



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1231585  
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: \_\_\_\_\_

1231585

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: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
---	--

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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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Virginia 'C' 1-14
Doc ID	1231585

All Electric Logs Run

DIL
DUCP
MEL
BHCS



# Saman Sharifaie

## Petroleum Geologist

### GEOLOGIST'S REPORT

#### DRILLING TIME AND SAMPLE LOG

COMPANY: **Martin Drilling Co., Inc.**  
 LEASE: **Virginia-C-#1-14**  
 FIELD: **Midcat**  
 LOCATION: **1800 FSL & 660 FWL**  
 SEC: **14** TWP: **1S** RGE: **36W**  
 COUNTY: **Randolph** STATE: **Kansas**  
 CONTRACTOR: **Martin Drilling #2**  
 RPTD: **07/19/14** COMP: **07/26/14**  
 RTD: **4574'** LTD: **4575'**  
 MUD UP: **3113'** TYPE MUD: **Chemical**

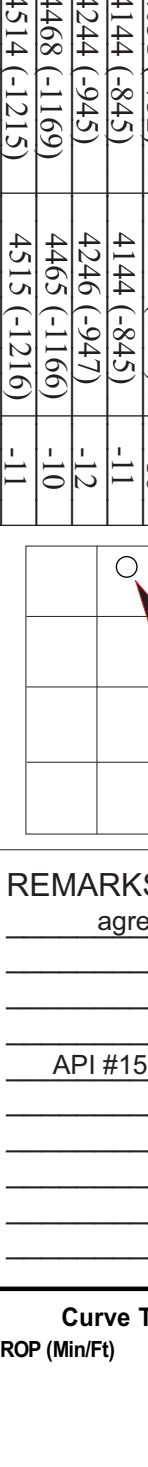
SAMPLES SAVED FROM: **3600'** TO RTD  
 DRILLING TIME KEPT FROM: **3600'** TO RTD  
 SAMPLES EXAMINED FROM: **3600'** TO RTD  
 GEOLOGICAL SUPERVISION FROM: **3300'**  
 REFERENCE WELL: **MDCI - Burk "E" #1-14**

ELEVATIONS  
 KB: **3299'**  
 DE: \_\_\_\_\_  
 GL: **3288'**  
 Measurements Are All From Kelly Bushing

CASING  
 CONDUCTOR: \_\_\_\_\_  
 SURFACE: **8-5/8" at 265'**  
 PRODUCTION: **5-1/2" at 4569'**

ELECTRICAL SURVEYS  
 CND: **D.L. MEL, SANC**  
 REFERENCE: **Powder Hrefline**

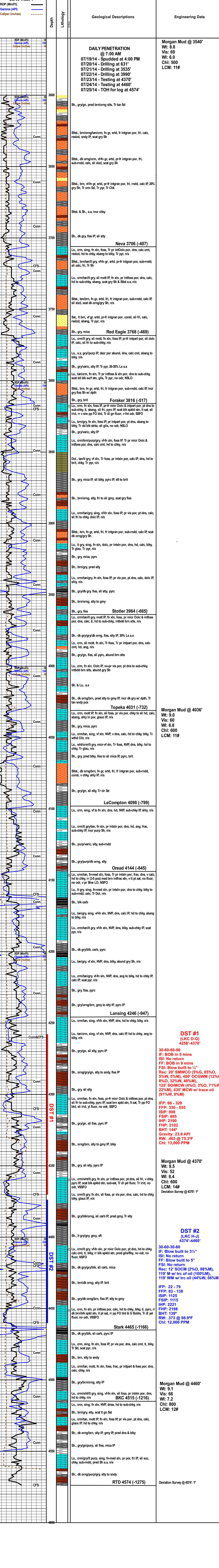
Formation	Sample Tops	E-log Tops	Strat. Pos.
Anhydrite	3216 (+83)	3218 (+81)	-11
Base Anhydrite	3255 (+44)	3255 (+44)	-14
Neva	3703 (-404)	3706 (-407)	8
Foraker	3816 (-517)	3816 (-517)	-10
Topoka	4031 (-732)	4031 (-732)	-10
Ordov	4144 (-845)	4144 (-845)	-11
Lansing	4246 (-947)	4246 (-947)	-12
Stark	4465 (-1166)	4465 (-1166)	-10
BKC	4514 (-1215)	4515 (-1216)	-11



REMARKS: Due to fair shows of oil in multiple potential pay zones and positive DST results, it is recommended and agreed upon by all parties that production casing be set to further evaluate this well.

Respectfully Submitted,  
 API #15-153-21036  
 Saman Sharifaie  
 Petroleum Geologist

\*Tops have been adjusted to electric logs



**DST #1**  
 (LKC D-G)  
 4258'-4370'  
 IF: 30-60-60-90  
 IS: BOB in 5 mins  
 IS: No return  
 FF: BOB in 9 mins  
 FSI: Blow built to 1/2"  
 Rec: 2' SMO/WCO (5%G, 85%O, 5%W, 5%M), 400' OCGWM (12%G, 8%O, 32%W, 48%M), 125' SO/MCW (4%O, 3%O, 71%W, 22%M), 635' MCW w/ trace oil (91%W, 9%M)

**DST #2**  
 (LKC H-J)  
 4374'-4460'  
 IF: 30-60-30-60  
 IS: Blow built to 3 1/2"  
 IS: No return  
 FF: Blow built to 5"  
 FSI: No return  
 Rec: 12' SOCM (2%O, 98%M), 119' M w/ trc oil (44%W, 56%M)

**Morgan Mud @ 3540'**  
 Wt: 8.8  
 Vis: 69  
 WI: 6.0  
 Chl: 500  
 LCM: 11#

**Morgan Mud @ 4036'**  
 Wt: 9.0  
 Vis: 60  
 WI: 6.8  
 Chl: 600  
 LCM: 11#

**Morgan Mud @ 4370'**  
 Wt: 8.5  
 Vis: 52  
 WI: 8.4  
 Chl: 800  
 LCM: 14#  
 Deviation Survey @ 4370': 1°

**Morgan Mud @ 4460'**  
 Wt: 9.1  
 Vis: 66  
 WI: 7.2  
 Chl: 800  
 LCM: 12#  
 Deviation Survey @ 4574': 1°



## DRILL STEM TEST REPORT

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

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Saman Sharifaie

### **Virginia 'C' #1-14**

#### **14-1s-36w Rawlins KS**

Start Date: 2014.07.23 @ 12:20:00

End Date: 2014.07.23 @ 21:20:45

Job Ticket #: 56947                      DST #: 1

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

Printed: 2014.07.25 @ 08:28:39



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**14-1s-36w Rawlins KS**

250 N. Water STE 300  
Wichita, KS 67202

**Virginia 'C' #1-14**

Job Ticket: 56947

**DST#: 1**

ATTN: Saman Sharifaie

Test Start: 2014.07.23 @ 12:20:00

## GENERAL INFORMATION:

Formation: **LKC "D - G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:34:45

Time Test Ended: 21:20:45

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 57

**Interval: 4258.00 ft (KB) To 4370.00 ft (KB) (TVD)**

Reference Elevations: 3299.00 ft (KB)

Total Depth: 4370.00 ft (KB) (TVD)

3288.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

## Serial #: 8671

Inside

Press@RunDepth: 555.08 psig @ 4259.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.23

End Date:

2014.07.23

Last Calib.:

2014.07.23

Start Time: 12:20:05

End Time:

21:20:45

Time On Btm:

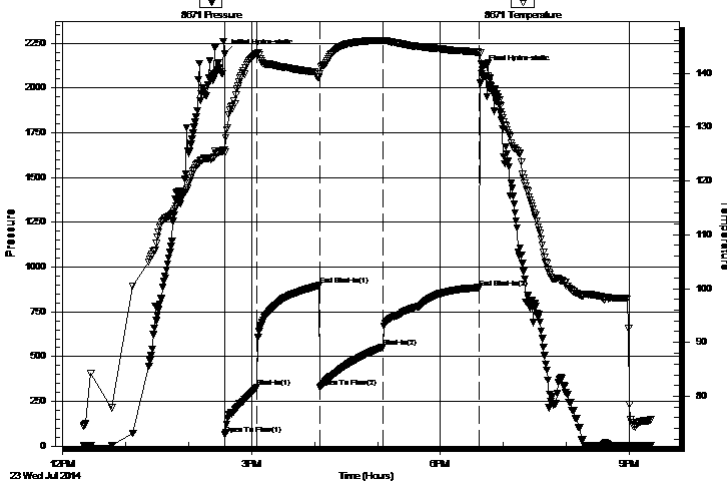
2014.07.23 @ 14:34:30

Time Off Btm:

2014.07.23 @ 18:39:30

TEST COMMENT: 30 - IF: Blow built to BOB (11") at 5 min.  
60 - IS: No blow back  
60 - FF: Blow built to BOB at 9 min.  
90 - FS: Blow back built to 1/2"

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2189.91	125.85	Initial Hydro-static
1	66.11	125.31	Open To Flow (1)
31	329.22	143.70	Shut-In(1)
91	897.72	139.23	End Shut-In(1)
91	330.10	139.86	Open To Flow (2)
151	555.08	146.04	Shut-In(2)
243	884.82	143.86	End Shut-In(2)
245	2102.24	141.56	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
635.00	MCW w/trace oil 91%w, 9%m	7.01
125.00	SO/MCW 71%w, 22%m, 4%g, 3%o	1.75
400.00	OCGWM 48%m, 32%w, 12%g, 8%o	5.61
20.00	SMWCO 85%o, 5%m, 5%w, 5%g	0.28

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc.

**14-1s-36w Rawlins KS**

250 N. Water STE 300  
Wichita, KS 67202

**Virginia 'C' #1-14**

Job Ticket: 56947

**DST#: 1**

ATTN: Saman Sharifaie

Test Start: 2014.07.23 @ 12:20:00

## 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: 208.00 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose: 95000.00 lb
			<u>Total Volume: 57.69 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 85000.00 lb
Depth to Top Packer:	4258.00 ft			Final 92000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	112.00 ft			
Tool Length:	140.00 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			4235.00	
Hydraulic tool	5.00			4240.00	
Jars	5.00			4245.00	
Safety Joint	3.00			4248.00	
Packer	5.00			4253.00	28.00 Bottom Of Top Packer
Packer	5.00			4258.00	
Stubb	1.00			4259.00	
Recorder	0.00	8671	Inside	4259.00	
Recorder	0.00	8320	Outside	4259.00	
Perforations	12.00			4271.00	
Blank Spacing	96.00			4367.00	
Bullnose	3.00			4370.00	112.00 Bottom Packers & Anchor

**Total Tool Length: 140.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**14-1s-36w Rawlins KS**

250 N. Water STE 300  
Wichita, KS 67202

**Virginia 'C' #1-14**

Job Ticket: 56947

**DST#: 1**

ATTN: Saman Sharifaie

Test Start: 2014.07.23 @ 12:20:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 10.00 lb/gal  
Viscosity: 55.00 sec/qt  
Water Loss: 8.38 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 600.00 ppm  
Filter Cake: 2.00 inches

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

Oil API: 23.8 deg API  
Water Salinity: 13000 ppm

## Recovery Information

Recovery Table

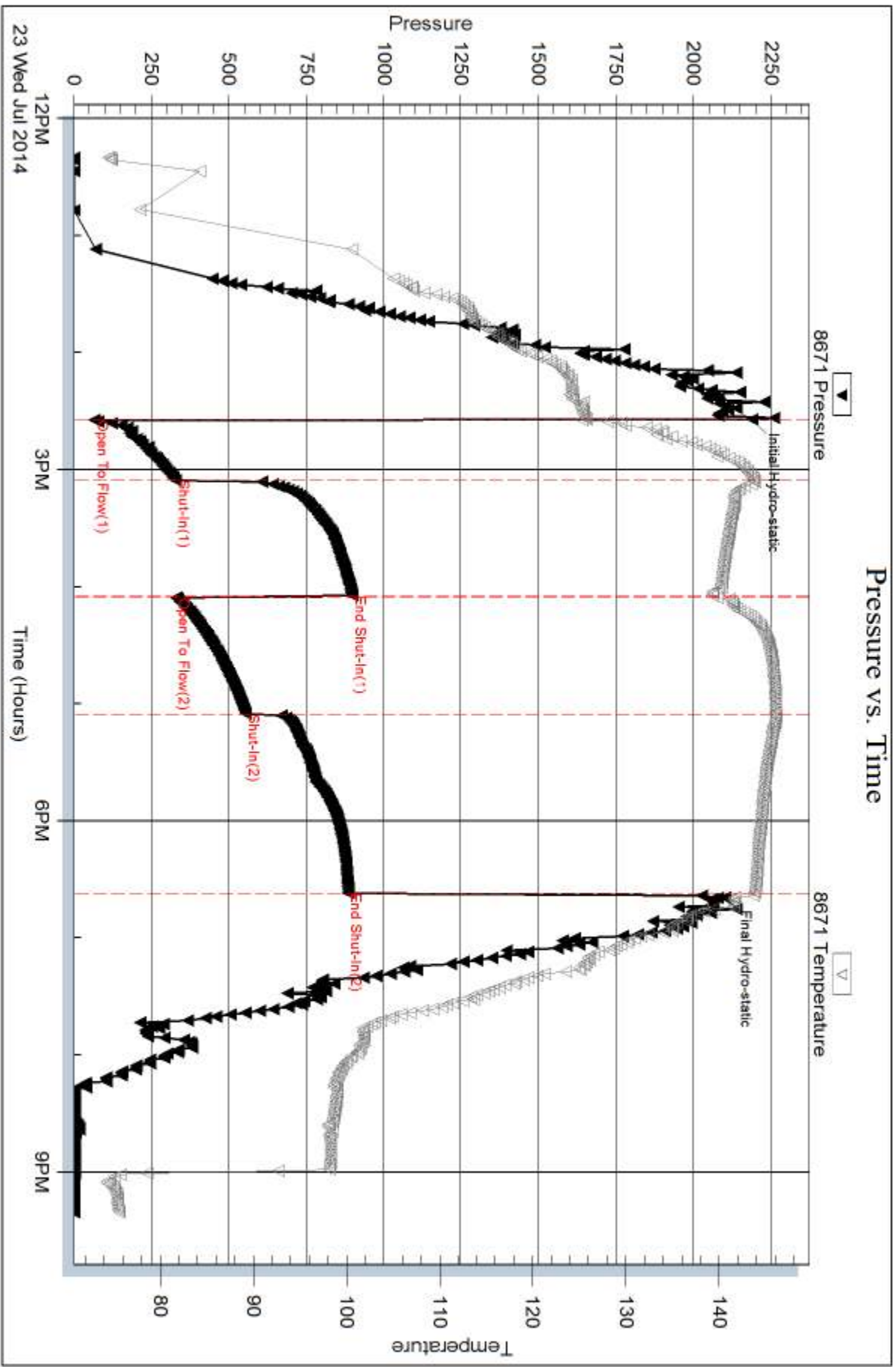
Length ft	Description	Volume bbl
635.00	MCW w /trace oil 91%w , 9%m	7.013
125.00	SO/MCW 71%w , 22%m, 4%g, 3%o	1.753
400.00	OCGWM 48%m, 32%w , 12%g, 8%o	5.611
20.00	SMWCO 85%o, 5%m, 5%w , 5%g	0.281

Total Length: 1180.00 ft      Total Volume: 14.658 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: Gravity = 25.6 api @ 78 deg F  
RW = .463 ohms @ 75.3 deg F

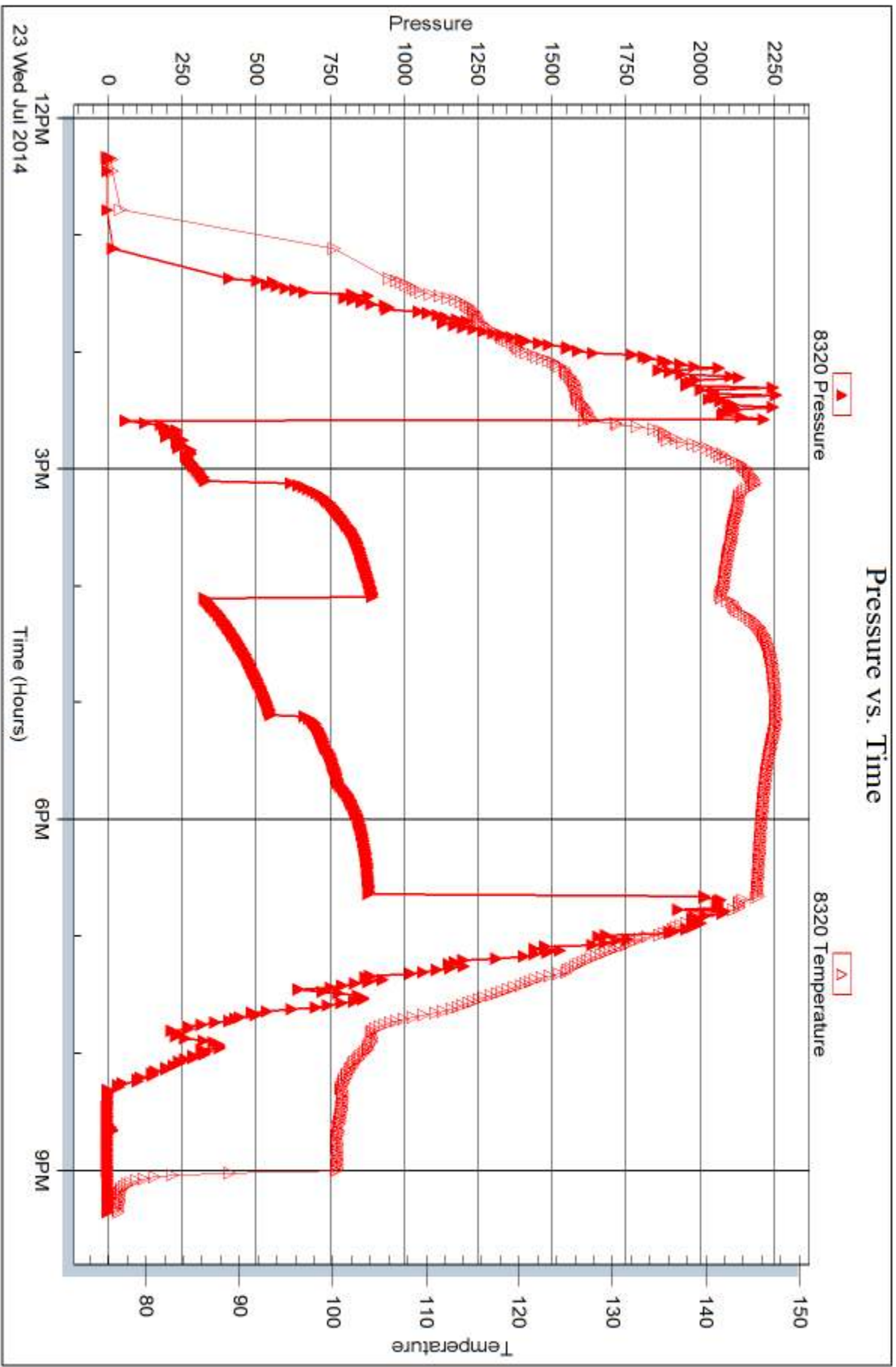


Serial #: 8320

Outside Murfin Drilling Co., Inc.

Virginia 'C' #1-14

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 56947

Printed: 2014.07.25 @ 08:28:40



## DRILL STEM TEST REPORT

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

250 N. Water STE 300  
Wichita, KS 67202

ATTN: Saman Sharifaie

### **Virginia 'C' #1-14**

#### **14-1s-36w Rawlins KS**

Start Date: 2014.07.24 @ 08:20:00

End Date: 2014.07.24 @ 16:42:30

Job Ticket #: 56948                      DST #: 2

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

Printed: 2014.07.25 @ 08:22:51

Murfin Drilling Co., Inc.  
14-1s-36w Rawlins KS  
Virginia 'C' #1-14  
DST # 2  
LKC "H - J"  
2014.07.24



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc.

**14-1s-36w Rawlins KS**

250 N. Water STE 300  
Wichita, KS 67202

**Virginia 'C' #1-14**

Job Ticket: 56948

**DST#: 2**

ATTN: Saman Sharifaie

Test Start: 2014.07.24 @ 08:20:00

## GENERAL INFORMATION:

Formation: **LKC "H - J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 10:26:15  
 Time Test Ended: 16:42:30  
 Interval: **4374.00 ft (KB) To 4460.00 ft (KB) (TVD)**  
 Total Depth: 4460.00 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: 3299.00 ft (KB)  
 3288.00 ft (CF)  
 KB to GR/CF: 11.00 ft

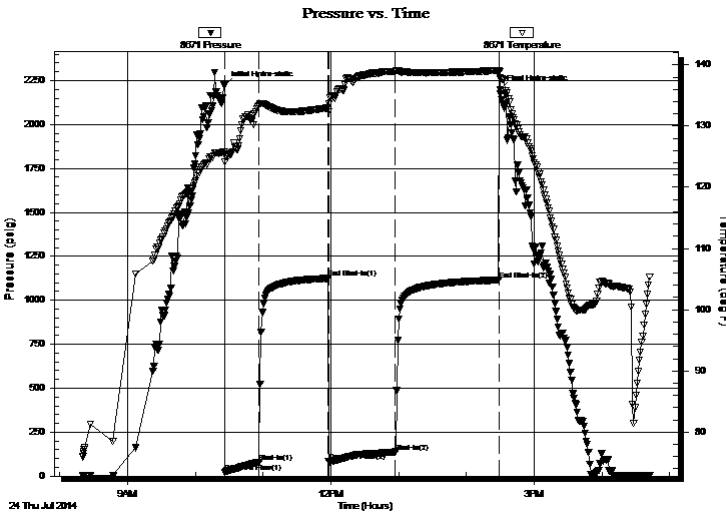
## Serial #: 8671

Inside

Press@RunDepth: 137.73 psig @ 4375.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.07.24 End Date: 2014.07.24 Last Calib.: 2014.07.24  
 Start Time: 08:20:05 End Time: 16:42:29 Time On Btm: 2014.07.24 @ 10:26:00  
 Time Off Btm: 2014.07.24 @ 14:29:45

TEST COMMENT: 30 - IF: Blow built to 3 1/2"  
 60 - IS: No blow back  
 60 - FF: Blow started at 9 1/2 min., built to 5"  
 90 - FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2220.57	125.33	Initial Hydro-static
1	22.36	124.19	Open To Flow (1)
31	78.74	133.37	Shut-In(1)
92	1125.09	132.98	End Shut-In(1)
92	82.81	132.41	Open To Flow (2)
151	137.73	138.89	Shut-In(2)
243	1115.33	139.09	End Shut-In(2)
244	2197.71	137.95	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
119.00	WM w/trace oil 56%m, 44%w	0.59
119.00	Mud w/trace oil 100%m	0.86
12.00	SOCM 98%m, 2%o	0.17

\* 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.

**14-1s-36w Rawlins KS**

250 N. Water STE 300  
Wichita, KS 67202

**Virginia 'C' #1-14**

Job Ticket: 56948

**DST#: 2**

ATTN: Saman Sharifaie

Test Start: 2014.07.24 @ 08:20:00

## GENERAL INFORMATION:

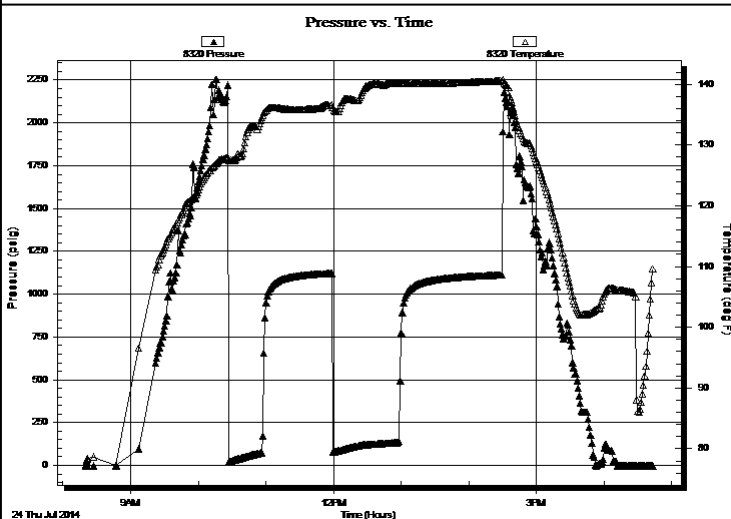
Formation: **LKC "H - J"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 10:26:15  
 Tester: James Winder  
 Time Test Ended: 16:42:30  
 Unit No: 57  
 Interval: **4374.00 ft (KB) To 4460.00 ft (KB) (TVD)**  
 Reference Elevations: 3299.00 ft (KB)  
 Total Depth: 4460.00 ft (KB) (TVD)  
 3288.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 11.00 ft

**Serial #: 8320**

**Outside**

Press@RunDepth: psig @ 4375.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.07.24 End Date: 2014.07.24 Last Calib.: 2014.07.24  
 Start Time: 08:20:05 End Time: 16:43:14 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30 - IF: Blow built to 3 1/2"  
 60 - IS: No blow back  
 60 - FF: Blow started at 9 1/2 min., built to 5"  
 90 - FS: No blow back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
119.00	WM w/trace oil 56%m, 44%w	0.59
119.00	Mud w/trace oil 100%m	0.86
12.00	SOCM 98%m, 2%o	0.17

## 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.

**14-1s-36w Rawlins KS**

250 N. Water STE 300  
Wichita, KS 67202

**Virginia 'C' #1-14**

Job Ticket: 56948

**DST#: 2**

ATTN: Saman Sharifaie

Test Start: 2014.07.24 @ 08:20:00

## Tool Information

Drill Pipe:	Length: 4165.00 ft	Diameter: 3.80 inches	Volume: 58.42 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: 208.00 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose: 92000.00 lb
			<u>Total Volume: 59.44 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 90000.00 lb
Depth to Top Packer:	4374.00 ft			Final 90000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	86.00 ft			
Tool Length:	114.00 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			4351.00	
Hydraulic tool	5.00			4356.00	
Jars	5.00			4361.00	
Safety Joint	3.00			4364.00	
Packer	5.00			4369.00	28.00 Bottom Of Top Packer
Packer	5.00			4374.00	
Stubb	1.00			4375.00	
Recorder	0.00	8671	Inside	4375.00	
Recorder	0.00	8320	Outside	4375.00	
Perforations	17.00			4392.00	
Blank Spacing	65.00			4457.00	
Bullnose	3.00			4460.00	86.00 Bottom Packers & Anchor

**Total Tool Length: 114.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc.

**14-1s-36w Rawlins KS**

250 N. Water STE 300  
Wichita, KS 67202

**Virginia 'C' #1-14**

Job Ticket: 56948

**DST#: 2**

ATTN: Saman Sharifaie

Test Start: 2014.07.24 @ 08:20:00

## 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:

12000 ppm

Viscosity: 66.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
119.00	WM w /trace oil 56%m, 44%w	0.585
119.00	Mud w /trace oil 100%m	0.859
12.00	SOCM 98%m, 2%o	0.168

Total Length: 250.00 ft      Total Volume: 1.612 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

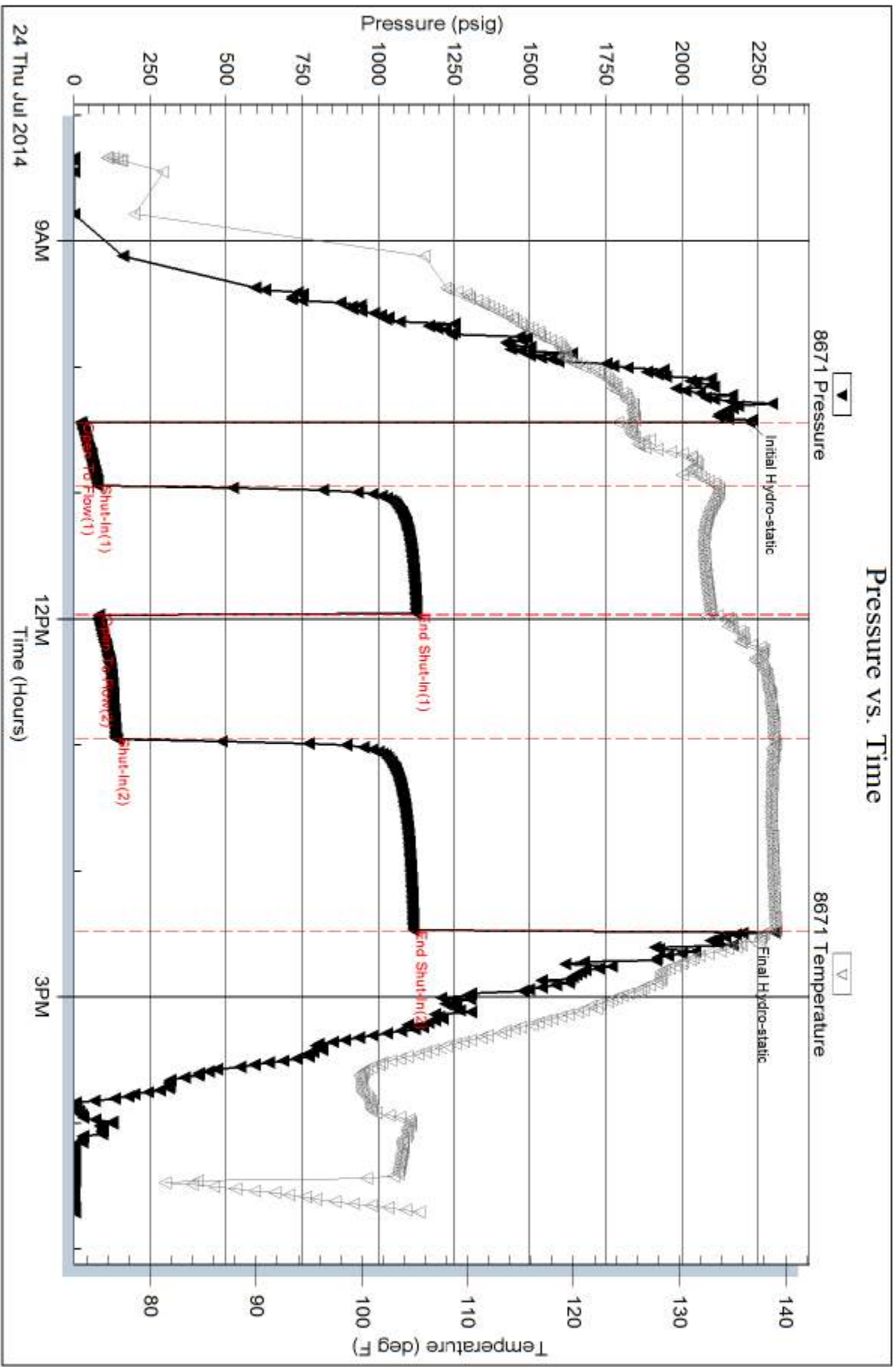
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .373 ohms @ 98.9 deg F

Chlorides = 12,000 ppm

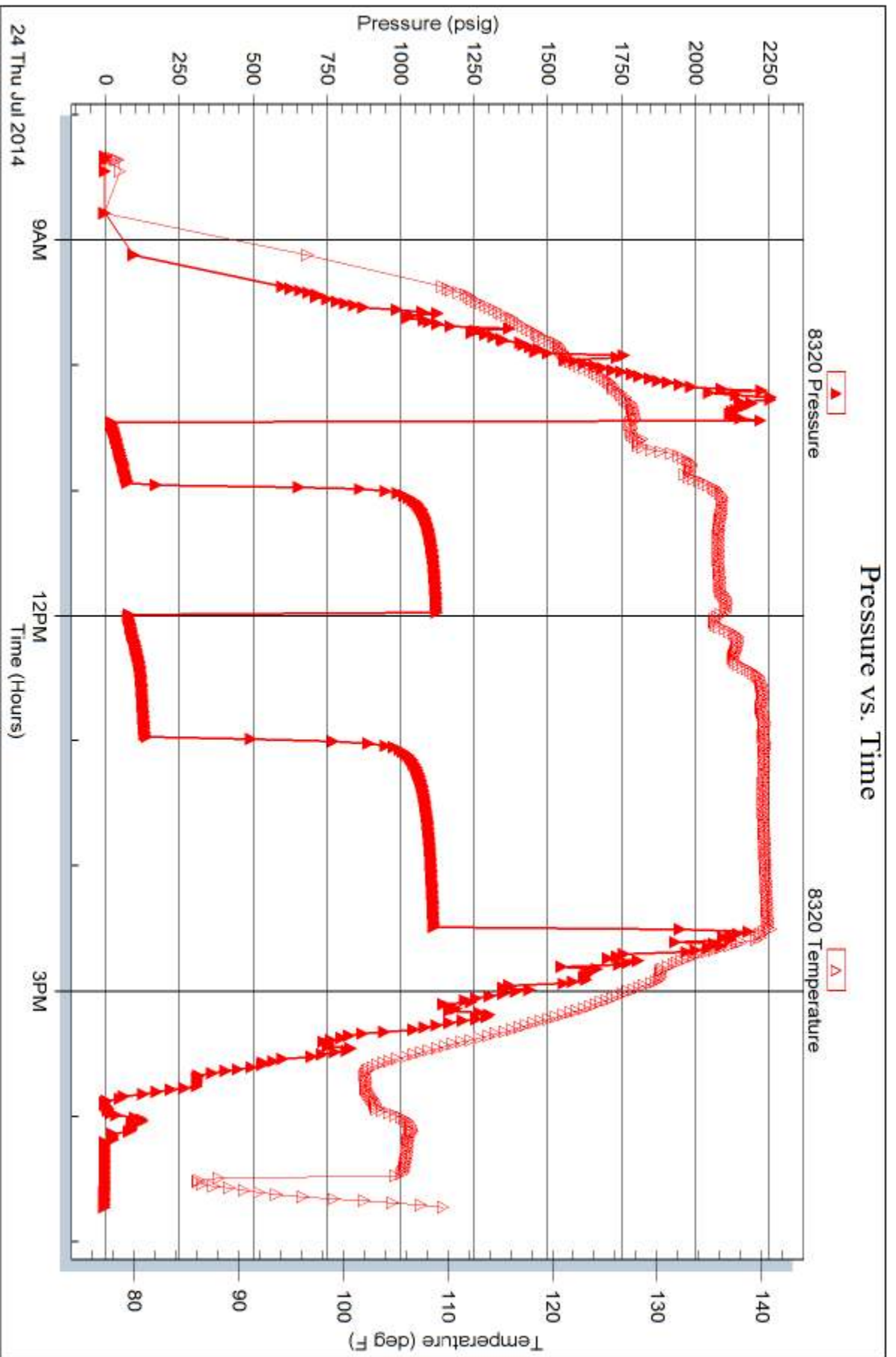


Serial #: 8320

Outside Murfin Drilling Co., Inc.

Virginia 'C' #1-14

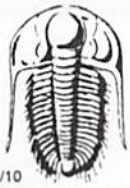
DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 56948

Printed: 2014.07.25 @ 08:22:52



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 56947

Well Name & No. Virginia 'C' #1-14 Test No. 1 Date 7-23-14  
 Company Murfin Drilling Co. Inc Elevation 3299 KB 3288 GL  
 Address 250 N. Water STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Saman Sharifaie Rig Murfin #2  
 Location: Sec. 14 Twp. 1s Rge. 36w Co. Rawlins State KS

Interval Tested 4258 - 4370 Zone Tested LKC "D-G"  
 Anchor Length 112 Drill Pipe Run 4000 4040 Mud Wt. 9.5  
 Top Packer Depth 4253 Drill Collars Run 208 Vis 55  
 Bottom Packer Depth 4258 Wt. Pipe Run - WL 8.4  
 Total Depth 4370 Chlorides 600 ppm System LCM 10

Blow Description IF: Blow built to BOB (11") at 5 min.  
ISI: No blowback  
FF: Blow built to BOB at 9 min.  
FSI: Blowback built to 1/2"

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>5MWC0</u>	<u>5</u>	<u>85</u>	<u>5</u>	<u>5</u>
<u>400</u>	<u>OCGWM</u>	<u>12</u>	<u>8</u>	<u>32</u>	<u>48</u>
<u>125</u>	<u>50/mcw</u>	<u>4</u>	<u>3</u>	<u>71</u>	<u>22</u>
<u>635</u>	<u>mcw w/trace oil</u>	<u>-</u>	<u>trace</u>	<u>91</u>	<u>9</u>
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1180 BHT 144 Gravity 23.8 API RW 463 @ 75.3 °F Chlorides 13,000 ppm

(A) Initial Hydrostatic 2190  Test 1250 T-On Location 10:45  
 (B) First Initial Flow 66  Jars 250 T-Started 12:20  
 (C) First Final Flow 329  Safety Joint 75 T-Open 14:34  
 (D) Initial Shut-In 898  Circ Sub \_\_\_\_\_ T-Pulled 18:37  
 (E) Second Initial Flow 330  Hourly Standby \_\_\_\_\_ T-Out 21:10  
 (F) Second Final Flow 555  Mileage 108RT 167.40 Comments \_\_\_\_\_  
 (G) Final Shut-In 885  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2102  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Flow 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Shut-In 90  Day Standby \_\_\_\_\_ Total 1742.40  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1742.40

Approved By [Signature] 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. 56948

Well Name & No. Virginia 'C' #1-2014 Test No. 2 Date 7-24-14  
 Company Murfin Drilling Co. Inc Elevation 3299 KB 3288 GL  
 Address 250 N. Water STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Saman Sharifaie Rig Murfin #2  
 Location: Sec. 14 Twp. 15 Rge. 36W Co. Rawlins State KS

Interval Tested 4374-4460 Zone Tested LKC "H-J"  
 Anchor Length 86 Drill Pipe Run 4165 Mud Wt. 9.1  
 Top Packer Depth 4369 Drill Collars Run ~~248~~ 208 Vis 66  
 Bottom Packer Depth 4374 Wt. Pipe Run - WL 7.2  
 Total Depth 4460 Chlorides 800 ppm System LCM 12  
 Blow Description IF: Blow built to 3 1/2"  
ISI: No blowback

FF: Blow started at 9 1/2 min., built to 5"  
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>12</u>	<u>50cm</u>	<u>-</u>	<u>2</u>	<u>-</u>	<u>98</u>
<u>119</u>	<u>mud w/trace of oil</u>	<u>%gas trace</u>	<u>%oil -</u>	<u>%water 100</u>	<u>%mud</u>
<u>119</u>	<u>WM w/trace of oil</u>	<u>%gas trace</u>	<u>%oil 44</u>	<u>%water 56</u>	<u>%mud</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 250 BHT 139 Gravity \_\_\_\_\_ API RW .373 @ 98.9° F Chlorides 12,000 ppm

(A) Initial Hydrostatic <u>2221</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>8:00</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>8:20</u>
(C) First Final Flow <u>79</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>10:26</u>
(D) Initial Shut-In <u>1125</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>14:28</u>
(E) Second Initial Flow <u>83</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>16:35</u>
(F) Second Final Flow <u>138</u>	<input checked="" type="checkbox"/> Mileage <u>108 RT</u> 167.40	Comments _____
(G) Final Shut-In <u>1115</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2198</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>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	Total <u>1742.40</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1742.40</u>	

Approved By \_\_\_\_\_ Our Representative Jane Winder

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# ALLIED OIL & GAS SERVICES, LLC 065475

Federal Tax I.D. # 20-8651475

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

SERVICE POINT: Osage

DATE <u>7-19-14</u>	SEC <u>14</u>	TWP <u>15</u>	RANGE <u>36W</u>	CALLED OUT	ON LOCATION <u>7:00pm</u>	JOB START <u>7:30</u>	JOB FINISH <u>8:00pm</u>
LEASE <u>Virginia C</u>		WELL # <u>1-14</u>	LOCATION <u>Bearsley N to AA W 70525 Rawlins</u>		COUNTY	STATE <u>KS</u>	
OLD OR <u>(NEW)</u> (Circle one)			LOCATION <u>1 N 1/4 W 1/4 N 1/4 W into</u>				

CONTRACTOR Murfin 2 OWNER Same

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 265' CEMENT

CASING SIZE 8 5/8 DEPTH 263.65' AMOUNT ORDERED 220 sbs com 38cc

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT

CEMENT LEFT IN CSG. 15'

PERFS.

DISPLACEMENT 15.83 Bbl

EQUIPMENT

PUMP TRUCK CEMENTER Andrew Fostel

# 431 HELPER Brandon Wilkins

BULK TRUCK

# 818 DRIVER Juan (TWS)

BULK TRUCK

# DRIVER

HANDLING 23' cu/ft @ 2.48 572.88

MILEAGE 2.25 hrs for 2e 10.65 @ 21.96 56

REMARKS:

Cement did circulate

Thank you

CHARGE TO: Murfin

STREET

CITY STATE ZIP

SERVICE

DEPTH OF JOB 263.65

PUMP TRUCK CHARGE 1522.25

EXTRA FOOTAGE @

MILEAGE 25 miles @ 2.22 557.50

MANIFOLD head @ 225.00

Light Vehicle @ 4.40 330.00

TOTAL 5464.19

PLUG & FLOAT EQUIPMENT

TOTAL

SALES TAX (If Any)

TOTAL CHARGES 10,589.19

DISCOUNT 3,527.46 (35%) IF PAID IN 30 DAYS

6,061.72 Net

PRINTED NAME Amro Cuberas

SIGNATURE Amro Cuberas

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.



CHARGE TO: Murfin Drilling  
 ADDRESS: \_\_\_\_\_  
 CITY, STATE, ZIP CODE: \_\_\_\_\_

TICKET 26495

PAGE 1 OF 2

SERVICE LOCATIONS: 1. New City KS WELL/PROJECT NO: 1-14 LEASE: Virginia "C" COUNTY/PARISH: RANDOLPH STATE: KS CITY: Beardsley DATE: 8/25/11 OWNER: \_\_\_\_\_

TICKET TYPE:  SERVICE  SALES CONTRACTOR: \_\_\_\_\_ RIG NAME/NO: 2 SHIPPED VIA: air DELIVERED TO: location WELL PERMIT NO.: \_\_\_\_\_

WELL TYPE: Development WELL CATEGORY: Development JOB PURPOSE: Cement long string WELL LOCATION: \_\_\_\_\_

INVOICE INSTRUCTIONS: \_\_\_\_\_

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF							
575		1			MILEAGE TRX 114	150	mi			6.00	900.00
579		1			Pump Charge					2000.00	2000.00
403		1			Cement Basket	5 1/2	in	3	in	300.00	900.00
406		1			Latex drum plug 5/8 bag/bbl	5 1/2	in	1	in	275.00	275.00
407		1			Insert Flat shoe w/ auto fill	5 1/2	in	1	in	375.00	375.00
409		1			Turbolizer	5 1/2	in	15	in	90.00	1350.00
419		1			Rotating head rental	5 1/2	in	1	in	200.00	200.00
413		1			Retours 1/2 scratches	5 1/2	in	20	in	40.00	800.00

**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: 8/30 TIME SIGNED:  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: 1 TOTAL: 23,404.08

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

SWIFT OPERATOR: \_\_\_\_\_ APPROVAL: \_\_\_\_\_

Thank You!





**JOB LOG**

**SWIFT Services, Inc.**

DATE 25 Jul 14 PAGE NO. 1

CUSTOMER MURKIN DRILLING WELL NO. 1-14 LEASE Virginia "C" JOB TYPE Cement lmg string TICKET NO. 26495

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
								300sk SMD cement w/ 1/4" Floccula 200sk EA-2 cement w/ 1/4" Floccula 5 1/2" x 15.5" casing TD = 4574
	20100							on loc YRK 114
	2235							start 5 1/2" x 15.5" casing in well
1127	<del>0030</del>							circulate 1/2 way - 30 min
20126	0020							Drop ball - circulate - ROTATE
	0124	4	12			200		Pump 500gal mud flush
		4	20			700		Pump 20 bbl KCl flush
			10					Plug RH-WH <del>30sk - 20sk</del>
	0137	5 3/4	140			200		mix SMD cement <del>20sk</del> @ 112ppg
	205	4 3/4	48			200		mix EA-2 cement <del>200sk</del> @ 15.3 ppg
								Drop latch down plug wash out pump & line
	0229	6				200		Displace plug
		6	99			1100		— cement to surface
		6	103			1200		} 155' pit }
	0245	6	107			1750		
	0250							Release pressure to truck - dried up
								wash truck
								Rack up
	0330							job complete
								<i>[Signature]</i> Blaine Flint, JARRO # 15040

Virginia "C" #1-14  
 Daily Drilling Report  
 Page two

7/25/14 RTD: 4574'. Cut 114'. DT: None. CT: None. Dev.: None. **DST #2 4374-4460 (LKC H-J):**  
 30-60-60-90. IF: Built to 3½". ISI: No return. FF: Built to 5". FSI: No return. Rec.: 12'  
 SOCM (2%O, 98%M), 119' M w/ trc of oil (100%M), 119' WM w/ trc oil (44%W, 56%M),  
 HP: 2221-2198. FP: 22/79, 83/138. SIP: 1125-1115. BHT: 139°, RW: .373 @ 98.9°F,  
 Chl: 12,000 PPM. HC @ 4:00AM 7/25.

7/26/14 RTD: 4574'. CT: 23¼ hrs. Pioneer logged 7:30AM – 11:30AM 7/25. LTD: 4575'. Ran  
 109jts of 5 ½" prod csg, set @ 4569'. Swift cmt w/450sxs (250EA-2). 30sxs RH, 20sxs  
 MH. PD @ 2:45AM 7/26. Circ 15sxs. RR @ 6:45AM 7/26/14. FINAL REPORT

MDCI Virginia 'C' #1-14 1800' FSL 660' FWL Sec. 14-T1S-R36W 3299' KB							MDCI Burk 'E' #1-14 330' FNL 1320' FWL Sec. 14-T1S-R36W 3309' KB	
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref	Log Top	Datum
Anhydrite	3216	+83	-9	3218	+81	-11	3217	+92
B/Anhydrite	3255	+44	-14	3255	+44	-14	3251	+58
Neva	3703	-404	-5	3707	-408	-9	3708	-399
Red Eagle	3768	-469	-10	3768	-469	-10	3768	-459
Foraker	3816	-517	-10	3817	-518	-11	3816	-507
Topeka	4031	-732	-10	4031	-732	-10	4031	-722
Oread	4144	-845	-11	4144	-845	-11	4143	-834
Lansing	4244	-945	-10	4246	-947	-12	4244	-935
Stark	4498	-1199	-43	4465	-1166	-10	4465	-1156
BKC	4514	-1215	-10	4515	-1216	-11	4514	-1205
RTD	4574	-1275					4614	-1305
LTD				4575	-1276		4614	-1305