



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Comp**

250 N. Water suite 300  
Wichita, KS 67202

ATTN: Curtis Covey

**27-34s-16w Comanche**

**Murdock-Oxy#1-27**

Start Date: 2001.04.06 @ 07:00:00

End Date: 2001.04.06 @ 12:55:00

Job Ticket #: 13474                      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

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

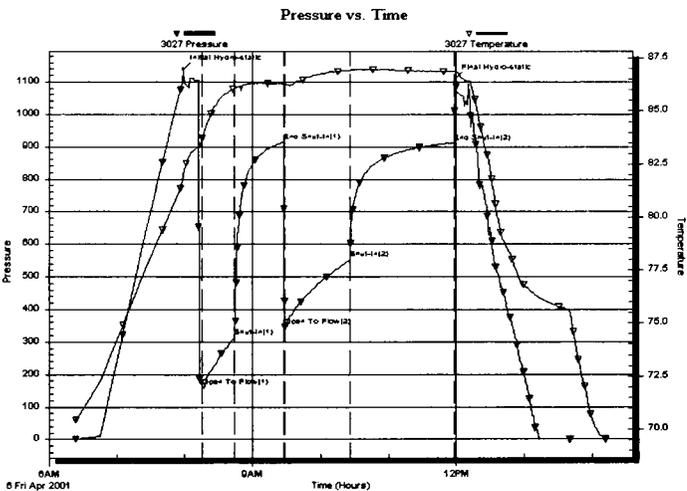
**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 13474      DST#: 1  
Test Start: 2001.04.06 @ 07:00:00

## GENERAL INFORMATION:

Formation: **Krider**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 08:15:54  
Time Test Ended: 12:55:00  
Interval: **2391.00 ft (KB) To 2455.00 ft (KB) (TVD)**  
Total Depth: 2455.00 ft (KB)  
Hole Diameter: 7.88 inches Hole Condition: Poor  
Reference Elevations: 1832.00 ft (KB)  
1822.00 ft (CF)  
KB to GR/CF: 10.00 ft  
Test Type: Conventional Bottom Hole  
Tester: Mike Colantonio  
Unit No: 20

Serial #: **3027** Inside  
Press@RunDepth: 552.22 psig @ 2398.00 ft (KB)  
Start Date: 2001.04.06 End Date: 2001.04.06  
Start Time: 06:23:26 End Time: 14:13:39  
Capacity: 7000.00 psig  
Last Calib.: 2001.04.05  
Time On Btm: 2001.04.06 @ 07:58:54  
Time Off Btm: 2001.04.06 @ 11:58:54

TEST COMMENT: 1st opening strong blow B.O.B in 1 min.  
ISI Bled off 2 in had 1" blow back  
2nd opening strong blow B.O.B in 30 sec.  
FSI Bled off 2" had 2" blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
96	1138.53	82.00	Initial Hydro-static
113	159.28	83.80	Open To Flow (1)
141	313.03	86.09	Shut-In(1)
184	913.99	86.30	End Shut-In(1)
185	346.50	86.31	Open To Flow (2)
243	552.22	86.93	Shut-In(2)
335	912.05	86.90	End Shut-In(2)
336	1107.23	86.88	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
430.00	water	4.06
180.00	GMW 10%g 80%w 10%w	2.52
300.00	GWM 20%g 20%w 60%w	4.21
240.00	Drilling mud 100%	3.37

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 13474      **DST#: 1**  
Test Start: 2001.04.06 @ 07:00:00

**Tool Information**

Drill Pipe:	Length: 2159.00 ft	Diameter: 3.80 inches	Volume: 30.29 bbl	Tool Weight: 1800.00 lb
Drill Collar:	Length: 217.00 ft	Diameter: 2.25 inches	Volume: 1.07 bbl	Weight set on Packer: 30000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 90000.00 lb
Drill Pipe Above KB:	8.00 ft			Tool Chased 0.00 ft
Depth to Top Packer:	2391.00 ft			String Weight: Initial 52000.00 lb
Depth to Bottom Packer:	ft			Final 56000.00 lb
Interval between Packers:	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
C.O. Sub	1.00			2369.00	
HYD S.I. Tool	5.00			2374.00	
HMV	5.00			2379.00	
Jars	5.00			2384.00	
Safety Joint	2.00			2386.00	
Packer	5.00			2391.00	23.00      Bottom Of Top Packer
Packer	5.00			2396.00	
Stubb	1.00			2397.00	
Perforations	1.00			2398.00	
Recorder	0.00	3027	Inside	2398.00	
P.O. Sub	5.00			2403.00	
Perforations	22.00			2425.00	
Blank Spacing	33.00			2458.00	
Recorder	0.00	13278	Outside	2458.00	
Bullnose	2.00			2460.00	69.00      Bottom Packers & Anchor

**Total Tool Length: 92.00**

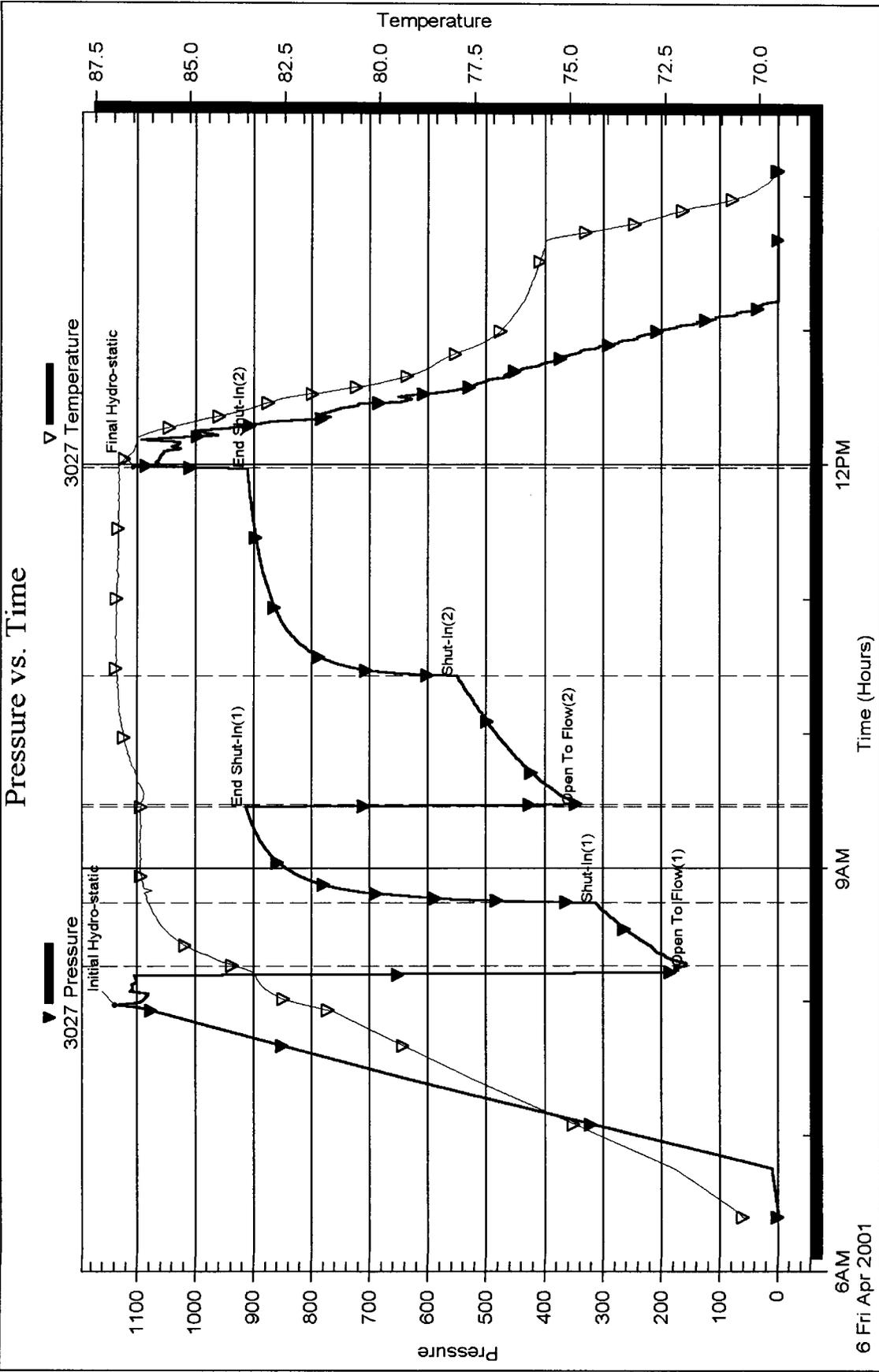
Serial #: 3027

Inside

Murfin Drilling Comp

27-34s-16w Comanche

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Comp**

250 N. Water suite 300  
Wichita, KS 67202

ATTN: Curtis Covey

**27-34s-16w Comanche**

**Murdock-Oxy#1-27**

Start Date: 2001.04.11 @ 00:00:00

End Date: 2001.04.11 @ 00:00:00

Job Ticket #: 14031                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Murfin Drilling Comp

Murdock-Oxy#1-27

27-34s-16w Comanche

DST #: 2

Swope

2001.04.11



**TRILOBITE  
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# DRILL STEM TEST REPORT

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

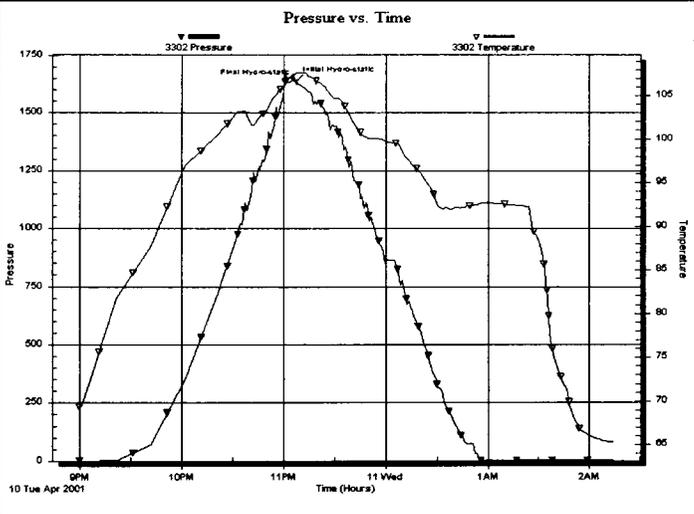
**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14031      **DST#: 2**  
Test Start: 2001.04.11 @ 00:00:00

## GENERAL INFORMATION:

Formation: **Swope**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened:  
Time Test Ended: 00:00:00  
Interval: **4762.00 ft (KB) To 4785.00 ft (KB) (TVD)**  
Total Depth: 4785.00 ft (KB)  
Hole Diameter: 7.88 inches Hole Condition:  
Test Type: Conventional Bottom Hole  
Tester: Darren L. Amerine  
Unit No: 19  
Reference Elevations: 1832.00 ft (KB)  
1822.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 3302** Inside  
Press@RunDepth: psig @ 4763.00 ft (KB) Capacity: 7000.00 psig  
Start Date: 2001.04.10 End Date: 2001.04.11 Last Calib.: 2001.04.11  
Start Time: 20:59:24 End Time: 02:14:52 Time On Btm: 2001.04.10 @ 23:07:22  
Time Off Btm: 2001.04.10 @ 23:07:52

TEST COMMENT: Hit bridge @3060----3092



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
128	1638.79	107.58	Initial Hydro-static
129	1626.80	107.60	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14031 **DST#: 2**  
Test Start: 2001.04.11 @ 00:00:00

### Tool Information

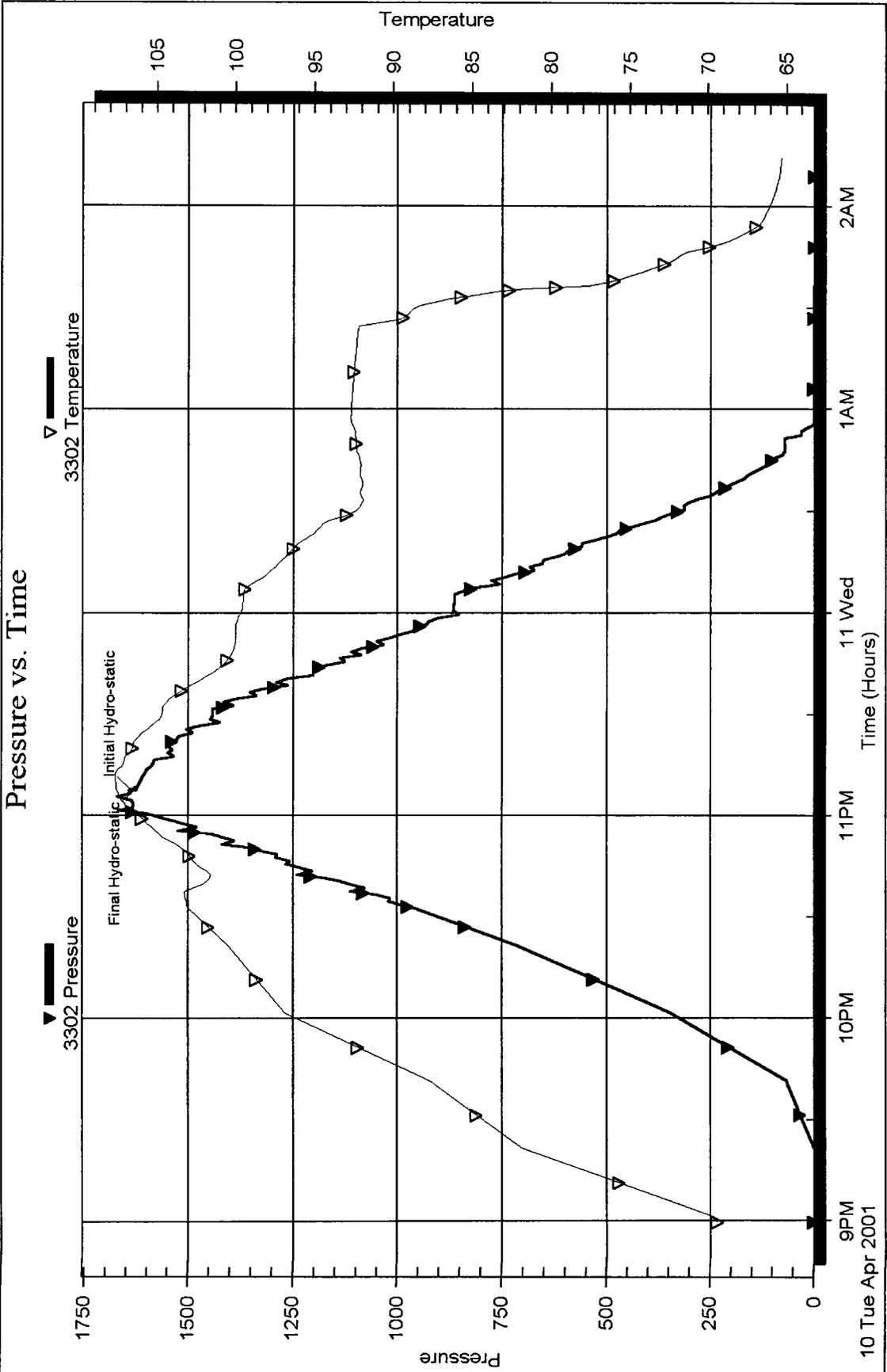
Drill Pipe:	Length: 4214.14 ft	Diameter: 3.80 inches	Volume: 59.11 bbl	Tool Weight: 2100.00 lb
Drill Collar:	Length: 217.60 ft	Diameter: 2.25 inches	Volume: 1.07 bbl	Weight set on Packer: 50000.00 lb
Heavy Wt. Pipe:	Length: 319.54 ft	Diameter: 2.80 inches	Volume: 2.43 bbl	Weight to Pull Loose: 60000.00 lb
Drill Pipe Above KB:	17.28 ft			Tool Chased 0.00 ft
Depth to Top Packer:	4757.00 ft			String Weight: Initial 60000.00 lb
Depth to Bottom Packer:	ft			Final 60000.00 lb
Interval between Packers:	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
C.O. Sub	1.00			4735.00	
S.I. Tool	5.00			4740.00	
HMV	5.00			4745.00	
Jars	5.00			4750.00	
Safety Joint	2.00			4752.00	
Packer	5.00			4757.00	23.00 Bottom Of Top Packer
Packer	5.00			4762.00	
Stubb	1.00			4763.00	
Recorder	0.00	3302	Inside	4763.00	
Anchor	19.00			4782.00	
Recorder	0.00	10991	Outside	4782.00	
Bullnose	3.00			4785.00	28.00 Bottom Packers & Anchor

**Total Tool Length: 51.00**

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Comp**

250 N. Water suite 300  
Wichita, KS 67202

ATTN: Curtis Covey

**27-34s-16w Comanche**

**Murdock-Oxy#1-27**

Start Date: 2001.04.11 @ 10:53:00

End Date: 2001.04.11 @ 00:00:00

Job Ticket #: 14032                      DST #: 3

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14032      **DST#: 3**  
Test Start: 2001.04.11 @ 10:53:00

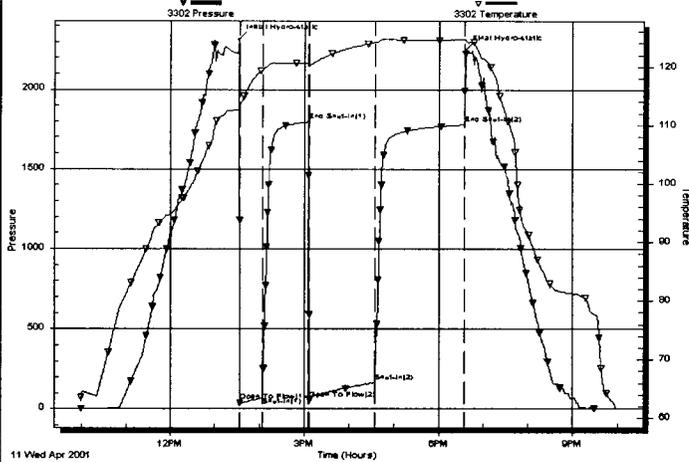
## GENERAL INFORMATION:

Formation: **Swope**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 13:33:50  
Time Test Ended: 00:00:00  
Test Type: Conventional Bottom Hole  
Tester: Darren Amerine  
Unit No: 19  
Interval: **4757.00 ft (KB) To 4785.00 ft (KB) (TVD)**  
Reference Elevations: 1832.00 ft (KB)  
Total Depth: 4785.00 ft (KB) 1822.00 ft (CF)  
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

**Serial #: 3302** Inside  
Press@RunDepth: 165.95 psig @ 4763.00 ft (KB) Capacity: 7000.00 psig  
Start Date: 2001.04.11 End Date: 2001.04.11 Last Calib.: 2001.04.10  
Start Time: 09:59:22 End Time: 21:58:50 Time On Btm: 2001.04.11 @ 13:32:20  
Time Off Btm: 2001.04.11 @ 18:36:20

TEST COMMENT: IF- Strong b.o.b. inf 30 sec.  
IS- GTS right after shutin  
FF- Strong b.o.b 15 seconds gauge gas

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
213	2312.59	112.71	Initial Hydro-static
215	42.38	113.17	Open To Flow (1)
245	68.26	119.44	Shut-In(1)
306	1796.17	120.62	End Shut-In(1)
308	55.08	120.50	Open To Flow (2)
395	165.95	124.20	Shut-In(2)
516	1779.81	124.68	End Shut-In(2)
517	2247.42	124.62	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
4419.00	Gas in pipe	57.96
200.00	VSG&MCW 4%gas 86%water 10% mud	2.81
115.00	G&MCW 8%gas 45%water 10% mud	1.61

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	1.50	5.95
Last Gas Rate	0.13	9.50	8.95
Max. Gas Rate	0.13	9.50	8.95



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## DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

Murdock-Oxy#1-27  
27-34s-16w Comanche  
Job Ticket: 14032      **DST#: 3**  
Test Start: 2001.04.11 @ 10:53:00

### Tool Information

Drill Pipe:	Length: 4214.14 ft	Diameter: 3.80 inches	Volume: 59.11 bbl	Tool Weight: 2100.00 lb
Drill Collar:	Length: 217.60 ft	Diameter: 2.25 inches	Volume: 1.07 bbl	Weight set on Packer: 20000.00 lb
Heavy Wt. Pipe:	Length: 319.54 ft	Diameter: 2.80 inches	Volume: 2.43 bbl	Weight to Pull Loose: 75000.00 lb
Drill Pipe Above KB:	17.28 ft			Tool Chased 0.00 ft
Depth to Top Packer:	4757.00 ft			String Weight: Initial 72000.00 lb
Depth to Bottom Packer:	ft			Final 72000.00 lb
Interval between Packers:	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
C.O. Sub	1.00			4735.00	
S.I. Tool	5.00			4740.00	
HMV	5.00			4745.00	
Jars	5.00			4750.00	
Safety Joint	2.00			4752.00	
Packer	5.00			4757.00	23.00      Bottom Of Top Packer
Packer	5.00			4762.00	
Stubb	1.00			4763.00	
Recorder	0.00	3302	Inside	4763.00	
Anchor	19.00			4782.00	
Recorder	0.00	10991	Outside	4782.00	
Bullnose	3.00			4785.00	28.00      Bottom Packers & Anchor

**Total Tool Length: 51.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14032      DST#: 3  
Test Start: 2001.04.11 @ 10:53:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: -999999 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: - ppm
Viscosity: 54.00 sec/qt	Cushion Volume: bbl	214748364
Water Loss: 8.35	Gas Cushion Type:	
Resistivity: 1.40 ohm.m	Gas Cushion Pressure: psig	
Salinity: 5000.00 ppm		
Filter Cake: 0.32 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
4419.00	Gas in pipe	57.956
200.00	VSG&MCW 4%gas 86%water 10%mud	2.805
115.00	G&MCW 8%gas 45%water 10%mud	1.613

Total Length: 4734.00 ft      Total Volume: 62.380 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #: 3302  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:



**TRILOBITE  
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## DRILL STEM TEST REPORT

**GAS RATES**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

Murdock-Oxy#1-27  
27-34s-16w Comanche  
Job Ticket: 14032      **DST#: 3**  
Test Start: 2001.04.11 @ 10:53:00

### Gas Rates Information

Temperature:            59 (deg F)  
Relative Density:      0.65  
Z Factor:                0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (kPaa)	Gas Rate (Mcf/d)
2	10	0.13	1.50	5.95
2	10	0.13	1.50	5.95
2	10	0.13	1.50	5.95
2	10	0.13	1.50	5.95
2	10	0.13	1.50	5.95
2	20	0.13	4.40	7.04
2	30	0.13	7.00	8.01
2	40	0.13	9.00	8.76
2	50	0.13	9.50	8.95

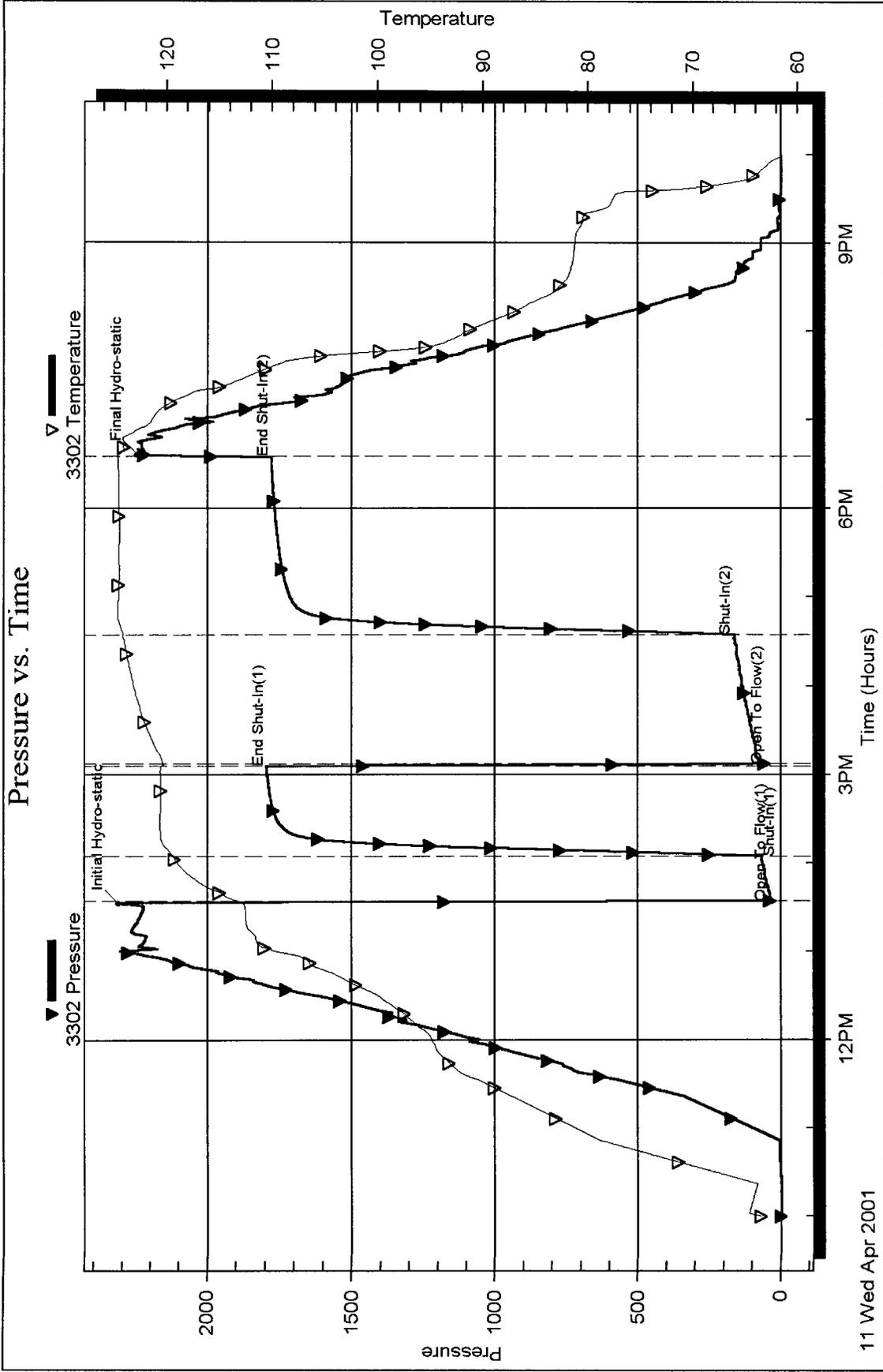
Serial #: 3302

Inside

Murfin Drilling Comp

27-34s-16w Comanche

### Pressure vs. Time



11 Wed Apr 2001



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Comp**

250 N. Water suite 300  
Wichita, KS 67202

ATTN: Curtis Covey

**27-34s-16w Comanche**

**Murdock-Oxy#1-27**

Start Date: 2001.04.12 @ 09:44:00

End Date: 2001.04.12 @ 13:33:00

Job Ticket #: 14033                      DST #: 4

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**TRILOBITE  
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# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14033 **DST#: 4**  
Test Start: 2001.04.12 @ 09:44:00

**Tool Information**

Drill Pipe:	Length: 4275.36 ft	Diameter: 3.80 inches	Volume: 59.97 bbl	Tool Weight: 2100.00 lb
Drill Collar:	Length: 217.60 ft	Diameter: 2.25 inches	Volume: 1.07 bbl	Weight set on Packer: 20000.00 lb
Heavy Wt. Pipe:	Length: 288.04 ft	Diameter: 2.80 inches	Volume: 2.19 bbl	Weight to Pull Loose: 75000.00 lb
Drill Pipe Above KB:	11.00 ft			Tool Chased 0.00 ft
Depth to Top Packer:	4793.00 ft			String Weight: Initial 73000.00 lb
Depth to Bottom Packer:	ft			Final 73000.00 lb
Interval between Packers:	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			4771.00	
S.I. Tool	5.00			4776.00	
HMV	5.00			4781.00	
Jars	5.00			4786.00	
Safety Joint	2.00			4788.00	
Packer	5.00			4793.00	23.00 Bottom Of Top Packer
Packer	5.00			4798.00	
Stubb	1.00			4799.00	
Recorder	0.00	3302	Inside	4799.00	
Anchor	31.00			4830.00	
Recorder	0.00	10991	Outside	4830.00	
Bullnose	3.00			4833.00	40.00 Bottom Packers & Anchor

**Total Tool Length: 63.00**

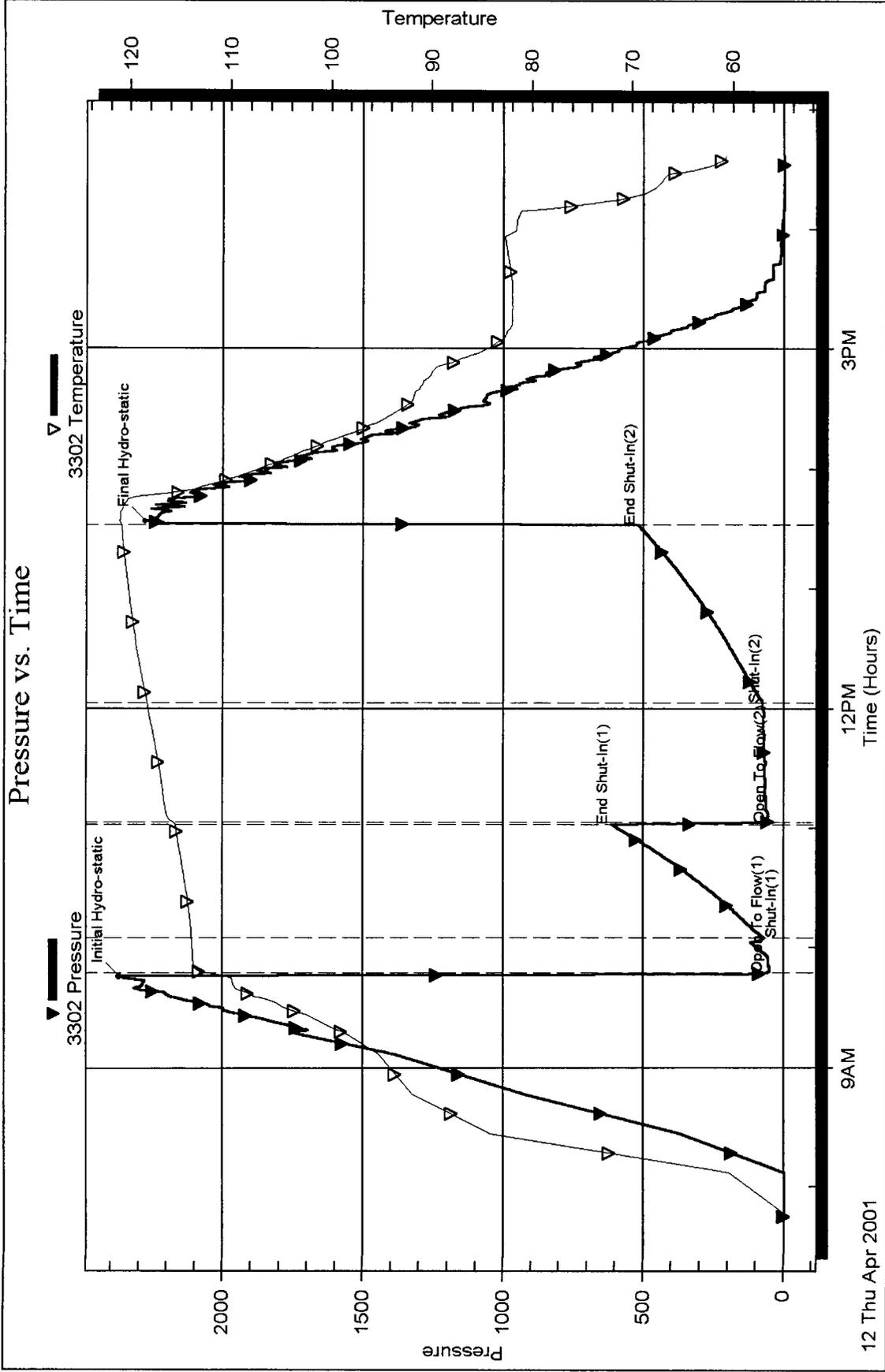
Serial #: 3302

Inside

Murfin Drilling Comp

27-34s-16w Comanche

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Comp**

250 N. Water suite 300  
Wichita, KS 67202

ATTN: Curtis Covey

**27-34s-16w Comanche**

**Murdock-Oxy#1-27**

Start Date: 2001.04.14 @ 02:30:00

End Date: 2001.04.14 @ 07:25:00

Job Ticket #: 14034                      DST #: 5

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
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# DRILL STEM TEST REPORT

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250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

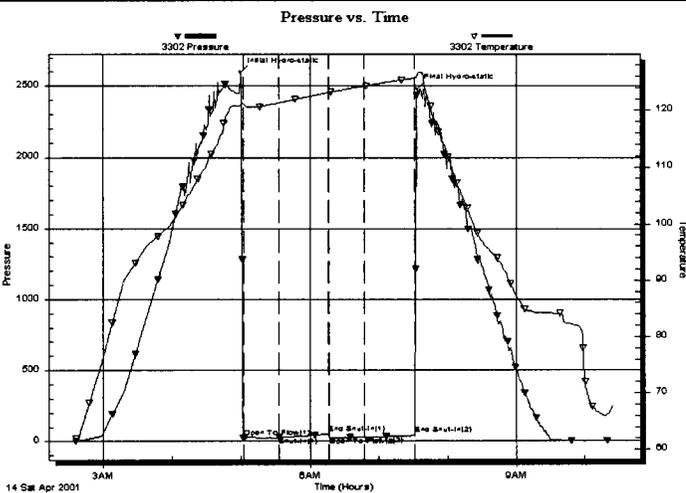
**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14034      **DST#: 5**  
Test Start: 2001.04.14 @ 02:30:00

## GENERAL INFORMATION:

Formation: **Mississippian**  
Deviated: No      Whipstock:      ft (KB)  
Time Tool Opened: 05:02:08  
Time Test Ended: 07:25:00  
Interval: **5150.00 ft (KB) To 5220.00 ft (KB) (TVD)**  
Total Depth: 5220.00 ft (KB)  
Hole Diameter: 7.88 inches      Hole Condition: Fair  
Test Type: Conventional Bottom Hole  
Tester: Darren L. Amerine  
Unit No: 19  
Reference Elevations: 1832.00 ft (KB)  
1822.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 3302**      Inside  
Press@RunDepth: 26.72 psig @ 5151.00 ft (KB)  
Start Date: 2001.04.14      End Date: 2001.04.14  
Start Time: 02:35:40      End Time: 10:25:08  
Capacity: 7000.00 psig  
Last Calib.: 2001.04.14  
Time On Btm: 2001.04.14 @ 04:59:38  
Time Off Btm: 2001.04.14 @ 07:33:38

**TEST COMMENT:** IF: Weak surface blow built to 1/2" in H2O bucket.  
IS: Bled down n for 10 mins. no blow back.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
144	2597.18	120.84	Initial Hydro-static
147	23.06	121.06	Open To Flow (1)
177	25.52	121.25	Shut-In(1)
220	49.43	123.06	End Shut-In(1)
222	24.18	123.12	Open To Flow (2)
252	26.72	124.25	Shut-In(2)
296	40.86	125.65	End Shut-In(2)
298	2478.74	126.50	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
15.00	100 - Mud	0.11

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



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# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14034      **DST#: 5**  
Test Start: 2001.04.14 @ 02:30:00

**Tool Information**

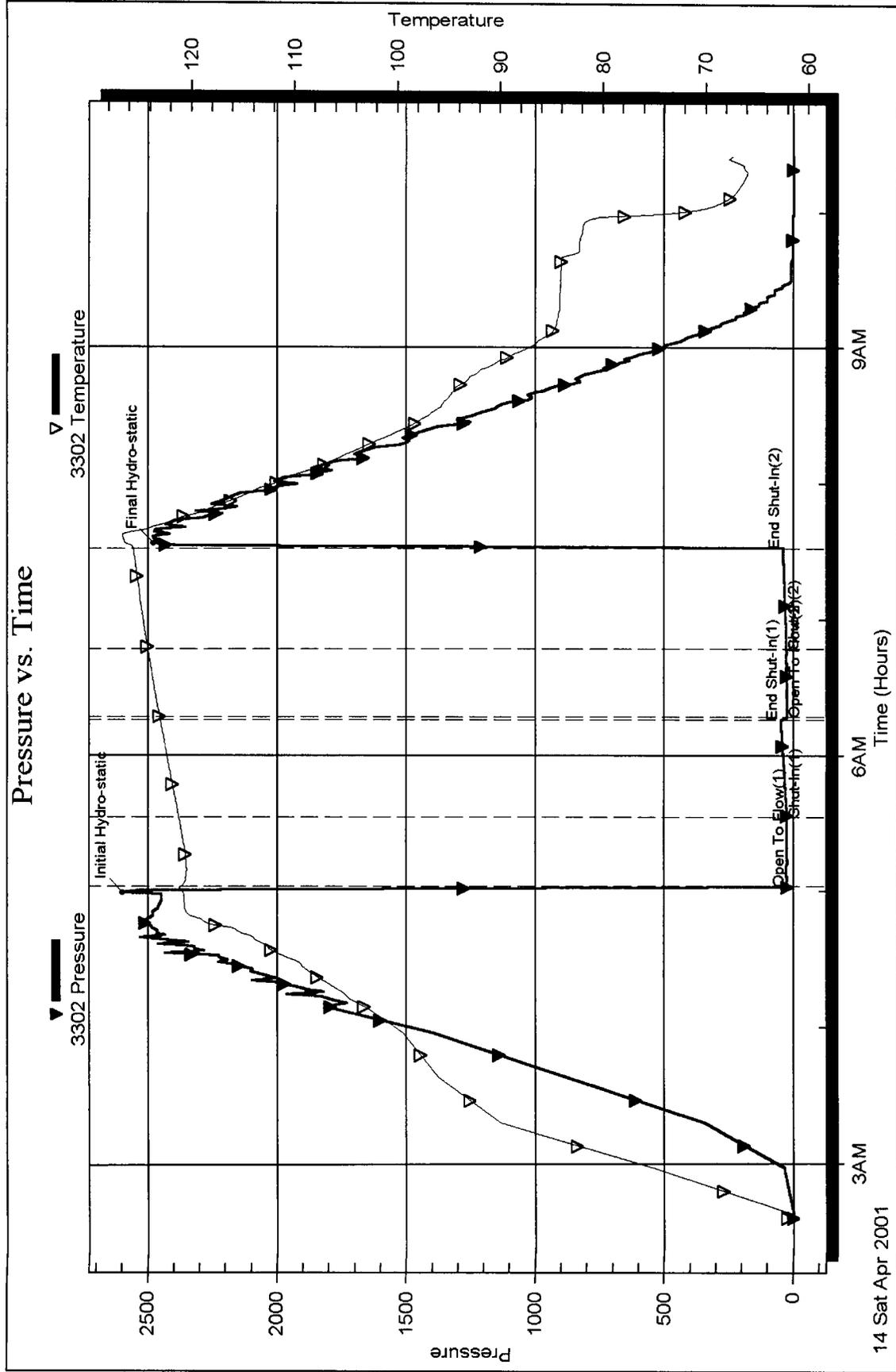
Drill Pipe:	Length: 4620.60 ft	Diameter: 3.80 inches	Volume: 64.81 bbl	Tool Weight: 2100.00 lb
Drill Collar:	Length: 217.60 ft	Diameter: 2.25 inches	Volume: 1.07 bbl	Weight set on Packer: 20000.00 lb
Heavy Wt. Pipe:	Length: 288.04 ft	Diameter: 2.80 inches	Volume: 2.19 bbl	Weight to Pull Loose: lb
Drill Pipe Above KB:	4.24 ft			Tool Chased 0.00 ft
Depth to Top Packer:	5145.00 ft			String Weight: Initial 75000.00 lb
Depth to Bottom Packer:	ft			Final 75000.00 lb
Interval between Packers:	ft			
Tool Length:	98.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

**Tool Comments**

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			5123.00	
S.I. Tool	5.00			5128.00	
HMV	5.00			5133.00	
Jars	5.00			5138.00	
Safety Joint	2.00			5140.00	
Packer	5.00			5145.00	23.00      Bottom Of Top Packer
Packer	5.00			5150.00	
Stubb	1.00			5151.00	
Recorder	0.00	3302	Inside	5151.00	
Anchor	35.00			5186.00	
Blank Spacing	31.00			5217.00	
Recorder	0.00	10991	Outside	5217.00	
Bullnose	3.00			5220.00	75.00      Bottom Packers & Anchor

**Total Tool Length: 98.00**

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Comp**

250 N. Water suite 300  
Wichita, KS 67202

ATTN: Curtis Covey

**27-34s-16w Comanche**

**Murdock-Oxy#1-27**

Start Date: 2001.04.15 @ 17:24:00

End Date: 2001.04.15 @ 00:00:00

Job Ticket #: 14035                      DST #: 6

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Comp  
 250 N. Water suite 300  
 Wichita, KS 67202  
 ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
 Job Ticket: 14035 **DST#: 6**  
 Test Start: 2001.04.15 @ 17:24:00

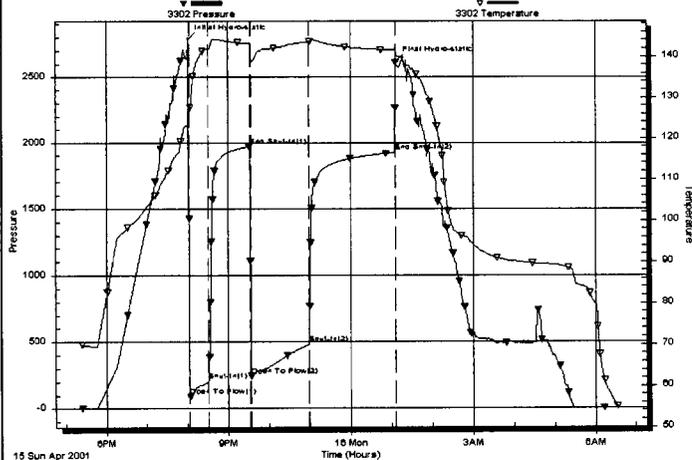
## GENERAL INFORMATION:

Formation: **Viola**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 20:02:53  
 Time Test Ended: 00:00:00  
 Interval: **5510.00 ft (KB) To 5562.00 ft (KB) (TVD)**  
 Total Depth: 5562.00 ft (KB)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole  
 Tester: Darren L. Amerine  
 Unit No: 19  
 Reference Elevations: 1832.00 ft (KB)  
 1822.00 ft (CF)  
 KB to GR/CF: 10.00 ft

Serial #: **3302** Inside  
 Press@RunDepth: 482.52 psig @ 5511.00 ft (KB) Capacity: 7000.00 psig  
 Start Date: 2001.04.15 End Date: 2001.04.16 Last Calib.: 2001.04.16  
 Start Time: 17:24:25 End Time: 06:36:53 Time On Btm: 2001.04.15 @ 20:00:53  
 Time Off Btm: 2001.04.16 @ 01:06:23

TEST COMMENT: IF: Strong blow b.o.b in 45 sec.  
 IS: Bled down for 15 mins gas-  
 to surface upon closing tool.

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
157	2786.70	123.11	Initial Hydro-static
159	88.95	125.63	Open To Flow (1)
186	203.78	141.81	Shut-In (1)
247	1970.19	143.04	End Shut-In (1)
249	244.98	139.71	Open To Flow (2)
334	482.52	143.52	Shut-In (2)
461	1926.59	141.43	End Shut-In (2)
462	2620.01	140.81	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
4311.00	gas in pipe	56.49
120.00	SMCW 90%water 10% mud	1.68
550.00	HO&GCWM 30%gas 10%oil 20%water 30%M	7.72
500.00	free oil	7.01

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	1.50	5.95
Last Gas Rate	0.13	18.00	12.13
Max. Gas Rate	0.13	18.00	12.13



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Comp

**Murdock-Oxy#1-27**

250 N. Water suite 300  
Wichita, KS 67202

**27-34s-16w Comanche**

Job Ticket: 14035

**DST#: 6**

ATTN: Curtis Covey

Test Start: 2001.04.15 @ 17:24:00

### Tool Information

Drill Pipe:	Length: 4996.36 ft	Diameter: 3.80 inches	Volume: 70.09 bbl	Tool Weight: 2100.00 lb
Drill Collar:	Length: 217.60 ft	Diameter: 2.25 inches	Volume: 1.07 bbl	Weight set on Packer: 20000.00 lb
Heavy Wt. Pipe:	Length: 288.04 ft	Diameter: 2.70 inches	Volume: 2.04 bbl	Weight to Pull Loose: 80000.00 lb
Drill Pipe Above KB:	20.00 ft			Tool Chased 0.00 ft
Depth to Top Packer:	5505.00 ft			String Weight: Initial 75000.00 lb
Depth to Bottom Packer:	ft			Final 77000.00 lb
Interval between Packers:	ft			
Tool Length:	80.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

### Tool Comments

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			5483.00	
S.I. Tool	5.00			5488.00	
HMV	5.00			5493.00	
Jars	5.00			5498.00	
Safety Joint	2.00			5500.00	
Packer	5.00			5505.00	23.00 Bottom Of Top Packer
Packer	5.00			5510.00	
Stubb	1.00			5511.00	
Recorder	0.00	3302	Inside	5511.00	
Anchor	16.00			5527.00	
Blank Spacing	32.00			5559.00	
Recorder	0.00	10991	Outside	5559.00	
Bullnose	3.00			5562.00	57.00 Bottom Packers & Anchor

**Total Tool Length: 80.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14035      **DST#: 6**  
Test Start: 2001.04.15 @ 17:24:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 40 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: - ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl	214748364
Water Loss: 9.97	Gas Cushion Type:	
Resistivity: 2.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 5000.00 ppm		
Filter Cake: 0.32 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
4311.00	gas in pipe	56.489
120.00	SMCW 90%water 10%mud	1.683
550.00	HO&GCWM 30%gas 10%oil 20%water 30%M	7.715
500.00	free oil	7.014

Total Length: 5481.00 ft      Total Volume: 72.900 bbl  
 Num Fluid Samples: 1      Num Gas Bombs: 0      Serial #: 3302  
 Laboratory Name: Caraw ay      Laboratory Location: Liberal KS  
 Recovery Comments:

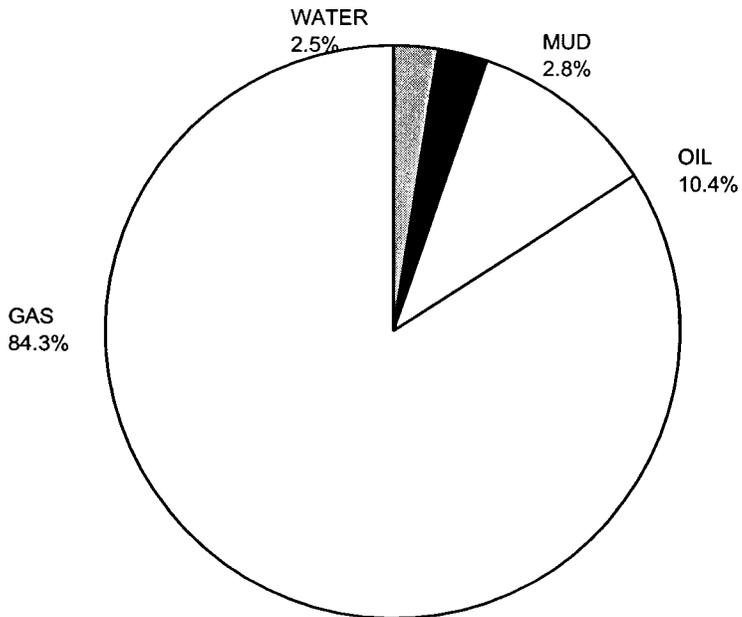
CALCULATED RECOVERY ANALYSIS

DST 6

TICKET 14035

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD		
		%	FEET	%	FEET	%	FEET	%	FEET	
DRILL	1	4311	100	4311	0	0	0	0	0	0
PIPE	2	500	0	0	100	500	0	0	0	0
	3	453	30	135.9	10	45.3	20	90.6	30	135.9
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0
WEIGHT	1	0	0	0	0	0	0	0	0	0
PIPE	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
DRILL	1	97	30	29.1	10	9.7	20	19.4	30	29.1
COLLARS	2	120	0	0	0	0	90	108	10	12
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
TOTAL		5481	0	4476	0	555	0	218	0	177

BBL OIL= 7.801599 \* HRS OPEN 2 = BBL/DAY 93.619188  
 BBL WATER= 1.911318 \* = 22.935816  
 BBL MUD= 2.133477  
 BBL GAS = 63.377217





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**GAS RATES**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14035      **DST#: 6**  
Test Start: 2001.04.15 @ 17:24:00

## Gas Rates Information

Temperature:            59 (deg F)  
Relative Density:      0.65  
Z Factor:                0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (kPaa)	Gas Rate (Mcf/d)
2	10	0.13	1.50	5.95
2	10	0.13	1.50	5.95
2	10	0.13	1.50	5.95
2	10	0.13	1.50	5.95
2	20	0.13	3.00	6.51
2	30	0.13	6.50	7.82
2	40	0.13	10.00	9.13
2	50	0.13	13.00	10.26
2	60	0.13	16.00	11.38
2	70	0.13	18.00	12.13

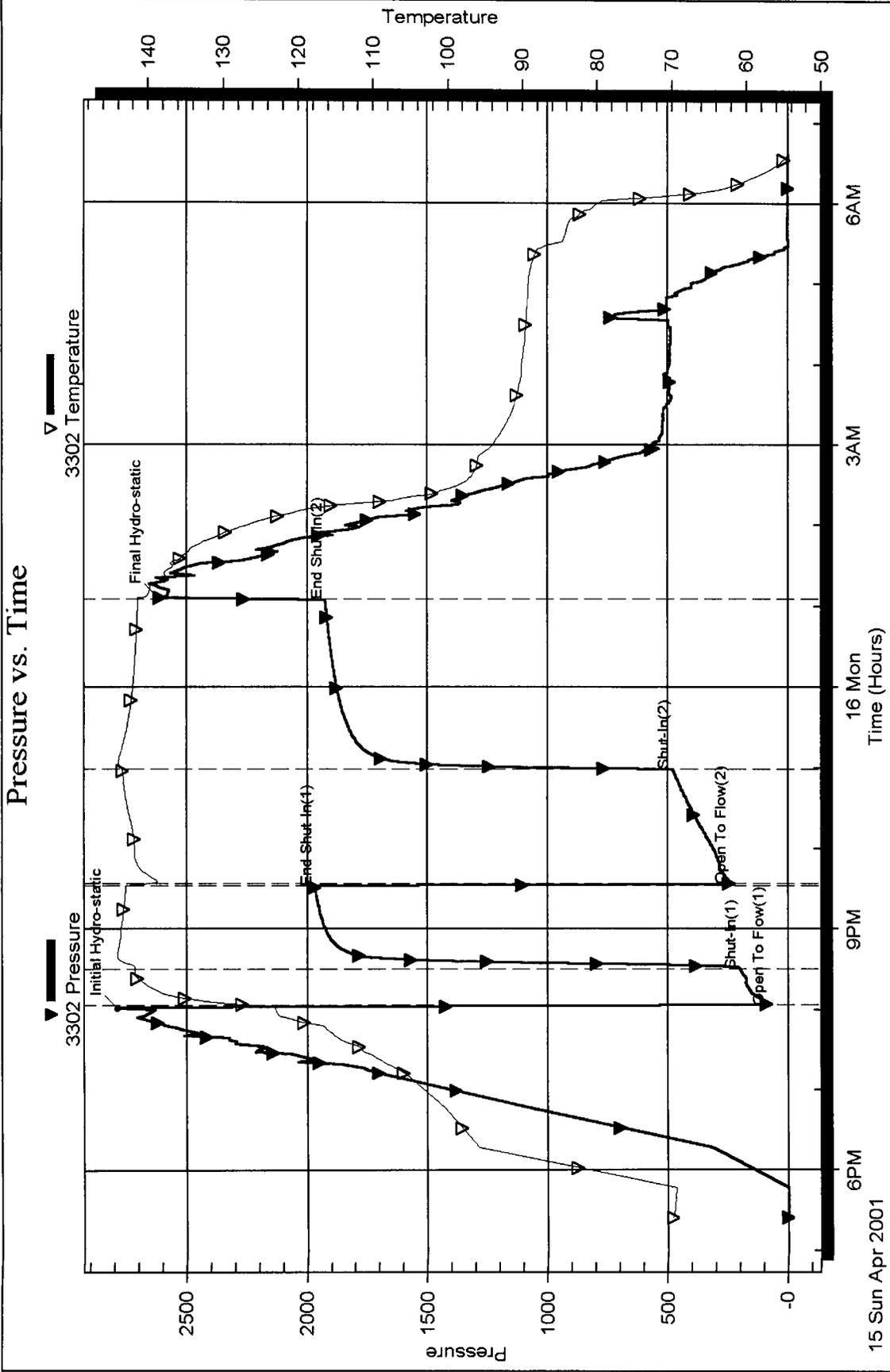
Serial #: 3302

Inside

Murfin Drilling Corp

27-34s-16w Comanche

### Pressure vs. Time





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Comp**

250 N. Water suite 300  
Wichita, KS 67202

ATTN: Curtis Covey

**27-34s-16w Comanche**

**Murdock-Oxy#1-27**

Start Date: 2001.04.16 @ 17:03:00

End Date: 2001.04.17 @ 06:44:00

Job Ticket #: 14012                      DST #: 7

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

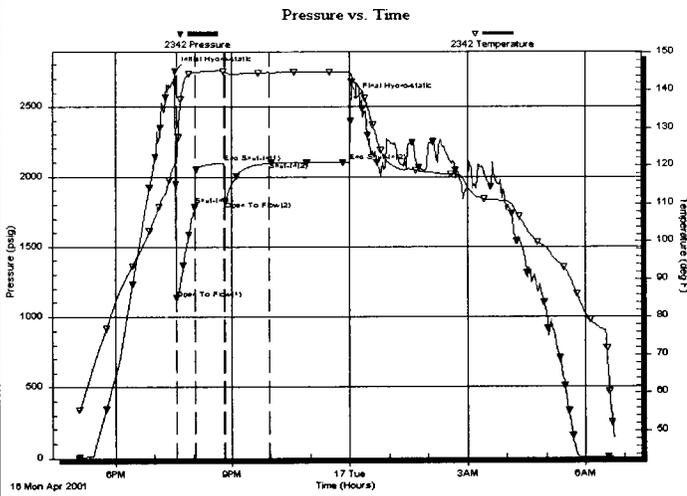
**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14012      **DST#: 7**  
Test Start: 2001.04.16 @ 17:03:00

## GENERAL INFORMATION:

Formation: **Simpson sd.**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 19:34:29  
Time Test Ended: 06:44:00  
Interval: **5572.00 ft (KB) To 5583.00 ft (KB) (TVD)**  
Total Depth: 5583.00 ft (KB)  
Hole Diameter: 7.88 inches Hole Condition: Poor  
Test Type: Conventional Bottom Hole  
Tester: Gary Pevoteaux  
Unit No: 13  
Reference Elevations: 1832.00 ft (KB)  
1822.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 2342** Inside  
Press@RunDepth: 2095.67 psig @ 5573.00 ft (KB) Capacity: 7000.00 psig  
Start Date: 2001.04.16 End Date: 2001.04.17 Last Calib.: 2001.01.04  
Start Time: 17:04:00 End Time: 06:43:59 Time On Btm: 2001.04.16 @ 19:31:29  
Time Off Btm: 2001.04.17 @ 00:08:59

**TEST COMMENT:** IF: Strong blow . B.O.B. in 30 secs. GTS in 30 mins.  
IS: Strong blow .  
FF: Strong blow . (see gas volume report)  
FS: Fair decreasing blow .



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
148	2755.59	120.39	Initial Hydro-static
151	1121.18	121.11	Open To Flow (1)
180	1793.95	144.89	Shut-In(1)
225	2093.66	145.05	End Shut-In(1)
226	1821.23	145.00	Open To Flow (2)
295	2095.67	144.73	Shut-In(2)
416	2100.94	144.86	End Shut-In(2)
425	2564.66	141.75	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	Gas in all fluid free pipe.	0.00
120.00	Heavy mud	0.59
4240.00	Salt water R <sub>w</sub> 0.13 ohms @ 53 deg.F.	58.66

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	6.00	32.74
Last Gas Rate	0.25	2.00	26.32
Max. Gas Rate	0.25	6.00	32.74



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14012      **DST#: 7**  
Test Start: 2001.04.16 @ 17:03:00

**Tool Information**

Drill Pipe:	Length: 5355.00 ft	Diameter: 3.80 inches	Volume: 75.12 bbl	Tool Weight: 2100.00 lb
Drill Collar:	Length: 210.00 ft	Diameter: 2.25 inches	Volume: 1.03 bbl	Weight set on Packer: 20000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 118000.0 lb
Drill Pipe Above KB:	20.00 ft			Tool Chased 0.00 ft
Depth to Top Packer:	5567.00 ft			String Weight: Initial 79000.00 lb
Depth to Bottom Packer:	ft			Final 93000.00 lb
Interval between Packers:	ft			
Tool Length:	38.00 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			5546.00	
S.I. Tool	5.00			5551.00	
HMV	5.00			5556.00	
Jars	5.00			5561.00	
Safety Joint	2.00			5563.00	
Packer	4.00			5567.00	22.00      Bottom Of Top Packer
Packer	5.00			5572.00	
Stubb	1.00			5573.00	
Recorder	0.00	2342	Inside	5573.00	
Perforations	5.00			5578.00	
Recorder	0.00	10248	Outside	5578.00	
Bullnose	5.00			5583.00	16.00      Bottom Packers & Anchor

**Total Tool Length: 38.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14012      **DST#: 7**  
Test Start: 2001.04.16 @ 17:03:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: -999999 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 79000 ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl	
Water Loss: 10.76	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 7000.00 ppm		
Filter Cake: 0.20 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	Gas in all fluid free pipe.	0.000
120.00	Heavy mud	0.590
4240.00	Salt water Rw 0.13 ohms @ 53 deg.F.	58.656

Total Length: 4360.00 ft      Total Volume: 59.250 bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #: 2342

Laboratory Name: Caraway      Laboratory Location: Liberal KS

Recovery Comments:



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**GAS RATES**

Murfin Drilling Comp  
250 N. Water suite 300  
Wichita, KS 67202  
ATTN: Curtis Covey

**Murdock-Oxy#1-27**  
**27-34s-16w Comanche**  
Job Ticket: 14012      **DST#: 7**  
Test Start: 2001.04.16 @ 17:03:00

## Gas Rates Information

Temperature: 47 (deg F)  
Relative Density: 0.65  
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (kPaa)	Gas Rate (Mcf/d)
2	10	0.25	6.00	32.74
2	10	0.25	6.00	32.74
2	20	0.25	4.00	29.53
2	30	0.25	4.00	29.53
2	40	0.25	5.00	31.14
2	50	0.25	4.00	29.53
2	60	0.25	2.00	26.32

### Pressure vs. Time

