

## DRILL STEM TEST REPORT

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

400 N. Woodlawn  
Suite 16  
Wichita, KS 67208-4333

ATTN: Josh Austin

**27-32s-13w Barber KS**

**Kelly #4**

Start Date: 2005.08.18 @ 06:28:47

End Date: 2005.08.18 @ 14:00:02

Job Ticket #: 21735                      DST #: 1

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Bowers Drilling Co., Inc.

**Kelly #4**

400 N. Woodlawn  
Suite 16  
Wichita, KS 67208-4333  
ATTN: Josh Austin

**27-32s-13w Barber KS**

Job Ticket: 21735      **DST#: 1**  
Test Start: 2005.08.18 @ 06:28:47

## GENERAL INFORMATION:

Formation: **Lower Douglas Sand**  
Deviated: **No Whipstock:**      ft (KB)  
Time Tool Opened: 08:55:32  
Time Test Ended: 14:00:02

Test Type: **Conventional Bottom Hole**  
Tester: **Jake Fahrenbruch**  
Unit No: **19**

Interval: **3877.00 ft (KB) To 3903.00 ft (KB) (TVD)**  
Total Depth: **3903.00 ft (KB) (TVD)**  
Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **1670.00 ft (KB)**  
**1660.00 ft (CF)**  
KB to GRVCF: **10.00 ft**

**Serial #: 6667**

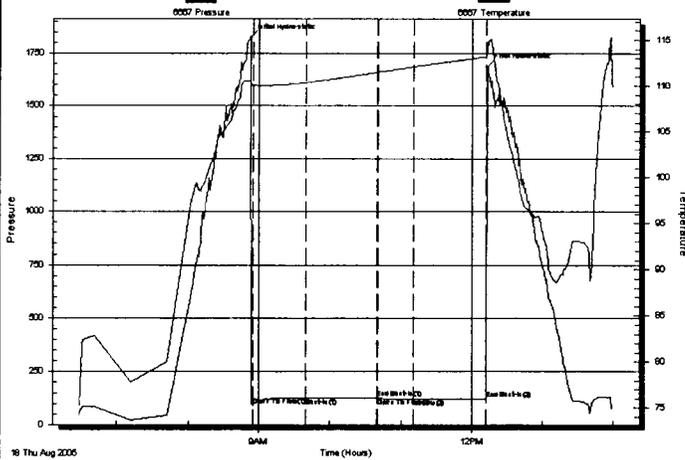
**Inside**

Press@RunDepth: **122.08 psig @ 3878.00 ft (KB)**  
Start Date: **2005.08.18**      End Date: **2005.08.18**  
Start Time: **06:28:52**      End Time: **14:00:01**

Capacity: **7000.00 psig**  
Last Calib.: **2005.08.18**  
Time On Btrn: **2005.08.18 @ 08:53:02**  
Time Off Btrn: **2005.08.18 @ 12:12:32**

**TEST COMMENT:** IF: Flushed tool. Weak surface blow, died after 30 min.  
IS: Bled off, no blow back.  
FF: No blow.  
FSI: Bled off, No blow back.

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1824.54	110.56	Initial Hydro-static
3	87.94	109.68	Open To Flow (1)
47	124.72	110.36	Shut-In(1)
107	124.33	111.48	End Shut-In(1)
108	124.22	111.49	Open To Flow (2)
138	122.08	112.08	Shut-In(2)
199	120.45	113.18	End Shut-In(2)
200	1686.70	113.98	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	Drig Mud 100%	0.07
0.00	0	0.00

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Bowers Drilling Co., Inc.

**Kelly #4**

400 N. Woodlaw n  
Suite 16  
Wichita, KS 67208-4333  
ATTN: Josh Austin

**27-32s-13w Barber KS**

Job Ticket: 21735 **DST#: 1**

Test Start: 2005.08.18 @ 06:28:47

### Tool Information

Drill Pipe:	Length: 3856.00 ft	Diameter: 3.80 inches	Volume: 54.09 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: 54.09 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	3877.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	54.00 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			3854.00	
Hydraulic tool	5.00			3859.00	
Jars	5.00			3864.00	
Safety Joint	3.00			3867.00	
Packer	5.00			3872.00	28.00 Bottom Of Top Packer
Packer	5.00			3877.00	
Stubb	1.00			3878.00	
Recorder	0.00	6667	Inside	3878.00	
Perforations	22.00			3900.00	
Recorder	0.00	6074	Outside	3900.00	
Bullnose	3.00			3903.00	26.00 Bottom Packers & Anchor

**Total Tool Length: 54.00**



**TRILOBITE  
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**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Bowers Drilling Co., Inc.

**Kelly #4**

400 N. Woodlawn  
Suite 16  
Wichita, KS 67208-4333  
ATTN: Josh Austin

**27-32s-13w Barber KS**  
Job Ticket: 21735      **DST#: 1**  
Test Start: 2005.08.18 @ 06:28:47

**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: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 11.98 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2200.00 ppm			
Filter Cake: 0.07 inches			

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
5.00	Drig Mud 100%	0.070
0.00	0	0.000

Total Length: 5.00 ft      Total Volume: 0.070 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

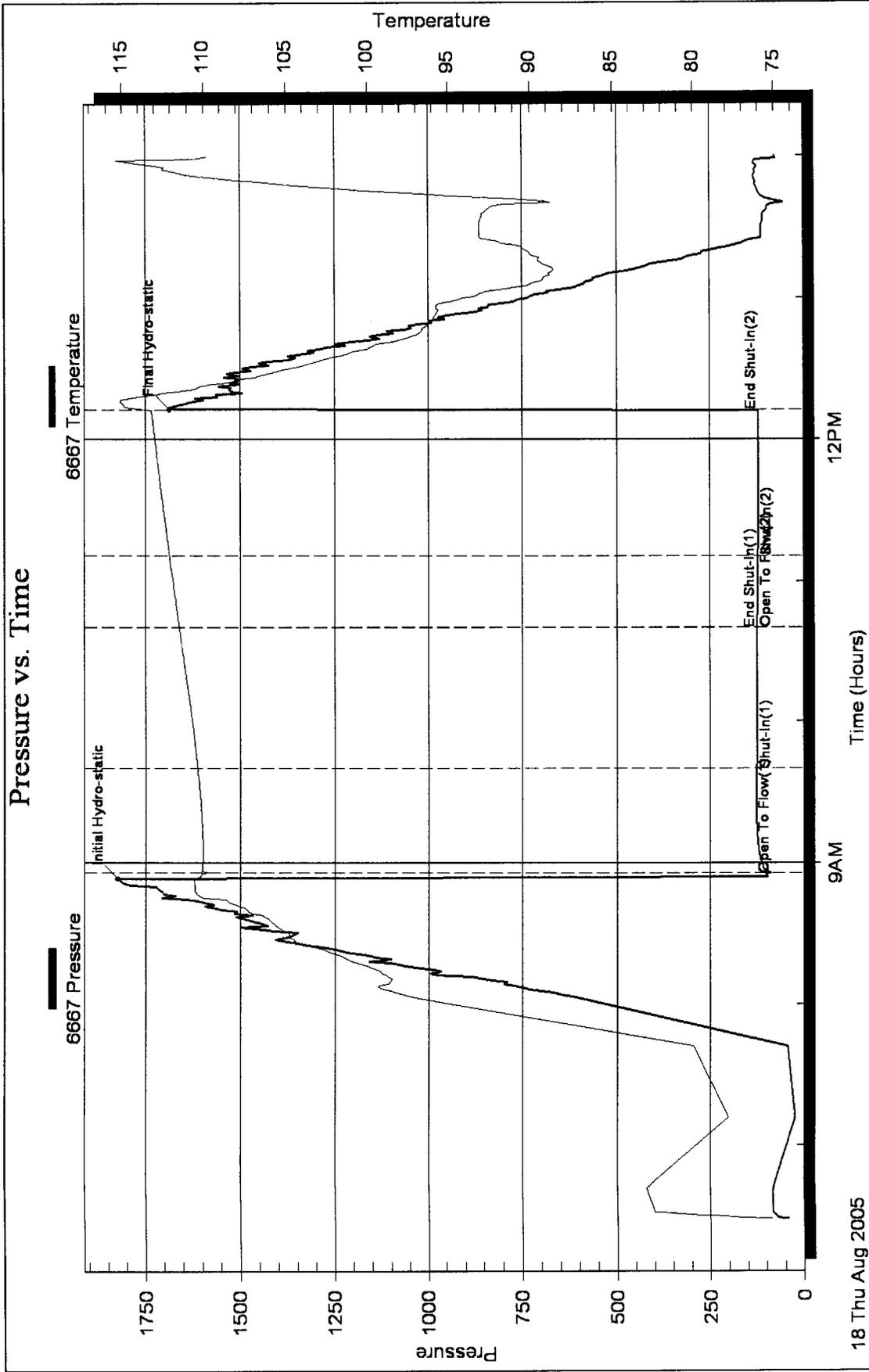
Serial #: 6667

Inside

Bowers Drilling Co., Inc.

27-32s-13w Barber KS

DST Test Number: 1





## DRILL STEM TEST REPORT

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

400 N. Woodlawn  
Suite 16  
Wichita, KS 67208-4333

ATTN: Josh Austin

**27-32s-13w Barber KS**

**Kelly #4**

Start Date: 2005.08.20 @ 01:31:49

End Date: 2005.08.20 @ 08:47:19

Job Ticket #: 21736                      DST #: 2

Trilobite Testing, Inc

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



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TESTING, INC.**

# DRILL STEM TEST REPORT

Bowers Drilling Co., Inc.

**Kelly #4**

400 N. Woodlawn  
Suite 16  
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ATTN: Josh Austin

**27-32s-13w Barber KS**

Job Ticket: 21736

**DST#: 2**

Test Start: 2005.08.20 @ 01:31:49

## GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: **No** Whipstock: **ft (KB)**

Time Tool Opened: 04:05:34

Time Test Ended: 08:47:19

Test Type: **Conventional Bottom Hole**

Tester: **Jake Fahrenbruch**

Unit No: **19**

Interval: **4394.00 ft (KB) To 4465.00 ft (KB) (TVD)**

Total Depth: **4465.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **1670.00 ft (KB)**

**1660.00 ft (CF)**

KB to GR/CF: **10.00 ft**

**Serial #: 6667**

**Inside**

Press@RunDepth: **105.99 psig @ 4395.00 ft (KB)**

Start Date: **2005.08.20**

End Date: **2005.08.20**

Start Time: **01:31:54**

End Time: **08:47:18**

Capacity: **7000.00 psig**

Last Calib.: **2005.08.20**

Time On Btm: **2005.08.20 @ 04:04:49**

Time Off Btm: **2005.08.20 @ 06:54:49**

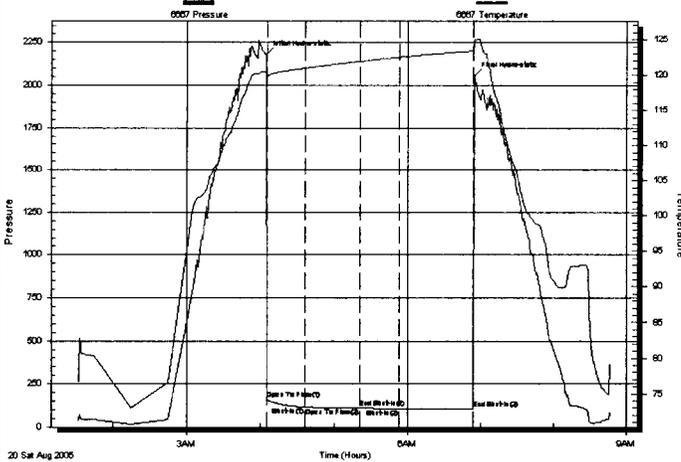
TEST COMMENT: **IF: Weak blow @ 2".**

**IS: Bled off, no blow back.**

**FF: No blow.**

**FSI: No blow.**

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2179.09	120.50	Initial Hydro-static
1	163.71	119.91	Open To Flow (1)
32	116.27	120.97	Shut-In(1)
76	111.07	121.92	End Shut-In(1)
77	109.27	121.92	Open To Flow (2)
108	105.99	122.51	Shut-In(2)
170	104.37	123.39	End Shut-In(2)
170	2053.57	124.87	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	Drig Mud 100% m	0.14
0.00	180' GIP	0.00
0.00	0	0.00

## Gas Rates

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



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# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Bowers Drilling Co., Inc.  
400 N. Woodlaw n  
Suite 16  
Wichita, KS 67208-4333  
ATTN: Josh Austin

**Kelly #4**  
**27-32s-13w Barber KS**  
Job Ticket: 21736      **DST#: 2**  
Test Start: 2005.08.20 @ 01:31:49

**Tool Information**

Drill Pipe:	Length: 4389.00 ft	Diameter: 3.80 inches	Volume: 61.57 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 61.57 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4394.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	71.00 ft			
Tool Length:	99.00 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			4371.00	
Hydraulic tool	5.00			4376.00	
Jars	5.00			4381.00	
Safety Joint	3.00			4384.00	
Packer	5.00			4389.00	28.00      Bottom Of Top Packer
Packer	5.00			4394.00	
Stubb	1.00			4395.00	
Recorder	0.00	6667	Inside	4395.00	
Perforations	4.00			4399.00	
Change Over Sub	1.00			4400.00	
Blank Spacing	31.00			4431.00	
Change Over Sub	1.00			4432.00	
Perforations	30.00			4462.00	
Recorder	0.00	6074	Outside	4462.00	
Bullnose	3.00			4465.00	71.00      Bottom Packers & Anchor

**Total Tool Length: 99.00**



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Bowers Drilling Co., Inc.

**Kelly #4**

400 N. Woodlaw n  
Suite 16  
Wchita, KS 67208-4333  
ATTN: Josh Austin

**27-32s-13w Barber KS**  
Job Ticket: 21736      **DST#: 2**  
Test Start: 2005.08.20 @ 01:31:49

## 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: 46.00 sec/qt	Cushion Volume: bbl		
Water Loss: 16.78 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2200.00 ppm			
Filter Cake: 0.07 inches			

## Recovery Information

Recovery Table

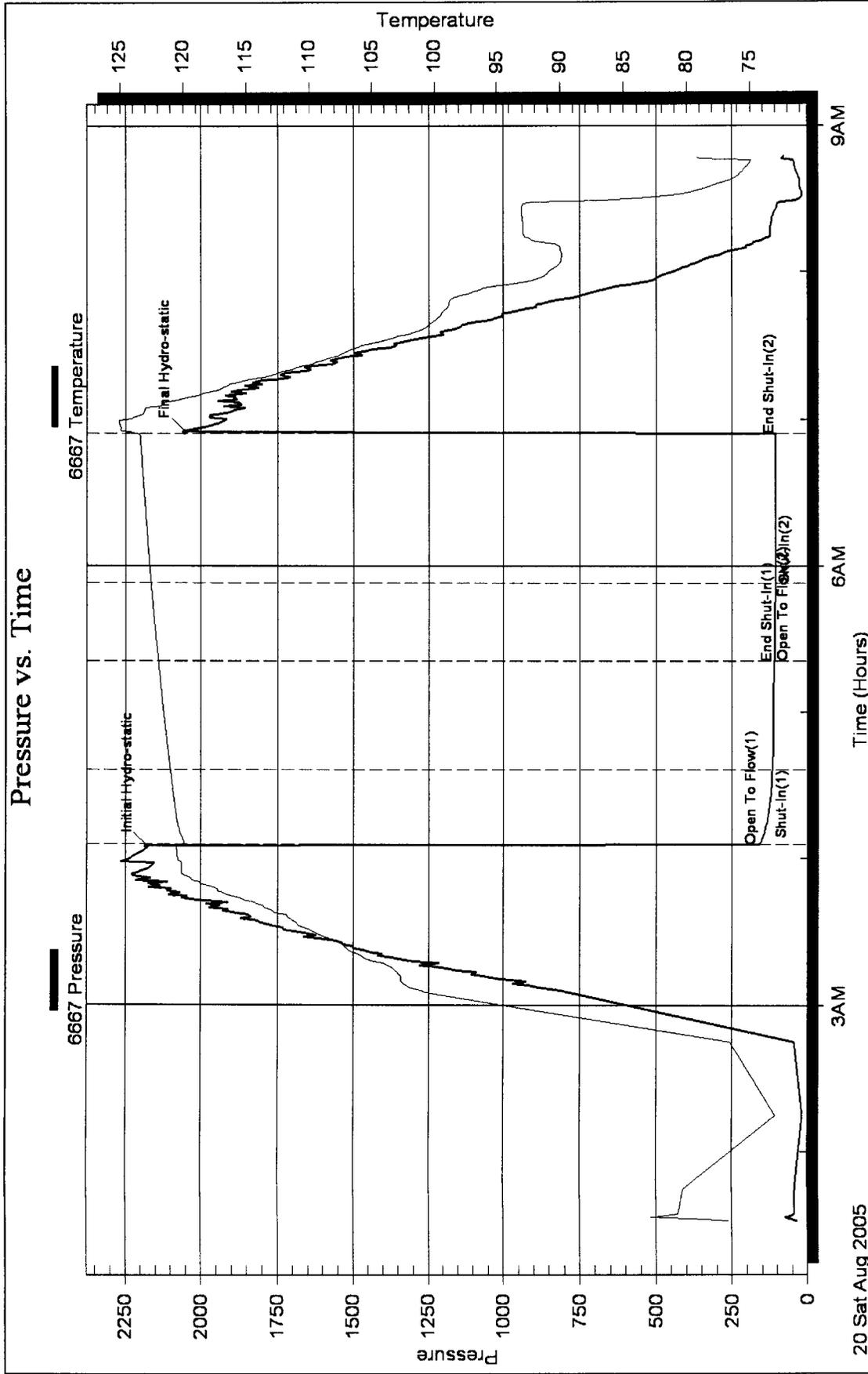
Length ft	Description	Volume bbl
10.00	Drig Mud 100%m	0.140
0.00	180' GIP	0.000
0.00	0	0.000

Total Length: 10.00 ft      Total Volume: 0.140 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:





## DRILL STEM TEST REPORT

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400 N. Woodlawn  
Suite 16  
Wichita, KS 67208-4333

ATTN: Josh Austin

**27-32s-13w Barber KS**

**Kelly #4**

Start Date: 2005.08.21 @ 09:59:19

End Date: 2005.08.21 @ 17:31:04

Job Ticket #: 21737                      DST #: 3

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



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## DRILL STEM TEST REPORT

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400 N. Woodlaw n  
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ATTN: Josh Austin

**Kelly #4**

**27-32s-13w Barber KS**

Job Ticket: 21737

**DST#: 3**

Test Start: 2005.08.21 @ 09:59:19

### GENERAL INFORMATION:

Formation: **Mizner - Viola**

Deviated: **No Whipstock:** ft (KB)

Time Tool Opened: 12:13:04

Time Test Ended: 17:31:04

Test Type: **Conventional Bottom Hole**

Tester: **Jake Fahrenbruch**

Unit No: **19**

Interval: **4771.00 ft (KB) To 4808.00 ft (KB) (TVD)**

Total Depth: **4808.00 ft (KB) (TVD)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **1670.00 ft (KB)**

**1660.00 ft (CF)**

KB to GR/CF: **10.00 ft**

**Serial #: 6667**

**Inside**

Press@RunDepth: **115.60 psig @ 4772.00 ft (KB)**

Start Date: **2005.08.21**

End Date:

**2005.08.21**

Start Time: **09:59:24**

End Time:

**17:31:03**

Capacity: **7000.00 psig**

Last Calib.: **2005.08.21**

Time On Btm: **2005.08.21 @ 12:12:34**

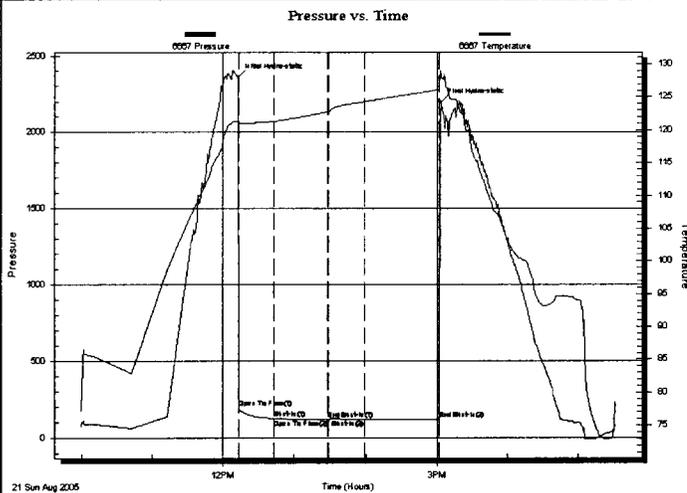
Time Off Btm: **2005.08.21 @ 15:03:04**

**TEST COMMENT:** **F: Weak surface blow, died after 20 minutes.**

**IS: No blow back.**

**FF: No blow.**

**FS: No blow back.**



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2360.73	121.25	Initial Hydro-static
1	192.51	120.87	Open To Flow (1)
31	124.38	121.31	Shut-In(1)
76	120.88	122.75	End Shut-In(1)
76	119.01	122.75	Open To Flow (2)
107	115.60	124.30	Shut-In(2)
170	115.99	126.09	End Shut-In(2)
171	2198.93	128.23	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
5.00	SLOSM 100% m	0.07
0.00	0	0.00

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Bowers Drilling Co., Inc.

**Kelly #4**

400 N. Woodlaw n  
Suite 16  
Wichita, KS 67208-4333  
ATTN: Josh Austin

**27-32s-13w Barber KS**

Job Ticket: 21737      **DST#: 3**  
Test Start: 2005.08.21 @ 09:59:19

### Tool Information

Drill Pipe:	Length: 4761.00 ft	Diameter: 3.80 inches	Volume: 66.78 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 66.78 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4771.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	65.00 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			4748.00	
Hydraulic tool	5.00			4753.00	
Jars	5.00			4758.00	
Safety Joint	3.00			4761.00	
Packer	5.00			4766.00	28.00      Bottom Of Top Packer
Packer	5.00			4771.00	
Stubb	1.00			4772.00	
Recorder	0.00	6667	Inside	4772.00	
Perforations	33.00			4805.00	
Recorder	0.00	6074	Outside	4805.00	
Bullnose	3.00			4808.00	37.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>65.00</b>				



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## DRILL STEM TEST REPORT

FLUID SUMMARY

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Wichita, KS 67208-4333  
ATTN: Josh Austin

**27-32s-13w Barber KS**  
Job Ticket: 21737      **DST#: 3**  
Test Start: 2005.08.21 @ 09:59:19

### 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: 49.00 sec/qt	Cushion Volume: bbl		
Water Loss: 14.38 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 4600.00 ppm			
Filter Cake: 0.07 inches			

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	SLOSM 100%m	0.070
0.00	0	0.000

Total Length: 5.00 ft      Total Volume: 0.070 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments:

Serial #: 6667

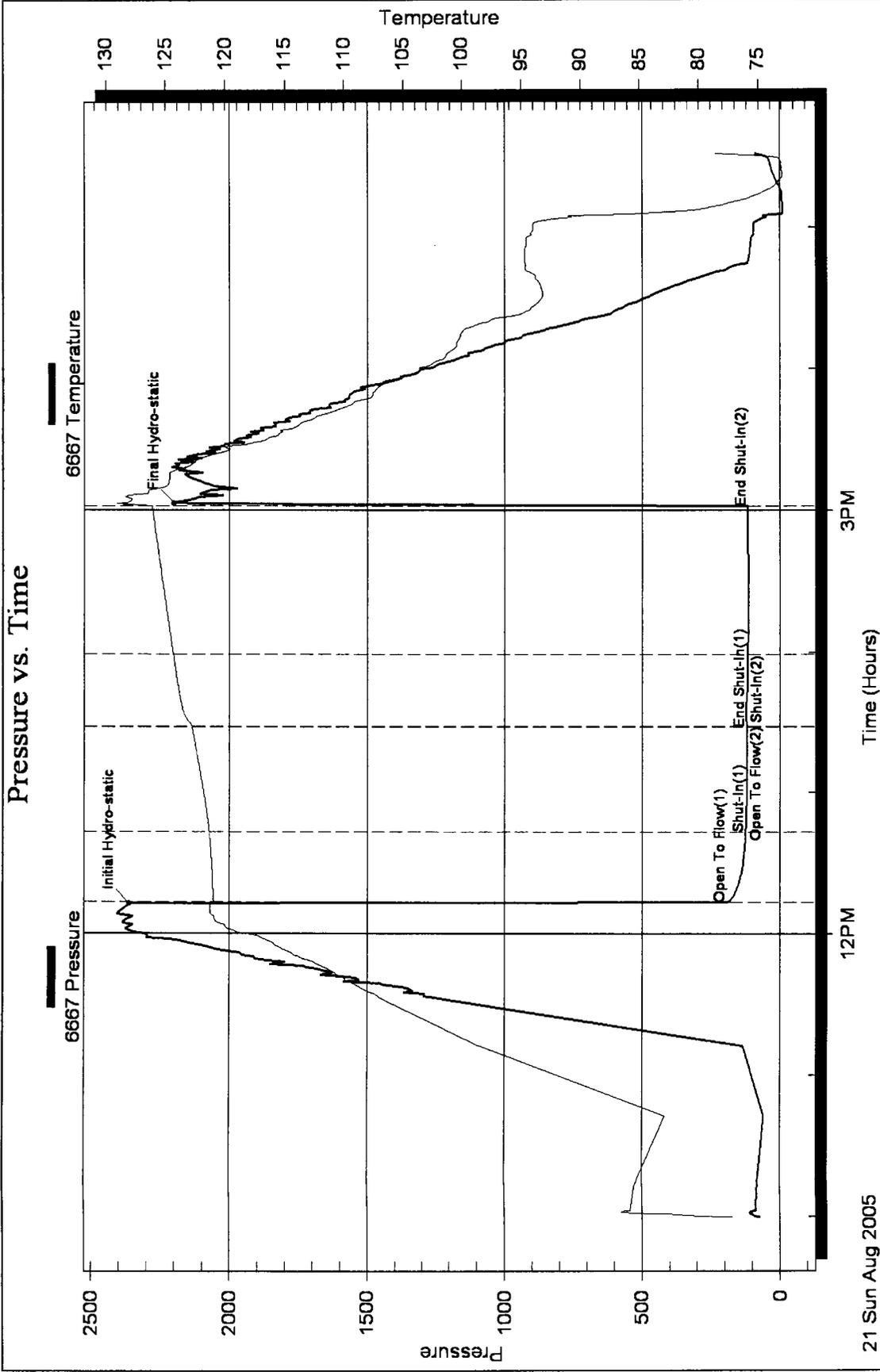
Inside

Bowers Drilling Co., Inc.

27-32s-13w Barber KS

DST Test Number: 3

### Pressure vs. Time



21 Sun Aug 2005

12PM

3PM

Time (Hours)