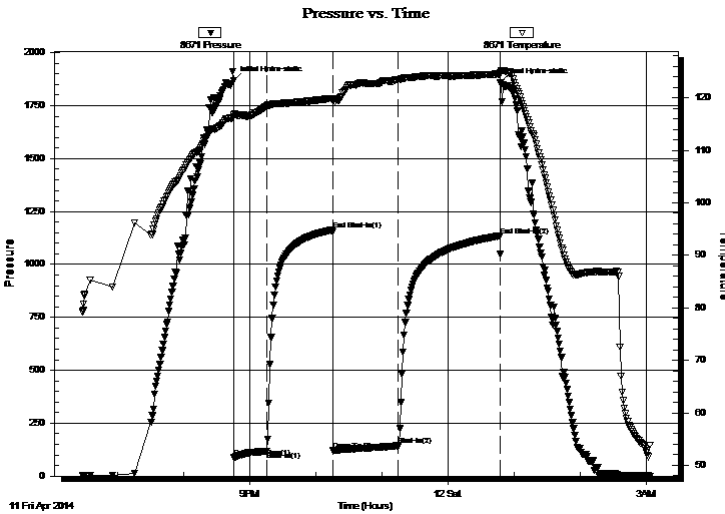
Serial #: 8671

Inside

Press@RunDepth: 143.71 psig @ 3859.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.11 End Date: 2014.04.12 Last Calib.: 2014.04.12
 Start Time: 18:28:05 End Time: 03:03:15 Time On Btm: 2014.04.11 @ 20:45:15
 Time Off Btm: 2014.04.12 @ 00:47:45

TEST COMMENT: 30 - IF: 5" Surge blow at open, bled off, Blow built to 2 1/2"
 60 - IS: No blow back
 60 - FF: Blow built to 6 3/4"
 90 - FS: Blow back built to 1/8"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1867.34	116.44	Initial Hydro-static
1	88.05	116.67	Open To Flow (1)
31	117.33	118.52	Shut-In(1)
90	1162.46	119.90	End Shut-In(1)
91	120.19	119.51	Open To Flow (2)
150	143.71	123.47	Shut-In(2)
242	1135.05	124.53	End Shut-In(2)
243	1860.29	124.88	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
187.00	GOCM 64% m, 24% o, 12% g	0.92
90.00	OCM 83% m, 11% o, 6% g	1.26

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

29-1s-36w Rawlins,KS

250 N. Water Suite 300
Wichita, KS 67202

HMZ #2-29

Job Ticket: 56990

DST#: 1

ATTN: Rocky Milford

Test Start: 2014.04.11 @ 18:28:00

Tool Information

Drill Pipe:	Length: 3662.00 ft	Diameter: 3.80 inches	Volume: 51.37 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: 52.29 bbl</u>	Tool Chased	6.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial	68000.00 lb
Depth to Top Packer:	3858.00 ft			Final	69000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	157.00 ft				
Tool Length:	185.00 ft				
Number of Packers:	2	Diameter:	6.75 inches		

Tool Comments: Tool chased 6' to bottom - mud down 15' - 5" surge blow at open

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3835.00	
Hydraulic tool	5.00			3840.00	
Jars	5.00			3845.00	
Safety Joint	3.00			3848.00	
Packer	5.00			3853.00	28.00 Bottom Of Top Packer
Packer	5.00			3858.00	
Packer - Shale	0.00			3858.00	
Stubb	1.00			3859.00	
Recorder	0.00	8671	Inside	3859.00	
Recorder	0.00	8320	Outside	3859.00	
Perforations	25.00			3884.00	
Blank Spacing	126.00			4010.00	
Perforations	2.00			4012.00	
Bullnose	3.00			4015.00	157.00 Bottom Packers & Anchor

Total Tool Length: 185.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-36w Rawlins,KS

250 N. Water Suite 300
Wichita, KS 67202

HMZ #2-29

Job Ticket: 56990

DST#: 1

ATTN: Rocky Milford

Test Start: 2014.04.11 @ 18:28:00

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: 5.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
187.00	GOCM 64%m, 24%o, 12%g	0.920
90.00	OCM 83%m, 11%o, 6%g	1.262

Total Length: 277.00 ft Total Volume: 2.182 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

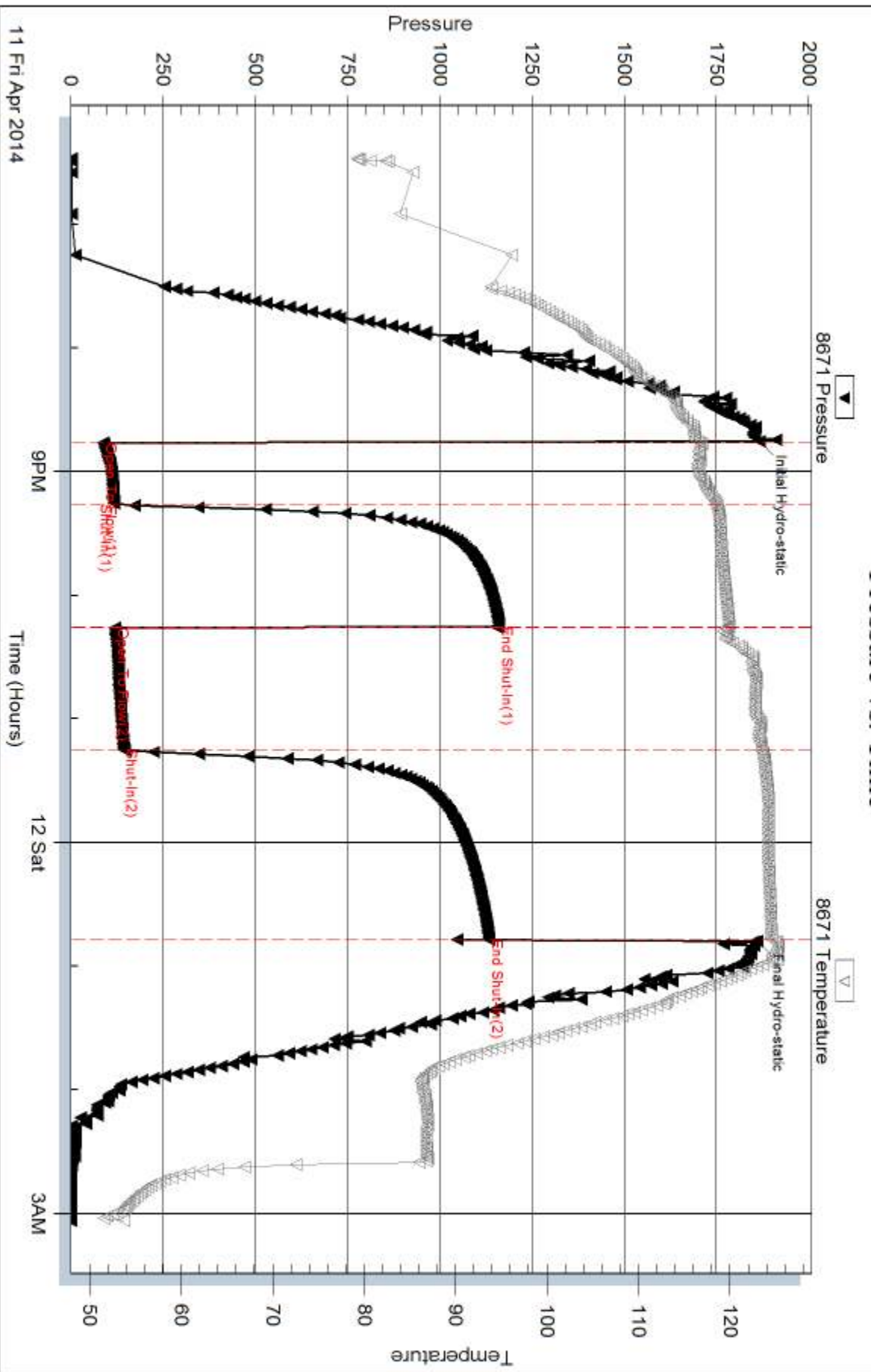
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

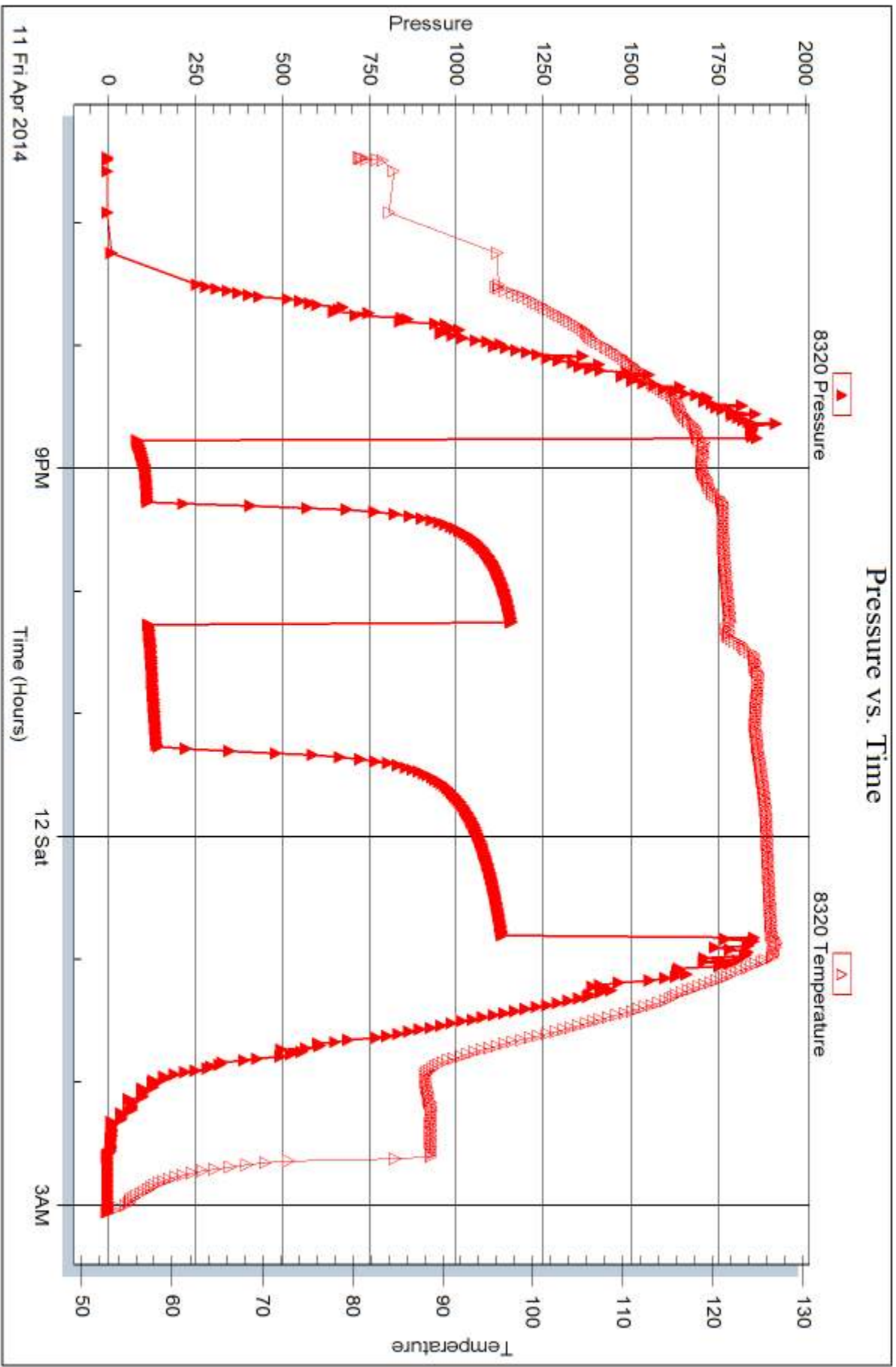


Serial #: 8320

Outside Murfin Drilling Co., Inc.

HWZ #2-29

DST Test Number: 1



Tribble Testing, Inc

Ref. No: 56990

Printed: 2014.04.19 @ 12:32:09



DRILL STEM TEST REPORT

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

250 N. Water Suite 300
Wichita, KS 67202

ATTN: Rocky Milford

HMZ #2-29

29-1s-36w Rawlins,KS

Start Date: 2014.04.13 @ 02:38:00

End Date: 2014.04.13 @ 12:29:43

Job Ticket #: 56991 DST #: 2

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

Printed: 2014.04.19 @ 12:31:44



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
250 N. Water Suite 300
Wichita, KS 67202
ATTN: Rocky Milford

29-1s-36w Rawlins,KS

HMZ #2-29

Job Ticket: 56991

DST#: 2

Test Start: 2014.04.13 @ 02:38:00

GENERAL INFORMATION:

Formation: **LKC "A - D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:53:43
 Time Test Ended: 12:29:43
 Interval: **4187.00 ft (KB) To 4320.00 ft (KB) (TVD)**
 Total Depth: 4320.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder
 Unit No: 57
 Reference Elevations: 3308.00 ft (KB)
 3303.00 ft (CF)
 KB to GR/CF: 5.00 ft

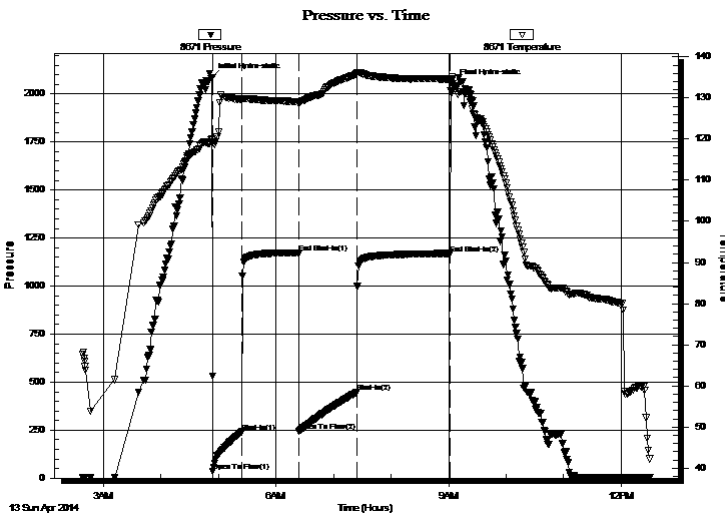
Serial #: 8671

Inside

Press@RunDepth: 448.27 psig @ 4188.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.13 End Date: 2014.04.13 Last Calib.: 2014.04.13
 Start Time: 02:38:05 End Time: 12:29:43 Time On Btm: 2014.04.13 @ 04:53:13
 Time Off Btm: 2014.04.13 @ 09:04:43

TEST COMMENT: 30 - IF: Blow built to BOB (11") in 9 3/4 min.
 60 - ISI: No blow back
 60 - FF: Blow built to BOB in 14 min.
 90 - FSI: No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2084.79	120.10	Initial Hydro-static
1	37.13	119.36	Open To Flow (1)
31	241.20	129.61	Shut-In(1)
90	1173.72	129.12	End Shut-In(1)
91	243.40	128.72	Open To Flow (2)
151	448.27	135.87	Shut-In(2)
249	1169.58	134.59	End Shut-In(2)
252	2054.02	134.69	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
312.00	MCW w/Oil Spots 88%w , 11%m, 1%o	2.67
63.00	WM w /Oil spots 53%m, 40%w , 6%g, 1%o	0.88
190.00	GWCM w /Oil spots 72%m, 16%w , 11%g	2.67
365.00	G Mud w /Oil spots 92%m, 6%g, 2%o	5.12

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

29-1s-36w Rawlins,KS

250 N. Water Suite 300
Wichita, KS 67202

HMZ #2-29

Job Ticket: 56991

DST#: 2

ATTN: Rocky Milford

Test Start: 2014.04.13 @ 02:38:00

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: 187.00 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 56.72 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4187.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	133.00 ft			
Tool Length:	161.00 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			4164.00	
Hydraulic tool	5.00			4169.00	
Jars	5.00			4174.00	
Safety Joint	3.00			4177.00	
Packer	5.00			4182.00	28.00 Bottom Of Top Packer
Packer	5.00			4187.00	
Packer - Shale	0.00			4187.00	
Stubb	1.00			4188.00	
Recorder	0.00	8671	Inside	4188.00	
Recorder	0.00	8320	Outside	4188.00	
Perforations	31.00			4219.00	
Blank Spacing	96.00			4315.00	
Perforations	2.00			4317.00	
Bullnose	3.00			4320.00	133.00 Bottom Packers & Anchor

Total Tool Length: 161.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-36w Rawlins,KS

250 N. Water Suite 300
Wichita, KS 67202

HMZ #2-29

Job Ticket: 56991

DST#: 2

ATTN: Rocky Milford

Test Start: 2014.04.13 @ 02:38:00

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:

12000 ppm

Viscosity: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
312.00	MCW w/Oil Spots 88%w , 11%m, 1%o	2.673
63.00	WM w/Oil spots 53%m, 40%w , 6%g, 1%o	0.884
190.00	GWCM w/Oil spots 72%m, 16%w , 11%g, 1%	2.665
365.00	G Mud w/Oil spots 92%m, 6%g, 2%o	5.120

Total Length: 930.00 ft

Total Volume: 11.342 bbl

Num Fluid Samples: 0

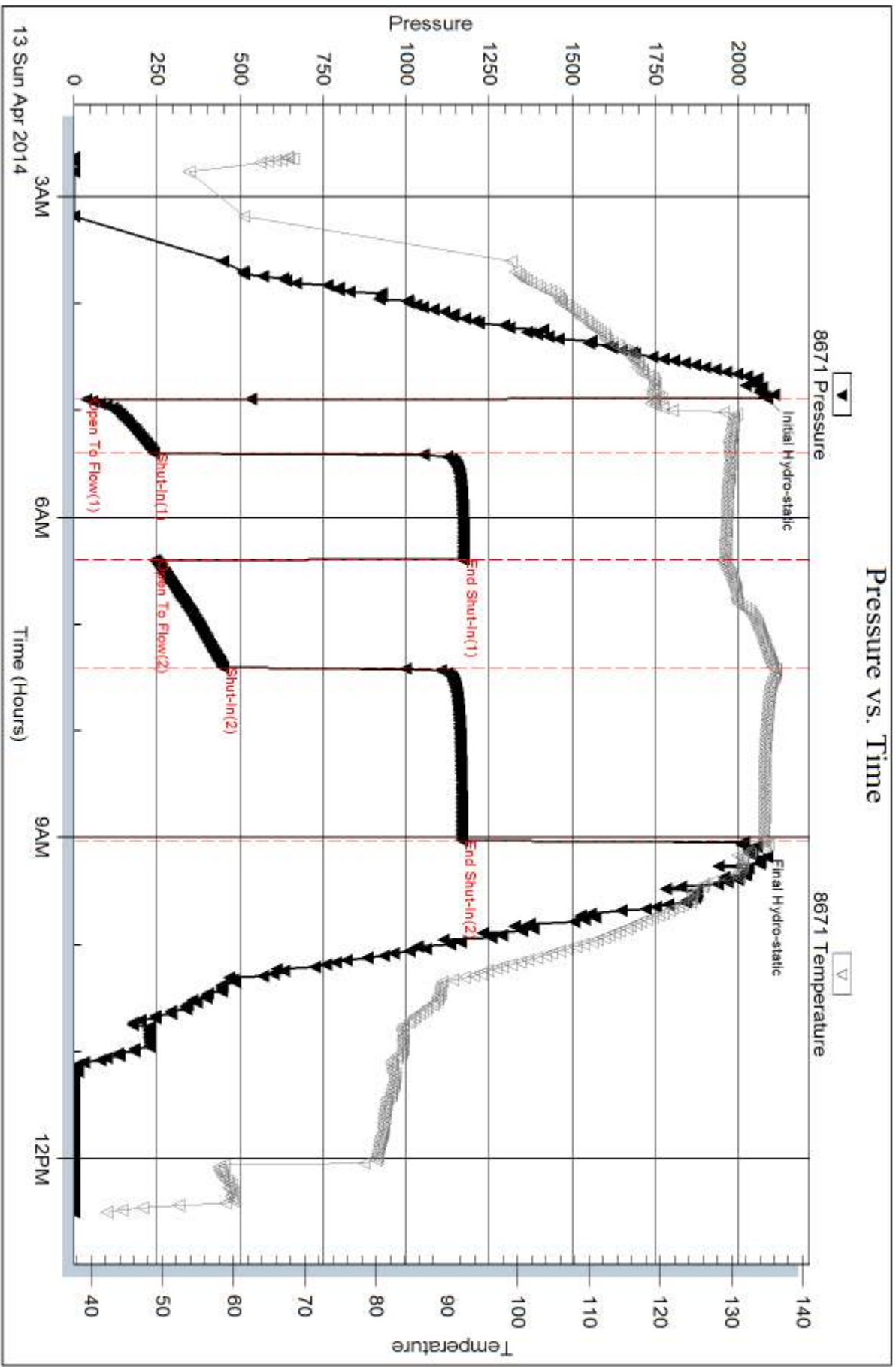
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .724 ohms @ 49.7 deg F Chlorides = 12,000 ppm

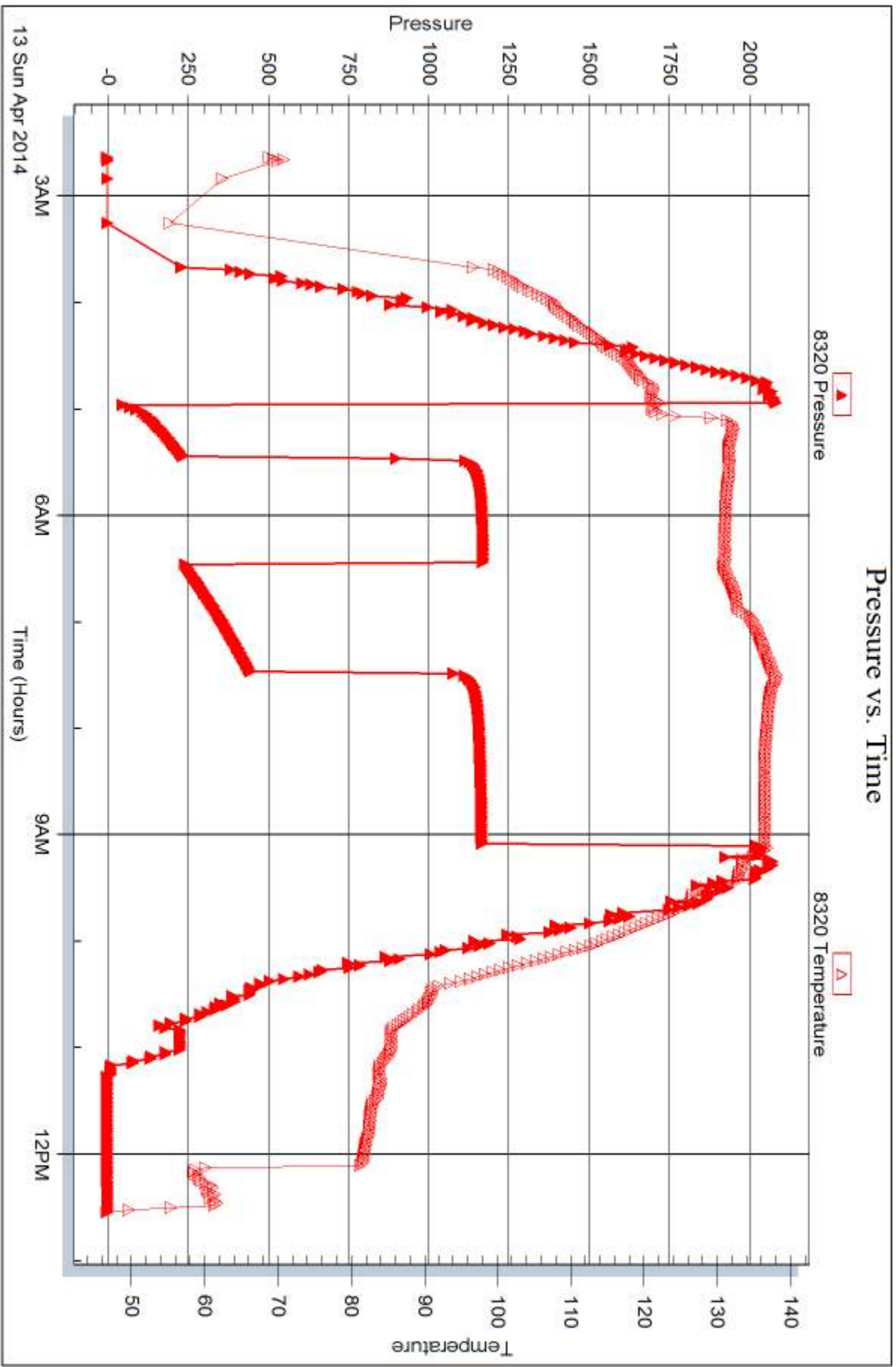


Serial #: 8320

Outside Murfin Drilling Co., Inc.

HMZ #2-29

DST Test Number: 2





DRILL STEM TEST REPORT

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

250 N. Water Suite 300
Wichita, KS 67202

ATTN: Rocky Milford

HMZ #2-29

29-1s-36w Rawlins,KS

Start Date: 2014.04.13 @ 23:40:00

End Date: 2014.04.14 @ 08:57:15

Job Ticket #: 56992 DST #: 3

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

Printed: 2014.04.19 @ 12:31:20



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N. Water Suite 300
 Wichita, KS 67202
 ATTN: Rocky Milford

29-1s-36w Rawlins,KS

HMZ #2-29

Job Ticket: 56992

DST#: 3

Test Start: 2014.04.13 @ 23:40:00

GENERAL INFORMATION:

Formation: **LKC "G"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 02:39:45
 Time Test Ended: 08:57:15
 Interval: **4316.00 ft (KB) To 4380.00 ft (KB) (TVD)**
 Total Depth: 4380.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder/Brandon
 Unit No: 57
 Reference Elevations: 3308.00 ft (KB)
 3303.00 ft (CF)
 KB to GR/CF: 5.00 ft

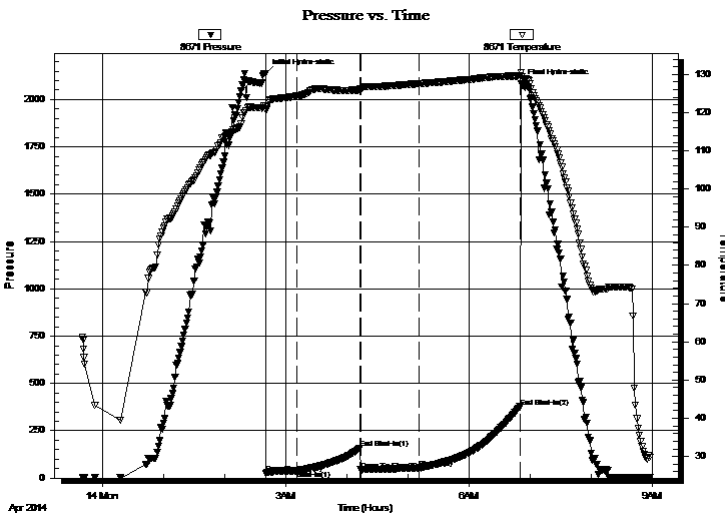
Serial #: 8671

Inside

Press@RunDepth: 52.63 psig @ 4317.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.13 End Date: 2014.04.14 Last Calib.: 2014.04.14
 Start Time: 23:40:05 End Time: 08:57:15 Time On Btm: 2014.04.14 @ 02:39:30
 Time Off Btm: 2014.04.14 @ 06:51:00

TEST COMMENT: 30 - IF - Opened at 3/4" built to 2 1/4" (Diesel in bucket)
 60 - ISI - No Return
 60 - FF - Surface blow built to 2"
 90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2138.37	121.89	Initial Hydro-static
1	25.06	120.77	Open To Flow (1)
31	39.21	124.27	Shut-In(1)
93	157.78	125.91	End Shut-In(1)
94	43.46	126.19	Open To Flow (2)
151	52.63	127.54	Shut-In(2)
250	377.03	129.63	End Shut-In(2)
252	2084.01	130.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	GOCM 70% m, 20% o, 10% g	0.32

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

29-1s-36w Rawlins,KS

250 N. Water Suite 300
Wichita, KS 67202

HMZ #2-29

Job Ticket: 56992

DST#: 3

ATTN: Rocky Milford

Test Start: 2014.04.13 @ 23:40:00

Tool Information

Drill Pipe:	Length: 4134.00 ft	Diameter: 3.80 inches	Volume: 57.99 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: 58.91 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 65000.00 lb
Depth to Top Packer:	4316.00 ft			Final 65000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	64.00 ft			
Tool Length:	92.00 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			4293.00	
Hydraulic tool	5.00			4298.00	
Jars	5.00			4303.00	
Safety Joint	3.00			4306.00	
Packer	5.00			4311.00	28.00 Bottom Of Top Packer
Packer	5.00			4316.00	
Packer - Shale	0.00			4316.00	
Stubb	1.00			4317.00	
Recorder	0.00	8671	Inside	4317.00	
Recorder	0.00	8320	Outside	4317.00	
Perforations	25.00			4342.00	
Blank Spacing	33.00			4375.00	
Perforations	2.00			4377.00	
Bullnose	3.00			4380.00	64.00 Bottom Packers & Anchor

Total Tool Length: 92.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-36w Rawlins,KS

250 N. Water Suite 300
Wichita, KS 67202

HMZ #2-29

Job Ticket: 56992

DST#: 3

ATTN: Rocky Milford

Test Start: 2014.04.13 @ 23:40:00

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: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	GOCM 70%m, 20%o, 10%g	0.320

Total Length: 65.00 ft Total Volume: 0.320 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

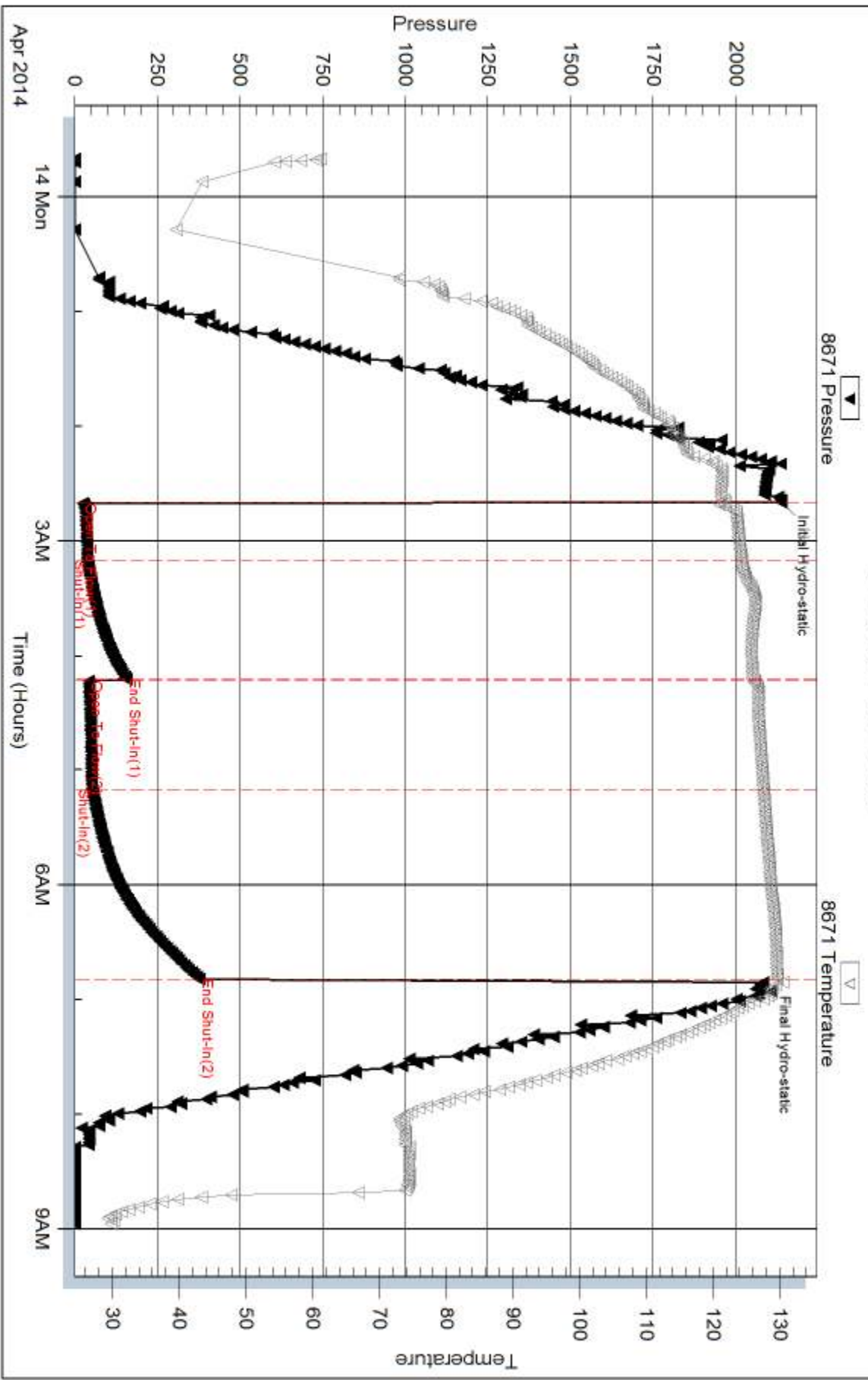
Serial #:

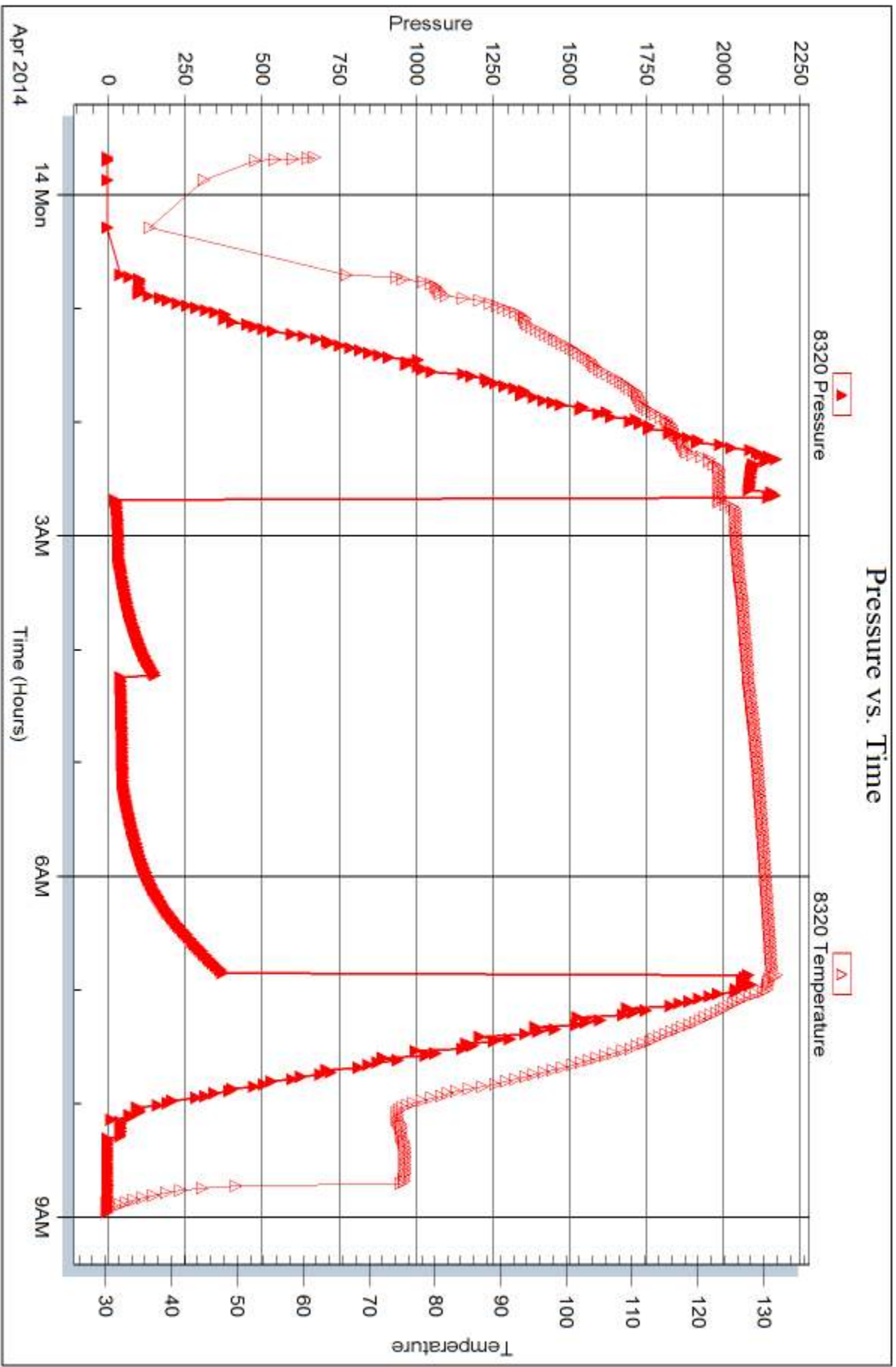
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

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

250 N. Water Suite 300
Wichita, KS 67202

ATTN: Rocky Milford

HMZ #2-29

29-1s-36w Rawlins,KS

Start Date: 2014.04.14 @ 20:21:00

End Date: 2014.04.15 @ 05:00:15

Job Ticket #: 56993 DST #: 4

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

Printed: 2014.04.19 @ 12:30:03

Murfin Drilling Co., Inc. 29-1s-36w Rawlins,KS HMZ #2-29 DST # 4 LKC "H.J" 2014.04.14



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.
 250 N. Water Suite 300
 Wichita, KS 67202
 ATTN: Rocky Milford

29-1s-36w Rawlins, KS

HMZ #2-29

Job Ticket: 56993

DST#: 4

Test Start: 2014.04.14 @ 20:21:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:33:15
 Time Test Ended: 05:00:15
 Interval: **4375.00 ft (KB) To 4465.00 ft (KB) (TVD)**
 Total Depth: 4465.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: James Winder/Brandon
 Unit No: 57
 Reference Elevations: 3308.00 ft (KB)
 3303.00 ft (CF)
 KB to GR/CF: 5.00 ft

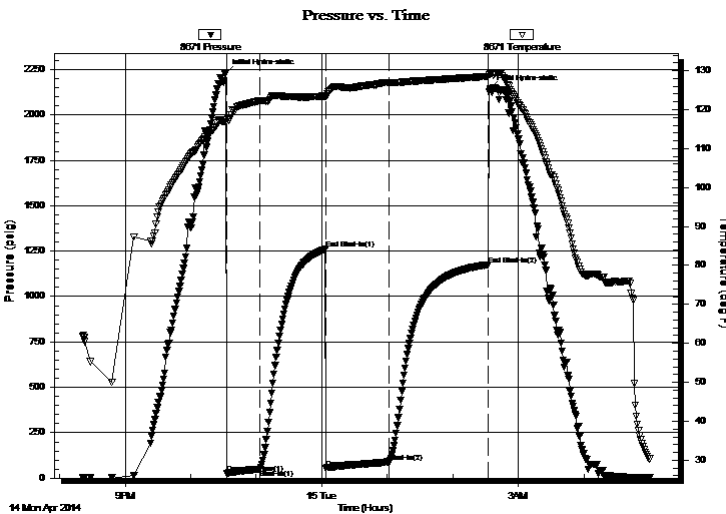
Serial #: 8671

Inside

Press@RunDepth: 89.89 psig @ 4376.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.14 End Date: 2014.04.15 Last Calib.: 2014.04.15
 Start Time: 20:21:05 End Time: 05:00:15 Time On Btm: 2014.04.14 @ 22:32:15
 Time Off Btm: 2014.04.15 @ 02:34:30

TEST COMMENT: 30 - IF - Opened at surface, built to 2 1/2" (Diesel in bucket)
 60 - ISI - No Return
 60 - FF - Opened at surface, built to 2"
 90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2226.81	117.33	Initial Hydro-static
1	24.37	116.84	Open To Flow (1)
32	49.96	122.31	Shut-In(1)
92	1260.83	123.49	End Shut-In(1)
92	55.68	123.28	Open To Flow (2)
150	89.89	126.85	Shut-In(2)
241	1175.44	128.55	End Shut-In(2)
243	2141.93	129.15	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
127.00	OCM - 83% _m , 17% _o	0.62

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co., Inc.

29-1s-36w Rawlins,KS

250 N. Water Suite 300
Wichita, KS 67202

HMZ #2-29

Job Ticket: 56993

DST#: 4

ATTN: Rocky Milford

Test Start: 2014.04.14 @ 20:21:00

Tool Information

Drill Pipe:	Length: 4166.00 ft	Diameter: 3.80 inches	Volume: 58.44 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: 85000.00 lb
			<u>Total Volume: 59.36 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4375.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	90.00 ft			
Tool Length:	118.00 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	8671	Inside	4376.00	
Recorder	0.00	8320	Outside	4376.00	
Perforations	22.00			4398.00	
Change Over Sub	0.50			4398.50	
Blank Spacing	63.00			4461.50	
Change Over Sub	0.50			4462.00	
Bullnose	3.00			4465.00	90.00 Bottom Packers & Anchor

Total Tool Length: 118.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co., Inc.

29-1s-36w Rawlins,KS

250 N. Water Suite 300
Wichita, KS 67202

HMZ #2-29

Job Ticket: 56993

DST#: 4

ATTN: Rocky Milford

Test Start: 2014.04.14 @ 20:21:00

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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1200.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
127.00	OCM - 83% _m , 17% _o	0.625

Total Length: 127.00 ft Total Volume: 0.625 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

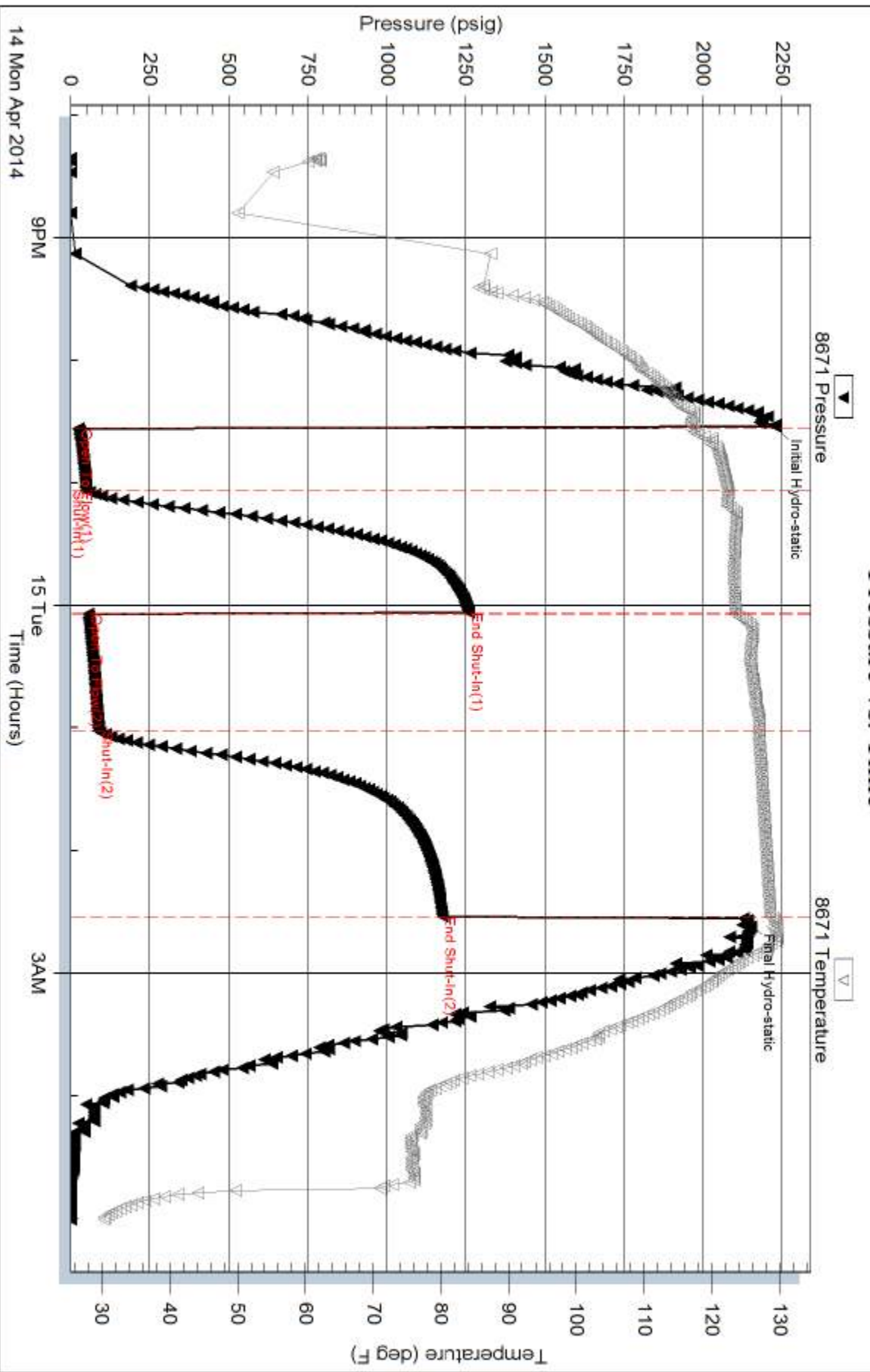
Serial #:

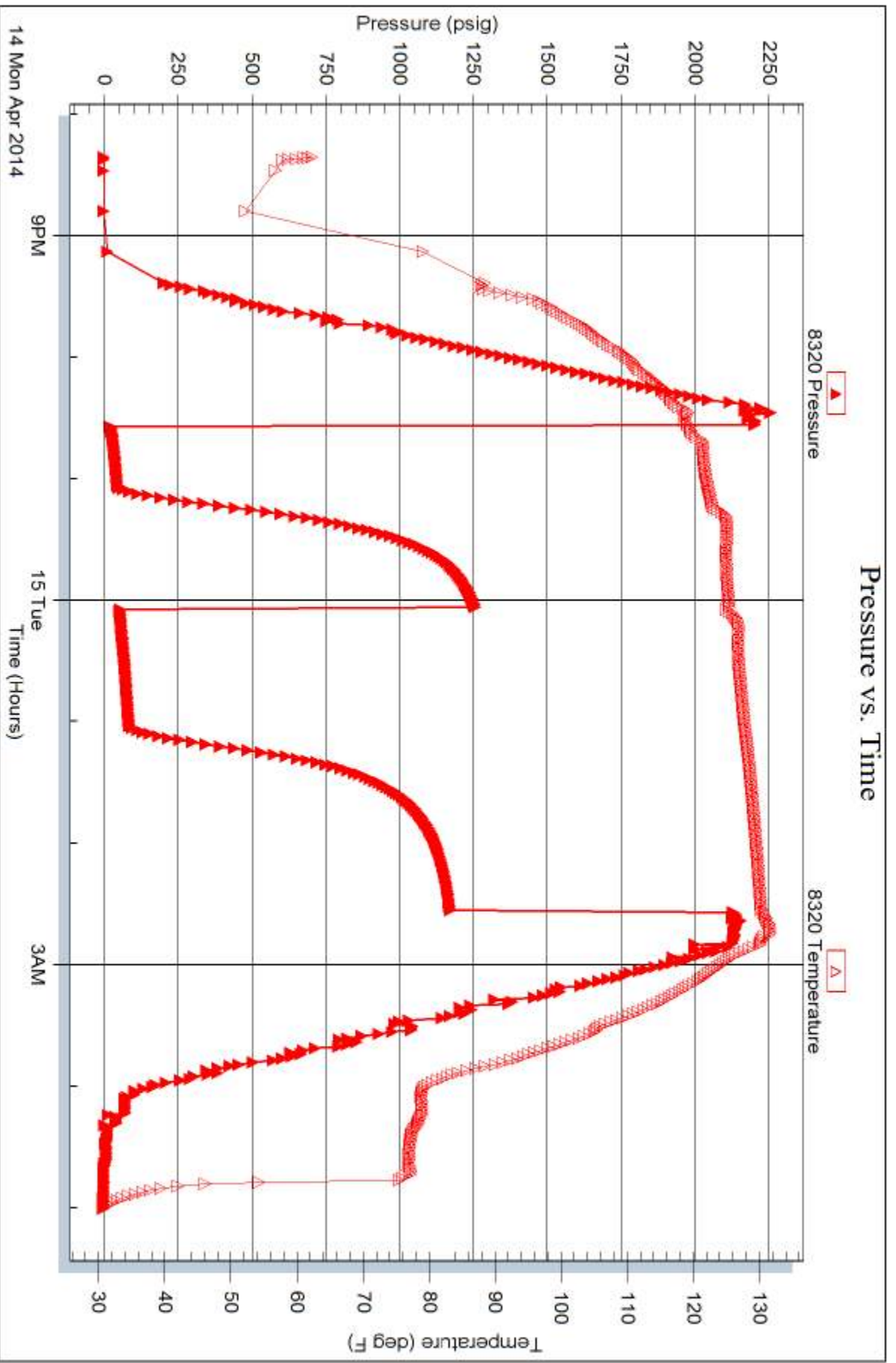
Laboratory Name:

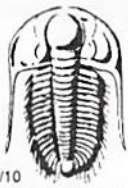
Laboratory Location:

Recovery Comments:

Pressure vs. Time







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56990

Well Name & No. HMZ #2-29 Test No. 1 Date 4-11-14
 Company Murfin Drilling Co. Inc Elevation 3308 KB 3303 GL
 Address 250 N. Water Suite 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #8
 Location: Sec. 29 Twp. 15 Rge. 36w Co. Rawlins State KS

Interval Tested 3858 - 4015 Zone Tested Stotler
 Anchor Length 157 Drill Pipe Run 3662 Mud Wt. 8.9
 Top Packer Depth 3853 Drill Collars Run 187 Vis 54
 Bottom Packer Depth 3858 (shale) Wt. Pipe Run - WL 5.6
 Total Depth 4015 Chlorides 700 ppm System LCM 4

Blow Description IF: 5" surge at open, bled off, blow built to 2 1/2"
ISI: No blowback
FF: Blow built to 6 3/4"
FSI: Blowback built to 18"

Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>0cm</u>	<u>6</u>	<u>11</u>	<u>-</u>	<u>83</u>
<u>187</u>	<u>60cm</u>	<u>12</u>	<u>24</u>	<u>-</u>	<u>64</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 277 BHT 125 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1867 Test 1250 T-On Location 17:50 4/11
 (B) First Initial Flow 88 Jars 250 T-Started 18:28
 (C) First Final Flow 117 Safety Joint 75 T-Open 20:45
 (D) Initial Shut-In 1162 Circ Sub _____ T-Pulled 00:47
 (E) Second Initial Flow 120 Hourly Standby _____ T-Out 2:55 4/12
 (F) Second Final Flow 144 Mileage 114 RT 176.70 Comments Tool chased 6' to bottom
 (G) Final Shut-In 1135 Sampler _____ at open - mud down 15'-5"
 (H) Final Hydrostatic 1860 Straddle _____ surge blow at open.
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Extra Packer _____
 Initial Shut-In 60 Extra Recorder _____
 Final Flow 60 Day Standby _____
 Final Shut-In 90 Accessibility _____
 Sub Total 2001.70 MP/DST Disc't _____

Approved By Rocky Milford Our Representative James Winder
 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. 56991

Well Name & No. HMZ #2-29 Test No. 2 Date 4-13-14
 Company Murfin Drilling Co. Inc. Elevation 3308 KB 3303 GL
 Address 250 N. Water suite 300 Wichita KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #8
 Location: Sec. 29 Twp. 1S Rge. 36W Co. Rawlins State KS

Interval Tested 4187-4320 Zone Tested Lans "A-D"
 Anchor Length 133 Drill Pipe Run 3978 Mud Wt. 9.1
 Top Packer Depth 4182 Drill Collars Run 187 Vis 56
 Bottom Packer Depth 4187 Wt. Pipe Run - WL 6.0
 Total Depth 4320 Chlorides 700 ppm System LCM 6

Blow Description IF: Blow built to BOB (11") in 9 3/4 min.
ISI: Noblowback
FF: Blow built to BOB in 14 min.
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mu
<u>365</u>	<u>mud w/oil spots</u>	<u>6</u>	<u>2</u>	<u>-</u>	<u>92</u>
<u>190</u>	<u>SWCM w/oil spots</u>	<u>11</u>	<u>1</u>	<u>16</u>	<u>72</u>
<u>63</u>	<u>WM w/oil spots</u>	<u>6</u>	<u>1</u>	<u>40</u>	<u>53</u>
<u>312</u>	<u>MCW w/oil spots</u>	<u>-</u>	<u>1</u>	<u>88</u>	<u>11</u>
Rec	Feet of	%gas	%oil	%water	%mu

Rec Total 930 BHT 135 Gravity - API RW .724 @ 49.7 °F Chlorides 12000 ppr
 (A) Initial Hydrostatic 2085 Test 1250 T-On Location 23:30 4/12
 (B) First Initial Flow 37 Jars 250 T-Started 2:38
 (C) First Final Flow 241 Safety Joint 75 T-Open 4:53
 (D) Initial Shut-In 1174 Circ Sub _____ T-Pulled 9:01
 (E) Second Initial Flow 243 Hourly Standby ? 2.25h T-Out 12:30 4/12
 (F) Second Final Flow 448 Mileage 114 RT 176.70
 (G) Final Shut-In 1170 Sampler _____
 (H) Final Hydrostatic 2054 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1976.70

Comments Rig had to short trip after tight spot pulled bit - called to tell me at 23
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1976.70
 MP/DST Disc't _____

Approved By Rocky Milford Our Representative James Winder
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56992

Well Name & No. AMZ #2-29 Test No. 3 Date 4-13-14
 Company Murfin Drilling Co., Inc. Elevation 3308 KB 3303 GL
 Address 250 N Water, STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #8
 Location: Sec. 29 Twp. 15 Rge. 36W Co. Rawlins State KS

Interval Tested 4316-4380 Zone Tested LKC "G"
 Anchor Length 64' Drill Pipe Run 4134 Mud Wt. 9.2
 Top Packer Depth 4311 Drill Collars Run 186 187 Vis 65
 Bottom Packer Depth 4316 shale Wt. Pipe Run - WL 6.4
 Total Depth 4380 Chlorides 1000 ppm System LCM 6

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

Rec	Feet of	%gas	%oil	%water	%mud
<u>65</u>	<u>OCM</u>	<u>10</u>	<u>26</u>	<u>76</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 65 BHT 129 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2138 Test 1250 T-On Location 22:15
 (B) First Initial Flow 25 Jars 250 T-Started 23:40
 (C) First Final Flow 39 Safety Joint 75 T-Open 2:50 2:40
 (D) Initial Shut-In 157 Circ Sub _____ T-Pulled 6:40
 (E) Second Initial Flow 43 Hourly Standby _____ T-Out 8:59
 (F) Second Final Flow 52 Mileage 114 R.T 176.70 Comments _____
 (G) Final Shut-In 377 Sampler _____
 (H) Final Hydrostatic 2084 Straddle _____

Initial Open 30 Shale Packer 250
 Initial Shut-In 60 Extra Packer _____
 Final Flow 60 Extra Recorder _____
 Final Shut-In 90 Day Standby _____
 Sub Total 2001.70 Accessibility _____
 Sub Total 2001.70

Approved By Rocky Milford Our Representative James Hinder Brandon Oit
 50% / 50%
 Trilobite Testing Inc. shall not be liable for damaged or 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. 56993

Well Name & No. HMZ #2-29 Test No. 4 Date 4-14-14
 Company Murfin Drilling Co., Inc. Elevation 3308 KB 3303 GL
 Address 250 N Water, STE 300 Wichita, KS 67202
 Co. Rep / Geo. Rocky Milford Rig Murfin #8
 Location: Sec. 29 Twp. 1S Rge. 36W Co. Rawlins State KS

Interval Tested 4375-4465 Zone Tested LKC "H,I,J"
 Anchor Length 90' Drill Pipe Run 4166 Mud Wt. 9
 Top Packer Depth 4370 Drill Collars Run 187 Vis 62
 Bottom Packer Depth 4375 Wt. Pipe Run — WL 5.6
 Total Depth 4465 Chlorides 1200 ppm System LCM 5
 Blow Description IF - Opened at surface, built to 2 1/2"
ISI - No Return
FF - Opened at surface, built to 2"
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>127</u>	<u>OCM</u>		<u>17</u>		<u>83</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 127 BHT 129 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2227 Test 1250 T-On Location 19:45 ^{4/14}
 (B) First Initial Flow 24 Jars 250 T-Started 20:21
 (C) First Final Flow 50 ~~50~~ Safety Joint 75 T-Open 22:33
 (D) Initial Shut-In 1261 Circ Sub _____ T-Pulled 02:33
 (E) Second Initial Flow 56 Hourly Standby _____ T-Out 5:01 ^{4/15}
 (F) Second Final Flow 90 ~~90~~ Mileage 114 R.T.X2 353.40 Comments Tools loaded 6:45
 (G) Final Shut-In 1175 Sampler _____ 4-16-14
 (H) Final Hydrostatic 2142 Straddle _____ Brandon Running most of test on own
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____

Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Extra Packer _____
 Final Flow 60 Extra Recorder _____ Sub Total 0
 Final Shut-In 90 Day Standby _____ Total 1928.40
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1928.40 50% / 50%

Approved By Rocky Milford Our Representative James Weider Brad Olt
 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.