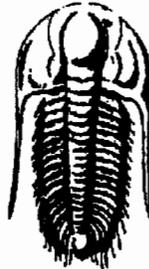


15-135-24952

10-16s-21w

100



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **Northern Lights**

PO Box 164
Andover, Ks
67002

CONFIDENTIAL

OCT 26 2009

KCC

ATTN: Jeff Christian

10 16S 21W Ness KS

Harms Kendall "N" #1

Start Date: 2009.09.12 @ 17:46:42

End Date: 2009.09.12 @ 23:03:36

Job Ticket #: 35222 DST #: 1

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WICHITA, KS

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

Northern Lights

Harms Kendall "N" #1

10 16S 21W Ness KS

DST # 1

Pawnee Sand

2009.09.12



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Northern Lights

Harms Kendall "N" #1

PO Box 164
Andover, Ks
67002
ATTN: Jeff Christian

10 16S 21W Ness KS
Job Ticket: 35222 **DST#: 1**
Test Start: 2009.09.12 @ 17:46:42

GENERAL INFORMATION:

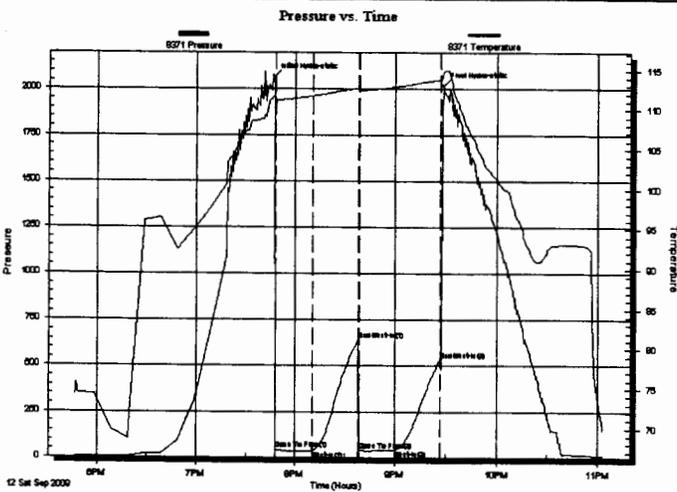
Formation: **Pawnee Sand**
Deviated: **No Whipstock** ft (KB)
Time Tool Opened: 19:48:07
Time Test Ended: 23:03:36
Test Type: **Conventional Bottom Hole**
Tester: **Brian Fairbank**
Unit No: **41**
Interval: **4116.00 ft (KB) To 4153.00 ft (KB) (TVD)**
Reference Elevations: 2306.00 ft (KB)
Total Depth: 4153.00 ft (KB) (TVD) 2301.00 ft (CF)
Hole Diameter: 6.75 inches Hole Condition: KB to GR/CF: 5.00 ft

Serial #: 8371

Inside

Press@RunDepth: 39.58 psig @ 4125.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2009.09.12 End Date: 2009.09.12 Last Calib.: 2009.09.12
Start Time: 17:46:42 End Time: 23:03:36 Time On Btrm: 2009.09.12 @ 19:47:07
Time Off Btrm: 2009.09.12 @ 21:28:07

TEST COMMENT: IFP - stg. sur. blow - died sur blow
ISI - no blow back
FFP - no blow
FSI - no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2063.15	111.71	Initial Hydro-static
1	44.13	110.46	Open To Flow (1)
24	36.93	111.75	Shut-In(1)
51	644.28	112.76	End Shut-In(1)
52	39.82	112.46	Open To Flow (2)
73	39.58	112.92	Shut-In(2)
100	533.43	113.85	End Shut-In(2)
101	2018.57	114.65	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	mud 100%	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Northern Lights

Harms Kendall "N" #1

PO Box 164
Andover, Ks
67002

10 16S 21W Ness KS

Job Ticket: 35222

DST#: 1

ATTN: Jeff Christian

Test Start: 2009.09.12 @ 17:46:42

Tool Information

Drill Pipe:	Length: 3868.00 ft	Diameter: 3.80 inches	Volume: 54.26 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: 248.00 ft	Diameter: 2.25 inches	Volume: 1.22 bbl	Weight to Pull Loose: 65000.00 lb
		Total Volume: 55.48 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4116.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 ft			
Tool Length:	64.00 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			4094.00	
Hydraulic tool	5.00			4099.00	
Jars	5.00			4104.00	
Safety Joint	2.00			4106.00	
Packer	5.00			4111.00	27.00 Bottom Of Top Packer
Packer	5.00			4116.00	
Stubb	1.00			4117.00	
Perforations	8.00			4125.00	
Recorder	0.00	8018	inside	4125.00	
Recorder	0.00	8371	inside	4125.00	
Perforations	25.00			4150.00	
Bullnose	3.00			4153.00	37.00 Bottom Packers & Anchor

Total Tool Length: 64.00

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TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Northern Lights

Harms Kendall "N" #1

PO Box 164
Andover, Ks
67002

10 16S 21W Ness KS

Job Ticket: 35222

DST#: 1

ATTN: Jeff Christian

Test Start: 2009.09.12 @ 17:46:42

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.93 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
10.00	mud 100%	0.049

Total Length: 10.00 ft

Total Volume: 0.049 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

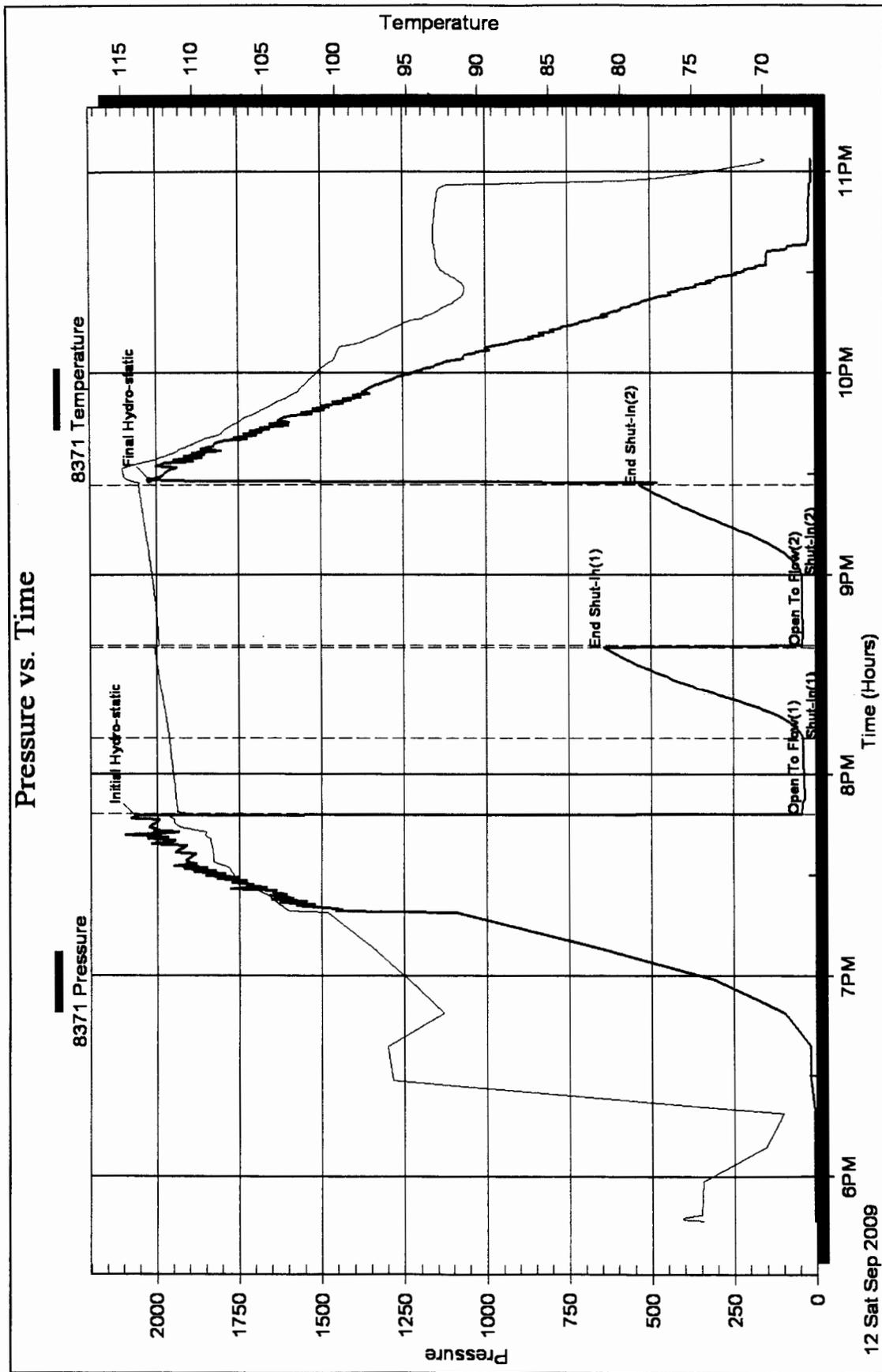
Serial #:

Laboratory Name:

Laboratory Location:

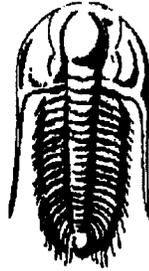
Recovery Comments:

Pressure vs. Time



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DRILL STEM TEST REPORT

Prepared For: **Northern Lights**

PO Box 164
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ATTN: Jeff Christian

10 16S 21W Ness KS

Harms Kendall "N" #1

Start Date: 2009.09.13 @ 05:35:46

End Date: 2009.09.13 @ 11:08:10

Job Ticket #: 35223 DST #: 2

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Northern Lights

Harms Kendall "N" #1

10 16S 21W Ness KS

DST # 2

Cherokee Sand

2009.09.13



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TESTING, INC.**

DRILL STEM TEST REPORT

Northern Lights
PO Box 164
Andover, Ks
67002
ATTN: Jeff Christian

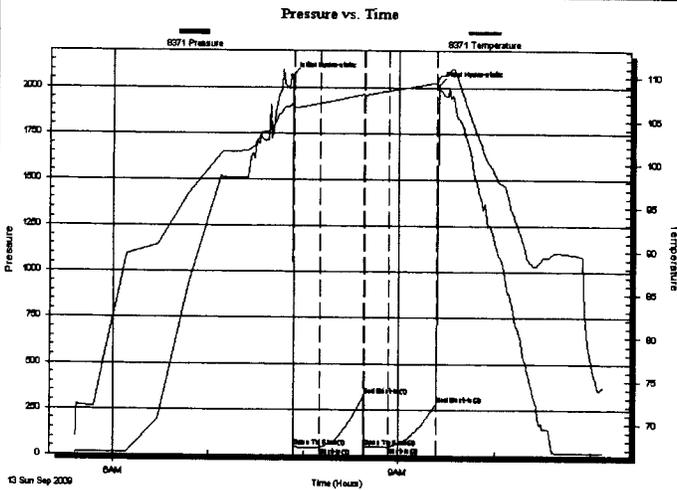
Harms Kendall "N" #1
10 16S 21W Ness KS
Job Ticket: 35223 **DST#: 2**
Test Start: 2009.09.13 @ 05:35:46

GENERAL INFORMATION:

Formation: **Cherokee Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:53:11
Time Test Ended: 11:08:10
Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41
Interval: **4115.00 ft (KB) To 4161.00 ft (KB) (TVD)**
Total Depth: 4161.00 ft (KB) (TVD)
Reference Elevations: 2306.00 ft (KB)
2301.00 ft (CF)
Hole Diameter: 6.75 inches Hole Condition: KB to GR/CF: 5.00 ft

Serial #: 8371 **Inside**
Press@RunDepth: 43.90 psig @ 4121.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2009.09.13 End Date: 2009.09.13 Last Calib.: 2009.09.13
Start Time: 05:35:46 End Time: 11:08:10 Time On Btm: 2009.09.13 @ 07:52:11
Time Off Btm: 2009.09.13 @ 09:24:41

TEST COMMENT: IFP - 1/4" blow throughout
ISI - no blow back
FFP - no blow
FSI - no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2064.41	106.91	Initial Hydro-static
1	47.98	106.04	Open To Flow (1)
18	41.96	106.96	Shut-In (1)
46	328.16	108.06	End Shut-In (1)
46	46.60	107.91	Open To Flow (2)
61	43.90	108.44	Shut-In (2)
92	281.78	109.42	End Shut-In (2)
93	2014.20	110.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	mud 100%	0.07

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Northern Lights

Harms Kendall "N" #1

PO Box 164
Andover, Ks
67002

10 16S 21W Ness KS

Job Ticket: 35223

DST#: 2

ATTN: Jeff Christian

Test Start: 2009.09.13 @ 05:35:46

Tool Information

Drill Pipe:	Length: 3860.00 ft	Diameter: 3.80 inches	Volume: 54.15 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: 248.00 ft	Diameter: 2.25 inches	Volume: 1.22 bbl	Weight to Pull Loose: 80000.00 lb
			Total Volume: 55.37 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4115.00 ft			Final 59000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	46.00 ft			
Tool Length:	73.00 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			4093.00	
Hydraulic tool	5.00			4098.00	
Jars	5.00			4103.00	
Safety Joint	2.00			4105.00	
Packer	5.00			4110.00	27.00 Bottom Of Top Packer
Packer	5.00			4115.00	
Stubb	1.00			4116.00	
Perforations	4.00			4120.00	
Change Over Sub	1.00			4121.00	
Recorder	0.00	8018	inside	4121.00	
Recorder	0.00	8371	inside	4121.00	
Blank Spacing	31.00			4152.00	
Change Over Sub	1.00			4153.00	
Perforations	5.00			4158.00	
Bullnose	3.00			4161.00	46.00 Bottom Packers & Anchor

Total Tool Length: 73.00

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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Northern Lights

Harms Kendall "N" #1

PO Box 164
Andover, Ks
67002

10 16S 21W Ness KS

Job Ticket: 35223 **DST#: 2**

ATTN: Jeff Christian

Test Start: 2009.09.13 @ 05:35:46

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: 53.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.92 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2000.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	mud 100%	0.074

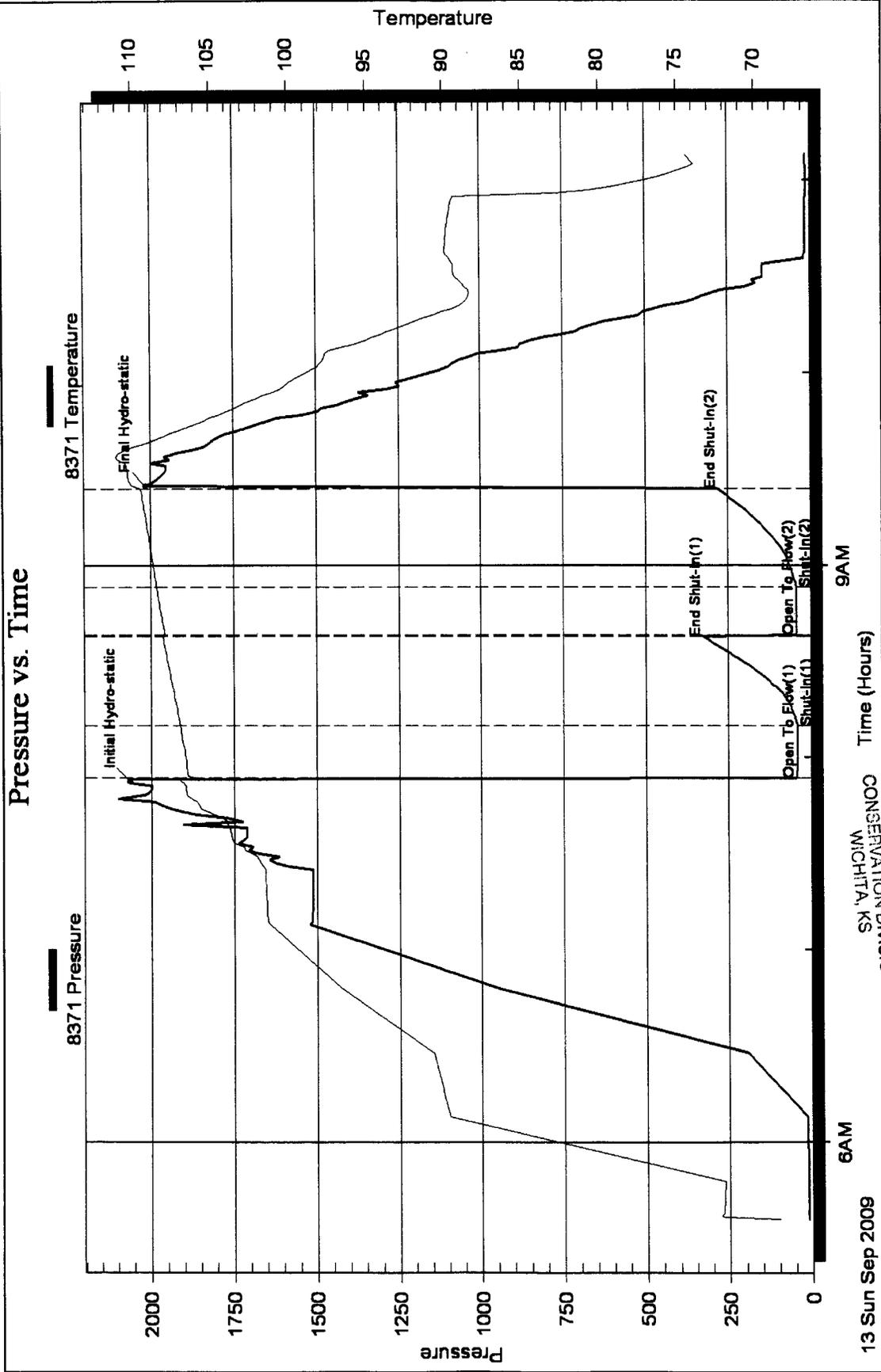
Total Length: 15.00 ft Total Volume: 0.074 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:

Pressure vs. Time



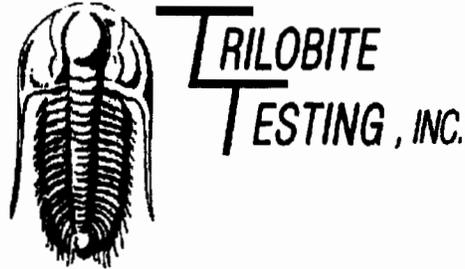
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DRILL STEM TEST REPORT

Prepared For: **Northern Lights**

PO Box 164
Andover, Ks
67002

ATTN: Jeff Christian

10 16S 21W Ness KS

Harms Kendall "N" #1

Start Date: 2009.09.13 @ 18:14:03

End Date: 2009.09.14 @ 00:09:57

Job Ticket #: 35224 DST #: 3

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

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WICHITA, KS

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Northern Lights

Harms Kendall "N" #1

10 16S 21W Ness KS

DST # 3

Kutina Sand

2009.09.13



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Northern Lights
PO Box 164
Andover, Ks
67002
ATTN: Jeff Christian

Harms Kendall "N" #1
10 16S 21W Ness KS
Job Ticket: 35224 DST#: 3
Test Start: 2009.09.13 @ 18:14:03

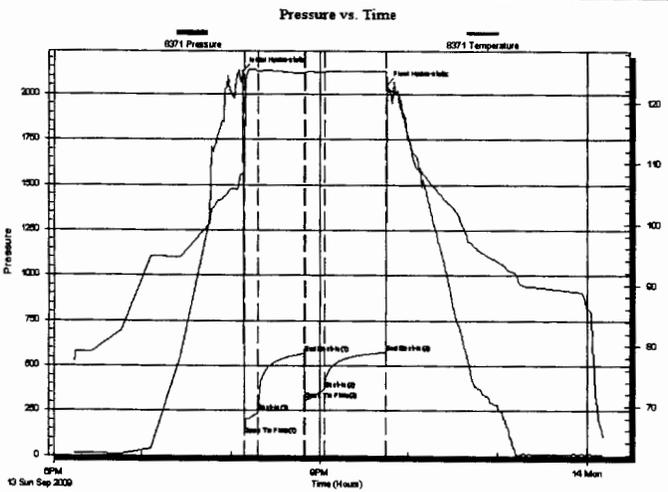
GENERAL INFORMATION:

Formation: **Kutina Sand**
Deviated: **No Whipstock:** ft (KB)
Time Tool Opened: 20:08:58
Time Test Ended: 00:09:57
Test Type: Conventional Bottom Hole
Tester: Brian Fairbank
Unit No: 41
Interval: **4200.00 ft (KB) To 4206.00 ft (KB) (TVD)**
Reference Elevations: 2306.00 ft (KB)
Total Depth: 4206.00 ft (KB) (TVD) 2301.00 ft (CF)
Hole Diameter: 6.75 inches Hole Condition: KB to GR/CF: 5.00 ft

Serial #: 8371 Inside

Press@RunDepth: 366.40 psig @ 4201.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2009.09.13 End Date: 2009.09.14 Last Calib.: 2009.09.14
Start Time: 18:14:03 End Time: 00:09:57 Time On Btm: 2009.09.13 @ 20:07:58
Time Off Btm: 2009.09.13 @ 21:45:28

TEST COMMENT: IFF - BOB 1 1/2 min.
ISI - 4" blow back
FFP - BOB 2 min.
FSI - 2" blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2124.30	108.38	Initial Hydro-static
1	115.89	108.52	Open To Flow (1)
10	239.39	125.07	Shut-In (1)
41	567.64	124.76	End Shut-In (1)
42	308.67	124.91	Open To Flow (2)
55	366.40	124.97	Shut-In (2)
97	574.69	125.08	End Shut-In (2)
98	2051.55	122.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	SAND 100%	0.30
357.00	MW 95%W, 5%M	3.30
250.00	SOCMW 10%O, 80%W, 10%M	3.51
30.00	OCWM 15%O, 35%W, 50%M	0.42
45.00	FREE OIL 95%O, 5%M	0.63
0.00	135' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Northern Lights

Harms Kendall "N" #1

PO Box 164
Andover, Ks
67002
ATTN: Jeff Christian

10 16S 21W Ness KS
Job Ticket: 35224 **DST#: 3**
Test Start: 2009.09.13 @ 18:14:03

Tool Information

Drill Pipe:	Length: 3953.00 ft	Diameter: 3.80 inches	Volume: 55.45 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: 248.00 ft	Diameter: 2.25 inches	Volume: 1.22 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 56.67 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 59000.00 lb
Depth to Top Packer:	4200.00 ft			Final 61000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	6.00 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

Shut in Tool	5.00			4178.00	
Hydraulic tool	5.00			4183.00	
Jars	5.00			4188.00	
Safety Joint	2.00			4190.00	
Packer	5.00			4195.00	27.00 Bottom Of Top Packer
Packer	5.00			4200.00	
Stubb	1.00			4201.00	
Recorder	0.00	8018	Inside	4201.00	
Recorder	0.00	8371	Inside	4201.00	
Perforations	2.00			4203.00	
Bullnose	3.00			4206.00	6.00 Bottom Packers & Anchor

Total Tool Length: 33.00

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DRILL STEM TEST REPORT

FLUID SUMMARY

Northern Lights

Harms Kendall "N" #1

PO Box 164
Andover, Ks
67002

10 16S 21W Ness KS

ATTN: Jeff Christian

Job Ticket: 35224

DST#: 3

Test Start: 2009.09.13 @ 18:14:03

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

36 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

25000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.91 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	SAND 100%	0.295
357.00	MV 95%W, 5%M	3.295
250.00	SOCMW 10%O, 80%W, 10%M	3.507
30.00	OCWM 15%O, 35%W, 50%M	0.421
45.00	FREE OIL 95%O, 5%M	0.631
0.00	135' GIP	0.000

Total Length: 742.00 ft Total Volume: 8.149 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .320 @ 601F = 25000ppm chlorides

Serial #: 8371

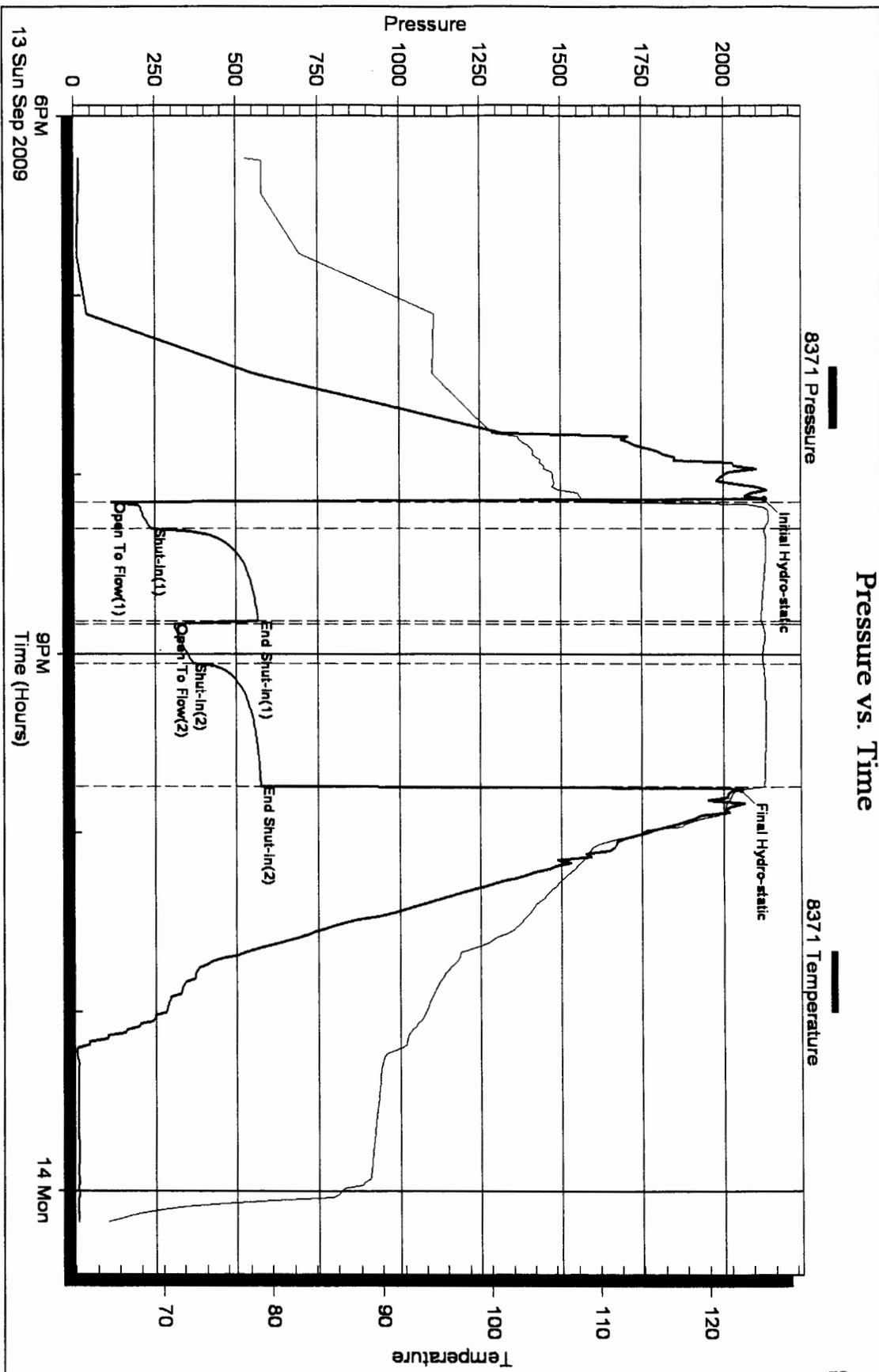
Inside

Northern Lights

10 16S 21W Ness KS

DST Test Number: 3

Pressure vs. Time



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Ref. No: 35224

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