



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1192916  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
August 2013

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

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

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
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx)      (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ 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: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

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

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

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.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

1192916

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops 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.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <i>(Attach Additional Sheets)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Log	Formation (Top), Depth and Datum	<input type="checkbox"/> Sample
Samples Sent to Geological Survey	<input type="checkbox"/> Yes <input type="checkbox"/> No	Name	Top	Datum
Cores Taken	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Electric Log Run	<input type="checkbox"/> Yes <input type="checkbox"/> No			
List All E. Logs Run:				

CASING RECORD <input 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

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				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

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:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  Flowing  Pumping  Gas Lift  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 <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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<b>Marc A. Downing</b>		<b>Geologic Report</b>	
<b>Consulting Petroleum Geologist</b>		<b>Drilling Time and Sample Log</b>	
Operator <b>H&amp;C Oil Operating, Inc.</b>		Elevation KB 2437 DF 2435 GL 2430	
Lease <b>Stowell</b> No. 17-2		Casing Record Surface 8 5/8" @ 264' Production None	
API # <b>15-065-24004-0000</b>		Electrical Surveys CNL/CDL, DIL, MEL	
Field <b>Wildcat</b>			
Location <b>600' FNL &amp; 990' FEL</b>			
Sec. <b>17</b>	Twp. <b>6s</b>	Rge. <b>23w</b>	
County <b>Graham</b>		State <b>Kansas</b>	
<b>Formation</b>	<b>Sample tops</b>	<b>Log Tops</b>	<b>Datum</b> <b>Struct Comp</b>
Top Anhydrite	2098	2095	+342 +1
Base Anhydrite	2125	2124	+313 +5
Topeka	3442	3442	-1005 FL
Heebner	3638	3636	-1199 +2
Toronto	3662	3662	-1225 +2
LKC	3682	3680	-1243 +1
BKC	3868	3866	-1429 +3
Total Depth	3910	3909	-1472
Reference Well For Structural Comparison	H&C Oil Operating, Inc.		
Stowell #17-1	1450' FNL & 330' FWL		Sec. 17-6s-23w

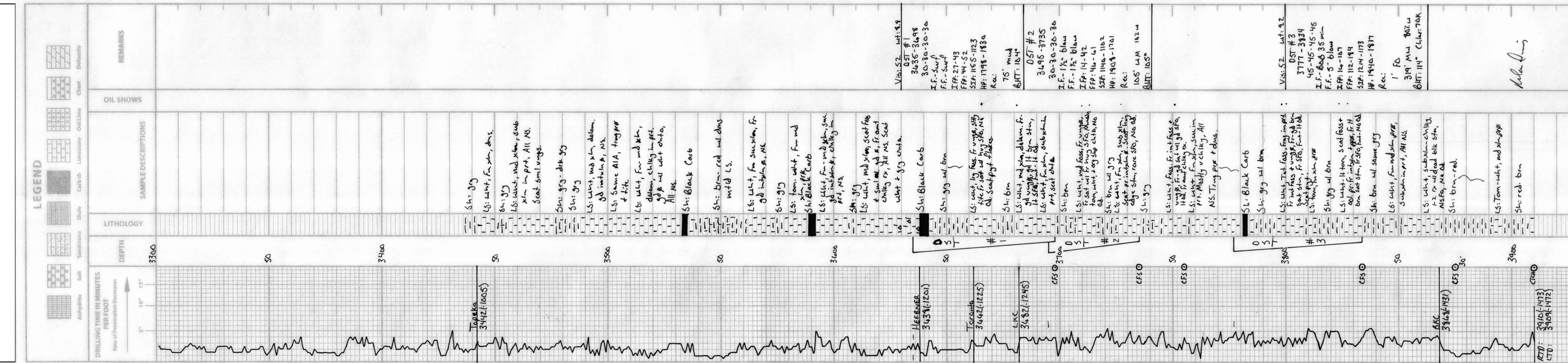
Drilling Contractor	<b>American Eagle, Rig #3</b>	
Commenced	<b>2-16-14</b>	Completed <b>2-21-14</b>
Samples Saved From	<b>3450</b>	To <b>RTD</b>
Drilling Time Kept From	<b>3300</b>	To <b>RTD</b>
Samples Examined From	<b>3450</b>	To <b>RTD</b>
Geological Supervision From	<b>3450</b>	To <b>RTD</b>

**Summary and Recommendations**

Due to structural position, DST recovery, and log evaluation, it was decided to plug and abandon the well.

Respectfully Submitted,

Marc A. Downing





## DRILL STEM TEST REPORT

Prepared For: **H & C Operating**

PO Box 56  
Plainville, KS 67663-0086

ATTN: Marc Downing

### **Stowell #17-2**

### **17-6s-23w Graham,KS**

Start Date: 2014.02.19 @ 01:20:20

End Date: 2014.02.19 @ 10:27:30

Job Ticket #: 53686                      DST #: 1

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

Printed: 2014.02.24 @ 08:16:02

H & C Operating  
17-6s-23w Graham,KS  
Stowell #17-2  
DST # 1  
Toronto LKC A  
2014.02.19



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

H & C Operating  
PO Box 56  
Plainville, KS 67663-0086  
ATTN: Marc Downing

**17-6s-23w Graham,KS**  
**Stowell #17-2**  
Job Ticket: 53686 **DST#: 1**  
Test Start: 2014.02.19 @ 01:20:20

## GENERAL INFORMATION:

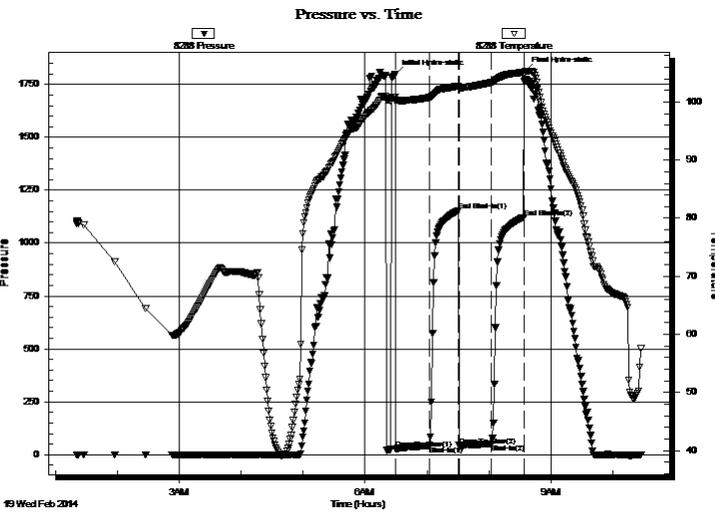
Formation: **Toronto LKC A**  
Deviated: No Whipstock: 0.00 ft (KB)  
Time Tool Opened: 06:29:20  
Time Test Ended: 10:27:30  
Interval: **3635.00 ft (KB) To 3698.00 ft (KB) (TVD)**  
Total Depth: 3698.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Stuart Stover  
Unit No: 44  
Reference Elevations: 2437.00 ft (KB)  
2430.00 ft (CF)  
KB to GR/CF: 7.00 ft

## Serial #: 8288

Inside

Press@RunDepth: 52.07 psig @ 3636.00 ft (KB)  
Start Date: 2014.02.19 End Date: 2014.02.19  
Start Time: 01:20:22 End Time: 10:27:30  
Capacity: 8000.00 psig  
Last Calib.: 2014.02.19  
Time On Btm: 2014.02.19 @ 06:29:10  
Time Off Btm: 2014.02.19 @ 08:34:50

TEST COMMENT: IFP: Surface blow thru out  
FFP: Surface blow died in 20 minutes



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1797.84	100.84	Initial Hydro-static
1	26.99	100.11	Open To Flow (1)
34	42.52	100.78	Shut-In(1)
62	1154.50	102.78	End Shut-In(1)
62	43.61	102.37	Open To Flow (2)
94	52.07	103.35	Shut-In(2)
125	1122.61	105.12	End Shut-In(2)
126	1813.40	105.23	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
75.00	Drig mud	0.78

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H & C Operating

**17-6s-23w Graham,KS**

PO Box 56  
Plainville, KS 67663-0086

**Stowell #17-2**

Job Ticket: 53686

**DST#: 1**

ATTN: Marc Downing

Test Start: 2014.02.19 @ 01:20:20

## Tool Information

Drill Pipe:	Length: 3615.00 ft	Diameter: 3.80 inches	Volume: 50.71 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 50.86 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3635.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	63.00 ft			
Tool Length:	83.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3620.00	
Hydraulic tool	5.00			3625.00	
Packer	5.00			3630.00	20.00 Bottom Of Top Packer
Packer	5.00			3635.00	
Stubb	1.00			3636.00	
Recorder	0.00	8288	Inside	3636.00	
Recorder	0.00	8521	Outside	3636.00	
Perforations	10.00			3646.00	
Change Over Sub	1.00			3647.00	
Drill Pipe	30.00			3677.00	
Change Over Sub	1.00			3678.00	
Perforations	16.00			3694.00	
Bullnose	4.00			3698.00	63.00 Bottom Packers & Anchor

**Total Tool Length: 83.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

H & C Operating

**17-6s-23w Graham,KS**

PO Box 56  
Plainville, KS 67663-0086

**Stowell #17-2**

Job Ticket: 53686

**DST#: 1**

ATTN: Marc Downing

Test Start: 2014.02.19 @ 01:20:20

## 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:

800 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
75.00	Drig mud	0.779

Total Length: 75.00 ft      Total Volume: 0.779 bbl

Num Fluid Samples: 0

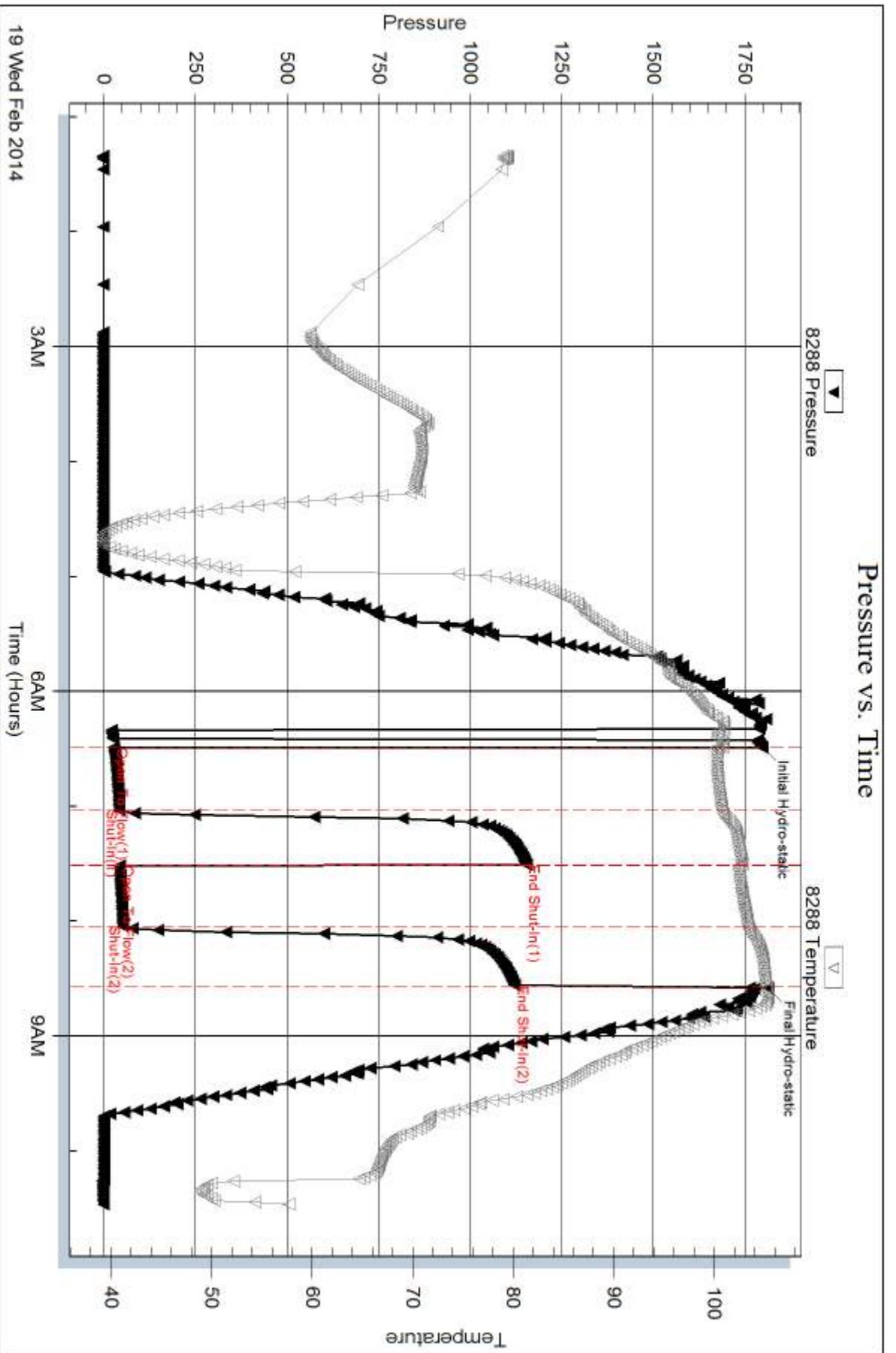
Num Gas Bombs: 0

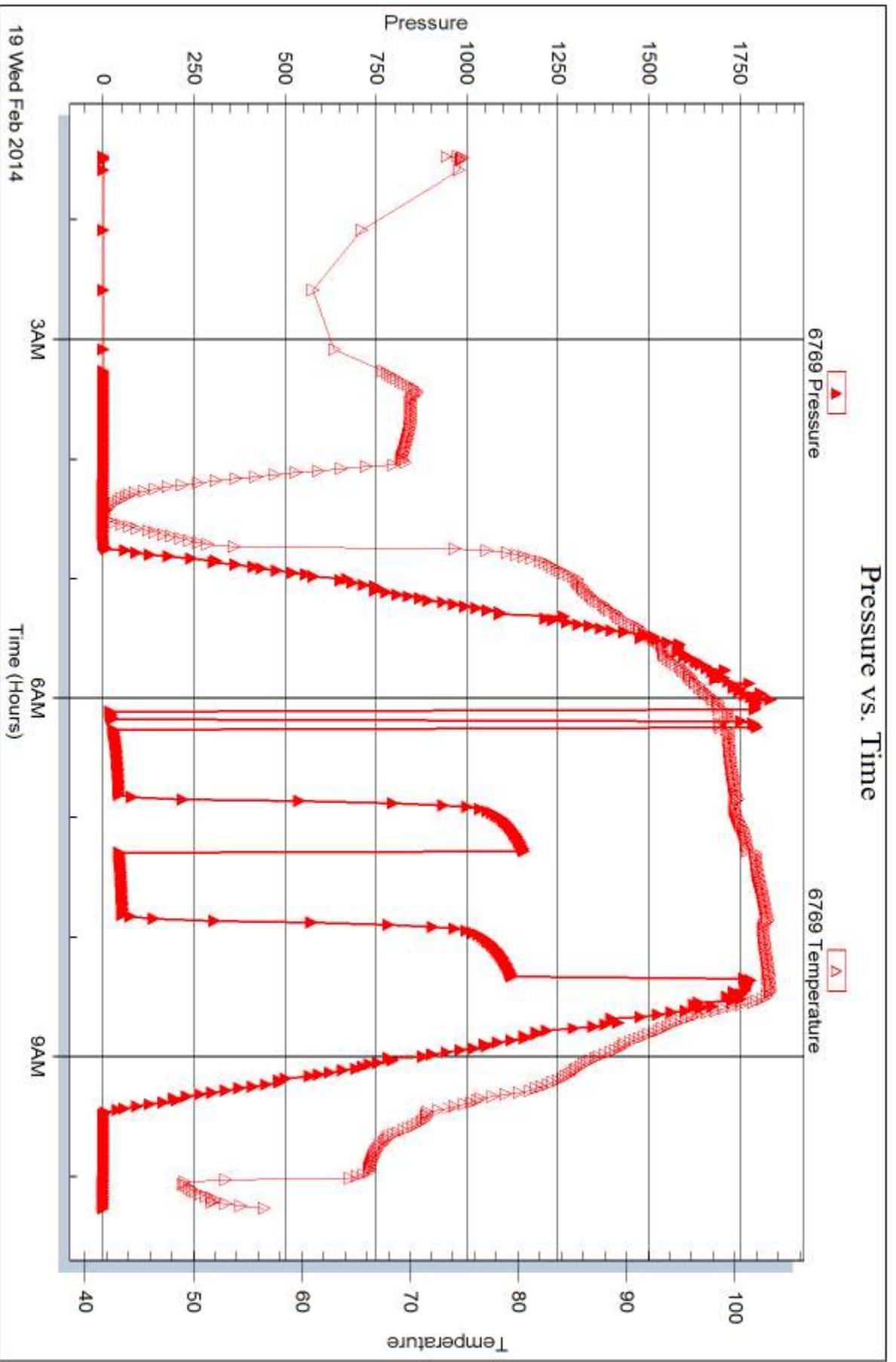
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **H & C Operating**

PO Box 56  
Plainville, KS 67663-0086

ATTN: Marc Downing

### **Stowell #17-2**

#### **17-6s-23w Graham,KS**

Start Date: 2014.02.19 @ 19:06:35

End Date: 2014.02.20 @ 00:44:05

Job Ticket #: 53687                      DST #: 2

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

Printed: 2014.02.24 @ 08:15:34



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

H & C Operating  
PO Box 56  
Plainville, KS 67663-0086  
ATTN: Marc Downing

**17-6s-23w Graham,KS**  
**Stowell #17-2**  
Job Ticket: 53687      **DST#: 2**  
Test Start: 2014.02.19 @ 19:06:35

## GENERAL INFORMATION:

Formation: **LKC C-D**  
Deviated: No      Whipstock: 0.00 ft (KB)  
Time Tool Opened: 20:42:35  
Time Test Ended: 00:44:05  
Interval: **3695.00 ft (KB) To 3735.00 ft (KB) (TVD)**  
Total Depth: 3698.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches      Hole Condition: Fair  
Reference Elevations: 2437.00 ft (KB)  
2430.00 ft (CF)  
KB to GR/CF: 7.00 ft  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Paul Simpson  
Unit No: 44

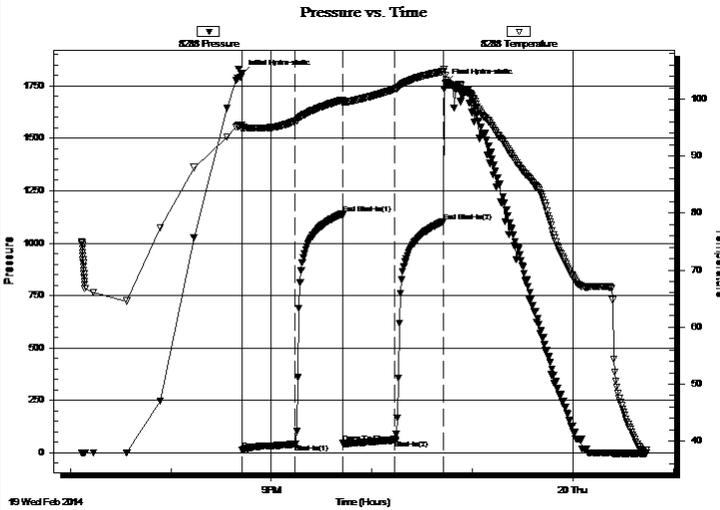
## Serial #: 8288

Inside

Press@RunDepth: 61.16 psig @ 3696.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2014.02.19      End Date: 2014.02.20      Last Calib.: 2014.02.19  
Start Time: 19:06:37      End Time: 00:44:05      Time On Btm: 2014.02.19 @ 20:42:25  
Time Off Btm: 2014.02.19 @ 22:43:45

TEST COMMENT: 30- IF weak 1/4" blow built to 1 1/2"  
30- no blow  
30- FF surface blow built to 1 1/2"  
30 no blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1808.24	95.51	Initial Hydro-static
1	14.01	94.74	Open To Flow (1)
32	41.64	96.15	Shut-In(1)
60	1139.57	99.83	End Shut-In(1)
61	45.80	99.23	Open To Flow (2)
92	61.16	101.79	Shut-In(2)
120	1102.42	104.83	End Shut-In(2)
122	1761.64	104.12	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
105.00	watery mud 10% water 90 % Mud	1.20
0.00	oil specks in tool	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H & C Operating

**17-6s-23w Graham,KS**

PO Box 56  
Plainville, KS 67663-0086

**Stowell #17-2**

Job Ticket: 53687

**DST#: 2**

ATTN: Marc Downing

Test Start: 2014.02.19 @ 19:06:35

## Tool Information

Drill Pipe:	Length: 3651.00 ft	Diameter: 3.80 inches	Volume: 51.21 bbl	Tool Weight: 2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 46000.00 lb
			<u>Total Volume: 51.36 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	3695.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	60.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3680.00	
Hydraulic tool	5.00			3685.00	
Packer	5.00			3690.00	20.00 Bottom Of Top Packer
Packer	5.00			3695.00	
Stubb	1.00			3696.00	
Recorder	0.00	8288	Inside	3696.00	
Recorder	0.00	8521	Outside	3696.00	
Perforations	2.00			3698.00	
Change Over Sub	1.00			3699.00	
Drill Pipe	31.00			3730.00	
Change Over Sub	1.00			3731.00	
Bullnose	4.00			3735.00	40.00 Bottom Packers & Anchor

**Total Tool Length: 60.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

H & C Operating

**17-6s-23w Graham,KS**

PO Box 56  
Plainville, KS 67663-0086

**Stowell #17-2**

Job Ticket: 53687

**DST#: 2**

ATTN: Marc Downing

Test Start: 2014.02.19 @ 19:06:35

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
105.00	watery mud 10% water 90 % Mud	1.200
0.00	oil specks in tool	0.000

Total Length: 105.00 ft      Total Volume: 1.200 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

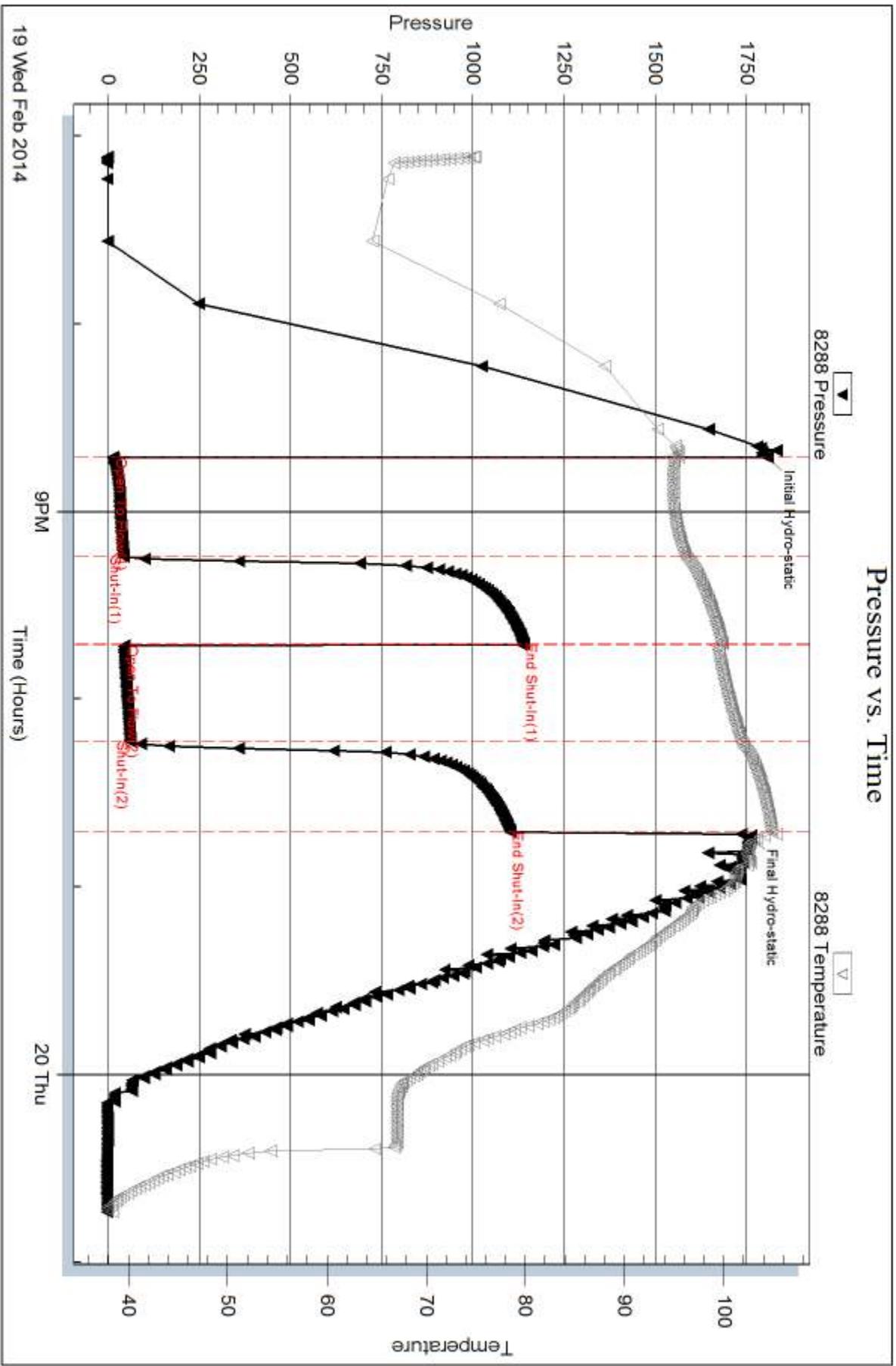
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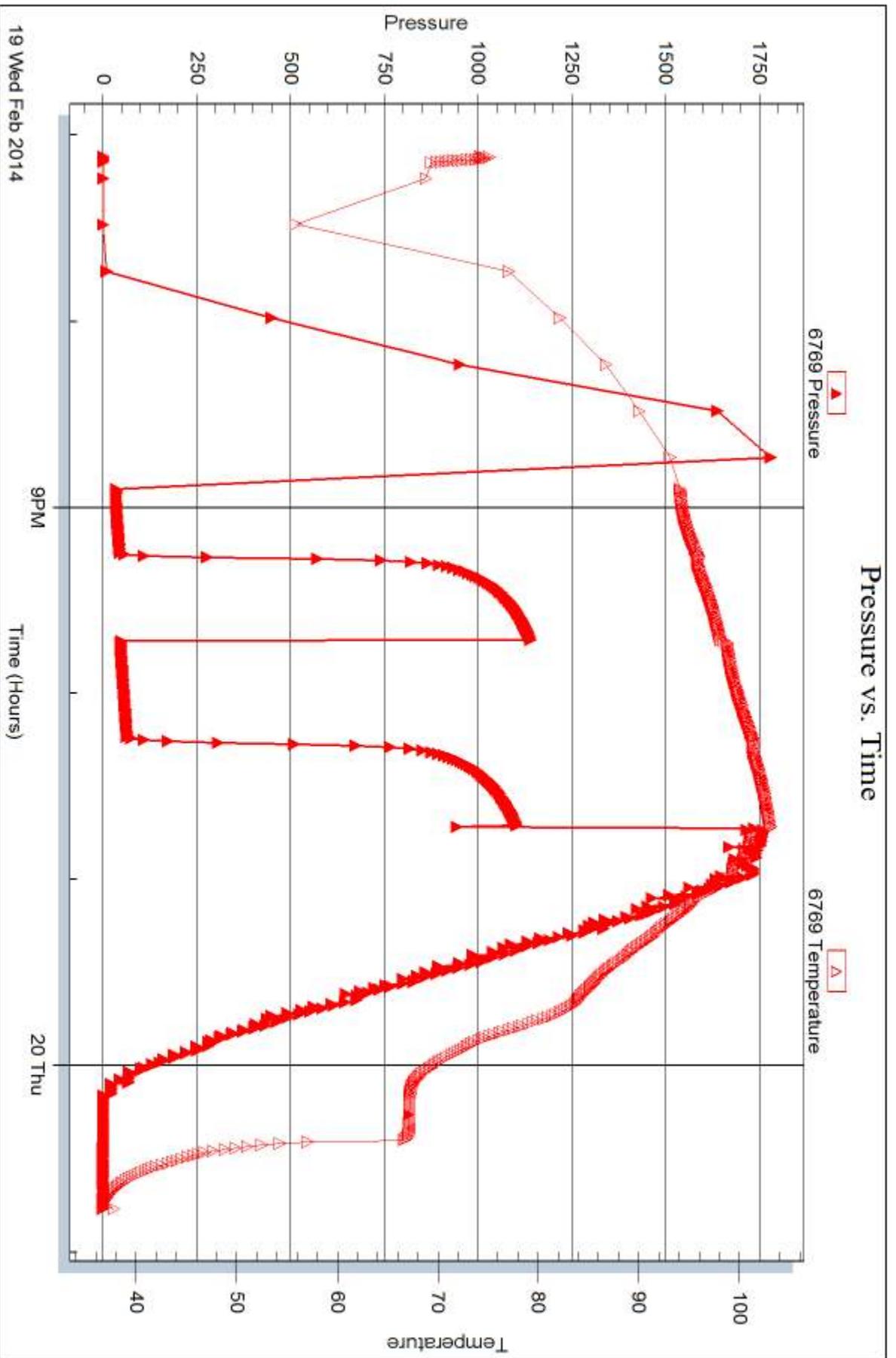
Laboratory Name:

Laboratory Location:

Recovery Comments:









## DRILL STEM TEST REPORT

Prepared For: **H & C Operating**

PO Box 56  
Plainville, KS 67663-0086

ATTN: Marc Downing

### **Stowell #17-2**

#### **17-6s-23w Graham,KS**

Start Date: 2014.02.20 @ 15:00:00

End Date: 2014.02.20 @ 21:55:45

Job Ticket #: 56215                      DST #: 3

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

Printed: 2014.02.24 @ 08:14:57



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

H & C Operating  
 PO Box 56  
 Plainville, KS 67663-0086  
 ATTN: Marc Downing

**17-6s-23w Graham,KS**  
**Stowell #17-2**  
 Job Ticket: 56215      **DST#: 3**  
 Test Start: 2014.02.20 @ 15:00:00

## GENERAL INFORMATION:

Formation: **KC "H-J"**  
 Deviated: No Whipstock: 0.00 ft (KB)  
 Time Tool Opened: 17:08:45  
 Time Test Ended: 21:55:45  
 Interval: **3777.00 ft (KB) To 3834.00 ft (KB) (TVD)**  
 Total Depth: 3834.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brett Dickinson  
 Unit No: 59  
 Reference Elevations: 2437.00 ft (KB)  
 2430.00 ft (CF)  
 KB to GR/CF: 7.00 ft

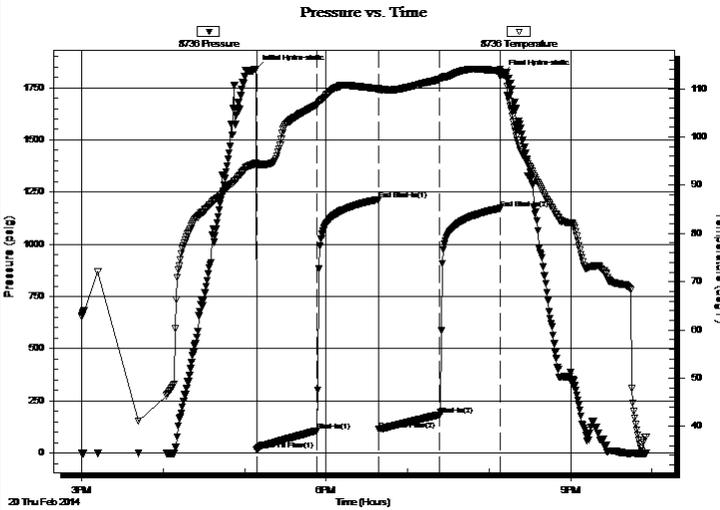
## Serial #: 8736

Outside

Press@RunDepth: 183.56 psig @ 3778.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2014.02.20      End Date: 2014.02.20      Last Calib.: 2014.02.20  
 Start Time: 15:00:05      End Time: 21:55:44      Time On Btm: 2014.02.20 @ 17:08:15  
 Time Off Btm: 2014.02.20 @ 20:09:30

TEST COMMENT: IF-BOB in 35 min  
 IS-No blow  
 FF-5" blow  
 FS-No blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1839.55	94.59	Initial Hydro-static
1	16.29	93.96	Open To Flow (1)
45	107.28	106.69	Shut-In(1)
90	1214.28	110.05	End Shut-In(1)
91	112.26	109.80	Open To Flow (2)
136	183.56	111.97	Shut-In(2)
180	1172.58	113.73	End Shut-In(2)
182	1816.92	113.17	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
319.00	MCW 20%M 80%W	4.20
1.00	Free Oil	0.01

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H & C Operating

**17-6s-23w Graham,KS**

PO Box 56  
Plainville, KS 67663-0086

**Stowell #17-2**

Job Ticket: 56215

**DST#: 3**

ATTN: Marc Downing

Test Start: 2014.02.20 @ 15:00:00

## Tool Information

Drill Pipe:	Length: 3744.00 ft	Diameter: 3.80 inches	Volume: 52.52 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	45000.00 lb
			<u>Total Volume: 52.67 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial	45000.00 lb
Depth to Top Packer:	3777.00 ft			Final	45000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	57.00 ft				
Tool Length:	77.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3762.00	
Hydraulic tool	5.00			3767.00	
Packer	5.00			3772.00	20.00 Bottom Of Top Packer
Packer	5.00			3777.00	
Stubb	1.00			3778.00	
Recorder	0.00	8018	Inside	3778.00	
Recorder	0.00	8736	Outside	3778.00	
Perforations	2.00			3780.00	
Change Over Sub	1.00			3781.00	
Drill Pipe	30.00			3811.00	
Change Over Sub	1.00			3812.00	
Perforations	19.00			3831.00	
Bullnose	3.00			3834.00	57.00 Bottom Packers & Anchor

**Total Tool Length: 77.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

H & C Operating

**17-6s-23w Graham,KS**

PO Box 56  
Plainville, KS 67663-0086

**Stowell #17-2**

Job Ticket: 56215

**DST#: 3**

ATTN: Marc Downing

Test Start: 2014.02.20 @ 15:00:00

### 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:

70000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1300.00 ppm

Filter Cake: inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
319.00	MCW 20%M 80%W	4.201
1.00	Free Oil	0.014

Total Length: 320.00 ft      Total Volume: 4.215 bbl

Num Fluid Samples: 0

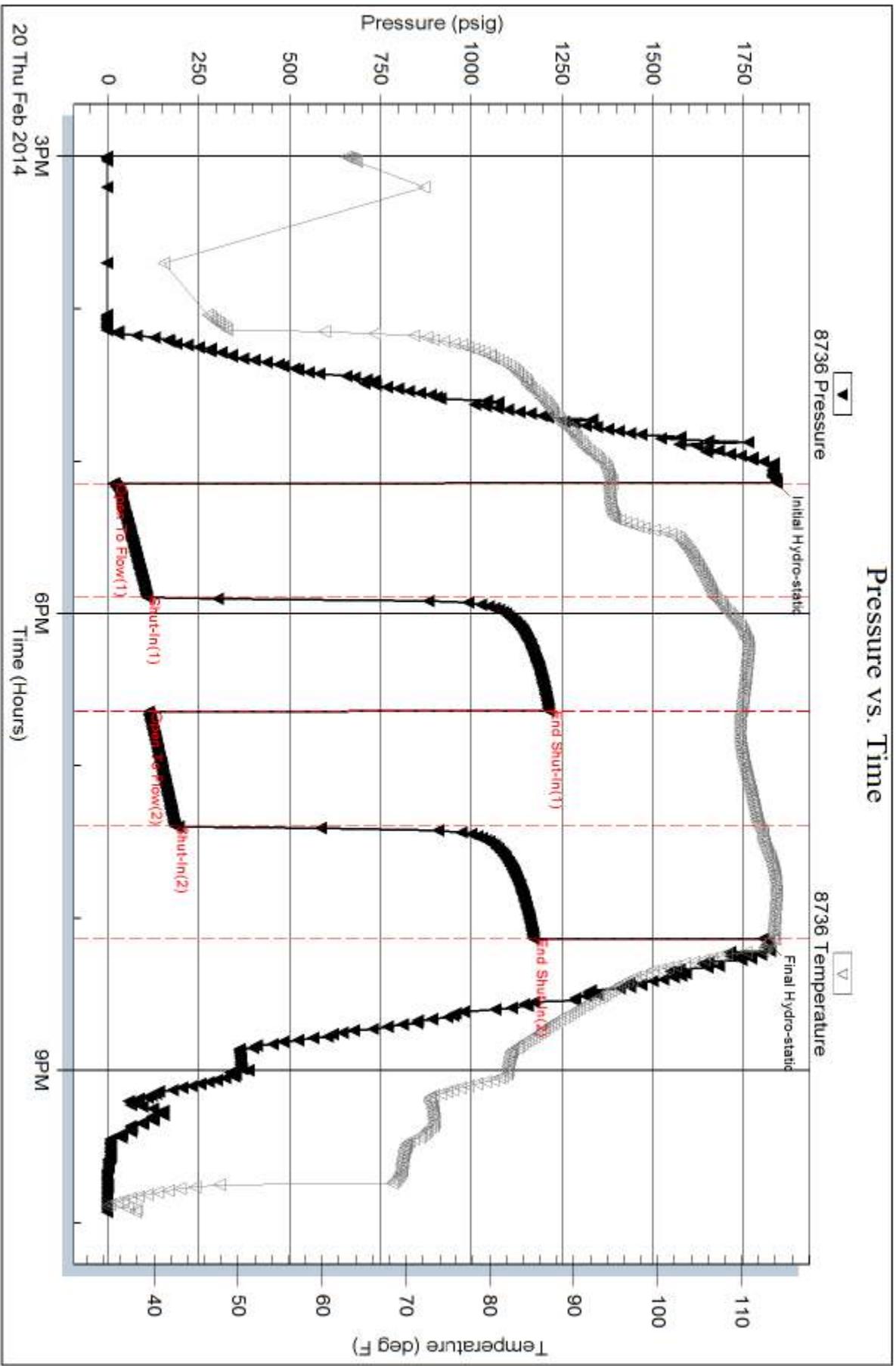
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





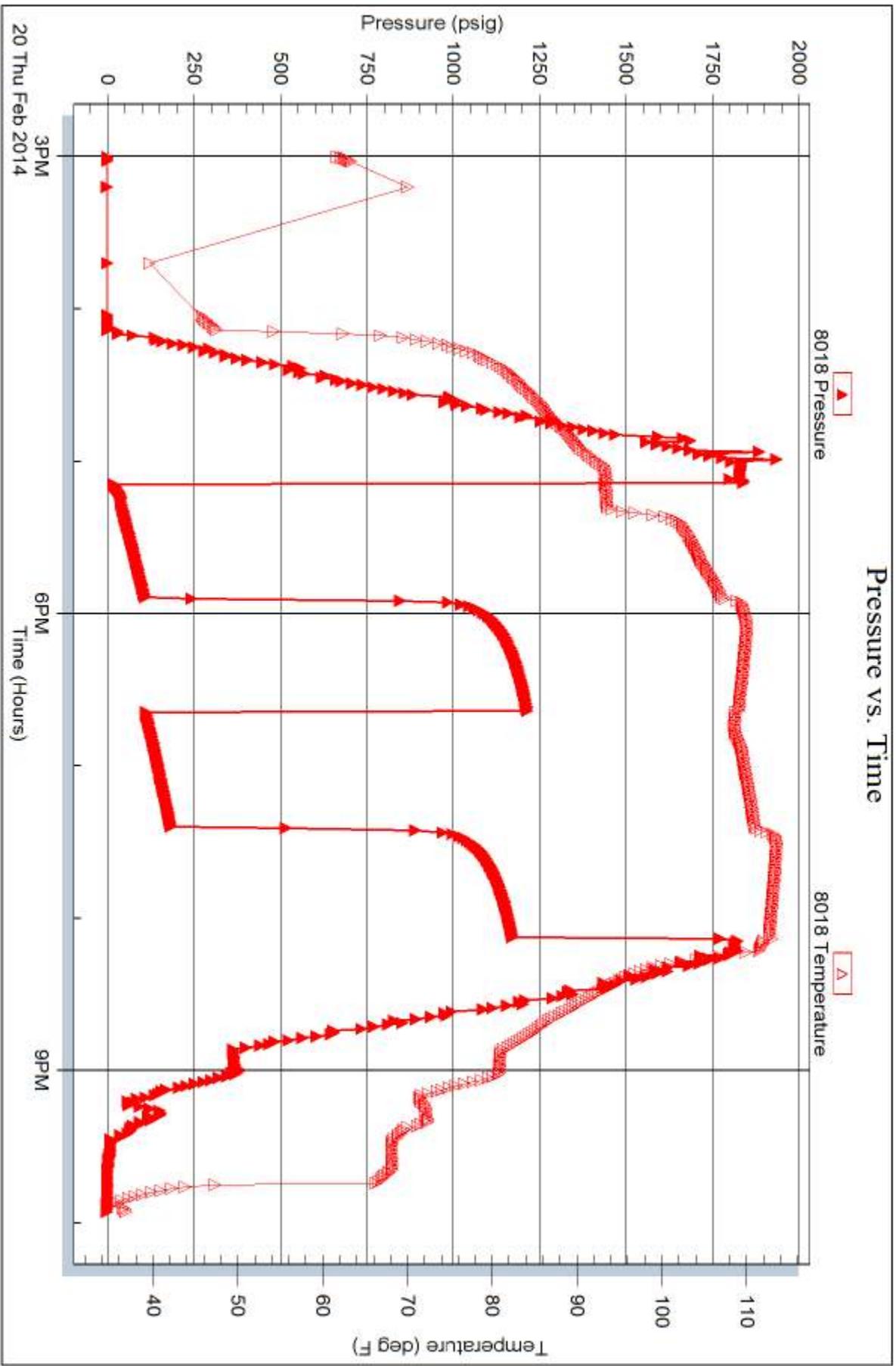
Serial #: 8018

Inside

H & C Operating

Slow el #17-2

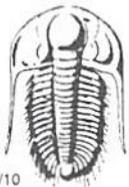
DST Test Number: 3



Tribble Testing, Inc

Ref. No: 56215

Printed: 2014.02.24 @ 08:14:59



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 53686

4/10

Well Name & No. Stowell 17-2 Test No. 1 Date 2-19-2014  
 Company H&C Operating, INC Elevation \_\_\_\_\_ KB \_\_\_\_\_ GL \_\_\_\_\_  
 Address PO Box 54 Plainville, KS 67643-0086  
 Co. Rep / Geo. Charles Ramsey Rig American Eagle #3  
 Location: Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ Rge. \_\_\_\_\_ Co. Graham State KS

Interval Tested 3635-3698 Zone Tested Toronto & LTC "A"  
 Anchor Length 63 Drill Pipe Run 3615 Mud Wt. 8.8  
 Top Packer Depth 3630 Drill Collars Run 30 Vis 52  
 Bottom Packer Depth 3635 Wt. Pipe Run 0 WL 52  
 Total Depth 3698 Chlorides 800 ppm System LCM 2#  
 Blow Description FFP - Surface blow thru out  
FFP - Surface blow Dico IN 20 min

Rec	Feet of	%gas	%oil	%water	%mud
<u>75</u>	<u>Drly mud</u>				
____	____				
____	____				
____	____				
____	____				

Rec Total 75 BHT 1040 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>0798</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>145</u>
(B) First Initial Flow <u>27</u>	<input type="checkbox"/> Jars _____	T-Started <u>200</u>
(C) First Final Flow <u>43</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>630</u>
(D) Initial Shut-In <u>1155</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>830</u>
(E) Second Initial Flow <u>44</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>1030</u>
(F) Second Final Flow <u>52</u>	<input checked="" type="checkbox"/> Mileage <u>120 RT</u> 186	Comments _____
(G) Final Shut-In <u>1123</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1830</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	Total <u>1336</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1336</u>	

Approved By \_\_\_\_\_

Our Representative STUART SLOVER

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 53687

Well Name & No. Stowell 17-2 Test No. 2 Date 2-19-14  
 Company H & C Operating Elevation 2435 KB 2430 GL  
 Address \_\_\_\_\_  
 Co. Rep / Geo. More Downing Rig AM Eagle #3  
 Location: Sec. 17 Twp. 6S Rge. 23W Co. Graham State KS

Interval Tested 3695 - 3735 Zone Tested LXC C-D  
 Anchor Length 40 Drill Pipe Run 3681 Mud Wt. 9.0  
 Top Packer Depth 3690 Drill Collars Run 30 Vis 50  
 Bottom Packer Depth 3695 Wt. Pipe Run \_\_\_\_\_ WL 5.6  
 Total Depth 3735 Chlorides \_\_\_\_\_ ppm System \_\_\_\_\_ LCM \_\_\_\_\_

Blow Description weak bit blow building to 1.5"  
IST no blow  
FF - surface blow building to 1.5"  
FSI no blow

Rec	Feet of	%gas	%oil	%water	%m
105	WM		10	90	

Rec Total 105 BHT 105  
 (A) Initial Hydrostatic 1808 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_  
 (B) First Initial Flow 14  Test 1150  
 (C) First Final Flow 42  Jars \_\_\_\_\_  
 (D) Initial Shut-In 1140  Safety Joint \_\_\_\_\_  
 (E) Second Initial Flow 46  Circ Sub \_\_\_\_\_  
 (F) Second Final Flow 61  Hourly Standby \_\_\_\_\_  
 (G) Final Shut-In 1102  Mileage 186  
 (H) Final Hydrostatic 1761  Sampler \_\_\_\_\_  
 Straddle \_\_\_\_\_

Initial Open 30  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 30  Ruined Packer \_\_\_\_\_  
 Final Flow 30  Extra Copies \_\_\_\_\_  
 Final Shut-In 30  Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_  
 Sub Total 1336 Sub Total \_\_\_\_\_  
 Total 1336 Total \_\_\_\_\_  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative \_\_\_\_\_  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56215

Well Name & No. Stowell #17-2 Test No. 3 Date 2/20/14  
 Company H&C Oil Operating Inc. Elevation 2435 KB 2430 GL  
 Address PO Box 86 Plainville KS 67663  
 Co. Rep / Geo. \_\_\_\_\_ Rig American Eagle #3  
 Location: Sec. 17 Twp. 6 Rge. 23 Co. Graham State KS

Interval Tested 3777-3834 Zone Tested KC "H-J"  
 Anchor Length 57 Drill Pipe Run \_\_\_\_\_ Mud Wt. 9.2  
 Top Packer Depth 3772 Drill Collars Run 30 Vis 52  
 Bottom Packer Depth 3777 Wt. Pipe Run \_\_\_\_\_ WL 6.0  
 Total Depth 3834 Chlorides 1,300 ppm System LCM \_\_\_\_\_  
 Blow Description JF-BOB in 35 min  
FSE - No blow  
FF - 5 in blow  
FSE - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>1</u>	<u>Free Oil</u>				
<u>319</u>	<u>Mcw</u>		<u>80</u>	<u>20</u>	
_____	_____				
_____	_____				
_____	_____				

Rec Total 320 BHT 114 Gravity \_\_\_\_\_ API RW .2 @ 40 ° F Chlorides 70000 ppm

(A) Initial Hydrostatic <u>1,840</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>14:05</u>
(B) First Initial Flow <u>16</u>	<input type="checkbox"/> Jars _____	T-Started <u>15:00</u>
(C) First Final Flow <u>107</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>17:10</u>
(D) Initial Shut-In <u>1,214</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>20:10</u>
(E) Second Initial Flow <u>112</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>22:00</u>
(F) Second Final Flow <u>184</u>	<input checked="" type="checkbox"/> Mileage <u>1.51 rt</u>	Comments _____
(G) Final Shut-In <u>1,173</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1,817</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>45</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Flow <u>45</u>	<input type="checkbox"/> Day Standby _____	Total <u>1522</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1522</u>	

Approved By \_\_\_\_\_ Our Representative Burt D. ...

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# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 7163

Date	2-15-14	Sec.	17	Twp.	6	Range	23	County	Graham	State	KS	On Location	3:30 PM
Lease	Stowell			Well No.	17-2			Location	Hill City, KS - N to CC Rd, 3 1/8 W				
Contractor	American			Eagle #3									
Type Job	Surface			To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cement and helper to assist owner or contractor to do work as listed.									
Hole Size	12 1/4"			T.D.	266'			Charge To	H+C OPI operating				
Csg.	8 5/8"			Depth	264'			Street					
Tbg. Size				Depth				City	State				
Tool				Depth				The above was done to satisfaction and supervision of owner agent or contractor.					
Cement Left in Csg.	15'			Shoe Joint	15'			Cement Amount Ordered	160 SX Common 3 3/4 CC				
Meas Line				Displace	15 3/4 BLS				2 1/2 Gal				
<b>EQUIPMENT</b>													
Pumptrk	16	No.	Cementer		B. Iltus								
			Helper										
Bulktrk	14	No.	Driver		Rygon								
			Driver		David								
Bulktrk	p.u.	No.	Driver		Rick								
			Driver										
<b>JOB SERVICES &amp; REMARKS</b>													
Remarks:	Cement did Circulate												
Rat Hole													
Mouse Hole													
Centralizers													
Baskets													
D/V or Port Collar													
	Handling 169												
	Mileage 169												
	FLOAT EQUIPMENT												
	Guide Shoe												
	Centralizer												
	Baskets												
	AFU Inserts												
	Float Shoe												
	Latch Down												
	Pumptrk Charge Surface												
	Mileage 41												
	Tax												
	Discount												
	Total Charge												
X Signature	Rudy												

