

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

KCC
NOV 1 5 2001
CONFIDENTIAL

Prepared For: **Murfin Drilling Company**

250 N. Water #300
Wichita, KS 67202

CONFIDENTIAL
RECEIVED
NOV 16 2001
KCC WICHITA

ATTN: Curtis Covey

33-2s-41w Cheyenne KS

RELEASED ORIGINAL
NOV 22 2002

Orth #1-33

Start Date: 2001.10.30 @ 10:00:35

End Date: 2001.10.30 @ 18:15:50

FROM CONFIDENTIAL

Job Ticket #: 14888 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

DRILL STEM TEST REPORT

Murfin Drilling Company

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

Orth #1-33

33-2s-41w CheyenneKS

Job Ticket: 14888 **DST#: 1**

Test Start: 2001.10.30 @ 10:00:35

GENERAL INFORMATION:

Formation: **L/KC "D"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:55:50
Time Test Ended: 18:15:50

RELEASED
NOV 2 2 2002
FROM CONFIDENTIAL

Test Type: Conventional Bottom Hole
Tester: Rod Steinbrink
Unit No: 22

Interval: 4505.00 ft (KB) To 4552.00 ft (KB) (TVD)
Total Depth: 4552.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3628.00 ft (KB)
3623.00 ft (CF)
KB to GR/CF: 5.00 ft

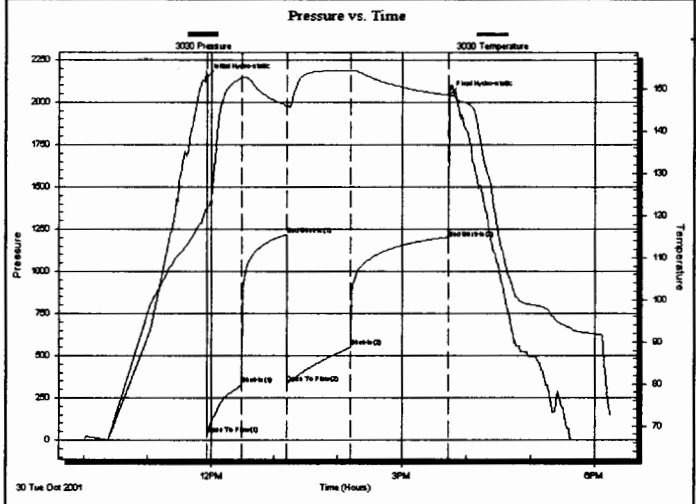
Serial #: 3030 **Inside**

Press@RunDepth: 550.61 psig @ 4506.00 ft (KB)
Start Date: 2001.10.30 End Date: 2001.10.30
Start Time: 10:00:40 End Time: 18:15:49

Capacity: 7000.00 psig
Last Calib.: 1899.12.30
Time On Btm: 2001.10.30 @ 11:55:35
Time Off Btm: 2001.10.30 @ 15:43:34

TEST COMMENT: IF; Fair to strong off bttm in 9 mins
ISI; Weak surface return throughout
FF; Fair to strong off bttm in 44 mins
FSI; No return blow

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PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2148.86	121.66	Initial Hydro-static
1	33.03	121.76	Open To Flow (1)
34	328.01	152.60	Shut-In(1)
77	1215.07	146.05	End Shut-In(1)
77	337.96	146.01	Open To Flow (2)
137	550.61	154.32	Shut-In(2)
228	1194.13	148.49	End Shut-In(2)
228	2047.45	148.48	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1149.00	MW 90%w tr 10%mud	11.29
1.00	Free Oil	0.01

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

Orth #1-33

33-2s-41w CheyenneKS

Job Ticket: 14888 **DST#: 1**

Test Start: 2001.10.30 @ 10:00:35

Tool Information

Drill Pipe:	Length:	3960.00 ft	Diameter:	3.80 inches	Volume:	55.55 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	530.00 ft	Diameter:	2.25 inches	Volume:	2.61 bbl	
					Total Volume:	58.16 bbl	

Drill Pipe Above KB:	8.00 ft
Depth to Top Packer:	4505.00 ft
Depth to Bottom Packer:	ft
Interval between Packers:	47.00 ft
Tool Length:	70.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:	1800.00 lb
Weight set on Packer:	30000.00 lb
Weight to Pull Loose:	80000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	58000.00 lb
Final	62000.00 lb

Tool Comments:

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ORIGINAL

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
C.O. Sub	1.00			4483.00		
S.I. Tool	5.00			4488.00		
HMV	5.00			4493.00		
Safety Joint	2.00			4495.00		
Packer	5.00			4500.00	23.00	Bottom Of Top Packer
Packer	5.00			4505.00		
Stubb	1.00			4506.00		
Recorder	0.00	3030	Inside	4506.00		
Perforations	8.00			4514.00		
C.O. Sub	1.00			4515.00		
Anchor	31.00			4546.00		
C.O. Sub	1.00			4547.00		
Recorder	0.00	13576	Outside	4547.00		
Bullnose	5.00			4552.00	47.00	Bottom Packers & Anchor
Total Tool Length:	**70.00**					

KCC

NOV 1 8 2001

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RELEASED

NOV 2 2 2002

FROM CONFIDENTIAL

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

Orth #1-33

33-2s-41w CheyenneKS

Job Ticket: 14888 **DST#: 1**

Test Start: 2001.10.30 @ 10:00:35

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:	6000 ppm
Viscosity:	54.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	6.78 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	600.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

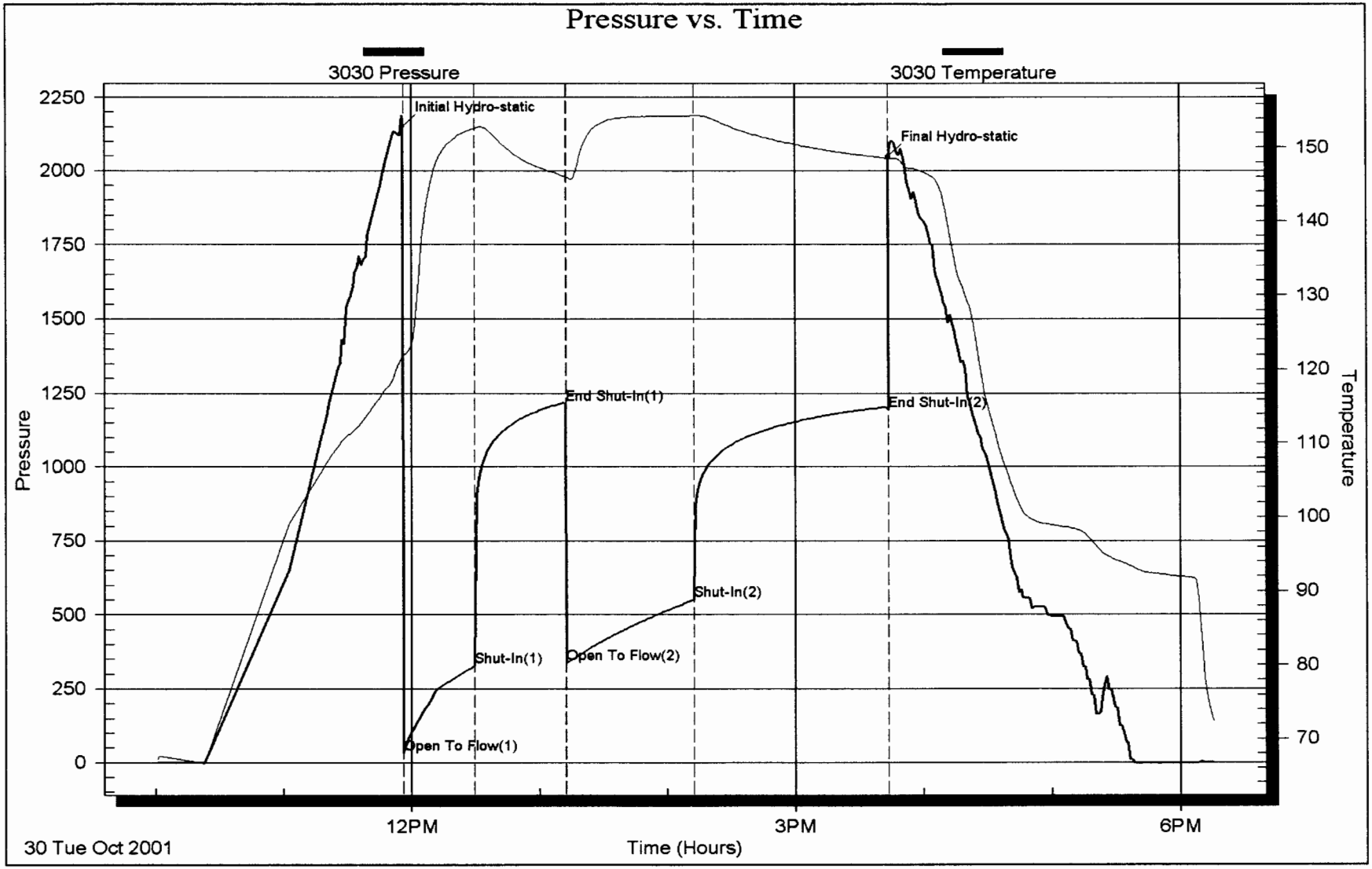
Length ft	Description	Volume bbl
1149.00	MW 90%w tr 10%mud	11.289
1.00	Free Oil	0.014

Total Length: 1150.00 ft Total Volume: 11.303 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: RW 1.1 @ 76 deg =


Pressure vs. Time
3030 Pressure
3030 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Shut-In(1)
Shut-In(2)
Open To Flow(1)
Open To Flow(2)
Pressure
Temperature
Time (Hours)
12PM
3PM
6PM
30 Tue Oct 2001
2250
2000
1750
1500
1250
1000
750
500
250
0
150
140
130
120
110
100
90
80
70



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

33-2s-41w CheyenneKS

Orth #1-33

Start Date: 2001.11.01 @ 03:55:39

End Date: 2001.11.01 @ 11:54:54

Job Ticket #: 14889 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

DRILL STEM TEST REPORT

Murfin Drilling Company

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

Orth #1-33

33-2s-41w CheyenneKS

Job Ticket: 14889 **DST#: 2**

Test Start: 2001.11.01 @ 03:55:39

GENERAL INFORMATION:

Formation: **L/KC "G"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:57:39
Time Test Ended: 11:54:54

Test Type: Conventional Bottom Hole
Tester: Rod Steinbrink
Unit No: 22

Interval: 4560.00 ft (KB) To 4600.00 ft (KB) (TVD)
Total Depth: 4600.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

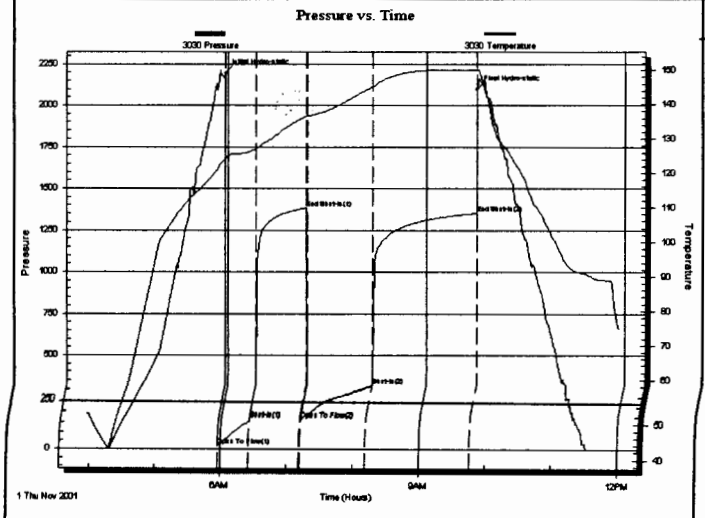
Reference Elevations: 3628.00 ft (KB)
3623.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 3030 **Inside**

Press@RunDepth: 315.93 psig @ 4561.00 ft (KB)
Start Date: 2001.11.01 End Date: 2001.11.01
Start Time: 03:55:44 End Time: 11:54:53

Capacity: 7000.00 psig
Last Calib.: 1899.12.30
Time On Btm: 2001.11.01 @ 05:57:24
Time Off Btm: 2001.11.01 @ 09:45:38

TEST COMMENT: IF; Weak to fair off bttm in 27 mins
ISI; Intermitten return blow
FF; Weak to fair off bttm in 40 mins
FSI; No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2195.33	124.06	Initial Hydro-static
1	16.46	124.13	Open To Flow (1)
29	158.60	127.17	Shut-In(1)
74	1379.30	136.61	End Shut-In(1)
74	162.42	136.64	Open To Flow (2)
134	315.93	145.23	Shut-In(2)
228	1351.04	149.98	End Shut-In(2)
229	2097.55	149.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
270.00	MW 85%w tr 15%mud	1.33
410.00	Wtr	3.38

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

Orth #1-33

33-2s-41w CheyenneKS

Job Ticket: 14889 **DST#: 2**

Test Start: 2001.11.01 @ 03:55:39

Tool Information

Drill Pipe:	Length:	4022.00 ft	Diameter:	3.80 inches	Volume:	56.42 bbl	Tool Weight:		1800.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00 inches	Volume:	0.00 bbl	Weight set on Packer:		30000.00 lb
Drill Collar:	Length:	530.00 ft	Diameter:	2.25 inches	Volume:	2.61 bbl	Weight to Pull Loose:		90000.00 lb
					Total Volume:	59.03 bbl	Tool Chased		0.00 ft
Drill Pipe Above KB:		15.00 ft					String Weight:	Initial	58000.00 lb
Depth to Top Packer:		4560.00 ft						Final	64000.00 lb
Depth to Bottom Packer:		ft							
Interval between Packers:		40.00 ft							
Tool Length:		63.00 ft							
Number of Packers:		2	Diameter:	6.75 inches					

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
C.O. Sub	1.00			4538.00		
S.I. Tool	5.00			4543.00		
HMV	5.00			4548.00		
Safety Joint	2.00			4550.00		
Packer	5.00			4555.00	23.00	Bottom Of Top Packer
Packer	5.00			4560.00		
Stubb	1.00			4561.00		
Recorder	0.00	3030	Inside	4561.00		
Perforations	3.00			4564.00		
C.O. Sub	1.00			4565.00		
Anchor	29.00			4594.00		
C.O. Sub	1.00			4595.00		
Recorder	0.00	13576	Outside	4595.00		
Bullnose	5.00			4600.00	40.00	Bottom Packers & Anchor
Total Tool Length:	**63.00**					

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

Orth #1-33

33-2s-41w CheyenneKS

Job Ticket: 14889 **DST#: 2**

Test Start: 2001.11.01 @ 03:55:39

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:	28000 ppm
Viscosity:	51.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.18 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

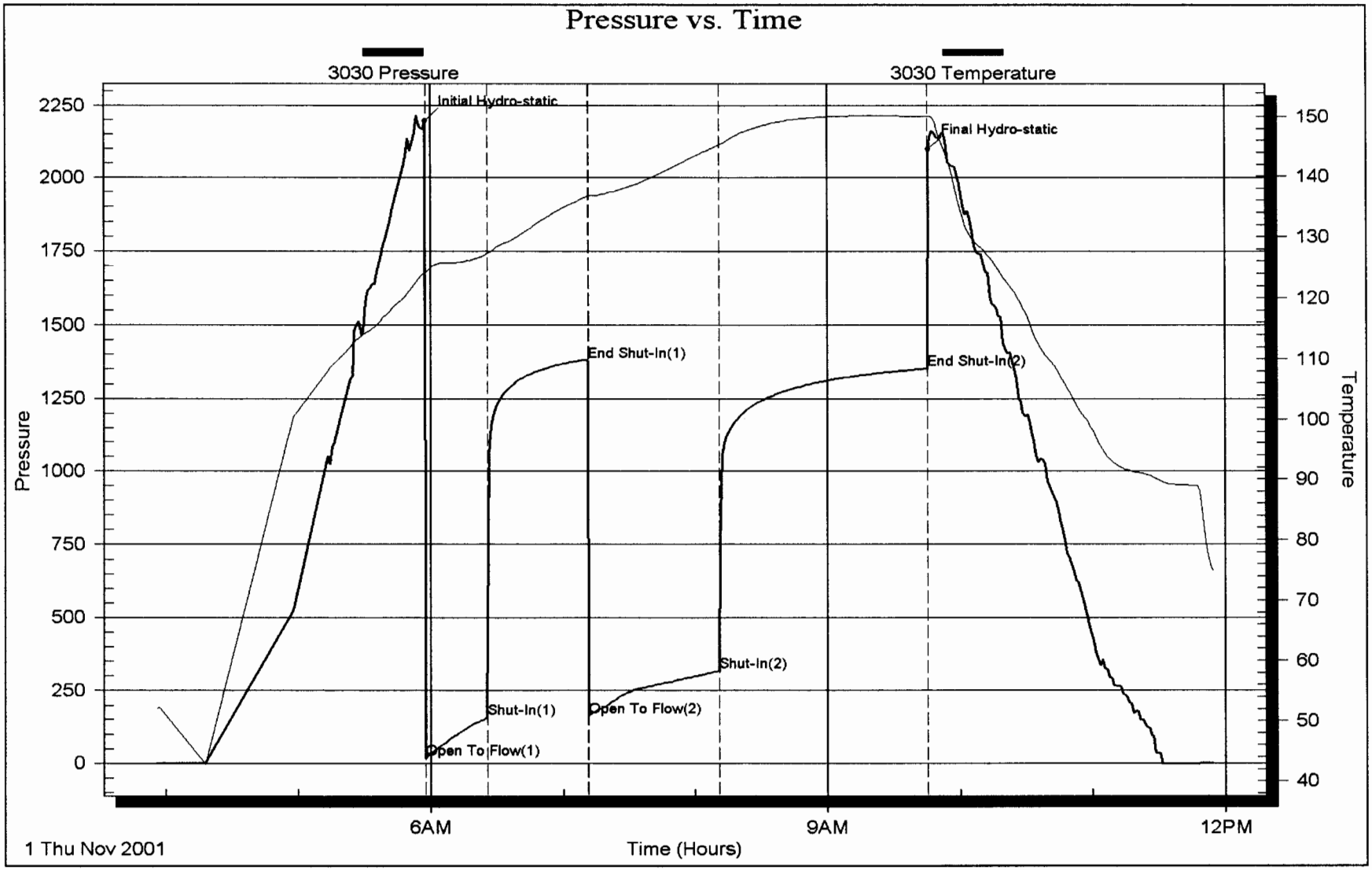
Length ft	Description	Volume bbl
270.00	MW 85%w tr 15%mud	1.328
410.00	Wtr	3.383

Total Length: 680.00 ft Total Volume: 4.711 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: RW .20 @ 85 deg =


Pressure vs. Time
3030 Pressure
3030 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Shut-In(1)
Shut-In(2)
Open To Flow(1)
Open To Flow(2)
Pressure
Temperature
2250
2000
1750
1500
1250
1000
750
500
250
0
150
140
130
120
110
100
90
80
70
60
50
40
6AM
9AM
12PM
1 Thu Nov 2001
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company**

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

33-2s-41w CheyenneKS

Orth #1-33

Start Date: 2001.11.02 @ 00:52:07

End Date: 2001.11.02 @ 08:59:31

Job Ticket #: 14890 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

DRILL STEM TEST REPORT

Murfin Drilling Company

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

Orth #1-33

33-2s-41w CheyenneKS

Job Ticket: 14890 **DST#: 3**

Test Start: 2001.11.02 @ 00:52:07

GENERAL INFORMATION:

Formation: **L/KC"J"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:52:17
Time Test Ended: 08:59:31

Test Type: Conventional Bottom Hole
Tester: Rod Steinbrink
Unit No: 22

Interval: 4637.00 ft (KB) To 4685.00 ft (KB) (TVD)
Total Depth: 4685.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

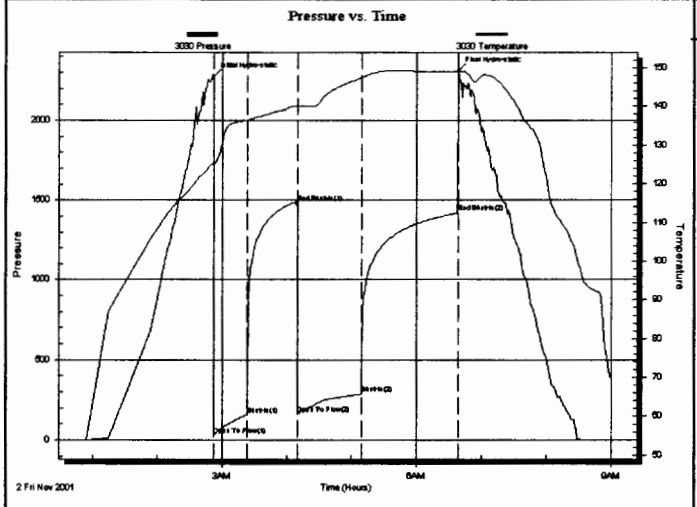
Reference Elevations: 3628.00 ft (KB)
3623.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 3030 **Inside**

Press@RunDepth: 287.17 psig @ 4638.00 ft (KB)
Start Date: 2001.11.02 End Date: 2001.11.02
Start Time: 00:52:07 End Time: 08:59:31

Capacity: 7000.00 psig
Last Calib.: 1899.12.30
Time On Btm: 2001.11.02 @ 02:52:02
Time Off Btm: 2001.11.02 @ 06:39:01

TEST COMMENT: IF; Weak to fair built to 10"
ISI; No return
FF; Weak return slowly built to bttm in 50 mins
FSI; No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2277.78	125.27	Initial Hydro-static
1	29.10	125.29	Open To Flow (1)
31	156.87	136.42	Shut-In(1)
78	1481.44	140.16	End Shut-In(1)
78	162.62	140.15	Open To Flow (2)
137	287.17	147.35	Shut-In(2)
227	1421.01	148.94	End Shut-In(2)
227	2313.01	148.95	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
240.00	WM 15%w tr 85%mud	1.18
360.00	WM 95%w tr 5%w tr	2.41

Gas Rates

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

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

Orth #1-33

33-2s-41w CheyenneKS

Job Ticket: 14890 **DST#: 3**

Test Start: 2001.11.02 @ 00:52:07

Tool Information

Drill Pipe:	Length:	4116.00 ft	Diameter:	3.80	inches	Volume:	57.74	bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	0.00	inches	Volume:	0.00	bbl	
Drill Collar:	Length:	530.00 ft	Diameter:	2.25	inches	Volume:	2.61	bbl	
						Total Volume:	60.35	bbl	

Drill Pipe Above KB:	32.00 ft
Depth to Top Packer:	4637.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	48.00 ft
Tool Length:	71.00 ft
Number of Packers:	2
Diameter:	6.75 inches

Tool Weight:	1800.00 lb
Weight set on Packer:	30000.00 lb
Weight to Pull Loose:	70000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	58000.00 lb
Final	60000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
C.O. Sub	1.00			4615.00		
S.I. Tool	5.00			4620.00		
HMV	5.00			4625.00		
Safety Joint	2.00			4627.00		
Packer	5.00			4632.00	23.00	Bottom Of Top Packer
Packer	5.00			4637.00		
Stubb	1.00			4638.00		
Recorder	0.00	3030	Inside	4638.00		
Perforations	9.00			4647.00		
C.O. Sub	1.00			4648.00		
Anchor	31.00			4679.00		
C.O. Sub	1.00			4680.00		
Recorder	0.00	13576	Outside	4680.00		
Bullnose	5.00			4685.00	48.00	Bottom Packers & Anchor
Total Tool Length:	**71.00**					

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company

250 N. Water #300
Wichita, KS 67202

ATTN: Curtis Covey

Orth #1-33

33-2s-41w CheyenneKS

Job Ticket: 14890 **DST#: 3**

Test Start: 2001.11.02 @ 00:52:07

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:	30000 ppm
Viscosity:	52.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	7.18 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	1000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

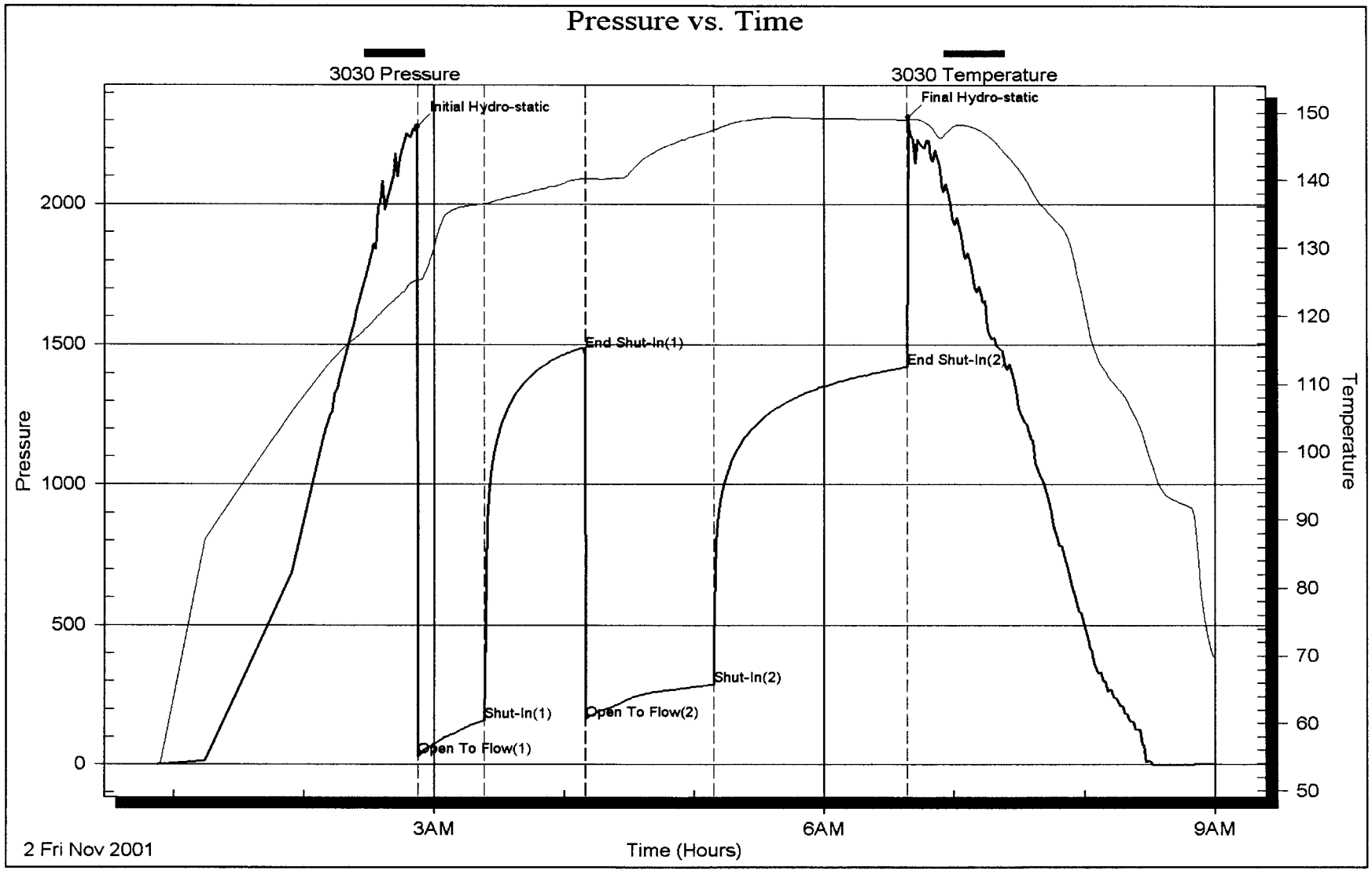
Length ft	Description	Volume bbl
240.00	WM 15%w tr 85%mud	1.180
360.00	WM 95%w tr 5%w tr	2.408

Total Length: 600.00 ft Total Volume: 3.588 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: RW .26 @ 65 deg=


Pressure vs. Time
3030 Pressure
3030 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Shut-In(1)
Shut-In(2)
Open To Flow(1)
Open To Flow(2)
Pressure
Temperature
2000
1500
1000
500
0
150
140
130
120
110
100
90
80
70
60
50
3AM
6AM
9AM
2 Fri Nov 2001
Time (Hours)