



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1230303  
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: \_\_\_\_\_

1230303

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

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

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

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

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

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate				
<input type="checkbox"/> Protect Casing				
<input type="checkbox"/> Plug Back TD				
<input type="checkbox"/> Plug Off Zone				

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

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

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

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

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  
 Flowing    Pumping    Gas Lift    Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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<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> <i>(Submit ACO-4)</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	Dan 1-9
Doc ID	1230303

All Electric Logs Run

DIL
DUCP
MEL
BHCS





# Robert D. Hendrix

## Petroleum Geologist

### GEOLOGIST'S REPORT

#### DRILLING TIME AND SAMPLE LOG

COMPANY **Murfin Drilling Co. Inc.**

LEASE **Dan #1-9**

FIELD **Wildcat**

LOCATION **330 fsi & 1650 fcl**

SEC **9** TWP **1s** RGE **35w**

COUNTY **Rawlins** STATE **Kansas**

CONTRACTOR **Murfin Drilling Co. Inc. Rig 2**

SPUD **7/10/2014** COMPLET **7/18/2014**

RTD **4472** LTD **4478**

MUD UP **3247** TYPE MUD **Chemical**

SAMPLES SAVED FROM **3530 TO 1TD**

DRILLING TIME KEPT FROM **3530 TO 1TD**

SAMPLES EXAMINED FROM **3530 TO 1TD**

GEOLOGICAL SUPERVISION FROM **3530**

GEOLOGIST ON WELL **Robert D. Hendrix**

FORMATION TOPS

ELECTRIC LOG

SAMPLE

Anchorer **3684 (-511)** **3680 (-507)**

Topeka **3897 (-724)** **3893 (-720)**

Lansing **4113 (-931)** **4104 (-931)**

Stark **4329 (-1156)** **4326 (-1153)**

BKC **4378 (-1205)** **4372 (-1199)**

AP# **15-155-21033**

ELEVATIONS

KB **3173**

DF

GL **3162**

Measurements Are All From **Kelly Bushing**

CASING

CONDUCTOR **5.122 @ 4472**

SURFACE **8.518' at 2833**

PRODUCTION **5.122 @ 4472**

ELECTRICAL SURVEYS

compenesd porosity / dual induction

minilog / sonic

Pressure Wireline Services



REMARKS:

### LEGEND

	Anhydrite
	Sandstone
	Limestone
	Shale
	Carb Sh
	Cherty LS
	Chert
	Dolomite

DEPTH	LITHOLOGY	SAMPLE DESCRIPTION	REMARKS
3050	Anhydrite		<b>Anhydrite 3070 (+103)</b>
3100	Anhydrite		<b>Base Anhydrite 3100 (+73)</b>
3150	Shale	Shale: red, sandy, silty	Geologist on location 3530' at 10:24 pm 7/12/2014. Bit trip with pipe strap which was 1.28' long.
3500	Limestone	Limestone: white, f-mxn, sl chalky, v-fossiliferous, no vis por	<b>Neva 3569 (-396)</b>
3600	Shale	Shale: red, gray, brown, silty, sandy	
3650	Sandstone	Sandstone: gray/green, v-fgm, md, well sorted, sl calcareous, no vis por	
3680	Shale	Shale: red, gray, silty	<b>Red Eagle 3630 (-457)</b>
3700	Limestone	Limestone: gray to white, f-xn, sl chalky, sl cherty, granular, fossiliferous, no vis por	
3750	Limestone	Limestone: gray to brown, f-xn, sl chalky, sl cherty, fossiliferous, no vis por	
3800	Shale	Shale: red, gray, green, sl sandy	
3850	Shale	Shale: gray, red, brown	
3900	Limestone	Limestone: white to tan, f-xn, chalky, granular, no vis por, 20% sample black spotty to sat stain, slsf, faint odor	
3950	Shale	Shale: gray, red, brown	
4000	Limestone	Limestone: tan, f-xn, sl fossiliferous, no vis por, ns	
4050	Dolomite	Dolomite: tan, f-xn, cherty, granular, no vis por, ns	
4100	Siltstone/Shale	Siltstone/Shale: gray, brown, silty, calcareous	
4150	Shale	Shale: gray, black, red, silty	
4200	Limestone	Limestone: white to tan, f-mxn, sl pyritic, fossiliferous, no vis por	
4250	Shale	Shale: gray, red, brown	
4300	Limestone	Limestone: tan to brown, f-mxn, fossiliferous, no vis por	
4350	Shale	Shale: red, gray, green, silty	
4400	Limestone	Limestone: tan, f-mxn, oolitic, sl pyritic, fossiliferous, no vis por	
4450	Siltstone	Siltstone: gray, silty, blocky	
4500	Shale	Shale: gray, green, red, silty	
4550	Limestone	Limestone: white to tan, f-xn, granular, fossiliferous, no vis por	
4600	Limestone	Limestone: tan, f-mxn, chalky, oolitic, fossiliferous, no vis por	
4650	Shale	Shale: gray, green, red, silty	
4700	Limestone	Limestone: tan to white, f-mxn, chalky, oolitic, fossiliferous, pr oolitic por, 5 pieces fr dark sat stain, nfo, no odor	
4750	Shale	Shale: dark red, gray, silty	
4800	Limestone	Limestone: tan, f-mxn, sl oolitic, sl pyritic, fossiliferous, no vis por	
4850	Shale	Shale: red, gray, silty	
4900	Limestone	Limestone: tan, f-xn, sl chalky, fossiliferous, sl pyritic, no vis por	
4950	Shale	Shale: red, gray, silty	
5000	Limestone	Limestone: tan, f-xn, sl chalky, oolitic in part, fossiliferous, no vis por	
5050	Limestone	Limestone: white to lt gray, f-xn, dense, no vis por	8:00am, 7/13/2014
5100	Shale	Shale: gray, red, black	wt 9.3, vis. 58, lcm 5# Morgan Mud, Dave Lines
5150	Limestone	Limestone: white, f-xn, fossiliferous, no vis por, 2% sample black dead oil stain, nfo, no odor	
5200	Limestone	Limestone: tan to white, f-xn, chalky, fossiliferous, no vis por	
5250	Shale	Shale: red, gray, silty	8:00am, 4/17/2014 wt 9.0, vis. 63, lcm 8# Morgan Mud, Troy Vanpelt
5300	Shale	Shale: red, gray, silty, fossiliferous	
5350	Limestone	Limestone: white, f-mxn, chalky, granular, dense, no vis por, 7 pieces dead flaky oil stain, nfo no odor	
5400	Limestone	Limestone: white, f-mxn, chalky, oolitic, fossiliferous, fr oolitic por, ns	
5450	Limestone	Limestone: gray, f-xn, sl chalky, granular, no vis por	
5500	Shale	Shale: gray, dark gray, red	
5550	Limestone	Limestone: gray to brown, f-xn, no vis por	
5600	Limestone	Limestone: white to tan, f-mxn, v-chalky, oolitic in part, fossiliferous, no vis por, ns	
5650	Limestone	Limestone: gray to brown, f-xn, sl cherty, no vis por	
5700	Sandstone	Sandstone: white to gray, lt, md gm, sub ang, mod sorted, pr intergranular por, ns	
5750	Shale	Shale: gray, dark gray, pyritic, silty, sandy	
5800	Shale	Shale: red, gray, silty	
5850	Limestone	Limestone: tan, f-xn, sl fossiliferous, mostly dense, pr vug por, 1% sample dark sat stain v-sifo, no odor	
5900	Limestone	Limestone: tan to brown, f-xn, dense, hard, no vis por	
5950	Shale	Shale: gray, red, silty	<b>DST #1</b> 4065-4172 30-60-30-60 1st open: blow built to 1/4" 2nd open: no blow Rec: 5' mud hydro: 2101-2097 psi lf: 22-28 psi ff: 31-36 psi sip: 1078-966 psi bht: 129°F
6000	Sandstone	Sandstone: white to gray, v-f gm, md, well sorted, calcareous, pr intergranular por, black flaky dead stain, nfo, no odor	
6050	Shale	Shale: gray, red, silty, sandy, pyritic	8:00am, 7/14/2014 wt 9.2, vis. 65, lcm 4# Morgan Mud, Dave Lines
6100	Shale	Shale: gray, red, silty	
6150	Limestone	Limestone: white, f-xn, sl oolitic in part, sl pyritic, 10% sample pr vug por, lt sat stain, slsf, good odor	
6200	Limestone	Limestone: tan, f-xn, mostly dense, sl chalky, sl fossiliferous, no vis por, few pieces of show from above	
6250	Shale	Shale: gray, green, brown, red, silty	<b>DST #2</b> 4174-4230 30-60-60-90 1st open: blow built to 4" 2nd open: blow built to 7" 2nd close: no returns Rec: 70' go 10/90 50' gocm 5/40/55 120' gip hydro: 2193-2098 psi lf: 21-31 psi ff: 34-54 psi sip: 1296-1287 psi bht: 120°F gravity: 34°api
6300	Limestone	Limestone: white to tan, f-mxn, oolitic in part, fossiliferous, 20% sample fr vug por, lt to dark brown stain, frsf, gd odor	8:00am, 7/15/2014 wt 9.5, vis. 47, lcm 4# Morgan Mud, Dave Korte
6350	Limestone	Limestone: white to gray, f-xn, fossiliferous, 1% sample pr interxn por, dark sat stain dead flaky, nfo, faint odor	
6400	Shale	Shale: red, gray, green	<b>DST #3</b> 4232-4278 30-60-60-90 1st open: blow built to 1 1/4" 2nd open: blow built to 1 1/8" no returns Rec: 2' oil 8' ocm 40/60 hydro: 2188-2041 psi lf: 20-22 psi ff: 44-58 psi sip: 1216-1189 psi bht: 128°F
6450	Shale	Shale: red, gray	8:00am, 7/16/2014 wt 9.3, vis. 165, lcm 4# Morgan Mud, Dave Korte
6500	Limestone	Limestone: tan, f-mxn, fossiliferous, no vis por, no odor	
6550	Shale	Shale: red, gray	<b>DST #4</b> 4273-4325 30-60-60-90 1st open: blow built to 3 1/4" 2nd open: blow built to 1" no returns Rec: 70' ocm 35/65 hydro: 2228-2204 psi lf: 19-38 psi ff: 44-58 psi sip: 947-776 psi bht: 127°F
6600	Limestone	Limestone: white to tan, f-xn, chalky, oolitic in part, pr pp to vug por, 5% sample lt sat stain, prsf, fr odor	
6650	Limestone	Limestone: tan, f-xn, dense, hard, no vis por	
6700	Shale	Shale: gray, dark gray, red	
6750	Shale	Shale: red, gray	<b>Stark 4326 (-1153)</b>
6800	Limestone	Limestone: tan to white, f-xn, dense, fossiliferous, no vis por	
6850	Limestone	Limestone: tan, f-mxn, dense, v-fossiliferous, no vis por	
6900	Shale	Shale: gray lt to dark, red	
6950	Limestone	Limestone: tan to lt gray, m-xn, chalky, fossiliferous, sl pyritic, no vis por	
7000	Limestone	Limestone: tan to white, f-mxn, sl chalky, mostly dense, fossiliferous, no vis por	
7050	Shale	Shale: red, brown, gray, silty	
7100	Limestone	Limestone: gray, f-xn, chalky, fossiliferous, no vis por	8:00am, 7/17/2014
7150	Shale	Shale: red, gray, blocky	
7200	Limestone	Limestone: tan to brown, f-xn, dense, no vis por	
7250	Shale	Shale: red, gray, blocky	
7300	Shale	Shale: red, gray, silty, sandy	
7350	Shale	Shale: red, gray	
7400	Limestone	Limestone: tan, f-mxn, fossiliferous, no vis por	
7450			<b>BKC 4372 (-1199)</b>
7500			8:00am, 7/17/2014
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## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling CO, INC.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

**Dan #1-9**

**9-1s-35w Rawlins,KS**

Start Date: 2014.07.14 @ 09:15:00

End Date: 2014.07.14 @ 16:17:00

Job Ticket #: 58426                      DST #: 1

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

Printed: 2014.07.18 @ 10:59:00



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58426

**DST#: 1**

ATTN: Robert Hendrix

Test Start: 2014.07.14 @ 09:15:00

## GENERAL INFORMATION:

Formation: **LKC "A-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:15:00

Time Test Ended: 16:17:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Robert Zodrow

Unit No: 49

**Interval: 4065.00 ft (KB) To 4172.00 ft (KB) (TVD)**

Reference Elevations: 3173.00 ft (KB)

Total Depth: 4172.00 ft (KB) (TVD)

3163.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6769 Outside**

Press@RunDepth: 36.42 psig @ 4066.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.14

End Date:

2014.07.14

Last Calib.: 2014.07.14

Start Time: 09:15:05

End Time:

16:16:59

Time On Btm: 2014.07.14 @ 11:14:30

Time Off Btm: 2014.07.14 @ 14:16:30

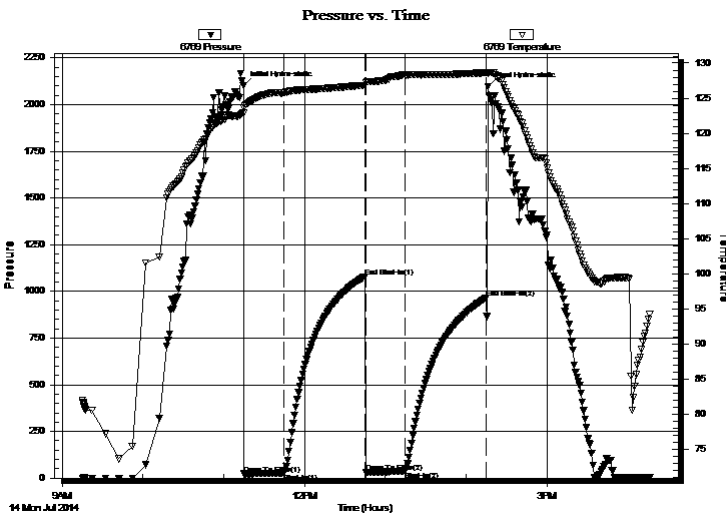
TEST COMMENT: 30-IF- Blow built to 1/4"

60-IS- No return

30-FF- No blow

60-FS- No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2100.99	122.86	Initial Hydro-static
1	21.94	123.63	Open To Flow (1)
30	28.17	125.76	Shut-In(1)
90	1078.44	126.84	End Shut-In(1)
91	30.67	127.20	Open To Flow (2)
120	36.42	128.31	Shut-In(2)
181	966.31	128.62	End Shut-In(2)
182	2097.12	128.46	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100%m	0.02

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58426

**DST#: 1**

ATTN: Robert Hendrix

Test Start: 2014.07.14 @ 09:15:00

## Tool Information

Drill Pipe:	Length: 3846.00 ft	Diameter: 3.88 inches	Volume: 56.24 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: 204.00 ft	Diameter: 2.25 inches	Volume: 1.00 bbl	Weight to Pull Loose:	90000.00 lb
			<u>Total Volume: 57.24 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	78000.00 lb
Depth to Top Packer:	4065.00 ft			Final	78000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	107.00 ft				
Tool Length:	134.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4043.00	
Hydraulic tool	5.00			4048.00	
Jars	5.00			4053.00	
Safety Joint	3.00			4056.00	
Packer	5.00			4061.00	27.00 Bottom Of Top Packer
Packer	4.00			4065.00	
Stubb	1.00			4066.00	
Recorder	0.00	8521	Inside	4066.00	
Recorder	0.00	6769	Outside	4066.00	
Perforations	8.00			4074.00	
Change Over Sub	1.00			4075.00	
Drill Pipe	93.00			4168.00	
Change Over Sub	1.00			4169.00	
Bullnose	3.00			4172.00	107.00 Bottom Packers & Anchor

**Total Tool Length: 134.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58426

**DST#: 1**

ATTN: Robert Hendrix

Test Start: 2014.07.14 @ 09:15:00

## 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: 65.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	mud 100%m	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbf

Num Fluid Samples: 0

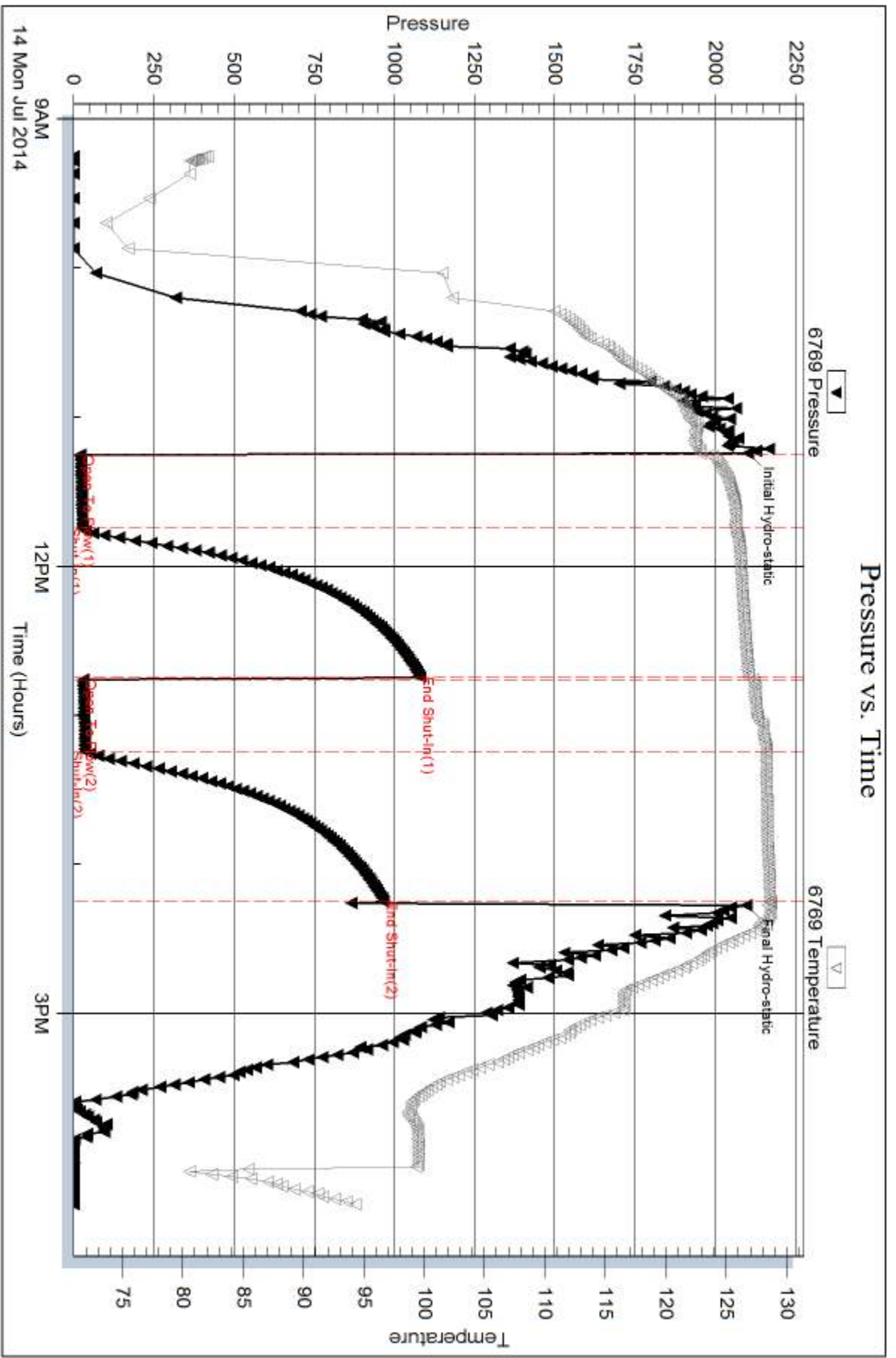
Num Gas Bombs: 0

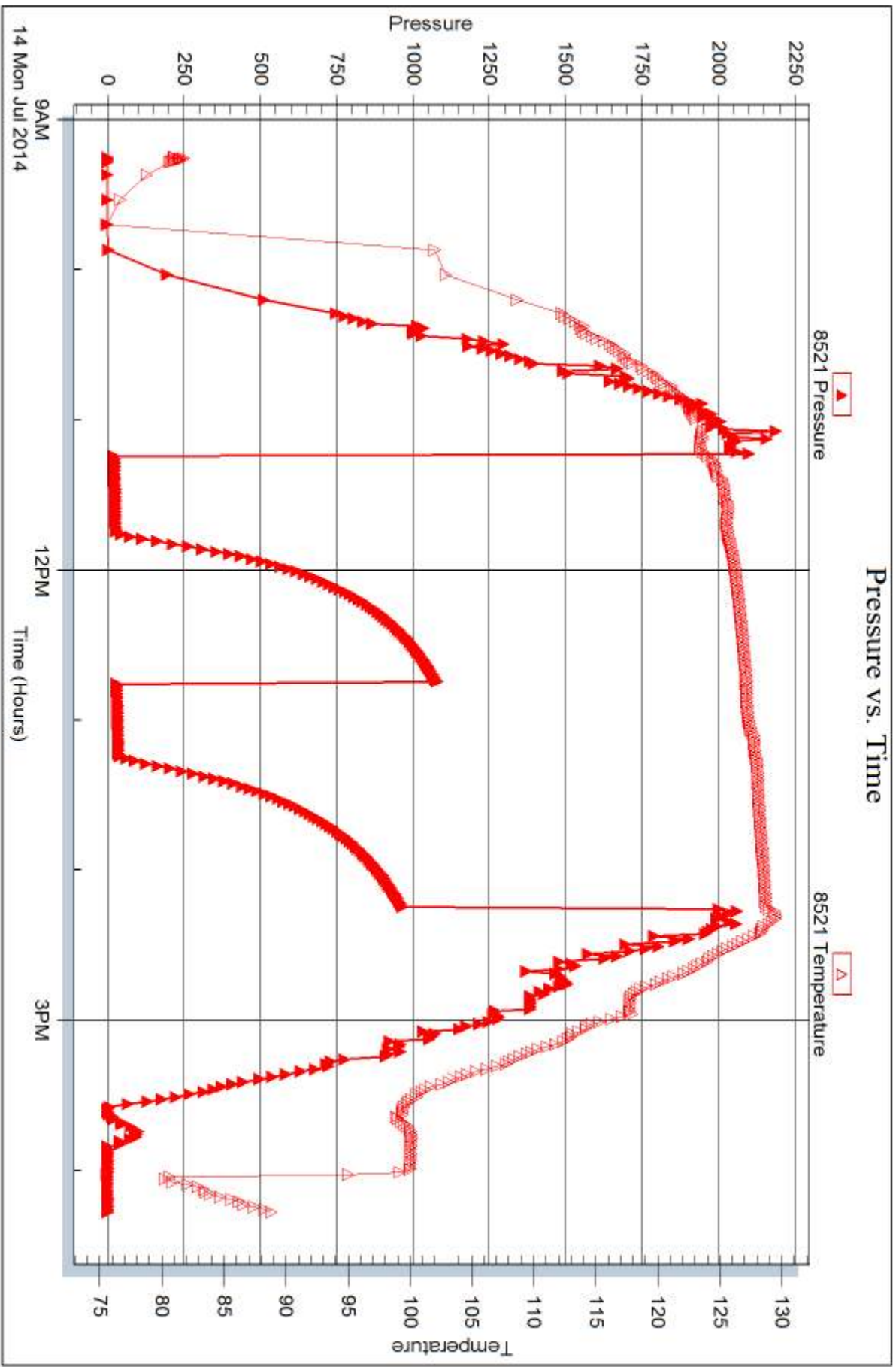
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling CO, INC.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

**Dan #1-9**

**9-1s-35w Rawlins,KS**

Start Date: 2014.07.15 @ 02:00:00

End Date: 2014.07.15 @ 10:11:00

Job Ticket #: 58427                      DST #: 2

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

Printed: 2014.07.18 @ 10:58:29



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58427

**DST#: 2**

ATTN: Robert Hendrix

Test Start: 2014.07.15 @ 02:00:00

## GENERAL INFORMATION:

Formation: **LKC "G"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:04:00

Time Test Ended: 10:11:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 49

**Interval: 4174.00 ft (KB) To 4230.00 ft (KB) (TVD)**

Reference Elevations: 3173.00 ft (KB)

Total Depth: 4230.00 ft (KB) (TVD)

3163.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6769 Outside**

Press@RunDepth: 53.97 psig @ 4175.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.15

End Date:

2014.07.15

Last Calib.:

2014.07.15

Start Time: 02:00:05

End Time:

10:10:59

Time On Btm:

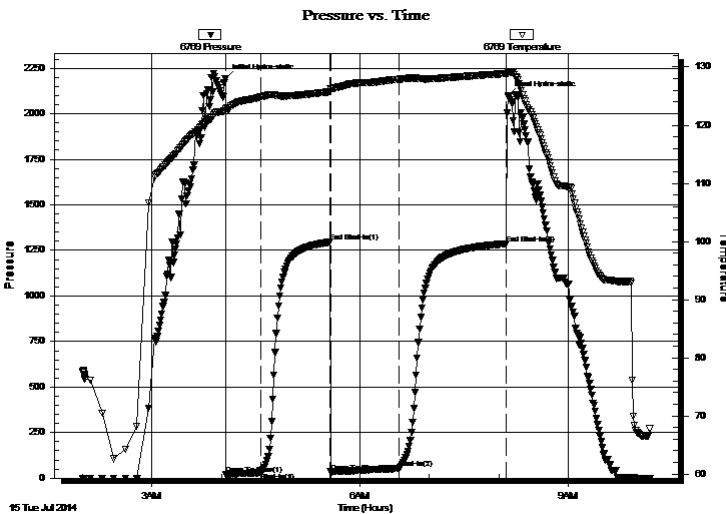
2014.07.15 @ 04:03:30

Time Off Btm:

2014.07.15 @ 08:08:00

TEST COMMENT: 30-IF- Blow built to 4"  
60-ISI- No return  
60-FF- Blow built to 7"  
90-FSI- No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2193.17	122.46	Initial Hydro-static
1	20.85	122.89	Open To Flow (1)
31	30.55	124.86	Shut-In(1)
90	1295.70	125.74	End Shut-In(1)
91	34.19	126.32	Open To Flow (2)
150	53.97	127.88	Shut-In(2)
243	1287.28	128.87	End Shut-In(2)
245	2098.44	128.96	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
50.00	gocm 5%g 40%o 55%m	0.25
70.00	go 10%g 90%o	0.34
0.00	120' GIP	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.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58427

**DST#: 2**

ATTN: Robert Hendrix

Test Start: 2014.07.15 @ 02:00:00

## Tool Information

Drill Pipe:	Length: 3972.00 ft	Diameter: 3.88 inches	Volume: 58.09 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: 204.00 ft	Diameter: 2.25 inches	Volume: 1.00 bbl	Weight to Pull Loose: 84000.00 lb
			<u>Total Volume: 59.09 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 78000.00 lb
Depth to Top Packer:	4174.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	56.00 ft			
Tool Length:	83.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			4152.00	
Hydraulic tool	5.00			4157.00	
Jars	5.00			4162.00	
Safety Joint	3.00			4165.00	
Packer	5.00			4170.00	27.00 Bottom Of Top Packer
Packer	4.00			4174.00	
Stubb	1.00			4175.00	
Recorder	0.00	8521	Inside	4175.00	
Recorder	0.00	6769	Outside	4175.00	
Perforations	19.00			4194.00	
Change Over Sub	1.00			4195.00	
Drill Pipe	31.00			4226.00	
Change Over Sub	1.00			4227.00	
Bullnose	3.00			4230.00	56.00 Bottom Packers & Anchor

**Total Tool Length: 83.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58427

**DST#: 2**

ATTN: Robert Hendrix

Test Start: 2014.07.15 @ 02:00:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

34 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 65.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
50.00	gocm 5%g 40%o 55%m	0.246
70.00	go 10%g 90%o	0.344
0.00	120' GIP	0.000

Total Length: 120.00 ft Total Volume: 0.590 bbl

Num Fluid Samples: 0

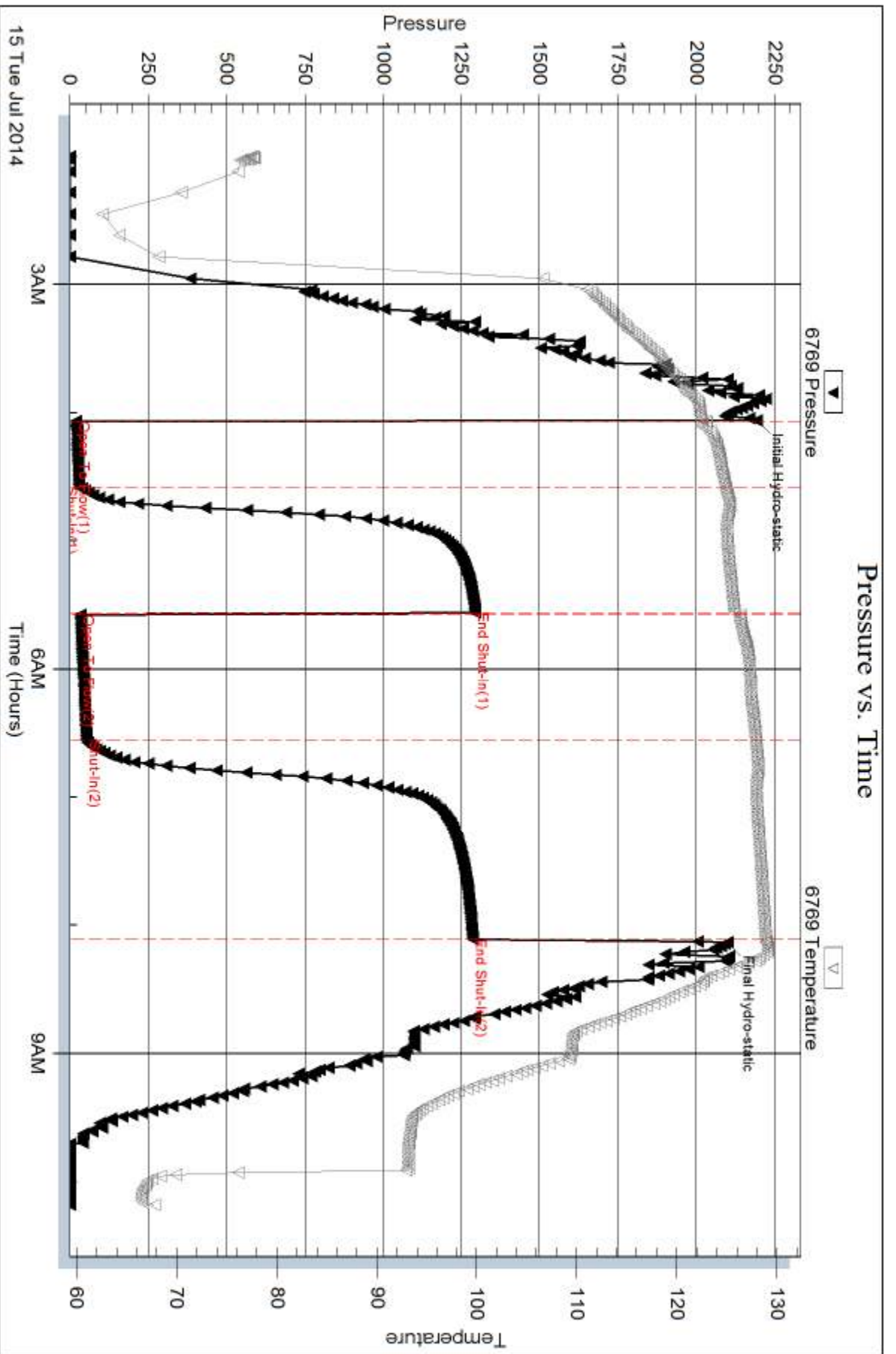
Num Gas Bombs: 0

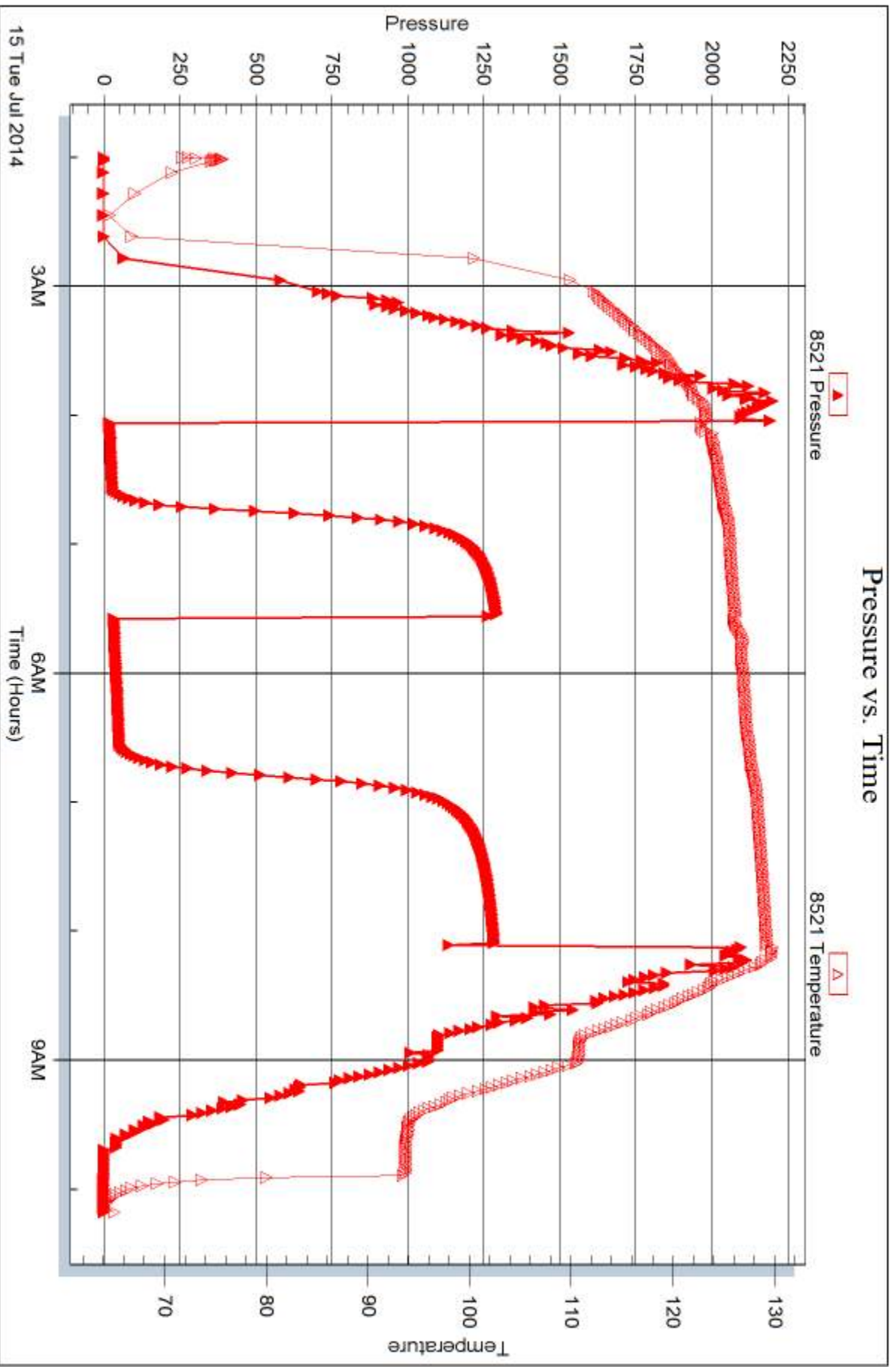
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling CO, INC.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

**Dan #1-9**

**9-1s-35w Rawlins,KS**

Start Date: 2014.07.15 @ 21:15:00

End Date: 2014.07.16 @ 05:05:00

Job Ticket #: 58428                      DST #: 3

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

Printed: 2014.07.18 @ 10:58:01

Murfin Drilling CO, INC. 9-1s-35w Rawlins,KS Dan #1-9 DST # 3 LKC "H" 2014.07.15





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58428

**DST#: 3**

ATTN: Robert Hendrix

Test Start: 2014.07.15 @ 21:15:00

## GENERAL INFORMATION:

Formation: **LKC "H"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:57:30

Time Test Ended: 05:05:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 49

**Interval: 4232.00 ft (KB) To 4278.00 ft (KB) (TVD)**

Reference Elevations: 3173.00 ft (KB)

Total Depth: 4278.00 ft (KB) (TVD)

3163.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6769 Outside**

Press@RunDepth: 32.36 psig @ 4233.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.15

End Date:

2014.07.16

Last Calib.:

2014.07.16

Start Time:

21:15:05

End Time:

05:04:59

Time On Btm:

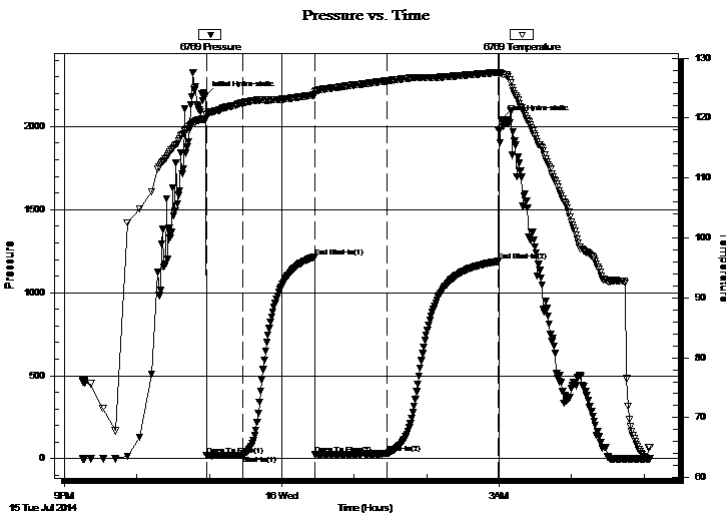
2014.07.15 @ 22:57:00

Time Off Btm:

2014.07.16 @ 03:01:30

**TEST COMMENT:** 30-IS- Blow built to 1 1/4"  
60-IS- No return  
60-FF- Surface blow started in 13 mins built to 1 1/8"  
90-FS- No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2187.61	119.75	Initial Hydro-static
1	20.40	120.51	Open To Flow (1)
31	22.15	122.56	Shut-In(1)
90	1216.40	123.87	End Shut-In(1)
91	27.34	124.42	Open To Flow (2)
150	32.36	126.22	Shut-In(2)
242	1188.70	127.63	End Shut-In(2)
245	2040.57	127.47	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
8.00	ocm 40%o 60%m	0.04
2.00	clean oil 100%o	0.01

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58428

**DST#: 3**

ATTN: Robert Hendrix

Test Start: 2014.07.15 @ 21:15:00

## Tool Information

Drill Pipe:	Length: 4007.00 ft	Diameter: 3.88 inches	Volume: 58.60 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: 204.00 ft	Diameter: 2.25 inches	Volume: 1.00 bbl	Weight to Pull Loose:	86000.00 lb
			<u>Total Volume: 59.60 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	80000.00 lb
Depth to Top Packer:	4232.00 ft			Final	80000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	46.00 ft				
Tool Length:	73.00 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			4210.00	
Hydraulic tool	5.00			4215.00	
Jars	5.00			4220.00	
Safety Joint	3.00			4223.00	
Packer	5.00			4228.00	27.00 Bottom Of Top Packer
Packer	4.00			4232.00	
Stubb	1.00			4233.00	
Recorder	0.00	8521	Inside	4233.00	
Recorder	0.00	6769	Outside	4233.00	
Perforations	9.00			4242.00	
Change Over Sub	1.00			4243.00	
Drill Pipe	31.00			4274.00	
Change Over Sub	1.00			4275.00	
Bullnose	3.00			4278.00	46.00 Bottom Packers & Anchor

**Total Tool Length: 73.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58428

**DST#: 3**

ATTN: Robert Hendrix

Test Start: 2014.07.15 @ 21:15:00

## Mud and Cushion Information

Mud Type: Gel Chem  
Mud Weight: 10.00 lb/gal  
Viscosity: 47.00 sec/qt  
Water Loss: 8.38 in<sup>3</sup>  
Resistivity: ohm.m  
Salinity: 700.00 ppm  
Filter Cake: 2.00 inches

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

Oil API: 28 deg API  
Water Salinity: ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
8.00	ocm 40%o 60%m	0.039
2.00	clean oil 100%o	0.010

Total Length: 10.00 ft      Total Volume: 0.049 bbl

Num Fluid Samples: 0

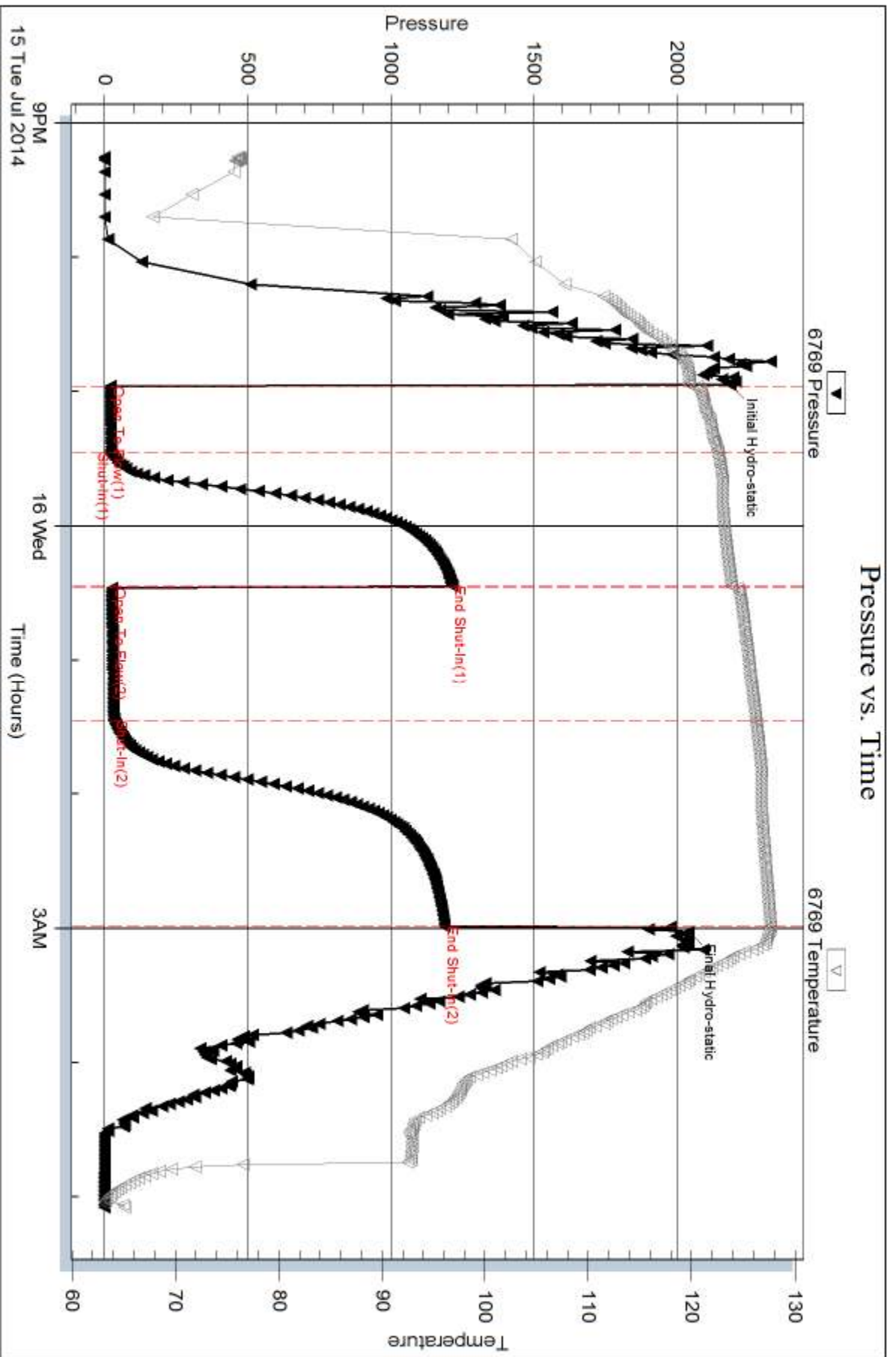
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



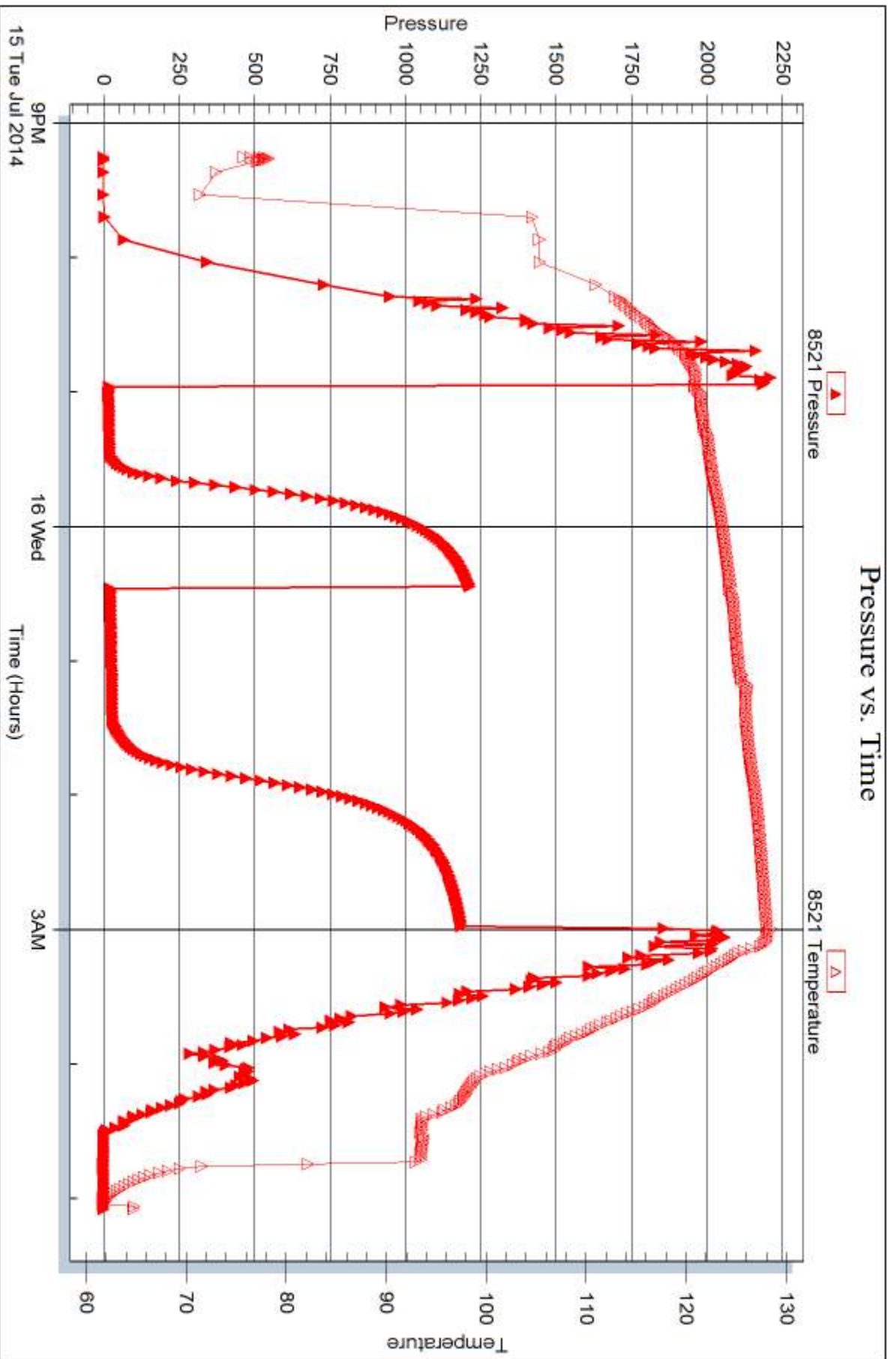
Serial #: 8521

Inside

Murfin Drilling CO., INC.

Dan #1-9

DST Test Number: 3







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling CO, INC.**

250 N Water STE 300  
Wichita KS 67202

ATTN: Robert Hendrix

### **Dan #1-9**

#### **9-1s-35w Rawlins,KS**

Start Date: 2014.07.16 @ 15:35:00

End Date: 2014.07.16 @ 23:42:00

Job Ticket #: 58429                      DST #: 4

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

Printed: 2014.07.18 @ 10:57:34



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58429

**DST#: 4**

ATTN: Robert Hendrix

Test Start: 2014.07.16 @ 15:35:00

## GENERAL INFORMATION:

Formation: **LKC "J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:40:00

Time Test Ended: 23:42:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Robert Zodrow

Unit No: 49

**Interval: 4273.00 ft (KB) To 4325.00 ft (KB) (TVD)**

Reference Elevations: 3173.00 ft (KB)

Total Depth: 4325.00 ft (KB) (TVD)

3163.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 6769 Outside**

Press@RunDepth: 57.90 psig @ 4274.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.07.16

End Date:

2014.07.16

Last Calib.:

2014.07.16

Start Time: 15:35:05

End Time:

23:41:59

Time On Btm:

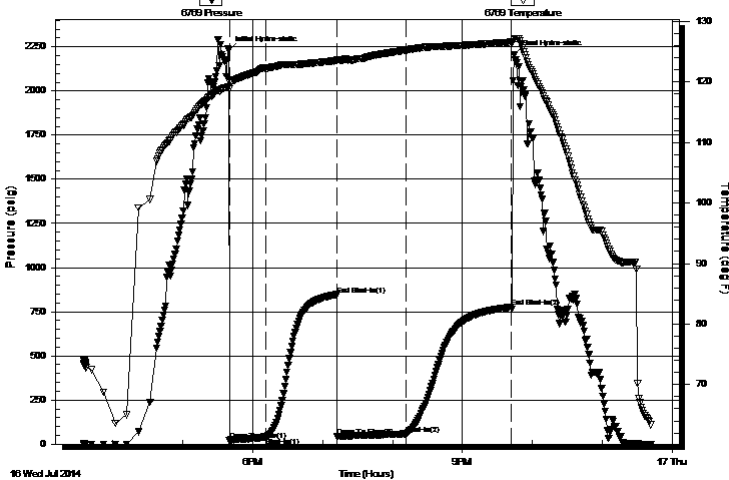
2014.07.16 @ 17:39:30

Time Off Btm:

2014.07.16 @ 21:44:30

**TEST COMMENT:** 30-IF- Blow built to 3 1/4"  
60-ISI- No return  
30-FF- Blow started in 15 mins built to 1"  
60-FSI- No return

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2227.71	119.23	Initial Hydro-static
1	19.49	118.92	Open To Flow (1)
32	37.90	122.23	Shut-In(1)
93	846.66	123.52	End Shut-In(1)
93	44.40	123.69	Open To Flow (2)
152	57.90	125.26	Shut-In(2)
243	776.38	126.59	End Shut-In(2)
245	2204.16	127.04	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
70.00	ocm 35%o 65%m	0.34

\* 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.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58429

**DST#: 4**

ATTN: Robert Hendrix

Test Start: 2014.07.16 @ 15:35:00

## Tool Information

Drill Pipe:	Length: 4070.00 ft	Diameter: 3.88 inches	Volume: 59.52 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: 204.00 ft	Diameter: 2.25 inches	Volume: 1.00 bbl	Weight to Pull Loose:	86000.00 lb
			<u>Total Volume: 60.52 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	78000.00 lb
Depth to Top Packer:	4273.00 ft			Final	78000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	52.00 ft				
Tool Length:	79.00 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			4251.00	
Hydraulic tool	5.00			4256.00	
Jars	5.00			4261.00	
Safety Joint	3.00			4264.00	
Packer	5.00			4269.00	27.00 Bottom Of Top Packer
Packer	4.00			4273.00	
Stubb	1.00			4274.00	
Recorder	0.00	8521	Inside	4274.00	
Recorder	0.00	6769	Outside	4274.00	
Perforations	15.00			4289.00	
Change Over Sub	1.00			4290.00	
Drill Pipe	31.00			4321.00	
Change Over Sub	1.00			4322.00	
Bullnose	3.00			4325.00	52.00 Bottom Packers & Anchor

**Total Tool Length: 79.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling CO, INC.

**9-1s-35w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Dan #1-9**

Job Ticket: 58429

**DST#: 4**

ATTN: Robert Hendrix

Test Start: 2014.07.16 @ 15:35:00

## 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: 165.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 4.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
70.00	ocm 35%o 65%m	0.344

Total Length: 70.00 ft      Total Volume: 0.344 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

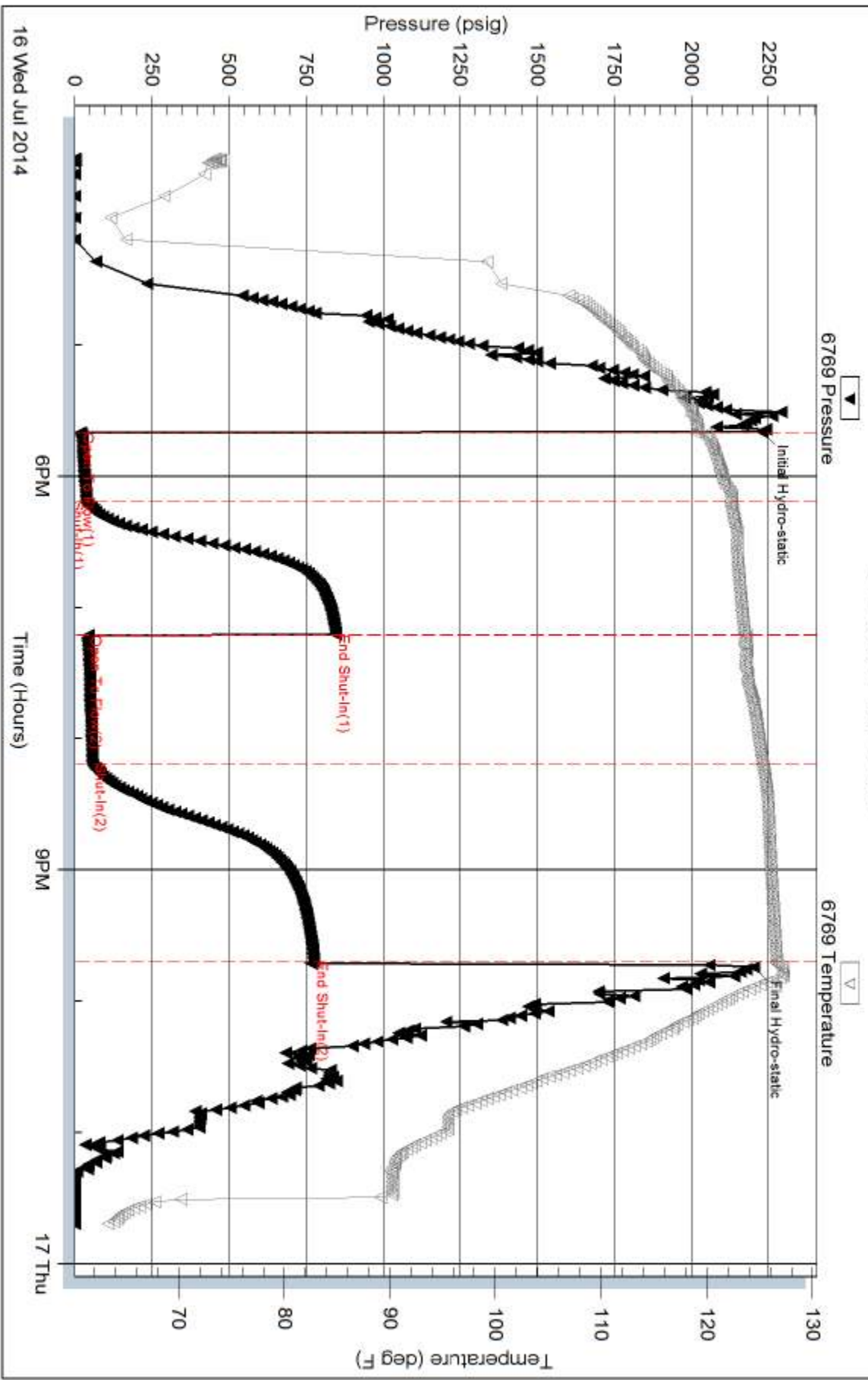
Serial #:

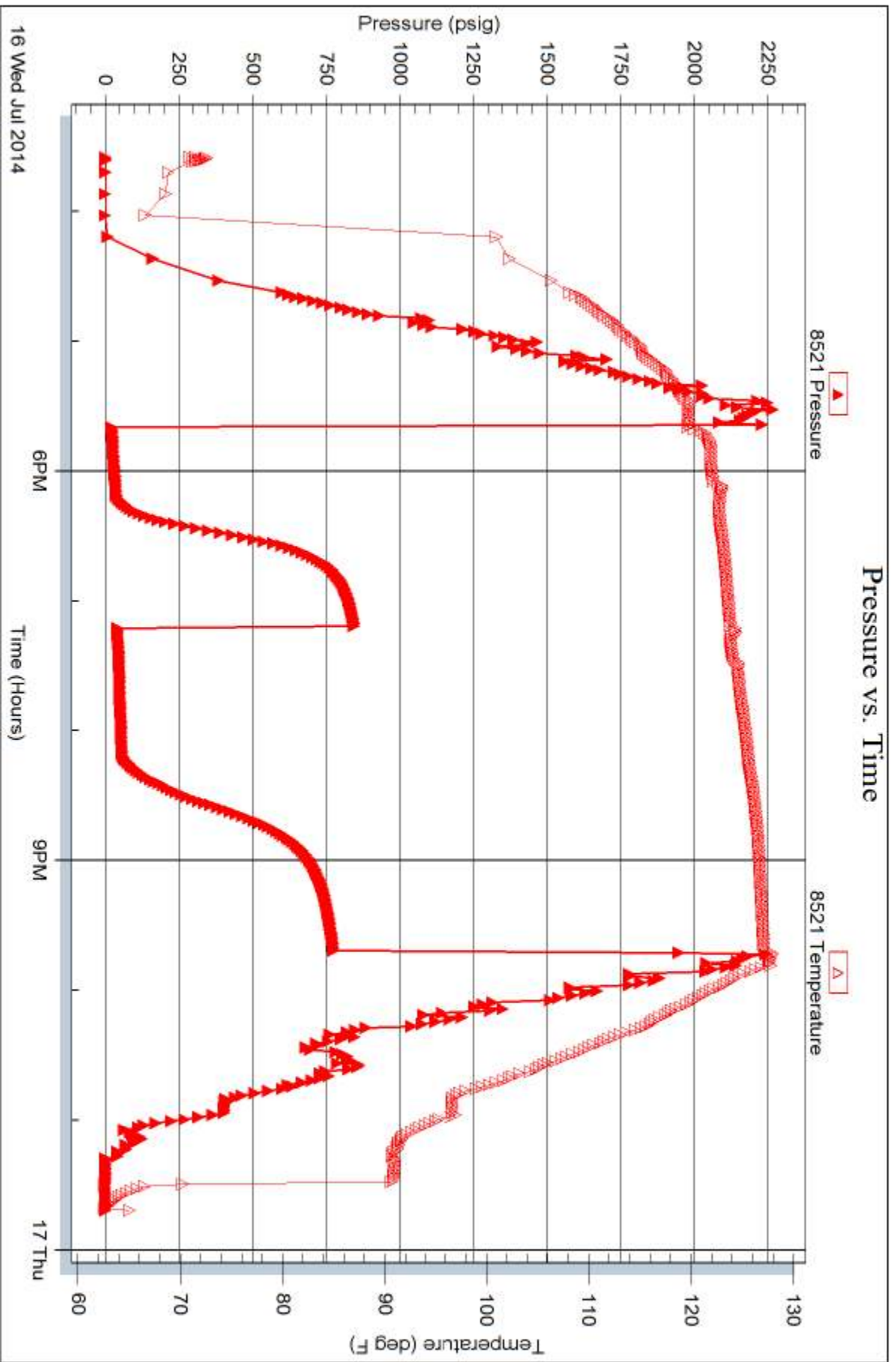
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 58426

Well Name & No. Dan #1-9 Test No. 1 Date 7-14-2014  
 Company Murfin Drilling CO, Inc. Elevation 3173 KB 3163 GL  
 Address 250 N water STE 300 Wichita KS, 67202  
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2  
 Location: Sec. 9 Twp. 1 Rge. 35 Co. Rawlins State KS

Interval Tested 4065 - 4172 Zone Tested LKC "A-D"  
 Anchor Length 107 Drill Pipe Run 3846 Mud Wt. 9.2  
 Top Packer Depth 4061 Drill Collars Run 204 Vis 65  
 Bottom Packer Depth 4065 Wt. Pipe Run 0 WL 5.2  
 Total Depth 4172 Chlorides 700 ppm System LCM 4.0  
 Blow Description IF - Blow built to 1/4"  
ISI - NO return  
FF - NO blow  
FSE - NO return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>mud</u>			<u>100</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 129 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>2101</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>08:00 7-14</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>09:15 7-14</u>
(C) First Final Flow <u>28</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>11:15 7-14</u>
(D) Initial Shut-In <u>1078</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>14:15 7-14</u>
(E) Second Initial Flow <u>31</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>16:17 7-14</u>
(F) Second Final Flow <u>36</u>	<input checked="" type="checkbox"/> Mileage <u>106 RT 164.30</u>	Comments _____
(G) Final Shut-In <u>966</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2097</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
	<input type="checkbox"/> Day Standby _____	Total <u>1739.30</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1739.30</u>	

Approved By [Signature] Our Representative Robert Zichow

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. 58427

Well Name & No. Dan #1-9 Test No. 2 Date 7-15-2014  
 Company Murfin Drilling CO, Inc. Elevation 3173 KB 3163 GL  
 Address 250 N Water STE 300 Wichita KS, 67202  
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2  
 Location: Sec. 9 Twp. 1 Rge. 3.5 Co. Rawlins State KS

Interval Tested 4174 - 4230 Zone Tested LKC "H"  
 Anchor Length 56 Drill Pipe Run 3972 Mud Wt. 9.2  
 Top Packer Depth 4170 Drill Collars Run 204 Vis 6.5  
 Bottom Packer Depth 4174 Wt. Pipe Run 0 WL 5.2  
 Total Depth 4230 Chlorides 700 ppm System LCM 4.0  
 Blow Description IF - Blow built to 4"  
ISI - No return  
FF - Blow built to 7"  
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>90</u>	<u>10</u>	<u>90</u>		
<u>50</u>	<u>90cm</u>	<u>5</u>	<u>40</u>	<u>55</u>	
	<u>120' MIP</u>				

Rec Total 120 BHT 129 Gravity 34 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 219.3  Test 1250 T-On Location 01:30 7-15  
 (B) First Initial Flow 21  Jars 250 T-Started 02:00 7-15  
 (C) First Final Flow 31  Safety Joint 75 T-Open 04:04 7-15  
 (D) Initial Shut-In 1296  Circ Sub \_\_\_\_\_ T-Pulled 08:06 7-15  
 (E) Second Initial Flow 34  Hourly Standby \_\_\_\_\_ T-Out 10:11 7-15  
 (F) Second Final Flow 54  Mileage 106 164.30 Comments \_\_\_\_\_  
 (G) Final Shut-In 1287  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2098  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 1739.30  
 Final Flow 60  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 90 Sub Total 1739.30

Approved By

*Robert J. Zichow*

Our Representative

*Robert Zichow*

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. 58428

Well Name & No. Dan #1-9 Test No. 3 Date 7-15-2014  
 Company Murfin Drilling Co, Inc. Elevation 3173 KB 3163 GL  
 Address 250 N Water STE 300 Wichita KS, 67202  
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2  
 Location: Sec. 9 Twp. 1 Rge. 35 Co. Rawlins State Ks.

Interval Tested 4232 - 4278 Zone Tested LKC "H"  
 Anchor Length 46 Drill Pipe Run 4007 Mud Wt. 9.5  
 Top Packer Depth 4228 Drill Collars Run 204 Vis 47  
 Bottom Packer Depth 4232 Wt. Pipe Run 0 WL 8.4  
 Total Depth 4278 Chlorides 700 ppm System LCM 4.0  
 Blow Description IF - Blow built to 1 1/4"  
ISI - No return  
FF - Surface blow started in 13 mins built to 1 1/8"  
FBI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>oil</u>	<u>100</u>			
<u>8</u>	<u>OCM</u>	<u>40</u>		<u>60</u>	

Rec Total 10 BHT 128 Gravity 28 API RW - @ - °F Chlorides - ppm

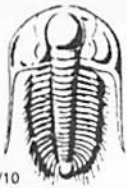
(A) Initial Hydrostatic <u>2188</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>20:45 7-15</u>
(B) First Initial Flow <u>20</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>21:15 7-15</u>
(C) First Final Flow <u>22</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>22:57 7-15</u>
(D) Initial Shut-In <u>1216</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>02:59 7-16</u>
(E) Second Initial Flow <u>27</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>05:05 7-16</u>
(F) Second Final Flow <u>32</u>	<input checked="" type="checkbox"/> Mileage <u>106 RT</u> 164.30	Comments _____
(G) Final Shut-In <u>1189</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2041</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1739.30</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1739.30</u>	

Approved By Robert D. Hendrix

Our Representative Robert Zocher

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. 58429

Well Name & No. Dan #1-9 Test No. 4 Date 7-16-2014  
 Company Martin Drilling Co, Inc. Elevation 3173 KB 3163 GL  
 Address 250 N Water STE 300 Wichita KS, 67202  
 Co. Rep / Geo. Robert Hendrix Rig MURFIN #2  
 Location: Sec. 9 Twp. 1 Rge. 35 Co. Rawlins State KS

Interval Tested 4273 - 4325 Zone Tested LKC "J"  
 Anchor Length 52 Drill Pipe Run 4070 Mud Wt. 9.3  
 Top Packer Depth 4269 Drill Collars Run 204 Vis 165  
 Bottom Packer Depth 4273 Wt. Pipe Run 0 WL 7.6  
 Total Depth 4325 Chlorides 700 ppm System LCM 4.0  
 Blow Description IF-Blow built to 3 1/4  
ISF - No return  
PF - Blow started in 15 mins built to 1"  
BSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>70</u>	<u>0cm</u>	<u>35</u>		<u>65</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 70 BHT 127 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2228  Test 1250 T-On Location 15:00 7-16  
 (B) First Initial Flow 19  Jars 250 T-Started 15:35 7-16  
 (C) First Final Flow 38  Safety Joint 75 T-Open 17:40 7-16  
 (D) Initial Shut-In 847  Circ Sub \_\_\_\_\_ T-Pulled 21:42 7-16  
 (E) Second Initial Flow 44  Hourly Standby \_\_\_\_\_ T-Out 23:42 7-16  
 (F) Second Final Flow 58  Mileage 106 RT x2 Comments Prove out  
 (G) Final Shut-In 776  Sampler 328.60 Loaded tool 7-17  
 (H) Final Hydrostatic 2204  Straddle \_\_\_\_\_ at 11:00 AM  
 Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 1903.60  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1903.60

Approved By Robert D. Hendrix Our Representative Robert Zochens

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*acct  
Prod-MG*

# INVOICE

PO Box 93999  
Southlake, TX 76092

Invoice Number: 144328  
Invoice Date: Jul 10, 2014  
Page: 1

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

<b>Bill To:</b>
Murfin Drig. Co., Inc. 250 N. Water STE #300 Wichita, KS 67202

Customer ID	Field Ticket #	Payment Terms	
Murfin	63469	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Jul 10, 2014	8/9/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Dan #1-9		
225.00	CEMENT MATERIALS	Class A Common	17.90	4,027.50
634.00	CEMENT MATERIALS	Chloride	1.10	697.40
236.25	CEMENT SERVICE	Cubic Feet Charge	2.48	585.90
816.74	CEMENT SERVICE	Ton Mileage Charge	2.75	2,246.04
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
75.00	CEMENT SERVICE	Pump Truck Mileage	7.70	577.50
1.00	CEMENT SERVICE	Manifold Head Rental	275.00	275.00
75.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	330.00
1.00	CEMENT SUPERVISOR	Andrew Forslund		
1.00	OPERATOR ASSISTANT	Adam Flipse		

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

\$ 3,588.06

ONLY IF PAID ON OR BEFORE  
Aug 9, 2014

Subtotal	10,251.59
Sales Tax	373.27
Total Invoice Amount	10,624.86
Payment/Credit Applied	
<b>TOTAL</b>	<b>10,624.86</b>

*OK*

# ALLIED OIL & GAS SERVICES, LLC . 063469

Federal Tax I.D. # 20-8651475

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

SERVICE POINT: OKLEY

DATE <u>2-10-14</u>	SEC <u>9</u>	TWP. <u>15</u>	RANGE <u>35W</u>	CALLED OUT	ON LOCATION <u>6:30 PM</u>	JOB START <u>7:00 PM</u>	JOB FINISH <u>7:30 PM</u>
LEASE <u>Dan</u>	WELL# <u>1-9</u>		LOCATION <u>Beardsley 11 TO Rd CC</u>		COUNTY <u>Rawlins</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one) <u>NEW</u>			<u>4W NINTO</u>				

CONTRACTOR MURFIN 2

TYPE OF JOB Surface

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

CASING SIZE 8 3/8 DEPTH 263'

TUBING SIZE \_\_\_\_\_ DEPTH \_\_\_\_\_

DRILL PIPE \_\_\_\_\_ DEPTH \_\_\_\_\_

TOOL \_\_\_\_\_ DEPTH \_\_\_\_\_

PRES. MAX \_\_\_\_\_ MINIMUM \_\_\_\_\_

MEAS. LINE \_\_\_\_\_ SHOE JOINT \_\_\_\_\_

CEMENT LEFT IN CSG. 15'

PERFS. \_\_\_\_\_

DISPLACEMENT 15.79 BBL

OWNER same

CEMENT AMOUNT ORDERED 225 sls cur 3% CC

EQUIPMENT

PUMP TRUCK CEMENTER Andrew Farland

# 431 HELPER Adam Fipse

BULK TRUCK # 818 DRIVER Juan (TWS)

BULK TRUCK # \_\_\_\_\_ DRIVER \_\_\_\_\_

COMMON 225 sls @ 12.90 4022.50

POZMIX @ \_\_\_\_\_

GEL @ \_\_\_\_\_

CHLORIDE 6.34# @ 1.10 6.97.40

ASC @ \_\_\_\_\_

Materiales for @ 9.70.90

(1653.72/35%)

HANDLING 2.36 25 cyle @ 2.48 585.90

MILEAGE 2.25 20 mile @ 10.89 24.40

REMARKS:

Cement did circulate

CHARGE TO: Murfin

STREET \_\_\_\_\_

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

SERVICE

DEPTH OF JOB 263'

PUMP TRUCK CHARGE \_\_\_\_\_ 1510.25

EXTRA FOOTAGE @ \_\_\_\_\_

MILEAGE 25 miles @ 2.70 577.50

MANIFOLD head @ \_\_\_\_\_ 225.00

Light vehicle @ 4.40 330.00

(1924.39/35%) TOTAL 5526.71

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.

PRINTED NAME Amro Cabezas

SIGNATURE Amro Cabezas

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

TOTAL CHARGES 10,257.61

DISCOUNT 3,588.06 IF PAID IN 30 DAYS

6,669.55 Net.



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



# Invoice

DATE	INVOICE #
7/18/2014	26510

BILL TO
Murfin Drilling Co Inc PO Box 661 Colby, KS 67701-0661
USED FOR <u>IC 1031</u>
APPROVED <u>JJ/FH</u>

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#1-9	Dan	Rawlins	Murfin Drilling	Oil	Development	5-1/2" LongString	Jason
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				150	Miles	6.00	900.00
579D	Pump Charge - Top To Bottom LongString				1	Job	2,000.00	2,000.00
403-5	5 1/2" Cement Basket				3	Each	300.00	900.00T
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
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
413-5	5 1/2" Roto Wall Scratcher				20	Each	40.00	800.00T
281	Mud Flush				500	Gallon(s)	1.25	625.00T
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
276	Flocele				125	Lb(s)	2.50	312.50T
283	Salt				1,000	Lb(s)	0.20	200.00T
284	Calseal				9	Sack(s)	35.00	315.00T
285	CFR-1				150	Lb(s)	4.50	675.00T
290	D-Air				5	Gallon(s)	42.00	210.00T
325	Standard Cement				200	Sacks	14.50	2,900.00T
330	Swift Multi-Density Standard (MIDCON II)				300	Sacks	18.50	5,550.00T
581D	Service Charge Cement				500	Sacks	2.00	1,000.00
583D	Drayage				3,808.12	Ton Miles	1.00	3,808.12
Subtotal								22,495.62
Sales Tax Rawlins County							7.90%	1,168.21
<b>We Appreciate Your Business!</b>						<b>Total</b>	<b>\$23,663.83</b>	



Services, Inc.

CHARGE TO: MURFIN DRILLING

TICKET 26510

ADDRESS  
CITY, STATE, ZIP CODE

PAGE 1 OF 2

SERVICE LOCATION: 1. NESS CITY, KS. WELL PROJECT NO. LEASE DAN 1-9 COUNTY/Parish RAWLINS STATE KS CITY BEARDSLEY, KS DATE 18 July 14 OWNER

TICKET TYPE:  SERVICE MURFIN DRILLING RIG # 2 CONTRACTOR RIG NAME NO. SHIPPED VIA DELIVERED TO ORDER NO.

WELL TYPE: BIL WELL CATEGORY DEVELOPMENT JOB PURPOSE 53 LOWSTRONG WELL PERMIT NO. WELL LOCATION 7th 14th Nests

INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.			UNIT PRICE	AMOUNT
		LOC	ACCT	DE		QTY.	UM	QTY.		
575					MILEAGE \$ 115	150	mi		60	9000
579					PUMP CHARGE	1	TR		2000	2000
4D3					CEMENT BASKETS	3	EA		300	900
4D6					LATCH DOWN FLUID BASKET	1	EA		275	275
4D7					INSERT FLOAT SHADE w/ PILL	1	EA		375	375
4D9					TURBIDIZER	15	EA		90	1350
4H9					ROTATING HEAD RENTAL	1	TR		200	200
4I3					ROTO WALL SCRAPPERS	2	EA		40	800
281					MUD FLUSH	500	gal		1	625
221					LIQUID KEL	4	gal		25	100

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: 18 July 14 TIME SIGNED: 1:30 P.M.

SIGNED: *[Signature]*

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?

CUSTOMER DID NOT WISH TO RESPOND

PAGE TOTAL: 14970

TOTAL: 23,663.83

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

SWIFT OPERATOR: *[Signature]* APPROVAL: *[Signature]*

Thank You!





JOB LOG

SWIFT Services, Inc.

DATE 18 July 14 PAGE NO.

CUSTOMER MURFIN DRILLING

WELL NO.

LEASE DAN 1-9

JOB TYPE 52 LONG STRING

TICKET NO. 26510

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0815							ON LOCATION
	0840							START PIPE 5 1/2 - 15.5" RTD @ 4472 TOTAL PIPE 4467 SHAFT. 19,30 CENTRALIZERS 1,2,3,4,5,6,7,8,9,10,12,14,16,33,58 BASKETS 17,34,59
	1035							DROP BALL - CIRCULATE.
	1135	L <sub>6</sub>	12		✓		400	Pump 500 gal mud FLUSH
		L <sub>6</sub>	20		✓		400	Pump 20 Bbl KCL FLUSH
	1142		7.5					PLUG RH-30sx, MH 20sx
	1145		138		✓			MIX 250sx SMD
			48		✓			MIX 200 Sx EA-2
	1226							WASH OUT Pump & LINES.
	1230	L <sub>6</sub>			✓			START DISPLACING PLUG.
	1248	Ø	106		✓			PLUG DOWN LATCH PLUG IN.
	1250							RELEASE PSI - Dry
	1252							WASH TRUCK
	1							
	1325							JOB COMPLETE
								THANKS # 115
								JASON DOUG JARED PRESTON

Dan #1-9  
 Daily Drilling Report  
 Page Two

- 7/16/14 Depth 4278'. Cut 48'. DT: None. CT: 20hrs. Dev.: None. **LKC H:** Ls white, f-mxln, oolitic in part, sl foss, pyritic, upper portion 10% sample drk sat stn, frsfo (bleeding), gd odor. **DST #3 4232-4278 (LKC H):** 30-60-60-90. IF: built to 1 1/4". FF: surf blw started @ 13min, built to 1 1/8". Rec.: 2'CO, 8'OCM (40%O, 60%M), Grav 28°. HP: 2188-2041. FP: 20/22, 27/32. SIP: 1216-1189. BHT: 128°. **LKC I:** Ls tan f-mxln, foss, no vis por, 10% sample blk tarry flaky stn, nfo, no odor. **LKC J:** Ls wht - tan, fxln, chalky, oolitic in prt, pr pp to vug por, 5% sample lt sat stn, prsfo, fr odor. **DST #4 4273-4325 (LKC I-J):**
- 7/17/14 Depth 4373'. Cut 95'. DT: None. CT: 17 1/4 hrs. Dev.: None. **DST #4 4273-4325 (LKC I-J):** 30-60-30-60. IF: blw built to 3 1/4". FF: blw started in 15mins built to 1". Rec.: 70'OCM (35%O, 65%M). HP: 2228-2204. FP: 19/38, 44/58. SIP: 847-776. BHT: 127°. Will TD @ 4472', currently @ 4410'.
- 7/18/14 RTD: 4472'. Cut 99'. DT: None. CT: 17hrs. Dev.: 3/4° @ 4472'. Pioneer logged 8:45PM 7/17 – 1:00AM 7/18. LTD: 4478'. LD pipe to run 5 1/2".
- 7/19/14 RTD: 4472'. CT: 10hrs. Ran 106jts of 5 1/2" prod csg, set @ 4467'. Swift cmt w/450sxs (250SMD, 200EA-2). PD @ 1:00PM 7/18. 30sxs RH, 20sxs MH. Circ 10sxs. RR @ 5:00PM 7/18. FINAL REPORT

Dan #1-9 330FSL 1650 FEL Sec. 9-1S-35W 3173' KB							Wilkinson #1-9 2550 FSL 1800 FWL Sec. 9-1S-35W 3143' KB	
Formation	Sample top	Datum	Ref	Log tops	Datum	Ref	Log tops	Datum
Anhydrite	3070	+103	+1	3071	+102	Flat	3041	+102
B/Anhydrite	3100	+73	+5	3102	+71	+3	3075	+68
Neva	3565	-392	+5	3570	-397	Flat	3540	-397
Foraker	3680	-507	+5	3684	-511	+1	3655	-512
Topeka	3893	-720	+2	3897	-724	-2	3865	-722
Oread	3996	-823	+5	4003	-830	-2	3971	-828
Lansing	4104	-931	+5	4114	-941	-5	4079	-936
Stark	4326	-1153	+1	4328	-1155	-1	4297	-1154
BKC	4372	-1199	+4	4378	-1205	-2	4346	-1203
RTD	4472	-1299					4800	-1657
LTD				4478	-1305			