



Confidentiality Requested:
Yes No

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

Commingle Permit #: \_\_\_\_\_
Dual Completion Permit #: \_\_\_\_\_
SWD Permit #: \_\_\_\_\_
ENHR Permit #: \_\_\_\_\_
GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or
Recompletion Date Recompletion Date

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: \_\_\_\_\_



1171089

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  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: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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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> _____ <i>(Submit ACO-4)</i>	<b>PRODUCTION INTERVAL:</b> _____ _____
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Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

December 02, 2013

Leon Rodak  
Murfin Drilling Co., Inc.  
250 N WATER STE 300  
WICHITA, KS 67202-1216

Re: ACO1  
API 15-039-21185-00-00  
Earl 1-6  
SW/4 Sec.06-05S-30W  
Decatur County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Leon Rodak

Earl #1-6  
 2500' FSL 330' FWL  
 Sec. 6-5S-30W  
 2853' KB

Brown Farms #1-1  
 2150' FNL 500' FEL  
 Sec. 1-5S-31W  
 2852' KB

Formation	Sample top	Datum	Ref	Log tops	Datum	Ref	Log tops	Datum
Anhydrite	2584	+269	Flat	2583	+270	+1	2583	+269
B/Anhydrite	2620	+233	-1	2616	+237	+3	2618	+234
Topeka	3672	-819	-5	3671	-818	-4	3666	-814
Heebner	3843	-990	-6	3839	-986	-2	3836	-984
Lansing	3891	-1038	-7	3888	-1035	-4	3883	-1031
Stark	4055	-1202	-4	4053	-1200	-2	4050	-1198
BKC	4107	-1254	-4	4106	-1253	-3	4102	-1250
Pawnee	4218	-1635	-3	4217	-1364	-2	4214	-1362
Ft Scott	4285	-1432	Flat	4287	-1434	-2	4284	-1432
Cherokee	4298	-1445	-1	4299	-1446	-1	4296	-1444
Mississippi	4413	-1560	-2	4414	-1561	-3	4410	-1558
RTD	4479						4510	
LTD				4479			4508	

# Jeff Christian

PETROLEUM GEOLOGIST  
Wichita, Kansas

## GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

OPERATOR: **MURFIN DRILLING COMPANY**

LEASE: **EARI # 1-6**

LOCATION: **2500' FSI & 330' FWL**

SEC: **6** TWP: **5 S** RING: **30 W**

COUNTY: **DECATUR** STATE: **KANSAS**

FIELD: **EINA NORTHEAST**

API: **15-039-21815**

CONTRACTOR: **COMPANY TOOLS** RIG NO: **2**

DRILLING STARTED: **08/06/2013** COMPLETED: **08/15/2013**

MUD DISPLACED: **3314'** MUD TYPE: **CHEMICAL**

DRILLING TIME PER FROM: **3550'** TO: **RTD**

SAMPLES SAVED FROM: **3570'** TO: **RTD**

SAMPLES EXAMINED FROM: **3570'** TO: **RTD**

GEOLOGICAL SUPERVISION FROM: **3625'** TO: **RTD**

FORMATION NAME: **TOP** LOG DATUM: **TOP** SAMPLE

ANHYDRITE: **2585' (-270)** **2595' (+268)**

TOPEKA: **3671' (-818)** **3672' (-819)**

HEEBNER: **3839' (-986)** **3843' (-990)**

LANSING: **3886' (-1038)** **3891' (-1038)**

STARK: **4053' (-1200)** **4055' (-1202)**

PAWNEE: **4217' (-1364)** **4218' (-1364)**

CHEROKEE: **4299' (-1446)** **4298' (-1445)**

MISS: **4414' (-1561)** **4413' (-1560)**

WELL DEPTH: **4479' (-1626)** **4479' (-1626)**

ELEVATIONS: **2853'**

KB: **2853'**

CL: **2842'**

MEASUREMENTS FROM: **4**

Surveys: **8 5/8" @ 221'**

W/ 190 SX

Production: **5 1/2" @ 4479'**

W/ 175 SX

Candidate: **NONE**

CASING RECORD

DATE	7:00 AM DEPTH	REMARKS
8/6/13	MIRT	SPUD @ 5:00 pm
8/7/13	221'	WQC dev. 1/4 deg.
8/8/13	2450'	DRLG.
8/9/13	3580'	DRLG dev 1/4 deg @ 3534'
8/10/13	3928'	Short Trip Prior to DST # 1 dev. 1 1/4 deg.
8/11/13	3970'	TIH w/ DST # 2
8/12/13	4058'	OB w/ DST # 3
8/13/13	4134'	DRLG dev 1 deg @ 4110'
8/14/13	4328'	TOH w/ DST # 5 RTD 4479' @ 7:30 pm dev. 3/4 deg.
8/15/13	4479'	Finish Logging @ 3:45 am

**Remarks**

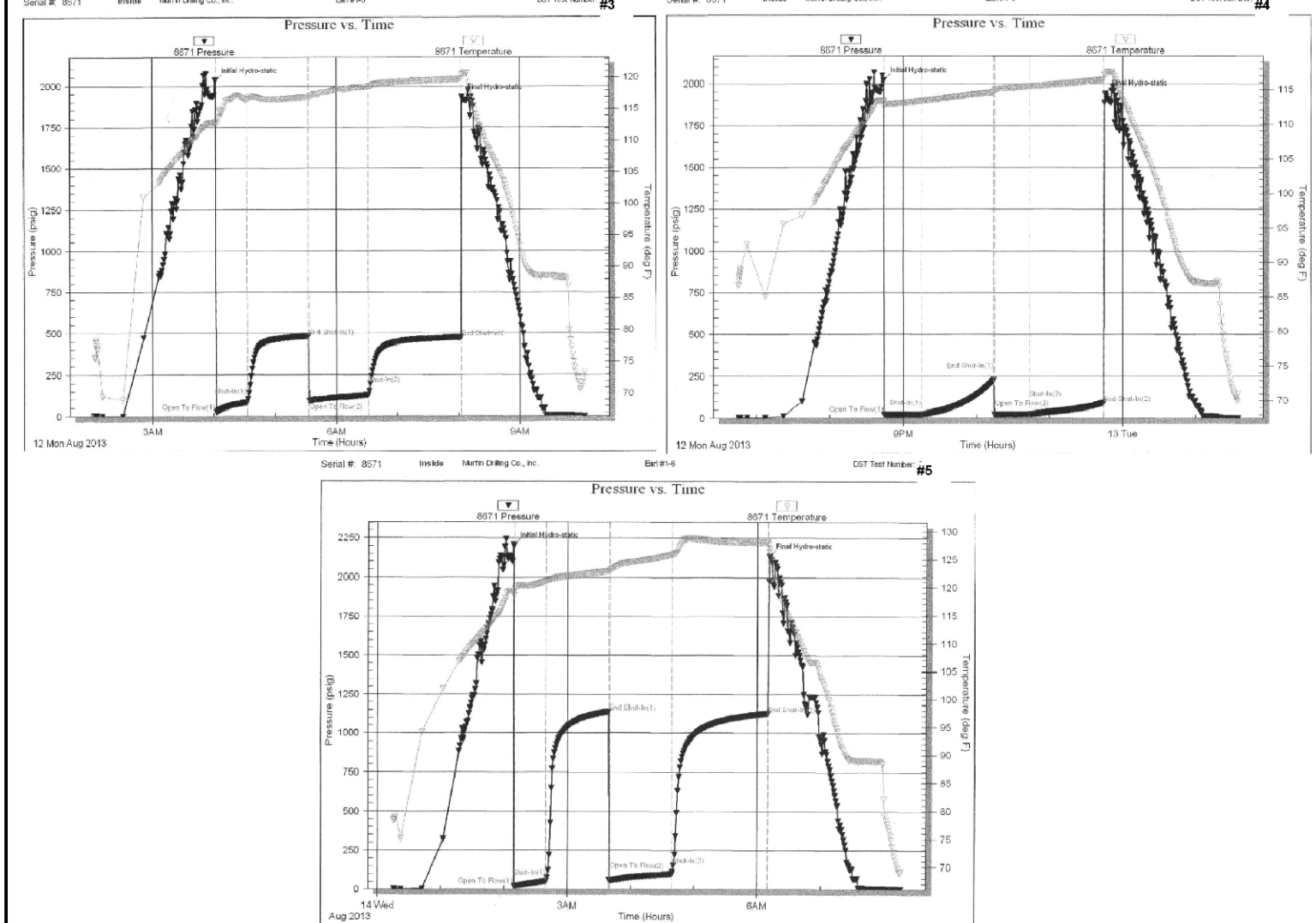
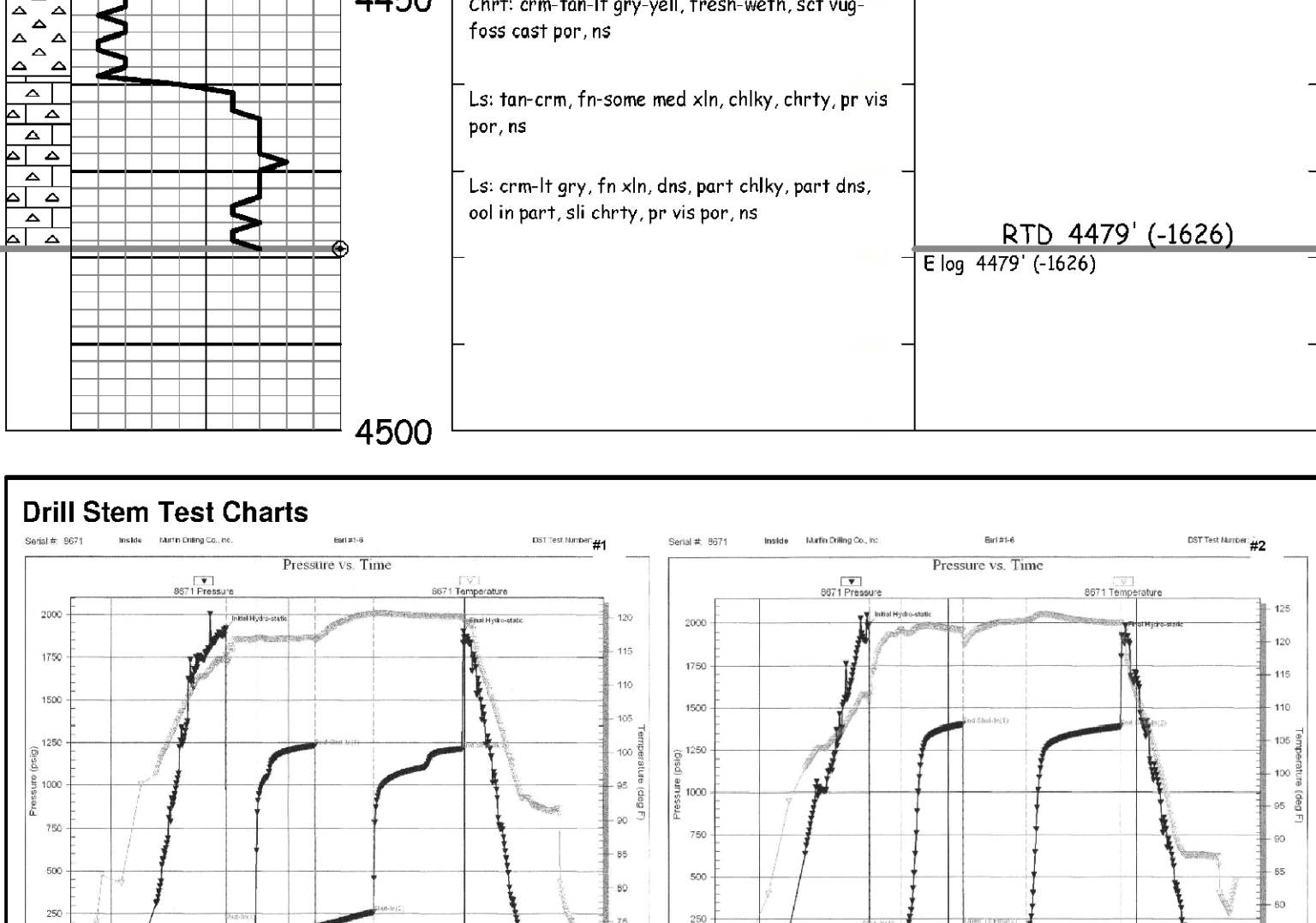
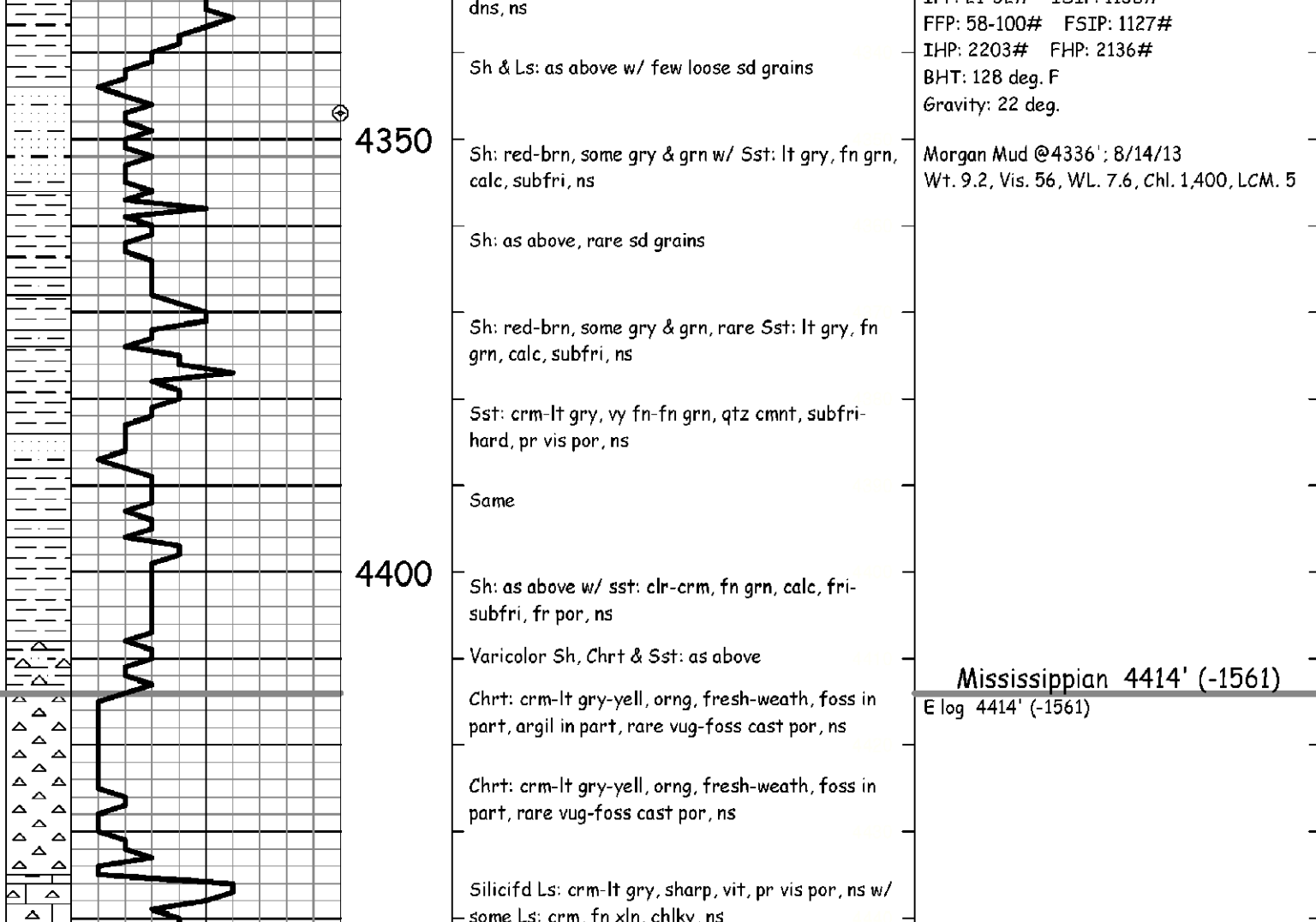
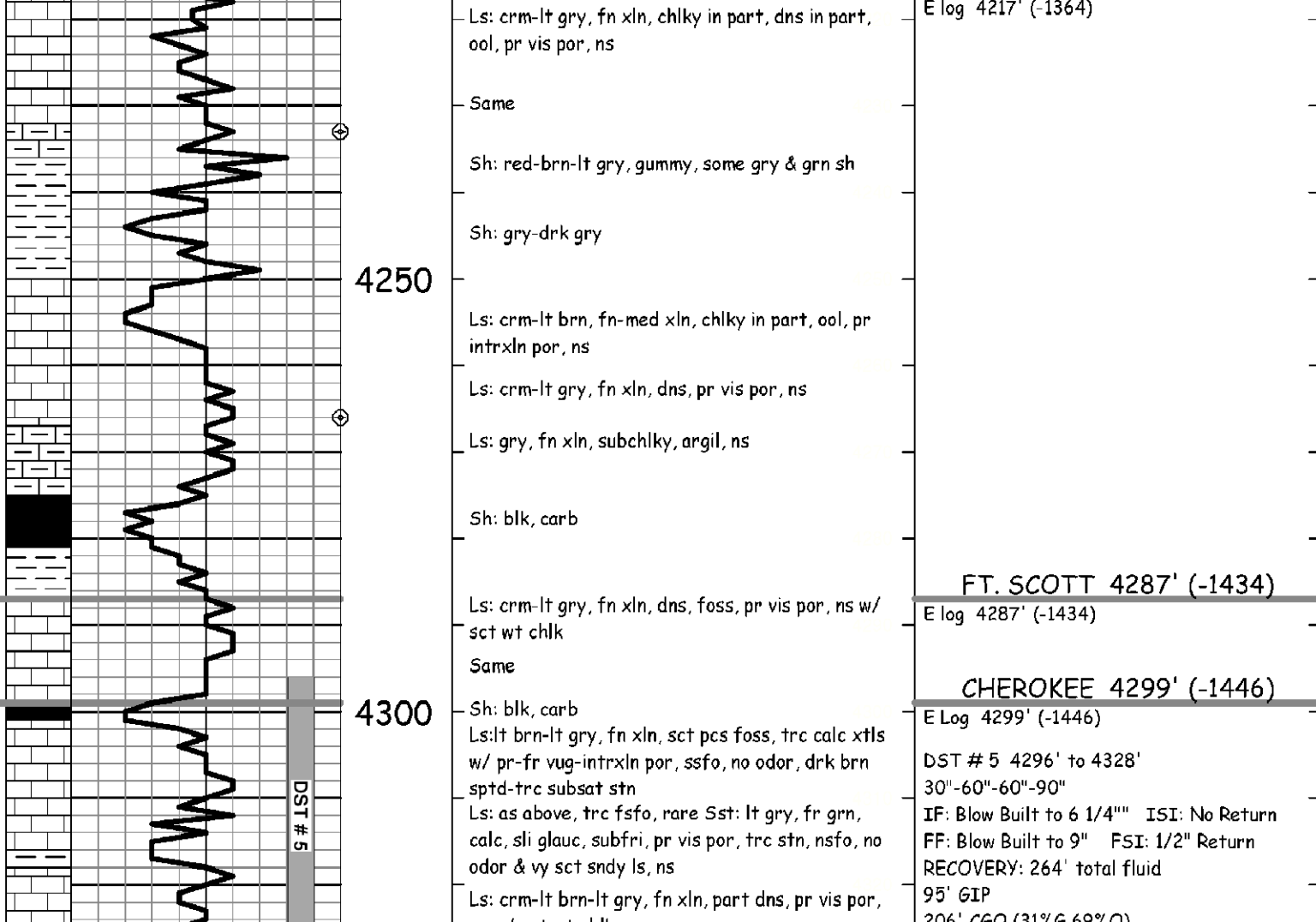
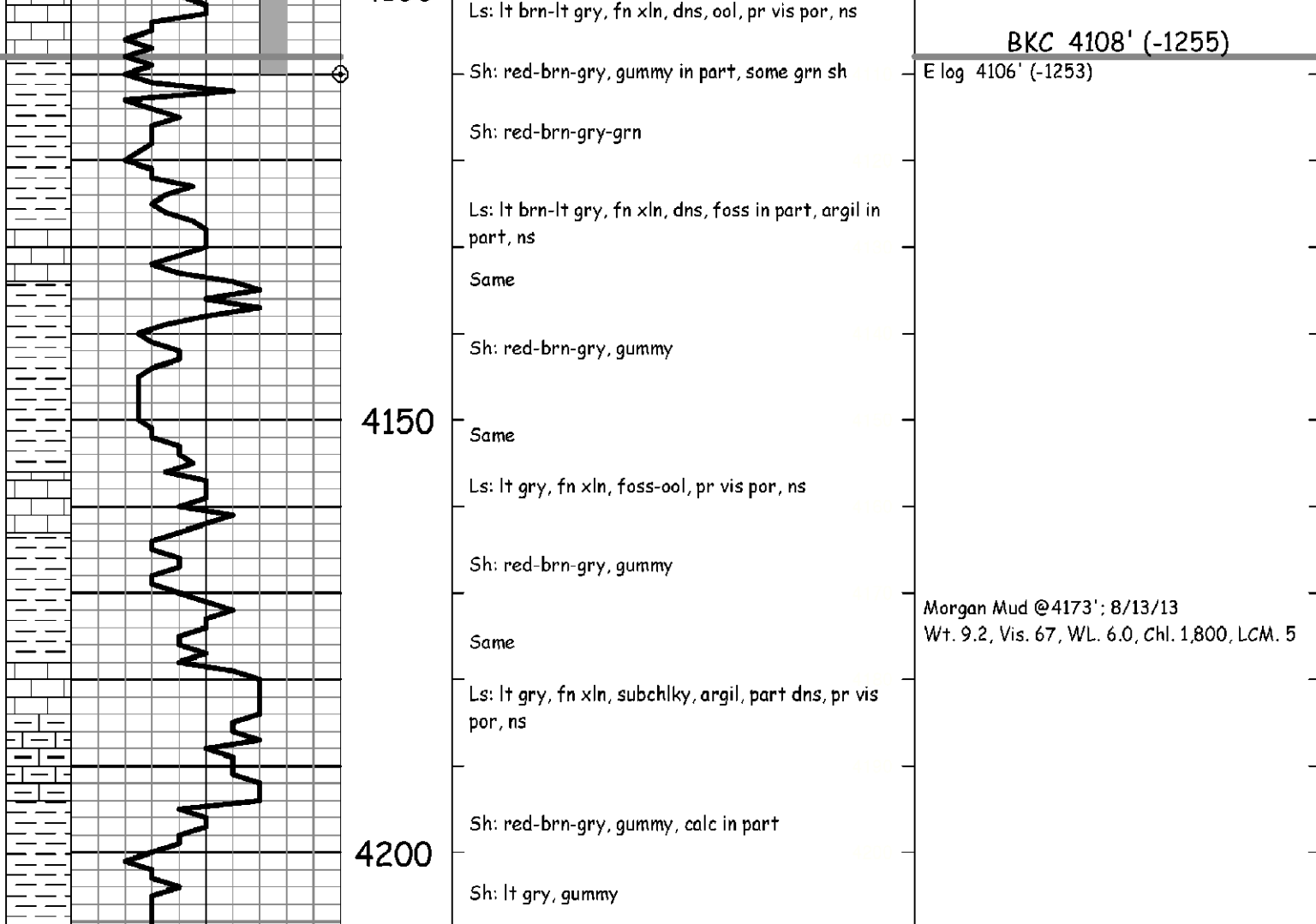
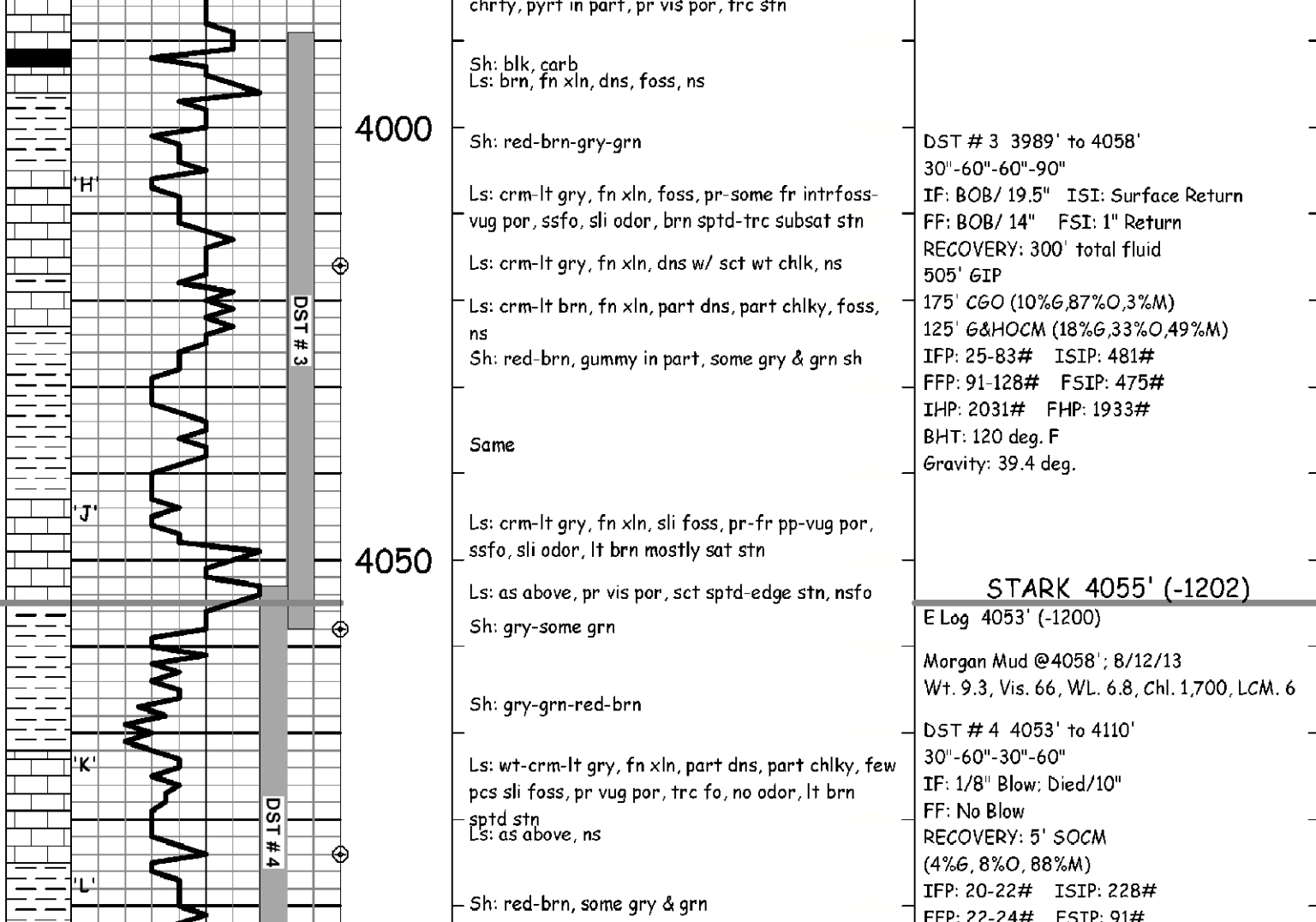
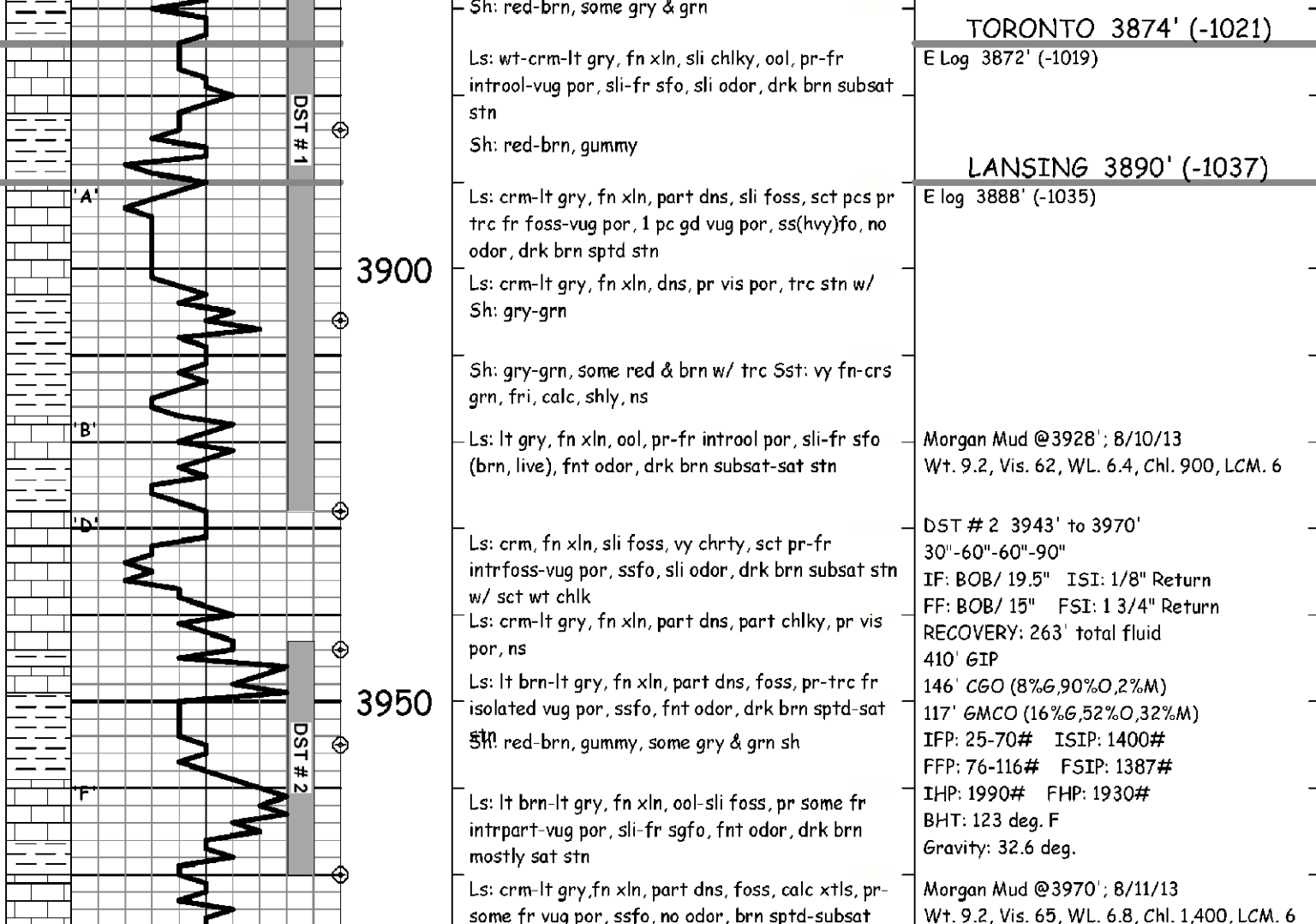
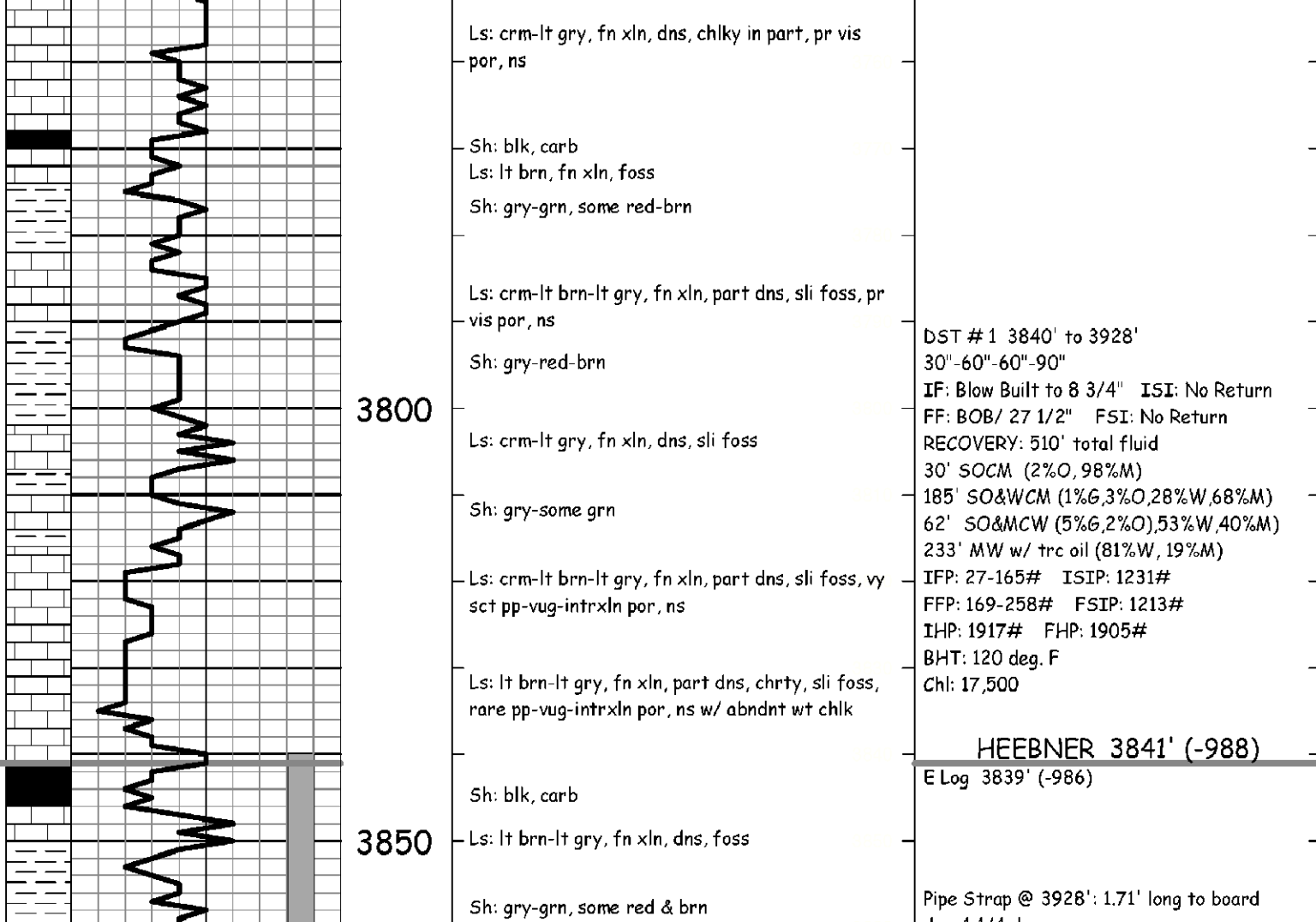
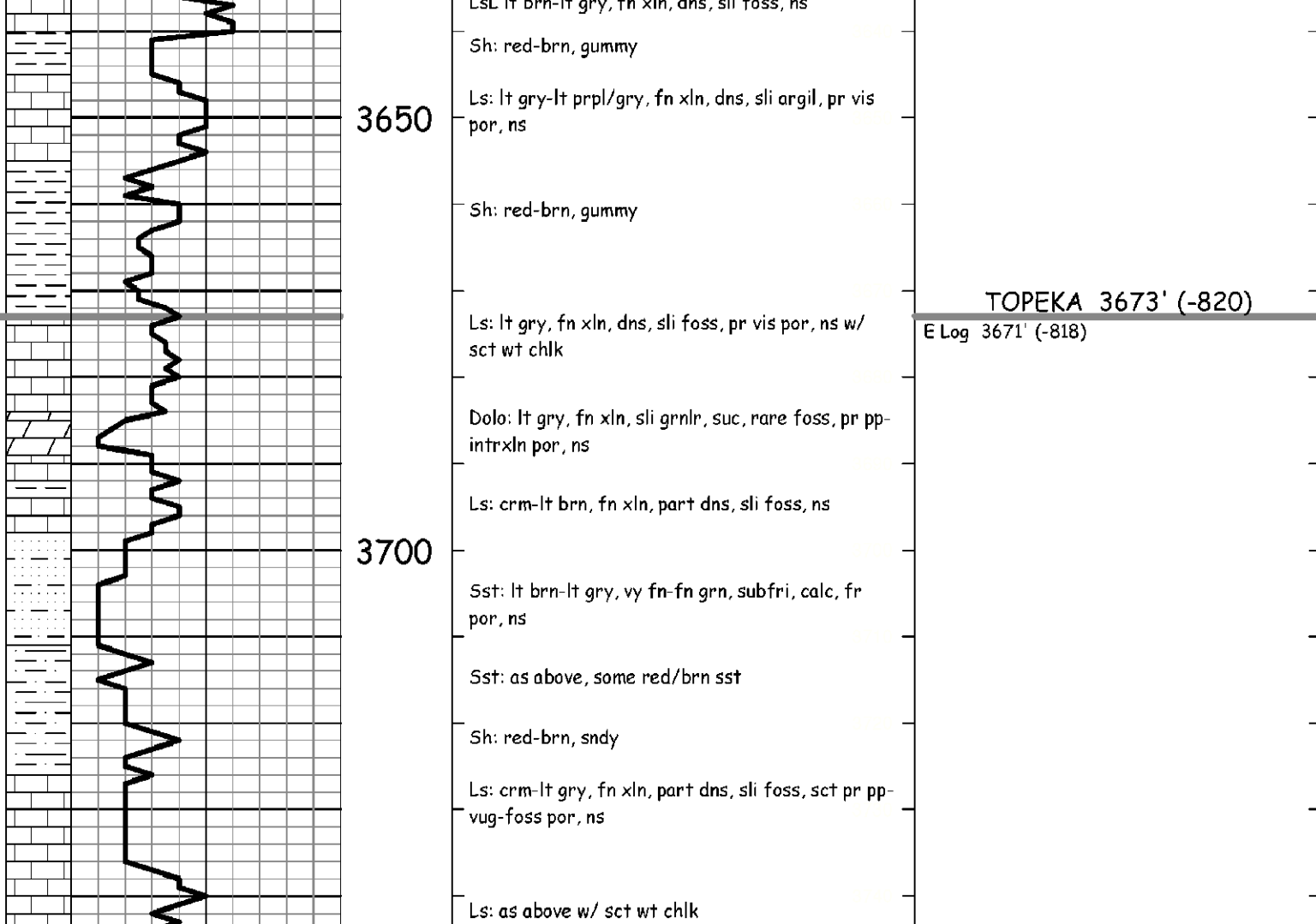
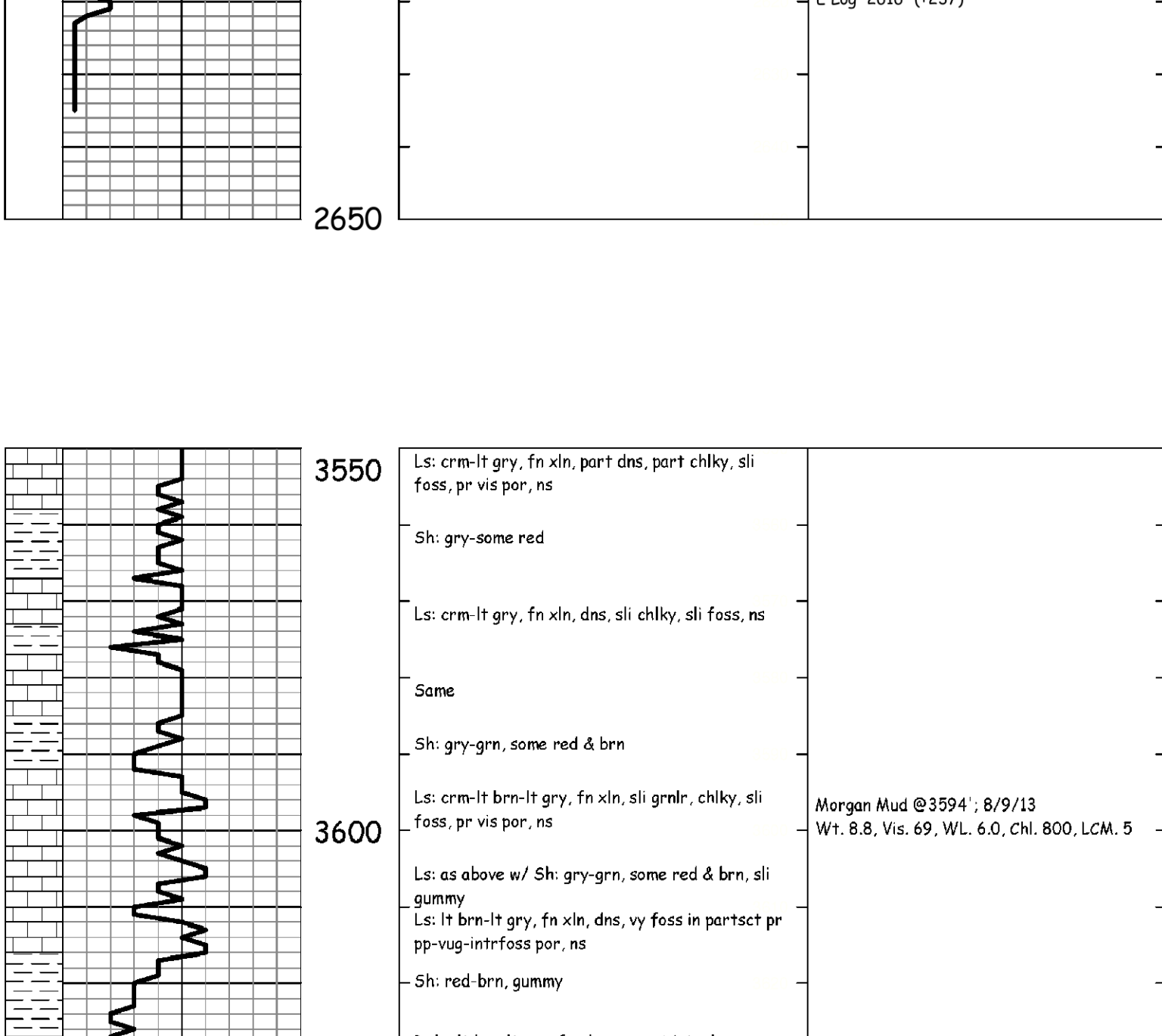
5 1/2" production casing set to further test the Lansing/Kansas City and Cherokee formations.

Electric log measurements correlate about even to 2' high compared to rotary measurements.

Samples deposited at the Kansas Geological Survey.

Respectfully Submitted,  
*Jeff Christian*

Jeff Christian





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Jeff Christian

**Earl #1-6**

**6-5s-30w Decatur KS**

Start Date: 2013.08.10 @ 11:43:00

End Date: 2013.08.10 @ 19:56:30

Job Ticket #: 52655                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.08.15 @ 11:00:16



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.  
250 N. Water STE 300  
Wichita, KS 67202  
ATTN: Jeff Christian

**6-5s-30w Decatur KS**

**Earl #1-6**

Job Ticket: 52655

**DST#: 1**

Test Start: 2013.08.10 @ 11:43:00

## GENERAL INFORMATION:

Formation: **Toronto - LKC "A & B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:56:45

Time Test Ended: 19:56:30

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 57

**Interval: 3840.00 ft (KB) To 3928.00 ft (KB) (TVD)**

Reference Elevations: 2853.00 ft (KB)

Total Depth: 3928.00 ft (KB) (TVD)

2842.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

**Serial #: 8671**

**Inside**

Press @ Run Depth: 258.04 psig @ 3841.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.08.10

End Date:

2013.08.10

Last Calib.:

2013.08.10

Start Time: 11:43:05

End Time:

19:56:29

Time On Btm:

2013.08.10 @ 13:56:30

Time Off Btm:

2013.08.10 @ 17:58:30

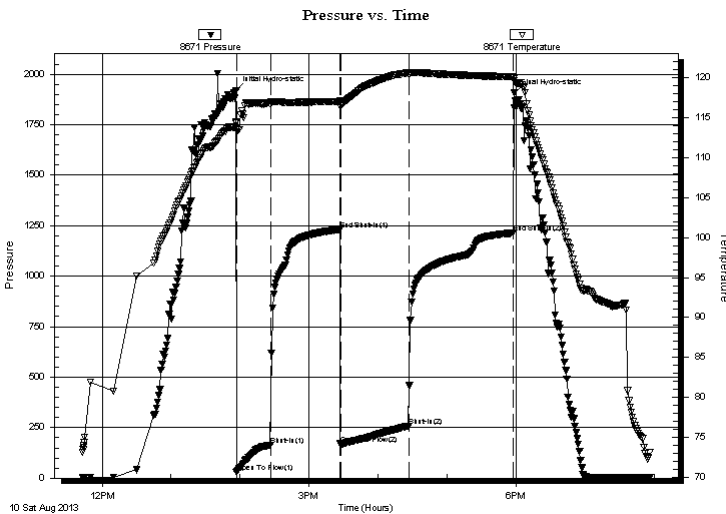
**TEST COMMENT:** 30 - IF: Blow built to 8 3/4" (loose hammer union tightened at 18 min.)

60 - IS: No blow back

60 - FF: Blow built to BOB (11") in 27 1/2 min.

90 - FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1917.34	114.47	Initial Hydro-static
1	26.90	113.48	Open To Flow (1)
30	165.31	116.78	Shut-In(1)
91	1231.27	117.07	End Shut-In(1)
91	168.62	116.63	Open To Flow (2)
151	258.04	120.47	Shut-In(2)
241	1213.26	120.15	End Shut-In(2)
242	1905.42	119.69	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
233.00	MCW w/trace oil 81%w, 19%m	1.15
62.00	SO/MW 53%w, 40%m, 5%g, 2%o	0.87
185.00	SO/WCM 68%m, 28%w, 3%o, 1%g	2.60
30.00	SOCM 98%m, 2%o	0.42

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.  
250 N. Water STE 300  
Wichita, KS 67202  
ATTN: Jeff Christian

**6-5s-30w Decatur KS**  
**Earl #1-6**  
Job Ticket: 52655      **DST#: 1**  
Test Start: 2013.08.10 @ 11:43:00

## GENERAL INFORMATION:

Formation: **Toronto - LKC "A & B"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 13:56:45  
 Time Test Ended: 19:56:30  
 Interval: **3840.00 ft (KB) To 3928.00 ft (KB) (TVD)**  
 Total Depth: 3928.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)  
 Tester: James Winder  
 Unit No: 57

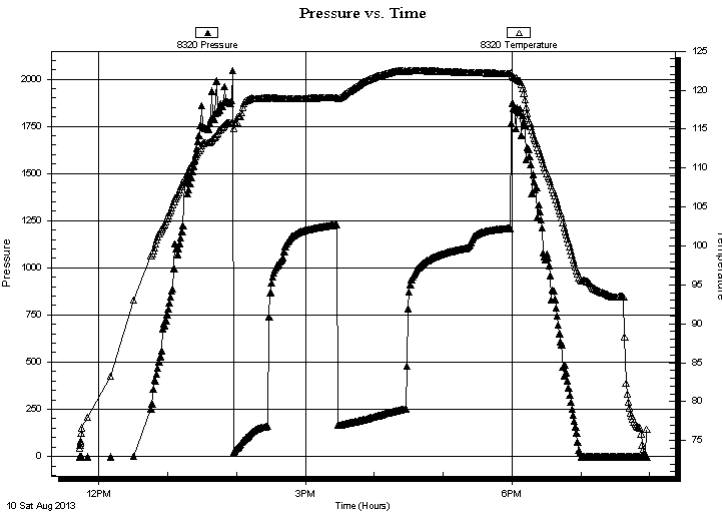
Reference Elevations: 2853.00 ft (KB)  
 2842.00 ft (CF)  
 KB to GR/CF: 11.00 ft

**Serial #: 8320      Outside**

Press @ Run Depth: psig @ 3841.00 ft (KB)  
 Start Date: 2013.08.10      End Date: 2013.08.10  
 Start Time: 11:43:05      End Time: 19:57:14

Capacity: 8000.00 psig  
 Last Calib.: 2013.08.10  
 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30 - IF: Blow built to 8 3/4" (loose hammer union tightened at 18 min.)  
 60 - IS: No blow back  
 60 - FF: Blow built to BOB (11") in 27 1/2 min.  
 90 - FS: No blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery		
Length (ft)	Description	Volume (bbl)
233.00	MCW w/trace oil 81%w , 19%m	1.15
62.00	SO/MW 53%w , 40%m, 5%g, 2%o	0.87
185.00	SO/WCM 68%m, 28%w , 3%o, 1%g	2.60
30.00	SOCM 98%m, 2%o	0.42

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52655

**DST#: 1**

ATTN: Jeff Christian

Test Start: 2013.08.10 @ 11:43:00

## Tool Information

Drill Pipe:	Length: 3601.00 ft	Diameter: 3.80 inches	Volume: 50.51 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 51.66 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	3840.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	88.00 ft			
Tool Length:	116.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments: 2" blow in 2 min., found loose hammer union, tightened at 18 min., 3" blow at 18 min., built to 8 3/4" at 30 min.

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3817.00	
Hydraulic tool	5.00			3822.00	
Jars	5.00			3827.00	
Safety Joint	3.00			3830.00	
Packer	5.00			3835.00	28.00 Bottom Of Top Packer
Packer	5.00			3840.00	
Stubb	1.00			3841.00	
Recorder	0.00	8671	Inside	3841.00	
Recorder	0.00	8320	Outside	3841.00	
Perforations	18.00			3859.00	
Blank Spacing	64.00			3923.00	
Perforations	2.00			3925.00	
Bullnose	3.00			3928.00	88.00 Bottom Packers & Anchor

**Total Tool Length: 116.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52655

**DST#: 1**

ATTN: Jeff Christian

Test Start: 2013.08.10 @ 11:43:00

## 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:

17500 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.36 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
233.00	MCW w/trace oil 81%w , 19%m	1.146
62.00	SO/MW 53%w , 40%m, 5%g, 2%o	0.870
185.00	SO/WCM 68%m, 28%w , 3%o, 1%g	2.595
30.00	SOCM 98%m, 2%o	0.421

Total Length: 510.00 ft      Total Volume: 5.032 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

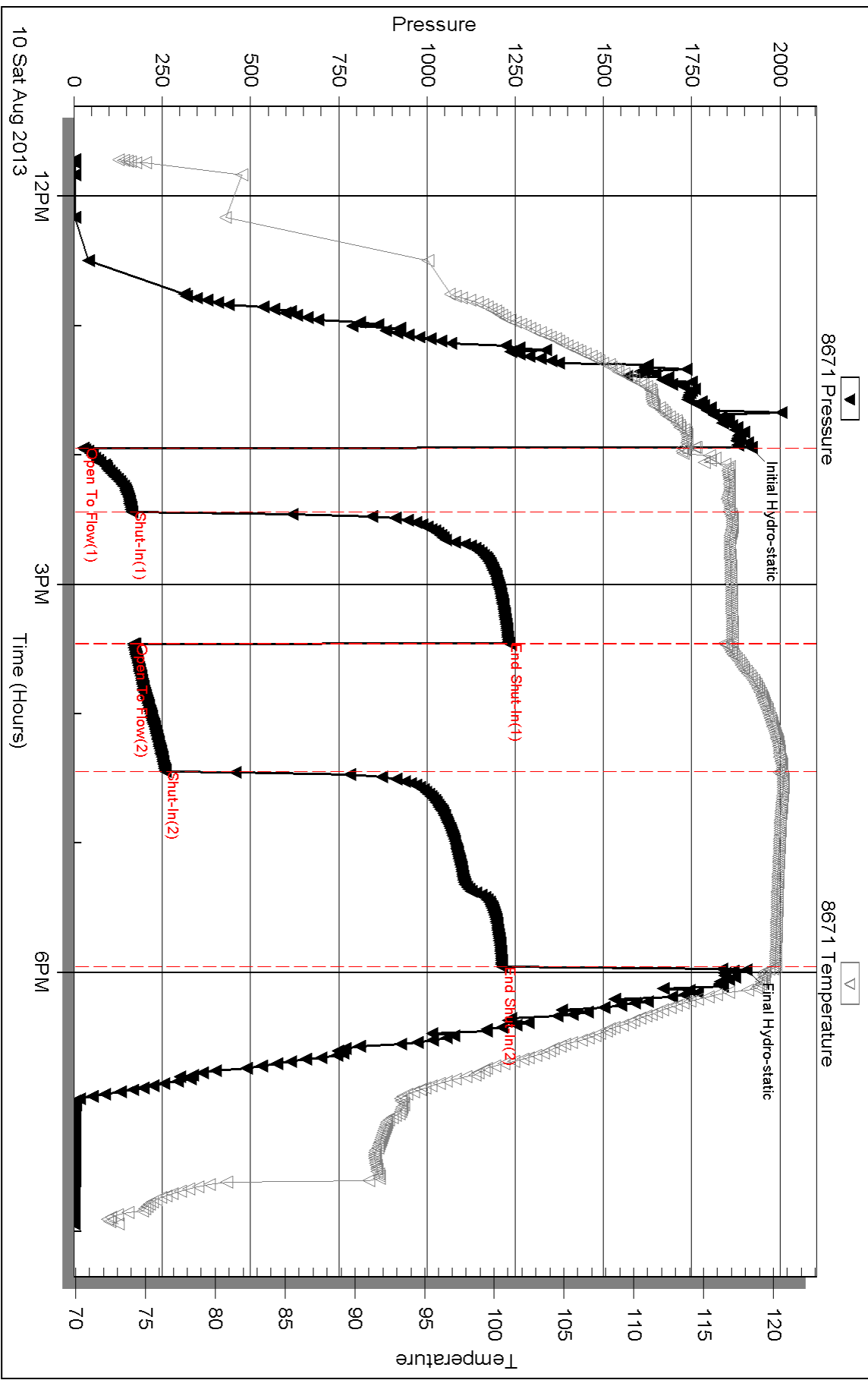
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .348 ohms @ 78.0 deg F

### Pressure vs. Time

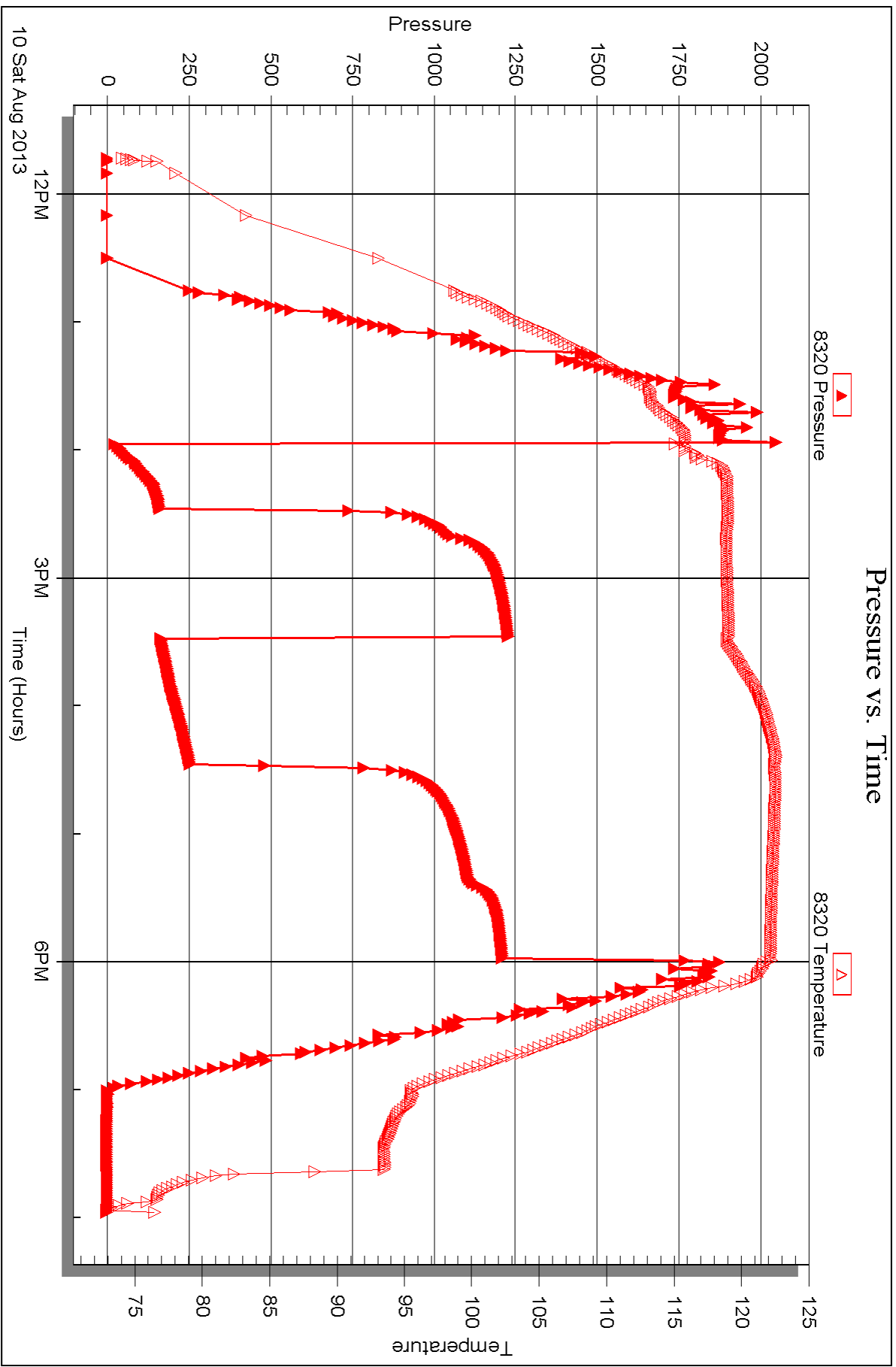


Serial #: 8320

Outside Murfin Drilling Co., Inc.

Earl #1-6

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Jeff Christian

**Earl #1-6**

**6-5s-30w Decatur KS**

Start Date: 2013.08.11 @ 05:41:00

End Date: 2013.08.11 @ 13:34:30

Job Ticket #: 52656                      DST #: 2

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

Printed: 2013.08.15 @ 10:56:54

Murfin Drilling Co., Inc.  
6-5s-30w Decatur KS  
Earl #1-6  
DST # 2  
LKC "F"  
2013.08.11



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.  
 250 N. Water STE 300  
 Wichita, KS 67202  
 ATTN: Jeff Christian

**6-5s-30w Decatur KS**  
**Earl #1-6**  
 Job Ticket: 52656 **DST#: 2**  
 Test Start: 2013.08.11 @ 05:41:00

## GENERAL INFORMATION:

Formation: **LKC "F"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 07:44:30  
 Time Test Ended: 13:34:30  
 Interval: **3943.00 ft (KB) To 3970.00 ft (KB) (TVD)**  
 Total Depth: 3970.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: James Winder  
 Unit No: 57  
 Reference Elevations: 2853.00 ft (KB)  
 2842.00 ft (CF)  
 KB to GR/CF: 11.00 ft

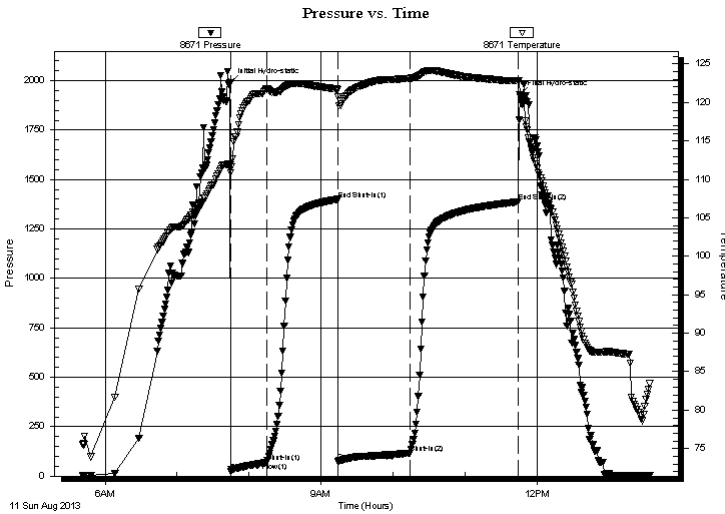
## Serial #: 8671

Inside

Press @ Run Depth: 115.56 psig @ 3944.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.08.11 End Date: 2013.08.11 Last Calib.: 2013.08.11  
 Start Time: 05:41:05 End Time: 13:34:29 Time On Btm: 2013.08.11 @ 07:44:15  
 Time Off Btm: 2013.08.11 @ 11:46:00

**TEST COMMENT:** 30 - IF: Blow built to BOB (11") in 19 1/2 min.  
 60 - IS: Blow back built to 1/8"  
 60 - FF: Blow built to BOB in 15 min.  
 90 - FS: Blow back built to 1 3/4"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1990.09	111.84	Initial Hydro-static
1	24.74	110.87	Open To Flow (1)
31	70.48	121.81	Shut-In(1)
90	1399.95	121.71	End Shut-In(1)
90	76.31	120.78	Open To Flow (2)
151	115.56	123.14	Shut-In(2)
241	1387.32	122.81	End Shut-In(2)
242	1930.36	120.95	Final Hydro-static

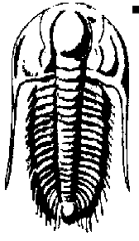
## Recovery

Length (ft)	Description	Volume (bbl)
117.00	GMCO 52%o, 32%m, 16%g	0.58
146.00	CGO 90%o, 8%g, 2%m	0.99
0.00	GIP = 410'	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.  
250 N. Water STE 300  
Wichita, KS 67202  
ATTN: Jeff Christian

**6-5s-30w Decatur KS**  
**Earl #1-6**  
Job Ticket: 52656      **DST#: 2**  
Test Start: 2013.08.11 @ 05:41:00

## GENERAL INFORMATION:

Formation:	<b>LKC "F"</b>	Test Type:	Conventional Bottom Hole (Reset)
Deviated:	No Whipstock:                          ft (KB)	Tester:	James Winder
Time Tool Opened:	07:44:30	Unit No:	57
Time Test Ended:	13:34:30		
<b>Interval:</b>	<b>3943.00 ft (KB) To 3970.00 ft (KB) (TVD)</b>	Reference Elevations:	2853.00 ft (KB)
Total Depth:	3970.00 ft (KB) (TVD)		2842.00 ft (CF)
Hole Diameter:	7.88 inchesHole Condition: Fair	KB to GR/CF:	11.00 ft

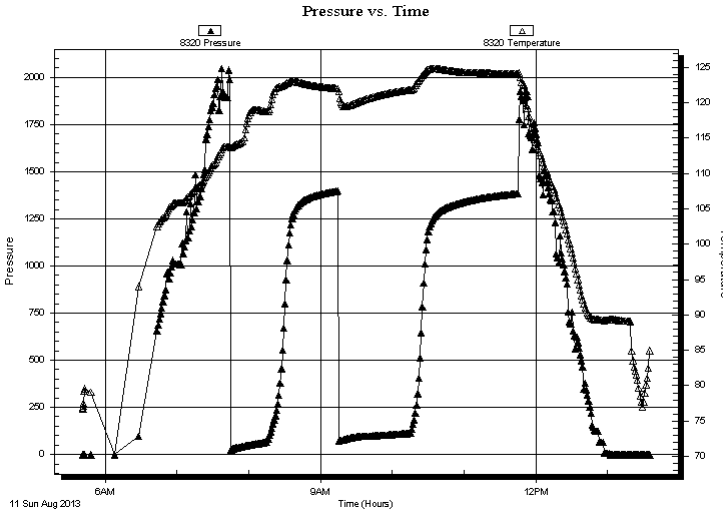
## Serial #: 8320

Outside

Press@RunDepth:	psig @ 3944.00 ft (KB)	Capacity:	8000.00 psig
Start Date:	2013.08.11      End Date: 2013.08.11	Last Calib.:	2013.08.11
Start Time:	05:41:05      End Time: 13:35:14	Time On Btm:	
		Time Off Btm:	

**TEST COMMENT:** 30 - IF: Blow built to BOB (11") in 19 1/2 min.  
60 - IS: Blow back built to 1/8"  
60 - FF: Blow built to BOB in 15 min.  
90 - FS: Blow back built to 1 3/4"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
117.00	GMCO 52%o, 32%m, 16%g	0.58
146.00	CGO 90%o, 8%g, 2%m	0.99
0.00	GIP = 410'	0.00

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52656

**DST#: 2**

ATTN: Jeff Christian

Test Start: 2013.08.11 @ 05:41:00

## Tool Information

Drill Pipe:	Length: 3694.00 ft	Diameter: 3.80 inches	Volume: 51.82 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 52.97 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	3943.00 ft			Final 69000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	55.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			3920.00	
Hydraulic tool	5.00			3925.00	
Jars	5.00			3930.00	
Safety Joint	3.00			3933.00	
Packer	5.00			3938.00	28.00 Bottom Of Top Packer
Packer	5.00			3943.00	
Stubb	1.00			3944.00	
Recorder	0.00	8671	Inside	3944.00	
Recorder	0.00	8320	Outside	3944.00	
Perforations	23.00			3967.00	
Bullnose	3.00			3970.00	27.00 Bottom Packers & Anchor

**Total Tool Length: 55.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52656

**DST#: 2**

ATTN: Jeff Christian

Test Start: 2013.08.11 @ 05:41:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 65.00 sec/qt  
Water Loss: 6.77 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 1400.00 ppm  
Filter Cake: 2.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: 32.6 deg API  
Water Salinity: ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
117.00	GMCO 52%o, 32%m, 16%g	0.575
146.00	CGO 90%o, 8%g, 2%m	0.991
0.00	GIP = 410'	0.000

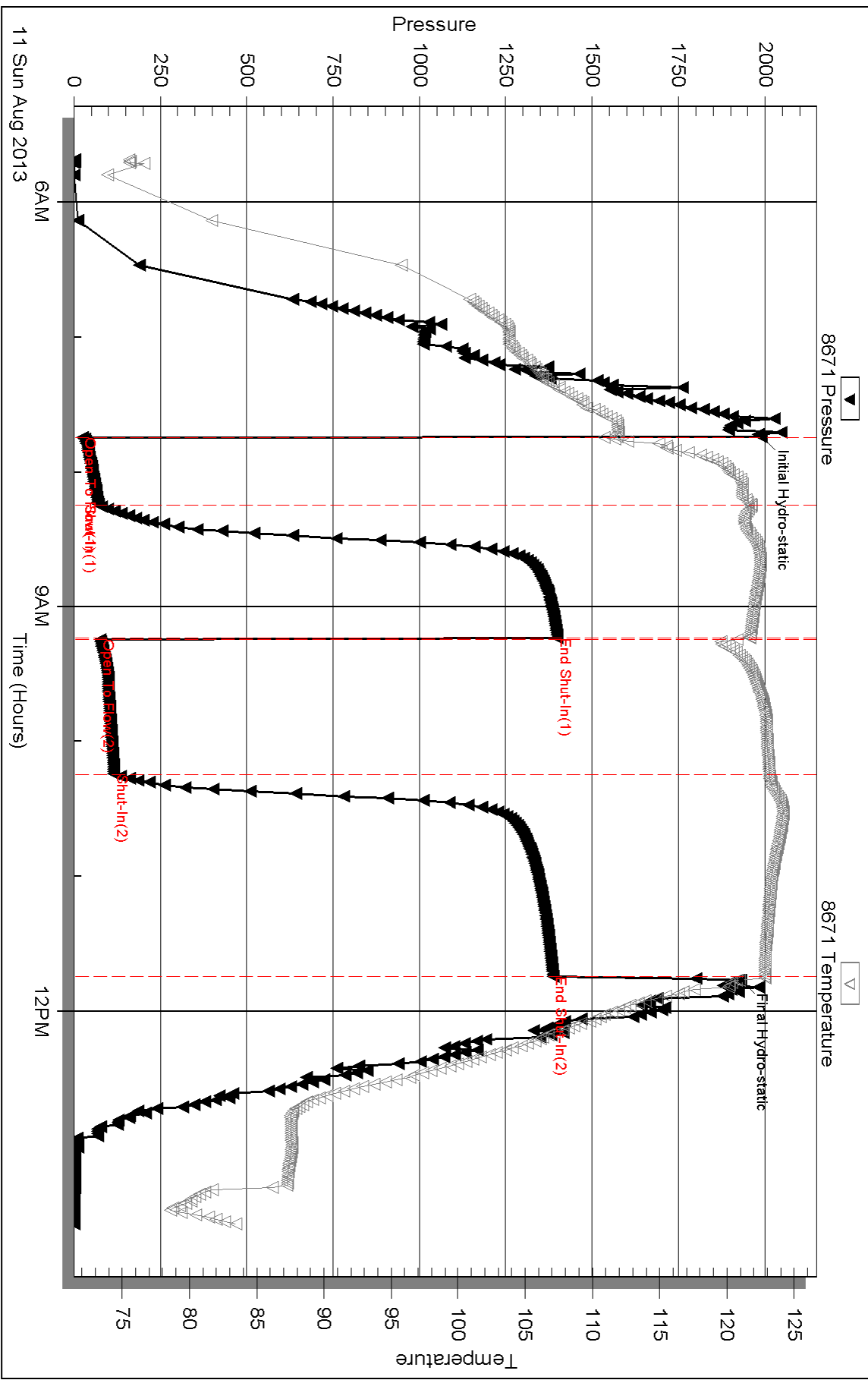
Total Length: 263.00 ft      Total Volume: 1.566 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: Gravity = 35.6 api @ 90 deg F  
Corrected Gravity = 32.6 api

### Pressure vs. Time

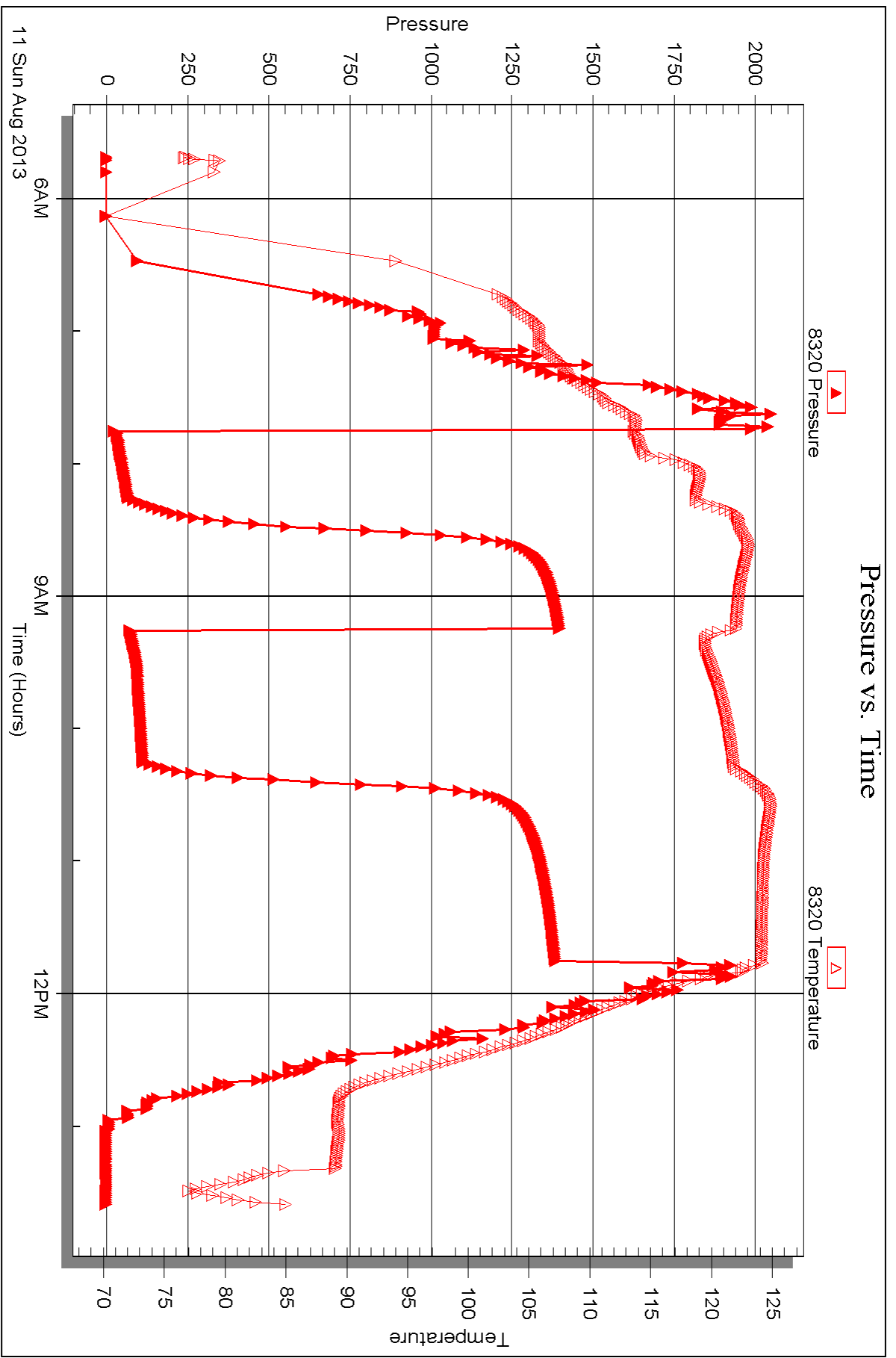


Serial #: 8320

Outside Murfin Drilling Co., Inc.

Earl #1-6

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Jeff Christian

**Earl #1-6**

**6-5s-30w Decatur KS**

Start Date: 2013.08.12 @ 02:03:00

End Date: 2013.08.12 @ 10:03:58

Job Ticket #: 52657                      DST #: 3

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

Printed: 2013.08.15 @ 10:54:40



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.  
250 N. Water STE 300  
Wichita, KS 67202  
ATTN: Jeff Christian

**6-5s-30w Decatur KS**  
**Earl #1-6**  
Job Ticket: 52657 **DST#: 3**  
Test Start: 2013.08.12 @ 02:03:00

## GENERAL INFORMATION:

Formation: **LKC "H - J"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 04:02:13  
Time Test Ended: 10:03:58  
Interval: **3989.00 ft (KB) To 4058.00 ft (KB) (TVD)**  
Total Depth: 4058.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Reset)  
Tester: James Winder  
Unit No: 57  
Reference Elevations: 2853.00 ft (KB)  
2842.00 ft (CF)  
KB to GR/CF: 11.00 ft

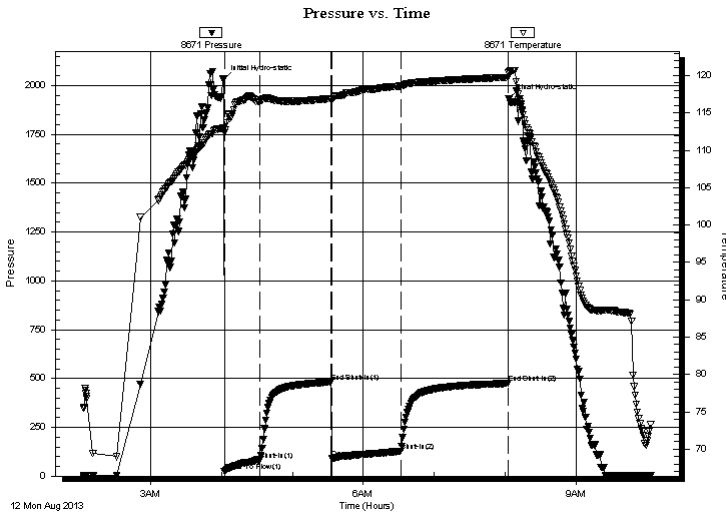
## Serial #: 8671

Inside

Press @ Run Depth: 127.63 psig @ 3990.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2013.08.12 End Date: 2013.08.12 Last Calib.: 2013.08.12  
Start Time: 02:03:05 End Time: 10:03:58 Time On Btm: 2013.08.12 @ 04:01:43  
Time Off Btm: 2013.08.12 @ 08:02:58

TEST COMMENT: 30 - IF: Blow built to BOB (11") in 19 1/2"  
60 - IS: Weak surface blow back  
60 - FF: Blow built to BOB in 14 min.  
90 - FS: Blow back built to 1"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2030.58	112.99	Initial Hydro-static
1	24.62	112.38	Open To Flow (1)
31	83.39	116.38	Shut-In(1)
91	481.13	116.89	End Shut-In(1)
92	91.11	116.76	Open To Flow (2)
150	127.63	118.59	Shut-In(2)
241	474.58	119.76	End Shut-In(2)
242	1932.72	120.41	Final Hydro-static

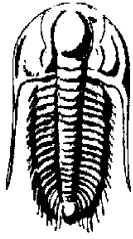
## Recovery

Length (ft)	Description	Volume (bbl)
125.00	GOM 49% <i>m</i> , 33% <i>o</i> , 18% <i>g</i>	0.61
175.00	CGO 87% <i>o</i> , 10% <i>g</i> , 3% <i>m</i>	1.47
0.00	GIP = 505'	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Jeff Christian

**6-5s-30w Decatur KS**

**Earl #1-6**

Job Ticket: 52657

**DST#: 3**

Test Start: 2013.08.12 @ 02:03:00

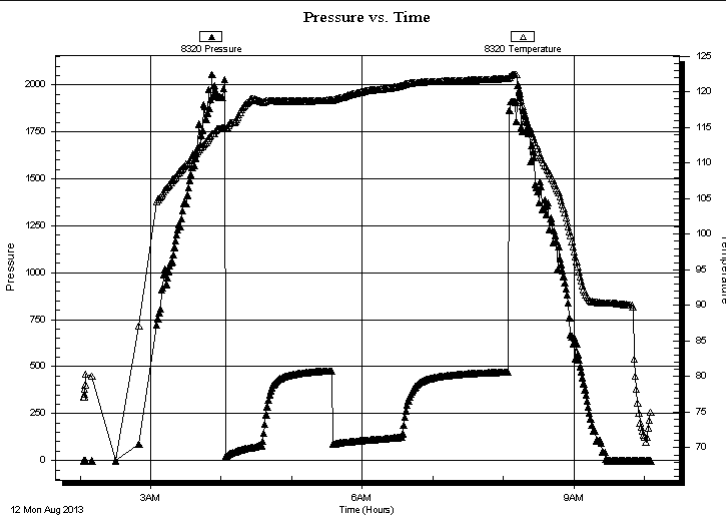
**GENERAL INFORMATION:**

Formation: <b>LKC "H - J"</b>				Test Type: <b>Conventional Bottom Hole (Reset)</b>
Deviated: <b>No Whipstock:</b>	<b>ft (KB)</b>			Tester: <b>James Winder</b>
Time Tool Opened: <b>04:02:13</b>				Unit No: <b>57</b>
Time Test Ended: <b>10:03:58</b>				
<b>Interval: 3989.00 ft (KB) To 4058.00 ft (KB) (TVD)</b>			Reference Elevations:	<b>2853.00 ft (KB)</b>
Total Depth: <b>4058.00 ft (KB) (TVD)</b>				<b>2842.00 ft (CF)</b>
Hole Diameter: <b>7.88 inches</b>	Hole Condition: <b>Fair</b>		KB to GR/CF:	<b>11.00 ft</b>

**Serial #: 8320 Outside**

Press @ RunDepth: <b>psig @ 3990.00 ft (KB)</b>	Capacity: <b>8000.00 psig</b>
Start Date: <b>2013.08.12</b>	End Date: <b>2013.08.12</b>
Start Time: <b>02:03:05</b>	End Time: <b>10:05:59</b>
Last Calib.: <b>2013.08.12</b>	Time On Btm:
Time Off Btm:	

**TEST COMMENT:** 30 - IF: Blow built to BOB (11") in 19 1/2"  
60 - IS: Weak surface blow back  
60 - FF: Blow built to BOB in 14 min.  
90 - FS: Blow back built to 1"



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

**Recovery**

Length (ft)	Description	Volume (bbl)
125.00	GOM 49% <i>m</i> , 33% <i>o</i> , 18% <i>g</i>	0.61
175.00	CGO 87% <i>o</i> , 10% <i>g</i> , 3% <i>m</i>	1.47
0.00	GIP = 505'	0.00

**Gas Rates**

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52657

**DST#: 3**

ATTN: Jeff Christian

Test Start: 2013.08.12 @ 02:03:00

## Tool Information

Drill Pipe:	Length: 3757.00 ft	Diameter: 3.80 inches	Volume: 52.70 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 53.85 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 68000.00 lb
Depth to Top Packer:	3989.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	69.00 ft			
Tool Length:	97.00 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			3966.00	
Hydraulic tool	5.00			3971.00	
Jars	5.00			3976.00	
Safety Joint	3.00			3979.00	
Packer	5.00			3984.00	28.00 Bottom Of Top Packer
Packer	5.00			3989.00	
Stubb	1.00			3990.00	
Recorder	0.00	8671	Inside	3990.00	
Recorder	0.00	8320	Outside	3990.00	
Perforations	28.00			4018.00	
Blank Spacing	33.00			4051.00	
Perforations	4.00			4055.00	
Bullnose	3.00			4058.00	69.00 Bottom Packers & Anchor

**Total Tool Length: 97.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52657

**DST#: 3**

ATTN: Jeff Christian

Test Start: 2013.08.12 @ 02:03:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 58.00 sec/qt  
Water Loss: 6.36 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 1400.00 ppm  
Filter Cake: 2.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: 39.4 deg API  
Water Salinity: ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	GOM 49% <i>m</i> , 33% <i>o</i> , 18% <i>g</i>	0.615
175.00	CGO 87% <i>o</i> , 10% <i>g</i> , 3% <i>m</i>	1.471
0.00	GIP = 505'	0.000

Total Length: 300.00 ft      Total Volume: 2.086 bbl

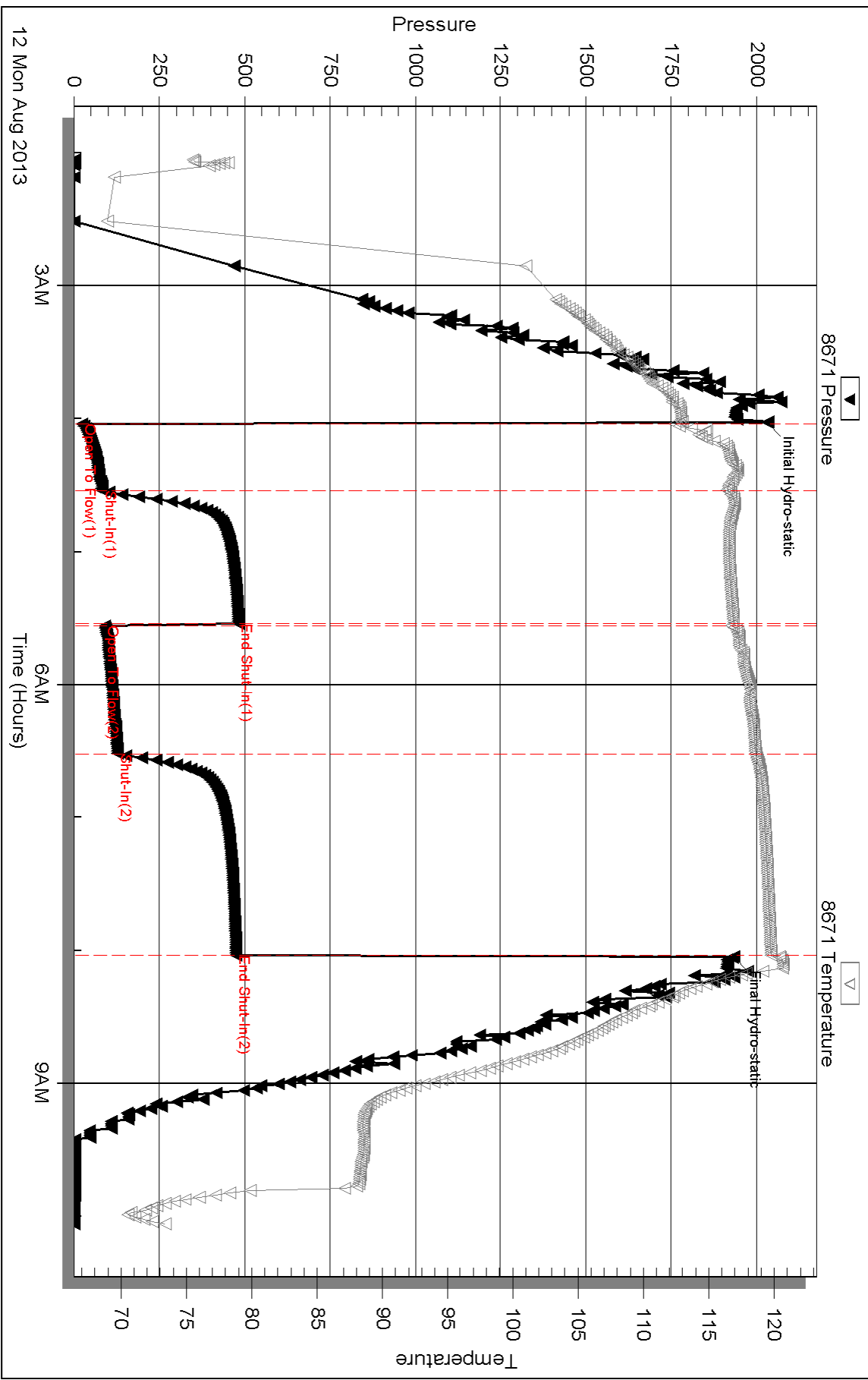
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

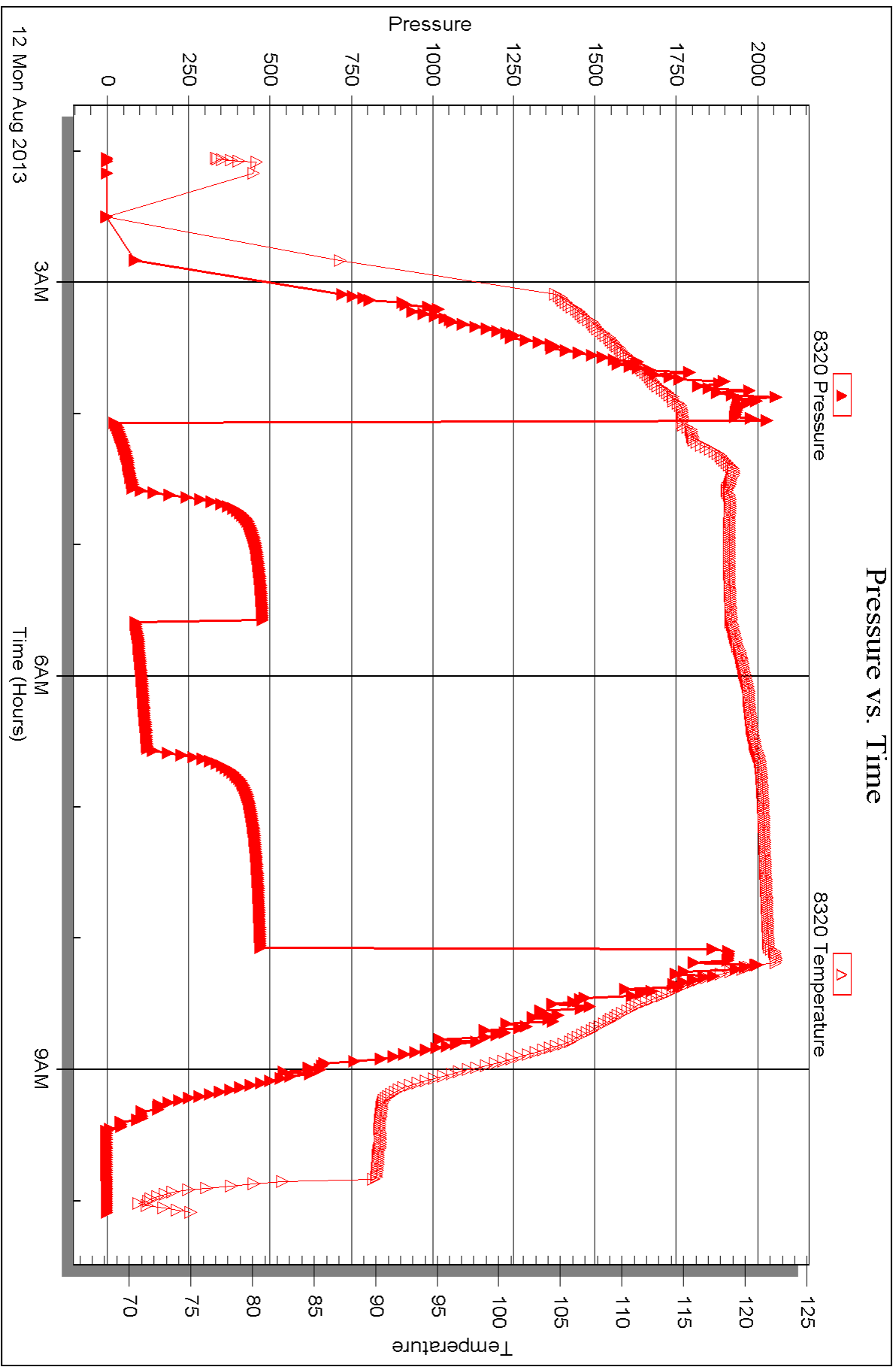
Laboratory Name:      Laboratory Location:

Recovery Comments: Gravity = 41.2 api @ 78 deg F  
Corrected Gravity = 39.4 api



### Pressure vs. Time







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Jeff Christian

**Earl #1-6**

**6-5s-30w Decatur KS**

Start Date: 2013.08.12 @ 18:45:00

End Date: 2013.08.13 @ 01:34:30

Job Ticket #: 52658                      DST #: 4

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

Printed: 2013.08.15 @ 10:53:20



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.  
250 N. Water STE 300  
Wichita, KS 67202  
ATTN: Jeff Christian

**6-5s-30w Decatur KS**

**Earl #1-6**

Job Ticket: 52658

**DST#: 4**

Test Start: 2013.08.12 @ 18:45:00

## GENERAL INFORMATION:

Formation: **LKC "K - L"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 20:44:15  
 Time Test Ended: 01:34:30  
 Interval: **4053.00 ft (KB) To 4110.00 ft (KB) (TVD)**  
 Total Depth: 4110.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: James Winder  
 Unit No: 57  
 Reference Elevations: 2853.00 ft (KB)  
 2842.00 ft (CF)  
 KB to GR/CF: 11.00 ft

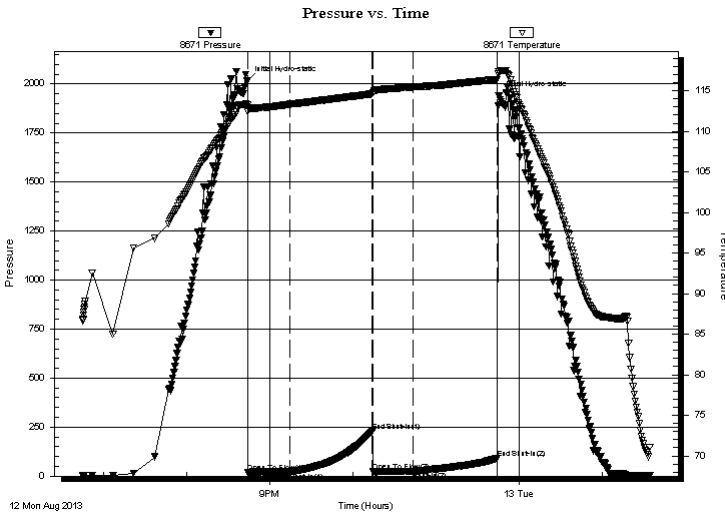
## Serial #: 8671

Inside

Press @ Run Depth: 24.06 psig @ 4054.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.08.12 End Date: 2013.08.13 Last Calib.: 2013.08.13  
 Start Time: 18:45:05 End Time: 01:34:29 Time On Btm: 2013.08.12 @ 20:44:00  
 Time Off Btm: 2013.08.12 @ 23:45:30

TEST COMMENT: 30 - IF: 1/8" blow at open, died back, dead at 10 min.  
 60 - IS: No blow back  
 30 - FF: No blow  
 60 - FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2019.71	113.24	Initial Hydro-static
1	20.05	112.45	Open To Flow (1)
31	21.68	113.32	Shut-In(1)
91	227.86	114.60	End Shut-In(1)
91	22.33	114.79	Open To Flow (2)
120	24.06	115.47	Shut-In(2)
181	91.01	116.38	End Shut-In(2)
182	1942.80	117.30	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	SOCM 88%m, 8%o, 4%g	0.02

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52658

**DST#: 4**

ATTN: Jeff Christian

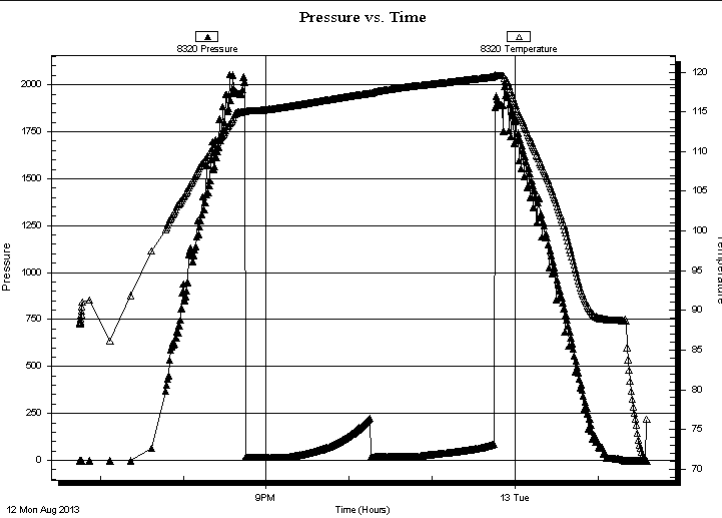
Test Start: 2013.08.12 @ 18:45:00

**GENERAL INFORMATION:**

Formation:	<b>LKC "K - L"</b>				
Deviated:	No Whipstock:	ft (KB)	Test Type:	Conventional Bottom Hole (Reset)	
Time Tool Opened:	20:44:15		Tester:	James Winder	
Time Test Ended:	01:34:30		Unit No:	57	
<b>Interval:</b>	<b>4053.00 ft (KB) To 4110.00 ft (KB) (TVD)</b>		Reference Elevations:	2853.00 ft (KB)	
Total Depth:	4110.00 ft (KB) (TVD)			2842.00 ft (CF)	
Hole Diameter:	7.88 inches	Hole Condition: Fair	KB to GR/CF:	11.00 ft	

<b>Serial #: 8320</b>	<b>Outside</b>				
Press @ RunDepth:	psig @ 4054.00 ft (KB)	Capacity:	8000.00 psig		
Start Date:	2013.08.12	End Date:	2013.08.13	Last Calib.:	2013.08.13
Start Time:	18:45:05	End Time:	01:35:14	Time On Btm:	
				Time Off Btm:	

**TEST COMMENT:** 30 - IF: 1/8" blow at open, died back, dead at 10 min.  
60 - IS: No blow back  
30 - FF: No blow  
60 - FS: No blow back



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

**Recovery**

Length (ft)	Description	Volume (bbl)
5.00	SOCM 88%m, 8%o, 4%g	0.02

\* Recovery from multiple tests

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52658

**DST#: 4**

ATTN: Jeff Christian

Test Start: 2013.08.12 @ 18:45:00

## Tool Information

Drill Pipe:	Length: 3821.00 ft	Diameter: 3.80 inches	Volume: 53.60 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose: 86000.00 lb
			<u>Total Volume: 54.75 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4053.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	57.00 ft			
Tool Length:	85.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			4030.00	
Hydraulic tool	5.00			4035.00	
Jars	5.00			4040.00	
Safety Joint	3.00			4043.00	
Packer	5.00			4048.00	28.00 Bottom Of Top Packer
Packer	5.00			4053.00	
Stubb	1.00			4054.00	
Recorder	0.00	8671	Inside	4054.00	
Recorder	0.00	8320	Outside	4054.00	
Perforations	18.00			4072.00	
Blank Spacing	33.00			4105.00	
Perforations	2.00			4107.00	
Bullnose	3.00			4110.00	57.00 Bottom Packers & Anchor

**Total Tool Length: 85.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52658

**DST#: 4**

ATTN: Jeff Christian

Test Start: 2013.08.12 @ 18:45:00

## 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:

ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	SOCM 88% <i>m</i> , 8% <i>o</i> , 4% <i>g</i>	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

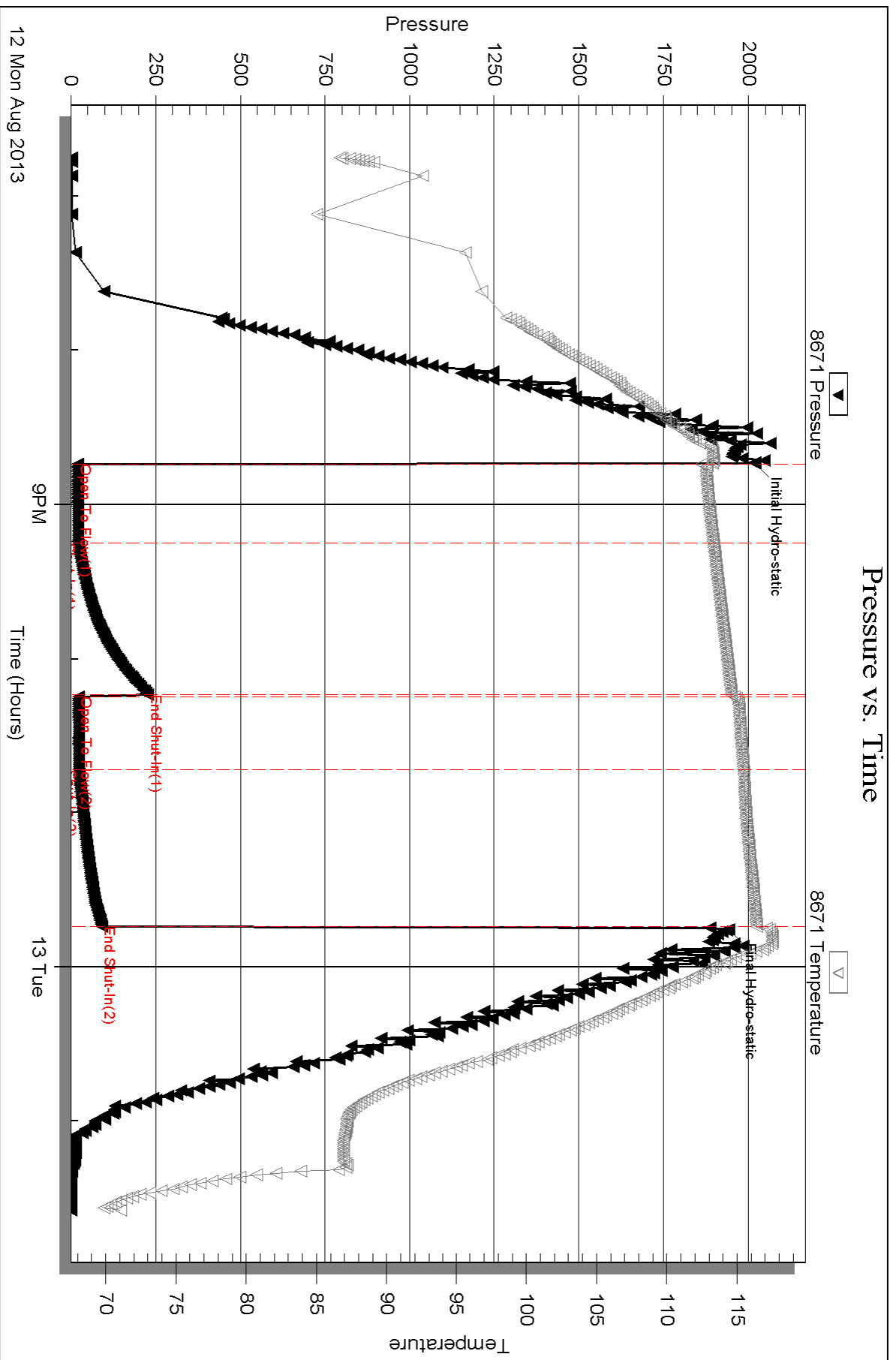
Serial #:

Laboratory Name:

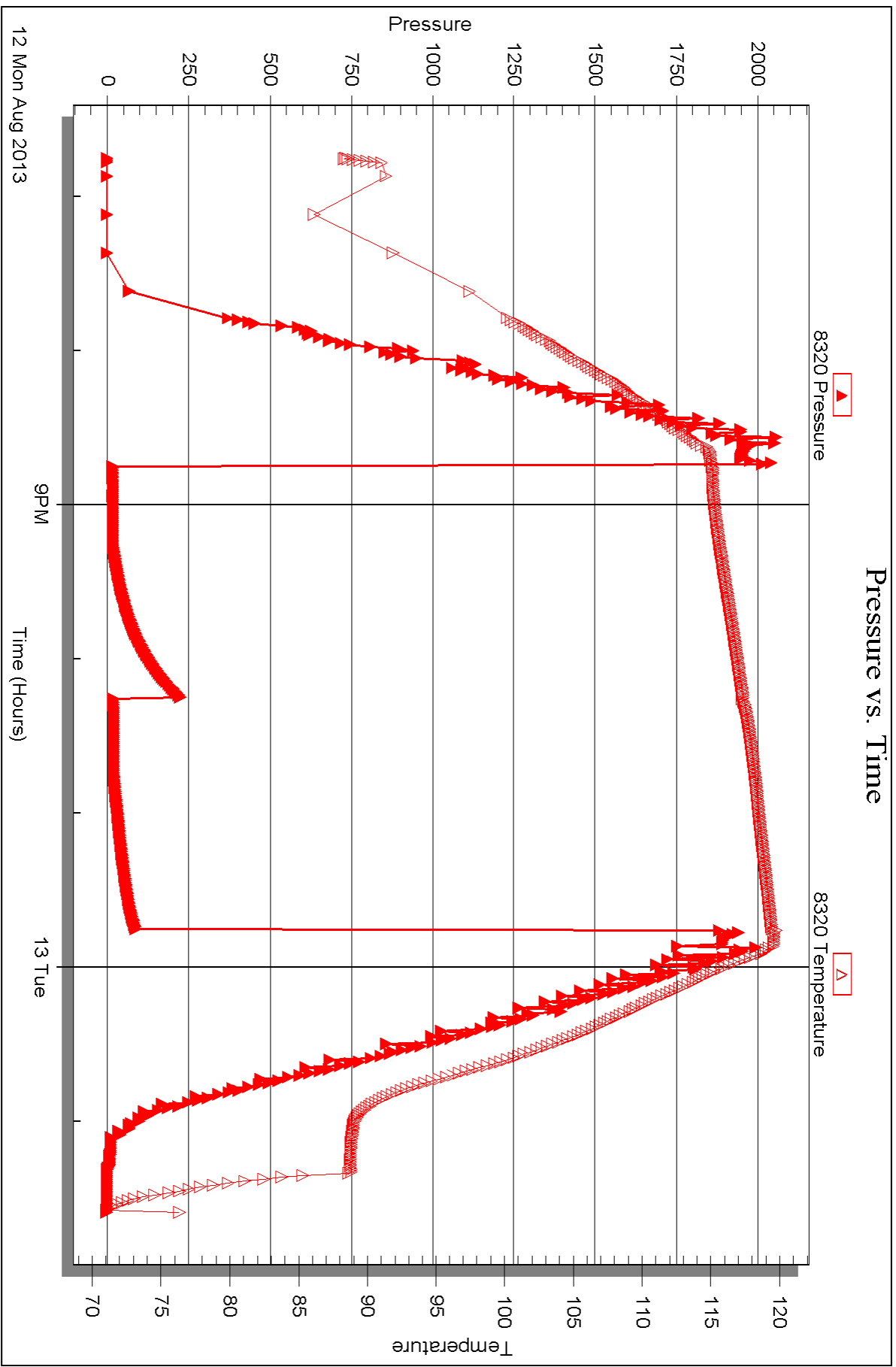
Laboratory Location:

Recovery Comments:

# Pressure vs. Time









## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co., Inc.**

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Jeff Christian

**Earl #1-6**

**6-5s-30w Decatur KS**

Start Date: 2013.08.14 @ 00:15:00

End Date: 2013.08.14 @ 08:15:45

Job Ticket #: 52659                      DST #: 5

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

Printed: 2013.08.15 @ 10:52:25



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.  
250 N. Water STE 300  
Wichita, KS 67202  
ATTN: Jeff Christian

**6-5s-30w Decatur KS**

**Earl #1-6**

Job Ticket: 52659

**DST#: 5**

Test Start: 2013.08.14 @ 00:15:00

## GENERAL INFORMATION:

Formation: **Cherokee**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 02:09:15  
 Tester: James Winder  
 Time Test Ended: 08:15:45  
 Unit No: 57  
 Interval: **4296.00 ft (KB) To 4328.00 ft (KB) (TVD)**  
 Reference Elevations: 2853.00 ft (KB)  
 Total Depth: 4328.00 ft (KB) (TVD)  
 2842.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 11.00 ft

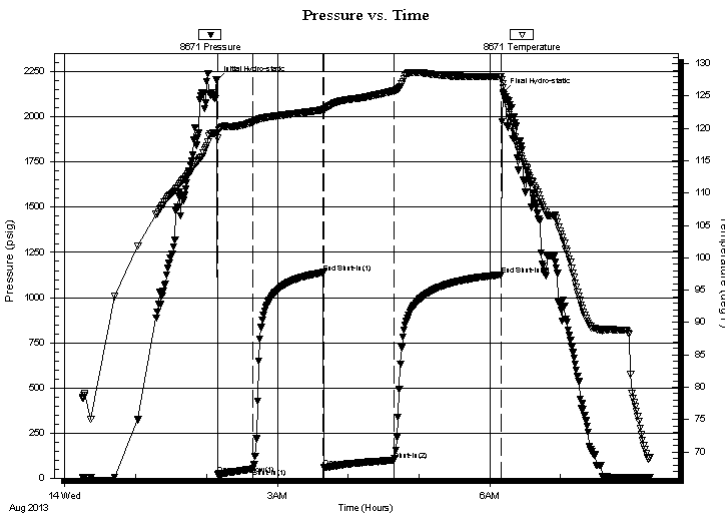
## Serial #: 8671

Inside

Press @ Run Depth: 99.90 psig @ 4297.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.08.14 End Date: 2013.08.14 Last Calib.: 2013.08.14  
 Start Time: 00:15:05 End Time: 08:15:44 Time On Btm: 2013.08.14 @ 02:08:45  
 Time Off Btm: 2013.08.14 @ 06:11:00

TEST COMMENT: 30 - IF: Blow built to 6 1/4"  
 60 - IS: No blow back  
 60 - FF: Blow built to 9"  
 90 - FS: Weak blow back, built to 1/2"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2203.02	119.23	Initial Hydro-static
1	21.43	118.48	Open To Flow (1)
31	51.57	121.01	Shut-In(1)
90	1138.47	122.85	End Shut-In(1)
91	57.56	123.04	Open To Flow (2)
150	99.90	125.81	Shut-In(2)
241	1126.75	127.97	End Shut-In(2)
243	2135.71	126.95	Final Hydro-static

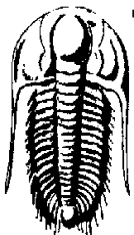
## Recovery

Length (ft)	Description	Volume (bbl)
29.00	GOM 56% <sub>m</sub> , 33% <sub>o</sub> , 11% <sub>g</sub>	0.14
29.00	GMCO 75% <sub>o</sub> , 15% <sub>m</sub> , 10% <sub>g</sub>	0.14
206.00	CGO 69% <sub>o</sub> , 31% <sub>g</sub>	1.30
0.00	GIP = 95'	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

6-5s-30w Decatur KS

250 N. Water STE 300  
Wichita, KS 67202

Earl #1-6

Job Ticket: 52659

DST#: 5

ATTN: Jeff Christian

Test Start: 2013.08.14 @ 00:15:00

## GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:09:15

Time Test Ended: 08:15:45

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 57

Interval: **4296.00 ft (KB) To 4328.00 ft (KB) (TVD)**

Total Depth: 4328.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2853.00 ft (KB)

2842.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: **8320** Outside

Press @ Run Depth: psig @ 4297.00 ft (KB)

Start Date: 2013.08.14

End Date: 2013.08.14

Capacity: 8000.00 psig

Last Calib.: 2013.08.14

Start Time: 00:15:05

End Time: 08:16:29

Time On Btm:

Time Off Btm:

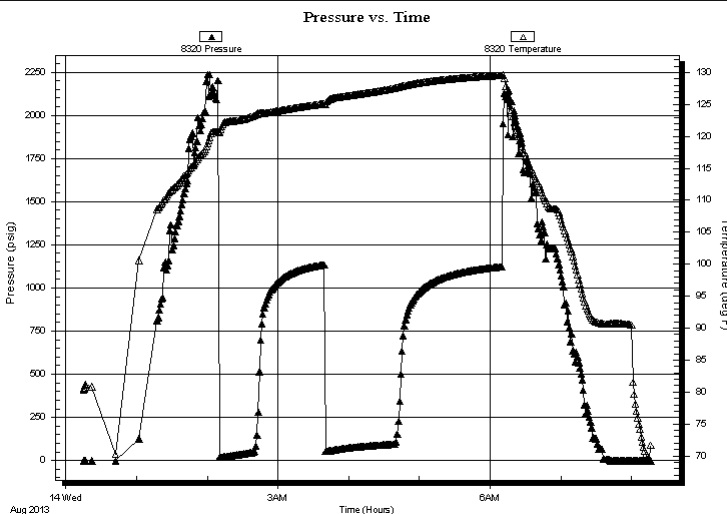
TEST COMMENT: 30 - IF: Blow built to 6 1/4"

60 - IS: No blow back

60 - FF: Blow built to 9"

90 - FS: Weak blow back, built to 1/2"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
29.00	GOM 56% <sub>m</sub> , 33% <sub>o</sub> , 11% <sub>g</sub>	0.14
29.00	GMCO 75% <sub>o</sub> , 15% <sub>m</sub> , 10% <sub>g</sub>	0.14
206.00	CGO 69% <sub>o</sub> , 31% <sub>g</sub>	1.30
0.00	GIP = 95'	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**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52659

**DST#: 5**

ATTN: Jeff Christian

Test Start: 2013.08.14 @ 00:15:00

## Tool Information

Drill Pipe:	Length: 4040.00 ft	Diameter: 3.80 inches	Volume: 56.67 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 233.00 ft	Diameter: 2.25 inches	Volume: 1.15 bbl	Weight to Pull Loose:	86000.00 lb
			<u>Total Volume: 57.82 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	70000.00 lb
Depth to Top Packer:	4296.00 ft			Final	70000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	32.00 ft				
Tool Length:	60.00 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			4273.00	
Hydraulic tool	5.00			4278.00	
Jars	5.00			4283.00	
Safety Joint	3.00			4286.00	
Packer	5.00			4291.00	28.00 Bottom Of Top Packer
Packer	5.00			4296.00	
Stubb	1.00			4297.00	
Recorder	0.00	8671	Inside	4297.00	
Recorder	0.00	8320	Outside	4297.00	
Perforations	28.00			4325.00	
Bullnose	3.00			4328.00	32.00 Bottom Packers & Anchor

**Total Tool Length: 60.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**6-5s-30w Decatur KS**

250 N. Water STE 300  
Wichita, KS 67202

**Earl #1-6**

Job Ticket: 52659

**DST#: 5**

ATTN: Jeff Christian

Test Start: 2013.08.14 @ 00:15:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 9.00 lb/gal  
Viscosity: 67.00 sec/qt  
Water Loss: 5.99 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 1800.00 ppm  
Filter Cake: 2.00 inches

Cushion Type:  
Cushion Length: ft  
Cushion Volume: bbl  
Gas Cushion Type:  
Gas Cushion Pressure: psig

Oil API: 22 deg API  
Water Salinity: ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
29.00	GOM 56% <i>m</i> , 33% <i>o</i> , 11% <i>g</i>	0.143
29.00	GMCO 75% <i>o</i> , 15% <i>m</i> , 10% <i>g</i>	0.143
206.00	CGO 69% <i>o</i> , 31% <i>g</i>	1.295
0.00	GIP = 95'	0.000

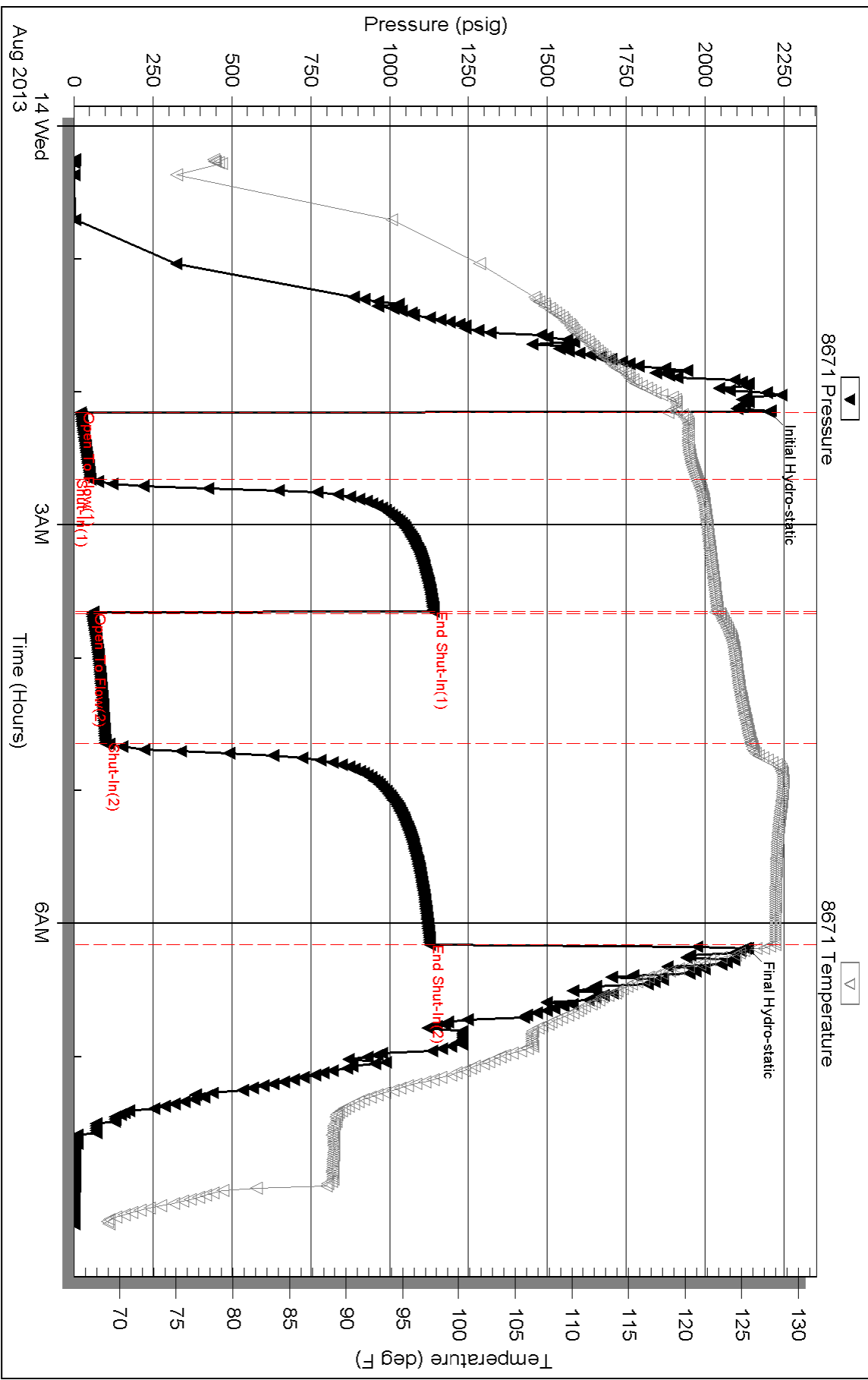
Total Length: 264.00 ft      Total Volume: 1.581 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: Gravity = 23 api @ 70 deg F  
Corrected Gravity = 22 api

### Pressure vs. Time

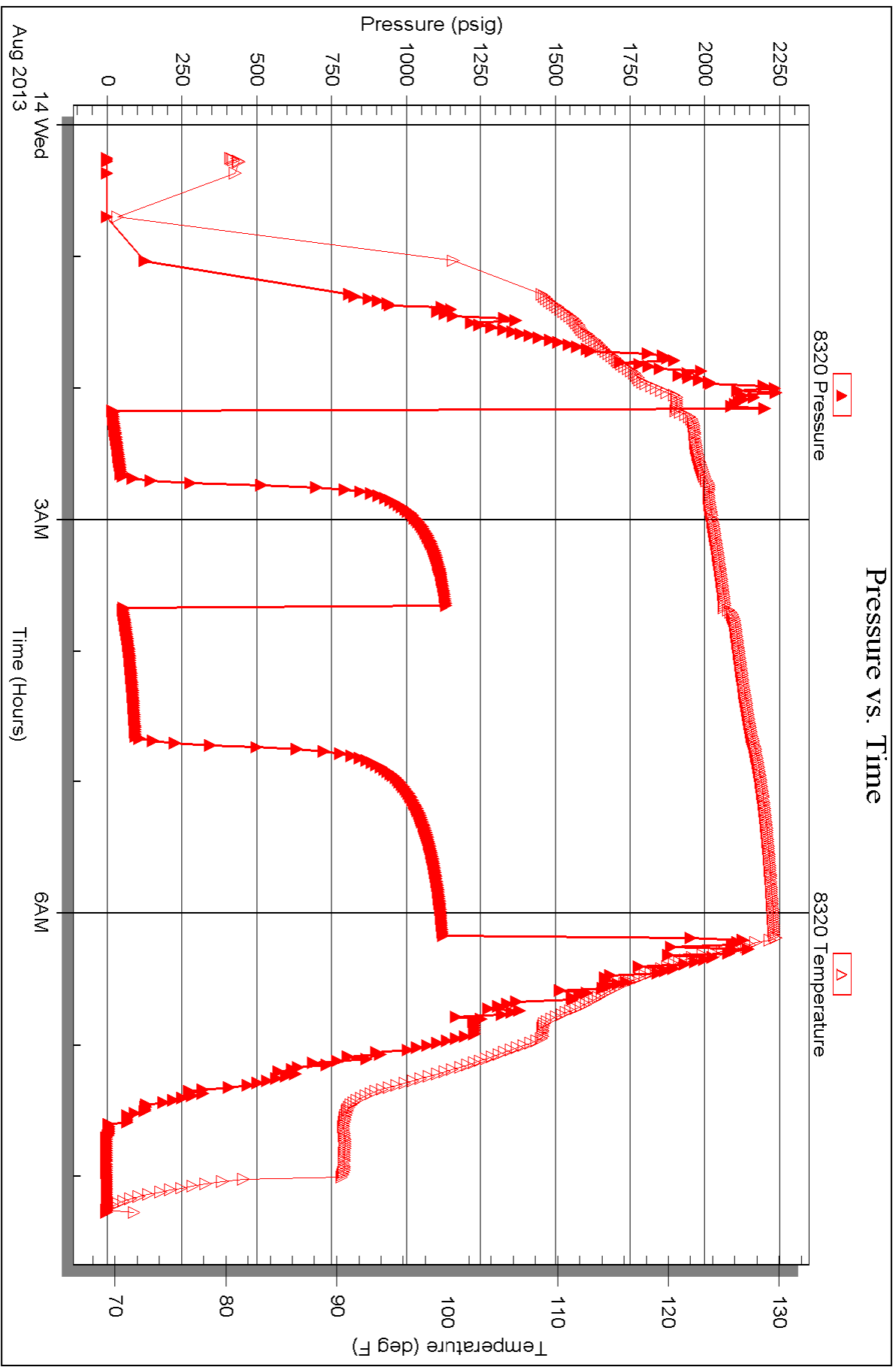


Serial #: 8320

Outside Murfin Drilling Co., Inc.

Earl #1-6

DST Test Number: 5







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52655

Well Name & No. Earl #1-6 Test No. 1 Date 8-10-13  
 Company Murfin Drilling Co. Inc Elevation 2853 KB 2842 GL  
 Address 250 N. Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Jeff Christian Rig Murfin #2  
 Location: Sec. 6 Twp. 5S Rge. 30W Co. ~~Rawlins~~ Decatur State KS

Interval Tested 3840-3928 Zone Tested Toronto - LKC "A+B"  
 Anchor Length 88 Drill Pipe Run 3601 Mud Wt. ~~9.2~~ 9.2  
 Top Packer Depth 3835 Drill Collars Run 233 Vis 62  
 Bottom Packer Depth 3840 Wt. Pipe Run - WL 6.4  
 Total Depth 3928 Chlorides 900 ppm System LCM 6  
 Blow Description IF: Blow built to 8 3/4" (loose hammer union-tightened at 18 min)  
ISI: No blowback  
FF: Blow built to BOB (11") in 27 1/2 min.  
FSI: No blowback

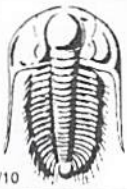
Rec	Feet of	%gas	%oil	%water	%mud
30	50cm	-	2	-	98
185	50/wcm	1	3	28	68
62	50/mw	5	2	53	40
233	mcw w/trace of oil	-	trace	81	19
		%gas	%oil	%water	%mud

Rec Total 510 BHT 120 Gravity - API RW 348 @ 78 °F Chlorides 17,500 ppm

(A) Initial Hydrostatic <u>1917</u>	<input type="checkbox"/> Test <u>*</u> 1150	T-On Location <u>10:45</u>
(B) First Initial Flow <u>27</u>	<input type="checkbox"/> Jars <u>*</u> 250	T-Started <u>11:43</u>
(C) First Final Flow <u>165</u>	<input type="checkbox"/> Safety Joint <u>*</u> 75	T-Open <u>13:56</u>
(D) Initial Shut-In <u>1231</u>	<input checked="" type="checkbox"/> Circ Sub <u>* NA</u>	T-Pulled <u>17:57</u>
(E) Second Initial Flow <u>169</u>	<input checked="" type="checkbox"/> Hourly Standby	T-Out <u>19:45</u>
(F) Second Final Flow <u>258</u>	<input type="checkbox"/> Mileage <u>48RT</u> 74.40	Comments <u>IF: 2" blow at 4 min.</u>
(G) Final Shut-In <u>1213</u>	<input checked="" type="checkbox"/> Sampler	<u>Found loose hammer union</u>
(H) Final Hydrostatic <u>1905</u>	<input checked="" type="checkbox"/> Straddle	<u>blow built from 3" to 8 3/4"</u>
	<input checked="" type="checkbox"/> Shale Packer	<u>18 min - result for 30 min.</u>
	<input checked="" type="checkbox"/> Extra Packer	<input checked="" type="checkbox"/> Ruined Shale Packer
	<input checked="" type="checkbox"/> Extra Recorder	<input checked="" type="checkbox"/> Ruined Packer
	<input checked="" type="checkbox"/> Day Standby	<input checked="" type="checkbox"/> Extra Copies
	<input checked="" type="checkbox"/> Accessibility	Sub Total <u>0</u>
	Sub Total <u>1549.40</u>	Total <u>1549.40</u>

Approved By Jeff Christian Our Representative James Winder

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. 52656

Well Name & No. Earl #1-6 Test No. 2 Date 8-11-13  
 Company Murfin Drilling Co. Inc Elevation 2853 KB 2842 GL  
 Address 250 N. Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Jeff Christian Rig Murfin #2  
 Location: Sec. 6 Twp. 5S Rge. 30W Co. Decatur State KS

Interval Tested 3943 - 3970 Zone Tested LKC "F"  
 Anchor Length 27 Drill Pipe Run 3694 Mud Wt. 9.2  
 Top Packer Depth 3938 Drill Collars Run 233 Vis 65  
 Bottom Packer Depth 3943 Wt. Pipe Run - WL 6.8  
 Total Depth 3970 Chlorides 1400 ppm System LCM 6

Blow Description IF: Blow built to BOB (11") in 19 1/2 min.  
ISI: Blowback built to 1/8"  
FF: Blow built to BOB in 15 min  
FSI: Blowback built to 1 3/4"

Rec	Feet of	%gas	%oil	%water	%mud
<u>146</u>	<u>CGO</u>	<u>8</u>	<u>90</u>	<u>-</u>	<u>2</u>
<u>117</u>	<u>Gmco</u>	<u>16</u>	<u>52</u>	<u>-</u>	<u>32</u>
<u></u>	<u><del>CGO</del> BIP = 410'</u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
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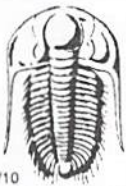
Rec Total 263 BHT 123 Gravity 32.6 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1990  Test 1150 T-On Location 5:30  
 (B) First Initial Flow 25  Jars 250 T-Started 5:41  
 (C) First Final Flow 70  Safety Joint 75 T-Open 7:44  
 (D) Initial Shut-In 1400  Circ Sub \*NA T-Pulled 11:44  
 (E) Second Initial Flow 76  Hourly Standby \_\_\_\_\_ T-Out 1:30  
 (F) Second Final Flow 116  Mileage 48RT 74.40  
 (G) Final Shut-In 1387  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1930  Straddle \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Final Flow 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Shut-In 90  Day Standby \_\_\_\_\_ Total 1549.40  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1549.40

Approved By Jeff Christian Our Representative James Winder

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. 52657

Well Name & No. Earl #1-6 Test No. 3 Date 8-12-13  
 Company Murfin Drilling Co. Inc Elevation 2853 KB 2842 GL  
 Address 250 N. Water STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Jeff Christian Rig Murfin #2  
 Location: Sec. 6 Twp. 5S Rge. 30W Co. Decatur State KS

Interval Tested 3989-4058 Zone Tested LKC "H-J"  
 Anchor Length 69 Drill Pipe Run 3757 Mud Wt. 9.2  
 Top Packer Depth 3984 Drill Collars Run 233 Vis 58  
 Bottom Packer Depth 3989 Wt. Pipe Run - WL 6.04  
 Total Depth 4058 Chlorides 1400 ppm System LCM 5

Blow Description IF: Blow built to BOB (11") in 19 1/2 min.  
ISI: Weak surface blowback  
FF: Blow built to BOB in 14 min.  
FSI: Blowback built to 1"

Rec	Feet of	%gas	%oil	%water	%mud
<u>175</u>	<u>CGO</u>	<u>10</u>	<u>87</u>	<u>3</u>	<u>3</u>
<u>125</u>	<u>GOM</u>	<u>18</u>	<u>33</u>	<u>49</u>	<u>49</u>
<u>    </u>	<u>GIP = 505'</u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>
<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>
<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>

Rec Total 300 BHT 120 Gravity 39.4 API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 2031  Test \* 1250 T-On Location 1:40  
 (B) First Initial Flow 25  Jars \* 250 T-Started 2:03  
 (C) First Final Flow 83  Safety Joint \* 75 T-Open 4:02  
 (D) Initial Shut-In 481  Circ Sub \*NA T-Pulled 8:02  
 (E) Second Initial Flow 91  Hourly Standby      T-Out 10:00  
 (F) Second Final Flow 128  Mileage 48 RT 74.40 Comments       
 (G) Final Shut-In 475  Sampler       
 (H) Final Hydrostatic 1933  Straddle       Ruined Shale Packer       
 Shale Packer       Ruined Packer       
 Extra Packer       Extra Copies       
 Extra Recorder      Sub Total 0  
 Day Standby      Total 1649.40  
 Accessibility      MP/DST Disc't       
 Sub Total 1649.40

Approved By Jeff Chrt Our Representative James Winder

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52658

4/10

Well Name & No. Earl #1-6 Test No. 4 Date 8-12-13  
 Company Murfin Drilling Co. Inc Elevation 2853 KB 2842 GL  
 Address 250 N. Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Jeff Christian Rig Murfin #2  
 Location: Sec. 6 Twp. 5S Rge. 30W Co. Decatur State KS

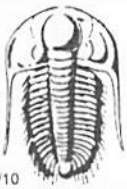
Interval Tested 4053-4110 Zone Tested LKC "K-L"  
 Anchor Length 57 Drill Pipe Run 3821 Mud Wt. 9.3  
 Top Packer Depth 4048 Drill Collars Run 233 Vis 66  
 Bottom Packer Depth 4053 Wt. Pipe Run - WL 6.8  
 Total Depth 4110 Chlorides 1700 ppm System LCM 6  
 Blow Description IF: 1/8" Blow at open, died back, dead at 10 min.  
ISI: No blowback  
FF: No blow  
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>50cm</u>	<u>4</u>	<u>8</u>	<u>-</u>	<u>88</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 116 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2020  Test \* 1250 T-On Location 18:15 8/12  
 (B) First Initial Flow 20  Jars \* 250 T-Started 18:45  
 (C) First Final Flow 22  Safety Joint \* 75 T-Open 20:44  
 (D) Initial Shut-In 228  Circ Sub \*NA T-Pulled 23:44  
 (E) Second Initial Flow 22  Hourly Standby \_\_\_\_\_ T-Out 1:25 8/13  
 (F) Second Final Flow 24  Mileage 48RT 74.40 Comments \_\_\_\_\_  
 (G) Final Shut-In 91  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1943  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 60  Day Standby \_\_\_\_\_ Total 1649.40  
 Final Flow 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 60 Sub Total 1649.40

Approved By \_\_\_\_\_ Our Representative James Winder  
 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. 52659

Well Name & No. Earl #1-6 Test No. 5 Date 8-14-13  
 Company Murfin Drilling Co. Inc Elevation 2853 KB 2842 GL  
 Address 250 N. Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Jeff Christian Rig Murfin #2  
 Location: Sec. 6 Twp. 5s Rge. 30w Co. Decatur State KS

Interval Tested 4296-4328 Zone Tested Cherokee  
 Anchor Length 32 Drill Pipe Run 4040 Mud Wt. 9.2  
 Top Packer Depth 4291 Drill Collars Run 233 Vis 67  
 Bottom Packer Depth 4296 Wt. Pipe Run - WL 6.0  
 Total Depth 4328 Chlorides 1800 ppm System LCM 5

Blow Description IF: Blow built to 6 1/4"  
ISI: No blowback  
FF: Blow built to 9"  
FSI: Weak blowback, built to 1/2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>206</u>	<u>C50</u>	<u>31</u>	<u>69</u>	<u>-</u>	<u>-</u>
<u>29</u>	<u>EMCO</u>	<u>10</u>	<u>75</u>	<u>-</u>	<u>15</u>
<u>29</u>	<u>50M</u>	<u>11</u>	<u>33</u>	<u>-</u>	<u>56</u>
	<u>GIP = 95'</u>				
		%gas	%oil	%water	%mud

Rec Total 264 BHT 128 Gravity 22 API RW - @ - °F Chlorides - ppm

- (A) Initial Hydrostatic 2203
- (B) First Initial Flow 21
- (C) First Final Flow 52
- (D) Initial Shut-In 1138
- (E) Second Initial Flow 58
- (F) Second Final Flow 100
- (G) Final Shut-In 1127
- (H) Final Hydrostatic 2136

- Test \* 1250
- Jars \* 250
- Safety Joint \* 75
- Circ Sub \*NA
- Hourly Standby
- Mileage 48RT 74.40
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1649.40

- T-On Location 23:15 8/13
- T-Started 00:15 8/14
- T-Open 2:09
- T-Pulled 6:09
- T-Out 8:05

- Comments \_\_\_\_\_
- Ruined Shale Packer
- Ruined Packer
- Extra Copies
- Sub Total 0
- Total 1649.40
- MP/DST Disc't \_\_\_\_\_

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90

Approved By Jeff Christian Our Representative James Winder

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 of 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.

# ALLIED

OIL & GAS SERVICES, LLC

**PROD COPY**

# INVOICE

PO Box 93999  
Southlake, TX 76092

Invoice Number: 137859

Invoice Date: Aug 6, 2013

Page: 1

Voice: (817) 546-7282  
Fax: (817) 246-3361

**Bill To:**  
Murfin Drlg. Co., Inc.  
250 N. Water  
STE #300  
Wichita, KS 67202

Now Includes:



Customer ID	Field Ticket #	Payment Terms	
Murfin	61237	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Aug 6, 2013	9/5/13

Quantity	Item	Description	Unit Price	Amount
190.00	CEMENT MATERIALS	Earl #1-6		
		Class A Common	17.90	3,401.00
7.00	CEMENT MATERIALS	Chloride	64.00	448.00
199.50	CEMENT SERVICE	Cubic Feet	2.48	494.76
413.91	CEMENT SERVICE	Ton Mileage	2.60	1,076.17
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
45.00	CEMENT SERVICE	Pump Truck Mileage	7.70	346.50
1.00	CEMENT SERVICE	Manifold Rental	275.00	275.00
45.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	198.00
1.00	CEMENT SUPERVISOR	Alan Ryan		
1.00	EQUIPMENT OPERATOR	Wayne McGhghy		
1.00	OPERATOR ASSISTANT	Kevin Ryan		
<i>ID203</i>			<i>5313.80</i>	<i>Cement S. Co.</i>
<i>3. 2164.000</i>				<i>#1-6</i>

Subtotal	7,751.68
Sales Tax	275.20
Total Invoice Amount	8,026.88
Payment/Credit Applied	
<b>TOTAL</b>	<b>8,026.88</b>

ALL PRICES ARE NET, PAYABLE 30 DAYS FOLLOWING DATE OF INVOICE. 1 1/2% CHARGED THEREAFTER. IF ACCOUNT IS CURRENT, TAKE DISCOUNT OF

\$ 2,713.08

ONLY IF PAID ON OR BEFORE  
Aug 31, 2013

*OKAD (2713.08)*  
*5313.80*

# ALLIED OIL & GAS SERVICES, LLC 061237

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999  
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Dakley, K3

DATE <u>2/6/10</u>	SEC. <u>2</u>	TWP. <u>5</u>	RANGE <u>30</u>	CALLED OUT	ON LOCATION	JOB START <u>9:30 am</u>	JOB FINISH <u>10:00 am</u>
LEASE <u>Earl</u>	WELL # <u>1-6</u>	LOCATION <u>Redford 7N 1E6W 1 1/2 W</u>			COUNTY <u>Deer</u>	STATE <u>TX</u>	
OLD OR NEW (Circle one) <u>NEW</u>				<u>1/2 S 1/4 E 10 into</u>		<u>Deer</u>	

CONTRACTOR Martin 2  
 TYPE OF JOB Surface  
 HOLE SIZE 12 1/4 T.D. 221  
 CASING SIZE 8 5/8 DEPTH 221  
 TUBING SIZE DEPTH  
 DRILL PIPE DEPTH  
 TOOL DEPTH  
 PRES. MAX MINIMUM  
 MEAS. LINE SHOE JOINT  
 CEMENT LEFT IN CSG. 15'  
 PERFS.  
 DISPLACEMENT 13.10.20222  
 EQUIPMENT

PUMP TRUCK CEMENTER Alan Ryan  
 # 422 HELPER Wayne McGibghy  
 BULK TRUCK  
 # 396 DRIVER Kevin Ryan  
 BULK TRUCK  
 # DRIVER

OWNER Same  
 CEMENT AMOUNT ORDERED 190 lbm 370 cc

COMMON	<u>190</u>	@ <u>17.90</u>	<u>3401.00</u>
POZMIX		@	
GEL		@	
CHLORIDE	<u>7</u>	@ <u>64.00</u>	<u>448.00</u>
ASC		@	
HANDLING	<u>199.5 CF</u>	@ <u>2.40</u>	<u>499.20</u>
MILEAGE	<u>2 @ 7000/mi</u>	@ <u>6.90</u>	<u>1276.12</u>
			TOTAL <u>5419.32</u>

REMARKS:  
Run log, calculate, mix cement, displace cement sheet in  
Cement bid @ 1.20 calculate  
6 @ 1.20 @ 1.7  
1.7 @ 1.20 @ 1.7

CHARGE TO: Martin Drilling  
 STREET \_\_\_\_\_  
 STATE \_\_\_\_\_ ZIP \_\_\_\_\_

SERVICE

DEPTH OF JOB		
PUMP TRUCK CHARGE		<u>1512.00</u>
EXTRA FOOTAGE	@	
MILEAGE	<u>45 miles</u>	@ <u>7.20</u> <u>346.20</u>
MANIFOLD	@	<u>275.00</u>
<u>littellville 45 miles</u>	@ <u>4.80</u>	<u>198.00</u>
TOTAL <u>2331.20</u>		

PLUG & FLOAT EQUIPMENT

	@	
	@	
	@	
	@	
	@	
TOTAL _____		

To: Allied Oil & Gas Services, LLC.  
 You are hereby requested to rent cementing equipment and furnish cementer 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 7,751.68  
 DISCOUNT 2,713.08 IF PAID IN 30 DAYS  
5,038.59 Net.

PRINTED NAME Arvin Edwards  
 SIGNATURE Arvin Edwards



P. O. 1  
Ness City,  
Off: 785

Accty -  
cc: WI  
cc: Lis  
cc: L-1

# Invoice

DATE	INVOICE #
8/29/2013	24999

BILL TO
Murfin Drilling Co Inc PO Box 661 Colby, KS 67701-0661

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1-6	Earl	Decatur		Oil	Development	Cement Port Collar	Don
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				100	Miles	6.00	600.00
576D-D	Pump Charge - Port Collar - 2594 Feet				1	Job	1,500.00	1,500.00
290	D-Air				2	Gallon(s)	42.00	84.00T
330	Swift Multi-Density Standard (MIDCON II)				200	Sacks	17.00	3,400.00T
276	Flocele				50	Lb(s)	2.00	100.00T
581D	Service Charge Cement				350	Sacks	2.00	700.00
583D	Drayage				1,741.5	Ton Miles	1.00	1,741.50
	Subtotal							8,125.50
	Sales Tax Decatur County						7.15%	256.26
USED FOR <u>IC 103</u>								
APPROVED <u>IT</u>								
<b>We Appreciate Your Business!</b>							<b>Total</b>	\$8,381.76





Services, Inc.

CHARGE TO: Murphy Digs Co  
 ADDRESS: \_\_\_\_\_  
 CITY, STATE, ZIP CODE: \_\_\_\_\_

TICKET N° 24999

PAGE 1 OF 1

SERVICE LOCATIONS

1. Ness City KS WELL/PROJECT NO. EARL LEASE Decatur COUNTY/PARISH KS STATE KS CITY \_\_\_\_\_ DATE 8-29-88 OWNER \_\_\_\_\_

2. Ness City KS CONTRACTOR Ca RIG NAME/NO. \_\_\_\_\_ SHIPPED VIA CT DELIVERED TO N. R. Bird KS ORDER NO. \_\_\_\_\_

3. \_\_\_\_\_ WELL TYPE \_\_\_\_\_ WELL CATEGORY Water JOB PURPOSE Revent Part Call WELL PERMIT NO. \_\_\_\_\_ WELL LOCATION \_\_\_\_\_

4. \_\_\_\_\_ REFERRAL LOCATION \_\_\_\_\_ INVOICE INSTRUCTIONS @ 8594

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	MILEAGE	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF								
575		1			449 110	100	MI				620	62000
576-D		1			Ramp Charge - cut 8400	100					15200	152000
290		1			D-Avis	250					4200	8400
350		2			SAND CUT	200					1700	34000
276		2			Hoale	50	lbs				200	10000
581		2			Service Charge	350					200	70000
583		2			Drayage	1741.5					100	174150

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY** provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

DATE SIGNED: 8-29-88 TIME SIGNED: 12:00  A.M.  P.M.

SIGNED BY: John Johnson

REMIT PAYMENT TO:  
 SWIFT SERVICES, INC.  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

SURVEY

OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?

WE UNDERSTOOD AND MET YOUR NEEDS?

OUR SERVICE WAS PERFORMED WITHOUT DELAY?

WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?

ARE YOU SATISFIED WITH OUR SERVICE?  YES  NO

PAGE TOTAL: 822550

TOTAL: 838176

Deductur TAX 7.15%

SWIFT OPERATOR: John Johnson

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES: The customer hereby acknowledges receipt of the materials and services listed on this ticket.

APPROVAL: \_\_\_\_\_

Thank You!





P. O. Box 466  
Ness City, KS 67560  
Off: 785-798-2300

Accto  
cc: WT  
cc: L...  
cc: RRA LR-1

# Invoice

DATE	INVOICE #
8/15/2013	24989

BILL TO
Murfin Drilling Co Inc PO Box 661 Colby, KS 67701-0661
USED FOR <u>1 C103</u>
APPROVED <u>JKR</u>

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1-6	Earl	Decatur		Oil	Development	Cement 5-1/2" L...	Don
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				100	Miles	6.00	600.00
578D-L	Pump Charge - Long String				1	Job	1,500.00	1,500.00
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
280	Flocheck 21				500	Gallon(s)	3.00	1,500.00T
403-5	5 1/2" Cement Basket				3	Each	285.00	855.00T
404-5	5 1/2" Port Collar				1	Each	2,650.00	2,650.00T
406-5	5 1/2" Latch Down Plug & Baffle				1	Each	275.00	275.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	375.00	375.00T
409-5	5 1/2" Turbolizer				15	Each	90.00	1,350.00T
413-5	5 1/2" Roto Wall Scratcher				15	Each	40.00	600.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
325	Standard Cement				225	Sacks	14.00	3,150.00T
276	Flocele				57	Lb(s)	2.00	114.00T
283	Salt				1,125	Lb(s)	0.20	225.00T
284	Calseal				11	Sack(s)	35.00	385.00T
285	CFR-1				159	Lb(s)	4.00	636.00T
581D	Service Charge Cement				225	Sacks	2.00	450.00
583D	Drayage				1,177.45	Ton Miles	1.00	1,177.45
	Subtotal							16,142.45
	Sales Tax Decatur County						7.15%	887.67
<b>We Appreciate Your Business!</b>							<b>Total</b>	\$17,030.12



Services, Inc.

CHARGE TO: Murphy Drilling Co.  
 ADDRESS  
 CITY, STATE, ZIP CODE

TICKET No. **24989**

PAGE 1 OF 2

1. SERVICE LOCATIONS: Hager, KS WELLPROJECT NO. LEASE COUNTY/PARISH Decatur STATE KS DATE 8-15-13 OWNER  
 2. Ness City, KS TICKET TYPE LEASE CONTRACTOR Co RIG NAME/NO. 542 SHIPPED VIA CT DELIVERED TO W. Reed, KS ORDER NO.  
 3. WELL TYPE Oil WELL CATEGORY Widened JOB PURPOSE Reamout 5 1/2" Longstring WELL PERMIT NO. WELL LOCATION  
 4. REFERRAL LOCATION INVOICE INSTRUCTIONS 70-4479

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575					MILEAGE #113	120	mi			600	60000
578					Ramp Charge - Cret Longstring	1	ea			150000	150000
221					Liquid KCl	490	gal			2500	100000
280					Fis chok - 21	520	gal			300	150000
403					Cement Buckets	300			5 1/2 in	28500	85500
404					Port Collar	1	ea		5 1/2 in	265000	265000
406					Letch Drill Plug & B. App	1	ea		5 1/2 in	295000	295000
407					Insert Head Size w/ Auto-Fill	1	ea		5 1/2 in	375000	375000
409					Turboliner	15	ea		5 1/2 in	9000	135000
413					Rto Wall Scrapers	15	ea		5 1/2 in	4800	40000
419					Rotating Head Rental	1	ea		5 1/2 in	20000	20000

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, **PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY** provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X Wes Williams DATE SIGNED 10/13/13 TIME SIGNED 10:30  A.M.  P.M.

REMIT PAYMENT TO:  
 SWIFT SERVICES, INC.  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

SURVEY: OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?  WE UNDERSTOOD AND MET YOUR NEEDS?  OUR SERVICE WAS PERFORMED WITHOUT DELAY?  WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?  ARE YOU SATISFIED WITH OUR SERVICE?  YES  NO  CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL 12005.00 TOTAL 17,030.12

SWIFT OPERATOR: Wes Williams APPROVAL: Wes Williams

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES: The customer hereby acknowledges receipt of the materials and services listed on this ticket.

Thank You!



**JOB LOG**

**SWIFT Services, Inc.**

DATE 8-15-13 PAGE NO. 1

CUSTOMER Newman Drilling Co. WELL NO. 1-6 LEASE EARL JOB TYPE Cement Lining TICKET NO. 24989

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		TD-4479	DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING		
	10:15					15.5 #/ft	5 1/2		DN loc - Float Equip. - Rg L.D. Ratchet
	11:30								Start 5 1/2 15.5 #/ft casing to 4476'
									Insert Float, Shoe W/Air Up
									L.D. Battle - SJ 21' @ 4455 = 106 BBL
									15 5' Spacers - (cut Batt. 17-27-95)
									Cent - 1 - thru 11 - 14 - 16 - 26 - 44
									Port Collar 2599' *45 call
									Break cir #60
									Drop Fall-up ball - 5 Jts out
	13:30								Fin casing
									st. cir / Rotate 1 HR
	14:30								Fin cir
	14:40	6	15				380		KCL Flush - 15 BBL
		5	12				250		Fleck - 500 gal
		5	5				250		KCL - spacer 5 BBL
	14:45	4					200		St. cent - 175 SKS EA-2
	15:00		42 1/2						Var Fin cent.
									Wash out Pump Lines
	15:05								Drop L.D. Plug
	15:05	9					300		Start Displ
		8-7-6	80				400		Caught 1st pass - slowly down Ratch
	15:15	5	106				800		Plug DOWN - Hold - Release & Hold
			7				1500		Plug RT / LHT (30/20 EA-2 out)
	16:00								Job Complete
									Wash up & Racking

*[Signature]*  
 Don, Tom & John