



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Bob Stolze

Antholz #1-9

9-3s-36w Rawlins,KS

Start Date: 2013.02.26 @ 17:40:00

End Date: 2013.06.27 @ 01:31:30

Job Ticket #: 49022 DST #: 1

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

Printed: 2013.03.07 @ 11:43:50



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Bob Stolzle

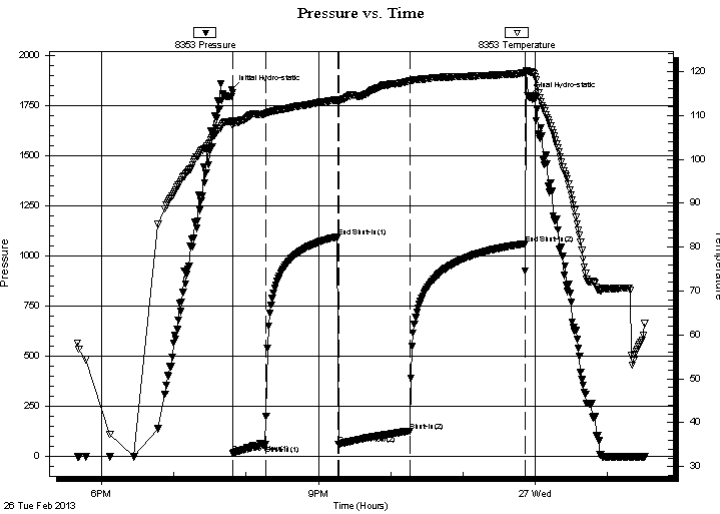
9-3s-36w Rawlins,KS
Antholz #1-9
Job Ticket: 49022 **DST#: 1**
Test Start: 2013.02.26 @ 17:40:00

GENERAL INFORMATION:

Formation: **Foraker**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:49:00
Time Test Ended: 01:31:30
Interval: **3771.00 ft (KB) To 3840.00 ft (KB) (TVD)**
Total Depth: 3840.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Wilbur Steinbeck
Unit No: 150
Reference Elevations: 3345.00 ft (KB)
3335.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8353 Outside
Press @ Run Depth: 126.70 psig @ 3772.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.02.26 End Date: 2013.02.27 Last Calib.: 2013.02.27
Start Time: 17:40:15 End Time: 01:31:30 Time On Btm: 2013.02.26 @ 19:48:15
Time Off Btm: 2013.02.26 @ 23:54:15

TEST COMMENT: 30 IF; Built to 4"
60 ISI; No Blow
60 FF; Built to 3"
90 FSI; No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1828.56	108.67	Initial Hydro-static
1	15.67	107.65	Open To Flow (1)
28	57.29	110.33	Shut-In(1)
88	1095.03	113.51	End Shut-In(1)
89	60.25	113.40	Open To Flow (2)
148	126.70	117.83	Shut-In(2)
243	1060.19	119.76	End Shut-In(2)
246	1792.54	119.91	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
200.00	Mud 100%	0.98

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water STE 300
 Wichita KS 67202
 ATTN: Bob Stolzle

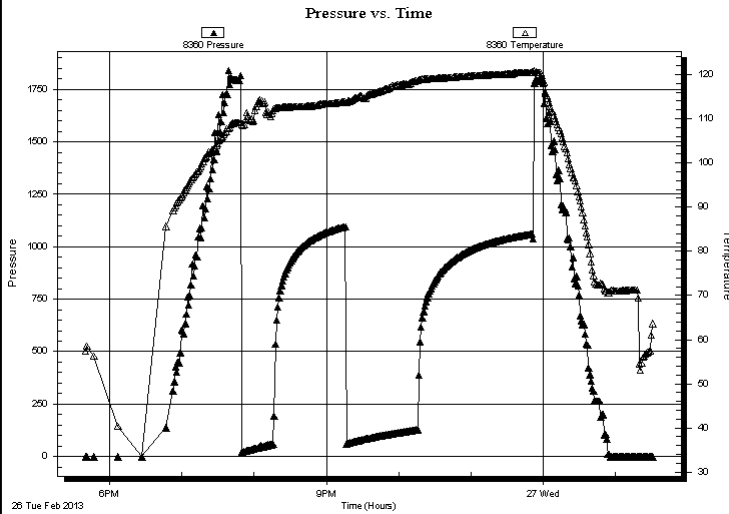
9-3s-36w Rawlins,KS
Antholz #1-9
 Job Ticket: 49022 **DST#: 1**
 Test Start: 2013.02.26 @ 17:40:00

GENERAL INFORMATION:

Formation: **Foraker**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 19:49:00 Tester: Wilbur Steinbeck
 Time Test Ended: 01:31:30 Unit No: 150
 Interval: **3771.00 ft (KB) To 3840.00 ft (KB) (TVD)** Reference Elevations: 3345.00 ft (KB)
 Total Depth: 3840.00 ft (KB) (TVD) 3335.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 8360 Inside
 Press @ Run Depth: psig @ 3772.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.02.26 End Date: 2013.02.27 Last Calib.: 2013.02.27
 Start Time: 17:40:15 End Time: 01:31:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 IF; Built to 4"
 60 IS; No Blow
 60 FF; Built to 3"
 90 FS; No Blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
200.00	Mud 100%	0.98

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49022

DST#: 1

ATTN: Bob Stolzle

Test Start: 2013.02.26 @ 17:40:00

Tool Information

Drill Pipe:	Length: 3227.00 ft	Diameter: 3.80 inches	Volume: 45.27 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 47.90 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3771.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	69.00 ft			
Tool Length:	96.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3745.00	
Shut In Tool	5.00			3750.00	
Hydraulic tool	5.00			3755.00	
Jars	5.00			3760.00	
Safety Joint	2.00			3762.00	
Packer	5.00			3767.00	27.00 Bottom Of Top Packer
Packer	4.00			3771.00	
Stubb	1.00			3772.00	
Recorder	0.00	8360	Inside	3772.00	
Recorder	0.00	8353	Outside	3772.00	
Perforations	29.00			3801.00	
Change Over Sub	1.00			3802.00	
Drill Pipe	32.00			3834.00	
Change Over Sub	1.00			3835.00	
Bullnose	5.00			3840.00	69.00 Bottom Packers & Anchor

Total Tool Length: 96.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49022

DST#: 1

ATTN: Bob Stolzle

Test Start: 2013.02.26 @ 17:40:00

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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 4.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
200.00	Mud 100%	0.984

Total Length: 200.00 ft Total Volume: 0.984 bbl

Num Fluid Samples: 0

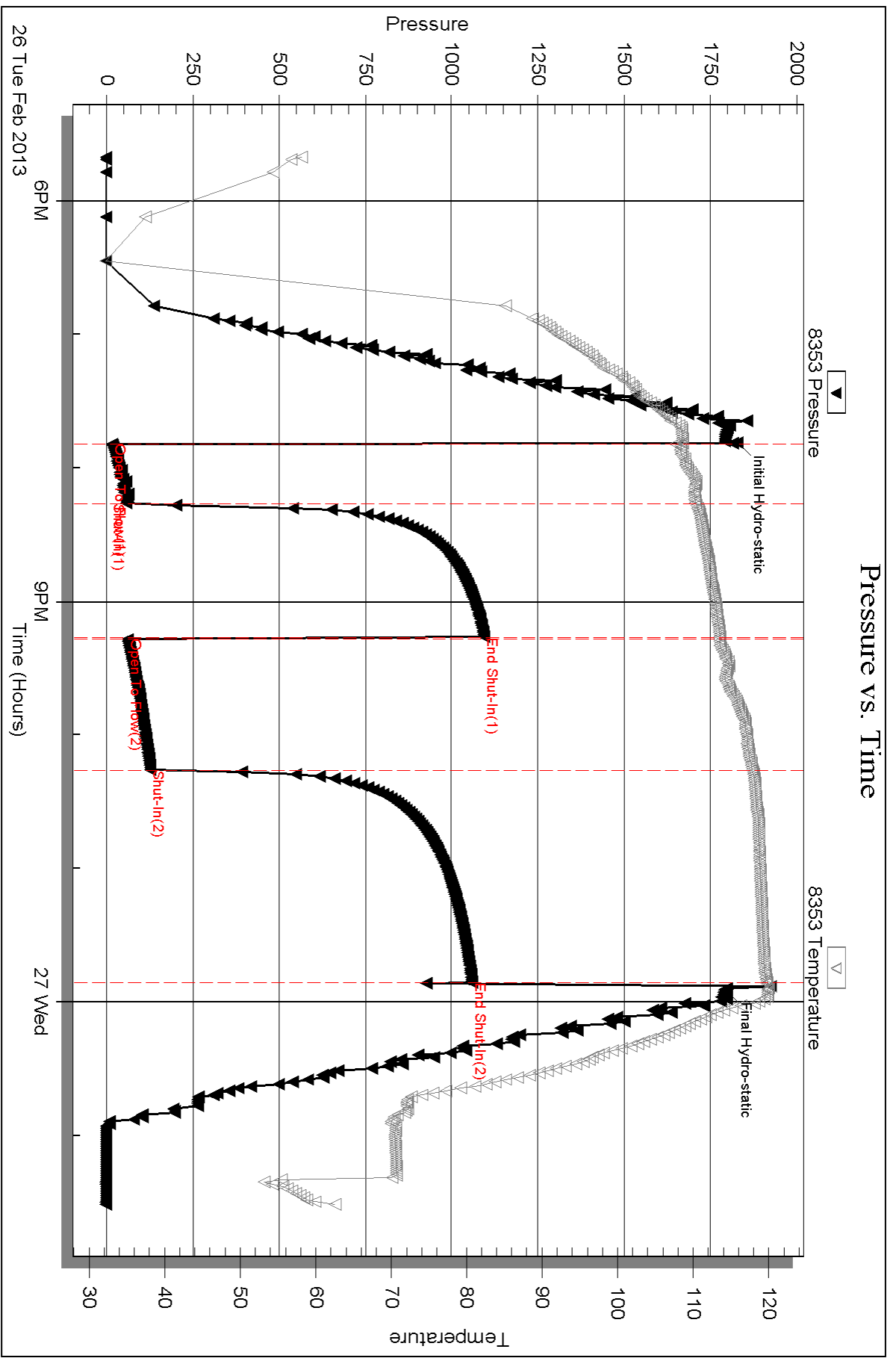
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



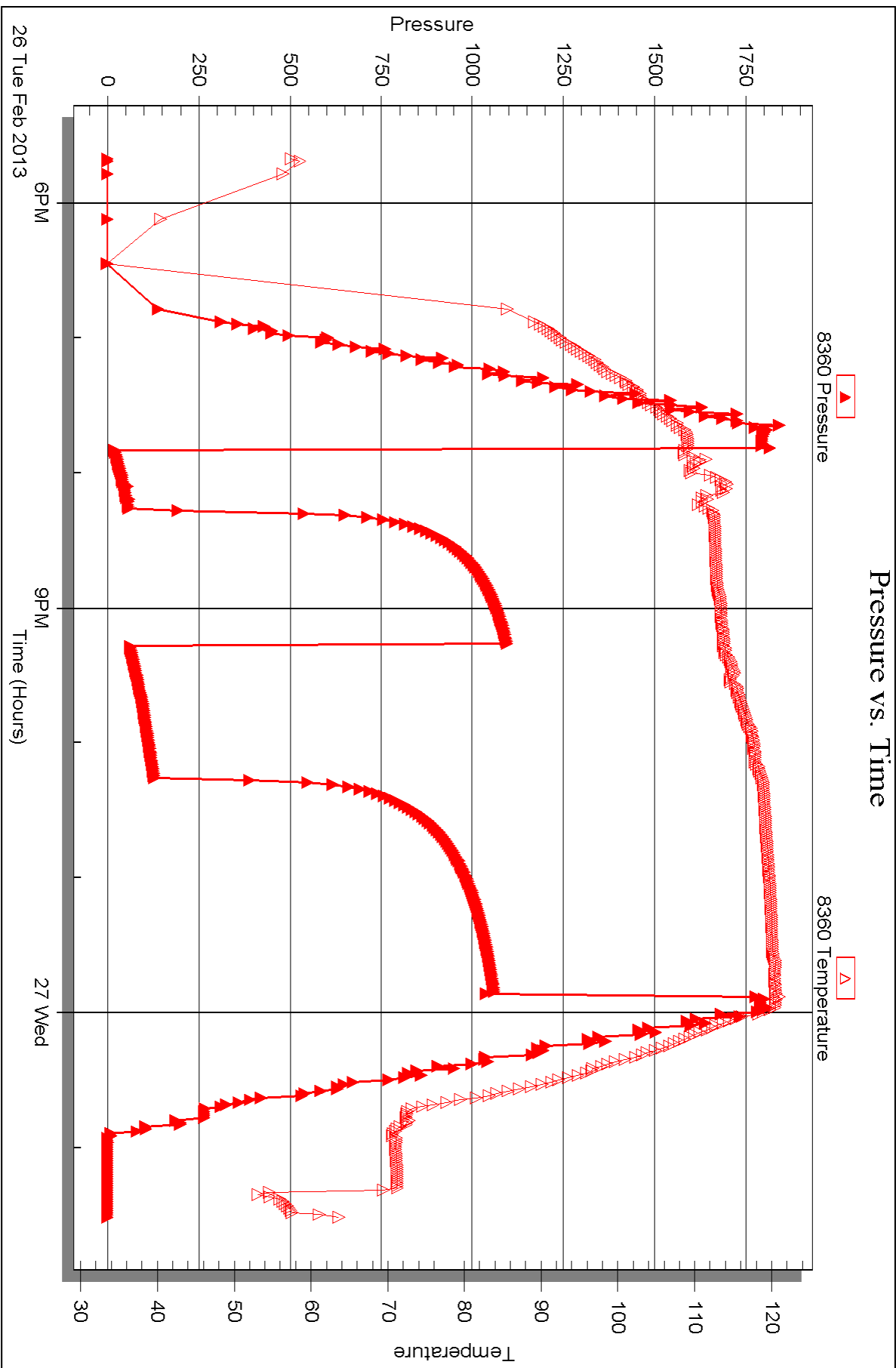
Serial #: 8360

Inside

Murfin Drilling Co

Antholz #1-9

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 49022

Printed: 2013.03.07 @ 11:43:54



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Bob Stolze

Antholz #1-9

9-3s-36w Rawlins,KS

Start Date: 2013.02.28 @ 06:35:00

End Date: 2013.02.28 @ 15:00:30

Job Ticket #: 49023 DST #: 2

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

Printed: 2013.03.07 @ 11:40:51



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Bob Stolzle

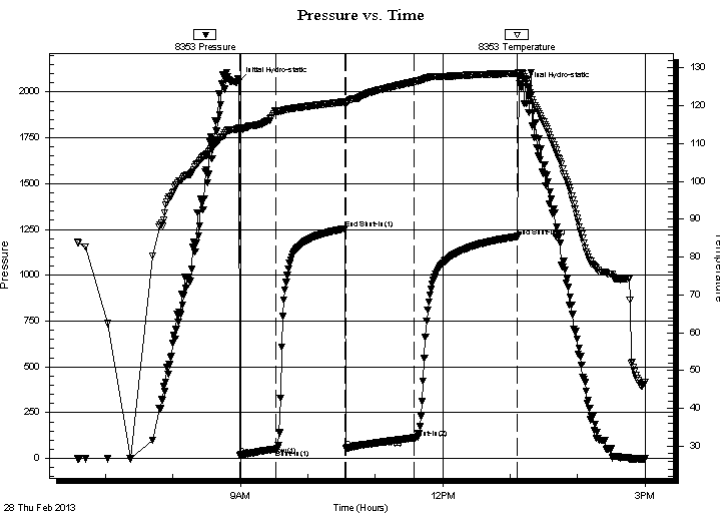
9-3s-36w Rawlins,KS
Antholz #1-9
Job Ticket: 49023 **DST#: 2**
Test Start: 2013.02.28 @ 06:35:00

GENERAL INFORMATION:

Formation: **Lan A**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 08:59:45
Time Test Ended: 15:00:30
Interval: **4245.00 ft (KB) To 4295.00 ft (KB) (TVD)**
Total Depth: 4295.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Wilbur Steinbeck
Unit No: 150
Reference Elevations: 3345.00 ft (KB)
3335.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8353 Outside
Press @ Run Depth: 112.63 psig @ 4246.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.02.28 End Date: 2013.02.28 Last Calib.: 2013.02.28
Start Time: 06:35:15 End Time: 15:00:30 Time On Btm: 2013.02.28 @ 08:58:45
Time Off Btm: 2013.02.28 @ 13:10:45

TEST COMMENT: 30 IF; Built to 4"
60 ISI; No Blow
60 FF; Built to 3 1/2"
90 FSI; Surface Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2054.94	114.08	Initial Hydro-static
1	17.51	113.46	Open To Flow (1)
33	51.86	118.56	Shut-In(1)
94	1253.70	121.05	End Shut-In(1)
95	56.94	120.81	Open To Flow (2)
156	112.63	126.40	Shut-In(2)
248	1211.29	128.55	End Shut-In(2)
252	2031.29	128.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
93.00	OCM 10%O 90%M	0.46
112.00	MCO 95%O 5%M	0.55

* 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

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49023

DST#: 2

ATTN: Bob Stolzle

Test Start: 2013.02.28 @ 06:35:00

Tool Information

Drill Pipe:	Length: 3711.00 ft	Diameter: 3.80 inches	Volume: 52.06 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 54.69 bbl</u>	Tool Chased	1.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial	76000.00 lb
Depth to Top Packer:	4245.00 ft			Final	77000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	50.00 ft				
Tool Length:	77.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4219.00	
Shut In Tool	5.00			4224.00	
Hydraulic tool	5.00			4229.00	
Jars	5.00			4234.00	
Safety Joint	2.00			4236.00	
Packer	5.00			4241.00	27.00 Bottom Of Top Packer
Packer	4.00			4245.00	
Stubb	1.00			4246.00	
Recorder	0.00	8360	Inside	4246.00	
Recorder	0.00	8353	Outside	4246.00	
Perforations	10.00			4256.00	
Change Over Sub	1.00			4257.00	
Drill Pipe	32.00			4289.00	
Change Over Sub	1.00			4290.00	
Bullnose	5.00			4295.00	50.00 Bottom Packers & Anchor

Total Tool Length: 77.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49023

DST#: 2

ATTN: Bob Stolzle

Test Start: 2013.02.28 @ 06:35:00

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: 4.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
93.00	OCM 10%O 90%M	0.457
112.00	MCO 95%O 5%M	0.551

Total Length: 205.00 ft Total Volume: 1.008 bbl

Num Fluid Samples: 0

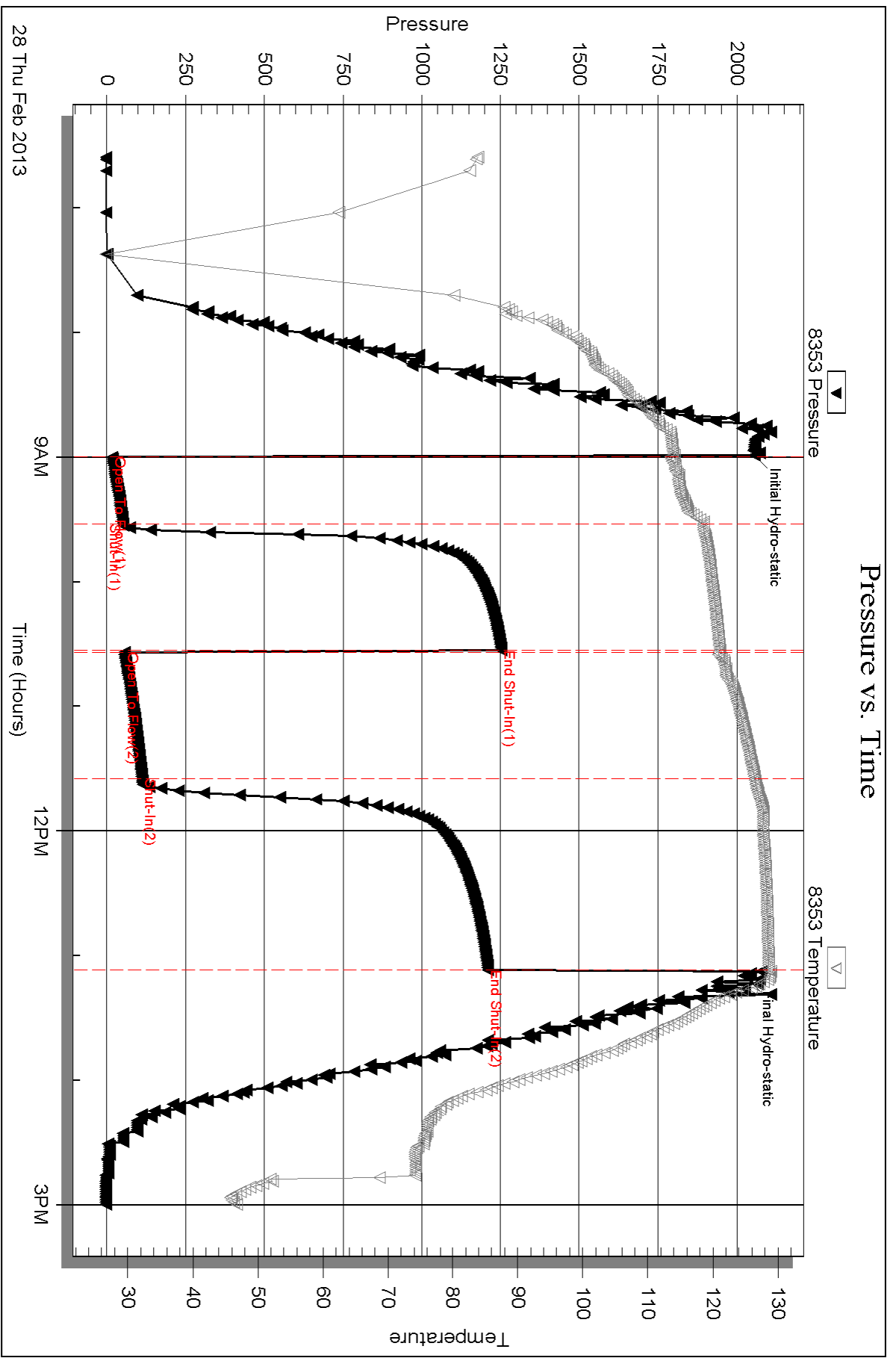
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



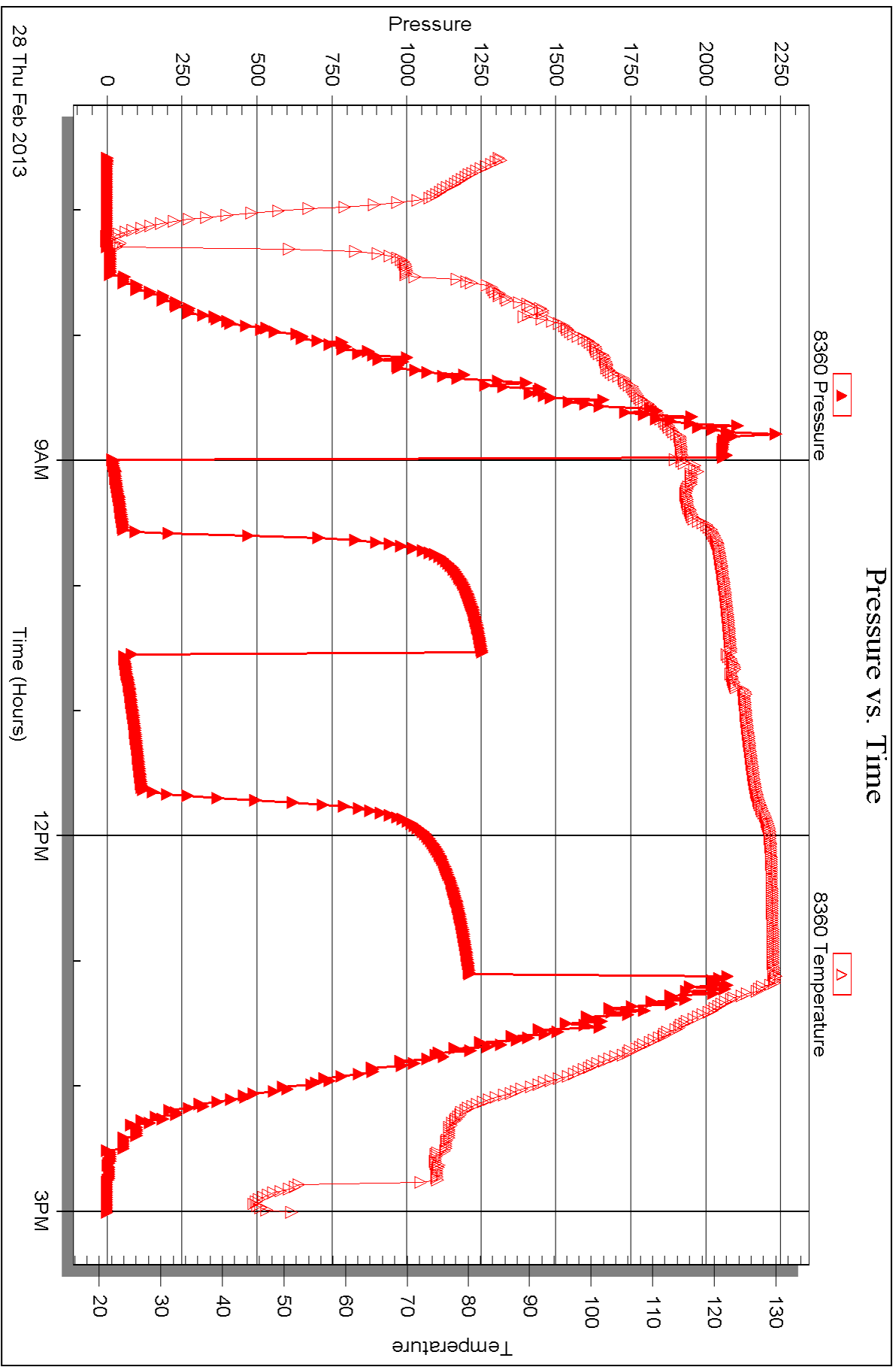
Serial #: 8360

Inside

Murfin Drilling Co

Antholz #1-9

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Bob Stolze

Antholz #1-9

9-3s-36w Rawlins,KS

Start Date: 2013.03.01 @ 10:00:00

End Date: 2013.03.01 @ 17:44:15

Job Ticket #: 49024 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.03.07 @ 11:40:10



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Bob Stolzle

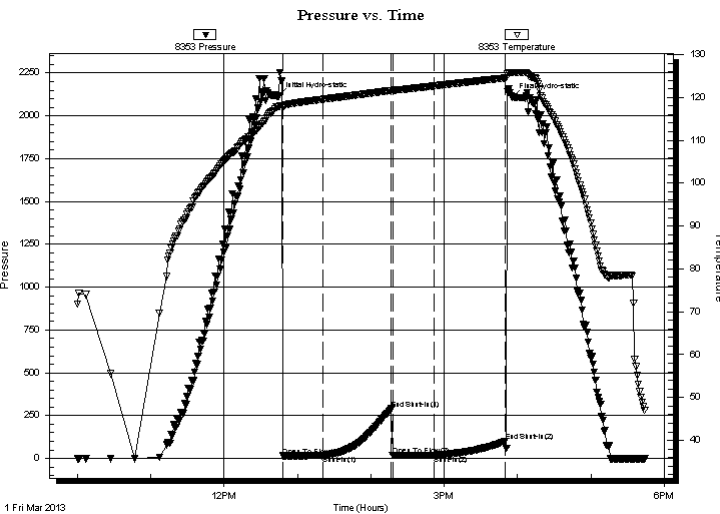
9-3s-36w Rawlins,KS
Antholz #1-9
Job Ticket: 49024 **DST#: 3**
Test Start: 2013.03.01 @ 10:00:00

GENERAL INFORMATION:

Formation: **Lan J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 12:47:45
Time Test Ended: 17:44:15
Interval: **4431.00 ft (KB) To 4480.00 ft (KB) (TVD)**
Total Depth: 4480.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Wilbur Steinbeck
Unit No: 150
Reference Elevations: 3345.00 ft (KB)
3335.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8353 Outside
Press @ Run Depth: 17.87 psig @ 4432.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.03.01 End Date: 2013.03.01 Last Calib.: 2013.03.01
Start Time: 10:00:15 End Time: 17:44:15 Time On Btm: 2013.03.01 @ 12:44:45
Time Off Btm: 2013.03.01 @ 15:55:45

TEST COMMENT: 30 IF; Surface Blow died in 20 min
60 IS; No Blow
30 FF; No Blow
60 FS; No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2115.30	117.88	Initial Hydro-static
3	15.35	117.81	Open To Flow (1)
36	16.99	119.58	Shut-In(1)
92	289.92	121.65	End Shut-In(1)
93	16.58	121.65	Open To Flow (2)
127	17.87	122.69	Shut-In(2)
185	101.74	124.55	End Shut-In(2)
191	2108.07	125.80	Final Hydro-static

Recovery

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

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49024

DST#: 3

ATTN: Bob Stolzle

Test Start: 2013.03.01 @ 10:00:00

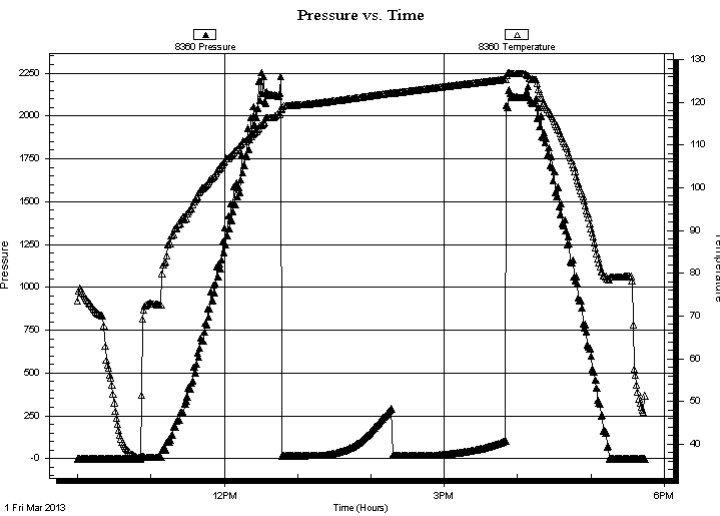
GENERAL INFORMATION:

Formation: **Lan J**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 12:47:45 Tester: Wilbur Steinbeck
 Time Test Ended: 17:44:15 Unit No: 150
 Interval: **4431.00 ft (KB) To 4480.00 ft (KB) (TVD)** Reference Elevations: 3345.00 ft (KB)
 Total Depth: 4480.00 ft (KB) (TVD) 3335.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 8360 Inside

Press @ RunDepth: psig @ 4432.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.03.01 End Date: 2013.03.01 Last Calib.: 2013.03.01
 Start Time: 10:00:01 End Time: 17:44:05 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 IF; Surface Blow died in 20 min
 60 IS; No Blow
 30 FF; No Blow
 60 FS; No Blow



PRESSURE SUMMARY

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

Recovery

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

* 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

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49024

DST#: 3

ATTN: Bob Stolzle

Test Start: 2013.03.01 @ 10:00:00

Tool Information

Drill Pipe:	Length: 3902.00 ft	Diameter: 3.80 inches	Volume: 54.73 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose:	85000.00 lb
			<u>Total Volume: 57.36 bbl</u>	Tool Chased	5.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	77000.00 lb
Depth to Top Packer:	4431.00 ft			Final	77000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	49.00 ft				
Tool Length:	76.00 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			4405.00	
Shut In Tool	5.00			4410.00	
Hydraulic tool	5.00			4415.00	
Jars	5.00			4420.00	
Safety Joint	2.00			4422.00	
Packer	5.00			4427.00	27.00 Bottom Of Top Packer
Packer	4.00			4431.00	
Stubb	1.00			4432.00	
Recorder	0.00	8360	Inside	4432.00	
Recorder	0.00	8353	Outside	4432.00	
Perforations	9.00			4441.00	
Change Over Sub	1.00			4442.00	
Drill Pipe	32.00			4474.00	
Change Over Sub	1.00			4475.00	
Bullnose	5.00			4480.00	49.00 Bottom Packers & Anchor

Total Tool Length: 76.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49024

DST#: 3

ATTN: Bob Stolzle

Test Start: 2013.03.01 @ 10:00:00

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: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 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

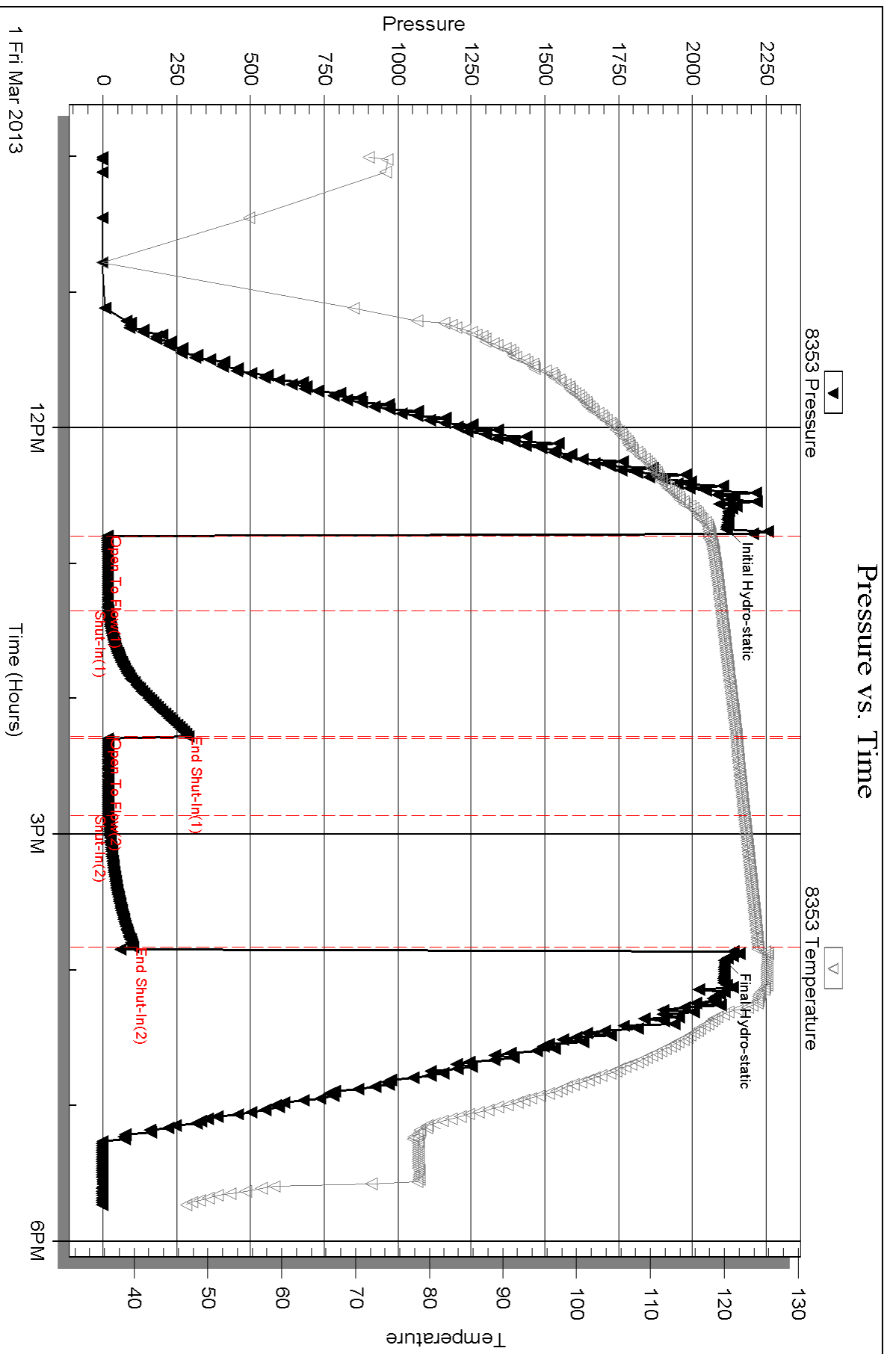
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



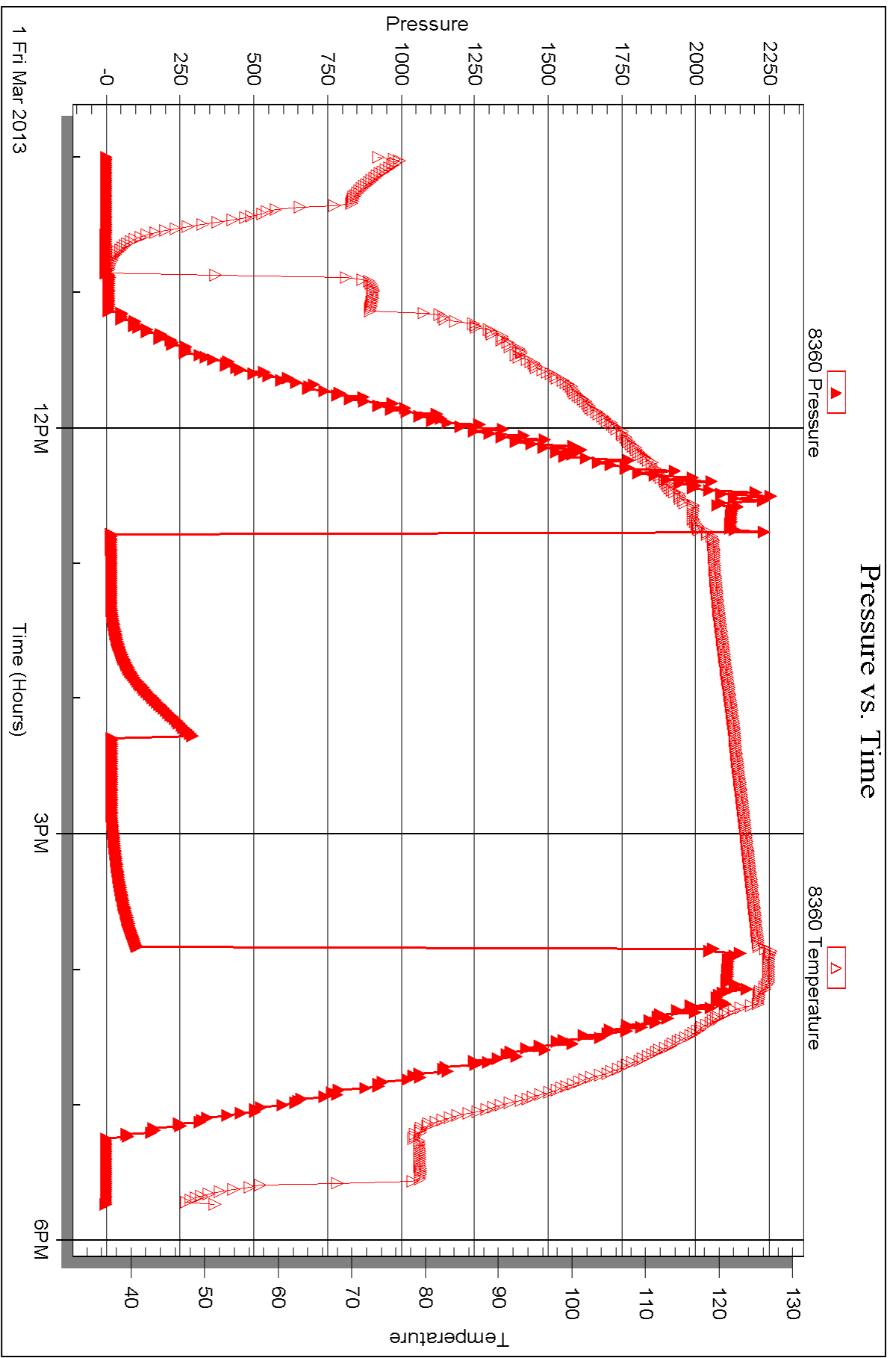
Serial #: 8360

Inside

Murfin Drilling Co

Antholz #1-9

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 49024

Printed: 2013.03.07 @ 11:40:13



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300
Wichita KS 67202

ATTN: Bob Stolze

Antholz #1-9

9-3s-36w Rawlins,KS

Start Date: 2013.03.02 @ 19:50:00

End Date: 2013.03.03 @ 03:14:45

Job Ticket #: 49025 DST #: 4

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

Printed: 2013.03.07 @ 11:39:28



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N Water STE 300
 Wichita KS 67202
 ATTN: Bob Stolzle

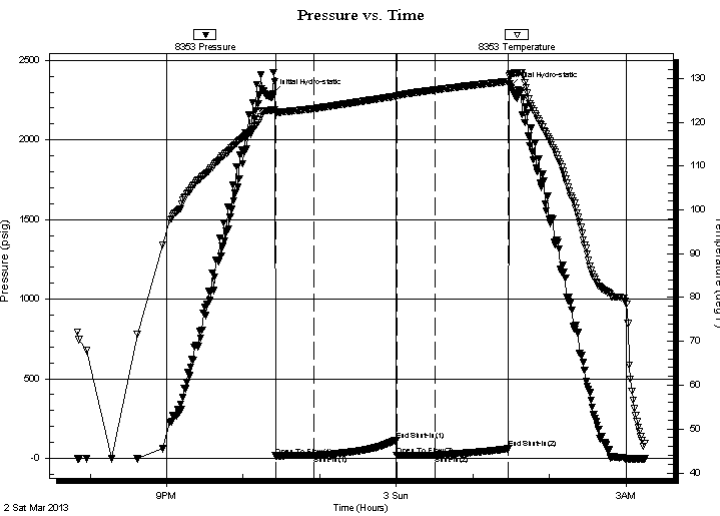
9-3s-36w Rawlins,KS
Antholz #1-9
 Job Ticket: 49025 **DST#: 4**
 Test Start: 2013.03.02 @ 19:50:00

GENERAL INFORMATION:

Formation: **Verdigris**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:25:15
 Time Test Ended: 03:14:45
 Interval: **4694.00 ft (KB) To 4765.00 ft (KB) (TVD)**
 Total Depth: 4765.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Wilbur Steinbeck
 Unit No: 150
 Reference Elevations: 3345.00 ft (KB)
 3335.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8353 Outside
 Press @ RunDepth: 20.69 psig @ 4695.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.03.02 End Date: 2013.03.03 Last Calib.: 2013.03.03
 Start Time: 19:50:15 End Time: 03:14:45 Time On Btm: 2013.03.02 @ 22:23:15
 Time Off Btm: 2013.03.03 @ 01:29:15

TEST COMMENT: 30 IF; Built to 1/2" died back to 1/8"
 60 IS; No Blow
 30 FF; No Blow
 60 FS; No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2291.33	122.82	Initial Hydro-static
2	16.33	122.28	Open To Flow (1)
33	18.28	123.13	Shut-In(1)
97	111.47	125.93	End Shut-In(1)
97	18.56	125.96	Open To Flow (2)
127	20.69	127.35	Shut-In(2)
185	60.98	129.31	End Shut-In(2)
186	2333.49	130.86	Final Hydro-static

Recovery

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

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N Water STE 300
Wichita KS 67202
ATTN: Bob Stolzle

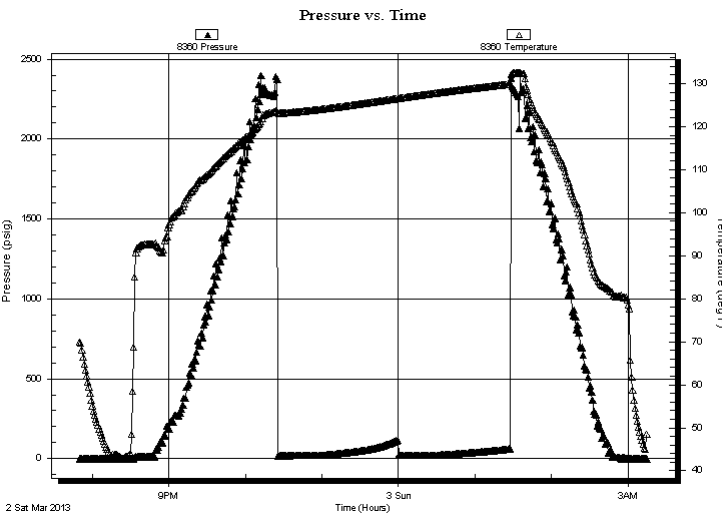
9-3s-36w Rawlins,KS
Antholz #1-9
Job Ticket: 49025 **DST#: 4**
Test Start: 2013.03.02 @ 19:50:00

GENERAL INFORMATION:

Formation: **Verdigris**
Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 22:25:15 Tester: Wilbur Steinbeck
Time Test Ended: 03:14:45 Unit No: 150
Interval: 4694.00 ft (KB) To 4765.00 ft (KB) (TVD) Reference Elevations: 3345.00 ft (KB)
Total Depth: 4765.00 ft (KB) (TVD) 3335.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 8360 Inside
Press @ Run Depth: psig @ 4695.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.03.02 End Date: 2013.03.03 Last Calib.: 2013.03.03
Start Time: 19:50:01 End Time: 03:14:40 Time On Btm:
Time Off Btm:

TEST COMMENT: 30 IF; Built to 1/2" died back to 1/8"
60 IS; No Blow
30 FF; No Blow
60 FS; No Blow



PRESSURE SUMMARY

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

Recovery

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

* 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

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49025

DST#: 4

ATTN: Bob Stolzle

Test Start: 2013.03.02 @ 19:50:00

Tool Information

Drill Pipe:	Length: 4151.00 ft	Diameter: 3.80 inches	Volume: 58.23 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 85000.00 lb
			<u>Total Volume: 60.86 bbl</u>	Tool Chased 1.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4694.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	71.00 ft			
Tool Length:	98.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4668.00	
Shut In Tool	5.00			4673.00	
Hydraulic tool	5.00			4678.00	
Jars	5.00			4683.00	
Safety Joint	2.00			4685.00	
Packer	5.00			4690.00	27.00 Bottom Of Top Packer
Packer	4.00			4694.00	
Stubb	1.00			4695.00	
Recorder	0.00	8360	Inside	4695.00	
Recorder	0.00	8353	Outside	4695.00	
Perforations	31.00			4726.00	
Change Over Sub	1.00			4727.00	
Drill Pipe	32.00			4759.00	
Change Over Sub	1.00			4760.00	
Bullnose	5.00			4765.00	71.00 Bottom Packers & Anchor

Total Tool Length: 98.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

9-3s-36w Rawlins,KS

250 N Water STE 300
Wichita KS 67202

Antholz #1-9

Job Ticket: 49025

DST#: 4

ATTN: Bob Stolzle

Test Start: 2013.03.02 @ 19:50:00

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: 600.00 ppm

Filter Cake: 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

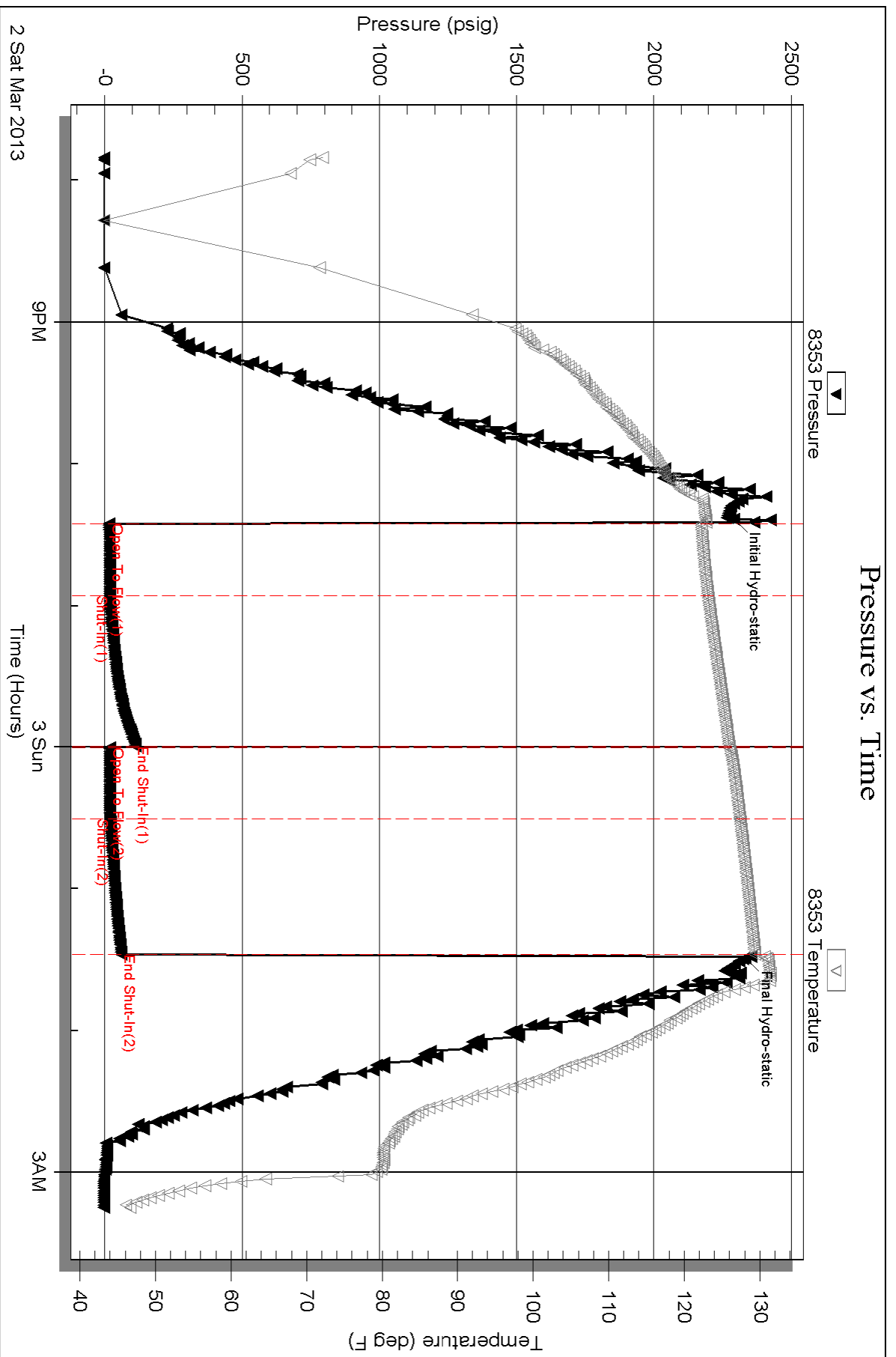
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



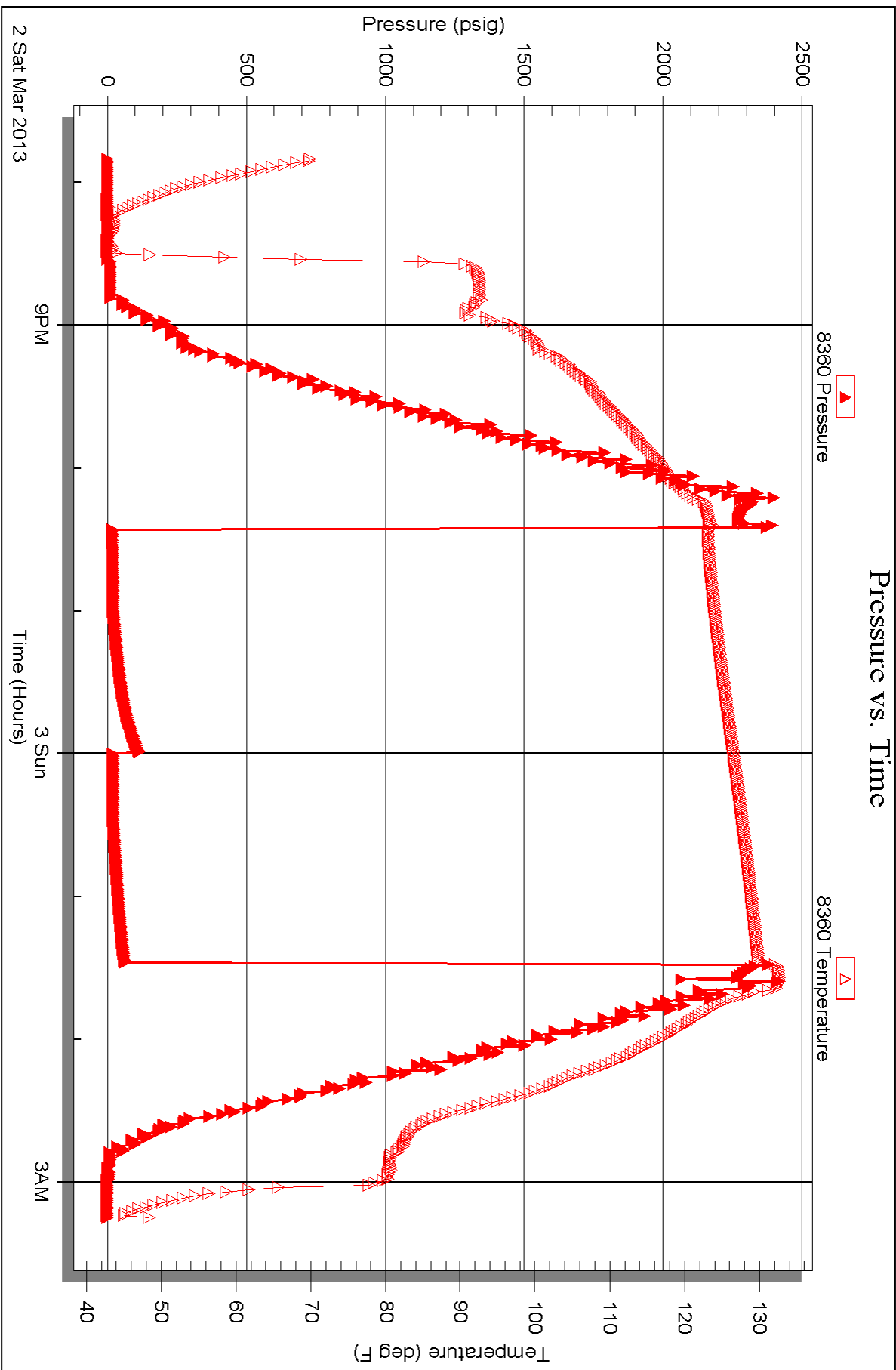
Serial #: 8360

Inside

Murfin Drilling Co

Antholz #1-9

DST Test Number: 4





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49022

Well Name & No. Antholz 1-9 Test No. 1 Date 2-26-13
 Company Martin Drilling Co Elevation 3345 KB 3335 GL
 Address 250 N Water St. 300 Wichita KS 67202
 Co. Rep / Geo. Bob Stoltzle Rig Martin 14
 Location: Sec. 9 Twp. 3s Rge. 36W Co. Rawlins State KS

Interval Tested 3771 3840 Zone Tested Foraker
 Anchor Length 69 Drill Pipe Run 3227 Mud Wt. 8.9
 Top Packer Depth 3766 Drill Collars Run 534 Vis 55
 Bottom Packer Depth 3771 Wt. Pipe Run 0 WL 4.8
 Total Depth 3840 Chlorides 600 ppm System LCM 4

Blow Description 1F Built to 4in
ISI No Blow
FF Built to 3in
ISI No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>200</u>	<u>Mod</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 200 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1,829 Test 1150 T-On Location 15:45
 (B) First Initial Flow 16 Jars 250 T-Started 17:40
 (C) First Final Flow 57 Safety Joint 75 T-Open 19:45
 (D) Initial Shut-In 1,089 Circ Sub NA T-Pulled 23:45
 (E) Second Initial Flow 60 Hourly Standby _____ T-Out 1:30
 (F) Second Final Flow 127 Mileage 100 RT 155 Comments _____
 (G) Final Shut-In 1,060 Sampler _____
 (H) Final Hydrostatic 1,793 Straddle _____

Initial Open 30 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 60 Shale Packer _____ Ruined Packer _____
 Final Flow 60 Extra Packer _____ Extra Copies _____
 Final Shut-In 90 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1630
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1630

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49023

Well Name & No. Aatholz 1-9 Test No. 2 Date 2-28-13
 Company Murfin Drilling Co Elevation 3345 KB 3335 GL
 Address 250 N Water STE 300 W. White KS 67202
 Co. Rep / Geo. Bob Stolz Rig Murfin 14
 Location: Sec. 9 Twp. 35 Rge. 36W Co. Rawlins State KS

Interval Tested 4245 4285 Zone Tested Lan 'A'
 Anchor Length 50 Drill Pipe Run 3711 Mud Wt. 93
 Top Packer Depth 4240 Drill Collars Run 534 Vis 68
 Bottom Packer Depth 4245 Wt. Pipe Run 0 WL 56
 Total Depth 4295 Chlorides 900 ppm System LCM 6

Blow Description IF; Built to 4"
IST; No Blow
FF; Built to 3 1/2"
FST; Surface Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>112</u>	<u>MCO</u>	<u>95</u>		<u>5</u>	
<u>93</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 205 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

- (A) Initial Hydrostatic 2055
- (B) First Initial Flow 18
- (C) First Final Flow 52
- (D) Initial Shut-In 1254
- (E) Second Initial Flow 57
- (F) Second Final Flow 113
- (G) Final Shut-In 1211
- (H) Final Hydrostatic 2031

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

- Test 1250
- Jars 250
- Safety Joint 75
- Circ Sub NA
- Hourly Standby _____
- Mileage 100 RT 155
- Sampler _____
- Straddle _____
- Shale Packer _____
- Extra Packer _____
- Extra Recorder _____
- Day Standby 1d 3.5h
- Accessibility _____
- Sub Total 1730

T-On Location 4:55
 T-Started 6:35
 T-Open 9:05
 T-Pulled 13:05
 T-Out 15:00

Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 116.67
 Total 1846.67
 MP/DST Disc't _____

Approved By _____ Our Representative

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49024

Well Name & No. Antholz 1-9 Test No. 3 Date 3-1-13
 Company Murfin Drilling Co. Elevation 3345 KB 3335 GL
 Address 250 N Water Stc 300 Wichita Ks 67202
 Co. Rep / Geo. Bob Stoltz Rig Murfin 14
 Location: Sec. 9 Twp. 35 Rge. 36W Co. Rawlins State Ks

Interval Tested 4451 4480 Zone Tested Layer 'J'
 Anchor Length 49 Drill Pipe Run 3902 Mud Wt. 9.3
 Top Packer Depth 4426 Drill Collars Run 534 Vis 68
 Bottom Packer Depth 4431 Wt. Pipe Run 0 WL 56
 Total Depth 4480 Chlorides 900 ppm System LCM 6

Blow Description IF; Surface Blow Died in 20m. 7
ISI; No Blow
FF; No Blow
FSI; No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mod</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 126 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

- (A) Initial Hydrostatic 2,115
- (B) First Initial Flow 15
- (C) First Final Flow 17
- (D) Initial Shut-In 290
- (E) Second Initial Flow 17
- (F) Second Final Flow 18
- (G) Final Shut-In 102
- (H) Final Hydrostatic 2,108

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

- Test 1250
- Jars 250
- Safety Joint 75
- Circ Sub NA
- Hourly Standby _____
- Mileage 100 RT 155
- Sampler _____
- Straddle _____
- Shale Packer _____
- Extra Packer _____
- Extra Recorder _____
- Day Standby _____
- Accessibility _____
- Sub Total 1730

T-On Location 9:10
 T-Started 10:00
 T-Open 12:50
 T-Pulled 15:50
 T-Out 17:45

Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1730
 MP/DST Disc't _____

Approved By _____

Our Representative [Signature]

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49025

Well Name & No. Antholz 1-9 Test No. 4 Date 3-2-13
 Company Martin Drilling Co. Elevation 3345 KB 3335 GL
 Address 250 N Water St. 300 Wichita KS 67202
 Co. Rep / Geo. Bob Stolze Rig Martin 14
 Location: Sec. 9 Twp. 3s Rge. 36w Co. Rawlens State Ks

Interval Tested 4694 4765 Zone Tested verdigris
 Anchor Length 71 Drill Pipe Run 4151 Mud Wt. 9.2
 Top Packer Depth 4489 Drill Collars Run 534 Vis 62
 Bottom Packer Depth 4494 Wt. Pipe Run 0 WL 5.6
 Total Depth 4765 Chlorides 600 ppm System LCM 4

Blow Description 1F Built to 1/2" die & ~~Back to 1/8"~~ Back to 1/8"
1st No Blow
FF No Blow
FSL No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>Mud</u>			<u>100</u>	

Rec Total 2 BHT 131°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2,291
 (B) First Initial Flow 16
 (C) First Final Flow 18
 (D) Initial Shut-In 111
 (E) Second Initial Flow 19
 (F) Second Final Flow 21
 (G) Final Shut-In 61
 (H) Final Hydrostatic 2,333

Test 1250
 Jars 250
 Safety Joint 75
 Circ Sub MA
 Hourly Standby
 Mileage 100RT 155
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

T-On Location ~~18:00~~
 T-Started 19:50
 T-Open 22:25
 T-Pulled 1:25
 T-Out 3:15

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

Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1730
 MP/DST Disc't _____
 Sub Total 1730

Approved By _____ Our Representative [Signature]

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