

**CONFIDENTIAL**

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SEP 01 2010

Form ACO-1  
June 2009

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

KCC WICHITA

Form Must Be Typed  
Form must be Signed  
All blanks must be Filled

**WELL COMPLETION FORM**  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

8/31/12

OPERATOR: License # 9855  
Name: Grand Mesa Operating Company  
Address 1: 1700 N. Waterfront Pkwy, Bldg 600  
Address 2: \_\_\_\_\_  
City: Wichita State: KS Zip: 67206 + 5 5 1 4  
Contact Person: Ronald N. Sinclair  
Phone: (316) 265-3000  
CONTRACTOR: License # 30606  
Name: Murfin Drilling Company, Inc.  
Wellsite Geologist: Macklin Armstrong  
Purchaser: None

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Designate Type of Completion:

- New Well     Re-Entry     Workover
- Oil     WSW     SWD     SIOW
- Gas     D&A     ENHR     SIGW
- OG     GSW     Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic     Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_  
Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening     Re-perf.     Conv. to ENHR     Conv. to SWD
- Conv. to GSW
- Plug Back: \_\_\_\_\_ Plug Back Total Depth \_\_\_\_\_
- Commingled    Permit #: \_\_\_\_\_
- Dual Completion    Permit #: \_\_\_\_\_
- SWD    Permit #: \_\_\_\_\_
- ENHR    Permit #: \_\_\_\_\_
- GSW    Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
08/12/2010	08/20/2010	08/21/2010

API No. 15 - 063-21859-00-00  
Spot Description: 2,305' FSL & 760' FEL  
SE\_NW\_NE\_SE Sec. 31 Twp. 13 S. R. 31  East  West  
2,305 Feet from  North /  South Line of Section  
760 Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:  
 NE     NW     SE     SW  
County: Gove  
Lease Name: Phelps Well #: 6-31  
Field Name: Maurice Northeast  
Producing Formation: None

Elevation: Ground: 2912' Kelly Bushing: 2917'  
Total Depth: 4645' Plug Back Total Depth: N/A  
Amount of Surface Pipe Set and Cemented at: 5 jts. @ 223 Feet  
Multiple Stage Cementing Collar Used?  Yes  No  
If yes, show depth set: \_\_\_\_\_ Feet  
If Alternate II completion, cement circulated from: \_\_\_\_\_  
feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

**Drilling Fluid Management Plan**

(Data must be collected from the Reserve Pit)

Chloride content: 7,200 ppm Fluid volume: 830 bbls  
Dewatering method used: Evaporation & backfill, reclaim location to it's natural state.

Location of fluid disposal if hauled offsite: \_\_\_\_\_

Operator Name: \_\_\_\_\_  
Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_  
Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West  
County: \_\_\_\_\_ Permit #: \_\_\_\_\_

**INSTRUCTIONS:** An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

**AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature: Ronald N. Sinclair

Title: President Date: 8/31/2010

**KCC Office Use ONLY**

- Letter of Confidentiality Received  
Date: 8/31/10 - 8/31/12
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: NS Date: 9-9-10

PA

SEP 01 2010

Side Two

KCC WICHITA

Operator Name: Grand Mesa Operating Company Lease Name: Phelps Well #: 6-31  
 Sec. 31 Twp. 13 S. R. 31  East  West County: Gove

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(If no, Submit Copy)</i>  List All E. Logs Run: <b>Comp. Neutron/Density PE Log; DI Log &amp; Micro Log</b>	<input checked="" type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum  <p style="text-align: center;"><b>“SEE ATTACHED SHEET FOR LOG TOPS”</b></p> <p style="text-align: center;"><b>KCC</b> <b>AUG 31 2010</b></p> <p style="text-align: right; font-weight: bold; font-size: 1.2em;">CONFIDENTIAL</p>
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CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12 1/4"	8 5/8"	23#	223	Common	165	3% CC, 2% Gel

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone <input checked="" type="checkbox"/> Plug well	4645'	60/40 Poz Mix	220	4% Gel, 1/4# sx Flocele

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____		Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date of First, Resumed Production, SWD or ENHR. _____		Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____	
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls. Gas-Oil Ratio Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other (Specify) _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Phelps 6-31  
Sec. 31-13S-31W  
Gove County, Kansas  
Grand Mesa Operating Company  
Spud 08/12/10  
Reach TD 08/20/10  
Completed 08/21/10

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LOG TOPS -- CONFIDENTIAL (2 YEAR)

Name	Top	Datum
Bs/Stone Corral	2418	+ 499
Heebner	3908	- 991
Lansing	3950	-1033
Muncie Creek	4101	-1184
Hushpuckney	4230	-1313
Upper Ft. Scott	4394	-1477
Little Osage Shale	4421	-1504
Krebs	4480	-1563
Johnson Zone	4518	-1601
Morrow	4542	-1625
Mississippian	4570	-1653
LTD	4644	

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# ALLIED CEMENTING CO., LLC. 035431

REMIT TO P.O. BOX 31  
RUSSELL, KANSAS 67665

AUG 31 2010  
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SERVICE POINT: Oakley Kc

DATE <u>8/12/10</u>	SEC. <u>13</u>	TWP. <u>13</u>	RANGE <u>31</u>	CALLED OUT	ON LOCATION	JOB START <u>6:00p</u>	JOB FINISH <u>6:30p</u>
LEASE <u>Phelps</u>	WELL # <u>6-31</u>	LOCATION <u>Oakley 11 S 3E 5 1/2 S</u>			COUNTY <u>Gove</u>	STATE <u>Ks</u>	
OLD OR NEW (Circle one)				<u>WINTO</u>			

CONTRACTOR Murfin 27

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 224'

CASING SIZE 8 5/8 DEPTH 223'

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 15'

PERFS.

DISPLACEMENT 13.24 BBL

OWNER Same

CEMENT AMOUNT ORDERED 165 Com

3070LL 290gel

COMMON	<u>165</u>	@	<u>15.45</u>	<u>2548.25</u>
POZMIX		@		
GEL	<u>3</u>	@	<u>20.00</u>	<u>60.00</u>
CHLORIDE	<u>6</u>	@	<u>58.00</u>	<u>348.00</u>
ASC		@		

EQUIPMENT

PUMP TRUCK CEMENTER Alan

# 422 HELPER Wayne

BULK TRUCK DRIVER Terry

# 347 DRIVER

BULK TRUCK DRIVER

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KCC WICHITA

HANDLING	<u>179 SKI</u>	@	<u>2.40</u>	<u>429.60</u>
MILEAGE	<u>101 SK/mile</u>			<u>352.00</u>
TOTAL				<u>3248.45</u>

REMARKS:

Cement did circulate

Thank you Alan Wayne Terry

CHARGE TO: Grand Mesa Operating

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

DEPTH OF JOB			
PUMP TRUCK CHARGE			<u>1018.00</u>
EXTRA FOOTAGE		@	
MILEAGE	<u>20</u>	@	<u>7.00</u> <u>140.00</u>
MANIFOLD		@	
TOTAL <u>1182.00</u>			

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	
	@	
TOTAL _____		

To Allied Cementing Co., LLC.  
You are hereby requested to rent cementing equipment and furnish cement and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

SALES TAX (If Any) \_\_\_\_\_

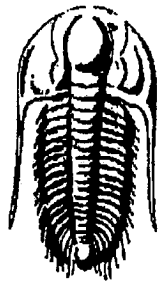
TOTAL CHARGES \_\_\_\_\_

DISCOUNT \_\_\_\_\_ IF PAID IN 30 DAYS

PRINTED NAME Anthony Martin

SIGNATURE Anthony Martin





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Comp.**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206

ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

**Phelps #6-31**

Start Date: 2010.08.15 @ 22:46:01

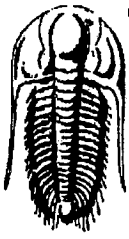
End Date: 2010.08.16 @ 06:55:45

Job Ticket #: 039708      DST #: 1

**KCC  
AUG 31 2010  
CONFIDENTIAL**

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

Grand Mesa Operating Comp.  
1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**Phelps #6-31**  
**31-13S 31W Logan KS**  
Job Ticket: 039708      DST#: 1  
Test Start: 2010.08.15 @ 22:46:01

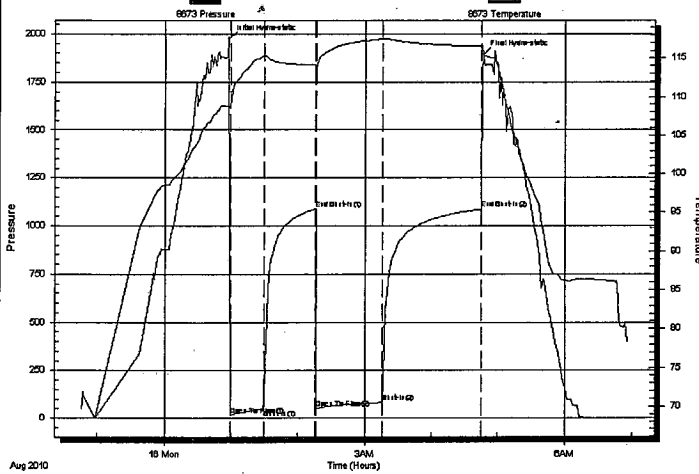
## GENERAL INFORMATION:

Formation: **Lansing "D"**  
Deviated: No      Whipstock:      ft (KB)  
Time Tool Opened: 00:58:45  
Time Test Ended: 06:55:45  
Test Type: Conventional Bottom Hole  
Tester: Mike Roberts  
Unit No: 28  
Interval: **3985.00 ft (KB) To 4005.00 ft (KB) (TVD)**  
Reference Elevations: 2917.00 ft (KB)  
Total Depth: 4005.00 ft (KB) (TVD)      2912.00 ft (CF)  
Hole Diameter: 7.88 inches      Hole Condition: Poor      KB to GR/CF: 5.00 ft

**Serial #: 8673      Inside**  
Press@RunDepth: 80.93 psig @ 3986.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2010.08.15      End Date: 2010.08.16      Last Calib.: 2010.08.16  
Start Time: 22:46:01      End Time: 06:55:45      Time On Btm: 2010.08.16 @ 00:57:45  
Time Off Btm: 2010.08.16 @ 04:46:45

**TEST COMMENT:** IF: Built to 5" blow  
IS: No return blow  
FF: Built to 5" blow  
FS: No return blow

Pressure vs. Time



## PRESSURE SUMMARY

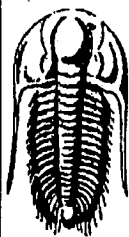
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1975.17	108.88	Initial Hydro-static
1	17.88	108.62	Open To Flow (1)
32	48.73	115.26	Shut-In(1)
78	1086.89	114.09	End Shut-In(1)
79	50.75	113.64	Open To Flow (2)
138	80.93	117.42	Shut-In(2)
228	1085.67	116.54	End Shut-In(2)
229	1893.48	115.40	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
121.00	nw 20% m 80% w	0.60
15.00	ocmw 10% o 40% m 50% w	0.21
15.00	free oil 100%	0.21

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

Job Ticket: 039708

**DST#: 1**

Test Start: 2010.08.15 @ 22:46:01

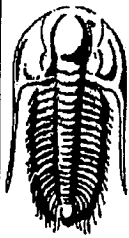
### Tool Information

Drill Pipe:	Length: 3869.00 ft	Diameter: 3.80 inches	Volume: 54.27 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: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 54.87 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	35.00 ft			String Weight: Initial 43000.00 lb
Depth to Top Packer:	3985.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	20.00 ft			
Tool Length:	50.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3956.00	
Shut In Tool	5.00			3961.00	
Sampler	3.00			3964.00	
Hydraulic tool	5.00			3969.00	
Jars	5.00			3974.00	
Safety Joint	2.00			3976.00	
Packer	5.00		Fluid	3981.00	30.00 Bottom Of Top Packer
Packer	4.00			3985.00	
Stubb	1.00			3986.00	
Recorder	0.00	8673	Inside	3986.00	
Recorder	0.00	8654	Inside	3986.00	
Perforations	16.00			4002.00	
Bullnose	3.00			4005.00	20.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>50.00</b>				





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

Job Ticket: 039708

**DST#: 1**

Test Start: 2010.08.15 @ 22:46:01

## Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 56.00 sec/qt

Water Loss: 7.11 in<sup>3</sup>

Resistivity: 0.00 ohm.m

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API: 0 deg API

Water Salinity: 12000 ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
121.00	mw 20% m 80% w	0.595
15.00	ocmw 10% o 40% m 50% w	0.210
15.00	free oil 100%	0.210

Total Length: 151.00 ft      Total Volume: 1.015 bbl

Num Fluid Samples: 0

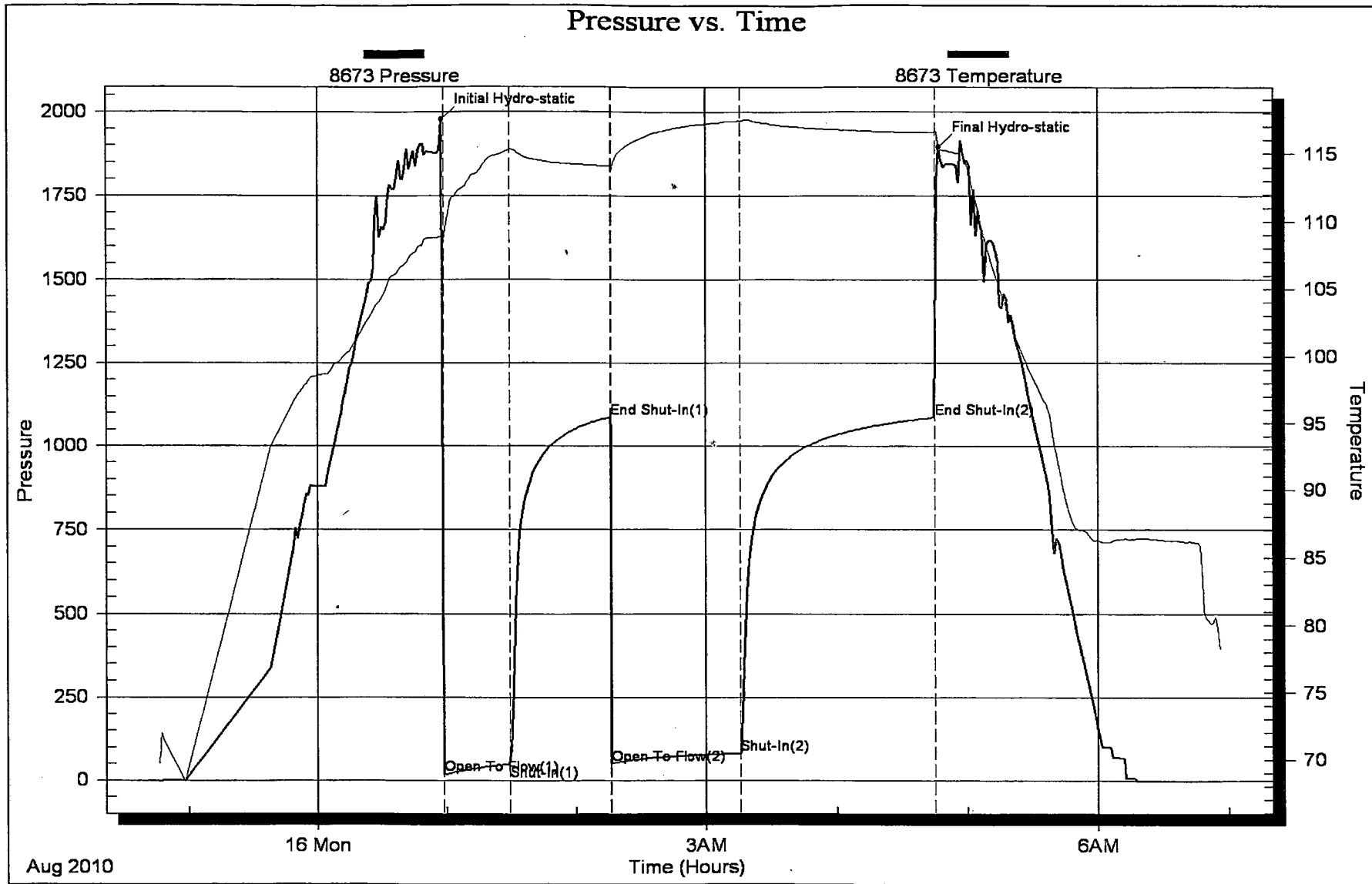
Num Gas Bombs: 0

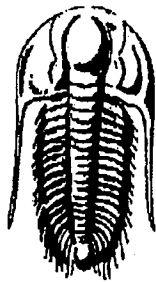
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .561 @ 65.8=12,000 ppm, sampler 2000ML total





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Comp.**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206

ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

**Phelps #6-31**

Start Date: 2010.08.16 @ 16:34:01

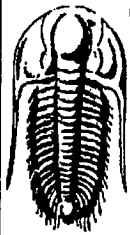
End Date: 2010.08.16 @ 22:03:00

Job Ticket #: 039709          DST #: 2

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

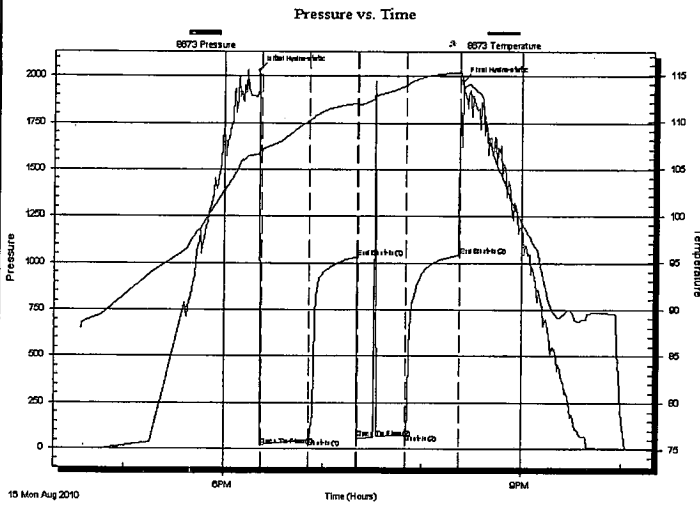
Job Ticket: 039709      DST#: 2  
Test Start: 2010.08.16 @ 16:34:01

## GENERAL INFORMATION:

Formation: **Lansing**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 18:22:15  
 Time Test Ended: 22:03:00  
 Interval: **4026.00 ft (KB) To 4047.00 ft (KB) (TVD)**  
 Total Depth: **4047.00 ft (KB) (TVD)**  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole  
 Tester: Mike Roberts  
 Unit No: 28  
 Reference Elevations: 2917.00 ft (KB)  
 2912.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8673**      **Inside**  
 Press@RunDepth: 77.72 psig @ 4028.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2010.08.16      End Date: 2010.08.16      Last Calib.: 2010.08.16  
 Start Time: 16:34:01      End Time: 22:03:00      Time On Btm: 2010.08.16 @ 18:20:45  
 Time Off Btm: 2010.08.16 @ 20:24:15

**TEST COMMENT:** IF:Surface blow died in 30 seconds  
 IS:No return blow  
 FF:No blow ---flushed tool---no blow  
 FS:No return blow



## PRESSURE SUMMARY

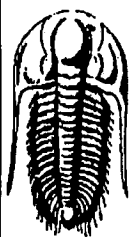
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2031.47	106.59	Initial Hydro-static
2	19.17	106.58	Open To Flow (1)
31	52.12	110.12	Shut-In(1)
60	1032.71	111.94	End Shut-In(1)
60	58.06	111.59	Open To Flow (2)
90	77.72	113.86	Shut-In(2)
122	1042.29	115.23	End Shut-In(2)
124	1976.43	113.35	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
139.00	MW w / Oil Spots 5%W 95%M	0.85
2.00	Free Oil 100%	0.03

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

Job Ticket: 039709      **DST#: 2**  
Test Start: 2010.08.16 @ 16:34:01

**Tool Information**

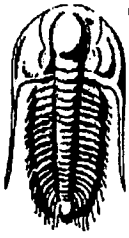
Drill Pipe:	Length: 3899.00 ft	Diameter: 3.80 inches	Volume: 54.69 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 55.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	4026.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	21.00 ft			
Tool Length:	51.00 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			3997.00	
Shut In Tool	5.00			4002.00	
Sampler	3.00			4005.00	
Hydraulic tool	5.00			4010.00	
Jars	5.00			4015.00	
Safety Joint	2.00			4017.00	
Packer	5.00		Fluid	4022.00	30.00 Bottom Of Top Packer
Packer	4.00			4026.00	
Stubb	1.00			4027.00	
Perforations	1.00			4028.00	
Recorder	0.00	8673	Inside	4028.00	
Recorder	0.00	8654	Inside	4028.00	
Perforations	16.00			4044.00	
Bullnose	3.00			4047.00	21.00 Bottom Packers & Anchor

**Total Tool Length: 51.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Comp.  
1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**Phelps #6-31**  
**31-13S 31W Logan KS**  
Job Ticket: 039709      **DST#: 2**  
Test Start: 2010.08.16 @ 16:34:01

## Mud and Cushion Information

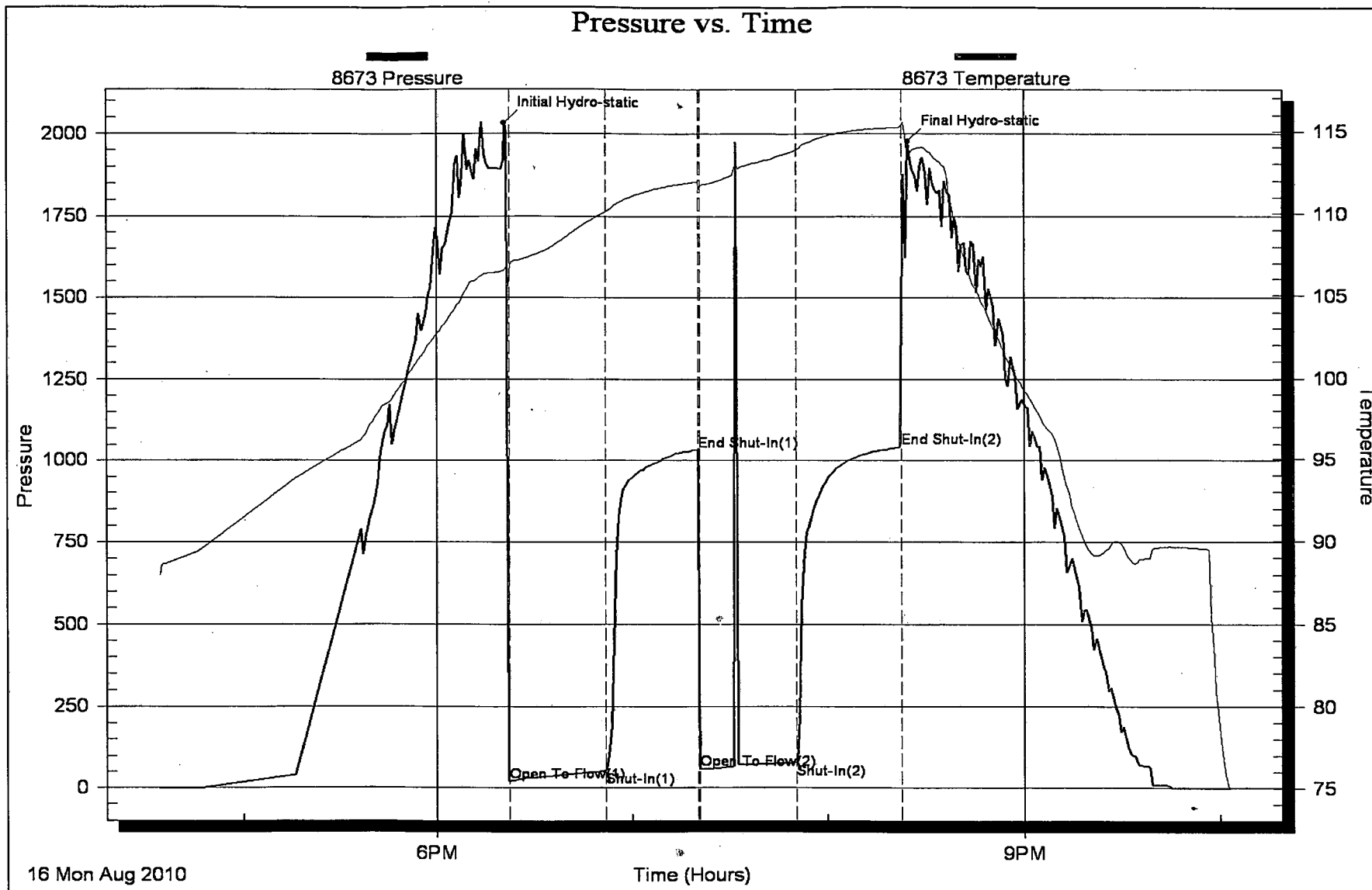
Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl		
Water Loss: 8.72 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2500.00 ppm			
Filter Cake: 1.00 inches			

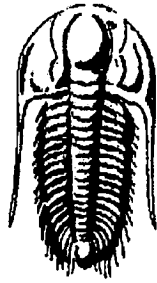
## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
139.00	MW w / Oil Spots 5%W 95%M	0.848
2.00	Free Oil 100%	0.028

Total Length: 141.00 ft      Total Volume: 0.876 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:





**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Comp.**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206

ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

**Phelps #6-31**

Start Date: 2010.08.17 @ 08:23:01

End Date: 2010.08.17 @ 15:47:45

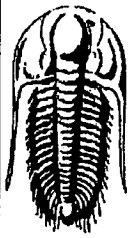
Job Ticket #: 039710      DST #: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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





**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

Job Ticket: 039710

DST#: 3

Test Start: 2010.08.17 @ 08:23:01

### GENERAL INFORMATION:

Formation: **Lansing "H"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:09:45

Time Test Ended: 15:47:45

Test Type: Conventional Bottom Hole

Tester: Mike Roberts

Unit No: 28

Interval: **4101.00 ft (KB) To 4129.00 ft (KB) (TVD)**

Reference Elevations: 2917.00 ft (KB)

Total Depth: 4129.00 ft (KB) (TVD)

2912.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

**Serial #: 8673**

Inside

Press@RunDepth: 90.72 psig @ 4102.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2010.08.17

End Date:

2010.08.17

Last Calib.: 2010.08.17

Start Time: 08:23:01

End Time:

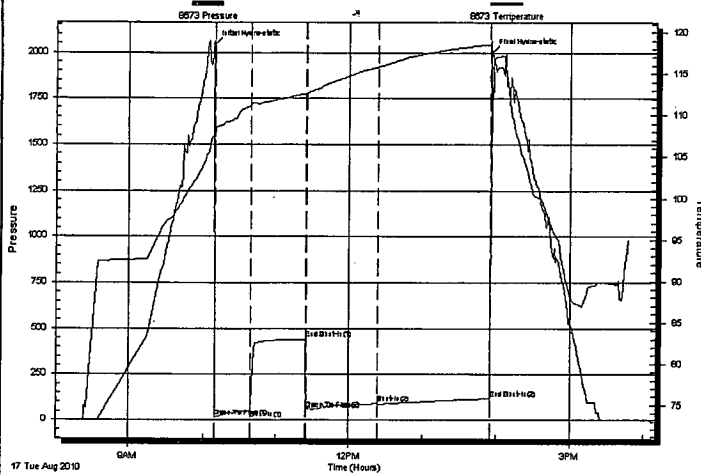
15:47:45

Time On Btm: 2010.08.17 @ 10:09:15

Time Off Btm: 2010.08.17 @ 13:56:15

**TEST COMMENT:** IF: Built to 2" blow  
IS: No return blow  
FF: Built to 2" blow  
FS: 1/8" return blow

Pressure vs. Time



### PRESSURE SUMMARY

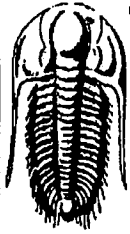
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2040.96	107.83	Initial Hydro-static
1	18.00	107.41	Open To Flow (1)
30	52.46	111.19	Shut-In(1)
76	442.71	112.62	End Shut-In(1)
76	61.29	112.54	Open To Flow (2)
134	90.72	115.81	Shut-In(2)
226	118.42	118.53	End Shut-In(2)
227	1994.83	118.28	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
121.00	MCSW 5% M 95% SW	0.60
62.00	M 100% M	0.87

### Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**31-13S 31W Logan KS**  
Job Ticket: 039710      **DST#: 3**  
Test Start: 2010.08.17 @ 08:23:01

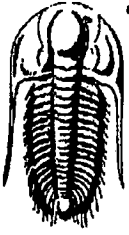
**Tool Information**

Drill Pipe:	Length: 3959.00 ft	Diameter: 3.80 inches	Volume: 55.53 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: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 56.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	4101.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 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
Change Over Sub	1.00			4072.00	
Shut In Tool	5.00			4077.00	
Sampler	3.00			4080.00	
Hydraulic tool	5.00			4085.00	
Jars	5.00			4090.00	
Safety Joint	2.00			4092.00	
Packer	5.00		Fluid	4097.00	30.00      Bottom Of Top Packer
Packer	4.00			4101.00	
Stubb	1.00			4102.00	
Recorder	0.00	8673	Inside	4102.00	
Recorder	0.00	8654	Inside	4102.00	
Perforations	24.00			4126.00	
Bullnose	3.00			4129.00	28.00      Bottom Packers & Anchor

**Total Tool Length: 58.00**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

FLUID SUMMARY

Grand Mesa Operating Comp.

Phelps #6-31

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

31-13S 31W Logan KS  
Job Ticket: 039710      DST#: 3  
Test Start: 2010.08.17 @ 08:23:01

### Mud and Cushion Information

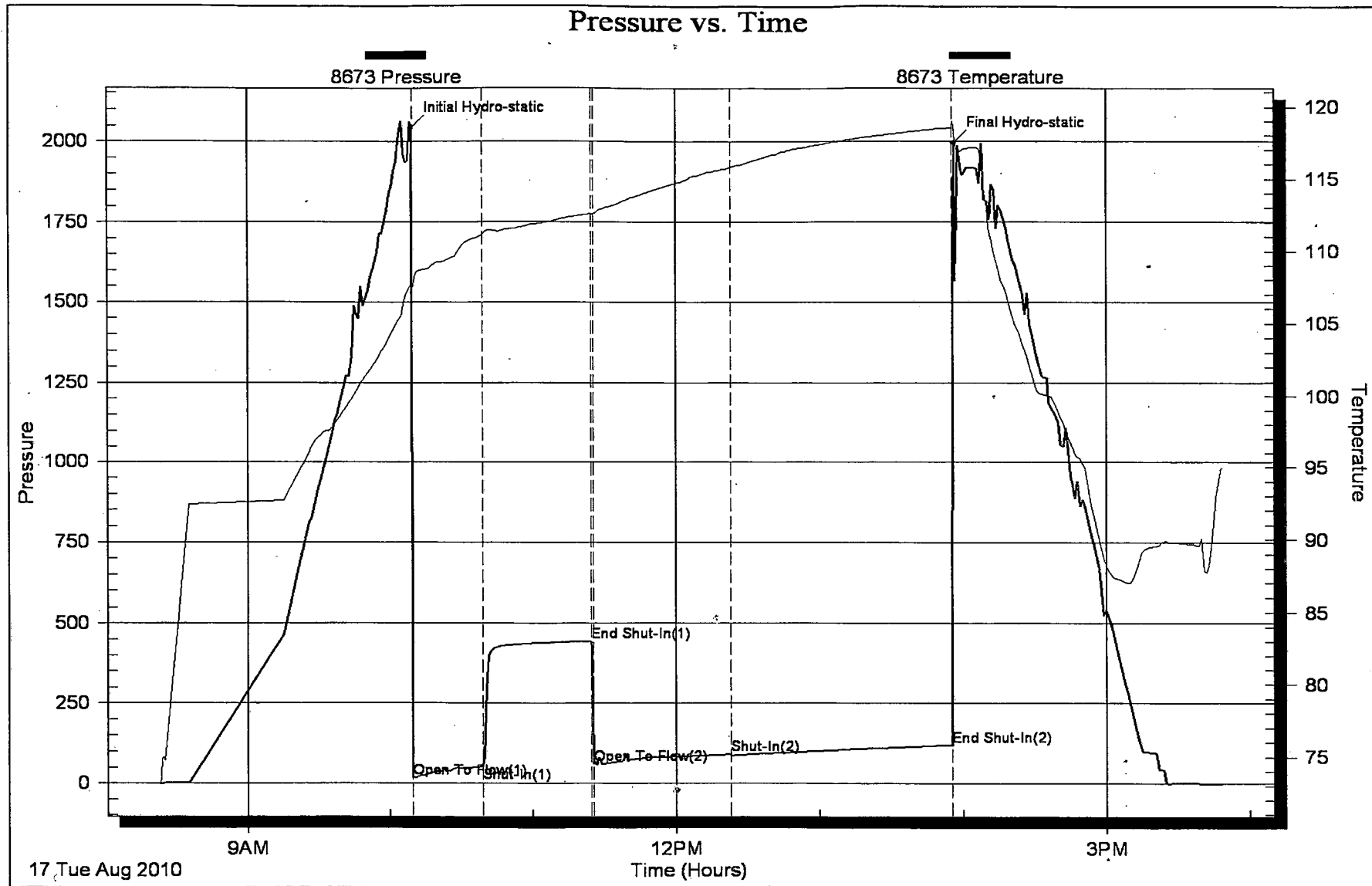
Mud Type:	Gel Chem	Cushion Type:		Oil API:	0 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	15000 ppm
Viscosity:	50.00 sec/qt	Cushion Volume:	bbbl		
Water Loss:	8.72 in <sup>3</sup>	Gas Cushion Type:			
Resistivity:	0.00 ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2500.00 ppm				
Filter Cake:	1.00 inches				

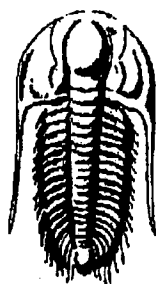
### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
121.00	MCSW 5% M 95%SW	0.595
62.00	M 100%M	0.870

Total Length: 183.00 ft      Total Volume: 1.465 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: RW= 148 @ 87.9 degrees=15,000 ppm





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Comp.**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206

ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

**Phelps #6-31**

Start Date: 2010.08.18 @ 01:29:01

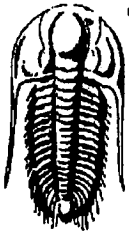
End Date: 2010.08.18 @ 07:57:15

Job Ticket #: 039711          DST #: 4

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

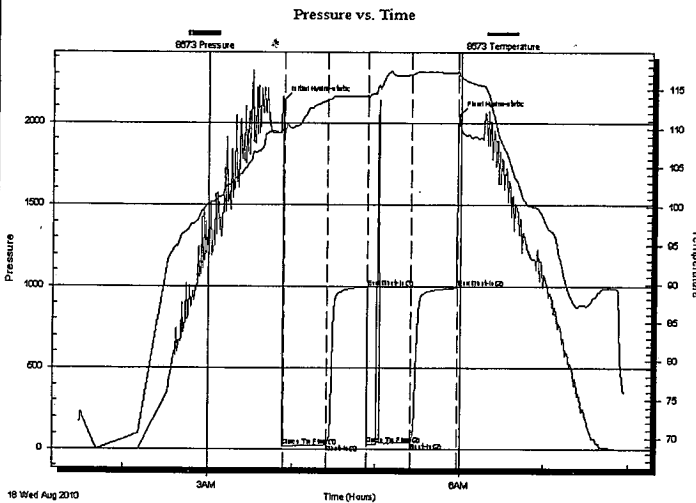
Job Ticket: 039711      **DST#: 4**  
Test Start: 2010.08.18 @ 01:29:01

## GENERAL INFORMATION:

Formation: **Lansing "J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 03:53:45  
 Time Test Ended: 07:57:15  
 Interval: **4170.00 ft (KB) To 4194.00 ft (KB) (TVD)**  
 Total Depth: 4005.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole  
 Tester: Mike Roberts  
 Unit No: 28  
 Reference Elevations: 2917.00 ft (KB)  
 2912.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8673**      **Inside**  
 Press@RunDepth: 44.55 psig @ 4171.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2010.08.18      End Date: 2010.08.18      Last Calib.: 2010.08.18  
 Start Time: 01:29:01      End Time: 07:57:15      Time On Btm: 2010.08.18 @ 03:53:30  
 Time Off Btm: 2010.08.18 @ 05:59:00

**TEST COMMENT:** IF: Built to weak surface blow  
 IS: No return blow  
 FF: No blow --- flushed tool --- no blow  
 FS: No return blow



## PRESSURE SUMMARY

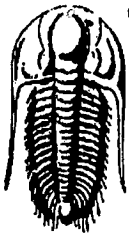
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2135.83	109.93	Initial Hydro-static
1	20.91	108.56	Open To Flow (1)
32	29.24	113.65	Shut-In(1)
60	997.56	114.24	End Shut-In(1)
61	33.11	113.86	Open To Flow (2)
91	44.55	116.99	Shut-In(2)
125	991.47	117.19	End Shut-In(2)
126	2046.37	117.03	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
62.00	Mud	0.30

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

Job Ticket: 039711

DST#: 4

Test Start: 2010.08.18 @ 01:29:01

### Tool Information

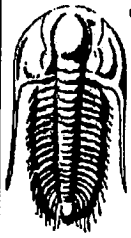
Drill Pipe:	Length: 4052.00 ft	Diameter: 3.80 inches	Volume: 56.84 bbl	Tool Weight: 1500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 57.44 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	4170.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	54.00 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			4141.00	
Shut In Tool	5.00			4146.00	
Sampler	3.00			4149.00	
Hydraulic tool	5.00			4154.00	
Jars	5.00			4159.00	
Safety Joint	2.00			4161.00	
Packer	5.00		Fluid	4166.00	30.00 Bottom Of Top Packer
Packer	4.00			4170.00	
Stubb	1.00			4171.00	
Recorder	0.00	8673	Inside	4171.00	
Recorder	0.00	8654	Inside	4171.00	
Perforations	20.00			4191.00	
Bullnose	3.00			4194.00	24.00 Bottom Packers & Anchor

**Total Tool Length: 54.00**



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

FLUID SUMMARY

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

Job Ticket: 039711

**DST#: 4**

Test Start: 2010.08.18 @ 01:29:01

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 50.00 sec/qt

Water Loss: 9.54 in<sup>3</sup>

Resistivity: 0.00 ohm.m

Salinity: 3400.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

0 deg API

Water Salinity: 0 ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	Mud	0.305

Total Length: 62.00 ft      Total Volume: 0.305 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

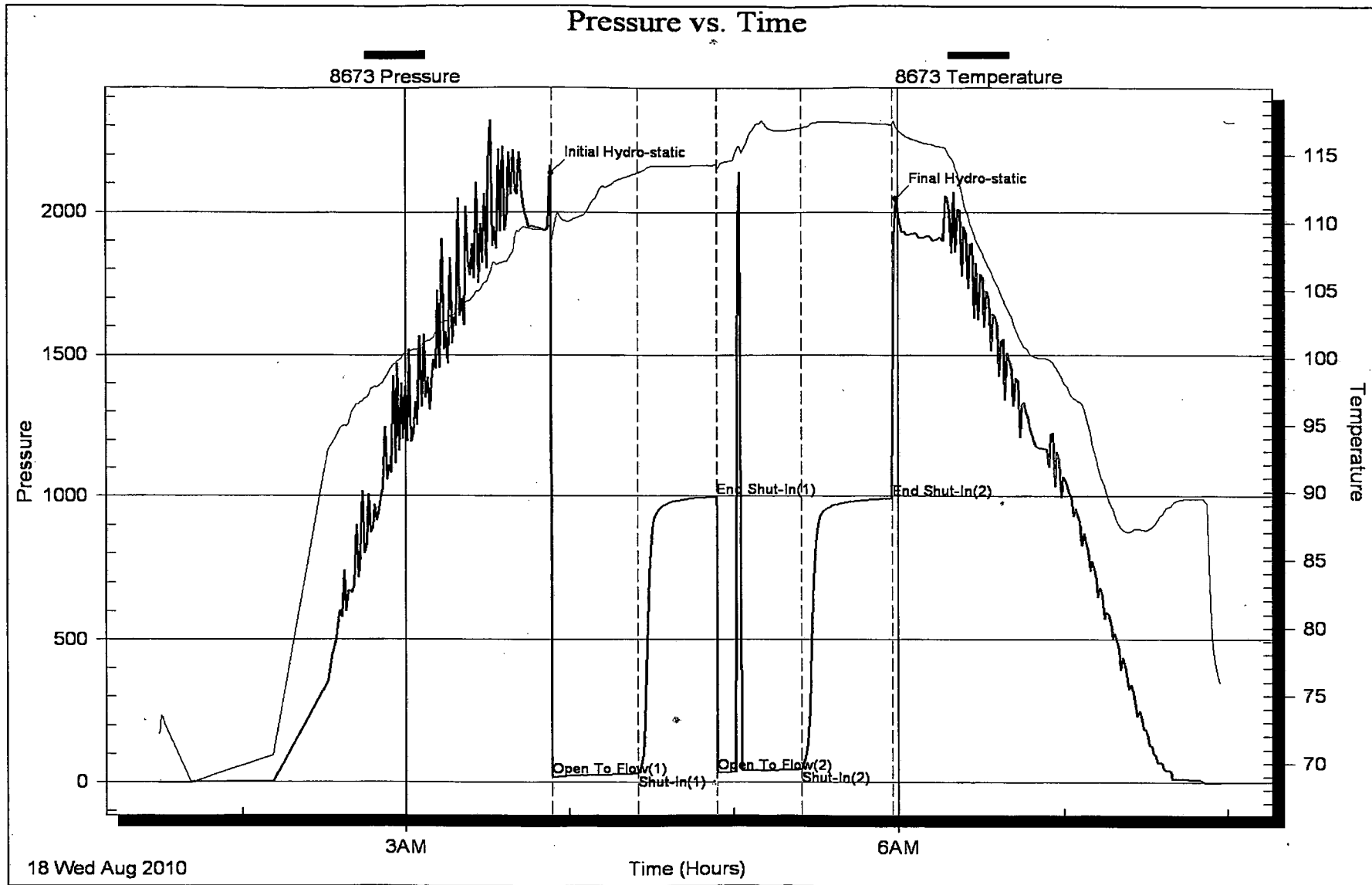
Serial #:

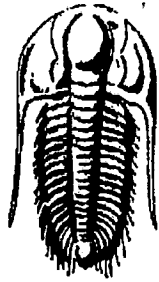
Laboratory Name:

Laboratory Location:

Recovery Comments:







**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Grand Mesa Operating Comp.**

1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206

ATTN: Macklin Armstrong

**31-13S 31W Logan KS**

**Phelps #6-31**

Start Date: 2010.08.19 @ 13:53:00

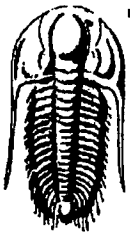
End Date: 2010.08.19 @ 20:46:00

Job Ticket #: 039712          DST #: 5

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Grand Mesa Operating Comp.  
 1700 N Waterfront Pkwy.  
 Bldg 600  
 Wichita KS 67206  
 ATTN: Macklin Armstrong

**Phelps #6-31**

**31-13S 31W Logan KS**

Job Ticket: 039712

**DST#: 5**

Test Start: 2010.08.19 @ 13:53:00

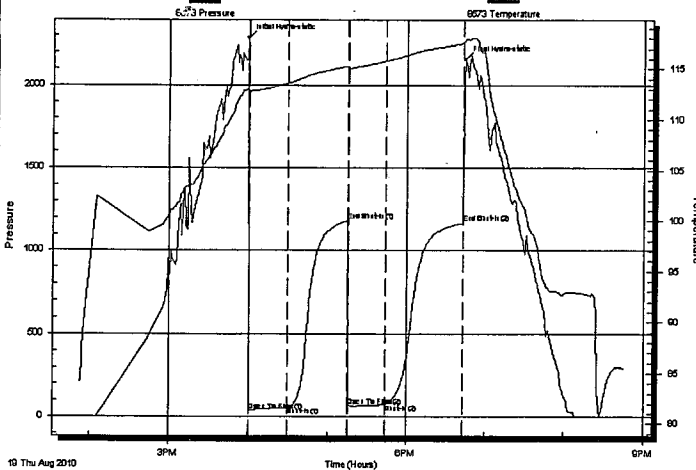
## GENERAL INFORMATION:

Formation: **Lower Fort Scott**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole  
 Time Tool Opened: 16:00:30  
 Tester: Mike Roberts  
 Time Test Ended: 20:46:00  
 Unit No: 28  
 Interval: **4432.00 ft (KB) To 4500.00 ft (KB) (TVD)**  
 Reference Elevations: 2917.00 ft (KB)  
 Total Depth: 4500.00 ft (KB) (TVD)  
 2912.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Poor  
 KB to GRVCF: 5.00 ft

**Serial #: 8673** Inside  
 Press@RunDepth: 76.19 psig @ 4471.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2010.08.19 End Date: 2010.08.19 Last Calib.: 2010.08.20  
 Start Time: 13:53:03 End Time: 20:46:02 Time On Btm: 2010.08.19 @ 15:59:47  
 Time Off Btm: 2010.08.19 @ 18:44:17

**TEST COMMENT:** IF: built to 1" blow  
 IS: no return blow  
 FF: built to 1" blow  
 FS: no return blow

Pressure vs. Time



## PRESSURE SUMMARY

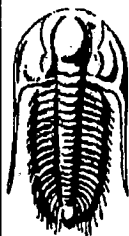
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2283.89	113.09	Initial Hydro-static
1	39.20	111.89	Open To Flow (1)
31	58.08	113.61	Shut-In(1)
76	1180.31	115.28	End Shut-In(1)
76	67.86	114.84	Open To Flow (2)
105	76.19	115.79	Shut-In(2)
164	1166.15	117.54	End Shut-In(2)
165	2155.39	117.89	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
70.00	Oil Spotted Mud 100%M	0.34

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Grand Mesa Operating Comp.

**Phelps #6-31**

1700 N Waterfront Pkwy.

**31-13S 31W Logan KS**

Bldg 600

Job Ticket: 039712

**DST#: 5**

Wichita KS 67206

Test Start: 2010.08.19 @ 13:53:00

ATTN: Macklin Armstrong

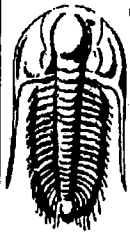
### Tool Information

Drill Pipe:	Length: 4306.00 ft	Diameter: 3.80 inches	Volume: 60.40 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: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 61.00 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	4432.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	68.00 ft			
Tool Length:	98.00 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			4403.00	
Shut In Tool	5.00			4408.00	
Sampler	3.00			4411.00	
Hydraulic tool	5.00			4416.00	
Jars	5.00			4421.00	
Safety Joint	2.00			4423.00	
Packer	5.00		Fluid	4428.00	30.00 Bottom Of Top Packer
Packer	4.00			4432.00	
Stubb	1.00			4433.00	
Perforations	5.00			4438.00	
Change Over Sub	1.00			4439.00	
Blank Spacing	31.00			4470.00	
Change Over Sub	1.00			4471.00	
Recorder	0.00	8673	Inside	4471.00	
Recorder	0.00	8654	Inside	4471.00	
Perforations	26.00			4497.00	
Bullnose	3.00			4500.00	68.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>98.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Grand Mesa Operating Comp.  
1700 N Waterfront Pkwy.  
Bldg 600  
Wichita KS 67206  
ATTN: Macklin Armstrong

**Phelps #6-31**  
**31-13S 31W Logan KS**  
Job Ticket: 039712      **DST#: 5**  
Test Start: 2010.08.19 @ 13:53:00

## 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: 61.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.20 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 1800.00 ppm			
Filter Cake: 1.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	Oil Spotted Mud 100%M	0.344

Total Length: 70.00 ft      Total Volume: 0.344 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

