

15-065-23593

32-6s-23w

MD



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Prepared For: **H&C Oil Operating Inc**

PO Box 86  
Plainville KS 67663-0086

**CONFIDENTIAL**

JAN 05 2010

**KCC**

ATTN: Charles Ramsay

**32-6s-23w Graham KS**

**Middleton #32-1**

Start Date: 2009.11.08 @ 19:07:54

End Date: 2009.11.09 @ 00:39:48

Job Ticket #: 36694                      DST #: 1

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Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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

H&C Oil Operating Inc

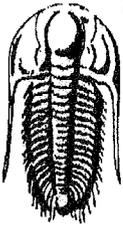
Middleton #32-1

32-6s-23w Graham KS

DST # 1

LKC "C"

2009.11.08



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

H&C Oil Operating Inc  
 PO Box 86  
 Plainville KS 67663-0086  
 ATTN: Charles Ramsay

**Middleton #32-1**  
**32-6s-23w Graham KS**  
 Job Ticket: 36694      **DST#: 1**  
 Test Start: 2009.11.08 @ 19:07:54

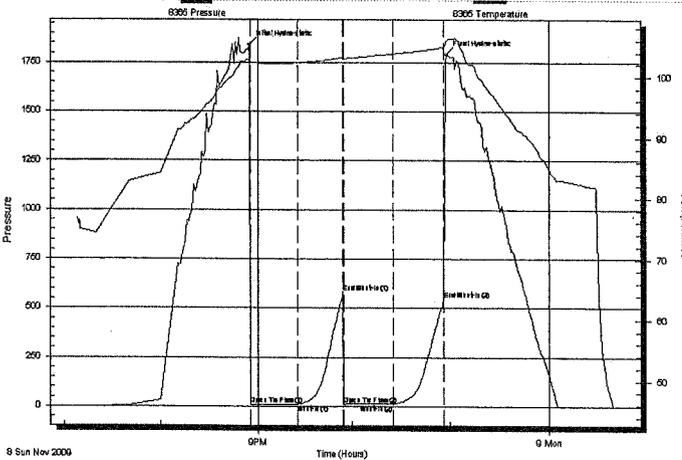
## GENERAL INFORMATION:

Formation: **LKC "C"**  
 Deviated: No      Whipstock:      ft (KB)  
 Time Tool Opened: 20:55:19  
 Time Test Ended: 00:39:48  
 Test Type: Conventional Bottom Hole  
 Tester: Ray Schwager  
 Unit No: 42  
 Interval: **3791.00 ft (KB) To 3815.00 ft (KB) (TVD)**  
 Total Depth: 3815.00 ft (KB) (TVD)  
 Hole Diameter: 7.85 inches  
 Hole Condition: Fair  
 Reference Elevations: 2514.00 ft (KB)  
 2509.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8365**      **Inside**  
 Press@RunDepth: 11.73 psig @ 3792.01 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2009.11.08      End Date: 2009.11.08      Last Calib.: 2009.11.08  
 Start Time: 19:07:54      End Time: 00:39:48      Time On Btm: 2009.11.08 @ 20:54:49  
 Time Off Btm: 2009.11.08 @ 22:57:49

**TEST COMMENT:** IFP-surface bl died in 10 min  
 FFP-no bl  
 Times 30-30-30-30

Pressure vs. Time



## PRESSURE SUMMARY

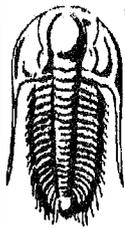
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1840.54	102.92	Initial Hydro-static
1	9.61	102.44	Open To Flow (1)
31	11.02	102.32	Shut-In(1)
60	582.27	103.19	End Shut-In(1)
60	11.70	102.95	Open To Flow(2)
91	11.73	103.83	Shut-In(2)
122	544.75	104.89	End Shut-In(2)
123	1793.34	106.06	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud	0.03

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

H&C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Charles Ramsay

**Middleton #32-1**  
**32-6s-23w Graham KS**  
Job Ticket: 36694      **DST#: 1**  
Test Start: 2009.11.08 @ 19:07:54

**Tool Information**

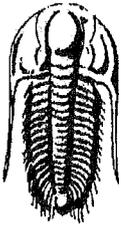
Drill Pipe:	Length: 3790.00 ft	Diameter: 3.80 inches	Volume: 53.16 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
		<b>Total Volume:</b>	<b>53.16 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3791.00 ft			Final 36000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.02 ft			
Tool Length:	45.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

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Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3771.00	
Shut In Tool	5.00			3776.00	
Hydraulic tool	5.00			3781.00	
Packer	5.00			3786.00	21.00      Bottom Of Top Packer
Packer	5.00			3791.00	
Stubb	1.00			3792.00	
Recorder	0.01	8365	Inside	3792.01	
Recorder	0.01	6625	Outside	3792.02	
Perforations	20.00			3812.02	
Bullnose	3.00			3815.02	24.02      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>45.02</b>				



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

H&C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Charles Ramsay

**Middleton #32-1**  
**32-6s-23w Graham KS**  
Job Ticket: 36694      **DST#: 1**  
Test Start: 2009.11.08 @ 19:07:54

**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: 56.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.92 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 800.00 ppm			
Filter Cake: 2.00 inches			

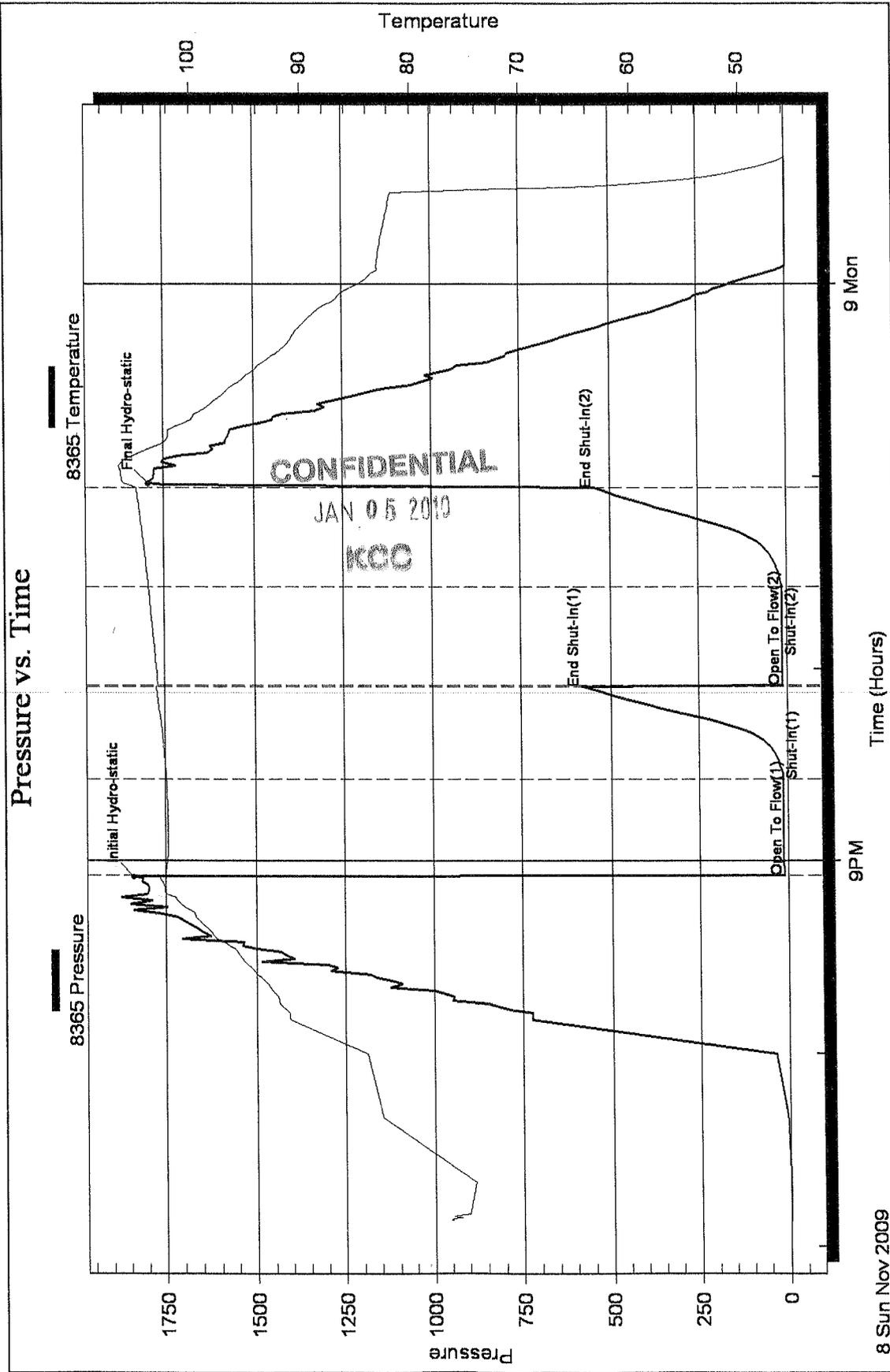
**Recovery Information**

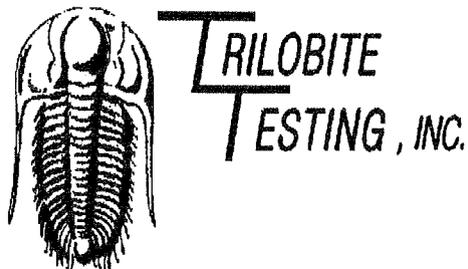
Recovery Table

Length ft	Description	Volume bbl
2.00	Mud	0.028

Total Length: 2.00 ft      Total Volume: 0.028 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: **H&C Oil Operating Inc**

PO Box 86  
Plainville KS 67663-0086

ATTN: Charles Ramsay

### 32-6s-23w Graham KS

#### Middleton #32-1

Start Date: 2009.11.09 @ 08:03:09

End Date: 2009.11.09 @ 13:03:33

Job Ticket #: 36695                      DST #: 2

Trilobite Testing, Inc  
PO Box 1733 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

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**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

H&C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Charles Ramsay

**Middleton #32-1**  
**32-6s-23w Graham KS**  
Job Ticket: 36695      **DST#: 2**  
Test Start: 2009.11.09 @ 08:03:09

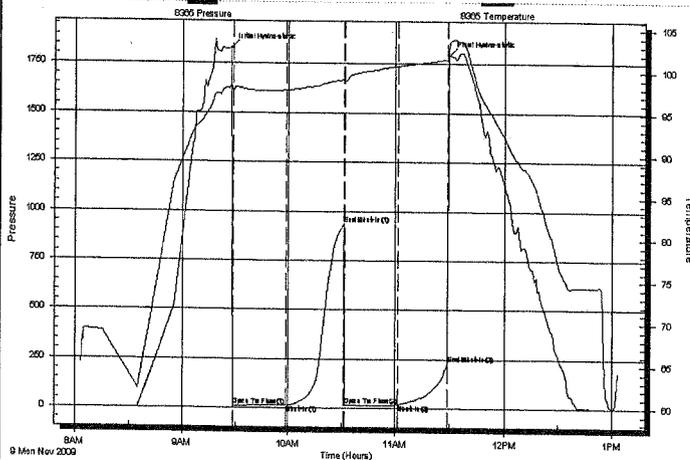
## GENERAL INFORMATION:

Formation: **LKC "D"**  
Deviated: **No** Whipstock:                      ft (KB)  
Time Tool Opened: 09:28:34  
Time Test Ended: 13:03:33  
Interval: **3811.00 ft (KB) To 3830.00 ft (KB) (TVD)**  
Total Depth: **3830.00 ft (KB) (TVD)**  
Hole Diameter: **7.85 inches** Hole Condition: Fair  
Test Type: Conventional Bottom Hole  
Tester: Ray Schwager  
Unit No: 42  
Reference Elevations: 2514.00 ft (KB)  
2509.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 8365**      **Inside**  
Press@RunDepth: 20.18 psig @ 3812.01 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2009.11.09      End Date: 2009.11.09      Last Calib.: 2009.11.09  
Start Time: 08:03:09      End Time: 13:03:33      Time On Btm: 2009.11.09 @ 09:27:34  
Time Off Btm: 2009.11.09 @ 11:30:04

TEST COMMENT: IFP-surface bl died in 10 min  
FFP-no bl  
Times 30-30-30-30

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1829.49	98.39	Initial Hydro-static
1	9.77	97.62	Open To Flow (1)
31	13.30	97.81	Shut-In(1)
64	932.83	99.11	End Shut-In(1)
64	15.16	98.85	Open To Flow (2)
94	20.18	100.71	Shut-In(2)
122	230.05	101.54	End Shut-In(2)
123	1795.05	103.40	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1.00	CO	0.01
15.00	HOCM 20%O80%M	0.21

## Gas Rates

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



**TRILOBITE**  
TESTING, INC

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H&C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Charles Ramsay

**Middleton #32-1**  
**32-6s-23w Graham KS**  
Job Ticket: 36695      **DST#: 2**  
Test Start: 2009.11.09 @ 08:03:09

**Tool Information**

Drill Pipe:	Length: 3821.00 ft	Diameter: 3.80 inches	Volume: 53.60 bbl	Tool Weight: 2200.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 45000.00 lb
		<b>Total Volume:</b>	<b>53.60 bbl</b>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3811.00 ft			Final 36000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	19.02 ft			
Tool Length:	40.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3791.00	
Shut In Tool	5.00			3796.00	
Hydraulic tool	5.00			3801.00	
Packer	5.00			3806.00	21.00      Bottom Of Top Packer
Packer	5.00			3811.00	
Stubb	1.00			3812.00	
Recorder	0.01	8365	Inside	3812.01	
Recorder	0.01	6625	Outside	3812.02	
Perforations	15.00			3827.02	
Bullnose	3.00			3830.02	19.02      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>40.02</b>				



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**TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

H&C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Charles Ramsay

**Middleton #32-1**  
**32-6s-23w Graham KS**  
Job Ticket: 36695      **DST#: 2**  
Test Start: 2009.11.09 @ 08:03:09

**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: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.91 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 800.00 ppm			
Filter Cake: 2.00 inches			

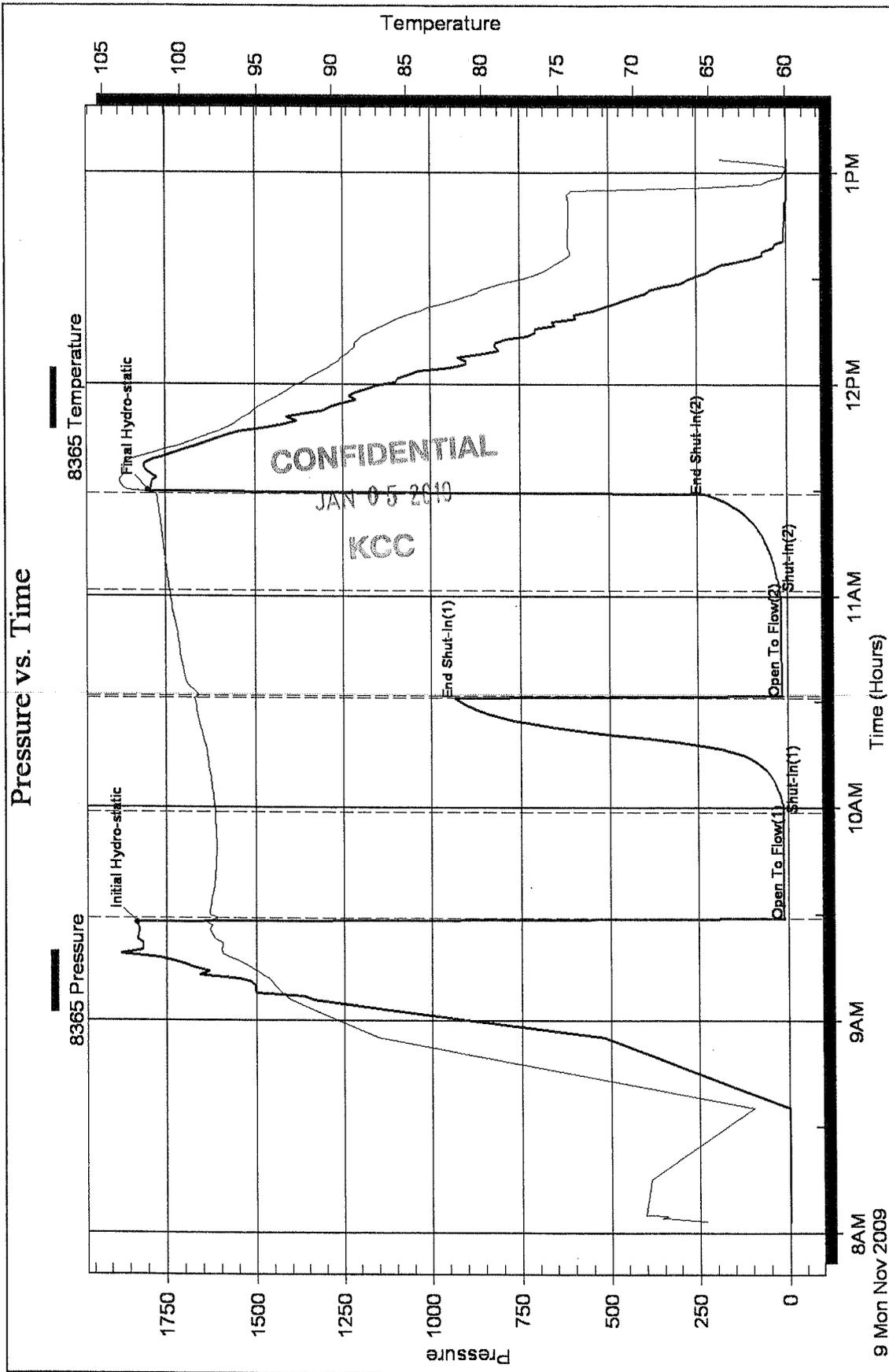
**Recovery Information**

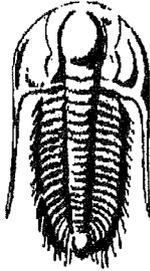
Recovery Table

Length ft	Description	Volume bbl
1.00	CO	0.014
15.00	HOCM 20% O80%M	0.210

Total Length: 16.00 ft      Total Volume: 0.224 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: **H&C Oil Operating Inc**

PO Box 86  
Plainville KS 67663-0086

ATTN: Charles Ramsay

**32-6s-23w Graham KS**

**Middleton #32-1**

Start Date: 2009.11.10 @ 01:13:12

End Date: 2009.11.10 @ 08:55:06

Job Ticket #: 36696                      DST #: 3

Trilobite Testing, Inc  
PO Box 1733 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

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H&C Oil Operating Inc

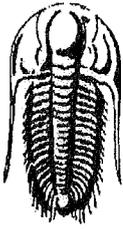
Middleton #32-1

32-6s-23w Graham KS

DST # 3

LKC "J"

2009.11.10



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

H&C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Charles Ramsay

**Middleton #32-1**  
**32-6s-23w Graham KS**  
Job Ticket: 36696      **DST#: 3**  
Test Start: 2009.11.10 @ 01:13:12

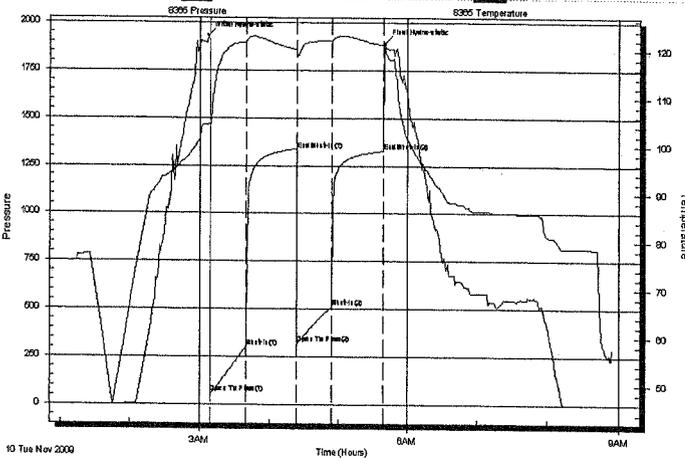
## GENERAL INFORMATION:

Formation: **LKC "J"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 03:09:07  
Time Test Ended: 08:55:06  
Interval: **3906.00 ft (KB) To 3930.00 ft (KB) (TVD)**  
Total Depth: 3930.00 ft (KB) (TVD)  
Hole Diameter: 7.85 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole  
Tester: Ray Schwager  
Unit No: 42  
Reference Elevations: 2514.00 ft (KB)  
2509.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 8365**      **Inside**  
Press@RunDepth: 508.85 psig @ 3907.01 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2009.11.10      End Date: 2009.11.10      Last Calib.: 2009.11.10  
Start Time: 01:13:12      End Time: 08:55:06      Time On Btm: 2009.11.10 @ 03:07:07  
Time Off Btm: 2009.11.10 @ 05:40:06

**TEST COMMENT:** IFP-strg bl in 1 min  
FFP-strg bl thru-out  
Times 30-45-30-45  
ISIP-strg bl bk in 19min, FSIP-1/2"bl bk

Pressure vs. Time



## PRESSURE SUMMARY

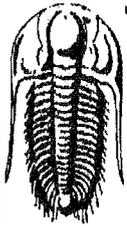
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1929.59	104.45	Initial Hydro-static
2	60.78	103.79	Open To Flow (1)
33	302.04	121.57	Shut-In (1)
77	1333.35	120.09	End Shut-In (1)
77	319.44	119.30	Open To Flow (2)
107	508.85	121.85	Shut-In (2)
152	1326.35	120.99	End Shut-In (2)
153	1893.26	120.71	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	1675'GIP	0.00
1126.00	CO	15.79
124.00	HO&GCM 10%G40%O50%M	1.74

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H&C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Charles Ramsay

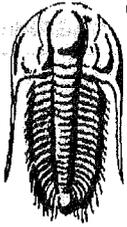
**Middleton #32-1**  
**32-6s-23w Graham KS**  
Job Ticket: 36696 **DST#: 3**  
Test Start: 2009.11.10 @ 01:13:12

**Tool Information**

Drill Pipe:	Length: 3913.00 ft	Diameter: 3.80 inches	Volume: 54.89 bbl	Tool Weight: 2200.00 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: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 54.89 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3906.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.02 ft			
Tool Length:	45.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

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Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3886.00	
Shut In Tool	5.00			3891.00	
Hydraulic tool	5.00			3896.00	
Packer	5.00			3901.00	21.00 Bottom Of Top Packer
Packer	5.00			3906.00	
Stubb	1.00			3907.00	
Recorder	0.01	8365	Inside	3907.01	
Recorder	0.01	6625	Outside	3907.02	
Perforations	20.00			3927.02	
Bullnose	3.00			3930.02	24.02 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>45.02</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

H&C Oil Operating Inc  
PO Box 86  
Plainville KS 67663-0086  
ATTN: Charles Ramsay

**Middleton #32-1**  
**32-6s-23w Graham KS**  
Job Ticket: 36696      DST#: 3  
Test Start: 2009.11.10 @ 01:13:12

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 35 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.76 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1000.00 ppm		
Filter Cake: 2.00 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	1675'GIP	0.000
1126.00	CO	15.795
124.00	HO&GCM 10%G40%O50%M	1.739

Total Length: 1250.00 ft      Total Volume: 17.534 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

Serial #: 8365

Inside

H&C Oil Operating Inc

32-6s-23w Graham KS

DST Test Number: 3

### Pressure vs. Time

