

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1236759  
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: \_\_\_\_\_

1236759

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> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Krug 'A' 1-8
Doc ID	1236759

All Electric Logs Run

DIL
DUCP
MEL
BHCS





Scale 1:240 (5"=100') Imperial  
Measured Depth Log

Well Name: Krug "A" #1-8  
Location: 1060' FSL, 1900' FWL, Sec 08-T01S-R38W, Cheyenne County, Kansas  
License Number: API: 15-023-21415 Region: Wildcat  
Spud Date: 11/23/2014 Drilling Completed: 12/04/2014  
Surface Coordinates: Lat: 39.9768285  
Long: -101.6099046  
Bottom Hole Vertical hole.  
Coordinates:  
Ground Elevation (ft): 3192' K.B. Elevation (ft): 3203'  
Logged Interval (ft): 3490' To: RTD Total Depth (ft): 4750'  
Formation: Cherokee at RTD.  
Type of Drilling Fluid: Chemical.

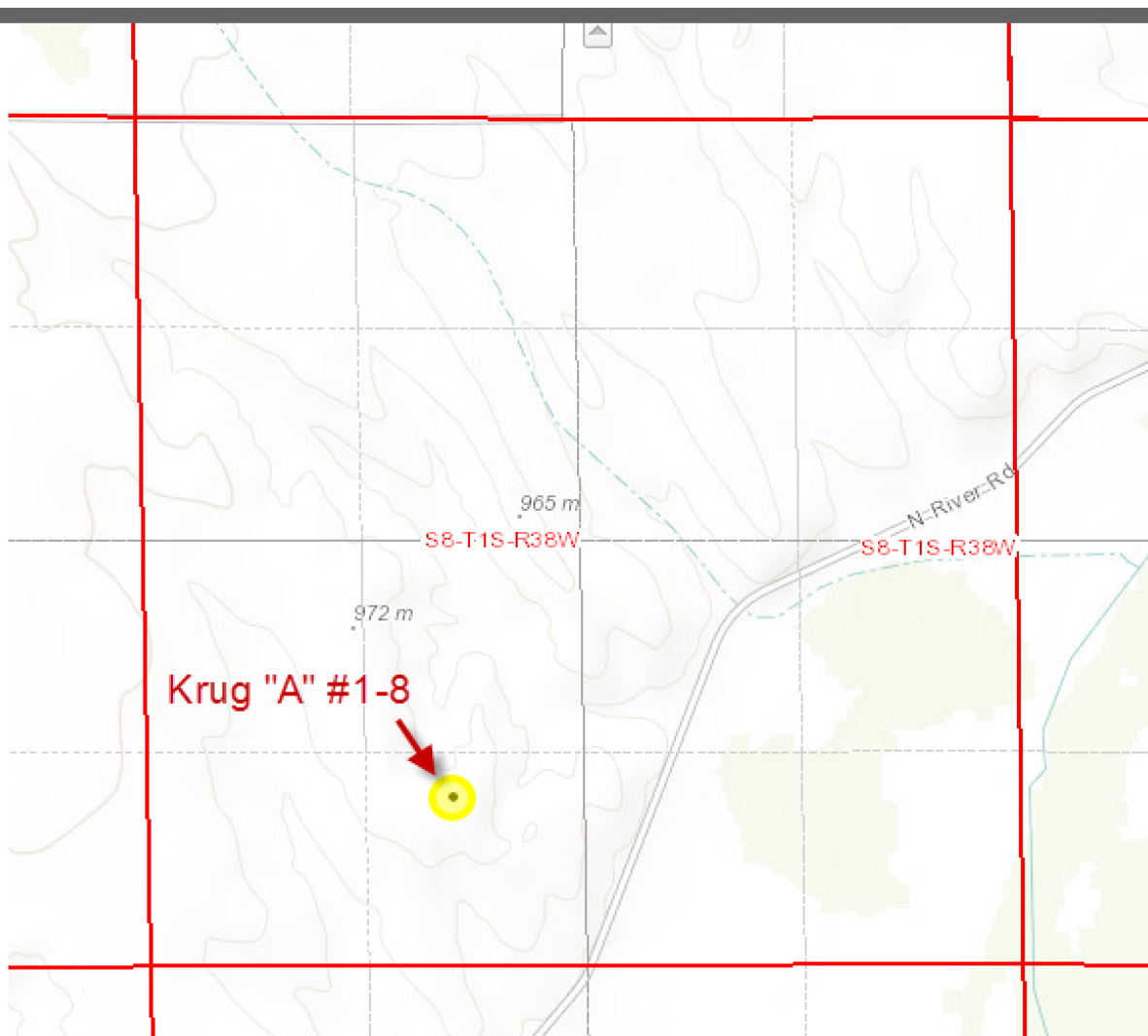
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

#### OPERATOR

Company: Murfin Drilling Company, Inc.  
Address: 250 N. Water, Suite 300  
Wichita, KS 67202  
316-267-3241

#### GEOLOGIST

Name: Kent R. Matson  
Company: Matson Geological Services, LLC  
Address: 33300 W. 15th Street S.  
Garden Plain, Kansas 67050  
316-644-1975



#### COMMENTS

**Murfin Company Geologist: Scott Robinson, 316-267-3241.**

**Drilling Contractor: Murfin Drilling Company, Inc. Rig #20.**

**Tool Pusher: Greg Condren, 785-443-3048.**

**Surface Casing: 8 5/8" set at 225' (KB) w/225sx cement.**

**Production Casing: based on field observations of drill cuttings, DST results and electric log review, production casing was not installed and the hole was plugged and abandoned.**

**Mud by: Morgan Mud, Inc. - Dave Korte, 308-340-6092.**

**DST's by: Trilobite Testing - Brandon Quintana, 785-639-0586.**

**Logs by: Pioneer Energy Services (DI w/GR, CND, Sonic, Micro) - D. Fischer, 785-625-3858.**






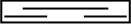



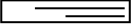




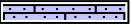











**RTD= 4750', -1547'.**

**LTD= 4752', -1549'.**

## FORMATION TOPS




















FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Stone Corral (Anhydrite)	3175'	+28	3180'	+23
Neva	3611'	-408	3611'	-408
Red Eagle	3679'	-476	3677'	-474
Foraker	3733'	-530	3733'	-530
Topeka	3952'	-749	3952'	-749
Oread	4091'	-888	4092'	-889
Lansing	4167'	-964	4169'	-966
Stark	4387'	-1184	4390'	-1187
Base/KC	4442'	-1239	4444'	-1241
Pawnee	4573'	-1370	4572'	-1369
Cherokee	4658'	-1455	4659'	-1456
RTD	4750'	-1547		
LTD			4752'	-1549

## ROCK TYPES

	Anhy		Salt		Dol		Siltysh
	Cht		Shale		Dtd		Sdy dolo
	Coal		Shcol		Gry sh		Silty dolo
	Congl		Shgy		Sandylms		Shy dolo
	Dol		Sltst		Shale		Shaly ls
	Gyp		Ss		Sltstn		
	Lmst		Carb sh		Shlyslts		

## ACCESSORIES











### FOSSIL

-  Algae
-  Amph
-  Belm
-  Bioclst
-  Brach
-  Bryozoa
-  Cephal
-  Coral
-  Crin
-  Echin
-  Fish
-  Foram
-  Fossil
-  Gastro
-  Oolite
-  Ostra
-  Pelec
-  Pellet
-  Pisolite



- Plant
- Strom
- Fuss
- Oomold

### MINERAL

-  Anhy
-  Arggrn
-  Arg
-  Bent
-  Bit
-  Brecfrag
-  Calc
-  Carb
-  Chtdk
-  Chtlt
-  Dol
-  Feldspar
-  Ferrpel
-  Ferr



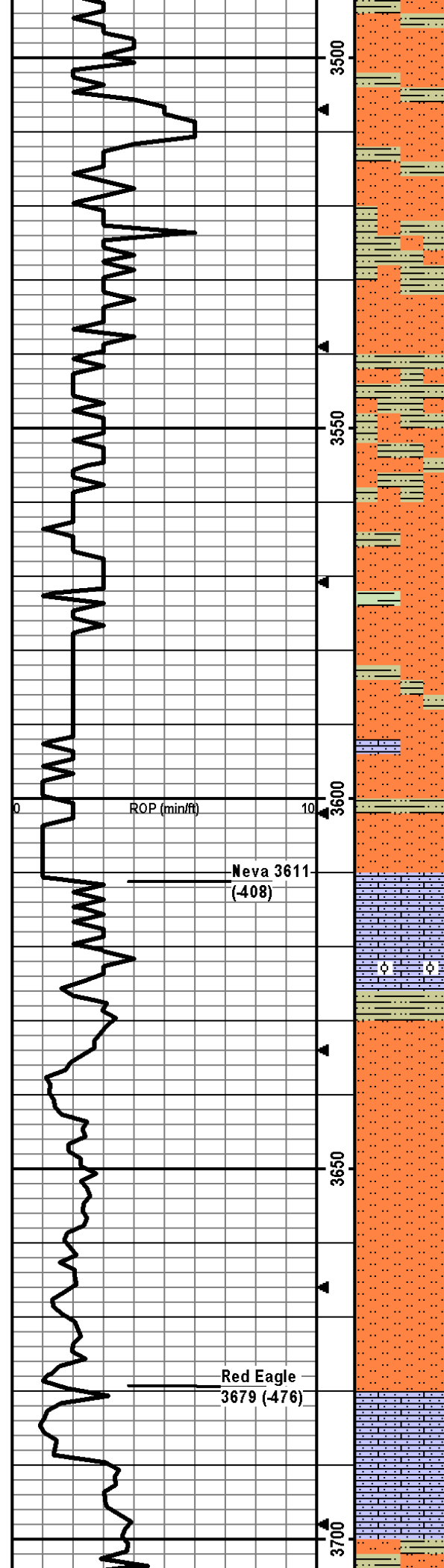
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Silty

### STRINGER

-  Anhy
-  Arg
-  Bent
-  Coal
-  Dol
-  Gyp
-  Ls
-  Mrst
-  Sltstrg
-  Ssstrg
-  Carbsh
-  Clystn
-  Dol
-  Grysh
-  Gryslt
-  Lms
-  Sandylms
-  Sh
-  Sltstn

ROP (min/ft)	rop	Depth	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
0	ROP (min/ft)	10					
		3400				<p><b>Morning Report Depth/Activity</b></p> <p>11/23/2014, Spud.            11/24, drill @ 500'.            11/25, drill @ 1850'.            11/26, drill @ 3050'.            11/27, drill @ 3550'.            11/28, drill @ 3925'.            11/29, DST #1 @ 4108'.            11/30, DST #2 @ 4190'.            12/01, DST #3 @ 4245'.            12/02, drill @ 4328'.            12/03, DST #5 @ 4580'.            12/04, drill @ 4740'; TD @ 4750'.</p> <p><b>Anhydrite: Top @ 3175', Bottom @ 3213'</b> (Based on drill time).</p> <p><b>Formation tops and lithology have been adjusted to correlate to the electric log.</b></p> <p><b>ROP data begins @ 3490'.</b></p> <p><b>Drill cutting samples at 10' intervals start at 3490'.</b></p> <p>Sltstn: dk red brn/tan, some vry arg, slt carb, pred qtz, hard, friable, some med-dk gry silty SH, no odor, ns.</p>	<p>Morgan Mud Check #0 @ Surface 11/23/14; drilling recommendations.</p> <p>Morgan Mud Check #1 @ 578' 11/24/14; cont. drilling recommendations.</p> <p>Morgan Mud Check #2 @ 1954' 11/25/14; cont. drilling recommendations.</p> <p>Morgan Mud Check #3 @ 3180' 11/26/14; cont drilling recommendations.</p> <p>Bit trip @ 3415', switched from PDC to tri-cone.</p>
		3450					





Sltstn: dk red brn/brn, vry arg, slt carb, hard, friable; some SH: dk red brn, silty, firm, fissile, no odor, ns.

Sltstn: med-dk red brn/brn, vry arg, slt carb, hard, friable, some med-dk gry SH, no odor, ns.

Sltstn/SH as above, no odor, ns.

SH: dk red brn, vry silty, slt carb, firm, fissile, some Sltstn: red brn/lt gry, 1 pce Sltstn w/blk tar oil, yel cut, no odor, ssfo.

Sltstn: med-dk red brn/brn/lt gry, vry arg, slt carb, firm, friable, no odor, ns.

SH: dk red brn/med gry, vry silty/sndy, firm, slt carb, some fissile, some Sltstn as above, no odor, ns.

SH/Sltstn: as above, no odor, ns.

Sltstn: lt gry/lt brn/red brn, vry arg, slty carb, med-hard, friable, some dk red SH, no odor ns.

Sltstn as above, some red brn SH, no odor, ns.

Sltstn: lt gry/tan/red brn/brn, vry arg, slty carb, soft-firm, friable, some SH: red brn/med-dk gry, no odor, ns.

Sltstn: red brn/brn, carb, vry arg, firm, friable, min red brn LS, micro-xtal, silty, no odor, ns.

Sltstn: red brn/tan/lt gry, vry arg, slt carb, firm-hard, friable, some med-dk gry SH, no odor, ns.

LS: crm/lt gry, micro-fn xtal, foss frags/grainy, vry silty/sndy, some chalky, min ppt in-xtal/frac por, no odor, ns.

LS: crm/lt gry, micro-med xtal, foss frags/ool, vry silty/sndy, some chalky, min ppt in-xtal/frac por, no odor, ns.

Sltstn: brn/red brn/lt gry, vry arg, slt carb, firm, friable, some gry/orange brn SH, no odor, ns.

Sltstn: as above, no odor, ns.

Sltstn: med-dk red brn/brn/lt gry, vry arg, slt carb, firm, friable, no odor, ns.

Sltstn as above, no odor, ns.

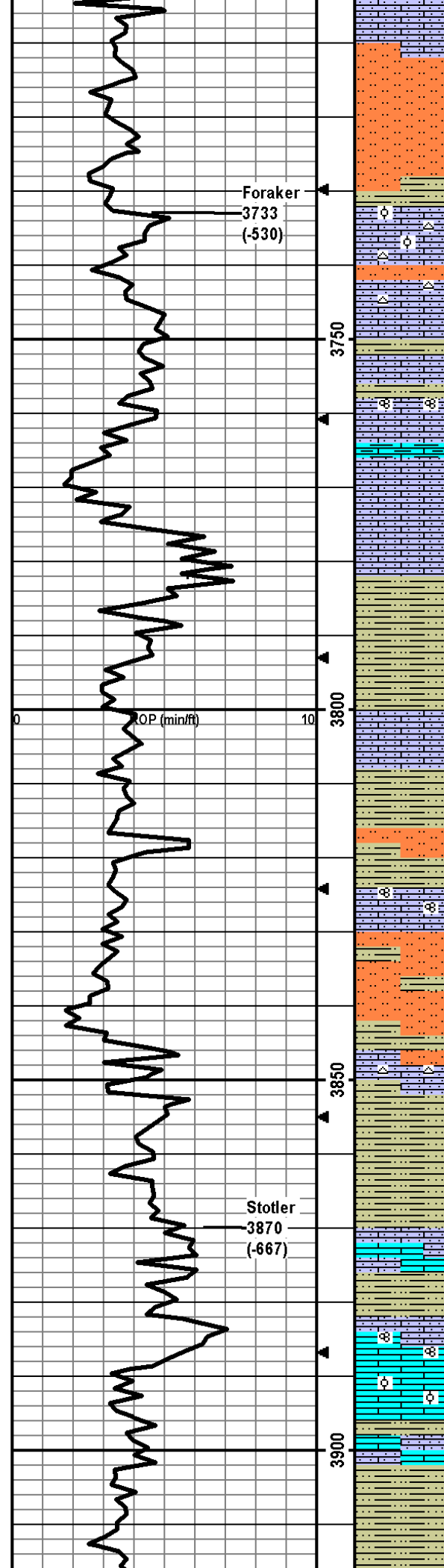
Sltstn: crm/lt gry/min red brn, slt arg, slt carb, pred qtz, hard, friable, no odor, ns.

LS: wht/crm/lt gry, micro-fn xtal, vry silty/sndy, some chalky/arg, some ppt-med in-xtal /frac por, no odor, ns.

LS: as above w/increase in ppt-med in-xtal por, no odor, ns.

LS: crm/lt gry, micro-med xtal, vry silty/sndy, chalky, some ppt-fn

Morgan Mud Check #4 @  
 3662' 11/27/14 11:40am  
 wt vis pH chl  
 8.9 59 9.5 600  
 Filt LCM  
 8.0 5



In-xtal por, some Sltstn: crm/lt gry/maroon, pred qtz, silt arg, silt carb, hard, friable. no odor, ns.

Sltstn: red brn/maroon/lt gry, vry arg, silt carb, soft-firm, friable, no odor, ns.

Sltstn: red brn/brn/lt gry/tan, vry arg, silt carb, 1 pce w/blk tar oil, yel cut, no odor, ssfo.

LS: crm/lt brn/lt gry-brn, micro-med xtal, vry silty/sndy, some chalky, foss frags/ool, some wht/lt brn chert, min ppt in-xtal/frac por, no odor, ns.

LS: crm/lt gry/lt maroon, micro-fn xtal, min foss frags, vry silty/sndy, orange/wht/gry chert, min ppt in-xtal/frac por; some Sltstn: crm/lt gry/maroon, carb, arg, firm, friable; no odor, ns.

SH: med-dk gry/dk maroon, vry silty/sndy, carb, firm, fissile, no odor, ns.

LS: crm/lt-med brn/gry, micro-med xtal, foss frags/fusln, vry silty/sndy, vry arg, min frac por, no odor, ns.

LS: crm/lt-med brn/lt gry, micro-med xtal, vry silty/sndy, some vry arg, some ppt-fn in-xtal/frac por, no odor, ns.

LS: crm/tan/lt gry-brn, micro-med xtal, foss frags, silty/sndy, some vry chalky, some ppt in-xtal/frac por, no odor, ns.

SH: med-dk gry, vry silty, carb, firm, fissile some friable, no odor, ns.

SH: med-dk red brn/med-dk gry, vry silty/sndy, carb, soft-firm, no odor, ns.

LS: crm/tan, micro-fn xtal, min foss frags, vry silty/sndy, some chalky, min ppt in-xtal/frac por, no odor, ns. Some SH as above.

SH: dk red brn/med-dk gry, vry silty/sndy, silt carb, firm-hard, fissile, no odor, ns.

Sltstn: lt brn/gry, vry arg, vry carb, firm-hard, no odor, ns.

LS: crm/tan/lt brn, micro-med xtal, foss frags/fusln, vry silty/sndy, some vry arg, min ppt in-xtal por, no odor, ns.

Sltstn: med-dk red brn/crm/gry, vry arg, carb, firm, some silty SH, no odor, ns.

Sltstn/SH as above, no odor, ns.

LS: crm/lt brn/lt gry brn, micro-med xtal, foss frags, vry silty/sndy, min wht/crm chert, min frac por, no odor, ns.

SH: lt-med gry/brn, vry silty, some carb, firm, fissile, no odor, ns.

SH: med-dk gry/red brn/maroon, some vry silty, silt carb, firm-hard, fissile, no odor, ns.

LS: crm/gry, micro-fn xtal, min foss frags, some silty, vry chalky, 26 pcs w/ppt in-xtal por w/s of blk tar oil, no odor, no flordul yel crush cut, ssfo.

SH: lt-med gry/dk red brn/dk maroon brn, vry silty, carb, firm, fissile, no odor, ns.

LS: crm/lt gry, micro-fn xtal, some vry silty/sndy, min foss frags/fusln, 65+ w/sfo, blk tarry, dul yel flordcrush cut, ppt-fn in-xtal por, no odor, sfo.

LS: crm/tan, micro-med xtal, foss frags/ool, some silty/sndy, 10-15 % of smple w/ppt-fn in-xtal/in-oo por w/sfo, dul yel flordcrushcut, no odor, sfo.

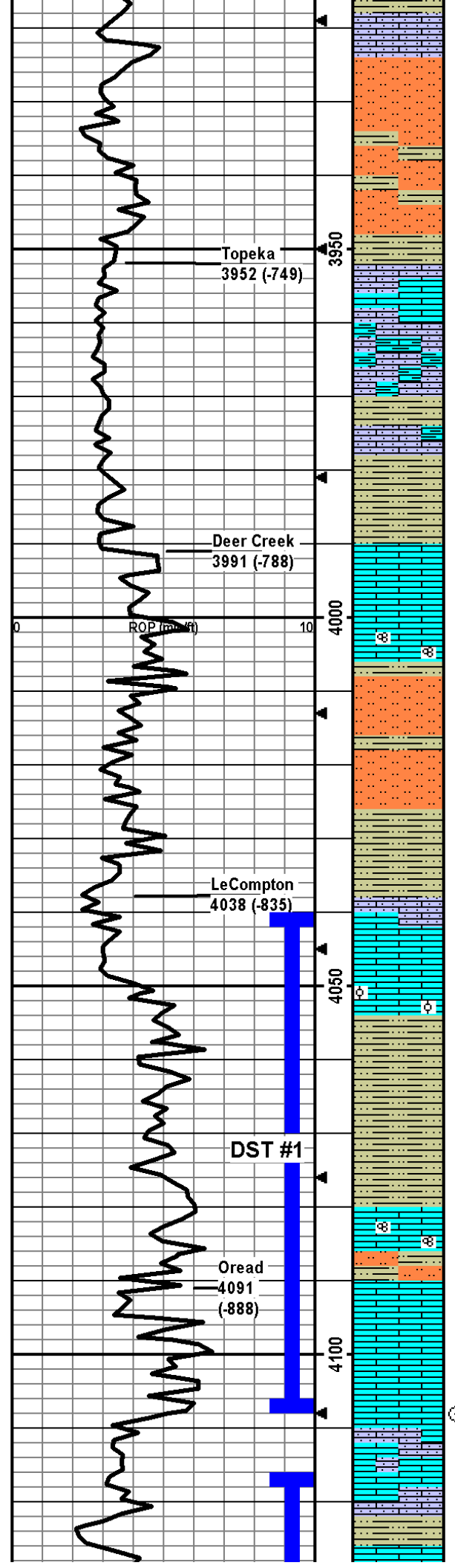
SH: red brn/gry, vry silty/sndy, carb, firm, fissile.

LS: crm/tan/lt-med brn, micro-med xtal, some vry sndy, foss frags, some frac por, no odor, ns.

SH: red brn/orange brn/gry, vry silty, carb, firm, fissile.

CFS @ 3745'  
30"60"

CFS @ 3895'  
30"60"



LS: crm/lt gry/tan, micro-med xtal, foss frags/ool, some vry silty/sndy, some vry chalky, ppt-fn in-xtal/in-ool por, 25 pcs w/blk tar oil, dul yel flor/cut, no odor, sfo.

SltStn: red brn/brn, vry arg, carb, firm-hard, friable.

SltStn as above w/some red brn silty SH.

Sltstn: lt gry/lt-dk red brn, vry arg, some carb, firm-hard, friable; some SH as above, no odor, ns.

SH: lt-dk red brn, vry silty/sndy, carb, firm, fissile, no odor, ns.

LS: crm/tan/lt gry, micro-fn xtal, slt silty, some chalky, some frac por, no odor, ns.

LS: crm/lt brn/lt gry w/red brn SH mottling, micro-med xtal, foss frags, some silty/sndy, some chalky, some ppt-fn in-xtal por, no odor, ns.

SH: lt-dk gry/dk red brn/brn, vry silty, some carb, soft-firm, fissile, no odor, ns.

LS: crm/lt gry, micro-fn xtal, min frac por, no odor, ns.

LS: wht/crm/lt gry, micro-fn xtal, min foss/fusln, some frac por, no odor ns.

Sltstn: lt brn/red brn/lt gry, vry arg, carb, firm-hard, friable, no odor, ns.

SH: med-dk gry, vry silty, carb, firm, fissile, no odor, ns.

LS: crm/lt-med brn, micro-fn xtal, min foss frags, some vry silty/sndy, min frac por, no odor, ns.

LS: crm/tan, micro-med xtal, min foss frags/ool, 7 ool pcs w/ppt-fn in-xtal/in-ool por w/sfo, blk tar oil, dul yel flor/cut, no odor, sfo.

SH: red brn/gry, some vry silty, carb, firm, fissile, no odor, ns.

SH: red brn/maroon/lt gry, vry silty, slt carb, firm, fissile.

SH: lt-dk gry/red brn/maroon, vry silty, slt carb, firm, no odor.

LS: crm/lt gry, micro-med xtal, min foss frags/fusln, 13 pcs w/ppt-fn in-xtal por w/blk tar oil, dul yel flor w/slt yel cut, no odor, sfo.

Sltstn: red brn/gry, vry arg, carb, friable, no odor, ns. SH: red brn/gry, some silty, slt carb, firm, no odor, ns.

LS: crm/tan/lt brn, micro-fn xtal, slt chalky, aprx 10-15% of tray w/ppt-fn in-xtal por w/mostly blk tar oil some dk brn fluid oil, dul yel flor/cut, no odor, sfo.

LS: crm/tan/lt gry, micro-fn xtal, some chalky, few pcs w/sfo assum from above, no vis por, no odor.

LS: crm/tan, micro-fn xtal, some silty, no vis por, no odor, ns.

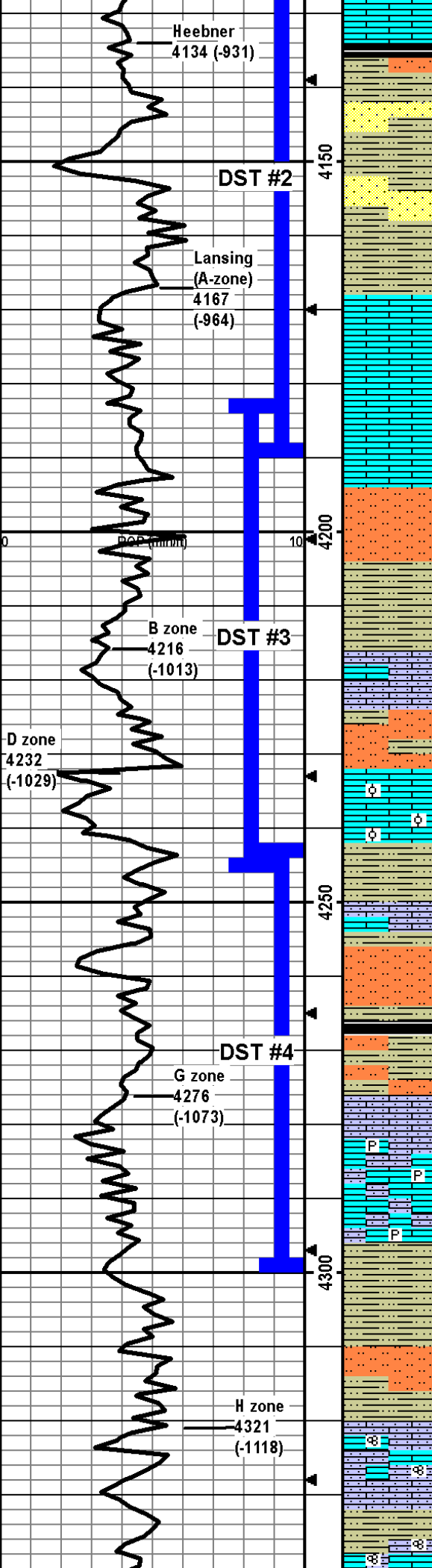
SH: med-dk gry/blk/red brn, carb, slt pyritic, soft-firm, fissile.

Morgan Mud Check #5 @ 3996' 11/28/14 11:20am  
wt vis pH chl  
9.0 49 10.5 600  
Filt LCM  
7.2 4

**DST1: 4040-4108**  
**LeCompton & Oread**  
30/60/30/60  
1st) surface blow built to 1/4" then died, no BB.  
2nd) no blow, no BB.  
IFP 36-30#  
ISIP 102#  
FFP 32-31#  
FSIP 79#  
HP 2060-1953#  
Recvd: 5' Mud.

Morgan Mud Check #6 @ 4108' 11/29/14 09:15am  
wt vis pH chl  
9.3 50 8.5 700  
Filt LCM  
9.2 4

CFS @ 4108'  
30"60"



LS: lt gry/lt gry-brn, micro-fn xtal, some chunky, 0 chunky pcs w/ppt-fn in-xtal por w/blk tar oil, dul yel flor/cut, no odor, sfo.

SH: med-dk gry/red brn/brn, some vry silty/sndy, carb, firm, fissile. Some Sltstn/SS: lt gry/lt brn, vf-f, sr-wr, arg, slt carb, friable, no odor, ns.

SH: lt-dk gry/red brn/orange brn, some vry silty, soft-firm; some SS: crm, vf-f, sr-wr, carb, no odor, ns.

SH/SS mix as above, 7 pcs of SS w/blk oil, dul yel flor/cut, no odor, sfo.

LS: crm/tan/lt gry, micro-fn xtal, some chalky, 8 pcs w/ppt-fn in-xtal por w/blk tar oil, dul yel cut, no odor, sfo. 19 pcs in 30 min smpl w/ppt-med in-xtal por w/mostly blk tar oil/min dk brn fluid oil, no odor, sfo.

15 pcs w/ppt-med in-xtal por w/mostly blk tar oil/min brn fluid oil.

LS: lt brn, micro xtal, no vis por, no odor.

Sltstn: lt-dk gry/med-dk brn/crm, arg, carb, hard, slt friable, approx 25% of smpl w/dk brn fluid oil w/some blk tar, dul yel flor/cut, ppt in-clas por, no odor, gsfo.

SH lt-dk gry/med-dk red bry, carb, silty, soft-firm, some Sltstn as above w/sfo.

LS: crm/lt gry-brn, micro-fn xtal, min foss frags/fusln, some silty/sndy, no vis por, no odor, ns.

Sltstn: lt-dk gry/red brn, some vry arg, carb, pred qtz w/some mafic mineral, soft-hard, some friable: some SH: dk red brn/dk gry, silty, carb, firm, fissile.

LS: crm/lt gry-brn, micro-med xtal, min foss frags w/some ool pcs, some chalky, 31 pcs w/ppt-fn in-xtal/in-ool por w/mostly blk tar oil min dk brn fluid oil, yel flor/cut, no odor, sfo.

LS: as above, increase in chalky, 22 pcs w/sfo.

SH: lt-dk gry/red brn, vry silty, slt carb, soft-firm, fissile.

LS: crm/tan/lt gry-brn, micro-fn xtal, min foss frags/fusln, some vry silty/sndy, vry chalky, some frac por, no odor, ns.

SH: as above w/Sltstn: lt gry, pred qtz, arg, slt carb, hard, friable, ns.

Sltstn: lt gry/red brn, vry arg, carb, hard, friable, some SH: lt-dk gry/red brn/orange brn, some vry silty, firm, ns.

SH: lt-dk gry/red brn/orange brn, some vry silty, carb, soft-firm; Sltstn: lt-med gry/lt brn, vry arg, carb, friable, firm, no odor, ns.

LS: crm/lt-med gry-brn, micro-med xtal, min foss frags, some sndy, some chalky, slt pyritic, approx 15-20% of tray w/ppt-med w/some crs in-xtal por w/sfo, dul yel flor, slt odor, gsfo.

LS: crm/lt gry-brn, micro-med xtal, min foss frags, some vry chalky, some silty/sndy, 53 pcs w/mostly ppt-fn w/some med in-xtal por w/sfo, dul yel flor, slt odor, gsfo.

SH: lt-med gry, silty, carb, soft.

SH: lt-dk gry/red brn/min maroon/min lt aqua-green, some vry silty, carb, firm, fissile, no odor, ns.

SH as above w/Sltstn: lt gry, arg, carb, hard, friable, ns.

LS: crm/lt gry/lt brn, foss frags/fusln, some vry silty/sndy, 3 pcs w/ppt-fn in-xtal por w/sfo, dk brn fluid oil, dul yel flor/cut, no odor, sfo.

SH: lt-dk gry/red brn/maroon, some vry silty, slt carb, firm, fissile, no odor, ns.

LS: crm/lt brn/lt gry, micro-fn xtal, min foss frags/fusln, some silty, some chalky, min frac por, no odor, ns.

**DST2: 4160-4190**  
**Lansing A Zone**  
 30/60/30/60  
 1st) surface blow did'nt build, no BB.  
 2nd) no blow, no BB.  
 IFP 21-23#  
 ISIP 1236#  
 FFP 26-28#  
 FSIP 1215#  
 HP 2051-2038#  
 Recvd: 5' Mud.

CFS @ 4170'  
 30"60"

Morgan Mud Check #7 @  
 4190' 11/30/14 08:30am  
 wt vis pH chl  
 9.2 53 11 500  
 Filt LCM  
 7.6 4

CFS @ 4190'  
 30"60"

**DST3: 4182-4245**  
**Lansing D Zone**  
 30/60/60/90  
 1st) surface blow built to BOB in 6 min, no BB.  
 2nd) blow built to BOB in 8 min, no BB.  
 IFP 115-274#  
 ISIP 1319#  
 FFP 284-527#  
 FSIP 1288#  
 HP 2129-2115#  
 Recvd: 1143' MW.

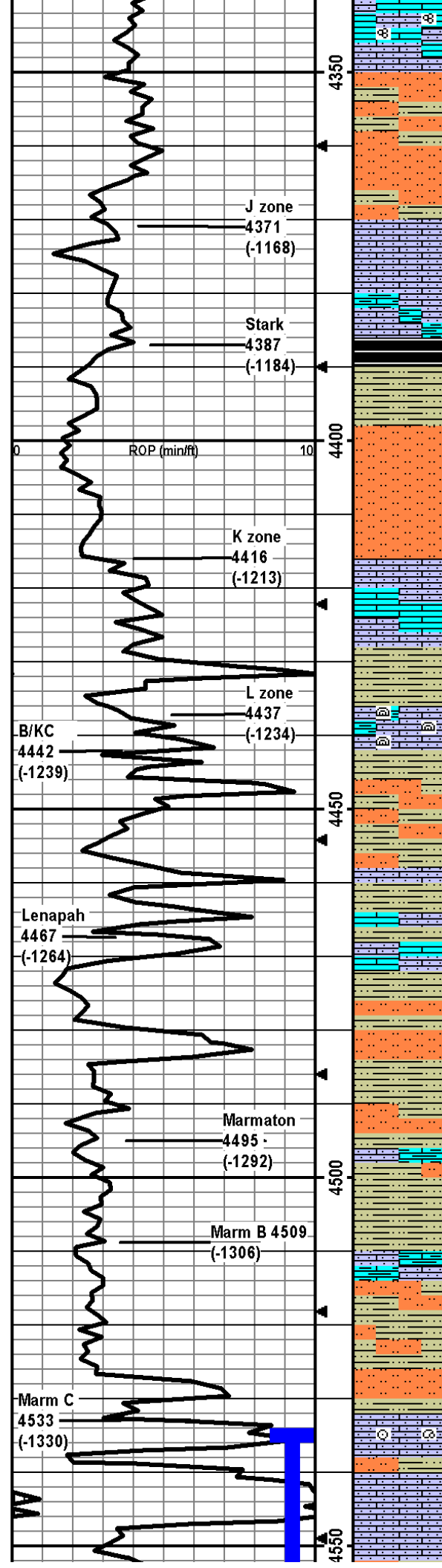
CFS @ 4245'  
 30"60"

Morgan Mud Check #8 @  
 4265' 12/01/14 09:45am  
 wt vis pH chl  
 9.5 70 10.5 900  
 Filt LCM  
 7.6 2

**DST4: 4242-4300**  
**Lansing G Zone**  
 15/60/30/90  
 1st) surface blow built to BOB in 35 sec, no BB.  
 2nd) blow built to BOB in 35 sec, no BB.  
 IFP 778-919#  
 ISIP 1431#  
 FFP 836-1270#  
 FSIP 1429#  
 HP 2155-2135#  
 Recvd: 2871' MW.

CFS @ 4300'  
 30"60"

CFS @ 4332'  
 30"60"



some chalky, min frac por, no odor, ns.

LS as above w/increase in chalk, no odor, ns.

Slststn: red brn/brn/lt gry, vry arg, pred qtz, slt carb, firm, friable, some SH: red brn/gry, silty, no odor, ns.

Slststn/SH as above, no odor, ns.

LS: crm, micro-med, foss frags, grainy, vry chalky, vry sndy, min frac por, no odor, ns.

LS: crm/lt gry, micro-fn xtal, min foss frags, vry silty/sndy, vry chalky, arg, some frac por, no odor ns.

SH: lt-med gry, silty, carb, soft-firm, fissile, no odor, ns.

SH: lt-dk gry/red brn/maroon, silty/sndy, slt carb, soft-firm, no odor, ns.

Slststn: lt-med gry/red brn, vry arg, carb, hard/vry hard, some friable. no odor, ns.

Slststn: red brn, vry arg, carb, hard, friable, no odor, ns.

LS: crm/lt gry, micro-fn w/some med xtal, foss frags, some vry sndy, some chalky, some frac por, no odor, ns.

SH: red brn/lt-med gry, vry silty, vry carb, soft-firm, no odor, ns.

LS: crm/lt-dk brn, micro-med xtal, foss frags/min algae, some vry sndy, some vry arg, some vry chalky, some ppt-fn in-xtal por, no odor, ns.

LS: crm/lt brn/lt gry, micro-med xtal, foss frags/algae, some silty/sndy, some ppt-med in-xtal por, no odor, ns.

SH: red brn/brn/ lt-med gry, vry silty, slt carb, firm some Slststn: red brn/lt brn/lt gry, vry arg, hard, some friable, no odor, ns.

LS: crm/lt brn/lt gry, micro-med xtal, foss frags, some vry silty/sndy, some chalky, some frac por, no odor, ns.

SH: red brn/lt-med gry, some vry silty, carb, firm, fissile; some Slststn: lt-med gry/red brn, vry arg, carb, firm, friable, no odor, ns.

Slststn: lt gry/red brn, vry arg, carb, firm-hard, some friable; SH: lt-med gry/maroon/red brn, vry silty/sndy, carb, firm, no odor, ns.

Slststn: lt brn/lt-med gry/red brn, vry arg, slt carb, firm-hard, friable, no odor, ns. Some SH: lt-dk gry/red brn, silty, slt carb, fissile; Some LS: crm, vry sndy, chalky.

SH: red brn/maroon/lt-med gry, vry silty, slt carb, firm, fissile, no odor, ns.

SH: as above, w/some Slststn: lt gry/red brn, vry arg, slt carb, firm, friable, no odor, ns.

SH/Slststn: as above, no odor, ns.

LS: crm/lt brn, micro-med xtal, some vry silty/sndy, some chalky, foss frags/crin, some frac por, no odor, ns.

LS: crm/lt gry/lt-med brn, micro-med xtal, vry silty/sndy, foss frags/crin/gastro, mostly dense w/2 pcs w/ppt-med in-xtal w/brn oil staining; SH/Slststn as above, no odor, ns.

SH: red brn/brn/med-dk gry/min vel mottling, vry silty, carb, firm

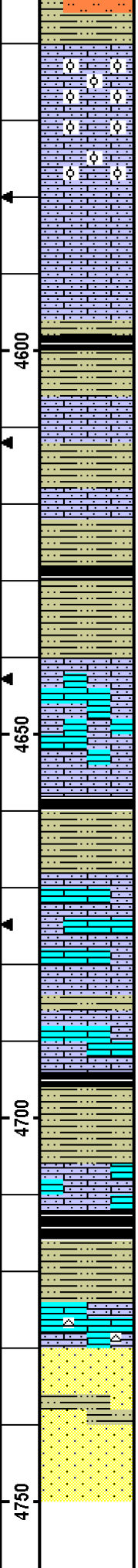
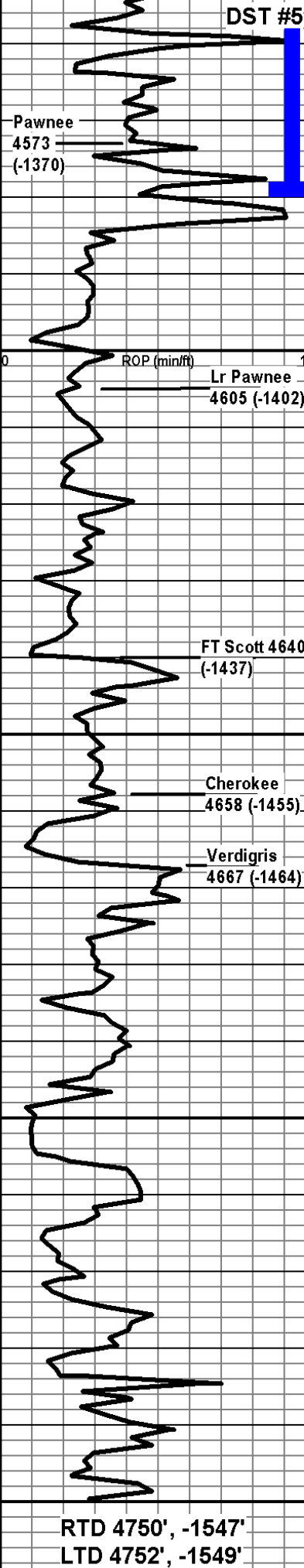
Morgan Mud Check #9 @ 4360' 12/02/14 10:15am  
wt vis pH chl  
9.3 58 10.5 800  
Filt LCM  
7.2 3

CFS @ 4390'  
30"60"

CFS @ 4430'  
30"60"

CFS @ 4450'  
30"60"

**DST5: 4535-4580**  
**Pawnee**  
30/60/30/60  
1st) surface blow built to 3/4", no BB.



CH: red brn/med-dk gry/med yel mottling, vry silty, carb, firm, fissile; Sltstn: lt-med gry/red brn, vry arg, firm, friable, no odor, ns.  
 LS: crm/lt brn/lt gry-brn, micro-fn xtal, min foss frags/fn abund ool pcs, silty/sndy, some chalky, 22+ pcs w/ppt-med in-xtal/in-ool por w/sfo, dk brn fluid, dul yel flor, slt crush odor, gsfo.  
 LS: as above, 18 pcs w/ppt-med in-xtal/in-ool por w/sfo, dk brn fluid, dul yel flor, slt crush odor, gsfo.  
 LS: lt gry/lt brn, micro-med xtal, foss frags, some silty/sndy, some chalky, no vis por, no odor, ns.  
 SH: lt-dk gy/red brn, vry silty/sndy, glauc, carb, firm, fissile.  
 LS: crm/lt brn/lt gry, micro-med xtal, foss frags/some grainy, some vry silty/sndy, some vry chalky, min ppt in-xtal por, no odor, ns.  
 SH: lt-dk gry/blk, some silty, slt carb, soft-firm, no odor, ns.  
 LS: crm/lt brn/lt gry, micro-med xtal, foss frags, some sndy, some vry chalky, some ppt-med in-xtal por, no odor, ns.  
 SH: med-dk gry, some silty, slt carb, firm, no odor, ns.  
 SH: same as above, no odor, ns.  
 LS: crm/lt gry/tan, micro-fn xtal, some vry silty, some chalky, foss frags/some grainy, min frac por, no odor, ns.  
 LS: crm/tan/lt-med brn, micro-fn w/some med xtal, some vry silty/sndy, some vry chalky, foss frags, min frac por, no odor, ns.  
 SH: med-dk gry/brn, vry silty/sndy, carb, firm, fissile, no odor, ns.  
 LS: crm/tan/lt-med brn/lt gry, micro-med xtal, some vry silty/sndy, some vry chalky, foss frags/some grainy, mostly dense w/some fn-med in-xtal por, no odor, ns.  
 LS: crm/tan/lt-med brn, micro-fn xtal, some vry silty, some chalky, foss frags/some grainy, some frac por, no odor, ns. Some SH: lt-dk gry/brn-gry, slt silty, carb, firm, fissile.  
 SH: med-dk gry/blk/min dk maroon, some silty, carb, soft-firm, fissile, no odor, ns.  
 LS: crm/lt-med gry/lt brn, micro-fn xtal, foss frags/some grainy, some vry silty, some vry chalky, min frac por, no odor, ns.  
 SH: med-dk gry/blk/red brn, some vry silty, carb, firm, fissile, no odor, ns.  
 LS: crm/lt gry-crm, micro-fn, some vry silty/sndy, some vry chalky, foss frags, some orange-brn chert, min frac por, no odor, ns.  
 SS: wht/lt orange brn/red brn, f-m, sr-wr, pred qtz, some dk incl, carb, poss some in-part por, hard, slt friable, no odor, ns. Some SH: med gry/red brn/maroon, silty, carb, firm, fissile.  
 SS: as above w/increase in red brn, some vry arg, no odor, ns.  
 TD @ 4750'.

2nd) no blow, no BB.  
 IFP 21-23#  
 ISIP 40#  
 FFP 24-25#  
 FSIP 39#  
 HP 2331-2312#  
 Recvd: 5' Mud.  
 CFS @ 4580'  
 30"60"  
 Morgan Mud Check #10 @  
 4580' 12/03/14 11:00am  
 wt vis pH chl  
 9.4 73 10.5 700  
 Filt LCM  
 8.0 3  
 CFS @ 4610'  
 30"60"  
 CFS @ 4650'  
 30"60"  
 CFS @ 4675'  
 30"60"  
 Morgan Mud Check #10 @  
 4750' 12/04/14  
 End of drilling, no analyses  
 conducted.  
 CFS @ 4750'  
 30"60"  
 Conducted 10 stand short  
 trip then circulated one hour  
 before TOH for logging.

RTD 4750', -1547'  
 LTD 4752', -1549'



## DRILL STEM TEST REPORT

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

250 N. Water, STE 300  
Wichita, KS 67202

ATTN: Kent Matson

**Krug "A" #1-8**

**8-1s-38w Cheyenne,KS**

Start Date: 2014.11.29 @ 01:55:00

End Date: 2014.11.29 @ 09:59:30

Job Ticket #: 61037                      DST #: 1

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.05 @ 16:18:14



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water, STE 300  
Wichita, KS 67202  
ATTN: Kent Matson

**8-1s-38w Cheyenne,KS**

**Krug "A" #1-8**

Job Ticket: 61037

**DST#: 1**

Test Start: 2014.11.29 @ 01:55:00

## GENERAL INFORMATION:

Formation: **Le Compton & Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:45:30

Time Test Ended: 09:59:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Brandon Quintana

Unit No: 46

**Interval: 4040.00 ft (KB) To 4108.00 ft (KB) (TVD)**

Reference Elevations: 3203.00 ft (KB)

Total Depth: 4108.00 ft (KB) (TVD)

3192.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

**Serial #: 8647 Inside**

Press@RunDepth: 31.03 psig @ 4041.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.29

End Date:

2014.11.29

Last Calib.:

2014.11.29

Start Time: 01:55:01

End Time:

09:59:30

Time On Btm:

2014.11.29 @ 04:38:30

Time Off Btm:

2014.11.29 @ 07:51:30

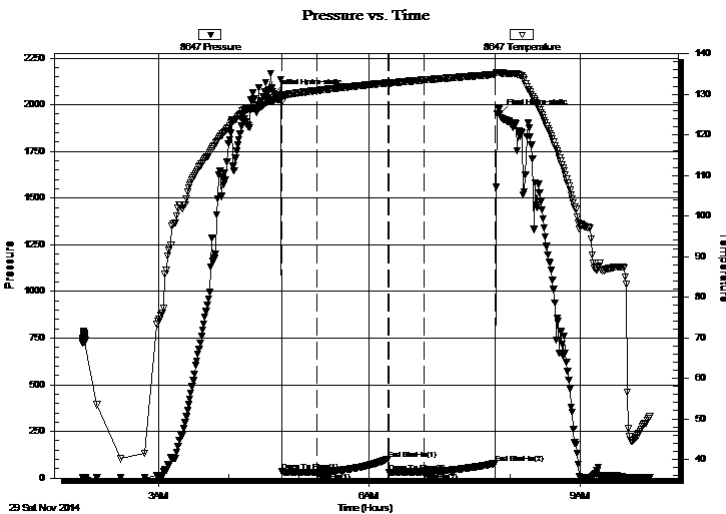
TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 1/4" died back to nothing

60 - ISI - No Return

30 - FF - No Blow

60 - FSI - No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2060.39	128.52	Initial Hydro-static
7	36.06	128.18	Open To Flow (1)
37	30.15	130.93	Shut-In(1)
97	101.90	132.78	End Shut-In(1)
98	32.36	132.74	Open To Flow (2)
128	31.03	133.50	Shut-In(2)
189	79.44	134.87	End Shut-In(2)
193	1953.33	135.28	Final Hydro-static

## Recovery

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

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61037

**DST#: 1**

ATTN: Kent Matson

Test Start: 2014.11.29 @ 01:55:00

## Tool Information

Drill Pipe:	Length: 3860.32 ft	Diameter: 3.80 inches	Volume: 54.15 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 183.06 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.38 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4040.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	68.00 ft			
Tool Length:	96.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4013.00	
Shut In Tool	5.00			4018.00	
Hydraulic tool	5.00		Inside	4023.00	
Jars	5.00			4028.00	
Safety Joint	3.00			4031.00	
Packer	5.00			4036.00	28.00 Bottom Of Top Packer
Packer	4.00			4040.00	
Stubb	1.00			4041.00	
Recorder	0.00	8647	Inside	4041.00	
Recorder	0.00	8372	Outside	4041.00	
Perforations	30.00			4071.00	
Change Over Sub	1.00			4072.00	
Drill Pipe	32.00			4104.00	
Change Over Sub	1.00			4105.00	
Bullnose	3.00			4108.00	68.00 Bottom Packers & Anchor

**Total Tool Length: 96.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61037

**DST#: 1**

ATTN: Kent Matson

Test Start: 2014.11.29 @ 01:55:00

### 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: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100% mud	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

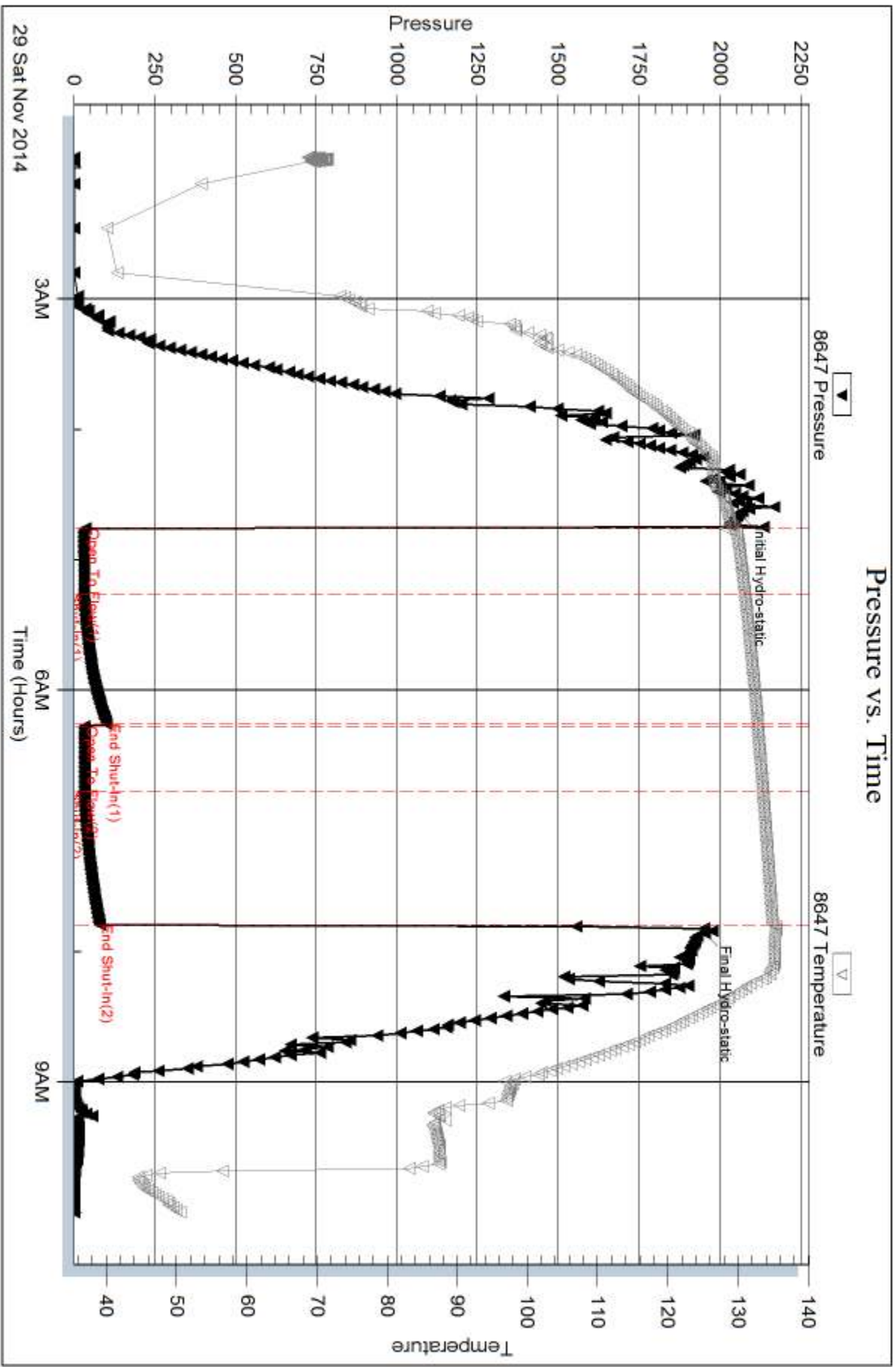
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

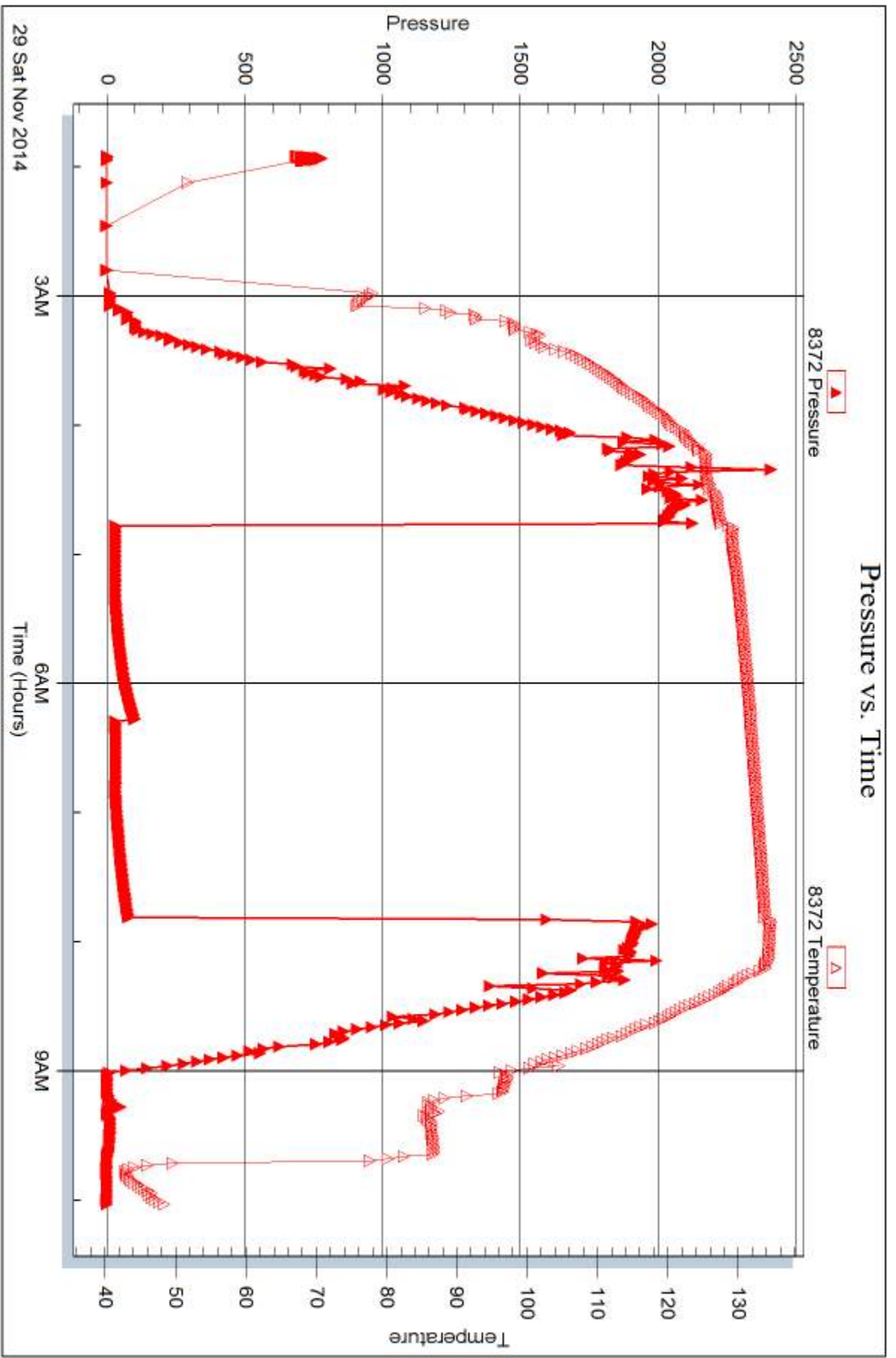


Serial #: 8372

Outside Marfin Drfg. Co., Inc.

Krug "A" #1-8

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 61037

Printed: 2014, 12:05 @ 16:18:15



## DRILL STEM TEST REPORT

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

250 N. Water, STE 300  
Wichita, KS 67202

ATTN: Kent Matson

**Krug "A" #1-8**

**8-1s-38w Cheyenne,KS**

Start Date: 2014.11.29 @ 23:44:00

End Date: 2014.11.30 @ 08:23:00

Job Ticket #: 61038                      DST #: 2

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.05 @ 16:17:53



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water, STE 300  
Wichita, KS 67202  
ATTN: Kent Matson

**8-1s-38w Cheyenne,KS**

**Krug "A" #1-8**

Job Ticket: 61038

**DST#: 2**

Test Start: 2014.11.29 @ 23:44:00

## GENERAL INFORMATION:

Formation: **LKC "A"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 02:58:00  
 Tester: Brandon Quintana  
 Time Test Ended: 08:23:00  
 Unit No: 46  
 Interval: **4116.00 ft (KB) To 4190.00 ft (KB) (TVD)**  
 Reference Elevations: 3203.00 ft (KB)  
 Total Depth: 4190.00 ft (KB) (TVD)  
 3192.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 11.00 ft

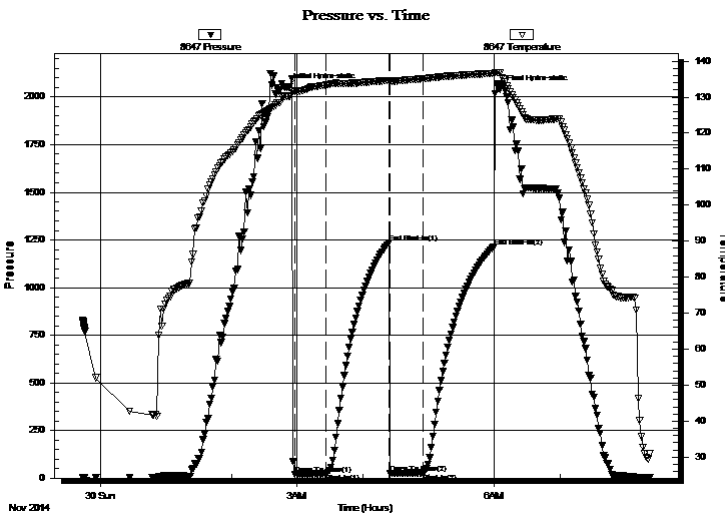
## Serial #: 8647

Inside

Press@RunDepth: 27.79 psig @ 4117.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.11.29 End Date: 2014.11.30 Last Calib.: 2014.11.30  
 Start Time: 23:44:01 End Time: 08:23:00 Time On Btm: 2014.11.30 @ 02:50:30  
 Time Off Btm: 2014.11.30 @ 06:05:30

TEST COMMENT: 30 - IF - Opened w/ surface blow , didn't build  
 60 - ISI - No Return  
 30 - FF - No Blow  
 60 - FSI - No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2050.90	130.22	Initial Hydro-static
8	21.39	131.62	Open To Flow (1)
36	23.25	133.31	Shut-In(1)
93	1235.69	134.60	End Shut-In(1)
95	25.66	134.38	Open To Flow (2)
125	27.79	135.11	Shut-In(2)
189	1215.15	136.61	End Shut-In(2)
195	2037.53	136.70	Final Hydro-static

## Recovery

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

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61038

**DST#: 2**

ATTN: Kent Matson

Test Start: 2014.11.29 @ 23:44:00

## Tool Information

Drill Pipe:	Length: 3923.00 ft	Diameter: 3.80 inches	Volume: 55.03 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 183.06 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose:	90000.00 lb
			<u>Total Volume:</u> - bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	18.06 ft			String Weight: Initial	66000.00 lb
Depth to Top Packer:	4116.00 ft			Final	66000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	74.00 ft				
Tool Length:	102.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4089.00	
Shut In Tool	5.00			4094.00	
Hydraulic tool	5.00		Inside	4099.00	
Jars	5.00			4104.00	
Safety Joint	3.00			4107.00	
Packer	5.00			4112.00	28.00 Bottom Of Top Packer
Packer	4.00			4116.00	
Stubb	1.00			4117.00	
Recorder	0.00	8647	Inside	4117.00	
Recorder	0.00	8372	Outside	4117.00	
Perforations	36.00			4153.00	
Change Over Sub	1.00			4154.00	
Drill Pipe	32.00			4186.00	
Change Over Sub	1.00			4187.00	
Bullnose	3.00			4190.00	74.00 Bottom Packers & Anchor

**Total Tool Length: 102.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61038

**DST#: 2**

ATTN: Kent Matson

Test Start: 2014.11.29 @ 23:44:00

## 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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.18 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	100% mud	0.025

Total Length: 5.00 ft      Total Volume: 0.025 bbl

Num Fluid Samples: 0

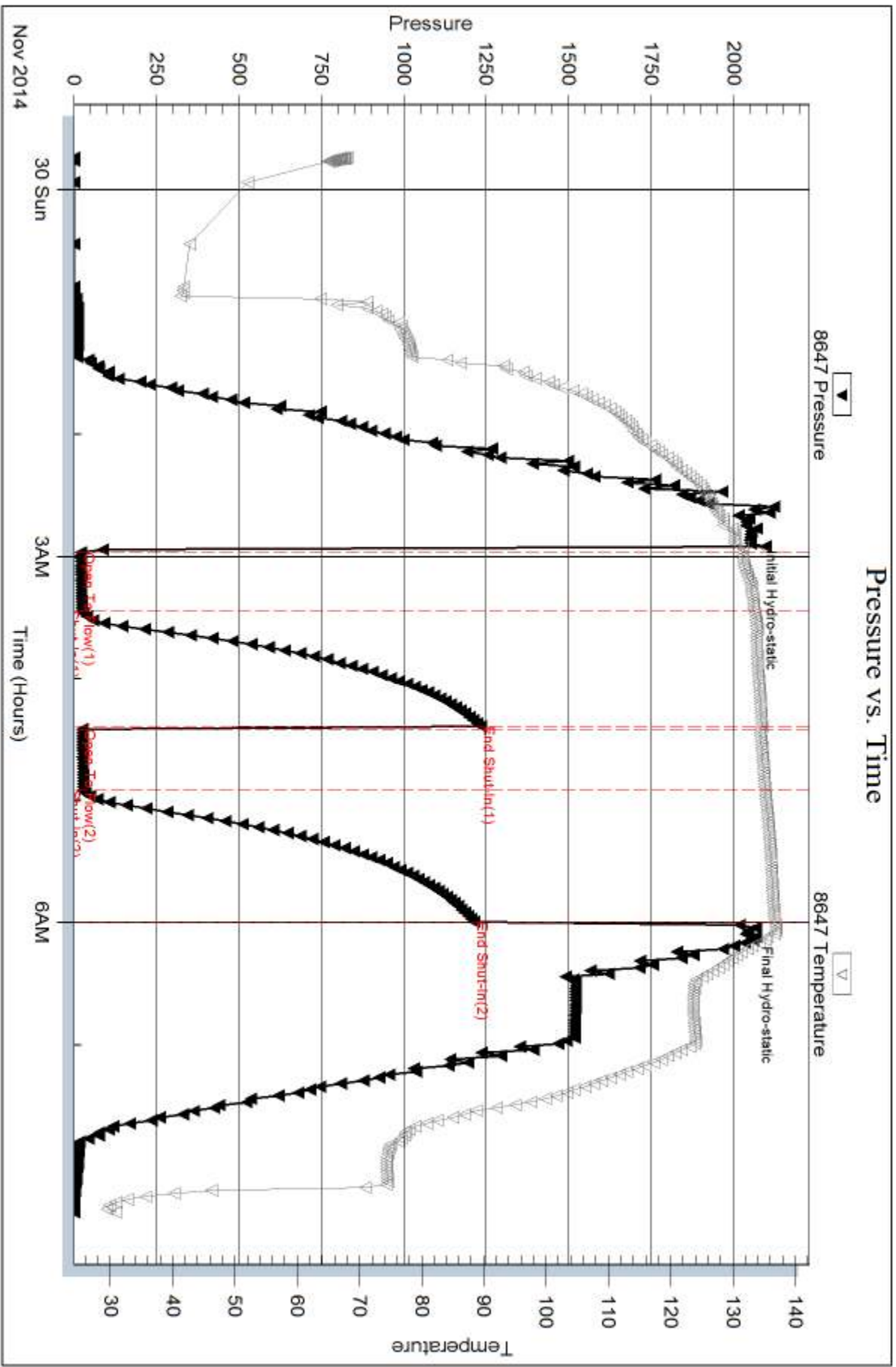
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

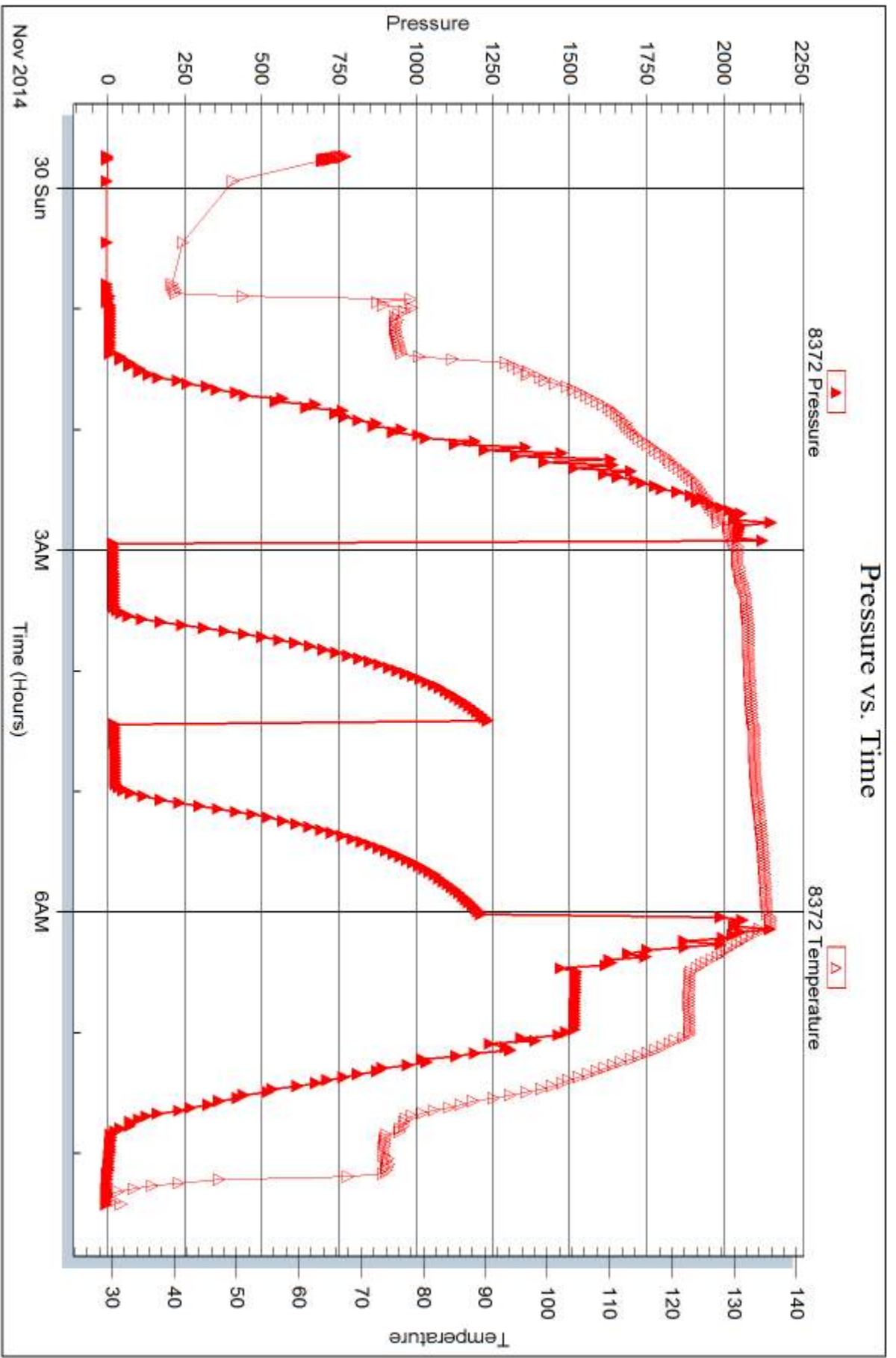


Serial #: 8372

Outside Murfin Drtg. Co., Inc.

Krug "A" #1-8

DST Test Number: 2





## DRILL STEM TEST REPORT

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

250 N. Water, STE 300  
Wichita, KS 67202

ATTN: Kent Matson

**Krug "A" #1-8**

**8-1s-38w Cheyenne,KS**

Start Date: 2014.11.30 @ 19:47:00

End Date: 2014.12.01 @ 04:11:00

Job Ticket #: 61039                      DST #: 3

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.11 @ 10:34:05



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water, STE 300  
Wichita, KS 67202  
ATTN: Kent Matson

**8-1s-38w Cheyenne,KS**

**Krug "A" #1-8**

Job Ticket: 61039

**DST#: 3**

Test Start: 2014.11.30 @ 19:47:00

## GENERAL INFORMATION:

Formation: **LKC "D"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 21:37:00  
 Time Test Ended: 04:11:00  
 Interval: **4182.00 ft (KB) To 4245.00 ft (KB) (TVD)**  
 Total Depth: 4245.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Brandon Quintana  
 Unit No: 46  
 Reference Elevations: 3203.00 ft (KB)  
 3192.00 ft (CF)  
 KB to GR/CF: 11.00 ft

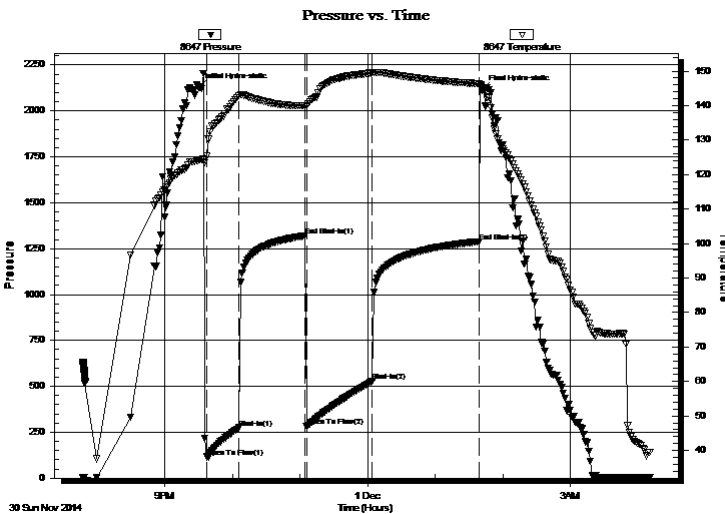
**Serial #: 8647**

**Inside**

Press@RunDepth: 526.74 psig @ 4183.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.11.30 End Date: 2014.12.01 Last Calib.: 2014.12.01  
 Start Time: 19:47:01 End Time: 04:11:00 Time On Btm: 2014.11.30 @ 21:29:30  
 Time Off Btm: 2014.12.01 @ 01:41:30

**TEST COMMENT:** 30 - IF - Opened w/ surface blow , built to B.o.B in 6 min.  
 60 - ISI - No Return  
 60 - FF - Blow built to B.o.B in 8 min.  
 90 - FSI - No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2129.04	124.10	Initial Hydro-static
8	115.28	125.28	Open To Flow (1)
36	273.92	142.88	Shut-In(1)
95	1319.07	139.96	End Shut-In(1)
96	284.35	139.88	Open To Flow (2)
155	526.74	149.52	Shut-In(2)
249	1288.39	146.35	End Shut-In(2)
252	2114.51	144.29	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1143.00	MW 73%w , 27%m	14.37

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61039

**DST#: 3**

ATTN: Kent Matson

Test Start: 2014.11.30 @ 19:47:00

## Tool Information

Drill Pipe:	Length: 3987.00 ft	Diameter: 3.80 inches	Volume: 55.93 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 183.06 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.06 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4182.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	63.00 ft			
Tool Length:	91.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4155.00	
Shut In Tool	5.00			4160.00	
Hydraulic tool	5.00		Inside	4165.00	
Jars	5.00			4170.00	
Safety Joint	3.00			4173.00	
Packer	5.00			4178.00	28.00 Bottom Of Top Packer
Packer	4.00			4182.00	
Stubb	1.00			4183.00	
Recorder	0.00	8647	Inside	4183.00	
Recorder	0.00	8372	Outside	4183.00	
Perforations	26.00			4209.00	
Change Over Sub	1.00			4210.00	
Drill Pipe	31.00			4241.00	
Change Over Sub	1.00			4242.00	
Bullnose	3.00			4245.00	63.00 Bottom Packers & Anchor

**Total Tool Length: 91.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61039

**DST#: 3**

ATTN: Kent Matson

Test Start: 2014.11.30 @ 19:47:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

70000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1143.00	MW 73%w , 27%m	14.366

Total Length: 1143.00 ft      Total Volume: 14.366 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .403 @ 16F Chlorides 70,000ppm

Serial #: 8647

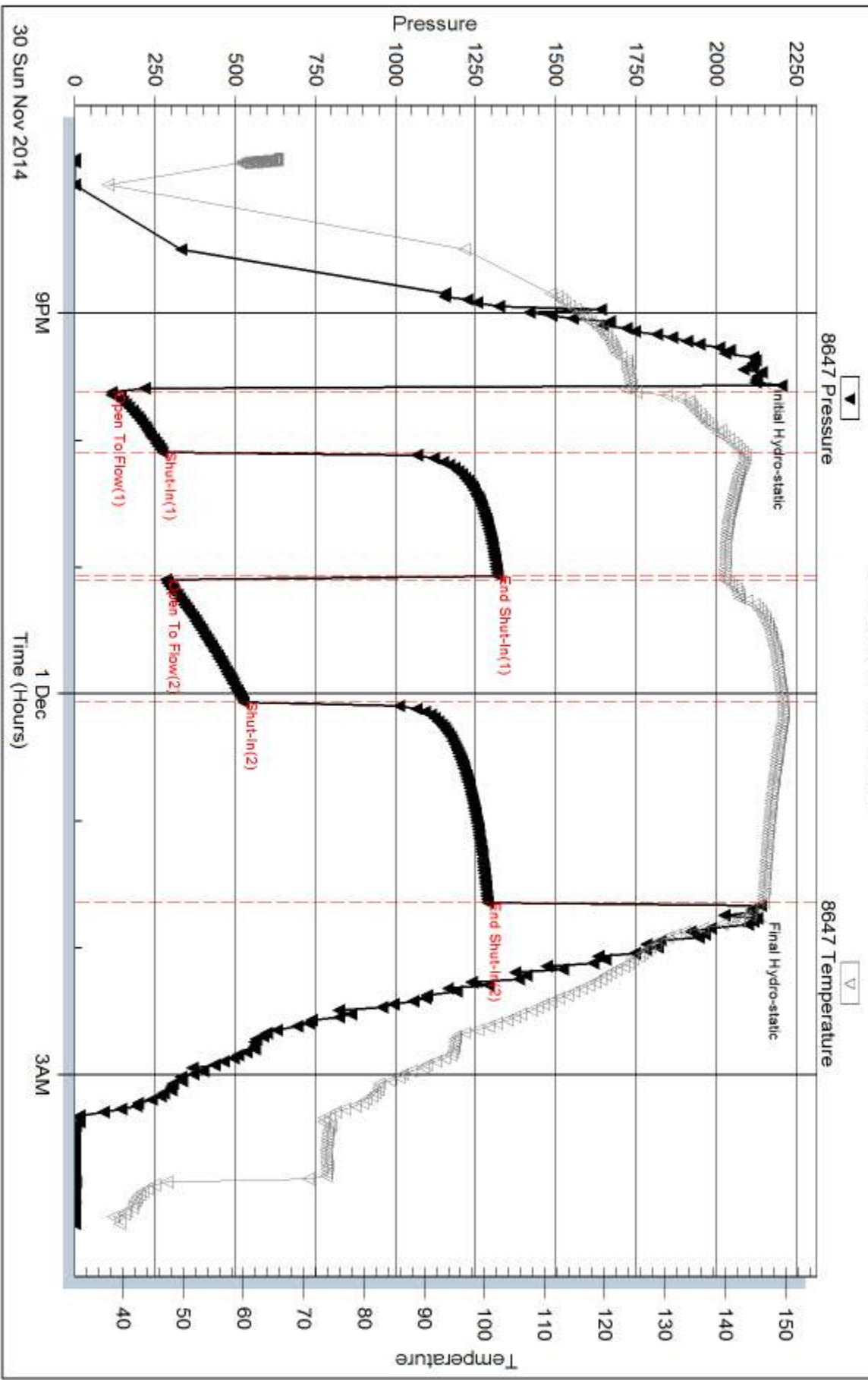
Inside

Marfin Drtg. Co., Inc.

Krug "A" #1-8

DST Test Number: 3

### Pressure vs. Time



Triobite Testing, Inc

Ref. No: 61039

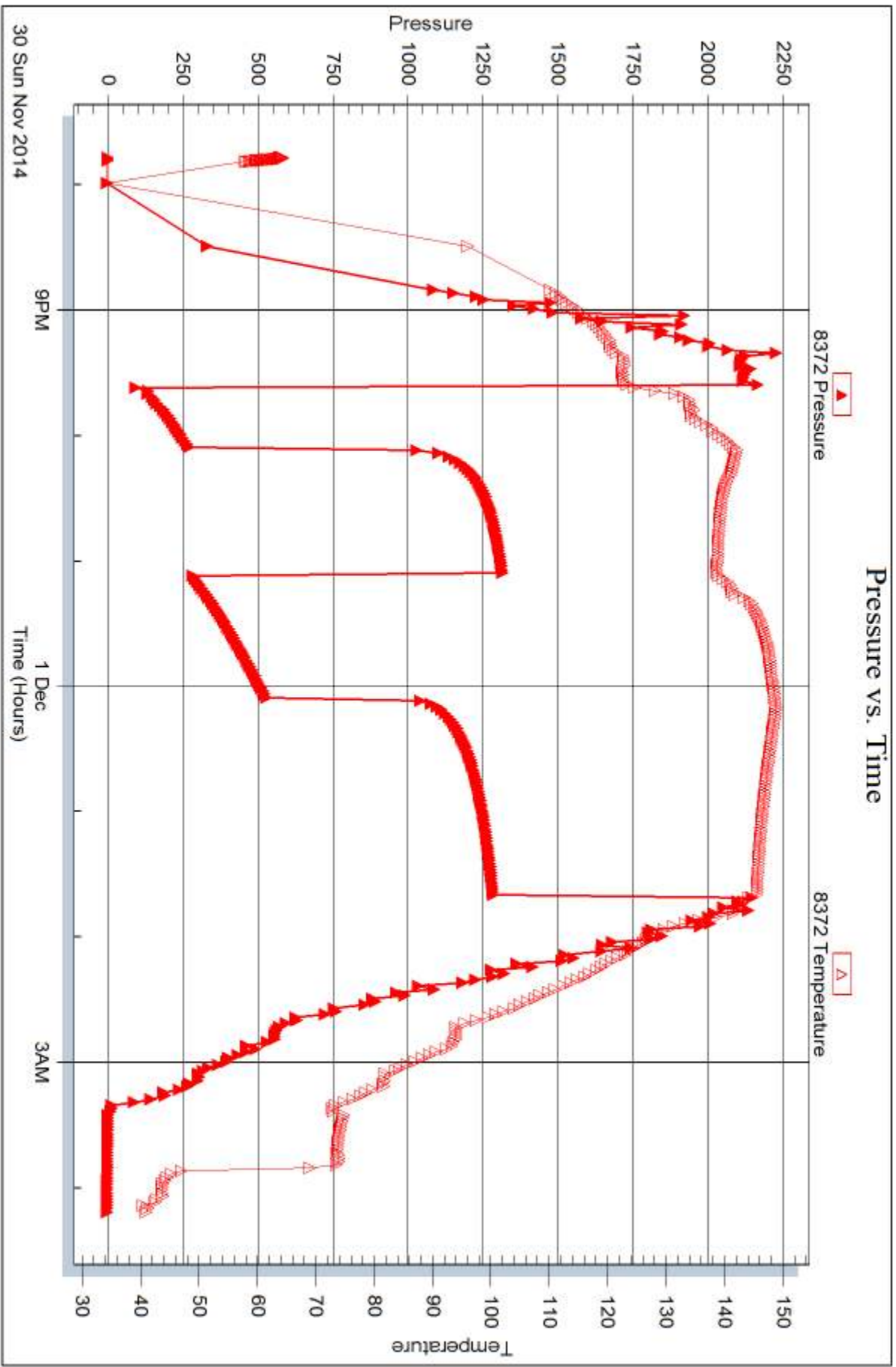
Printed: 2014.12.11 @ 10:34:06

Serial #: 8372

Outside Marfin Drfg. Co., Inc.

Krug "A" #1-8

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 61039

Printed: 2014.12.11 @ 10:34:07



## DRILL STEM TEST REPORT

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

250 N. Water, STE 300  
Wichita, KS 67202

ATTN: Kent Matson

**Krug "A" #1-8**

**8-1s-38w Cheyenne,KS**

Start Date: 2014.12.01 @ 16:12:00

End Date: 2014.12.02 @ 01:05:30

Job Ticket #: 61040                      DST #: 4

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.05 @ 16:15:54



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water, STE 300  
Wichita, KS 67202  
ATTN: Kent Matson

**8-1s-38w Cheyenne,KS**

**Krug "A" #1-8**

Job Ticket: 61040

**DST#: 4**

Test Start: 2014.12.01 @ 16:12:00

## GENERAL INFORMATION:

Formation: **LKC "G"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 18:45:30  
 Time Test Ended: 01:05:30  
 Interval: **4242.00 ft (KB) To 4300.00 ft (KB) (TVD)**  
 Total Depth: 4300.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Brandon Quintana  
 Unit No: 46  
 Reference Elevations: 3203.00 ft (KB)  
 3192.00 ft (CF)  
 KB to GR/CF: 11.00 ft

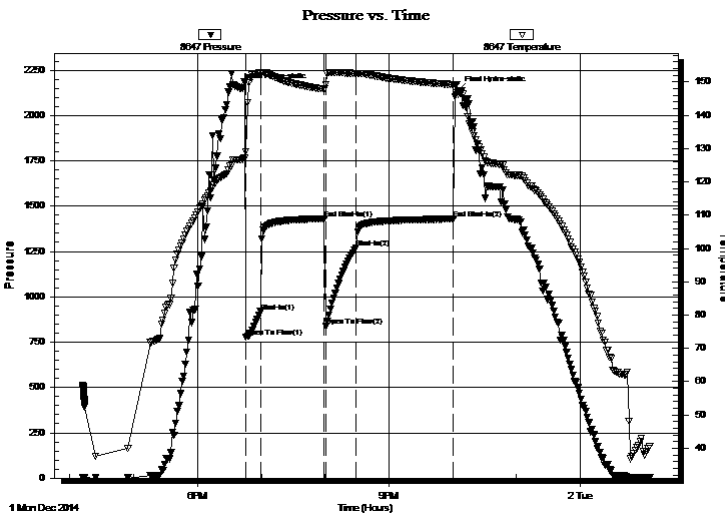
**Serial #: 8647**

**Inside**

Press@RunDepth: 1270.17 psig @ 4243.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.01 End Date: 2014.12.02 Last Calib.: 2014.12.02  
 Start Time: 16:12:01 End Time: 01:05:30 Time On Btm: 2014.12.01 @ 18:38:00  
 Time Off Btm: 2014.12.01 @ 22:05:00

**TEST COMMENT:** 15 - IF - Opened w/ surface blow , built to B.o.B in 35 sec.  
 60 - ISI - No Return  
 30 - FF - Blow built to B.o.B in 35 sec.  
 90 - FSI - No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2154.89	126.66	Initial Hydro-static
8	778.46	129.03	Open To Flow (1)
21	919.29	152.66	Shut-In(1)
81	1430.89	147.80	End Shut-In(1)
83	836.07	149.16	Open To Flow (2)
111	1270.17	152.49	Shut-In(2)
203	1429.38	149.17	End Shut-In(2)
207	2134.58	146.35	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
2871.00	MW 86%w , 14%m	38.60

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61040

**DST#: 4**

ATTN: Kent Matson

Test Start: 2014.12.01 @ 16:12:00

## Tool Information

Drill Pipe:	Length: 4049.00 ft	Diameter: 3.80 inches	Volume: 56.80 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 183.06 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose:	100000.0 lb
			<u>Total Volume:</u>	Tool Chased	0.00 ft
			- bbl	String Weight: Initial	70000.00 lb
Drill Pipe Above KB:	18.06 ft			Final	78000.00 lb
Depth to Top Packer:	4242.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	58.00 ft				
Tool Length:	86.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4215.00	
Shut In Tool	5.00			4220.00	
Hydraulic tool	5.00		Inside	4225.00	
Jars	5.00			4230.00	
Safety Joint	3.00			4233.00	
Packer	5.00			4238.00	28.00 Bottom Of Top Packer
Packer	4.00			4242.00	
Stubb	1.00			4243.00	
Packer - Shale	0.00			4243.00	
Recorder	0.00	8647	Inside	4243.00	
Recorder	0.00	8372	Outside	4243.00	
Perforations	21.00			4264.00	
Change Over Sub	1.00			4265.00	
Drill Pipe	31.00			4296.00	
Change Over Sub	1.00			4297.00	
Bullnose	3.00			4300.00	58.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>86.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61040

**DST#: 4**

ATTN: Kent Matson

Test Start: 2014.12.01 @ 16:12:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

61000 ppm

Viscosity: 70.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2871.00	MW 86%w , 14%m	38.605

Total Length: 2871.00 ft      Total Volume: 38.605 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

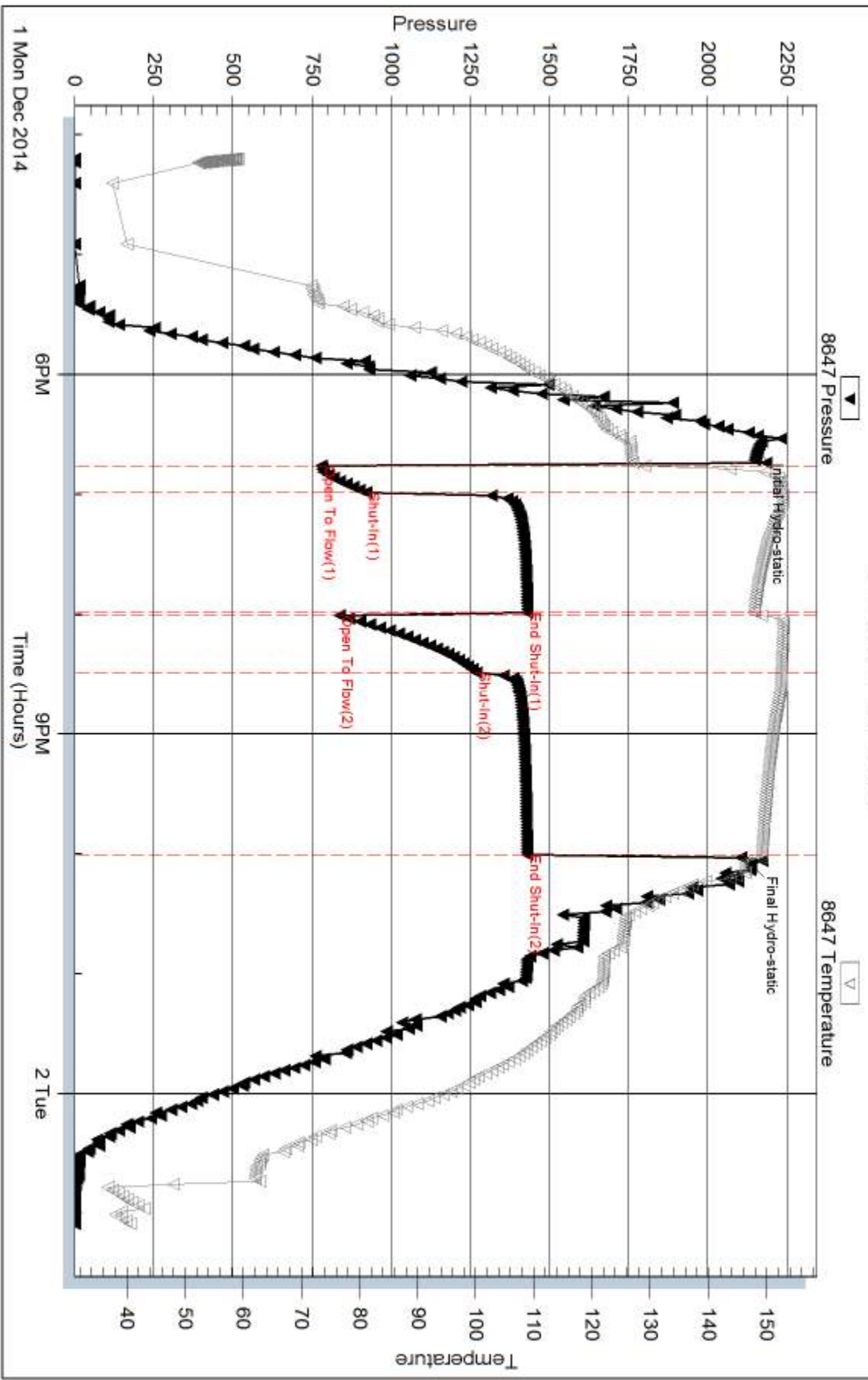
Laboratory Name:

Laboratory Location:

Recovery Comments: RW .436 @ 20F Chlorides 61000ppm



### Pressure vs. Time

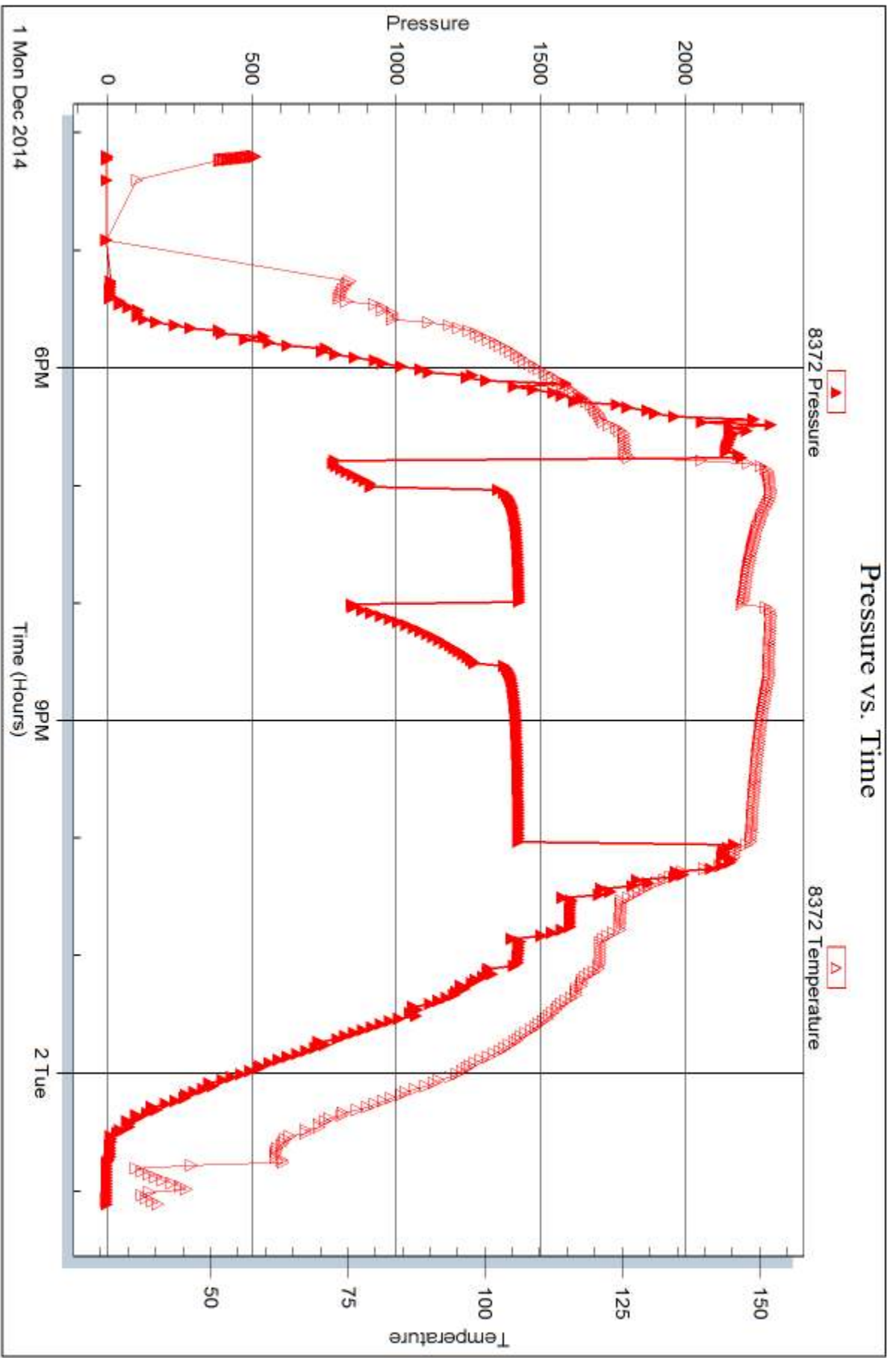


Serial #: 8372

Outside Marfin Dtg. Co., Inc.

Krug "A" #1-8

DST Test Number: 4



Tribble Testing, Inc

Ref. No: 61040

Printed: 2014, 12, 05 @ 16:15:55



## DRILL STEM TEST REPORT

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

250 N. Water, STE 300  
Wichita, KS 67202

ATTN: Kent Matson

**Krug "A" #1-8**

**8-1s-38w Cheyenne,KS**

Start Date: 2014.12.03 @ 08:58:00

End Date: 2014.12.03 @ 16:48:30

Job Ticket #: 61041                      DST #: 5

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.12.05 @ 16:15:09



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drlg. Co., Inc.  
250 N. Water, STE 300  
Wichita, KS 67202  
ATTN: Kent Matson

**8-1s-38w Cheyenne,KS**

**Krug "A" #1-8**

Job Ticket: 61041

**DST#: 5**

Test Start: 2014.12.03 @ 08:58:00

## GENERAL INFORMATION:

Formation: **Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:39:30  
 Time Test Ended: 16:48:30  
 Interval: **4535.00 ft (KB) To 4580.00 ft (KB) (TVD)**  
 Total Depth: 4580.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Brandon Quintana  
 Unit No: 46  
 Reference Elevations: 3203.00 ft (KB)  
 3192.00 ft (CF)  
 KB to GR/CF: 11.00 ft

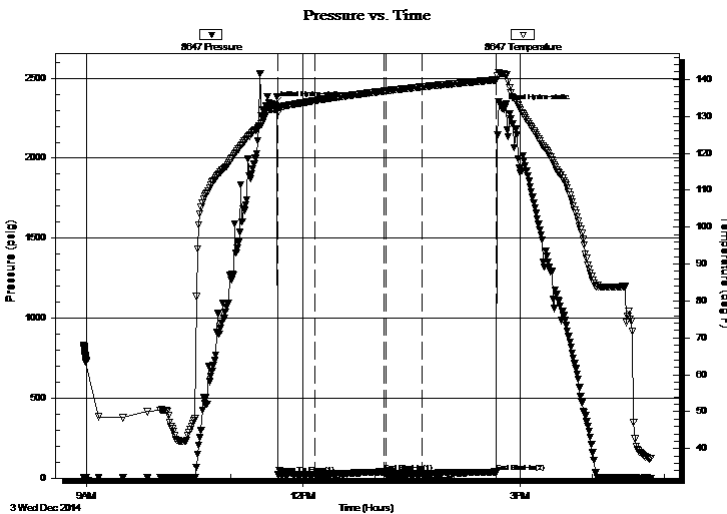
## Serial #: 8647

Inside

Press@RunDepth: 25.26 psig @ 4536.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2014.12.03 End Date: 2014.12.03 Last Calib.: 2014.12.03  
 Start Time: 08:58:01 End Time: 16:48:30 Time On Btm: 2014.12.03 @ 11:35:30  
 Time Off Btm: 2014.12.03 @ 14:45:30

TEST COMMENT: 30 - IF - Opened w/ surface blow , built to 3/4"  
 60 - ISI - No Return  
 30 - FF - No Blow  
 60 - FSI - No Return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2331.49	131.95	Initial Hydro-static
4	21.41	130.98	Open To Flow (1)
34	23.37	134.23	Shut-In(1)
92	39.61	136.82	End Shut-In(1)
93	24.32	136.88	Open To Flow (2)
123	25.26	137.96	Shut-In(2)
185	38.83	139.87	End Shut-In(2)
190	2312.07	141.59	Final Hydro-static

## Recovery

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

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61041

**DST#: 5**

ATTN: Kent Matson

Test Start: 2014.12.03 @ 08:58:00

## Tool Information

Drill Pipe:	Length: 4334.00 ft	Diameter: 3.80 inches	Volume: 60.79 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 183.06 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.06 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4535.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	73.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4508.00	
Shut In Tool	5.00			4513.00	
Hydraulic tool	5.00		Inside	4518.00	
Jars	5.00			4523.00	
Safety Joint	3.00			4526.00	
Packer	5.00			4531.00	28.00 Bottom Of Top Packer
Packer	4.00			4535.00	
Stubb	1.00			4536.00	
Packer - Shale	0.00			4536.00	
Recorder	0.00	8647	Inside	4536.00	
Recorder	0.00	8372	Outside	4536.00	
Perforations	8.00			4544.00	
Change Over Sub	1.00			4545.00	
Drill Pipe	31.00			4576.00	
Change Over Sub	1.00			4577.00	
Bullnose	3.00			4580.00	45.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>73.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drlg. Co., Inc.

**8-1s-38w Cheyenne,KS**

250 N. Water, STE 300  
Wichita, KS 67202

**Krug "A" #1-8**

Job Ticket: 61041

**DST#: 5**

ATTN: Kent Matson

Test Start: 2014.12.03 @ 08:58:00

### 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: 58.00 sec/qt

Cushion Volume:

bbf

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

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 800.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	100% mud	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:

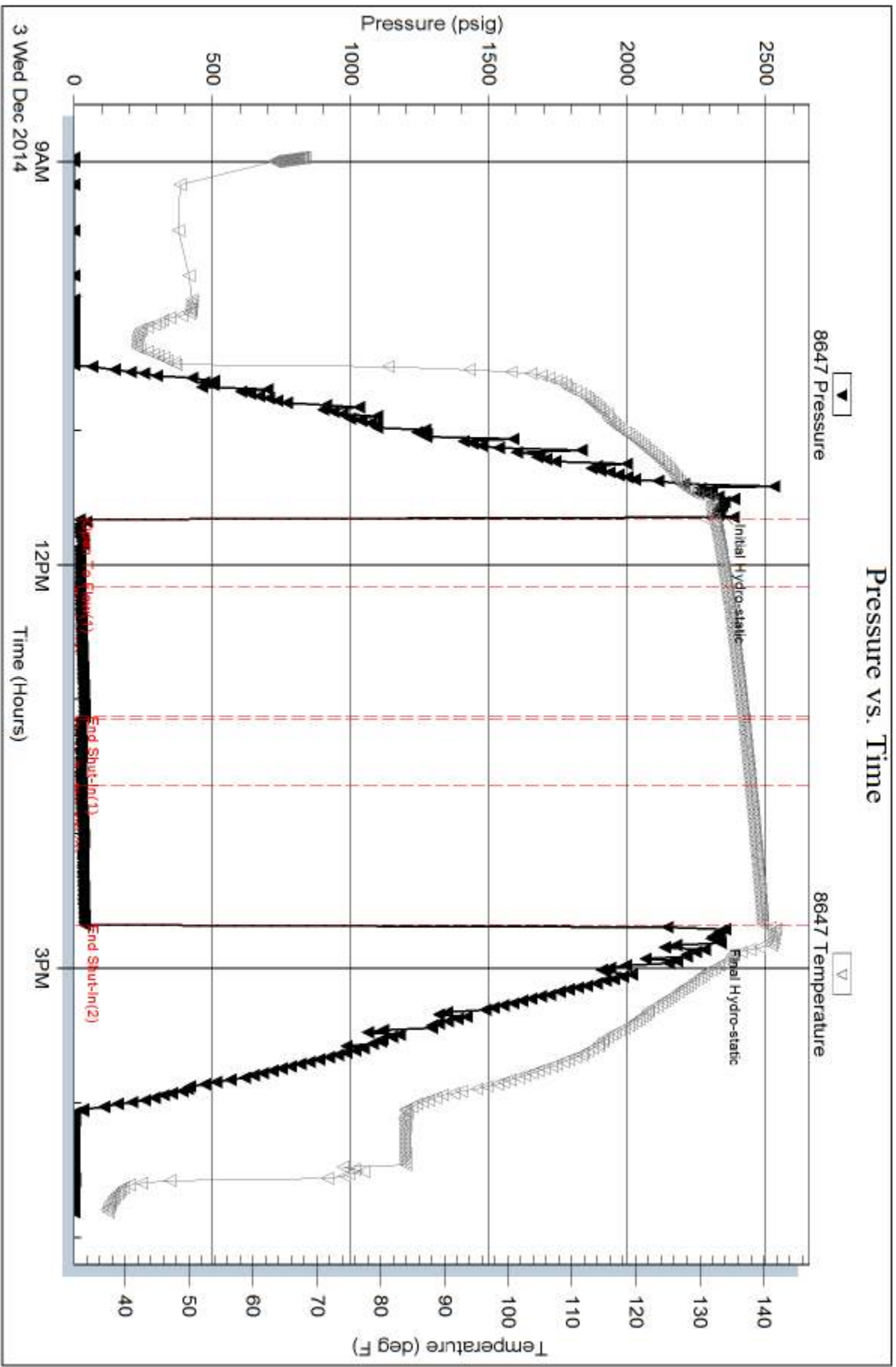
Serial #: 8647

Inside

Murfin Drtg. Co., Inc.

Krug "A" #1-8

DST Test Number: 5



Tribble Testing, Inc

Ref. No: 61041

Printed: 2014, 12, 05 @ 16:15:10

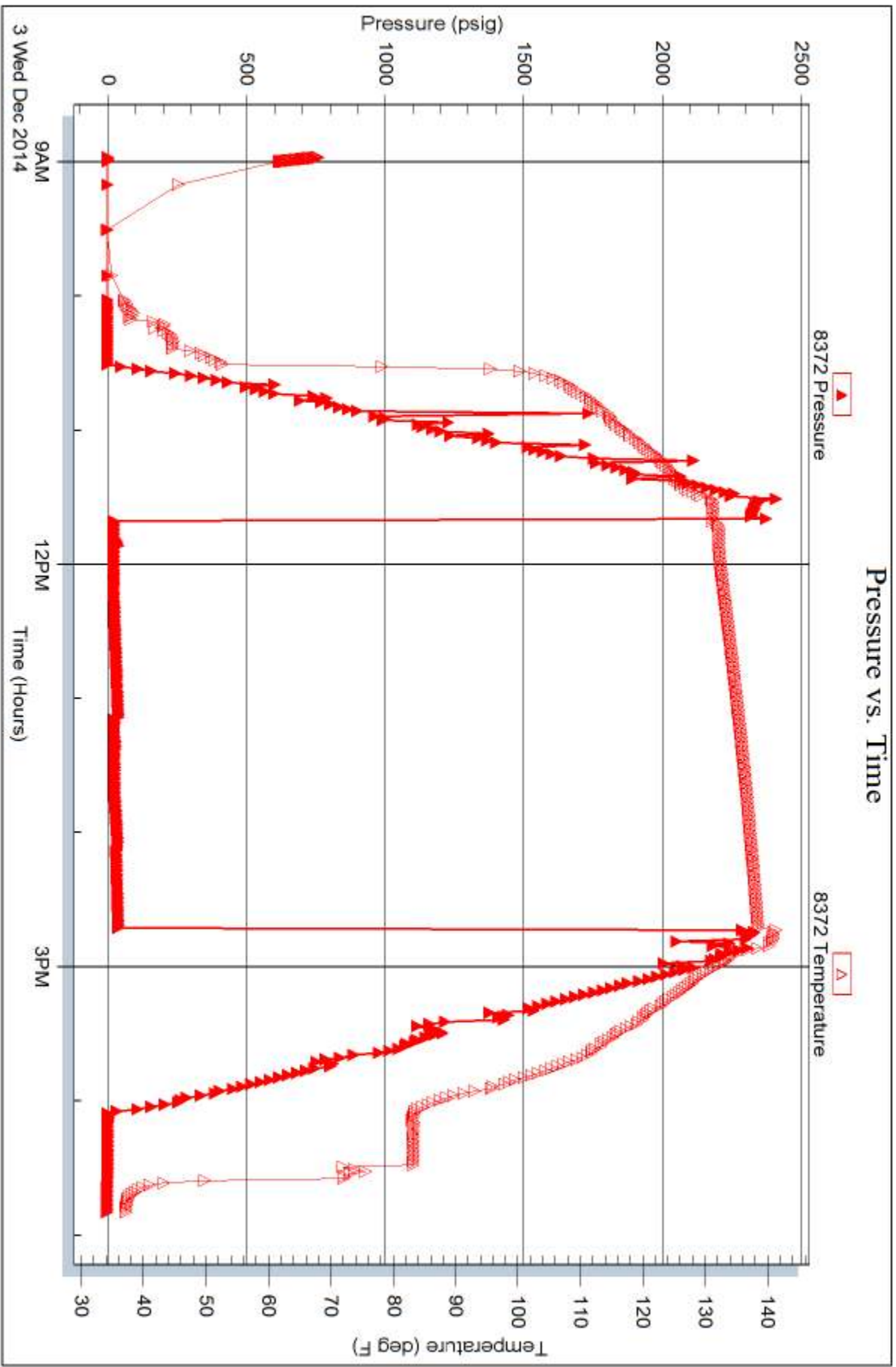


Serial #: 8372

Outside Marfin Drfg. Co., Inc.

Krug "A" #1-8

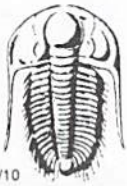
DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 61041

Printed: 2014, 12, 05 @ 16:15:10



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 61037

Well Name & No. Krug "A" #1-8 Test No. 1 Date 11-29-14  
 Company Murfin Drilg. Co., Inc. Elevation 3263 KB 3192 GL  
 Address 250 N. Water, STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Kent Matson Rig Murfin #20  
 Location: Sec. 8 Twp. 15 Rge. 38 W Co. Cheyenne State KS

Interval Tested 4040-4108 Zone Tested Le Compton + Oread  
 Anchor Length 68 Drill Pipe Run 3860.32 Mud Wt. 9  
 Top Packer Depth 4035 Drill Collars Run 183.06 Vis 49  
 Bottom Packer Depth 4040 Wt. Pipe Run — WL 7.2  
 Total Depth 4108 Chlorides 600 ppm System LCM 4

Blow Description IF- Opened w/ surface blow. ~~did~~ built to 1/4" died back to nothing  
ISI- No Return  
FF- No Blow  
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Mud</u>				<u>100</u>

Rec Total 5 BHT 134 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2060  Test 1250 T-On Location 1:22 AM  
 (B) First Initial Flow 36  Jars 250 T-Started 1:55 AM  
 (C) First Final Flow 30  Safety Joint 75 T-Open 4:47 AM  
 (D) Initial Shut-In 101  Circ Sub \_\_\_\_\_ T-Pulled 7:47 AM  
 (E) Second Initial Flow 32  Hourly Standby \_\_\_\_\_ T-Out 10:02 AM  
 (F) Second Final Flow 31  Mileage 152 R.T. 235.60 Comments \_\_\_\_\_  
 (G) Final Shut-In 79  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1953  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_

Initial Open 30  Shale Packer N/A  Ruined Packer X1 320  
 Initial Shut-In 60  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Final Flow 30  Extra Recorder \_\_\_\_\_ Sub-Total 320  
 Final Shut-In 60  Day Standby \_\_\_\_\_ Total 2130.60  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1810.60

Approved By \_\_\_\_\_ Our Representative Bud Ot

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. 61038

Well Name & No. Krug "A" #1-8 Test No. 2 Date 11-29-14  
 Company Murfin Drlg. Co., Inc. Elevation 3203 KB 3192 GL  
 Address 250 N. Water, STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Kent Matson Rig Murfin #20  
 Location: Sec. 8 Twp. 1S Rge. 38W Co. Cheyenne State KS

Interval Tested 4116 - 4190 Zone Tested LKC "A"  
 Anchor Length 74' Drill Pipe Run 3923 Mud Wt. 9.3  
 Top Packer Depth 4111 Drill Collars Run 183.06 Vis 50  
 Bottom Packer Depth 4116 Wt. Pipe Run — WL 9.2  
 Total Depth 4190 Chlorides 700 ppm System LCM 4  
 Blow Description IF- Opened w/ surface blow, didn't build  
ISI- No Return  
FF- No Blow  
FSI- 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 136 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2050  Test 1250 T-On Location 10:55 PM  
 (B) First Initial Flow 21  Jars 250 T-Started 11:44 PM  
 (C) First Final Flow 23  Safety Joint 75 T-Open 2:57 AM  
 (D) Initial Shut-In 1235  Circ Sub \_\_\_\_\_ T-Pulled 5:57 AM  
 (E) Second Initial Flow 25  Hourly Standby \_\_\_\_\_ T-Out 8:25 AM  
 (F) Second Final Flow 27  Mileage 152 R.T. 235.60 Comments \_\_\_\_\_  
 (G) Final Shut-In 1215  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2037  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

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

Sub Total 1810.60 Total 1810.60 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Bruce O'F

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. 61039

410

Well Name & No. Krug "A" #1-8 Test No. 3 Date 11-30-14  
 Company Murfin Drlg. Co., Inc. Elevation 3203 KB 3192 GL  
 Address 250 N. Water, STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Kent Matson Rig Murfin #20  
 Location: Sec. 8 Twp. 15 Rge. 38W Co. Cheyenne State KS

Interval Tested 4182 - 4245 Zone Tested LKC "D"  
 Anchor Length 63' Drill Pipe Run 3987 Mud Wt. 9.2  
 Top Packer Depth 4177 Drill Collars Run 183.06 Vis 53  
 Bottom Packer Depth 4182 Wt. Pipe Run — WL 7.6  
 Total Depth 4245 Chlorides 500 ppm System LCM 4  
 Blow Description IF-Opened w/ surface blow, built to B.O.B in 6 min.  
ISI- No Return  
FF- Blow built to B.O.B in 8 min  
FSI-

Rec	Feet of	%gas	%oil	%water	%mud
<u>1143</u>	<u>MW</u>			<u>73%</u>	<u>27%</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 1143 BHT 146 Gravity — API RW .463 @ 16° F Chlorides 70,000 ppm

(A) Initial Hydrostatic <u>2129</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>7:16 PM</u>
(B) First Initial Flow <u>115</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>7:47 PM</u>
(C) First Final Flow <u>273</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>9:37 PM</u>
(D) Initial Shut-In <u>1319</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>1:37 AM</u>
(E) Second Initial Flow <u>284</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>4:13 AM</u>
(F) Second Final Flow <u>526</u>	<input checked="" type="checkbox"/> Mileage <u>152 R.T.</u> <u>235.60</u>	Comments
(G) Final Shut-In <u>1288</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2114</u>	<input type="checkbox"/> Straddle	
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Ruined Shale Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Extra Copies
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility	Total <u>1810.60</u>
	Sub-Total <u>1810.60</u>	MP/DST Disc't

Approved By \_\_\_\_\_ Our Representative Bud Q. E.

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 61040

Well Name & No. Krug "A" #1-8 Test No. 4 Date 12-1-14  
 Company Murfin Drilg. Co., Inc. Elevation 3203 KB 3192 GL  
 Address 250 N. Water, STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Kent Matson Rig Murfin #20  
 Location: Sec. 8 Twp. 15 Rge. 38W Co. Cheyenne State KS

Interval Tested 4242 - 4300 Zone Tested LKC "G1"  
 Anchor Length 58' Drill Pipe Run 4049 Mud Wt. 9.5  
 Top Packer Depth 4237 Drill Collars Run 183.06 Vis 70  
 Bottom Packer Depth 4242 Wt. Pipe Run — WL 7.6  
 Total Depth 4300 Chlorides 900 ppm System LCM 2  
 Blow Description IF- Opened w/ surface blow. built to B.o.B in 35 sec.  
ISI- No Return  
FF- Blow built to B.o.B in 35 sec.  
FSI- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>2871</u>	<u>MW</u>			<u>86%</u>	<u>14%</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 2871 BHT 149 Gravity \_\_\_\_\_ API RW .436 @ 20 ° F Chlorides 61000 ppm  
 (A) Initial Hydrostatic 2154  Test 1250 T-On Location 3:43 PM  
 (B) First Initial Flow 778  Jars 250 T-Started 4:12 PM  
 (C) First Final Flow 919  Safety Joint 75 T-Open 6:47 PM  
 (D) Initial Shut-In 1430  Circ Sub \_\_\_\_\_ T-Pulled 10:02 PM  
 (E) Second Initial Flow 836  Hourly Standby \_\_\_\_\_ T-Out 1:08 AM  
 (F) Second Final Flow 1270  Mileage 152 RT. 235.60 Comments \_\_\_\_\_  
 (G) Final Shut-In 1429  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2134  Straddle \_\_\_\_\_  
 Shale Packer X1 250  Ruined Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 0  
 Day Standby \_\_\_\_\_ Total 2060.60  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 2060.60

Approved By \_\_\_\_\_ Our Representative Bader Olt  
 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. 61041

Well Name & No. Krug "A" #1-8 Test No. 5 Date 12-3-14  
 Company Murfin Drilg. Co., Inc. Elevation 3203 KB 3192 GL  
 Address 250 N. Water. STE 300 Wichita, KS 67202  
 Co. Rep / Geo. Kent Matson Rig Murfin #20  
 Location: Sec. 8 Twp. 1S Rge. 38w Co. Cheyenne State KS

Interval Tested 4535-4580 Zone Tested Pawnee  
 Anchor Length 45 Drill Pipe Run 4334 Mud Wt. 9.3  
 Top Packer Depth 4530 Drill Collars Run 183.06 Vis 58  
 Bottom Packer Depth 4535 Wt. Pipe Run — WL 7.2  
 Total Depth 4580 Chlorides 800 ppm System LCM 3

Blow Description IF - Opened w/ surface blow, built to 3/4"  
ISI - No Return  
FF - No Blow  
FSI - 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 139 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 2331  Test 1250 T-On Location 8:26 AM  
 (B) First Initial Flow 21  Jars 250 T-Started 8:58 AM  
 (C) First Final Flow 23  Safety Joint 75 T-Open 11:41 AM  
 (D) Initial Shut-In 39  Circ Sub \_\_\_\_\_ T-Pulled 2:41 PM  
 (E) Second Initial Flow 24  Hourly Standby \_\_\_\_\_ T-Out 4:50 PM  
 (F) Second Final Flow 25  Mileage 152 R.T. 235.60 Comments Picked up tool  
 (G) Final Shut-In 38  Sampler \_\_\_\_\_ 235.60 @ 8:15 PM on  
 (H) Final Hydrostatic 2312  Straddle \_\_\_\_\_ 12-4-14.

Ruined Shale Packer X1 350  
 Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby X1 d 7.25h  
 Accessibility \_\_\_\_\_  
 Sub Total 2296.20  
 Sub Total 241.67  
 Total 2537.87  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Bruce Oitz

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acct  
Prod-MG



# INVOICE

PO Box 93999  
Southlake, TX 76092

Invoice Number: 147379  
Invoice Date: Nov 23, 2014  
Page: 1

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

Federal Tax I.D.#: 20-8651475

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	64360	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Nov 23, 2014	12/23/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Krug A #1-8		
225.00	CEMENT MATERIALS	Class A Common	17.90	4,027.50
635.00	CEMENT MATERIALS	Chloride	1.10	698.50
236.25	CEMENT SERVICE	Cubic Feet Charge	2.48	585.90
1,034.54	CEMENT SERVICE	Ton Mileage Charge	2.75	2,844.99
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
95.00	CEMENT SERVICE	Pump Truck Mileage	7.70	731.50
1.00	CEMENT SERVICE	Manifold Head Rental	275.00	275.00
95.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	418.00
1.00	CEMENT SERVICE	Waiting on Location	440.00	440.00
1.00	CEMENT SUPERVISOR	LaRene Wentz		
1.00	EQUIPMENT OPERATOR	Wayne McGhghy		
1.00	OPERATOR ASSISTANT	Shawn Tatro		

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

\$ 4,036.78

ONLY IF PAID ON OR BEFORE  
Dec 23, 2014

Subtotal	11,533.64
Sales Tax	385.17
Total Invoice Amount	11,918.81
Payment/Credit Applied	
<b>TOTAL</b>	<b>11,918.81</b>

OK JR

# ALLIED OIL & GAS SERVICES, LLC 064360

Federal Tax I.D. # 20-8651476

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

SERVICE POINT:  
Sakley, KS

DATE <u>1/23/14</u>	SEC. <u>8</u>	TWP. <u>1</u>	RANGE <u>34</u>	CALLED OUT	ON LOCATION <u>2:30 pm</u>	JOB START <u>4:00 pm</u>	JOB FINISH <u>8:00 pm</u>
LEASE <u>Krug "A"</u>	WELL # <u>1-8</u>	LOCATION <u>Brockman S to DD 362</u>			COUNTY <u>Cheyenne</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one) <u>NEW</u>				<u>Armed curves, sticks</u>			

CONTRACTOR McFarlin 20 OWNER Same

TYPE OF JOB Surface

HOLE SIZE 12 1/4 T.D. 225' CEMENT AMOUNT ORDERED 225 stks com 3% CC

CASING SIZE 8 7/8 DEPTH 225'

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM COMMON 225 st @ 17.20 4027.50

MEAS. LINE SHOE JOINT POZMIX @

CEMENT LEFT IN CSG. 15' GEL @

PERFS. CHLORIDE 635# @ 1.10 698.50

DISPLACEMENT 13.49 bbl ASC @

EQUIPMENT Material total @ 4,726.00

PUMP TRUCK CEMENTER Les Rame E. Waufler (1657.10 / 35%)

# 431 HELPER Wayne McGhly

BULK TRUCK DRIVER Oscar Mascorro (TWD)

# 818/287 DRIVER Shawn Tatro

BULK TRUCK # HANDLING 236.25 st @ 2.45 585.90

MILEAGE 10.87 km X 95 X 2.95 2875.01

REMARKS: TOTAL \_\_\_\_\_

Mix 225 stks cement  
Displace with water  
Cement did circulate  
1050 to pit

### SERVICE

DEPTH OF JOB 225'

PUMP TRUCK CHARGE 1512.25

EXTRA FOOTAGE @

MILEAGE MHW 95 @ 7.70 736.50

MANIFOLD head @ 299.00

MHW 95 @ 4.90 471.00

Waiting time 1 hr @ 1 490.00

(2382.68 / 35%) TOTAL 6,801.00

### PLUG & FLOAT EQUIPMENT

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TOTAL \_\_\_\_\_

CHARGE TO: Marlin

STREET \_\_\_\_\_

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

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 Brett Anderson

SIGNATURE Brett Anderson

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

TOTAL CHARGES 11,533.66

DISCOUNT 4,036.78 (35%) IF PAID IN 30 DAYS

7,496.88 Net.



acct.



# INVOICE

PO Box 93999  
Southlake, TX 76092

Invoice Number: 147509  
Invoice Date: Dec 5, 2014  
Page: 1

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

Federal Tax I.D.#: 20-8651475

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	64832	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-03	Oakley	Dec 5, 2014	1/4/15

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Krug A #1-8		
255.00	CEMENT MATERIALS	Light Weight	18.92	4,824.60
64.00	CEMENT MATERIALS	Flo Seal	2.97	190.08
273.87	CEMENT SERVICE	Cubic Feet Charge	2.48	679.20
1,144.00	CEMENT SERVICE	Ton Mileage Charge	2.75	3,146.00
1.00	CEMENT SERVICE	Plug to Abandon	2,600.47	2,600.47
100.00	CEMENT SERVICE	Pump Truck Mileage	7.70	770.00
100.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	440.00
1.00	EQUIPMENT SALES	8-5/8 Wooden Plug	110.00	110.00
1.00	CEMENT SUPERVISOR	Paul Beaver		
1.00	EQUIPMENT OPERATOR	Tyler Flipse		

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

\$ 4,466.12 *3/5/15*

ONLY IF PAID ON OR BEFORE  
Jan 4, 2015

Subtotal	12,760.35
Sales Tax	1,039.97
Total Invoice Amount	13,800.32
Payment/Credit Applied	
<b>TOTAL</b>	<b>13,800.32</b>

*OK JR*

*4466.12*  
*9334.20*

# ALLIED OIL & GAS SERVICES, LLC 064832

Federal Tax I.D. # 20-8651475

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

SERVICE POINT: Oakley KS

DATE <u>12-5-14</u>	SEC. <u>8</u>	TWP. <u>1</u>	RANGE <u>38</u>	CALLED OUT	ON LOCATION <u>1:00 a.m.</u>	JOB START <u>3:00 p.m.</u>	JOB FINISH <u>4:00 p.m.</u>
LEASE <u>Living A"</u>	WELL# <u>1-8</u>	LOCATION <u>Blind City N to Rd DD</u>	COUNTY <u>Cheyenne</u>	STATE <u>KS</u>			
OLD OR <u>NEW</u> (Circle one)			<u>4 W N into</u>				

CONTRACTOR <u>Morfin 20</u>	OWNER <u>Same</u>
TYPE OF JOB <u>PTA</u>	
HOLE SIZE <u>7 7/8</u>	T.D. <u>4750'</u>
CASING SIZE	DEPTH
TUBING SIZE	DEPTH
DRILL PIPE <u>4 1/2</u>	DEPTH <u>3189'</u>
TOOL	DEPTH
PRES. MAX	MINIMUM
MEAS. LINE	SHOE JOINT
CEMENT LEFT IN CSG.	
PERFS.	
DISPLACEMENT <u>18 1/2 plug 5 bbl H<sub>2</sub>O 33 bbl mud</u>	
<u>17 1/2 plug 5 bbl H<sub>2</sub>O 30 1/4 bbl mud</u>	
<u>17 1/2 plug 5 bbl H<sub>2</sub>O 30 1/4 bbl mud</u>	
EQUIPMENT	
PUMP TRUCK # <u>120</u>	CEMENTER <u>Paul Beaver</u>
BULK TRUCK # <u>870/241</u>	HELPER <u>Tyler Flipse / Juan (two)</u>
BULK TRUCK #	DRIVER <u>Juan (two)</u>
	DRIVER

CEMENT	
AMOUNT ORDERED <u>255 sks 60/40</u>	
<u>4 1/2 gel 1/4 # Flo-seal</u>	
COMMON	@
POZMIX	@
GEL	@
CHLORIDE	@
ASC	@
<u>Line (60/40/4) 255 sks @ 18.92</u>	<u>4824.60</u>
<u>Flo-seal 64 # @ 2.97</u>	<u>190.08</u>
<u>Material total</u>	<u>5,014.68</u>
<u>(1785.74 / 35%)</u>	
HANDLING <u>273.87 @ 2.98</u>	<u>679.20</u>
MILEAGE <u>11.44 hrs @ 100 mi x 2.75</u>	<u>3146.00</u>
TOTAL	

REMARKS:  
mix 50 sks @ 3189', Displace w/ mud  
mix 100 sks @ 2342', Displace w/ mud  
mix 50 sks @ 275'  
mix 10 sks @ 40' w/ plug  
mix 30 sks in RH  
mix 15 sks in MH

*Thank you!  
Paul Hrew*

CHARGE TO: Morfin Drlg  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

DEPTH OF JOB	<u>3189'</u>
PUMP TRUCK CHARGE	<u>2600.47</u>
EXTRA FOOTAGE	@
MILEAGE MLW <u>100</u>	@ <u>7.70</u> <u>770.00</u>
MANIFOLD	@
MLW <u>100</u>	@ <u>4.40</u> <u>440.00</u>
TOTAL	<u>16356.7</u>

**PLUG & FLOAT EQUIPMENT**

<u>2 5/8 wooden plug</u>	@	<u>110.00</u>
	@	
	@	
	@	
	@	
TOTAL		<u>110.00</u>

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 Aleg CONDREU  
 SIGNATURE Aleg Condreu

SALES TAX (if Any) \_\_\_\_\_  
 TOTAL CHARGES 12,760.35  
 DISCOUNT 4,466.12 (35%) IF PAID IN 30 DAYS  
8,294.23 Net.

Krug 'A' #1-8  
 Daily Drilling Report  
 Page Two

- 12/2/14 Depth 4328'. Cut 83'. DT: None. CT: 17¾ hrs. Dev.: None. **DST #4 4242-4300(LKC G):** 15-60-30-90. IF: opened w/surf blw, built to BOB in 35sec. FF: blw built to BOB in 35secs. Rec.: 2871'MW (86%W, 14%M). HP: 255-2135. FP: 778/919, 836/1270. SIP: 1431-1429. BHT: 149°. RW .436 @ 20° Chr. 61000PPM.
- 12/3/14 Depth 4580'. Cut 252'. DT: None. CT: 6½ hrs. Dev.: None. **Pawnee:** ls pp por, med inter xln & inter oolitic por, Fr SFO, slit odor. **DST #5 4535-4580 (Paw):**
- 12/4/14 Depth 4740'. Cut 160'. DT: None. CT: 16hrs. Dev.: None. **DST #5 4535-4580 (Paw):** 30-60-30-60. IF: opened w/surf blw, built to ¾". FF: no blw. Rec.: 5'M. HP: 2331-2312. FP: 21/23, 24/25. SIP: 40-39. BHT: 140°.
- 12/5/14 RTD 4750'. Cut 10'. DT: None. CT: 23¼ hrs. Dev.: None. TD @ 7:45AM 12/4. Pioneer logged 2:00PM – 7:30PM 12/4. LTD: 4750'. Allied plugged hole (1:15AM – 4:15AM 12/5) as follows using 60/40Poz, 4%Gel, ¼#Flo seal, 50sxs @ 3189', 100sxs @ 2342', 50sxs @ 275', 10sxs @ 40', 30sxs RH, 15sxs MH. Orders: Pat Staab, KCC Hays. RR @ 8:15AM 12/5/14. FINAL REPORT

MDCI Krug 'A' #1-8 1060' FSL 1900' FWL Sec. 8-T1S-R38W 3203' KB							MDCI Delay #1-21 1510' FSL 330' FEL Sec. 21-T1S-R38W 3299' KB		
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref	Log Top	Datum	
Anhydrite	3175	+28	-28	3180	+23	-33	3143	+56	
B/Anhydrite	3208	-5	+18	3215	-12	-35	3176	+23	
Neva	3611	-408	-16	3611	-408	-16	3591	-392	
Red Eagle	3679	-476	-16	3677	-474	-14	3659	-460	
Foraker	3733	-530	-18	3733	-530	-18	3711	-512	
Topeka	3952	-749	-18	3952	-749	-18	3930	-731	
Oread	4091	-889	-18	4092	-889	-18	4070	-871	
Lansing	4161	-958	-16	4169	-966	-24	4141	-942	
Stark	4385	-1182	-14	4390	-1187	-19	4367	-1168	
BKC	4442	-1239	-13	4444	-1241	-15	4425	-1226	
Pawnee	4561	-1358	-11	4572	-1369	-22	4546	-1347	
Cherokee	4646	-1443	-8	4659	-1456	-21	4634	-1435	
Mississippi							DNR		
RTD	4750	-1547					4750	-1551	
LTD				4752	-1549		4753	-1554	