

DRILL STEM TEST REPORT

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

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206

ATTN: Phil Askey

Doug APC #1-25

25-16s-45w Cheyenne,CO

Start Date: 2012.11.30 @ 01:22:05

End Date: 2012.12.01 @ 05:23:59

Job Ticket #: 49921 DST #: 1

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

Printed: 2012.12.06 @ 15:27:14



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 49921

DST#: 1

Test Start: 2012.11.30 @ 01:22:05

GENERAL INFORMATION:

Formation: **Shawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:32:30

Time Test Ended: 05:23:59

Test Type: Conventional Bottom Hole (Initial)

Tester: Will MacLean

Unit No: 40

Interval: 3986.00 ft (KB) To 4017.00 ft (KB) (TVD)

Total Depth: 4017.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8360 Inside

Press @ Run Depth: 69.26 psig @ 3989.00 ft (KB)

Start Date: 2012.11.30

End Date:

2012.12.01

Start Time: 01:22:00

End Time:

05:23:54

Capacity: 8000.00 psig

Last Calib.: 2012.12.01

Time On Btm: 2012.11.30 @ 03:32:10

Time Off Btm: 2012.11.30 @ 06:31:54

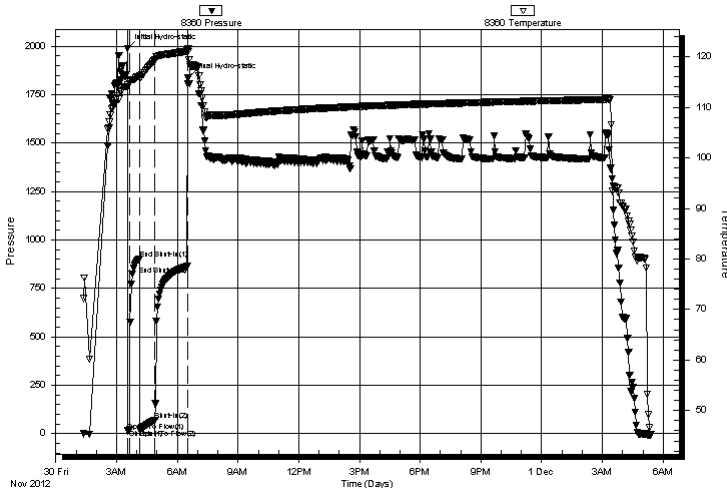
TEST COMMENT: IF- Weak Surface Blow Built to 3/4"

ISI- No Blow

FF- Weak Surface Blow Built to 3"

FSI- No Blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1989.36	114.54	Initial Hydro-static
1	15.33	113.87	Open To Flow (1)
6	21.72	115.15	Shut-In(1)
36	903.52	116.13	End Shut-In(1)
37	23.53	115.72	Open To Flow (2)
82	69.26	119.30	Shut-In(2)
178	864.32	121.10	End Shut-In(2)
180	1839.90	120.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WCM 45%w 55%m	0.30
60.00	MCW 37%m 63%w	0.30

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 49921

DST#: 1

Test Start: 2012.11.30 @ 01:22:05

GENERAL INFORMATION:

Formation: **Shawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:32:30

Time Test Ended: 05:23:59

Test Type: Conventional Bottom Hole (Initial)

Tester: Will MacLean

Unit No: 40

Interval: 3986.00 ft (KB) To 4017.00 ft (KB) (TVD)

Total Depth: 4017.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8353 Outside

Press @ Run Depth: psig @ 3989.00 ft (KB)

Start Date: 2012.11.30

End Date:

2012.12.01

Start Time: 01:22:15

End Time:

05:24:15

Capacity: 8000.00 psig

Last Calib.: 2012.12.01

Time On Btm:

Time Off Btm:

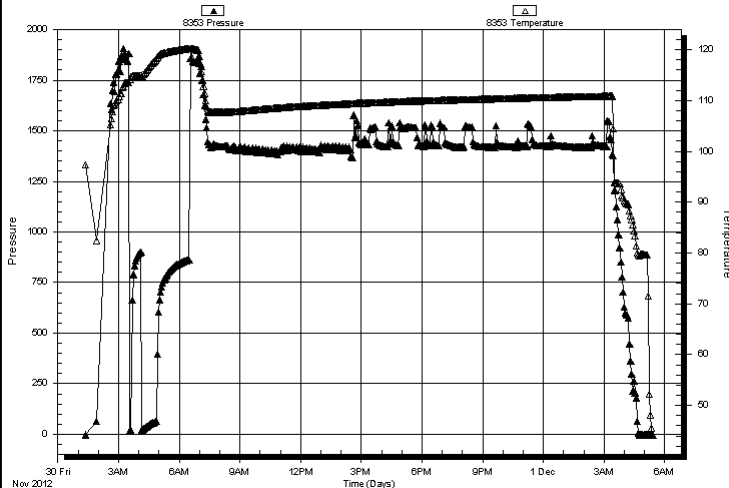
TEST COMMENT: IF- Weak Surface Blow Built to 3/4"

ISI- No Blow

FF- Weak Surface Blow Built to 3"

FSI- No Blow

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
60.00	WCM 45%w 55%w	0.30
60.00	MCW 37%w 63%w	0.30

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

Doug APC #1-25

Job Ticket: 49921

DST#: 1

Test Start: 2012.11.30 @ 01:22:05

Tool Information

Drill Pipe:	Length:	3821.00 ft	Diameter:	3.80 inches	Volume:	53.60 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length:	177.00 ft	Diameter:	2.25 inches	Volume:	0.87 bbl	Weight to Pull Loose:	4000.00 lb
					Total Volume:	54.47 bbl	Tool Chased	ft
Drill Pipe Above KB:		32.00 ft					String Weight: Initial	68000.00 lb
Depth to Top Packer:		3986.00 ft					Final	68000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		31.00 ft						
Tool Length:		51.00 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			3967.00	
Shut In Tool	5.00			3972.00	
Hydraulic tool	5.00			3977.00	
Packer	5.00			3982.00	20.00 Bottom Of Top Packer
Packer	4.00			3986.00	
Stubb	1.00			3987.00	
Perforations	2.00			3989.00	
Recorder	0.00	8360	Inside	3989.00	
Recorder	0.00	8353	Outside	3989.00	
Perforations	25.00			4014.00	
Bullnose	3.00			4017.00	31.00 Bottom Packers & Anchor

Total Tool Length: 51.00



TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY

Doug APC #1-25

B# 1200

Job Ticket: 49921

DST#: 1

Wichita KS 67206

Test Start: 2012.11.30 @ 01:22:05

ATTN: Phil Askey

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:

20500 ppm

Viscosity: 64.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.92 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	WCM 45%w 55%m	0.295
60.00	MCW 37%m 63%w	0.295

Total Length: 120.00 ft

Total Volume: 0.590 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW is .490 @ 45f = 20,500

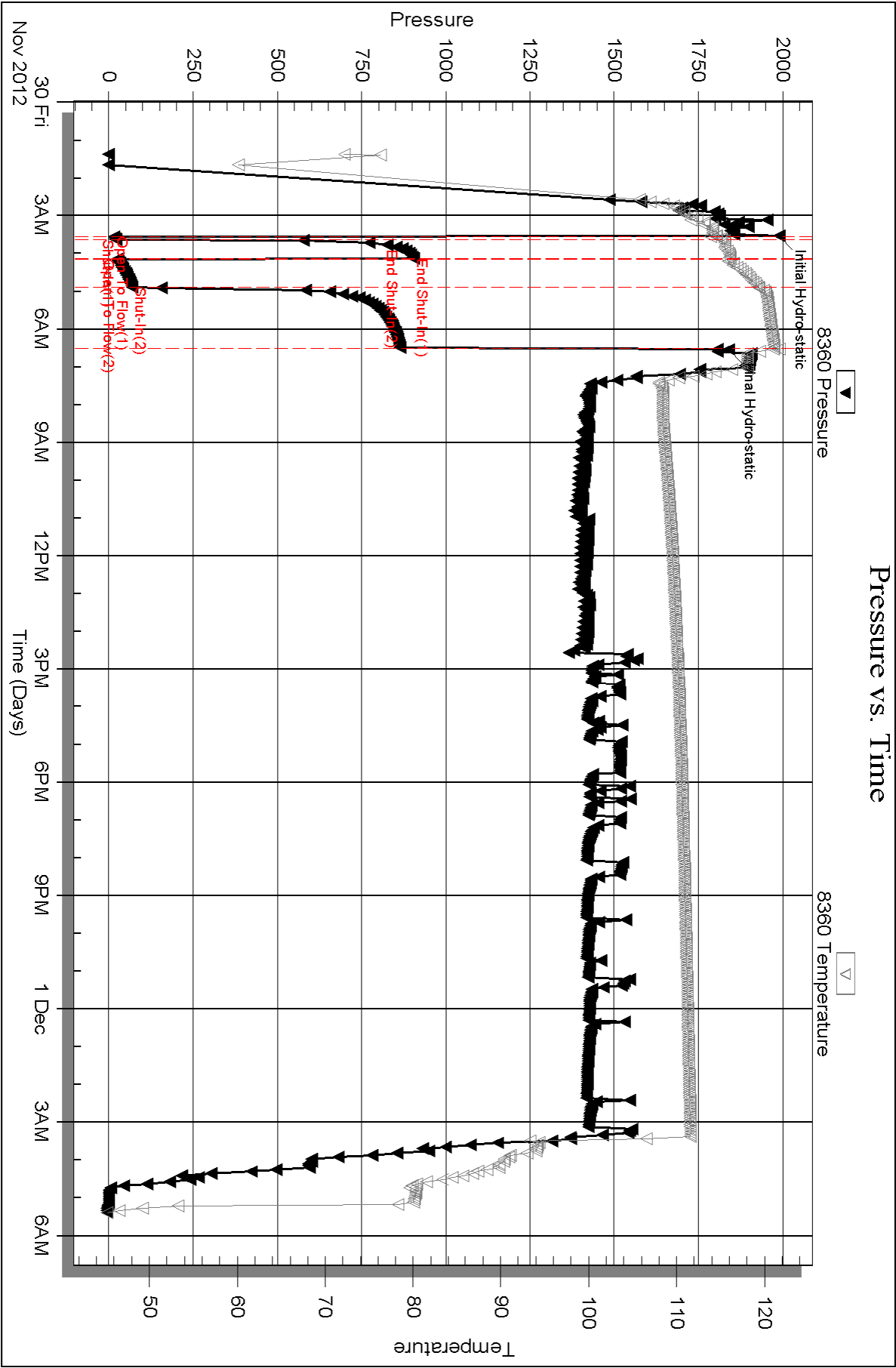
Serial #: 8360

Inside

Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 1

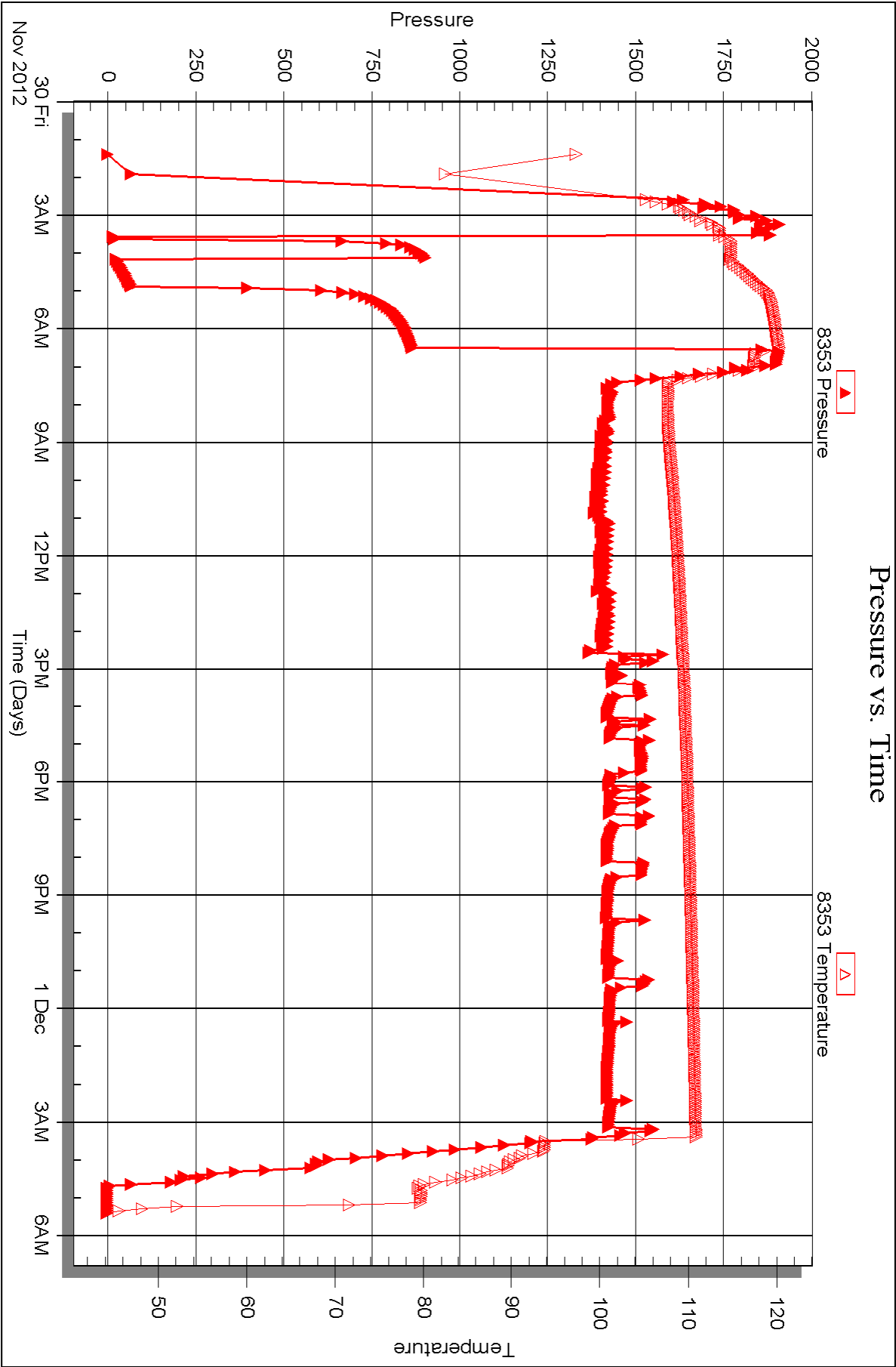


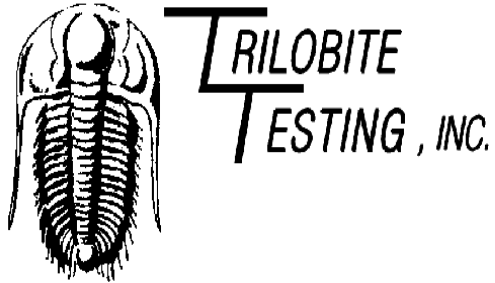
Serial #: 8353

Outside Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 1





DRILL STEM TEST REPORT

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

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206

ATTN: Phil Askey

Doug APC #1-25

25-16s-45w Cheyenne,CO

Start Date: 2012.12.03 @ 02:50:29

End Date: 2012.12.03 @ 09:07:44

Job Ticket #: 49893 DST #: 2

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

Printed: 2012.12.06 @ 15:26:34



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 49893

DST#: 2

Test Start: 2012.12.03 @ 02:50:29

GENERAL INFORMATION:

Formation: **I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:50:59

Time Test Ended: 09:07:44

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 40

Interval: 4426.00 ft (KB) To 4440.00 ft (KB) (TVD)

Reference Elevations: 4306.00 ft (KB)

Total Depth: 4440.00 ft (KB) (TVD)

4295.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 6667 Inside

Press @ Run Depth: 12.20 psig @ 4427.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.12.03

End Date:

2012.12.03

Last Calib.: 2012.12.03

Start Time: 02:50:29

End Time:

09:06:44

Time On Btm: 2012.12.03 @ 04:50:44

Time Off Btm: 2012.12.03 @ 07:05:44

TEST COMMENT: Weak blow , died in 4 min.

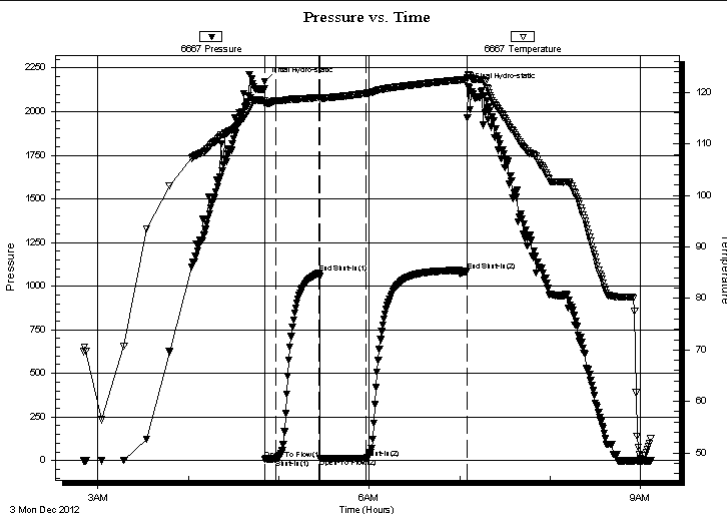
No return

No blow

No return

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2171.42	118.44	Initial Hydro-static
1	9.01	117.89	Open To Flow (1)
7	10.49	118.37	Shut-In(1)
36	1074.02	119.03	End Shut-In(1)
37	10.92	118.70	Open To Flow (2)
67	12.20	119.81	Shut-In(2)
135	1085.77	122.59	End Shut-In(2)
135	2140.38	123.52	Final Hydro-static



Recovery

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

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 49893

DST#: 2

Test Start: 2012.12.03 @ 02:50:29

GENERAL INFORMATION:

Formation: **I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:50:59

Time Test Ended: 09:07:44

Test Type: Conventional Bottom Hole (Reset)

Tester: Shane McBride

Unit No: 40

Interval: 4426.00 ft (KB) To 4440.00 ft (KB) (TVD)

Total Depth: 4440.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8368 Outside

Press @ Run Depth: psig @ 4427.00 ft (KB)

Start Date: 2012.12.03

End Date:

2012.12.03

Start Time: 02:50:14

End Time:

09:06:44

Capacity: 8000.00 psig

Last Calib.:

2012.12.03

Time On Btm:

Time Off Btm:

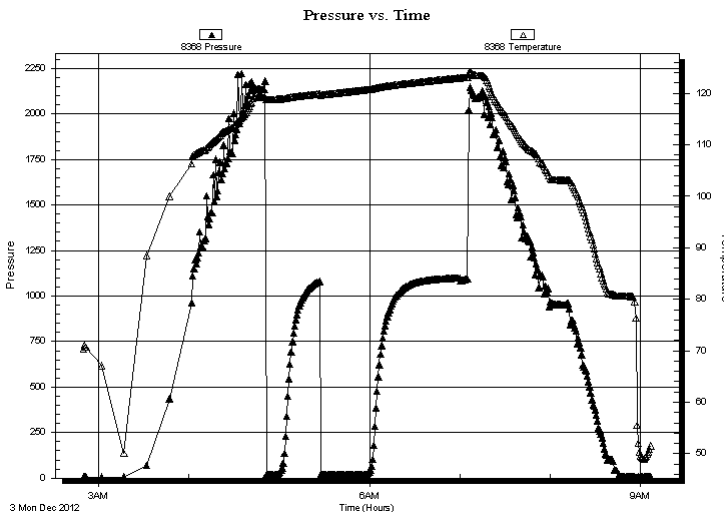
TEST COMMENT: Weak blow , died in 4 min.

No return

No blow

No return

PRESSURE SUMMARY



Time
(Min.)

Pressure
(psig)

Temp
(deg F)

Annotation

Recovery

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

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

Doug APC #1-25

Job Ticket: 49893

DST#: 2

Test Start: 2012.12.03 @ 02:50:29

Tool Information

Drill Pipe:	Length:	4224.00 ft	Diameter:	3.80 inches	Volume:	59.25 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length:	188.00 ft	Diameter:	2.25 inches	Volume:	0.92 bbl	Weight to Pull Loose:	95000.00 lb
					Total Volume:	60.17 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		6.00 ft					String Weight: Initial	72000.00 lb
Depth to Top Packer:		4426.00 ft					Final	72000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		14.00 ft						
Tool Length:		34.00 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			4407.00	
Shut In Tool	5.00			4412.00	
Hydraulic tool	5.00			4417.00	
Packer	5.00			4422.00	20.00 Bottom Of Top Packer
Packer	4.00			4426.00	
Stubb	1.00			4427.00	
Recorder	0.00	6667	Inside	4427.00	
Recorder	0.00	8368	Outside	4427.00	
Perforations	8.00			4435.00	
Bullnose	5.00			4440.00	14.00 Bottom Packers & Anchor
Total Tool Length:	34.00				



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY

Doug APC #1-25

B# 1200

Job Ticket: 49893

DST#: 2

Wichita KS 67206

Test Start: 2012.12.03 @ 02:50:29

ATTN: Phil Askey

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 6.36 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	mud 100% m	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

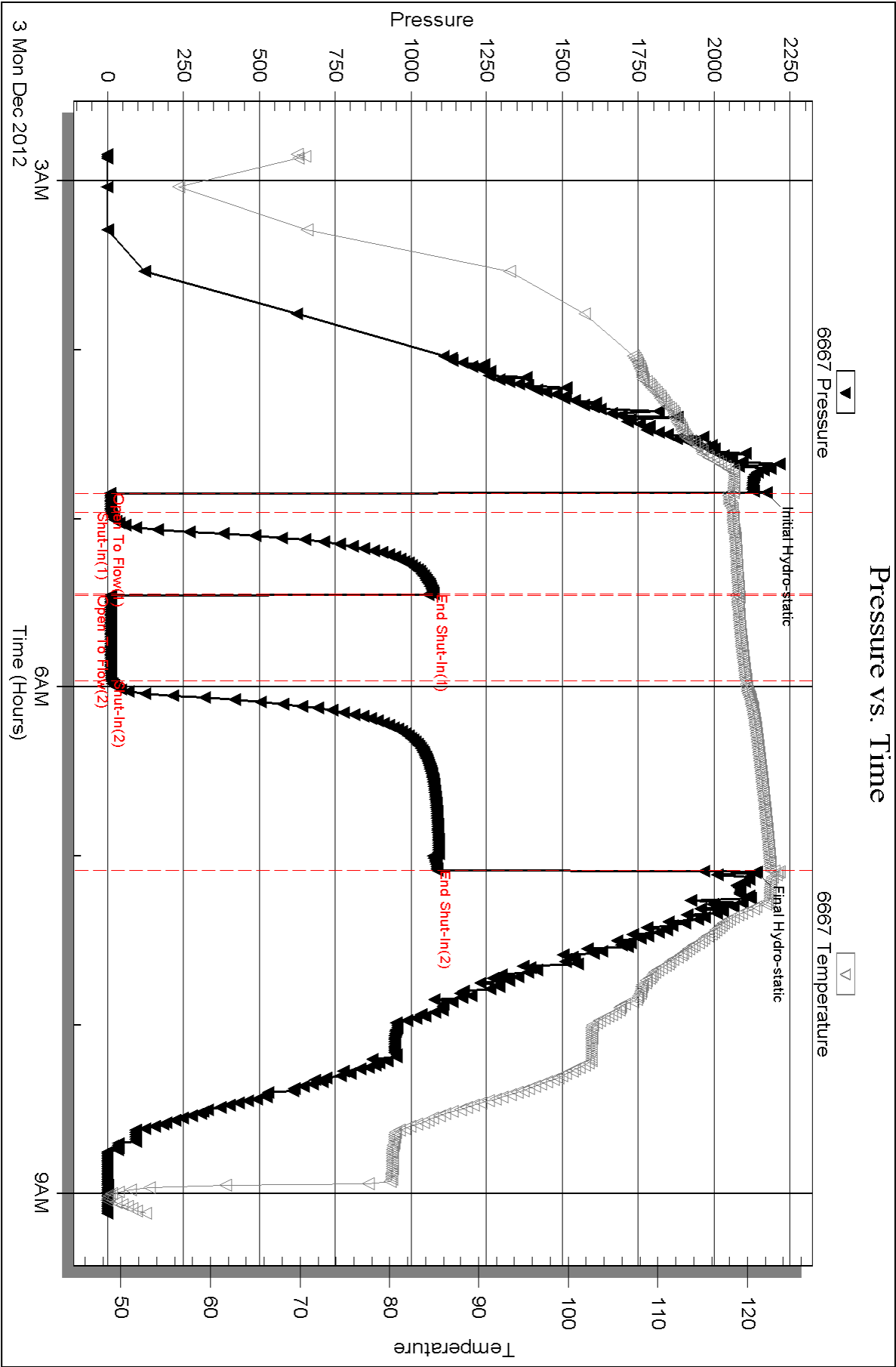
Serial #: 6667

Inside

Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 2

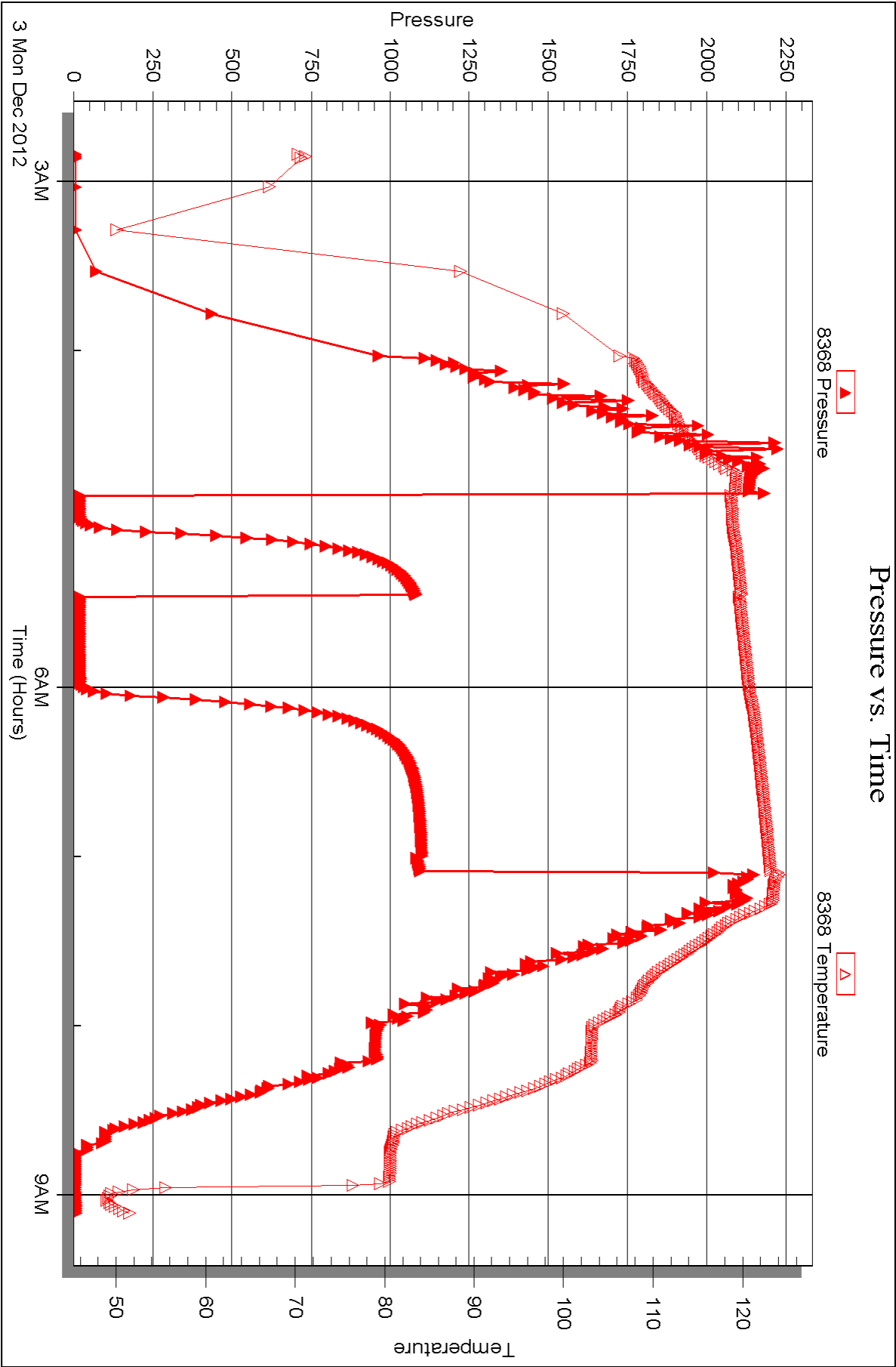


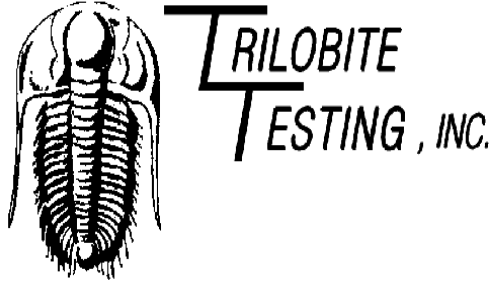
Serial #: 8368

Outside Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 2





DRILL STEM TEST REPORT

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

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206

ATTN: Phil Askey

Doug APC #1-25

25-16s-45w Cheyenne,CO

Start Date: 2012.12.03 @ 21:50:35

End Date: 2012.12.04 @ 06:09:35

Job Ticket #: 49850 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.12.06 @ 15:25:47



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 49850

DST#: 3

Test Start: 2012.12.03 @ 21:50:35

GENERAL INFORMATION:

Formation: **Lansing "K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:58:05

Time Test Ended: 06:09:35

Test Type: Conventional Bottom Hole (Reset)

Tester: Tate Lang

Unit No: 60

Interval: 4470.00 ft (KB) To 4490.00 ft (KB) (TVD)

Total Depth: 4490.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8373 Inside

Press @ Run Depth: 110.64 psig @ 4478.00 ft (KB)

Start Date: 2012.12.03

End Date:

2012.12.04

Start Time: 21:50:40

End Time:

06:09:34

Capacity: 8000.00 psig

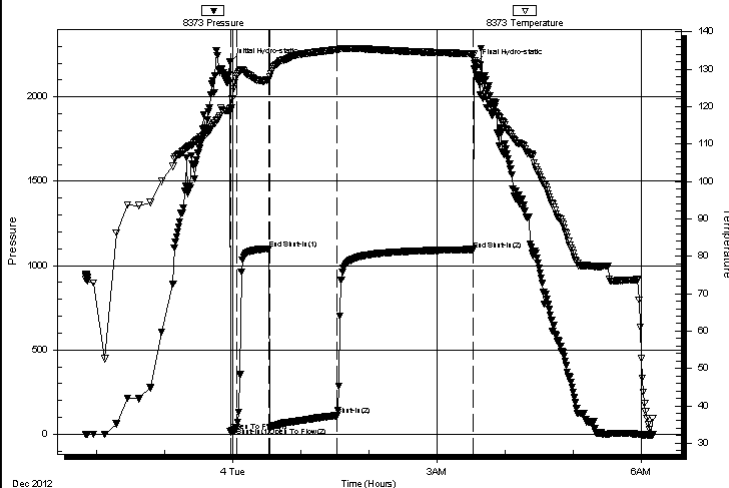
Last Calib.: 2012.12.04

Time On Btm: 2012.12.03 @ 23:57:35

Time Off Btm: 2012.12.04 @ 03:33:05

TEST COMMENT: IF-Weak surface blow built to 2"
ISI-Dead no return blow
FF-B.O.B. in 10 mins.
FSI-Strong return blow built to 11"

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2206.78	119.51	Initial Hydro-static
1	15.22	118.85	Open To Flow (1)
6	39.54	128.24	Shut-In(1)
34	1100.61	127.31	End Shut-In(1)
35	41.12	127.93	Open To Flow (2)
94	110.64	135.23	Shut-In(2)
214	1095.63	134.20	End Shut-In(2)
216	2195.42	132.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	5%G 3%O 2%M 90%W	0.61
62.00	20%G 40%M 40%O	0.39
62.00	10%M 45%G 45%O	0.87
0.00	1575 G.I.P.	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 49850

DST#: 3

Test Start: 2012.12.03 @ 21:50:35

GENERAL INFORMATION:

Formation: **Lansing "K"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:58:05

Time Test Ended: 06:09:35

Test Type: Conventional Bottom Hole (Reset)

Tester: Tate Lang

Unit No: 60

Interval: 4470.00 ft (KB) To 4490.00 ft (KB) (TVD)

Total Depth: 4490.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8356 Outside

Press @ Run Depth: psig @ 4478.00 ft (KB)

Start Date: 2012.12.03

End Date:

2012.12.04

Start Time: 21:50:39

End Time:

06:09:33

Capacity: 8000.00 psig

Last Calib.:

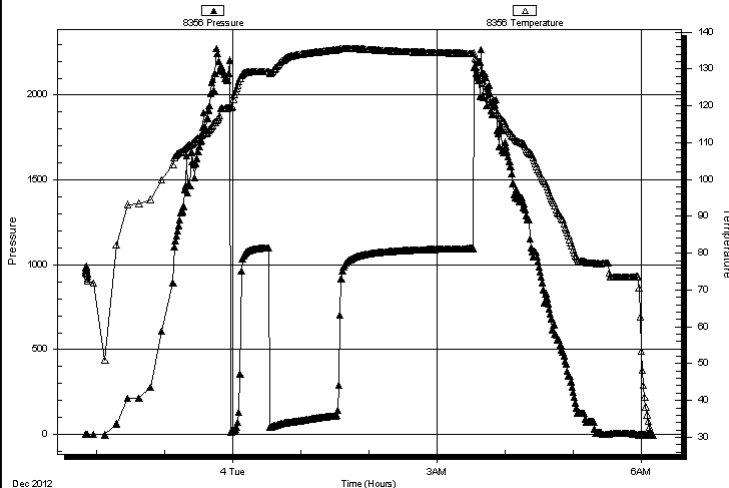
2012.12.04

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-Weak surface blow built to 2"
ISI-Dead no return blow
FF-B.O.B. in 10 mins.
FSI-Strong return blow built to 11"

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
124.00	5%G 3%O 2%M 90%W	0.61
62.00	20%G 40%M 40%O	0.39
62.00	10%M 45%G 45%O	0.87
0.00	1575 G.I.P.	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

Doug APC #1-25

Job Ticket: 49850

DST#: 3

Test Start: 2012.12.03 @ 21:50:35

Tool Information

Drill Pipe:	Length: 4294.00 ft	Diameter: 3.80 inches	Volume: 60.23 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose:	82000.00 lb
		Total Volume:	61.10 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial	72000.00 lb
Depth to Top Packer:	4477.00 ft			Final	75000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	13.00 ft				
Tool Length:	33.00 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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Stubb	1.00			4458.00	
Shut In Tool	5.00			4463.00	
Hydraulic tool	5.00			4468.00	
Packer	5.00			4473.00	20.00 Bottom Of Top Packer
Packer	4.00			4477.00	
Stubb	1.00			4478.00	
Recorder	0.00	8373	Inside	4478.00	
Recorder	0.00	8356	Outside	4478.00	
Perforations	7.00			4485.00	
Bullnose	5.00			4490.00	13.00 Bottom Packers & Anchor
Total Tool Length:	33.00				



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY

Doug APC #1-25

B# 1200

Job Ticket: 49850

DST#: 3

Wichita KS 67206

Test Start: 2012.12.03 @ 21:50:35

ATTN: Phil Askey

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:

17000 ppm

Viscosity: 47.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	5%G 3%O 2%M 90%W	0.610
62.00	20%G 40%M 40%O	0.387
62.00	10%M 45%G 45%O	0.870
0.00	1575 G.I.P.	0.000

Total Length: 248.00 ft

Total Volume: 1.867 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API RW .91 @ 31 F = 17000

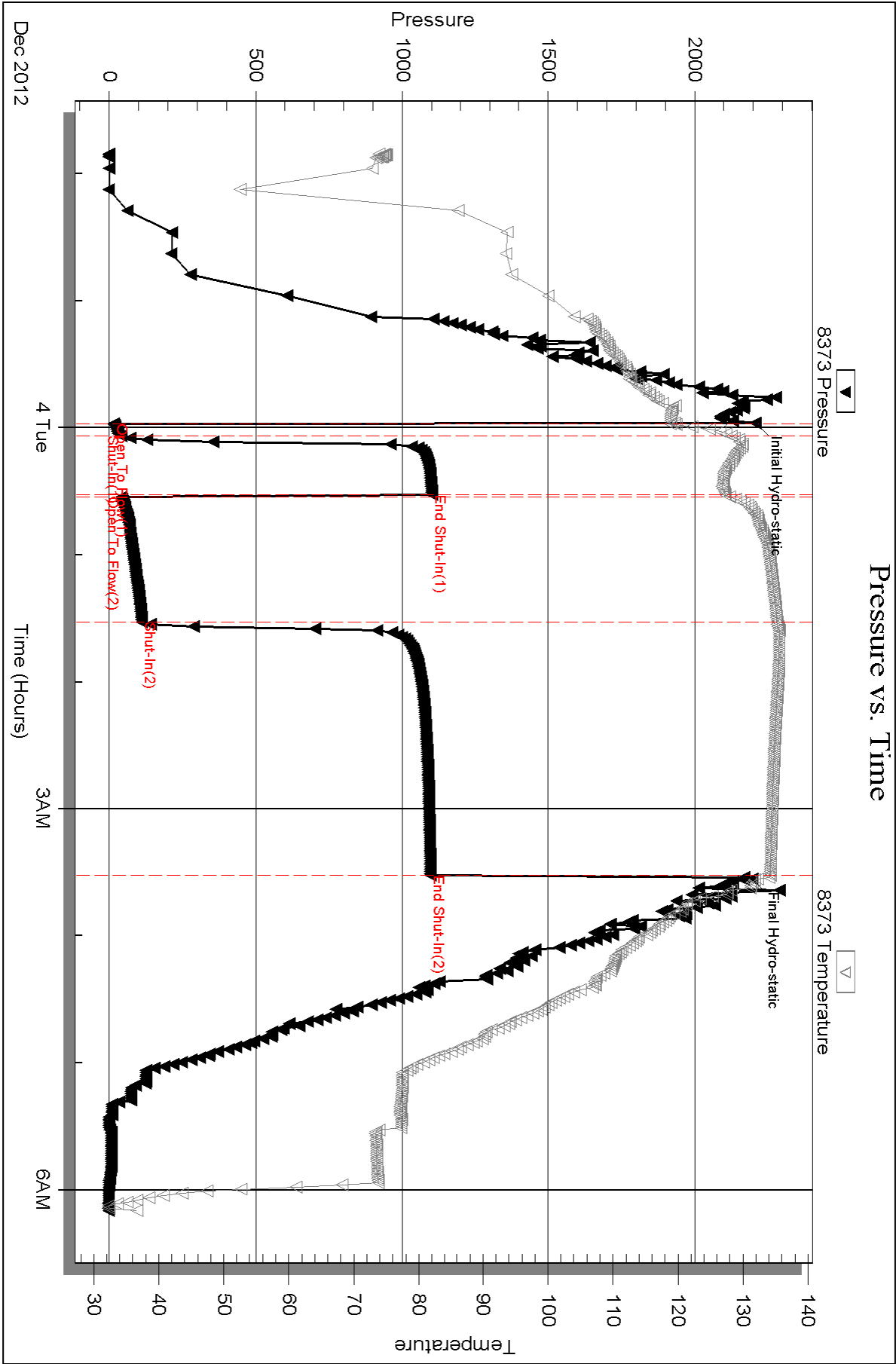
Serial #: 8373

Inside

Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 3

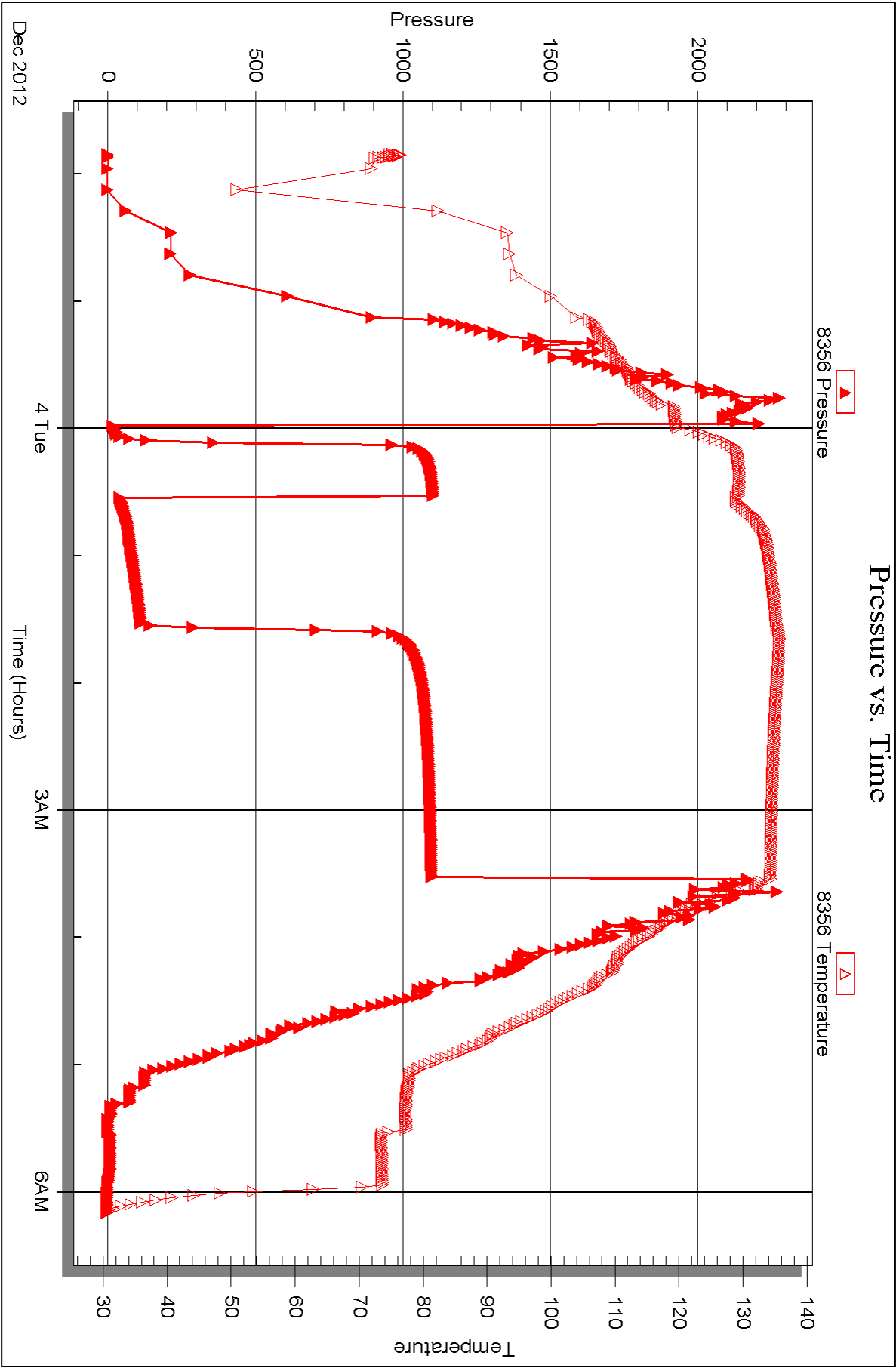


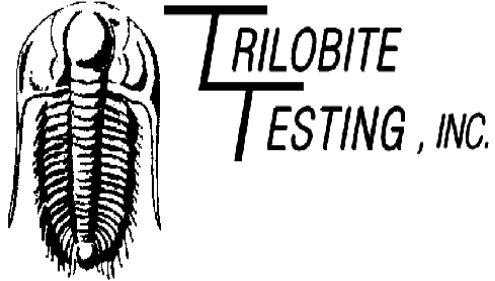
Serial #: 8356

Outside Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 3





DRILL STEM TEST REPORT

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

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206

ATTN: Phil Askey

Doug APC #1-25

25-16s-45w Cheyenne,CO

Start Date: 2012.12.04 @ 19:53:18

End Date: 2012.12.05 @ 01:54:18

Job Ticket #: 51401 DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.12.06 @ 15:25:05



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 51401

DST#: 4

Test Start: 2012.12.04 @ 19:53:18

GENERAL INFORMATION:

Formation: **Lansing "L" & Pleasa**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:45:18

Time Test Ended: 01:54:18

Test Type: Conventional Bottom Hole (Reset)

Tester: Tate Lang

Unit No: 60

Interval: 4529.00 ft (KB) To 4567.00 ft (KB) (TVD)

Total Depth: 4567.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8373 Inside

Press @ Run Depth: 297.32 psig @ 4533.00 ft (KB)

Start Date: 2012.12.04

End Date:

2012.12.05

Start Time: 19:53:23

End Time:

01:54:17

Capacity: 8000.00 psig

Last Calib.: 2012.12.05

Time On Btm: 2012.12.04 @ 21:44:48

Time Off Btm: 2012.12.04 @ 23:25:18

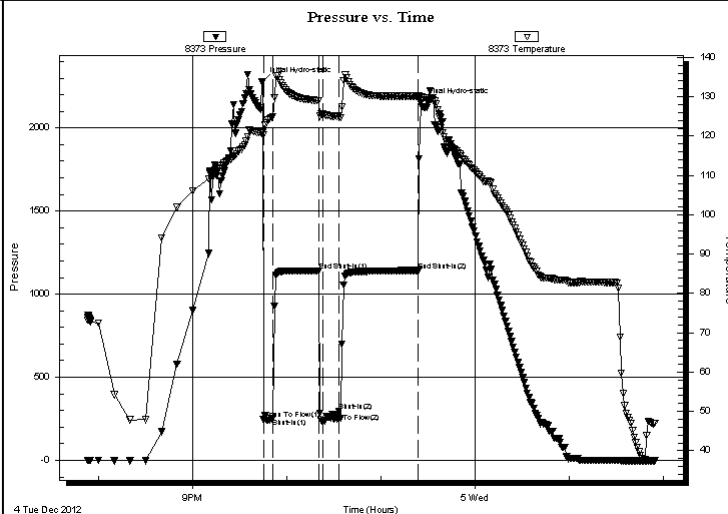
TEST COMMENT: IF-B.O.B. in 30 sec.

ISI-Bled off for 20 mins B.O.B. 2 mins

FF-B.O.B in 15 sec.

FSI-Bled off for 30 mins. B.O.B. 1 min.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2277.67	120.95	Initial Hydro-static
1	245.44	120.34	Open To Flow (1)
7	252.95	124.89	Shut-In (1)
36	1141.41	129.03	End Shut-In (1)
38	230.02	125.60	Open To Flow (2)
49	297.32	125.14	Shut-In (2)
99	1141.95	130.16	End Shut-In (2)
101	2151.59	129.17	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	60%G 10%O 10%W 20%M	0.30
186.00	40%G 40%O 20%M	1.56
186.00	20%G 70%O 10%M	2.61
0.00	Gas to surface G.I.P. 4100	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 51401

DST#: 4

Test Start: 2012.12.04 @ 19:53:18

GENERAL INFORMATION:

Formation: **Lansing "L" & Pleasa**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:45:18

Time Test Ended: 01:54:18

Test Type: Conventional Bottom Hole (Reset)

Tester: Tate Lang

Unit No: 60

Interval: 4529.00 ft (KB) To 4567.00 ft (KB) (TVD)

Total Depth: 4567.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8356 Outside

Press @ Run Depth: psig @ 4533.00 ft (KB)

Start Date: 2012.12.04

End Date:

2012.12.05

Start Time: 19:53:23

End Time:

01:54:17

Capacity: 8000.00 psig

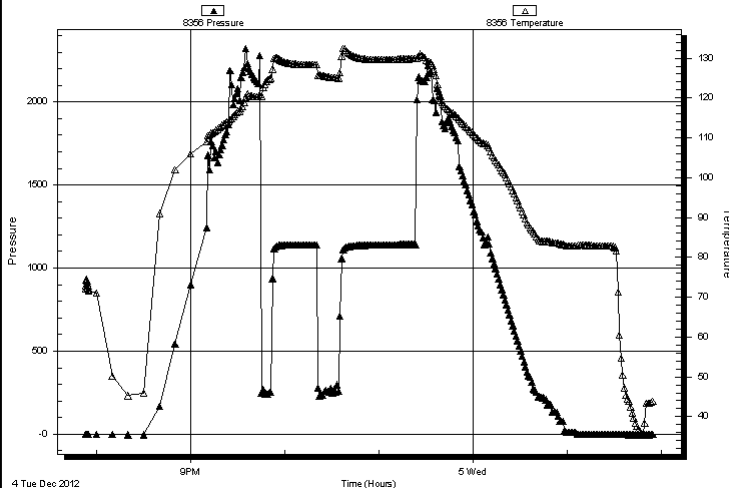
Last Calib.: 2012.12.05

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-B.O.B. in 30 sec.
ISI-Bled off for 20 mins B.O.B. 2 mins
FF-B.O.B in 15 sec.
FSI-Bled off for 30 mins. B.O.B. 1 min.

Pressure vs. Time



PRESSURE SUMMARY

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

Length (ft)	Description	Volume (bbl)
62.00	60%G 10%O 10%W 20%M	0.30
186.00	40%G 40%O 20%M	1.56
186.00	20%G 70%O 10%M	2.61
0.00	Gas to surface G.I.P. 4100	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

Doug APC #1-25

Job Ticket: 51401

DST#: 4

Test Start: 2012.12.04 @ 19:53:18

Tool Information

Drill Pipe:	Length:	4357.00 ft	Diameter:	3.80 inches	Volume:	61.12 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length:	177.00 ft	Diameter:	2.25 inches	Volume:	0.87 bbl	Weight to Pull Loose:	82000.00 lb
					Total Volume:	61.99 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		25.00 ft					String Weight: Initial	75000.00 lb
Depth to Top Packer:		4529.00 ft					Final	75000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		38.00 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
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Stubb	1.00			4510.00	
Shut In Tool	5.00			4515.00	
Hydraulic tool	5.00			4520.00	
Packer	5.00			4525.00	20.00 Bottom Of Top Packer
Packer	4.00			4529.00	
Stubb	1.00			4530.00	
Perforations	3.00			4533.00	
Recorder	0.00	8373	Inside	4533.00	
Recorder	0.00	8356	Outside	4533.00	
Perforations	29.00			4562.00	
Bullnose	5.00			4567.00	38.00 Bottom Packers & Anchor

Total Tool Length: 58.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY

Doug APC #1-25

B# 1200

Job Ticket: 51401

DST#: 4

Wichita KS 67206

Test Start: 2012.12.04 @ 19:53:18

ATTN: Phil Askey

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:

bbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	60%G 10%O 10%W 20%M	0.305
186.00	40%G 40%O 20%M	1.561
186.00	20%G 70%O 10%M	2.609
0.00	Gas to surface G.I.P. 4100	0.000

Total Length: 434.00 ft

Total Volume: 4.475 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8373

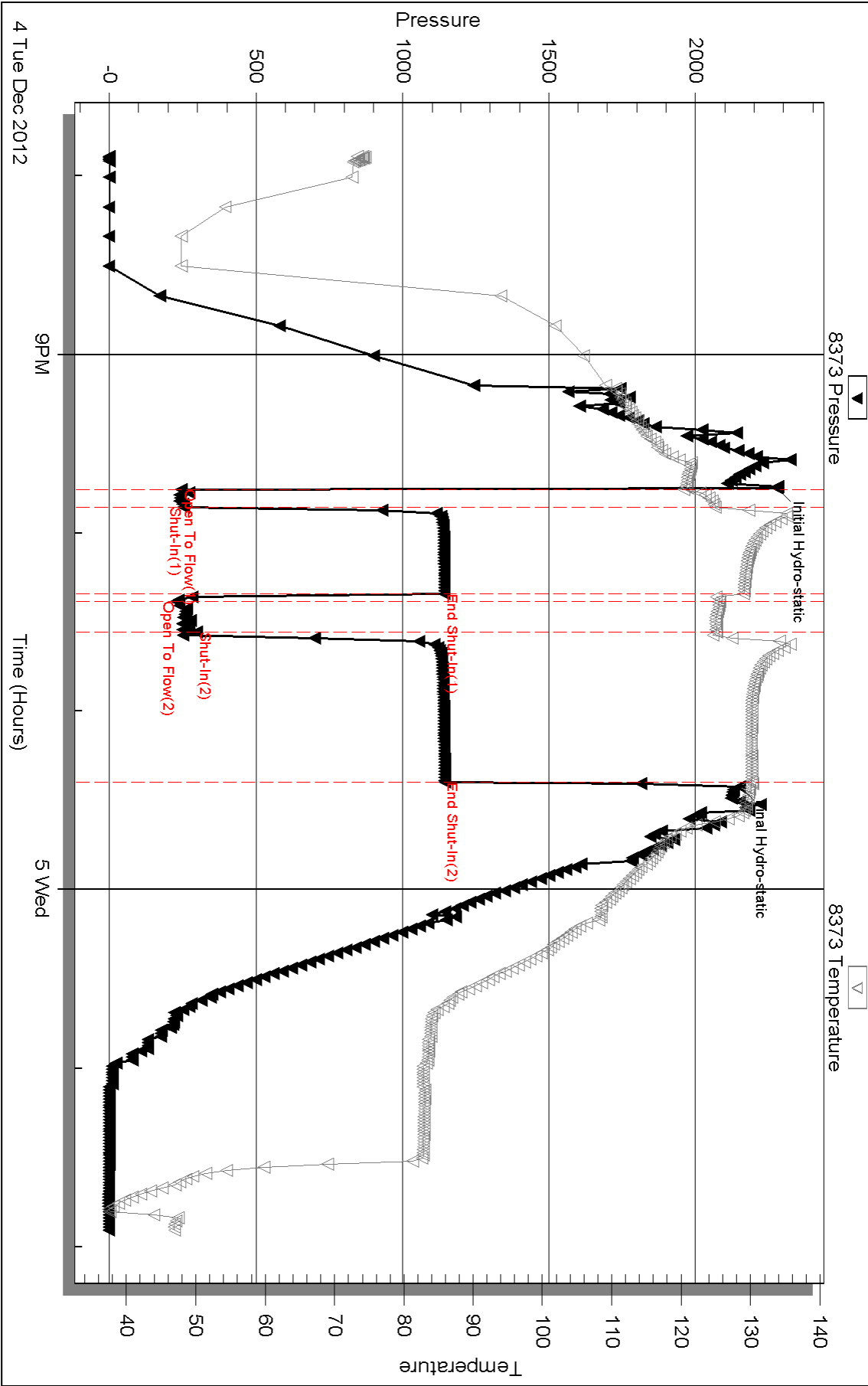
Inside

Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 4

Pressure vs. Time



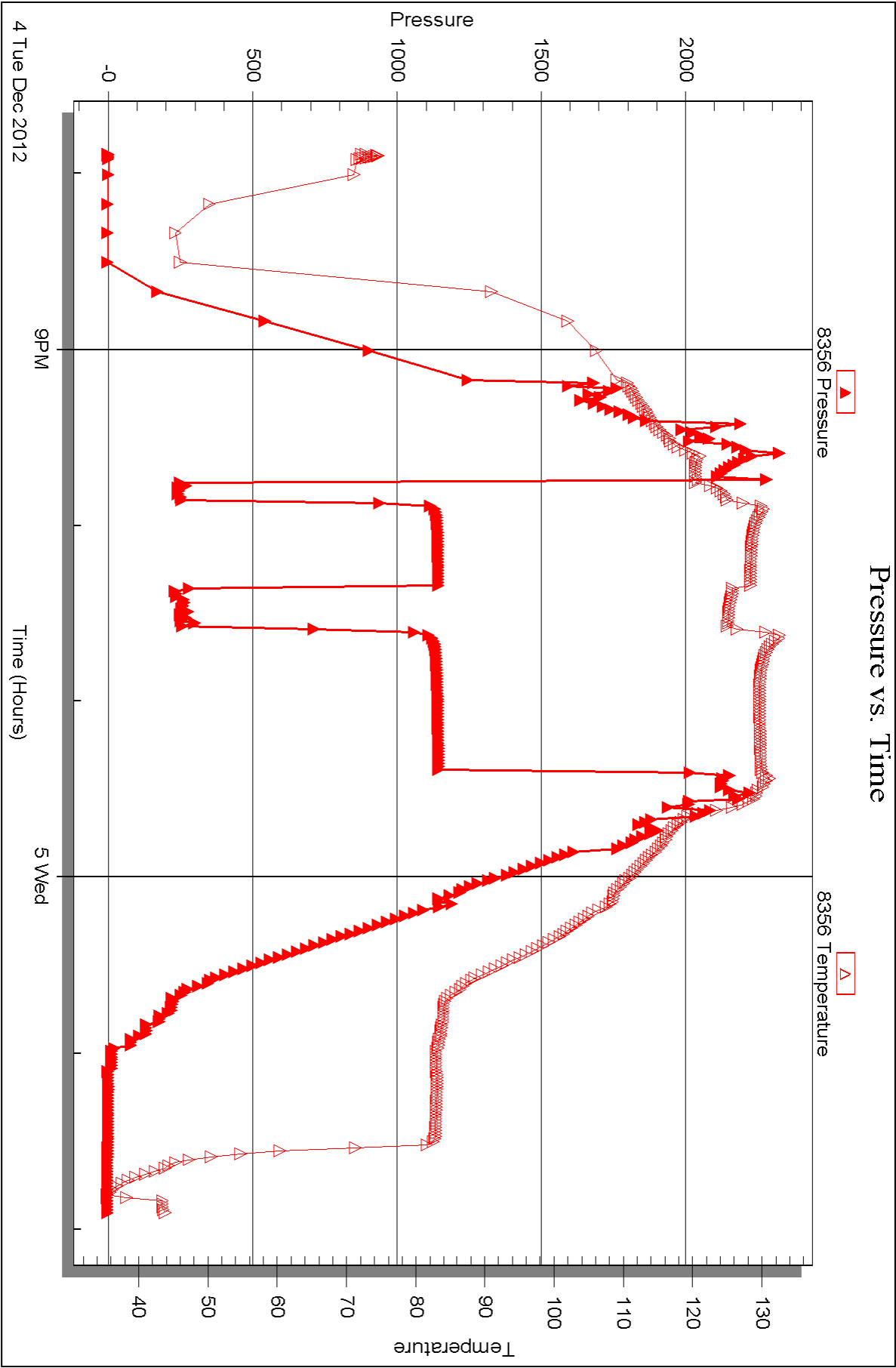
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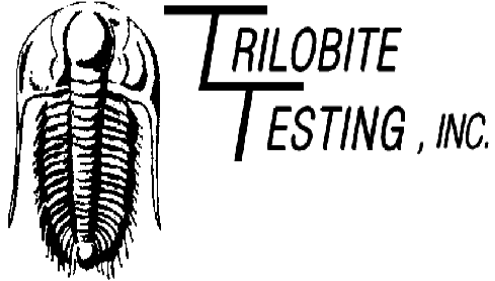
Outside

Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 4





DRILL STEM TEST REPORT

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

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206

ATTN: Phil Askey

Doug APC #1-25

25-16s-45w Cheyenne,CO

Start Date: 2012.12.05 @ 15:37:12

End Date: 2012.12.05 @ 23:38:42

Job Ticket #: 50115 DST #: 5

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

Printed: 2012.12.06 @ 15:24:18



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 50115

DST#: 5

Test Start: 2012.12.05 @ 15:37:12

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:35:42

Time Test Ended: 23:38:42

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4588.00 ft (KB) To 4660.00 ft (KB) (TVD)

Total Depth: 4660.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8373 Inside

Press @ Run Depth: 426.89 psig @ 4589.00 ft (KB)

Start Date: 2012.12.05

End Date:

2012.12.05

Start Time: 15:37:17

End Time:

23:38:41

Capacity: 8000.00 psig

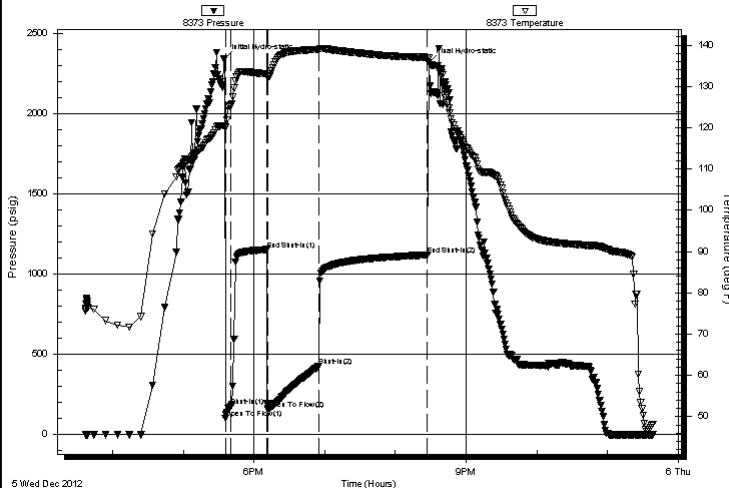
Last Calib.: 2012.12.05

Time On Btm: 2012.12.05 @ 17:35:12

Time Off Btm: 2012.12.05 @ 20:28:12

TEST COMMENT: IF: BOB in 30 min.
IS: Surface blow built to 1 died in 20 min.
FF: BOB in 1 min.
FS: BOB in 1 min. Gas to surface after 30 min.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2344.40	120.50	Initial Hydro-static
1	100.07	119.93	Open To Flow (1)
6	177.13	125.59	Shut-In (1)
36	1152.54	133.01	End Shut-In (1)
37	158.55	132.50	Open To Flow (2)
80	426.89	138.92	Shut-In (2)
172	1119.15	137.01	End Shut-In (2)
173	2318.53	136.85	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	mcw 80%w 20%m H2S	0.61
947.00	gcm 40%g 60%m H2S	12.80

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 50115

DST#: 5

Test Start: 2012.12.05 @ 15:37:12

GENERAL INFORMATION:

Formation: **Marmaton**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:35:42

Time Test Ended: 23:38:42

Test Type: Conventional Bottom Hole (Reset)

Tester: Brandon Turley

Unit No: 60

Interval: 4588.00 ft (KB) To 4660.00 ft (KB) (TVD)

Total Depth: 4660.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8356 Outside

Press@RunDepth: psig @ 4589.00 ft (KB)

Start Date: 2012.12.05

End Date:

2012.12.05

Start Time: 15:37:46

End Time:

23:39:10

Capacity: 8000.00 psig

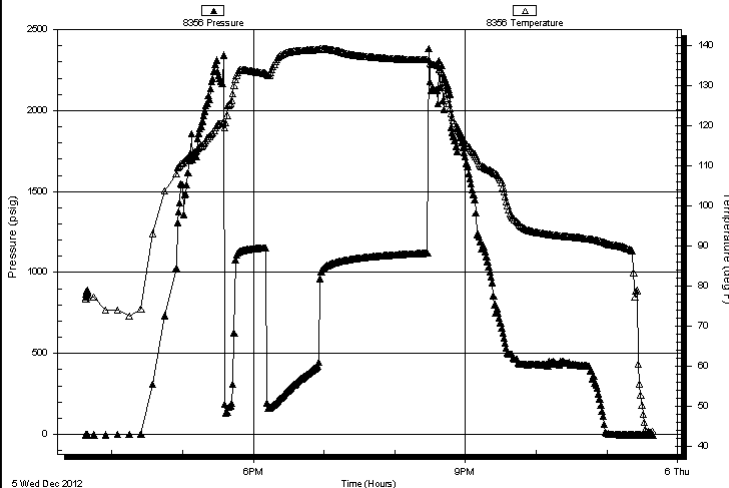
Last Calib.: 2012.12.05

Time On Btm:

Time Off Btm:

TEST COMMENT: IF: BOB in 30 min.
IS: Surface blow built to 1 died in 20 min.
FF: BOB in 1 min.
FS: BOB in 1 min. Gas to surface after 30 min.

Pressure vs. Time



PRESSURE SUMMARY

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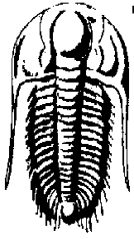
Recovery

Length (ft)	Description	Volume (bbl)
124.00	mcw 80%w 20%m H2S	0.61
947.00	gcm 40%g 60%m H2S	12.80

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

Doug APC #1-25

Job Ticket: 50115

DST#: 5

Test Start: 2012.12.05 @ 15:37:12

Tool Information

Drill Pipe:	Length:	4421.00 ft	Diameter:	3.80 inches	Volume:	62.02 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length:	177.00 ft	Diameter:	2.25 inches	Volume:	0.87 bbl	Weight to Pull Loose:	90000.00 lb
					Total Volume:	62.89 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		30.00 ft					String Weight: Initial	76000.00 lb
Depth to Top Packer:		4588.00 ft					Final	80000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		72.00 ft						
Tool Length:		92.00 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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Stubb	1.00			4569.00	
Shut In Tool	5.00			4574.00	
Hydraulic tool	5.00			4579.00	
Packer	5.00			4584.00	20.00 Bottom Of Top Packer
Packer	4.00			4588.00	
Stubb	1.00			4589.00	
Recorder	0.00	8373	Inside	4589.00	
Recorder	0.00	8356	Outside	4589.00	
Perforations	1.00			4590.00	
Change Over Sub	1.00			4591.00	
Drill Pipe	63.00			4654.00	
Change Over Sub	1.00			4655.00	
Bullnose	5.00			4660.00	72.00 Bottom Packers & Anchor

Total Tool Length: 92.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY

Doug APC #1-25

B# 1200

Job Ticket: 50115

DST#: 5

Wichita KS 67206

Test Start: 2012.12.05 @ 15:37:12

ATTN: Phil Askey

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

29000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6300.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	mcw 80%w 20%m H2S	0.610
947.00	gcm 40%g 60%m H2S	12.801

Total Length: 1071.00 ft

Total Volume: 13.411 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .39@46=29000

Dropped the bar and kellyed up H2S w as 230 ppm on the second stand w e dumped.

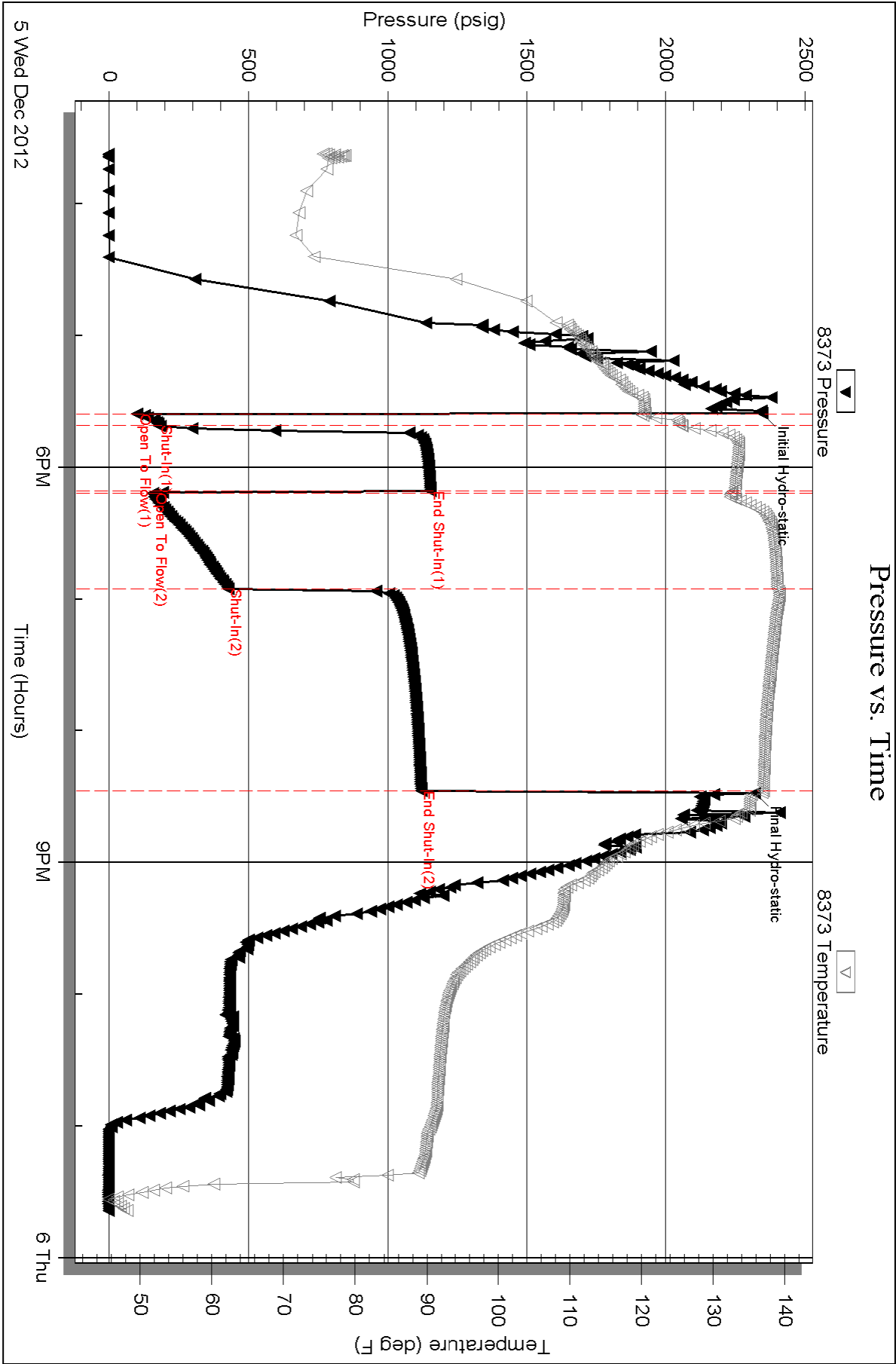
Serial #: 8373

Inside

Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 5



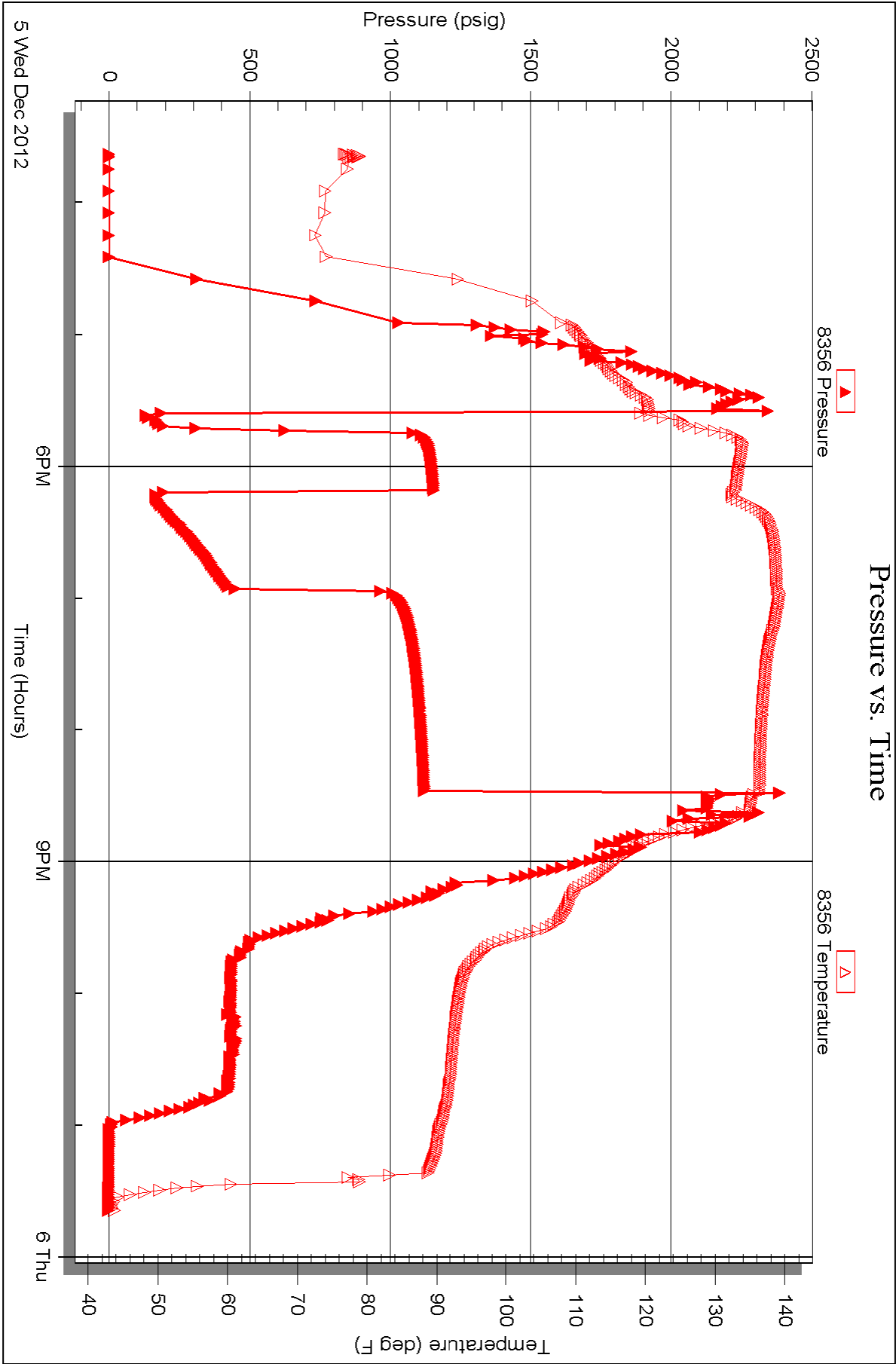
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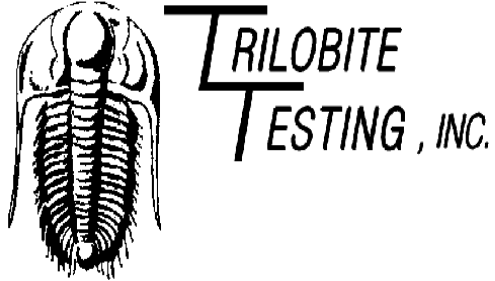
Outside

Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 5





DRILL STEM TEST REPORT

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

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206

ATTN: Phil Askey

Doug APC #1-25

25-16s-45w Cheyenne,CO

Start Date: 2012.12.09 @ 02:52:00

End Date: 2012.12.09 @ 09:53:30

Job Ticket #: 45987 DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2012.12.10 @ 11:56:27



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Mull Drilling Co. Inc

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 45987

DST#: 6

Test Start: 2012.12.09 @ 02:52:00

GENERAL INFORMATION:

Formation: **Mississippian - Sper**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:26:10

Time Test Ended: 09:53:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 5315.00 ft (KB) To 5390.00 ft (KB) (TVD)

Total Depth: 5390.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8018 Inside

Press @ Run Depth: 26.81 psig @ 5318.00 ft (KB)

Start Date: 2012.12.09

End Date:

2012.12.09

Start Time: 02:52:02

End Time:

09:53:30

Capacity: 8000.00 psig

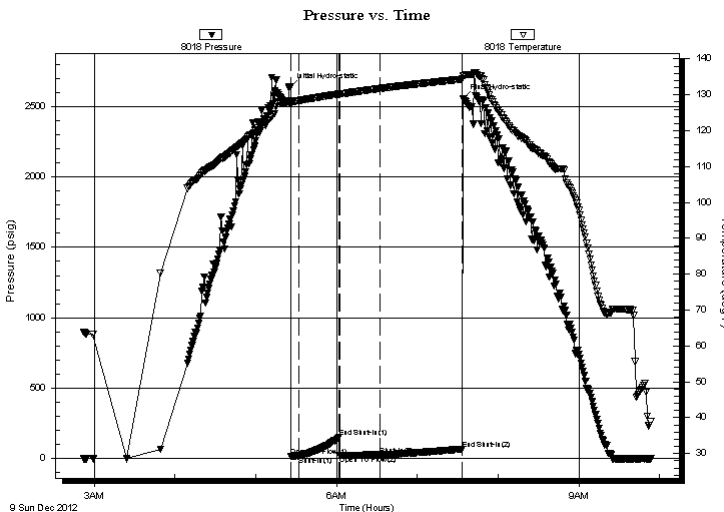
Last Calib.: 2012.12.09

Time On Btm: 2012.12.09 @ 05:24:50

Time Off Btm: 2012.12.09 @ 07:34:09

TEST COMMENT: 1/2" Blow .
No return.
No blow .
No return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2631.33	127.96	Initial Hydro-static
2	17.92	127.19	Open To Flow (1)
7	20.20	128.38	Shut-In(1)
37	151.35	130.24	End Shut-In(1)
38	24.45	130.17	Open To Flow (2)
68	26.81	131.76	Shut-In(2)
129	66.42	134.38	End Shut-In(2)
130	2555.85	135.35	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	M 100m	0.05

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

Doug APC #1-25

Job Ticket: 45987

DST#: 6

Test Start: 2012.12.09 @ 02:52:00

Formation: **Mississippian - Sper**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:26:10

Time Test Ended: 09:53:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Chuck Smith

Unit No: 62

Interval: 5315.00 ft (KB) To 5390.00 ft (KB) (TVD)

Total Depth: 5390.00 ft (KB) (TVD)

Hole Diameter: 7.88 inchesHole Condition: Fair

Reference Elevations: 4306.00 ft (KB)

4295.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 6751 Outside

Press@RunDepth: psig @ 5318.00 ft (KB)

Start Date: 2012.12.09

End Date:

2012.12.09

Start Time: 02:52:05

End Time:

09:53:29

Capacity: 8000.00 psig

Last Calib.: 2012.12.09

Time On Btm:

Time Off Btm:

TEST COMMENT: 1/2" Blow .

No return.

No blow .

No return.



Recovery

Gas Rates

* Recovery from multiple tests



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY
B# 1200
Wichita KS 67206
ATTN: Phil Askey

Doug APC #1-25

Job Ticket: 45987

DST#: 6

Test Start: 2012.12.09 @ 02:52:00

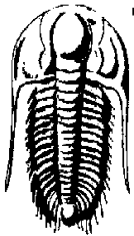
Tool Information

Drill Pipe:	Length: 5148.00 ft	Diameter: 3.80 inches	Volume: 72.21 bbl	Tool Weight:	1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 177.00 ft	Diameter: 2.25 inches	Volume: 0.87 bbl	Weight to Pull Loose:	85000.00 lb
		Total Volume:	73.08 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial	78000.00 lb
Depth to Top Packer:	5315.00 ft			Final	79000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	75.00 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
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Change Over Sub	1.00			5296.00	
Shut In Tool	5.00			5301.00	
Hydraulic tool	5.00			5306.00	
Packer	5.00			5311.00	20.00 Bottom Of Top Packer
Packer	4.00			5315.00	
Stubb	1.00			5316.00	
Perforations	2.00			5318.00	
Recorder	0.00	8018	Inside	5318.00	
Recorder	0.00	6751	Outside	5318.00	
Perforations	5.00			5323.00	
Change Over Sub	1.00			5324.00	
Drill Pipe	62.00			5386.00	
Bullnose	1.00			5387.00	
Bullnose	3.00			5390.00	75.00 Bottom Packers & Anchor

Total Tool Length: 95.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Mull Drilling Co. Inc

25-16s-45w Cheyenne, CO

1700 N Waterfront PKWY

Doug APC #1-25

B# 1200

Job Ticket: 45987

DST#: 6

Wichita KS 67206

Test Start: 2012.12.09 @ 02:52:00

ATTN: Phil Askey

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: 60.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3700.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	M 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:

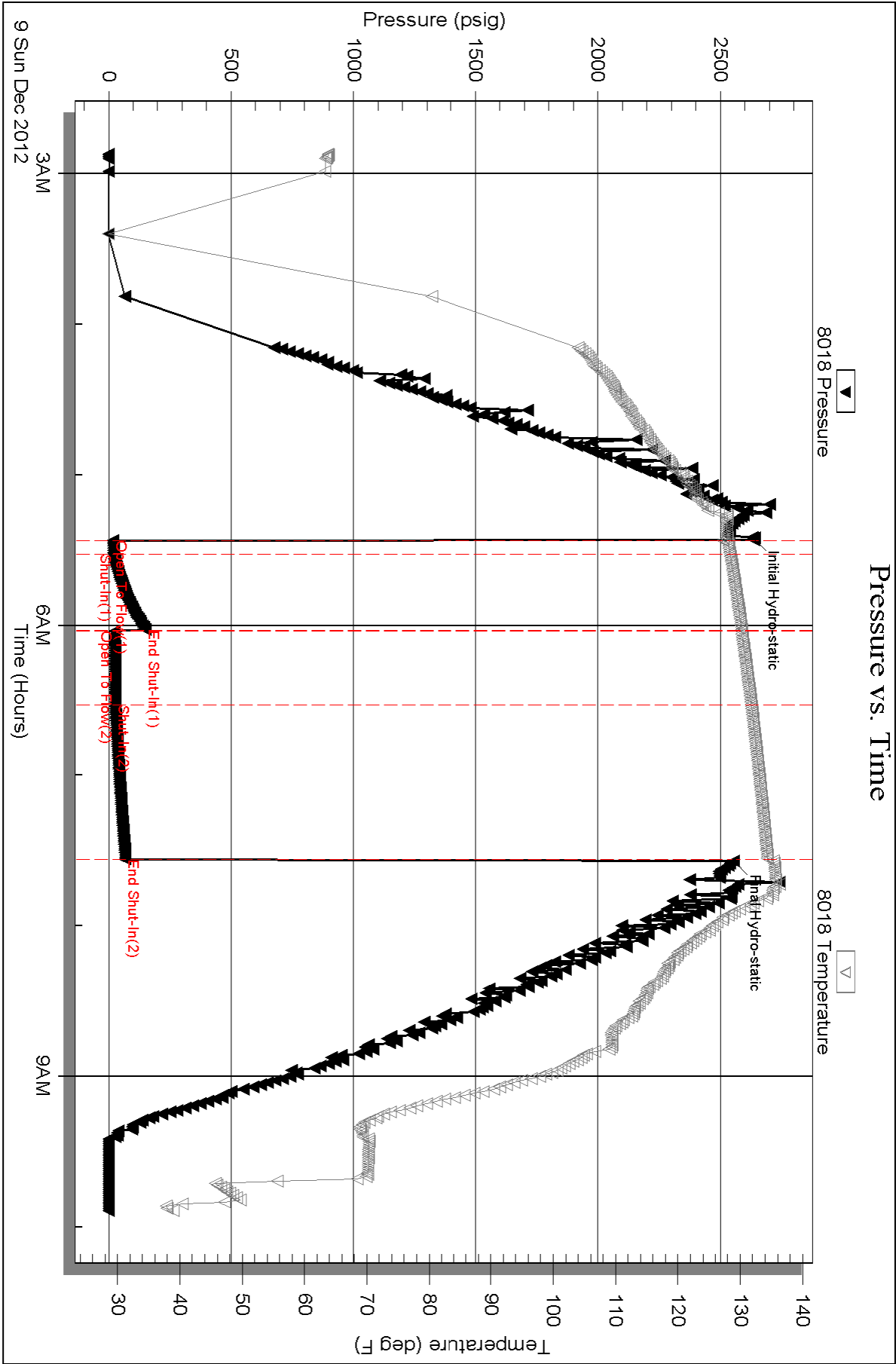
Serial #: 8018

Inside

Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 6

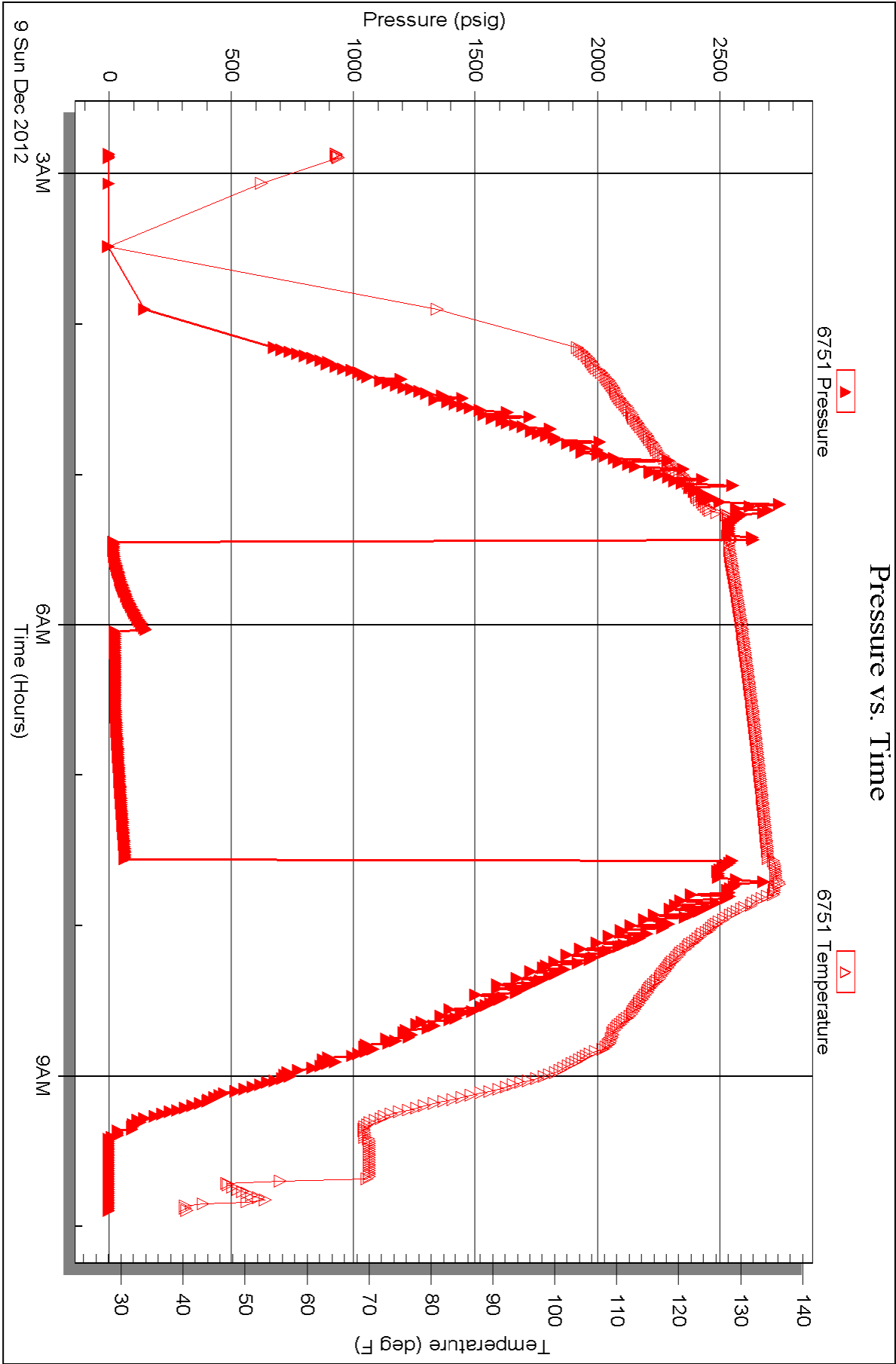


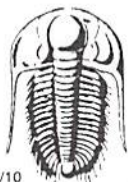
Serial #: 6751

Outside Mull Drilling Co. Inc

Doug APC #1-25

DST Test Number: 6





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket ²³⁶

NO. **49921**

Well Name & No. Doug APC #1-25 Test No. DST #1 Date 11-30-12
 Company Mull Drilling Co. Inc Elevation 4306 KB 4295 GL
 Address 1700 N. Waterfront PKWY B#1200 Wichita KS 67206
 Co. Rep / Geo. Phil Askey Rig Murfin Rigs #20
 Location: Sec. 25 Twp. 16S Rge. 45W Co. Cheyenne State CO

Interval Tested 3986 - 4017 Zone Tested Shawnee
 Anchor Length 31 Drill Pipe Run 3821 Mud Wt. 8.8
 Top Packer Depth 3982 Drill Collars Run 177 Vis 64
 Bottom Packer Depth 3986 Wt. Pipe Run 0 WL 8.0
 Total Depth 4017 Chlorides 2100 ppm System LCM 416

Blow Description IF- Weak Surface Blow Built to 34"
ISI - No Blow
FF- Weak Surface Blow Built to 3"
FSI - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>WCM MCW</u>			<u>63%</u>	<u>37%</u>
<u>60</u>	<u>WCM</u>			<u>45%</u>	<u>55%</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 120 BHT 115 Gravity _____ API RW 490@ 45°F Chlorides 20,500 ppm

(A) Initial Hydrostatic <u>1989</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>00:45</u>
(B) First Initial Flow <u>15</u>	<input type="checkbox"/> Jars	T-Started <u>1:22</u>
(C) First Final Flow <u>21</u>	<input type="checkbox"/> Safety Joint	T-Open <u>3:32</u>
(D) Initial Shut-In <u>903</u>	<input checked="" type="checkbox"/> Circ Sub <u>Dropped Bare 14:36</u>	T-Pulled <u>6:31</u> <u>11:30-12</u>
(E) Second Initial Flow <u>23</u>	<input checked="" type="checkbox"/> Hourly Standby <u>7Hr 7:30-14:30</u>	T-Out <u>5:23</u> <u>12-1-12</u>
(F) Second Final Flow <u>69</u>	<input checked="" type="checkbox"/> Mileage <u>194 R/T X 2</u>	Comments <u>Rig Broke Down</u>
(G) Final Shut-In <u>864</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>1839</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer

Initial Open 5
 Initial Shut-In 30
 Final Flow 45
 Final Shut-In 90

Sub Total 2601.40

Approved By Phil Askey Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 49893

Well Name & No. Doug APC # 1-25 Test No. #2 Date 12/3/12
 Company Mull Drilling Co Inc Elevation 4306 KB 4295 GL
 Address 1700 N. Waterfront PKWY B#1200 Wichita KS 67206
 Co. Rep / Geo. Phil Askey Rig Martin #20
 Location: Sec. 25 Twp. Nes Rge. 45w Co. Chexenne State Colo

Interval Tested 4426 4440 Zone Tested I
 Anchor Length 14 Drill Pipe Run 4224 Mud Wt. 9.3
 Top Packer Depth 4421 Drill Collars Run 188 Vis 50
 Bottom Packer Depth 4426 Wt. Pipe Run WL 6.4
 Total Depth 4440 Chlorides 6000 ppm System LCM #3

Blow Description

Weak blow died in 2 min
No return
No blow
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 123° Gravity API RW @ °F Chlorides ppm
 (A) Initial Hydrostatic 2171 ☒ Test 1250 T-On Location 02:20
 (B) First Initial Flow 9 ☐ Jars T-Started 02:50
 (C) First Final Flow 10 ☐ Safety Joint T-Open 04:52
 (D) Initial Shut-In 1074 ☒ Circ Sub N/C T-Pulled 06:57
 (E) Second Initial Flow 10 ☐ Hourly Standby T-Out 09:25
 (F) Second Final Flow 12 ☒ Mileage 198.5 300.70 Comments
 (G) Final Shut-In 1085 ☐ Sampler
 (H) Final Hydrostatic 2140 ☐ Straddle
☐ Shale Packer
☐ Extra Packer
☐ Extra Recorder
☐ Day Standby
☐ Accessibility

Initial Open 5
 Initial Shut-In 30
 Final Flow 30
 Final Shut-In 60

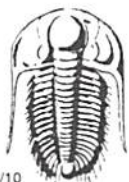
Approved By

Phil Askey

Our Representative

[Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 49850

Well Name & No. Mull Drilling Co. Inc. 52 Test No. 3 Date 12-3-12
 Company Doug APC #1-25 Elevation 4306 KB 4295 GL
 Address 1700 N Waterfront PKWY B#200 Wichita KS 67206
 Co. Rep / Geo. Phil Askey Rig Murfin Rig #20
 Location: Sec. 25 Twp. 16S Rge. 45W Co. Cheyenne State KO

Interval Tested 4477 4490 Zone Tested Lansing "15"
 Anchor Length 13 Drill Pipe Run 4294 Mud Wt. 9.3
 Top Packer Depth 4473 Drill Collars Run 177 Vis 47
 Bottom Packer Depth 4477 Wt. Pipe Run 0 WL 7.2
 Total Depth 4490 Chlorides 6000 ppm System LCM 3#

Blow Description IF - Weak surface blow built to 2 in
ISI - Dead no return blow
FF - B.O.B. in 10 mins.
FST - Strong return blow built to 11 in.

Rec	Feet of	%gas	%oil	%water	%mud
<u>124</u>	<u>VSGOM CW</u>	<u>5</u>	<u>3</u>	<u>90</u>	<u>2</u>
<u>62</u>	<u>G MCO</u>	<u>20</u>	<u>40</u>	<u>40</u>	<u>40</u>
<u>62</u>	<u>MCGO</u>	<u>45</u>	<u>45</u>	<u>10</u>	<u>10</u>
Rec	Feet of	%gas	%oil	%water	%mud
<u>1575</u>	<u>GIP</u>				

Rec Total 248 BHT 134 Gravity — API RW .91 @ 31 °F Chlorides 17000 ppm

(A) Initial Hydrostatic <u>2207</u>	<input checked="" type="checkbox"/> Test 1250	T-On Location <u>21:15</u>
(B) First Initial Flow <u>15</u>	<input type="checkbox"/> Jars	T-Started <u>21:50</u>
(C) First Final Flow <u>40</u>	<input type="checkbox"/> Safety Joint	T-Open <u>23:58</u>
(D) Initial Shut-In <u>1101</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>03:33</u>
(E) Second Initial Flow <u>41</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>06:08</u>
(F) Second Final Flow <u>111</u>	<input checked="" type="checkbox"/> Mileage <u>198 R/T</u> 300.70	Comments
(G) Final Shut-In <u>1046</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2195</u>	<input type="checkbox"/> Straddle	

Initial Open 5
 Initial Shut-In 30
 Final Flow 60
 Final Shut-In 190
 Sub Total 1550.70

Approved By Phil Askey Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 51401

Well Name & No. Doug APC #1-25 Test No. 4 Date 12-4-12
 Company Mult Drilling Co. Inc. Elevation 4306 KB 4295 GL
 Address _____
 Co. Rep / Geo. Phil Askey Rig Murfin Rig # 20
 Location: Sec. 25 Twp. 16S Rge. 45W Co. Cheyenne State CO

Interval Tested 4529 4567 Zone Tested Loring "K" + Pleasanton
 Anchor Length 38' Drill Pipe Run 4357 Mud Wt. 9.1
 Top Packer Depth 4525 Drill Collars Run 177 Vis 50
 Bottom Packer Depth 4529 Wt. Pipe Run 0 WL 8.0
 Total Depth 4567 Chlorides 6300 ppm System LCM 4#

Blow Description IF - B.O.B. 30 sec
ISI - Bled off for 20 mins B.O.B. 2 mins
FF - B.O.B. 15 sec
FSL - Bled off for 30 mins, B.O.B. 1 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>VSWLGMO</u>	<u>60</u>	<u>10</u>	<u>10</u>	<u>20</u>
<u>186</u>	<u>GMCO</u>	<u>40</u>	<u>40</u>		<u>20</u>
<u>186</u>	<u>GMCO</u>	<u>20</u>	<u>70</u>		<u>10</u>

Rec	Feet of	%gas	%oil	%water	%mud
<u>4100</u>	<u>G.I.P. Gas to surface 100'</u>				

Rec Total 434' BHT 130 OMF. Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

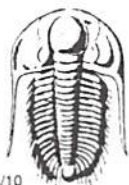
(A) Initial Hydrostatic	<u>2278</u>	<input checked="" type="checkbox"/> Test	<u>1250</u>	T-On Location	<u>19:20</u>
(B) First Initial Flow	<u>245</u>	<input type="checkbox"/> Jars		T-Started	<u>19:53</u>
(C) First Final Flow	<u>253</u>	<input type="checkbox"/> Safety Joint		T-Open	<u>21:44</u>
(D) Initial Shut-In	<u>1141</u>	<input checked="" type="checkbox"/> Circ Sub	<u>N/C</u>	T-Pulled	<u>23:19</u>
(E) Second Initial Flow	<u>230</u>	<input type="checkbox"/> Hourly Standby		T-Out	<u>01:51</u>
(F) Second Final Flow	<u>297</u>	<input checked="" type="checkbox"/> Mileage	<u>198 R/T</u> 300.70	Comments	
(G) Final Shut-In	<u>1142</u>	<input type="checkbox"/> Sampler			
(H) Final Hydrostatic	<u>2152</u>	<input type="checkbox"/> Straddle		<input type="checkbox"/> Ruined Shale Packer	

Initial Open 5
 Initial Shut-In 30
 Final Flow 15
 Final Shut-In 45

Sub Total 1550.70

Approved By Phil Askey Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 50115

Well Name & No. Doug APC 1-25 Test No. 5 Date 12-5-12
 Company Mull Drilling Company Elevation 4306 KB 4295 GL
 Address _____
 Co. Rep / Geo. Phil Askey Rig Murfin 20
 Location: Sec. 25 Twp. 16S Rge. 45W Co. Cheyenne State CO

Interval Tested 4588 4660 Zone Tested Morrison
 Anchor Length 72 Drill Pipe Run 4421 Mud Wt. 9.1
 Top Packer Depth 4583 Drill Collars Run 180 Vis 50
 Bottom Packer Depth 4588 Wt. Pipe Run — WL 8.0
 Total Depth 4660 Chlorides 6300 ppm System LCM 4

Blow Description IF: BoB in 30 sec.
FS: surface blow built to 1 died in 20 min.
FF: BoB in 1 min.
FS: BoB in 1 min. Gas to surface after 30 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>947</u>	<u>gm</u>	<u>40</u>			<u>60</u>
<u>124</u>	<u>mcw</u>			<u>80</u>	<u>20</u>

Rec Total 1071 BHT 138 Gravity — API RW .39 @ 46 °F Chlorides 29,000 ppm
 (A) Initial Hydrostatic 2344 ☒ Test 1250 T-On Location 15:20
 (B) First Initial Flow 100 ☐ Jars T-Started 15:37
 (C) First Final Flow 177 ☐ Safety Joint T-Open 17:35
 (D) Initial Shut-In 1152 ☒ Circ Sub 50.00 T-Pulled 20:25
 (E) Second Initial Flow 158 ☐ Hourly Standby T-Out 23:40
 (F) Second Final Flow 426 ☒ Mileage 198 x 2 601.40 Comments dropper and Kelleyed
 (G) Final Shut-In 1119 ☐ Sampler 4p H2S 230 ppm
 (H) Final Hydrostatic 2318 ☐ Straddle motel

Initial Open 5 ☐ Ruined Shale Packer
 Initial Shut-In 36 ☐ Ruined Packer
 Final Flow 45 ☐ Extra Copies
 Final Shut-In 80 ☐ Extra Recorder Sub Total 0
☐ Day Standby Total 1901.40
☐ Accessibility MP/DST Disc't
 Sub Total 1901.40

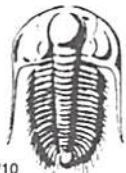
Approved By

Phil Askey

Our Representative

[Signature]

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TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45987

Well Name & No. Doug AFX #1-25 Test No. 6 Date 12-9-12
 Company Mull Drilling Co., Inc. Elevation 4304 KB 4295 GL
 Address 1700 N. Waterfront Pkwy. B#1200 Wichita, KS 67206
 Co. Rep / Geo. Phil Askey Rig MDC-20
 Location: Sec. 25 Twp. 16s Rge. 45w Co. Cheyenne State CO

Interval Tested 5315-5390 Zone Tested Mississippian - Spergen
 Anchor Length 75 Drill Pipe Run 5148 Mud Wt. 9.2
 Top Packer Depth 5311 Drill Collars Run 177 Vis 60
 Bottom Packer Depth 5315 Wt. Pipe Run 0 WL 8.8
 Total Depth 5390 Chlorides 3700 ppm System LCM 8"

Blow Description 1/2" Blow

No return.

No blow.

No return.

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>10</u>	Feet of <u>M</u>	%gas	%oil	%water <u>100</u>	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10 BHT 134 Gravity - API RW @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2631

☒ Test 1350

T-On Location 1:45

(B) First Initial Flow 18

☐ Jars

T-Started 2:52

(C) First Final Flow 20

☐ Safety Joint

T-Open 5:26

(D) Initial Shut-In 151

☐ Circ Sub

T-Pulled 7:34

(E) Second Initial Flow 24

☐ Hourly Standby

T-Out 9:54

(F) Second Final Flow 27

☒ Mileage 198 RT 300.70

Comments

(G) Final Shut-In 66

☐ Sampler

1 day motel

(H) Final Hydrostatic 2556

☐ Straddle

☐ Ruined Shale Packer

Initial Open 5

☐ Shale Packer

☐ Ruined Packer

Initial Shut-In 30

☐ Extra Packer

☐ Extra Copies

Final Flow 30

☐ Extra Recorder

Sub Total 0

Final Shut-In 60

☐ Day Standby

Total 1650.70

☐ Accessibility

MP/DST Disc't

Sub Total 1650.70

Approved By Phil Askey

Our Representative Chuck Smith

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