



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1236750
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: _____

1236750

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

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <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> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Waters 1-32
Doc ID	1236750

All Electric Logs Run

DIL
DUCP
MEL
BHCS



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

Well Name: Waters #1-32
Location: 800' FNL, 1410' FWL, Sec 32-T01S-R38W, Cheyenne County, Kansas
License Number: API: 15-023-21413 Region: Wildcat
Spud Date: 11/07/2014 Drilling Completed: 11/19/2014
Surface Coordinates: Lat: 39.9284559
Long: -101.6107506
Bottom Hole Vertical hole.
Coordinates:
Ground Elevation (ft): 3173' K.B. Elevation (ft): 3184'
Logged Interval (ft): 3480' To: RTD Total Depth (ft): 4720'
Formation: Cherokee at RTD.
Type of Drilling Fluid: Chemical.

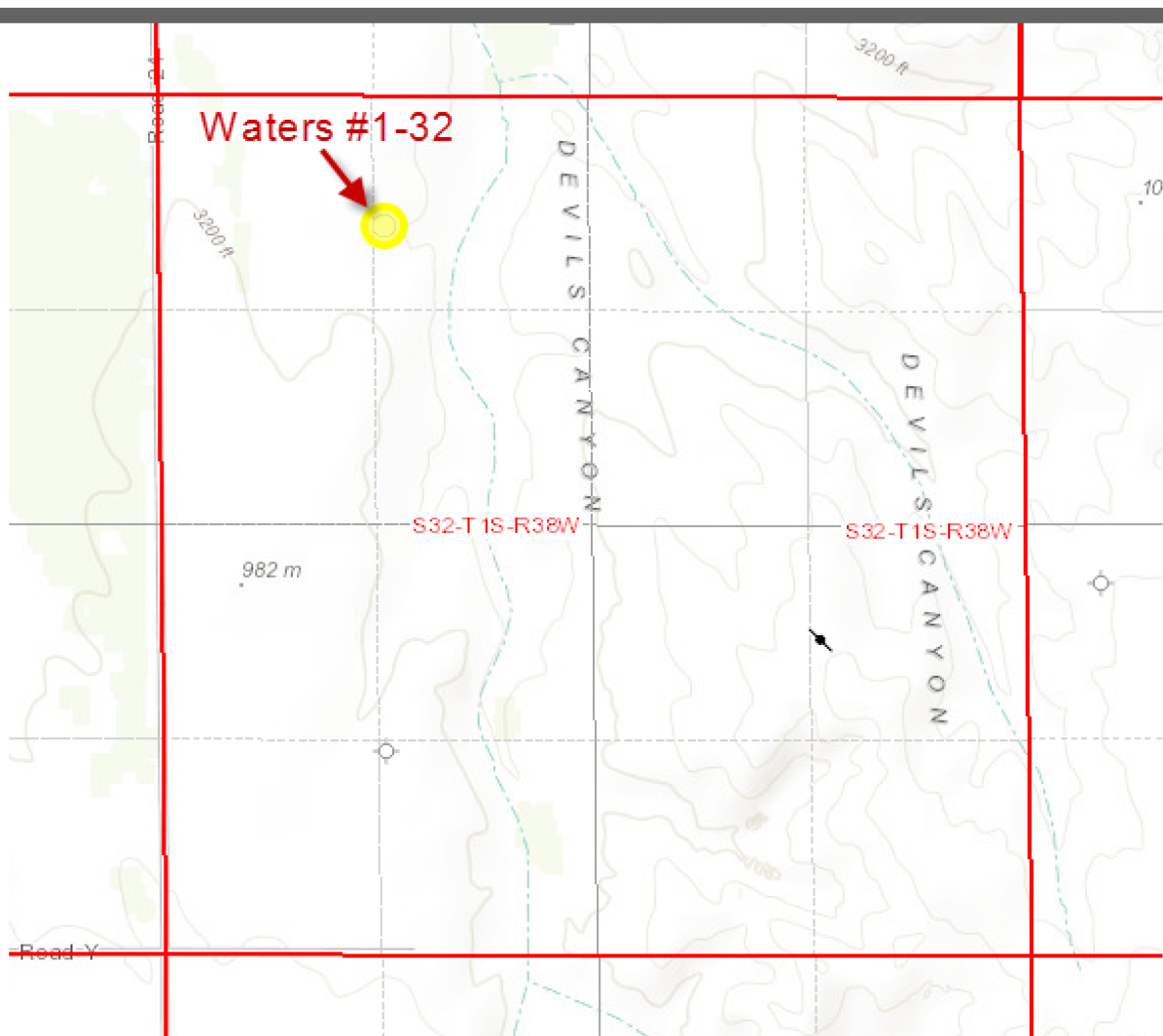
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

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 - Royal Fisher, 785-639-2835.

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






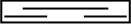



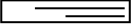




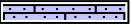











RTD= 4720', -1536'.

LTD= 4726', -1542'.

FORMATION TOPS

FORMATION	SAMPLE TOPS		LOG TOPS	
	Depth	Datum	Depth	Datum
Stone Corral (Anhydrite)	3124'	+60	3124'	+60
Neva	3583'	-399	3580'	-396
Red Eagle	3650'	-466	3650'	-466
Foraker	3703'	-519	3704'	-520
Topeka	3931'	-747	3931'	-747
Oread	4067'	-883	4066'	-882
Lansing	4136'	-952	4138'	-954
Stark	4362'	-1178	4364'	-1180
Base/KC	4422'	-1238	4426'	-1242
Pawnee	4548'	-1364	4552'	-1368
Cherokee	4634'	-1450	4636'	-1452
RTD	4720'	-1536		
LTD			4726'	-1542

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

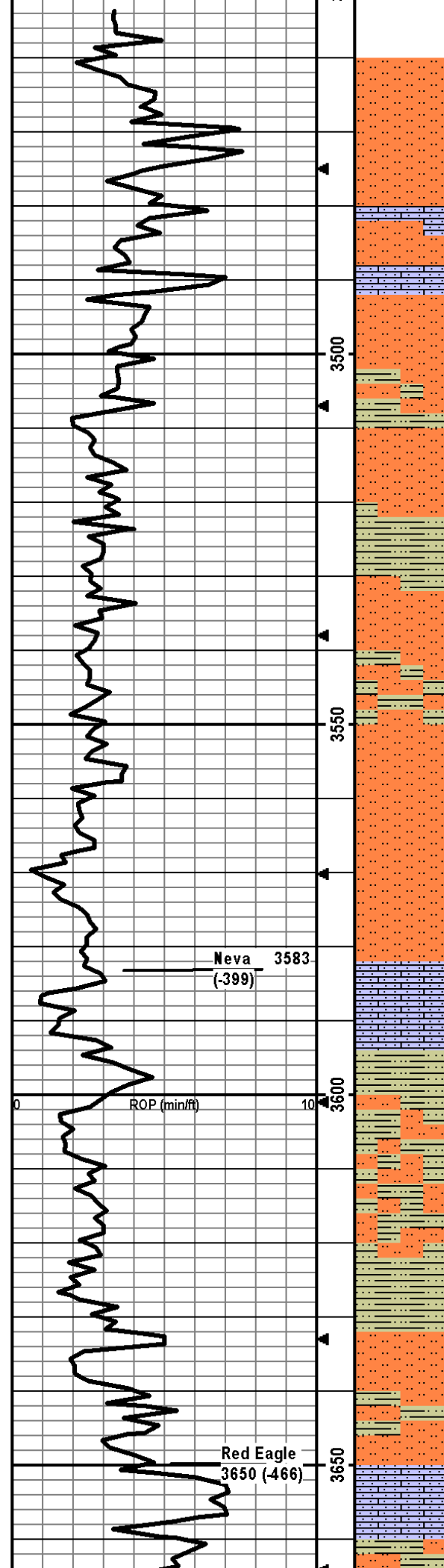


- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Sity

STRINGER

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

rop ROP (min/ft)		Depth	Lithology	CFS Point	Oil Shows	Geological Descriptions	Remarks
0	ROP (min/ft)	10				<p>Morning Report Depth/Activity</p> <p>11/07/2014, Spud. 11/08, drill @ 570'. 11/09, drill @ 2370'. 11/10, drill @ 3412'. 11/11, drill @ 3725'. 11/12, DST #1 @ 3812'. 11/13, DST #2 @ 4130'. 11/14, DST #3 @ 4220'. 11/15, DST #4 @ 4260'. 11/16, DST #5 @ 4350'. 11/17, drill @ 4545'. 11/18, drill @ 4620'; TD @ 4720'. 11/19, Straddle DST #7 @ 4720'.</p>	<p>Morgan Mud Check #0 @ Surface 11/07/14; drilling recommendations.</p> <p>Morgan Mud Check #1 @ 748' 11/08/14; cont. drilling recommendations.</p> <p>Morgan Mud Check #2 @ 2663' 11/09/14; cont. drilling recommendations.</p>
0	ROP (min/ft)	10					
		3400				<p>Anhydrite: Top @ 3124', Bottom @ 3156' (Based on drill time).</p>	<p>Morgan Mud Check #3 @ 3437' 11/10/14 11:30am wt vis pH chl 8.6 78 11 700 Filt LCM 6.8 6</p>
		3450				<p>ROP data begins @ 3451'.</p> <p>Drill cutting samples at 10' intervals start at 3480'.</p> <p>Formation tops and lithology have been</p>	



adjusted to correlate to the electric log.

Slststn: dk red brn/tan, vry arg, slt carb, hard, friable, no odor, ns.

Slststn: same as above, no odor, ns.

Slststn as above. LS: crm/red brn, micro-fn xtal, vry silty/sndy, vry arg, no vis por, no odor, ns.

Slststn/LS mix as above, no odor, ns.

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

Slststn: med-dk red brn, vry arg, slt carb, hard, friable, no odor, ns.

SH: dk red brn, vry silty, slt carb, firm, fissile, no odor, ns.

Slststn: med-dk red brn, vry arg, slt carb, soft-firm, no odor, ns.

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

Slststn: as above, no odor, ns.

Slststn: crm/lt gry/lt brn, arg, slty carb, med-hard, friable, no odor ns.

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

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

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

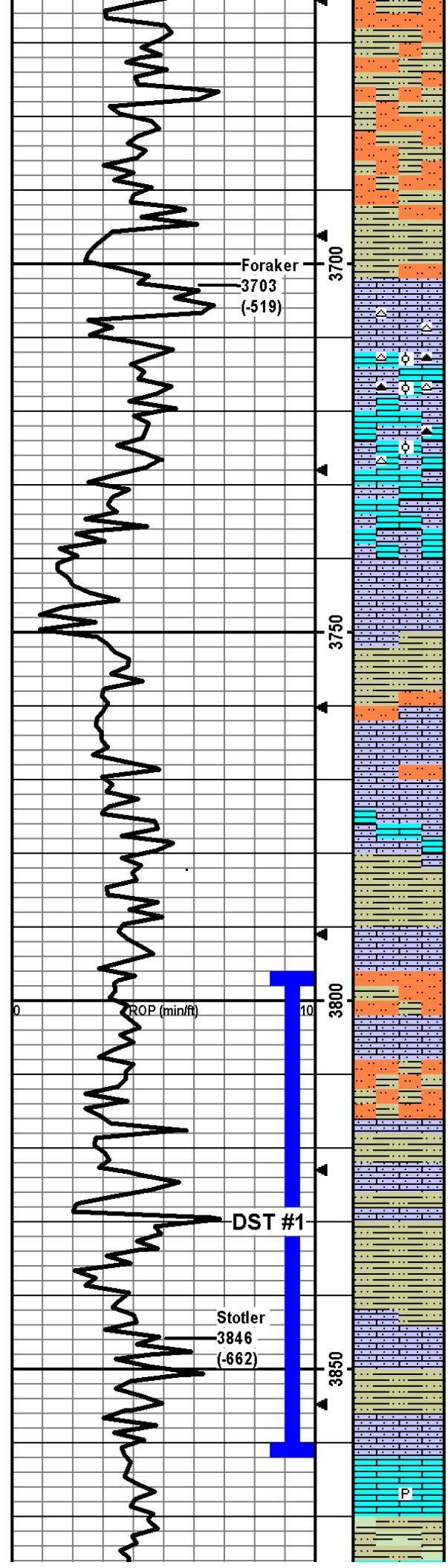
SH: dk red brn, vry silty, slt carb, firm, no odor, ns.

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

Slststn as above w/some SH: red brn, vry silty, slt carb; no odor, ns.

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

SH: dk red brn/dk maroon, vry silty/sndy, slt carb, firm: Slststn:



med-dk red brn/med-dk maroon, vry arg, slt carb, firm, friable, no odor, ns.

SH/Sltstn as above, no odor, ns.

SH: as above w/some med-dk gry, vry silty, firm; Sltstn as above, no odor, ns.

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

LS: crm/lt brn, micro-fn xtal, foss frags, vry silty/sndy, some maroon-brn chert, some ppt in-xtal/frac por, no odor, ns.

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

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

LS: crm/lt brn/lt gry-brn, micro-fn xtal w/some med-crs 2ndry, some vry silty/sndy, some chalky, some foss frags, some ppt in-xtal/frac por, no odor, ns.

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

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

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

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

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

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

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

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

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

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

LS: lt brn/lt gry-brn, micro-med xtal, foss frags, vry silty/sndy, min ppt in-xtal/frac por, no odor, ns. SH as above.

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

LS: crm/lt gry, micro-fn xtal, some vry silty/sndy, min foss frags, appx 25% of smpl w/sfo, dk brn/blk tarry, dul yel flor/cut, ppt in-xtal por, no odor, sfo.

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

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

LS: crm/lt brn, micro-med xtal, foss frags, min pyritic, 2 pcs w/ppt-fn in-xtal por w/s of blk tar oil, no odor, no flor/slt dul yel cut, ssfo.

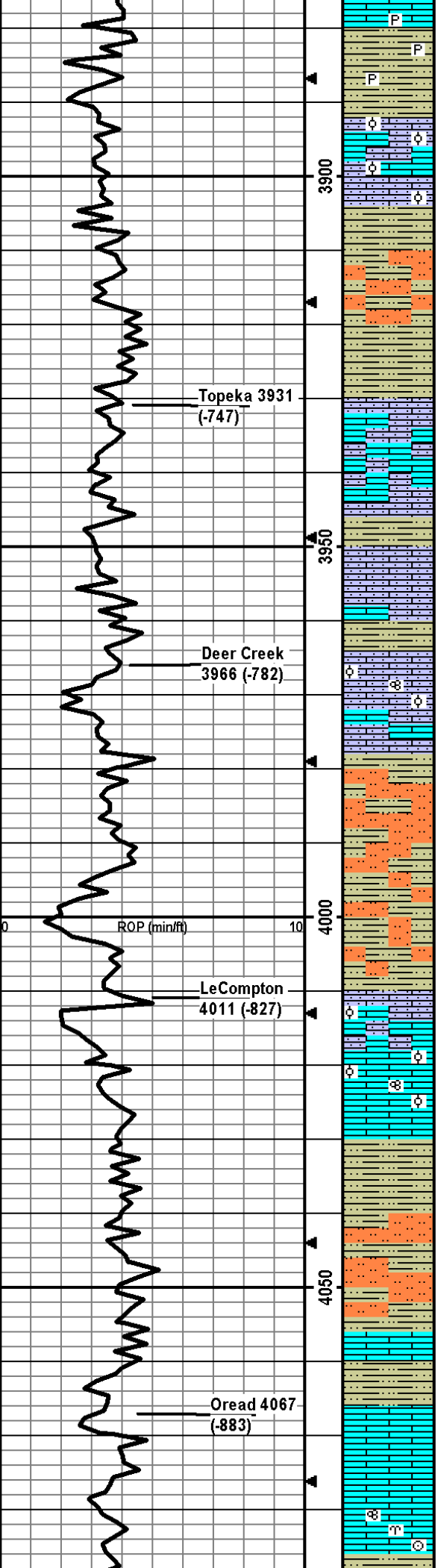
SH: lt-dk gry/gry-brn/brn/lt aqua-green, some silty, some carb, firm, fissile, no odor, ns.

CFS @ 3712'
30"60"

Morgan Mud Check #4 @
3809' 11/11/14 11:45am
wt vis pH chl
9.2 58 9.0 500
Filt LCM
8.0 6

DST1: 3795-3861
Stotler
30/60/30/60
1st) weak surface blow started at 15 min, no BB.
2nd) no blow, no BB.
IFP 18-21#
ISIP 49#
FFP 20-22#
FSIP 35#
HP 1976-1853#
Recvd: 5' Mud.

CFS @ 3861'
30"60"



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

SH: med-dk gry/brn/lt aqua-green, some vry silty, slt carb, pyritic, firm-hard, fissile, no odor, ns.

LS: crm/lt brn, 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 flor/cut, no odor, sfo.

LS: as above w/cont sfo.

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

SltStn/SH mix: lt-med gry/brn, vry arg, vry carb, firm-hard, some friable, 8 pcs w/blk tarry oil, no odor, no flor, slt dul yel flor when crushed, sfo. Some LS w/sfo from above.

SH: lt-dk gry/brn/maroon/lt aqua-green, some vry silty, carb, firm, fissile.

LS: crm/lt gry/lt brn, micro-med xtal, foss frags, some vry silty/sndy, some vry chalky, min ppt in-xtal por, 6 pcs w/s blk tar oil, no dul yel flor/cut, no odor, ns.

LS: same as above w/few pcs w/blk tar oil, no odor, ns.

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

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

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

LS: wht/crm/lt brn, micro-med xtal, foss frags/fusln/ool, some silty/sndy, some chalky, some ppt-fn in-xtal por, no odor, ns.

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

Sltstn/SH as above, no odor, ns.

SH/Sltstn: dk red brn, SH is vry silty/sndy, Sltstn is vry arg, carb, some friable, no odor, ns.

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

LS: same as above w/some fusln, no odor ns.

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

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

LS: wht/crm, micro-fn xtal, min foss frags, some chalky, 8 pcs w/ppt-fn in-xtal por w/sfo, some dk brn mostly blk tar, dul yel flor/slt yel cut, no odor, sfo.

LS: crm/lt gry-brn, micro-fn xtal, min foss frags, some chalky, 32 pcs w/ppt-fn in-xtal por w/sfo, blk tarry oil, some dul yel flor w/cut, no odor, ns.

LS: crm/lt gry-brn, micro-fn xtal, some foss frags/fusln/bryzn/crin, 8 pcs w/ppt-fn in-xtal por w/sfo, blk tar oil, dul yel flor/cut, slt crush odor, sfo. Min SH: lt-med gry, silty, slt carb, soft-firm.

CFS @ 4065'
 30"60"

CFS @ 4076'
 30"60"

9.1 50 10.5 500
Filt LCM
6.8 6

DST2: 4094-4130
Lansing A Zone
3060/3060
1st) surface blow built to 1 3/4", no BB.
2nd) no blow, no BB.
IFP 28-30#
ISIP 51#
FFP 30-31#
FSIP 42#
HP 2078-2010#
Recvd: 10" Mud.

DST3: 4160-4220
Lansing D Zone
3060/3060
1st) surface blow built to 1 1/4", no BB.
2nd) very faint surface blow, no BB.
IFP 34-50#
ISIP 752#
FFP 32-55#
FSIP 291#
HP 2141-2107#
Recvd: 10" Oil Spotted Mud.

Morgan Mud Check #7 @
4220' 11/14/14 11:45am
wt vis pH chl
9.4 56 10.5 600
Filt LCM
7.6 4

CFS @ 4200'
30"60"

CFS @ 4220'
30"60"

DST4: 4202-4260
Lansing G Zone
3060/3060
1st) surface blow built to 3/4", no BB.
2nd) no blow, no BB.
IFP 40-71#
ISIP 553#
FFP 49-73#
FSIP 128#
HP 2208-2152#
Recvd: 6" Oil Spotted Mud.

CFS @ 4260'
30"60"

Morgan Mud Check #8 @
4260' 11/15/14 11:45am
wt vis pH chl
9.5 85 10.5 500
Filt LCM
7.6 6

CFS @ 4290'
30"60"

LS: crm/lt gry brn, micro-fn xtal, min foss frags, 14 pcs w/ppt in-xtal por w/sfo, some dk brn mostly blk tar oil, dul yel flor/cut, slt crush odor, sfo.

SH: gry, slt silty, slt carb, firm, fissile.

Sltstn: lt-med gry/lt-dk brn, arg, carb, slt crush odor, 3 pcs w/ppt in-clastic por w/sfo, dul yel flor/cut, slt crush odor, ssfo. SH: dk gry, silty, carb, firm.

Sltstn: same as above, no odor, ns.

Some LS: crm/brn, micro-fn xtal, min foss frags, 4 pcs w/ppt-fn in-xtal por w/sfo, dk brn fluid oil, yel flor/cut, slt crush odor, sfo.

Sltstn: lt-dk brn, arg, carb, hard, some friable, several pcs w/sfo, dul yel flor/cut.

LS: crm/lt brn, micro-fn xtal, min foss frags, 10 pcs w/mostly ppt some fn-med in-xtal por w/sfo, dk brn/blk, fluid, dul yel flor/cut, slt crush odor, sfo.

SH: lt-med gry, silty, slt carb, firm.

LS: wht/crm/lt brn, micro-fn xtal, min foss frags, some chalky, 7 pcs w/ppt-fn in-xtal por w/sfo, dk brn/blk, dul yel flor/cut, no odor, sfo.

LS: same as above, 6 pcs w/ppt-fn in-xtal por w/sfo, dk brn/blk, dul yel flor/cut, no odor, sfo.

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

LS: crm/lt brn, micro xtal, 2 pcs w/ppt-fn in-xtal por w/sfo, dul yel flor/cut, no odor, ssfo.

SS/Sltstn: lt-med gry/brn/blk mottle, vf-f, sr-wr, friable, carb, 10 pcs w/sfo, no flor w/dul yel cut, no odor, sfo.

SH: red brn/lt-med gry/lt aqua-green/brn, some vry silty/sndy, carb, soft-firm, some fissile, some SS w/cont sfo, no odor, ns.

SH: as above, no odor, ns.

LS: crm/lt gry/lt brn, micro-fn xtal, some chalky, some SH, mostly dense w/5 pcs w/ppt in-xtal por 1 pcs w/ppt-med in-xtal por w/sfo, dul yel flor/cut, no odor, sfo.

SH: dk red brn/med-dk gry, some vry silty/sndy, carb, firm, fissile.

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

LS: wht/crm, micro-fn xtal, min fusln, some chalky, 35 pcs w/fn-crs in-xtal por w/sfo, dk brn fluid, some fo in tray, dul yel flor, gd cup odor, gsfo.

SH: brn/dk red brn/med-dk gry/dk maroon, some vry silty/sndy, carb, firm, fissile, no odor, ns. Some LS w/sfo.

SH as above w/some Sltstn/SS: lt gry, vf-f, pred qtz, sf-wr, arg, carb, no odor, ns.

LS: crm/lt gry-brn, micro-fn xtal, min foss frags, some chalky, 24 pcs w/ppt-med in-xtal por w/sfo, some fluid dk brn some blk tar, dul yel flor/cut, no odor, sfo.

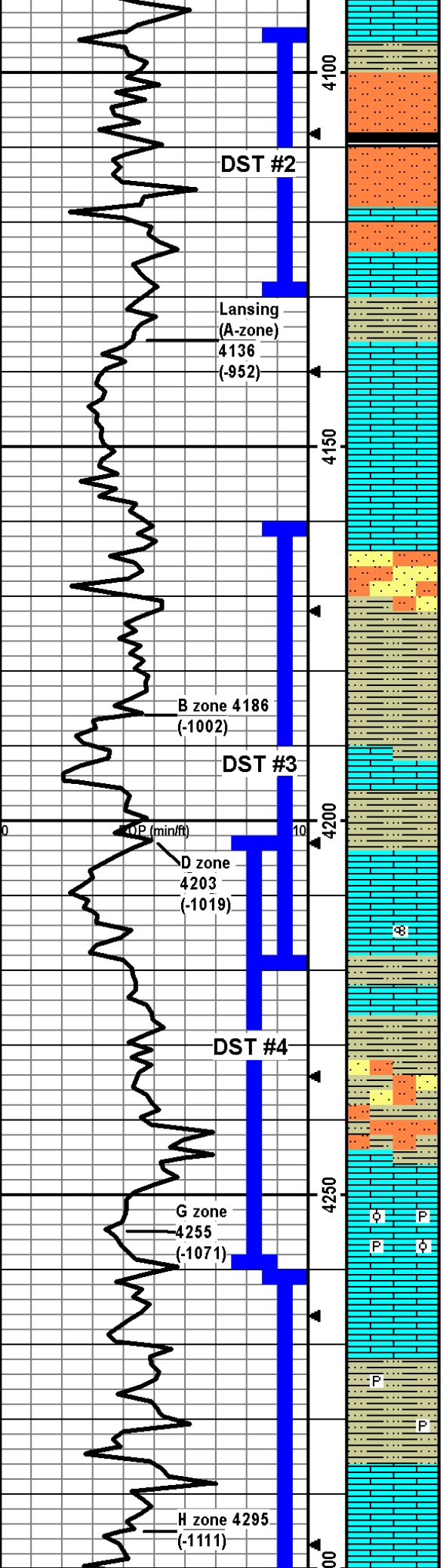
LS: crm/gry-dk gry, micro-fn xtal, min foss frags/some ool pcs, pyritic, some chalky, 16 pcs w/ppt-med in-xtal por w/sfo, some fluid dk brn some blk tar, dul yel flor, no odor, sfo.

LS: crm/gry, micro-fn xtal, min foss frags, some chalky, no odor, ns.

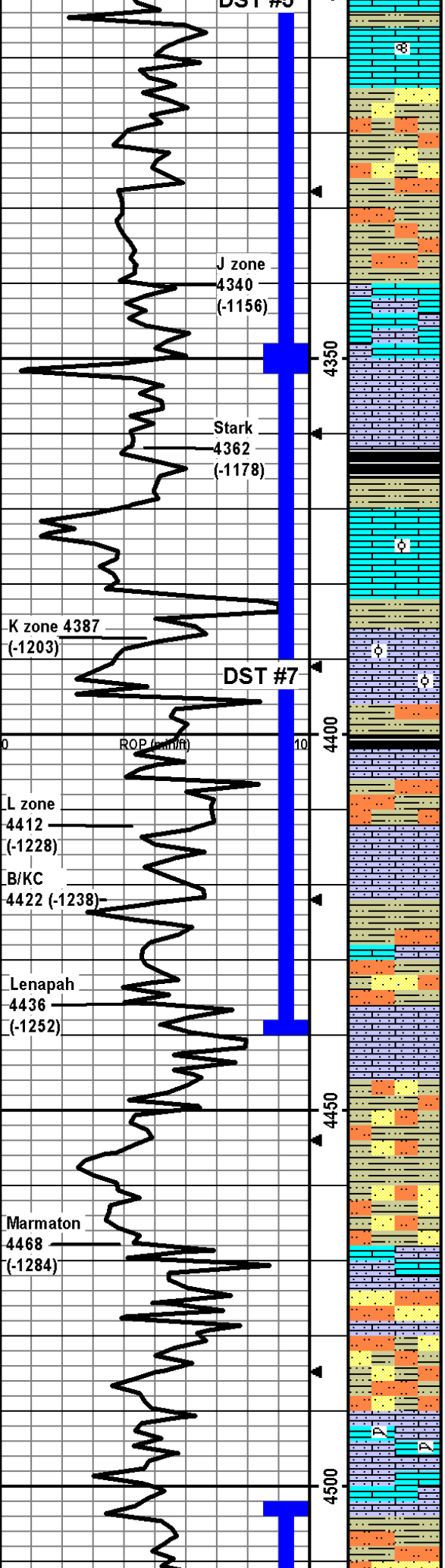
SH: as above w/increase in silt/sand content, some pyrite nod.

LS: crm/lt-dk brn/lt gry, micro-fn xtal, min foss frags/fusln, some sndy, some chalky, 5 pcs w/ppt-med in-xtal por w/sfo, dul yel flor, no odor, sfo.

LS: crm/lt gry, micro-fn xtal, some vry chalky, 25 pcs w/ppt-med in-xtal por w/sfo, some dk brn fluid some blk tar, dul yel flor, slt odor, sfo.



DST #5



LS: wht/crm, micro-fn xtal, few fusln, some vry chalky, 22 pcs w/mostly ppt and min fn-med in-xtal por w/sfo, some dk brn fluid some blk tar, dul yel flor/cut, slt crush odor, sfo. Some SH: dk gry/dk red brn, silty, slt carb, firm, fissile.

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

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

LS: wht/crm/lt gry, micro-fn xtal, foss frags/grainy, some vry chalky, 14 pcs w/ppt-med in-xtal por w/sfo, mostly blk tar oil w/some dk brn fluid, no flor/dul yel cut, no odor, sfo.

LS: wht/crm/lt-med brn, foss frags/some grainy, some vry silty/sndy, 12 pcs w/ppt-med in-xtal por w/sfo, dk brn fluid and blk tar oil, dul yel flor/cut, slt crush odor, sfo.

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

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

LS: wht/crm/lt gry, micro-fn xtal, min foss frags/ool, some chalky, mostly dense w/1 pce w/ppt-fn in-xtal por w/blk tar oil, yel cut, no odor, ssfo.

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

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

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

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

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

SH: red brn/med gry, vry silty, slt carb, soft-firm, some Sltstn/SS: lt gry, arg, vf-f, wr-r, slt carb, friable, no odo, ns.

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

SS/Sltstn: lt gry/lt brn/lt maroon-gry, vf-f, hard, some friable; SH: lt-med gry/dk red brn, vry silty/sndy, carb, firm, no odor, ns.

LS: lt gry/lt brn, micro-med xtal, foss frags, vry sndy, some carb SS, no vis por, no odor, ns.

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

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

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

SS/Sltstn: wht/lt gry/red brn, vf-f, sr-wr, vry arg, slt carb, hard, some friable, no odor, ns. Some sndy LS.

SS/Sltstn: lt gry/brn, vf-f, sr-wr, vry agr, slt carb, firm-hard, some friable; some SH: red brn/maroon/lt-med gry, vry silty, slt carb, firm, no odor, ns.

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

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

CFS @ 4320' 30"60"

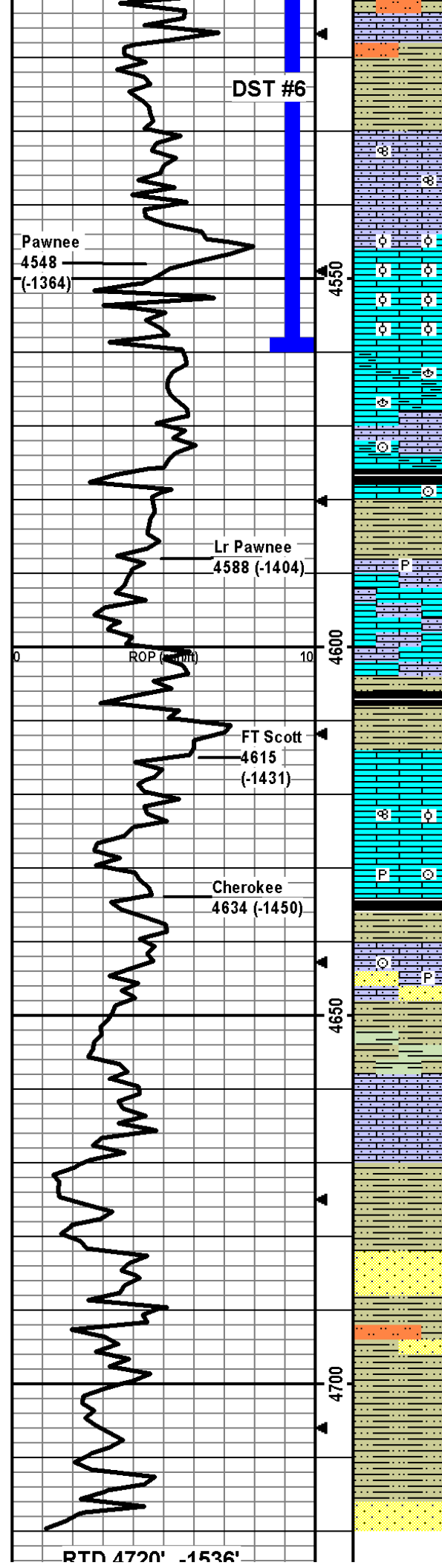
Morgan Mud Check #9 @ 4350' 11/16/14 01:15pm wt vis pH chl 9.4 157 10.5 600 Filt LCM 6.8 6

CFS @ 4350' 30"60"

DST5: 4260-4350 Lansing H thru J Zones 30/60/30/60 1st) surface blow built to 3/4", no BB. 2nd) no blow, no BB. IFP 18-21# ISIP 236# FFP 22-23# FSIP 173# HP 2171-2097# Recvd: 5' Oil Spotted Mud.

DST7: 4356-4446 Lansing K Zone Straddle Test Note: above depths based on E-log, adjusted depths to 4350-4440 based on drill time. 30/60/60/90 1st) surface blow built to 10 3/4", no BB. 2nd) surface blow built to 10", no BB. IFP 22-125# ISIP 1348# FFP 128-212# FSIP 1275# HP 2246-2197# Recvd: 217' WM (15%W), 217' MW (60%W).

DST6: 4502-4560 Pawnee 30/60/30/60



SH/Sltstn: as above, some SS med-dk red brn/gry, vf-f, sr-wr, vry arg, slt carb, hard, some friable, no odor, ns.

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

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

LS: crm, micro-fn xtal, foss frags/fn abund ool pcs, silty/sndy, some chalky, 60+ pcs w/ppt-med in-xtal/in-ool por w/sfo, dk brn fluid, dul yel flor, gd odor, vgsfo.

LS: crm/lt gry, micro-fn xtal, foss frags/abund ool pcs, some chalky, 31 pcs w/ppt-med in-xtal/in-ool por w/sfo, dk brn fluid, dul yel flor, gd odor, vgsfo.

LS: crm/lt gry, micro-fn xtal, some vry silty, firm, brac foss, no odor, ns.

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

SH: lt-dk gry, some silty, carb, firm, fissile.

SH: lt-dk gry/gry-brn, some vry sndy, some vry carb w/LS inclus, firm, no odor, ns. Also LS: crm/lt brn, micro-fn xtal, foss frags, min frac por, no odor, ns.

LS: crm/lt-med brn/lt gry, micro-med xtal, foss frags, some silty/sndy, some chalky, min pyritic, min ppt in-xtal por, 1 pce w/ppt-fn in-xtal por w/blk tar oil, dul yel cut, no odor, ssfo.

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: med-dk gy/blk, slt carb, some silty, firm, fissile.

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

LS: crm/lt brn/lt gry, micro-med xtal, foss frags/min ool/fusln/grainy, some chalky, some ppt-fn in-xtal por, no odor, ns.

SH: gry/red brn/min maroon, some vry silty/sndy, slt carb, firm.

LS: crm/lt-med brn, micro-med xtal, some chalky, min pyritic, foss frags/crin, some frac por, no odor, ns. Some SH: lt-dk gry, silty/sndy, slt carb, soft-firm.

LS: wht/crm/lt brn, micro-med xtal, vry sndy w/qtz, foss frags, min frac por, no odor, ns. Some SS: lt gry, f-m, wr, pred qtz, vry carb, hard, no odor, ns.

SH: med-dk gry/maroon/min lt aqua-green, slt carb, some silty/sndy, firm, no odor, ns.

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

SH: med-dk gry/dlk maroon brn/ br-dk brn/min lt aqua-green, some carb, some silty, no odor, ns.

SS: wht/gry/red brn, f-m, sa-sr, pred qtz, some dk incl, carb, poss some in-part por, hard, slt friable, no odor, ns.

SH: med-dk gry/brn/red brn, vry silty/sndy, carb, firm.

SH: as above; Sltstn/SS, med-dk red brn, vf-m, sr-wr, vry arg, carb, hard, slt friable, no odor, ns.

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

SS: wht/brn/red brn, f-m, sr-wr, pred qtz, some vry arg, some slt glac, carb, no odor, ns.

TD @ 4720'.

1st) surface blow built to 314" then died off to 114", no BB. 2nd) no blow, no BB.
 IFP 14-17#
 ISIP 31#
 FFP 17-19#
 FSIP 27#
 HP 2306-2288#
 Recvd: 5' Mud.

Morgan Mud Check #10 @ 4560' 11/17/14 12:30pm
 wt vis pH chl
 9.4 57 10.5 600
 Filt LCM
 6.8 5

CFS @ 4560'
 30"/60"

CFS @ 4590'
 30"/60"

CFS @ 4610'
 30"/60"

CFS @ 4631'
 30"/60"

Morgan Mud Check #11 @ 4685' 11/18/14 12:10pm
 wt vis pH chl
 9.3 53 10 900
 Filt LCM
 6.8 4

CFS @ 4720'
 30"/60"
 Conducted 10 stand short

RTD 4720', -1538'
LTD 4726', -1542'

50

Conducted 10 stand short
trip then circulated one hour
before TOH for logging.



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.11 @ 21:07:00

End Date: 2014.11.12 @ 05:32:30

Job Ticket #: 60863 DST #: 1

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

Printed: 2014.11.22 @ 12:47:46



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 60863

DST#: 1

ATTN: Kent Matson

Test Start: 2014.11.11 @ 21:07:00

GENERAL INFORMATION:

Formation: **Stotler**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:57:15

Time Test Ended: 05:32:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 54

Interval: 3795.00 ft (KB) To 3861.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 3861.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6753 Outside

Press@RunDepth: 21.87 psig @ 3796.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.11

End Date:

2014.11.12

Last Calib.:

2014.11.12

Start Time: 21:07:05

End Time:

05:32:29

Time On Btm:

2014.11.11 @ 23:57:00

Time Off Btm:

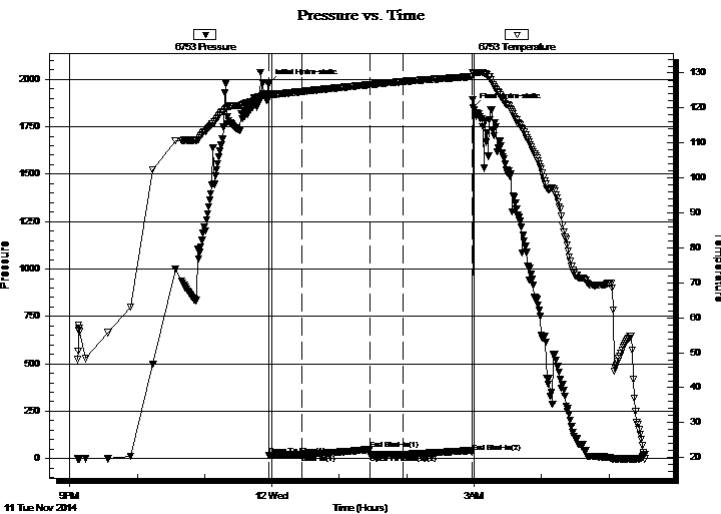
2014.11.12 @ 02:59:00

TEST COMMENT: 30 - IF - Surface blow started 15 min. in at a weak surface blow and stayed there for the rest of the time

60 - ISI - No return

30 - FF - No surface blow

60 - FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1975.48	124.06	Initial Hydro-static
1	17.86	123.47	Open To Flow (1)
30	20.46	124.73	Shut-In(1)
90	48.91	126.65	End Shut-In(1)
91	20.04	126.65	Open To Flow (2)
120	21.87	127.57	Shut-In(2)
182	34.55	128.99	End Shut-In(2)
182	1852.61	130.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud - 100M	0.02

Gas Rates

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



DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

32-1s-38w Cheyenne,KS

Waters #1-32

Job Ticket: 60863

DST#: 1

Test Start: 2014.11.11 @ 21:07:00

GENERAL INFORMATION:

Formation: **Stotler**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:57:15

Time Test Ended: 05:32:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 54

Interval: 3795.00 ft (KB) To 3861.00 ft (KB) (TVD)

Total Depth: 3861.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3184.00 ft (KB)

3173.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8368

Inside

Press@RunDepth: psig @ 3796.00 ft (KB)

Start Date: 2014.11.11

End Date:

2014.11.12

Start Time: 21:07:05

End Time:

05:32:29

Capacity: 8000.00 psig

Last Calib.:

2014.11.12

Time On Btm:

Time Off Btm:

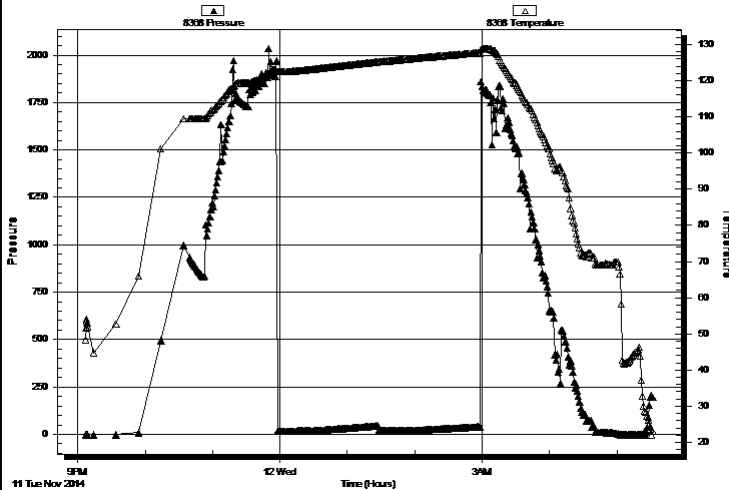
TEST COMMENT: 30 - IF - Surface blow started 15 min. in at a weak surface blow and stayed there for the rest of the time

60 - ISI - No return

30 - FF - No surface blow

60 - FSI - No return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud - 100M	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 60863

DST#: 1

ATTN: Kent Matson

Test Start: 2014.11.11 @ 21:07:00

Tool Information

Drill Pipe:	Length: 3641.00 ft	Diameter: 3.80 inches	Volume: 51.07 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: 155.00 ft	Diameter: 2.25 inches	Volume: 0.76 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 51.83 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 74000.00 lb
Depth to Top Packer:	3795.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	66.00 ft			
Tool Length:	93.00 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			3773.00	
Hydraulic tool	5.00			3778.00	
Jars	5.00			3783.00	
Safety Joint	3.00			3786.00	
Packer	4.00			3790.00	27.00 Bottom Of Top Packer
Packer	5.00			3795.00	
Stubb	1.00			3796.00	
Recorder	0.00	8368	Inside	3796.00	
Recorder	0.00	6753	Outside	3796.00	
Perforations	28.00			3824.00	
Change Over Sub	1.00			3825.00	
Drill Pipe	31.00			3856.00	
Change Over Sub	1.00			3857.00	
Bullnose	4.00			3861.00	66.00 Bottom Packers & Anchor

Total Tool Length: 93.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 60863

DST#: 1

ATTN: Kent Matson

Test Start: 2014.11.11 @ 21:07:00

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:

bbbl

Water Loss: 7.96 in³

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
5.00	Mud - 100M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

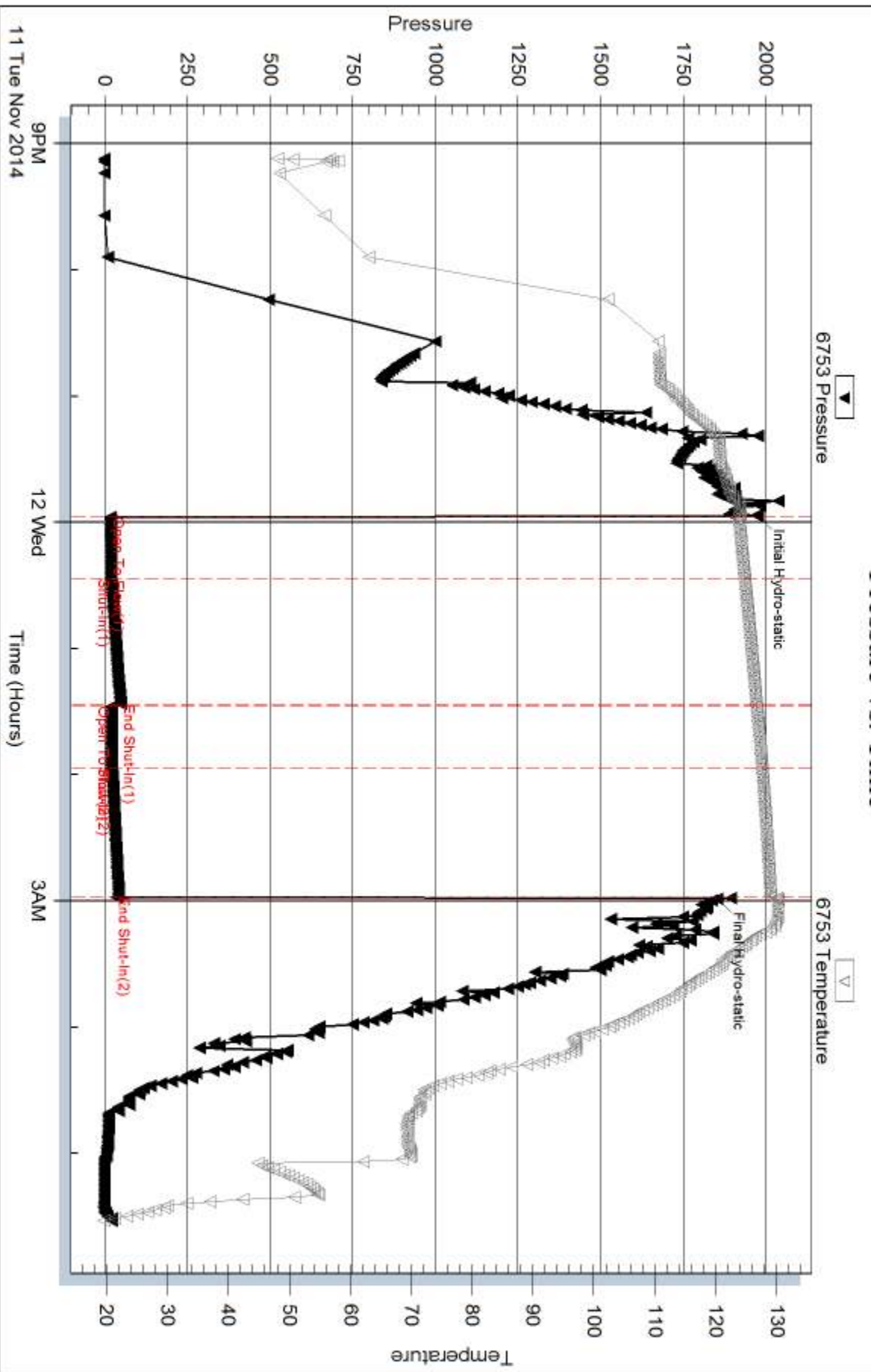
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



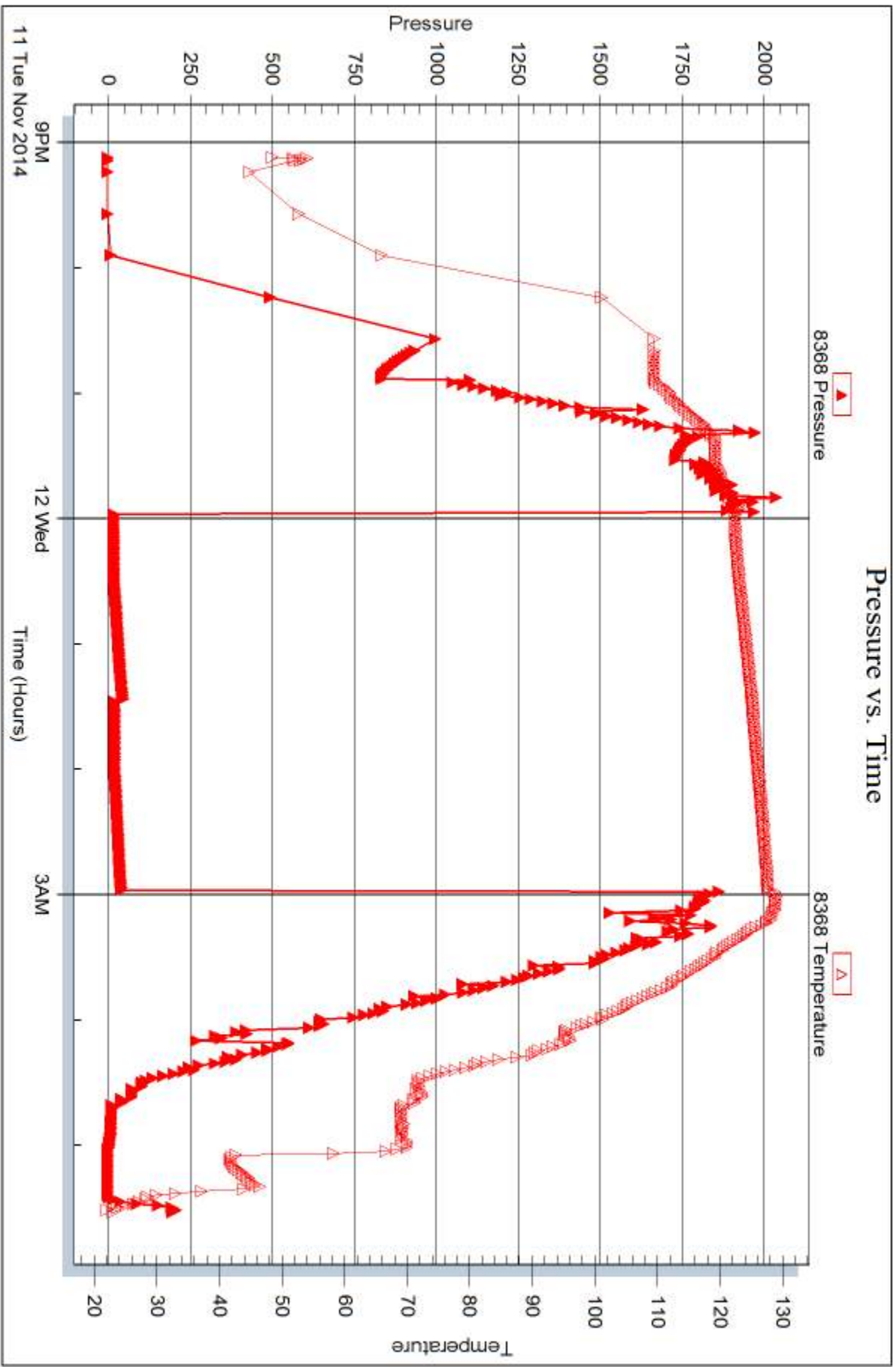
Serial #: 8368

Inside

Murfin Drilling Company, Inc.

Waters #1-32

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 60863

Printed: 2014.11.22 @ 12:47:47



DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.13 @ 22:16:00

End Date: 2014.11.14 @ 06:02:45

Job Ticket #: 61002 DST #: 2

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

Printed: 2014.11.22 @ 12:47:12



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61002

DST#: 2

ATTN: Kent Matson

Test Start: 2014.11.13 @ 22:16:00

GENERAL INFORMATION:

Formation: **LKC 'A'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:47:15

Time Test Ended: 06:02:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4094.00 ft (KB) To 4130.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4130.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8368

Outside

Press@RunDepth: 31.86 psig @ 4095.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.13

End Date:

2014.11.14

Last Calib.:

2014.11.13

Start Time:

22:16:05

End Time:

06:02:44

Time On Btm:

2014.11.14 @ 00:46:45

Time Off Btm:

2014.11.14 @ 03:50:15

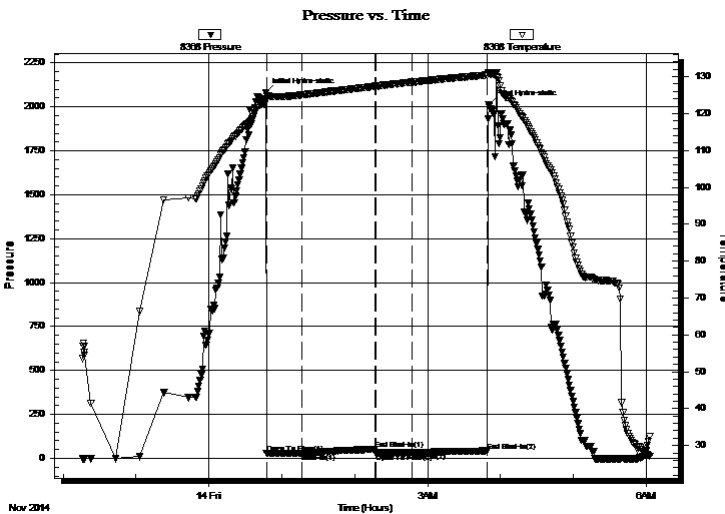
TEST COMMENT: 30 - IF - Surface blow started w with a weak blow and built to 1 3/4"

60 - ISI - No Return

30 - FF - No Surface blow

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2078.98	123.27	Initial Hydro-static
1	28.24	123.95	Open To Flow (1)
30	30.04	125.05	Shut-In(1)
90	51.54	127.36	End Shut-In(1)
91	30.92	127.47	Open To Flow (2)
120	31.86	128.52	Shut-In(2)
183	42.46	130.42	End Shut-In(2)
184	2010.47	131.13	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
10.00	Mud - 100M	0.05

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61002

DST#: 2

ATTN: Kent Matson

Test Start: 2014.11.13 @ 22:16:00

GENERAL INFORMATION:

Formation: **LKC 'A'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:47:15

Time Test Ended: 06:02:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4094.00 ft (KB) To 4130.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4130.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6753

Press@RunDepth: psig @ ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.13

End Date: 2014.11.14

Last Calib.: 2014.11.13

Start Time: 22:16:05

End Time: 06:02:44

Time On Btm:

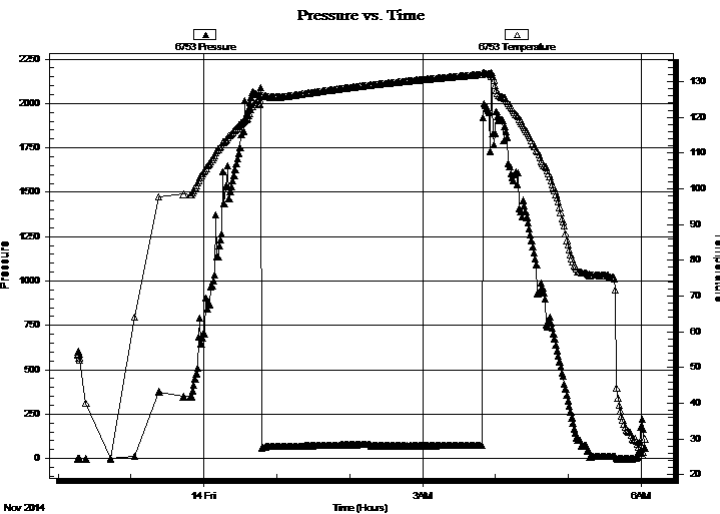
Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow started with a weak blow and built to 1 3/4"

60 - ISI - No Return

30 - FF - No Surface blow

60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud - 100M	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61002

DST#: 2

ATTN: Kent Matson

Test Start: 2014.11.13 @ 22:16:00

Tool Information

Drill Pipe:	Length: 3894.52 ft	Diameter: 3.80 inches	Volume: 54.63 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: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 102000.0 lb
			<u>Total Volume: 55.55 bbl</u>	Tool Chased 4.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4094.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	36.00 ft			
Tool Length:	63.00 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			4072.00	
Hydraulic tool	5.00			4077.00	
Jars	5.00			4082.00	
Safety Joint	3.00			4085.00	
Packer	4.00			4089.00	27.00 Bottom Of Top Packer
Packer	5.00			4094.00	
Stubb	1.00			4095.00	
Recorder	0.00	6753	Inside	4095.00	
Recorder	0.00	8368	Outside	4095.00	
Perforations	31.00			4126.00	
Bullnose	4.00			4130.00	36.00 Bottom Packers & Anchor

Total Tool Length: 63.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61002

DST#: 2

ATTN: Kent Matson

Test Start: 2014.11.13 @ 22:16:00

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: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

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
10.00	Mud - 100M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

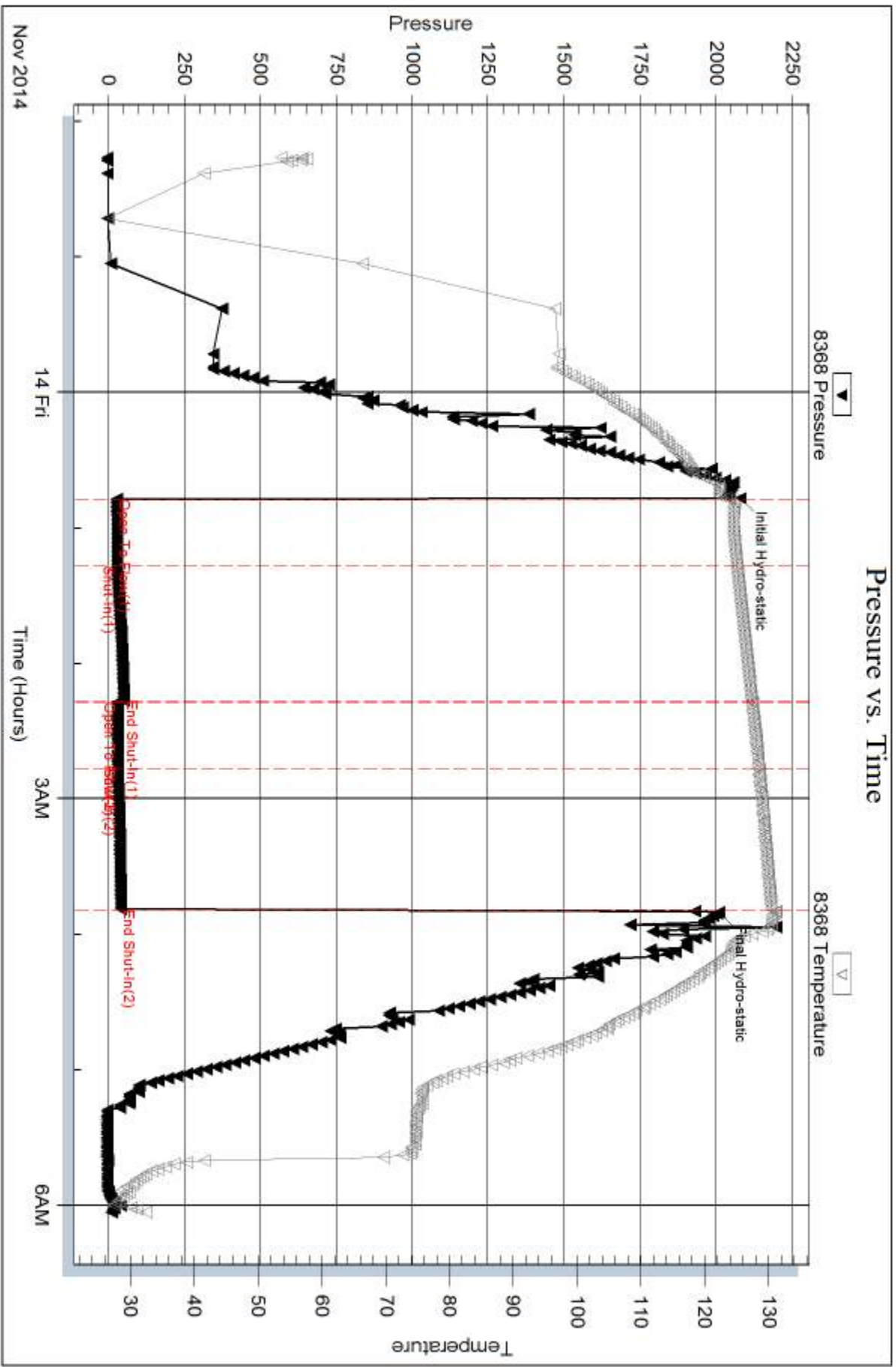
Num Gas Bombs: 0

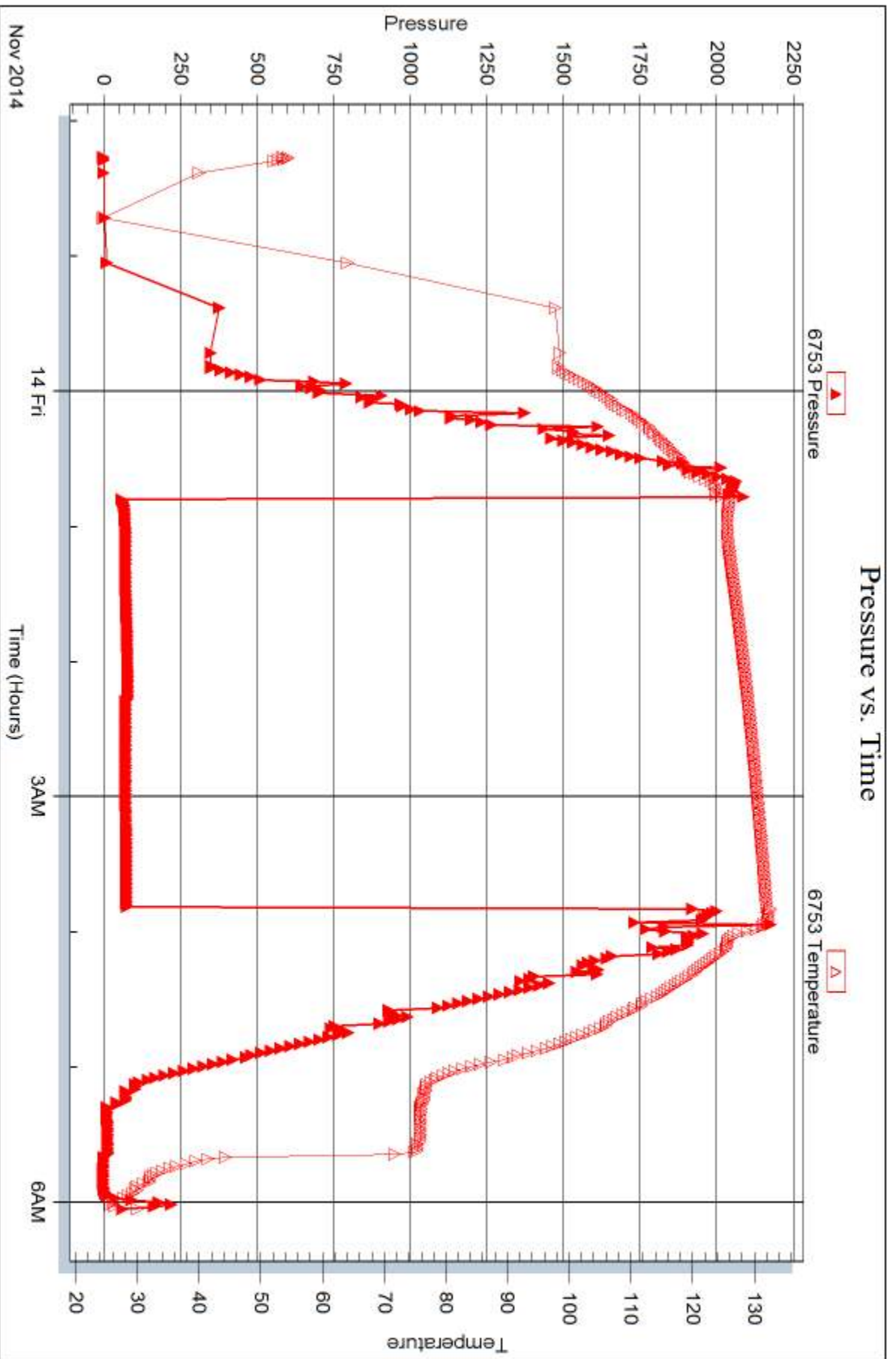
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.14 @ 09:33:00

End Date: 2014.11.14 @ 16:35:45

Job Ticket #: 61003 DST #: 3

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

Printed: 2014.11.22 @ 12:40:29



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61003

DST#: 3

ATTN: Kent Matson

Test Start: 2014.11.14 @ 09:33:00

GENERAL INFORMATION:

Formation: **LKC 'D'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:23:15

Time Test Ended: 16:35:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4160.00 ft (KB) To 4220.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4220.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6753 Outside

Press@RunDepth: 55.29 psig @ 4161.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.14

End Date:

2014.11.14

Last Calib.:

2014.11.14

Start Time:

09:33:05

End Time:

16:35:44

Time On Btm:

2014.11.14 @ 11:23:00

Time Off Btm:

2014.11.14 @ 14:24:15

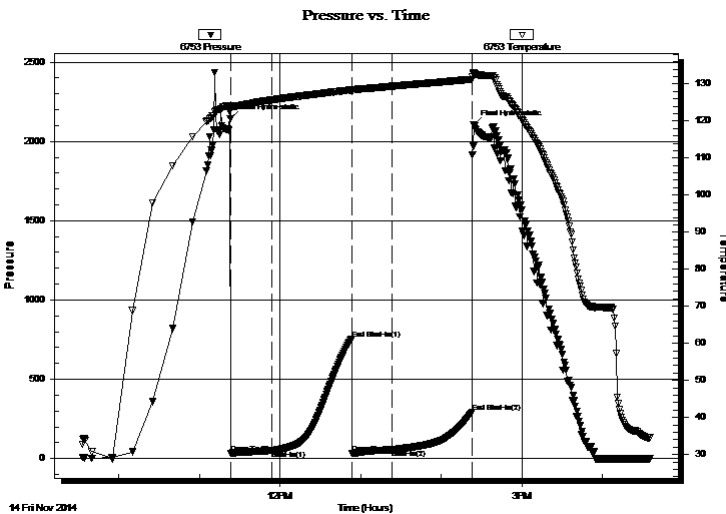
TEST COMMENT: 30 - IF - Surface blow slowly built to 1 1/4" in 20 mins., then stayed there

60 - ISI - No Return

30 - FF - Had a very faint surface blow through the w hole open

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2141.62	123.95	Initial Hydro-static
1	34.30	123.31	Open To Flow (1)
31	50.41	125.70	Shut-In(1)
91	752.50	128.36	End Shut-In(1)
91	32.52	128.07	Open To Flow (2)
121	55.29	129.38	Shut-In(2)
180	291.29	131.26	End Shut-In(2)
182	2107.20	133.13	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OSM - 100M - Oil Spots	0.05

Gas Rates

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



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne, KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61003

DST#: 3

ATTN: Kent Matson

Test Start: 2014.11.14 @ 09:33:00

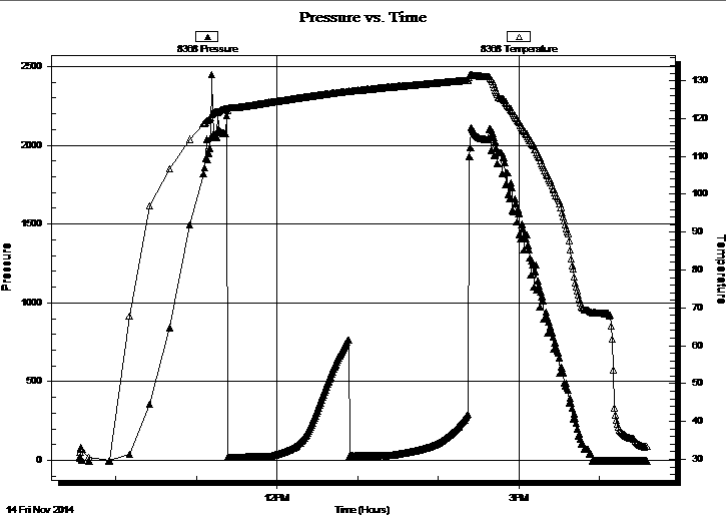
GENERAL INFORMATION:

Formation: **LKC 'D'**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 11:23:15 Tester: Royal Fisher
 Time Test Ended: 16:35:45 Unit No: 54
 Interval: **4160.00 ft (KB) To 4220.00 ft (KB) (TVD)** Reference Elevations: 3184.00 ft (KB)
 Total Depth: 4220.00 ft (KB) (TVD) 3173.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good KB to GR/CF: 11.00 ft

Serial #: 8368

Press@RunDepth: psig @ ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.14 End Date: 2014.11.14 Last Calib.: 2014.11.14
 Start Time: 09:33:05 End Time: 16:35:44 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow slowly built to 1 1/4" in 20 mins., then stayed there
 60 - ISI - No Return
 30 - FF - Had a very faint surface blow through the w hole open
 60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OSM - 100M - Oil Spots	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61003

DST#: 3

ATTN: Kent Matson

Test Start: 2014.11.14 @ 09:33:00

Tool Information

Drill Pipe:	Length: 3958.16 ft	Diameter: 3.80 inches	Volume: 55.52 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: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 56.44 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.64 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4160.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	87.00 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			4138.00	
Hydraulic tool	5.00			4143.00	
Jars	5.00			4148.00	
Safety Joint	3.00			4151.00	
Packer	4.00			4155.00	27.00 Bottom Of Top Packer
Packer	5.00			4160.00	
Stubb	1.00			4161.00	
Recorder	0.00	8368	Inside	4161.00	
Recorder	0.00	6753	Outside	4161.00	
Perforations	22.00			4183.00	
Change Over Sub	1.00			4184.00	
Drill Pipe	31.00			4215.00	
Change Over Sub	1.00			4216.00	
Bullnose	4.00			4220.00	60.00 Bottom Packers & Anchor

Total Tool Length: 87.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61003

DST#: 3

ATTN: Kent Matson

Test Start: 2014.11.14 @ 09:33:00

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: 6.78 in³

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
10.00	OSM - 100M - Oil Spots	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

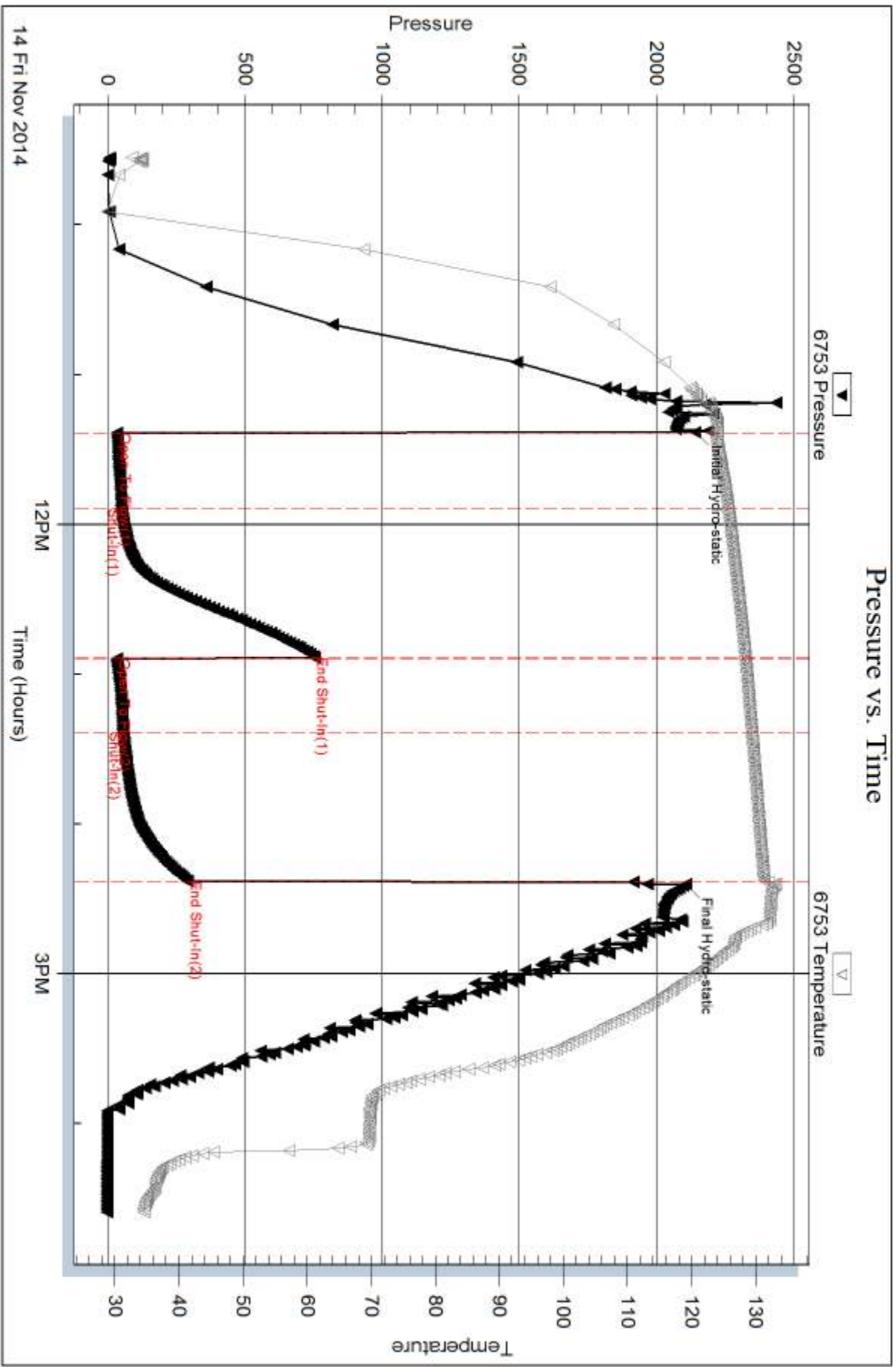
Num Gas Bombs: 0

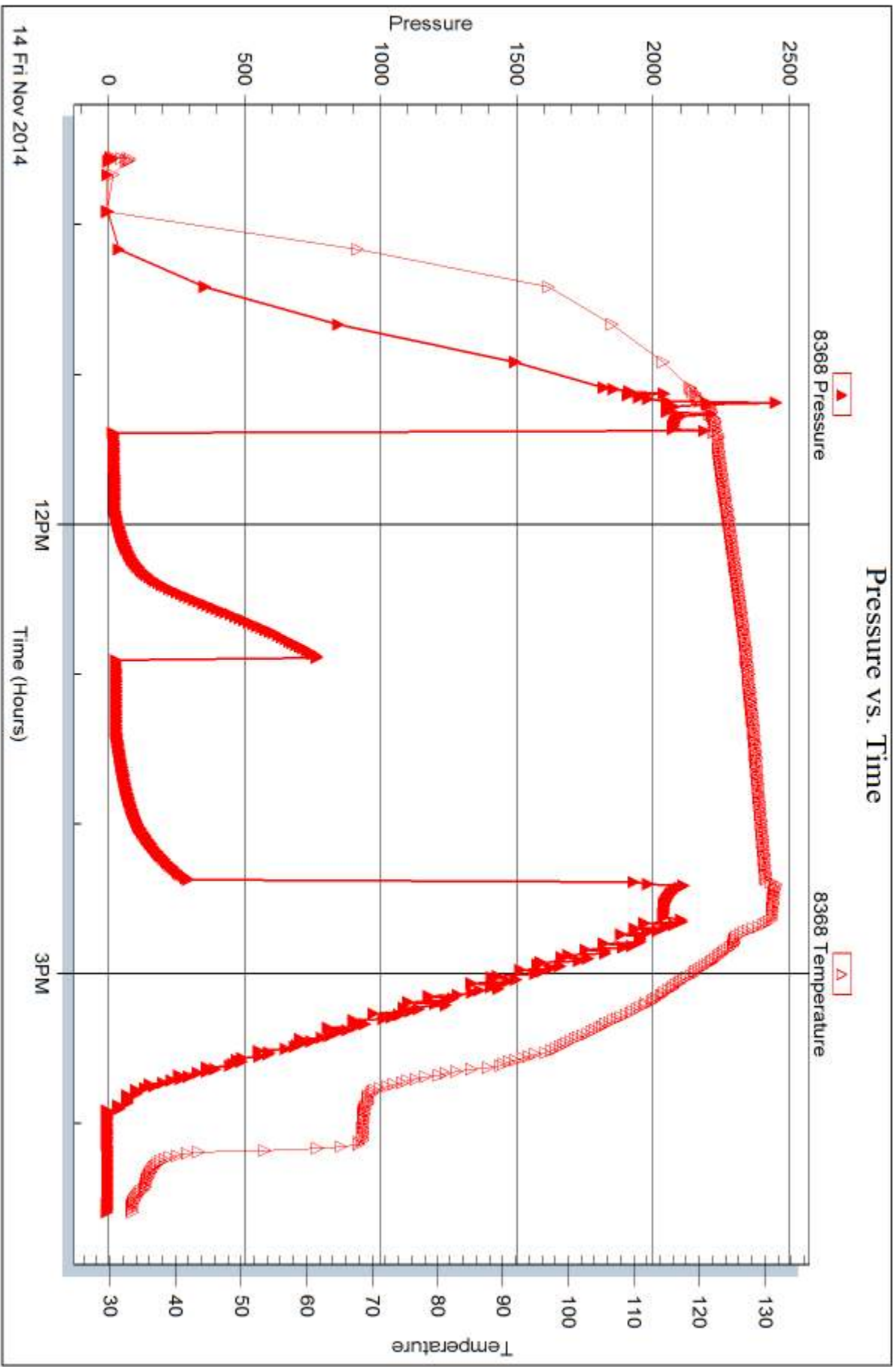
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.15 @ 03:03:00

End Date: 2014.11.15 @ 09:51:15

Job Ticket #: 61004 DST #: 4

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

Printed: 2014.11.22 @ 12:40:01



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61004

DST#: 4

ATTN: Kent Matson

Test Start: 2014.11.15 @ 03:03:00

GENERAL INFORMATION:

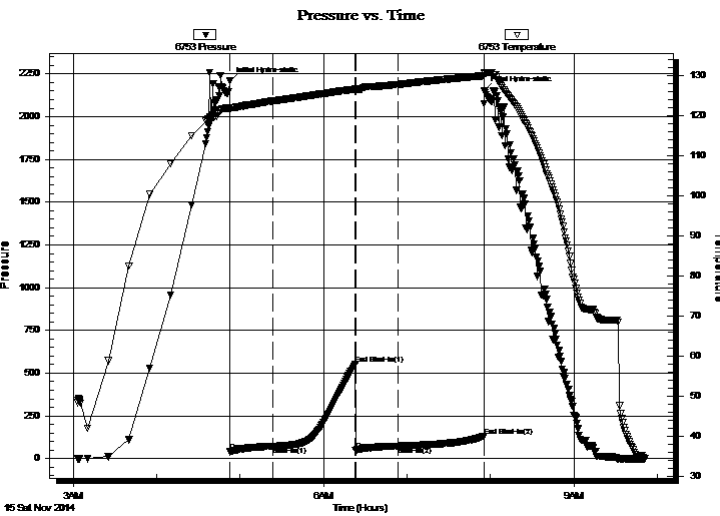
Formation: **LKC 'G'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:52:45
 Time Test Ended: 09:51:15
 Interval: **4202.00 ft (KB) To 4260.00 ft (KB) (TVD)**
 Total Depth: 4260.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Royal Fisher
 Unit No: #54
 Reference Elevations: 3184.00 ft (KB)
 3173.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 6753

Outside

Press@RunDepth: 73.56 psig @ 4203.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.15 End Date: 2014.11.15 Last Calib.: 2014.11.15
 Start Time: 03:03:05 End Time: 09:51:14 Time On Btm: 2014.11.15 @ 04:52:30
 Time Off Btm: 2014.11.15 @ 07:55:45

TEST COMMENT: 30 - IF - Surface blow slowly built to 3/4"
 60 - ISI - No Return
 30 - FF - No Surface blow
 60 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2208.42	121.93	Initial Hydro-static
1	40.44	121.42	Open To Flow (1)
31	71.69	123.54	Shut-In(1)
91	553.12	126.52	End Shut-In(1)
91	49.55	126.26	Open To Flow (2)
121	73.56	127.67	Shut-In(2)
183	128.92	129.84	End Shut-In(2)
184	2152.09	130.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
6.00	OSM - 100M - Oil Spots	0.03

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61004

DST#: 4

ATTN: Kent Matson

Test Start: 2014.11.15 @ 03:03:00

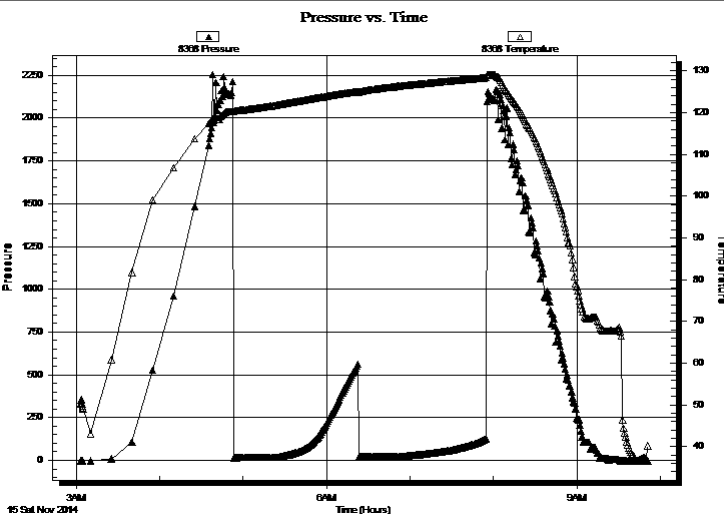
GENERAL INFORMATION:

Formation: LKC 'G'	
Deviated: No Whipstock: ft (KB)	Test Type: Conventional Bottom Hole (Initial)
Time Tool Opened: 04:52:45	Tester: Royal Fisher
Time Test Ended: 09:51:15	Unit No: #54
Interval: 4202.00 ft (KB) To 4260.00 ft (KB) (TVD)	Reference Elevations: 3184.00 ft (KB)
Total Depth: 4260.00 ft (KB) (TVD)	3173.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Good	KB to GR/CF: 11.00 ft

Serial #: 8368

Press@RunDepth: psig @ ft (KB)	Capacity: 8000.00 psig
Start Date: 2014.11.15 End Date: 2014.11.15	Last Calib.: 2014.11.15
Start Time: 03:03:05 End Time: 09:51:14	Time On Btm:
	Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow slowly built to 3/4"
60 - ISI - No Return
30 - FF - No Surface blow
60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
6.00	OSM - 100M - Oil Spots	0.03

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61004

DST#: 4

ATTN: Kent Matson

Test Start: 2014.11.15 @ 03:03:00

Tool Information

Drill Pipe:	Length: 4020.37 ft	Diameter: 3.80 inches	Volume: 56.40 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: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 88000.00 lb
			<u>Total Volume: 57.32 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.85 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4202.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	85.00 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			4180.00	
Hydraulic tool	5.00			4185.00	
Jars	5.00			4190.00	
Safety Joint	3.00			4193.00	
Packer	4.00			4197.00	27.00 Bottom Of Top Packer
Packer	5.00			4202.00	
Stubb	1.00			4203.00	
Recorder	0.00	8368	Inside	4203.00	
Recorder	0.00	6753	Outside	4203.00	
Perforations	20.00			4223.00	
Change Over Sub	1.00			4224.00	
Drill Pipe	31.00			4255.00	
Change Over Sub	1.00			4256.00	
Bullnose	4.00			4260.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61004

DST#: 4

ATTN: Kent Matson

Test Start: 2014.11.15 @ 03:03:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

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
6.00	OSM - 100M - Oil Spots	0.030

Total Length: 6.00 ft Total Volume: 0.030 bbl

Num Fluid Samples: 0

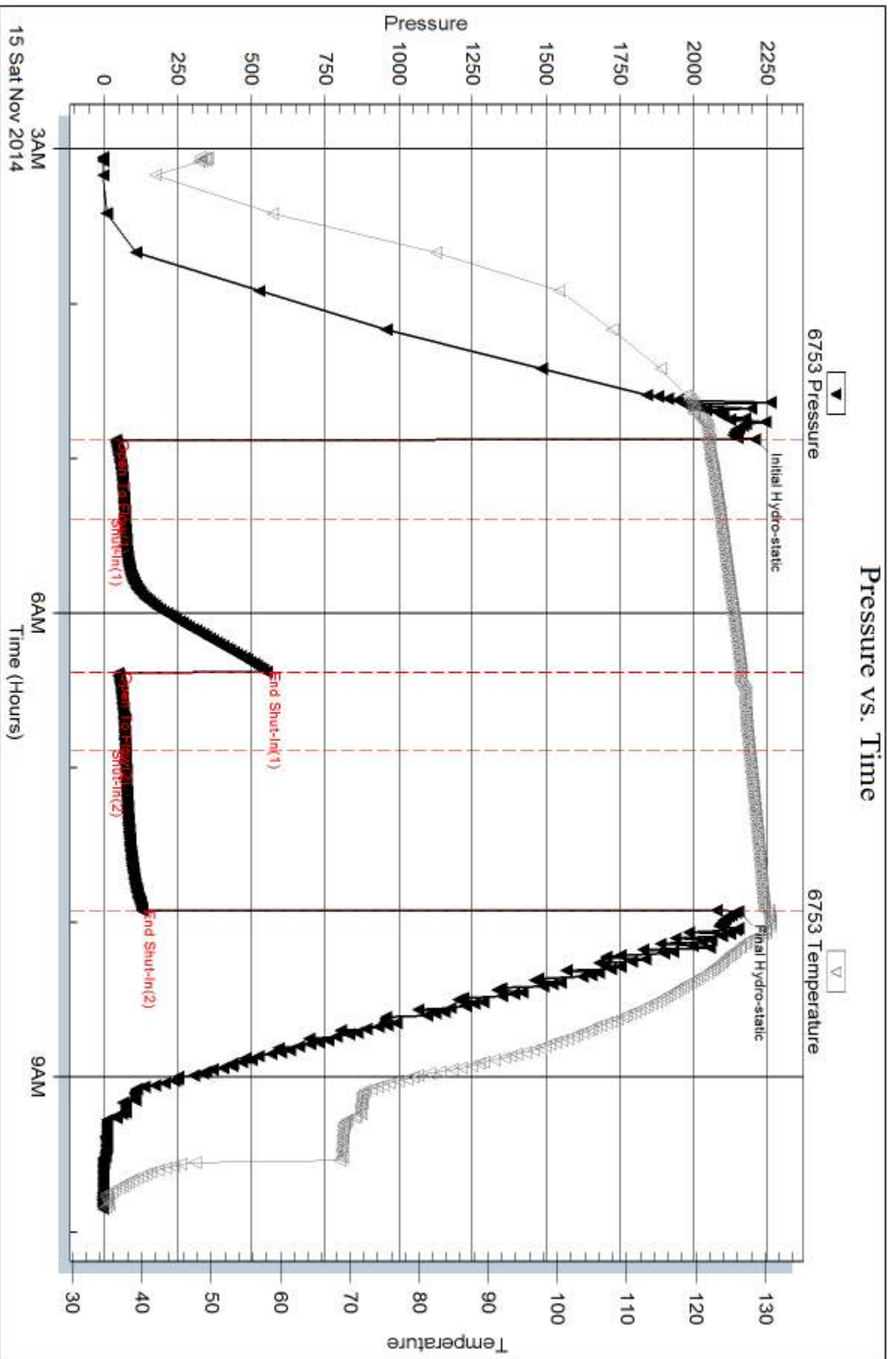
Num Gas Bombs: 0

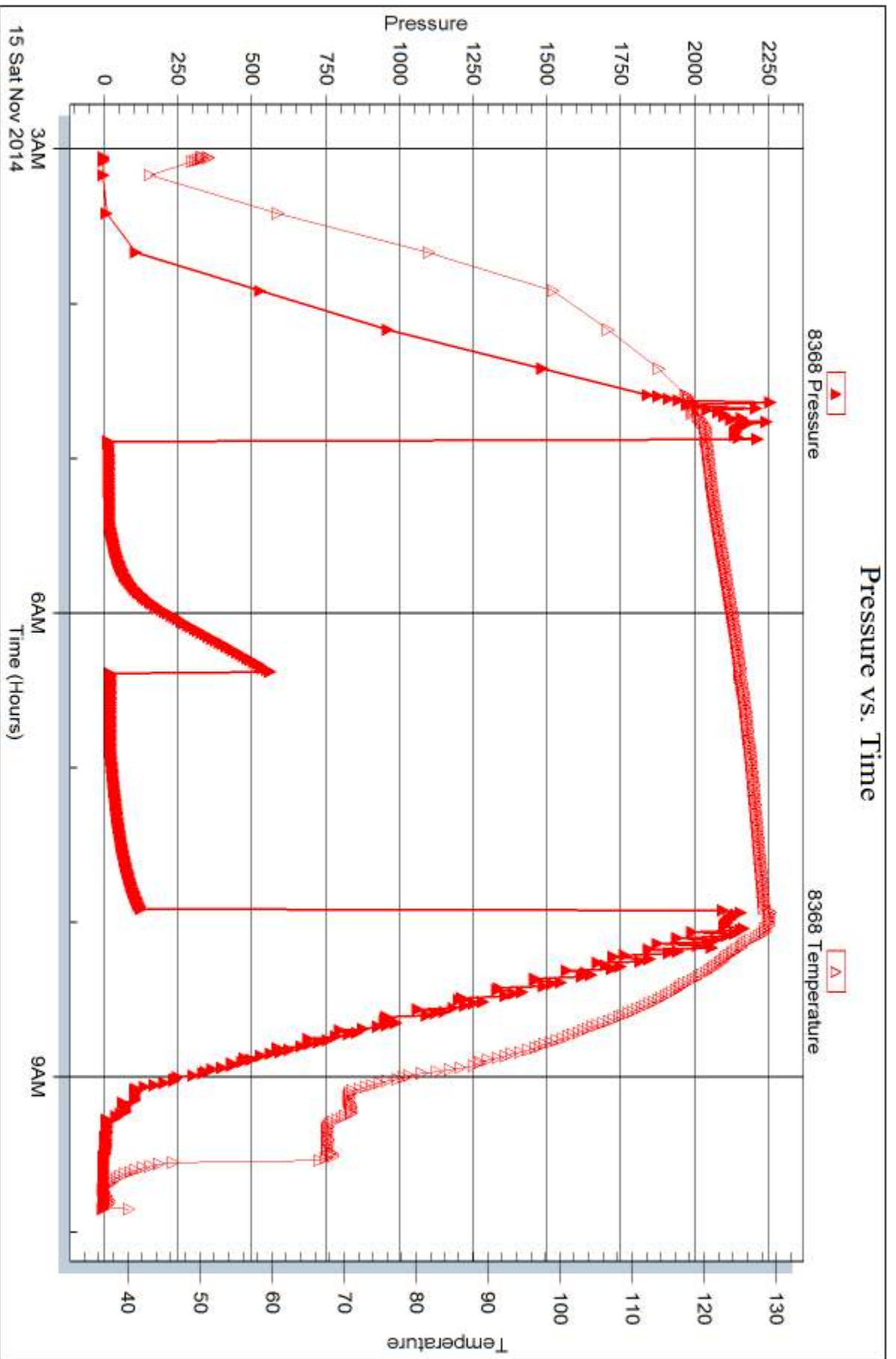
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.16 @ 14:56:00

End Date: 2014.11.16 @ 22:30:45

Job Ticket #: 61005 DST #: 5

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

Printed: 2014.11.22 @ 12:39:14

Murfin Drilling Company, Inc. 32-1s-38w Cheyenne,KS Waters #1-32 DST # 5 LKC 'H - J' 2014.11.16



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61005

DST#: 5

ATTN: Kent Matson

Test Start: 2014.11.16 @ 14:56:00

GENERAL INFORMATION:

Formation: **LKC 'H - J'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:14:00
 Time Test Ended: 22:30:45
 Interval: **4260.00 ft (KB) To 4350.00 ft (KB) (TVD)**
 Total Depth: 4350.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Royal Fisher
 Unit No: #54
 Reference Elevations: 3184.00 ft (KB)
 3173.00 ft (CF)
 KB to GR/CF: 11.00 ft

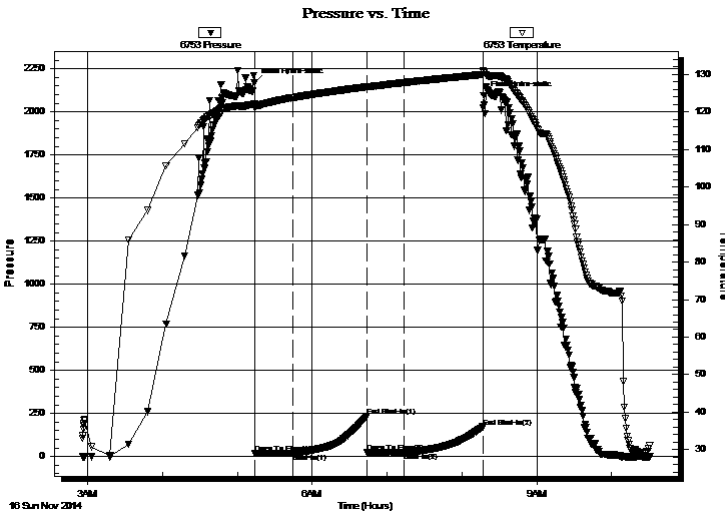
Serial #: 6753

Outside

Press@RunDepth: 23.33 psig @ 4261.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.16 End Date: 2014.11.16 Last Calib.: 2014.11.16
 Start Time: 02:56:05 End Time: 10:30:44 Time On Btm: 2014.11.16 @ 05:13:45
 Time Off Btm: 2014.11.16 @ 08:17:30

TEST COMMENT: 30 - IF - Surface blow slowly built to 3/4"
 60 - ISI - No Return
 30 - FF - No Surface blow
 60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2171.46	122.04	Initial Hydro-static
1	18.09	120.99	Open To Flow (1)
31	20.70	123.79	Shut-In(1)
91	235.89	126.69	End Shut-In(1)
91	22.17	126.56	Open To Flow (2)
121	23.33	127.81	Shut-In(2)
183	172.54	129.97	End Shut-In(2)
184	2096.64	130.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM - 100M - Oil Spots	0.02

Gas Rates

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



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

32-1s-38w Cheyenne, KS

Waters #1-32

Job Ticket: 61005

DST#: 5

Test Start: 2014.11.16 @ 14:56:00

GENERAL INFORMATION:

Formation: **LKC 'H - J'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:14:00

Time Test Ended: 22:30:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: #54

Interval: **4260.00 ft (KB) To 4350.00 ft (KB) (TVD)**

Total Depth: 4350.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3184.00 ft (KB)

3173.00 ft (CF)

KB to GR/CF: 11.00 ft

Serial #: 8368

Press@RunDepth: psig @ ft (KB)

Start Date: 2014.11.16

End Date: 2014.11.16

Capacity: 8000.00 psig

Start Time: 02:56:05

End Time: 10:30:44

Last Calib.: 2014.11.16

Time On Btm:

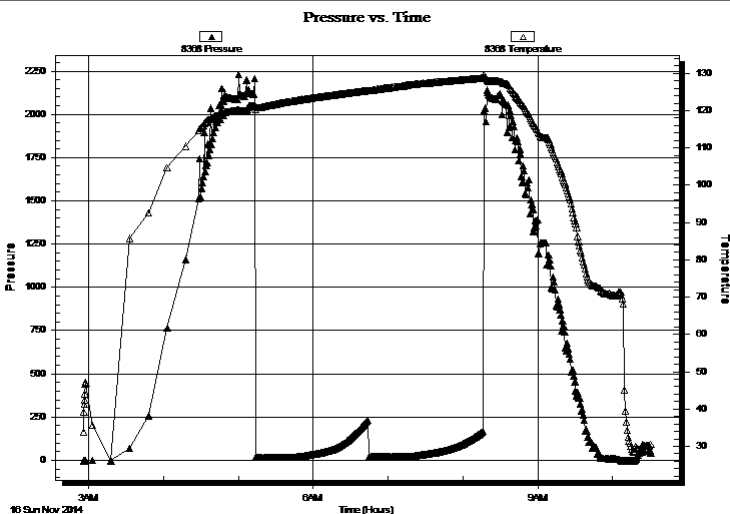
Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow slowly built to 3/4"

60 - ISI - No Return

30 - FF - No Surface blow

60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM - 100M - Oil Spots	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61005

DST#: 5

ATTN: Kent Matson

Test Start: 2014.11.16 @ 14:56:00

Tool Information

Drill Pipe:	Length: 4078.52 ft	Diameter: 3.80 inches	Volume: 57.21 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: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 102000.0 lb
			<u>Total Volume: 58.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4260.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	90.00 ft			
Tool Length:	117.00 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			4238.00	
Hydraulic tool	5.00			4243.00	
Jars	5.00			4248.00	
Safety Joint	3.00			4251.00	
Packer	4.00			4255.00	27.00 Bottom Of Top Packer
Packer	5.00			4260.00	
Stubb	1.00			4261.00	
Recorder	0.00	8368	Inside	4261.00	
Recorder	0.00	6753	Outside	4261.00	
Perforations	20.00			4281.00	
Change Over Sub	1.00			4282.00	
Drill Pipe	63.00			4345.00	
Change Over Sub	1.00			4346.00	
Bullnose	4.00			4350.00	90.00 Bottom Packers & Anchor

Total Tool Length: 117.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61005

DST#: 5

ATTN: Kent Matson

Test Start: 2014.11.16 @ 14:56:00

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:

ppm

Viscosity: 85.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

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
5.00	OSM - 100M - Oil Spots	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

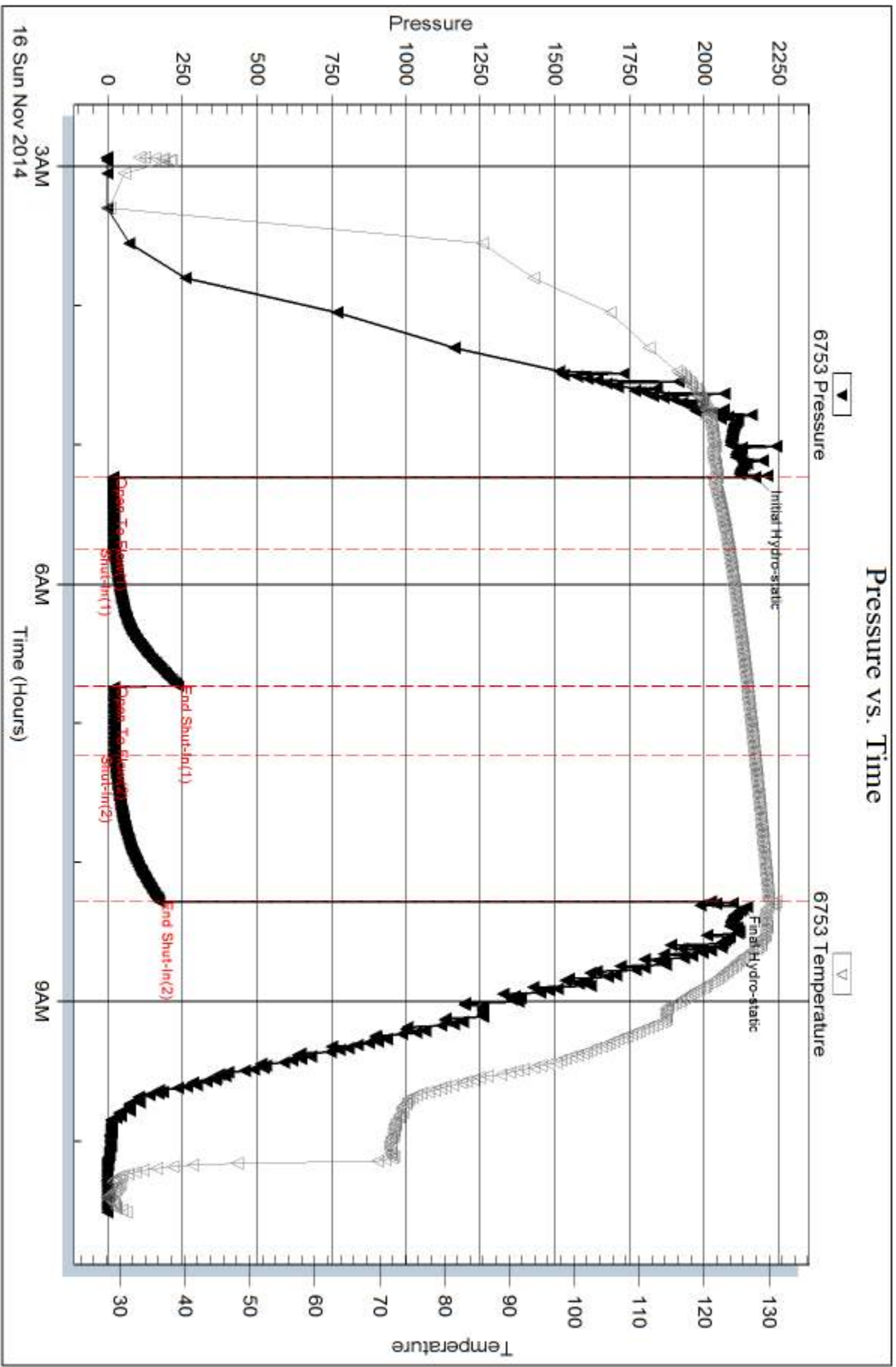
Num Gas Bombs: 0

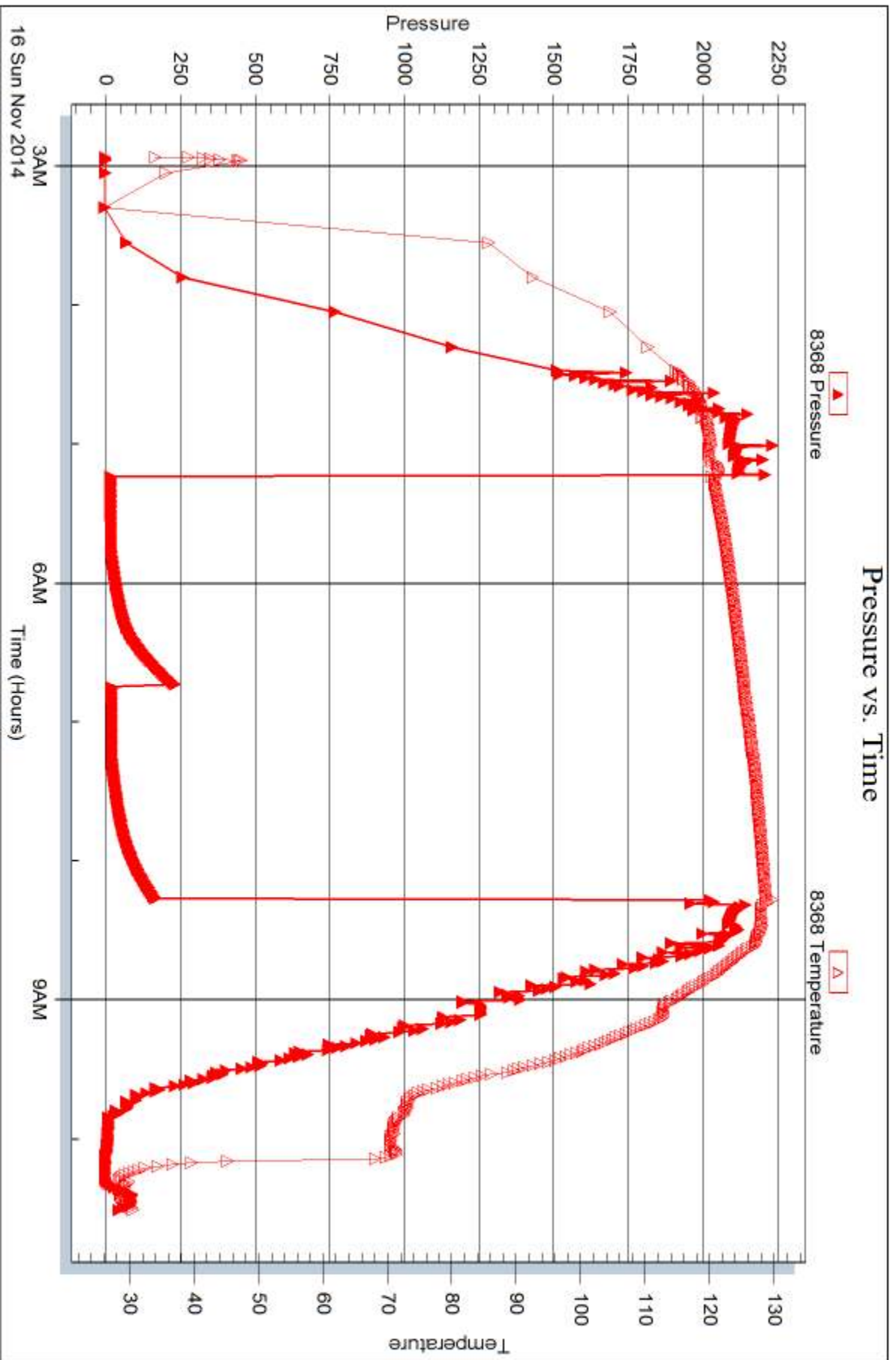
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.17 @ 12:17:00

End Date: 2014.11.17 @ 20:31:45

Job Ticket #: 61006 DST #: 6

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

Printed: 2014.11.22 @ 12:38:01



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61006

DST#: 6

ATTN: Kent Matson

Test Start: 2014.11.17 @ 12:17:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:16:15

Time Test Ended: 20:31:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4502.00 ft (KB) To 4560.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8368

Inside

Press@RunDepth: 19.05 psig @ 4503.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.17

End Date:

2014.11.17

Last Calib.:

2014.11.17

Start Time: 12:17:05

End Time:

20:31:44

Time On Btm:

2014.11.17 @ 15:16:00

Time Off Btm:

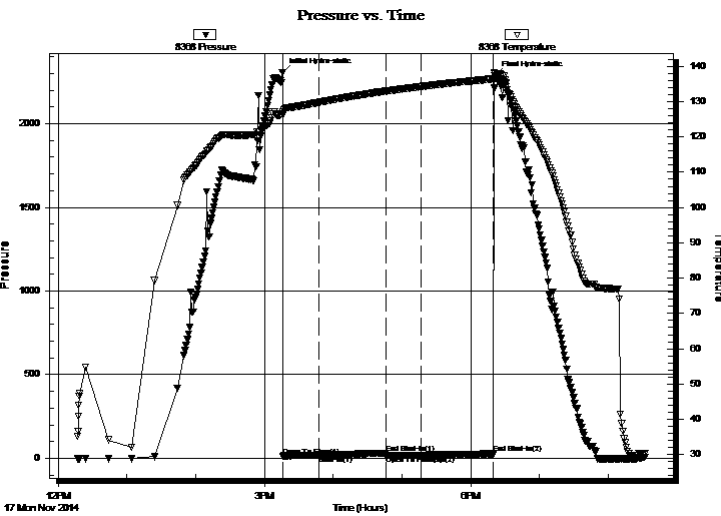
2014.11.17 @ 18:21:00

TEST COMMENT: 30 - IF - Surface blow built to 3/4" and then died off to 1/4"

60 - ISI - No Return

30 - FF - No Surface blow

60 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2306.16	127.01	Initial Hydro-static
1	13.73	126.16	Open To Flow (1)
32	17.01	129.76	Shut-In(1)
90	30.87	132.98	End Shut-In(1)
91	17.31	132.98	Open To Flow (2)
121	19.05	134.25	Shut-In(2)
184	27.24	136.42	End Shut-In(2)
185	2287.58	138.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud - 100M	0.02

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61006

DST#: 6

ATTN: Kent Matson

Test Start: 2014.11.17 @ 12:17:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:16:15

Time Test Ended: 20:31:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4502.00 ft (KB) To 4560.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6753

Press@RunDepth: psig @ ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.17 End Date: 2014.11.17

Last Calib.: 2014.11.17

Start Time: 12:17:05 End Time: 20:31:44

Time On Btm:

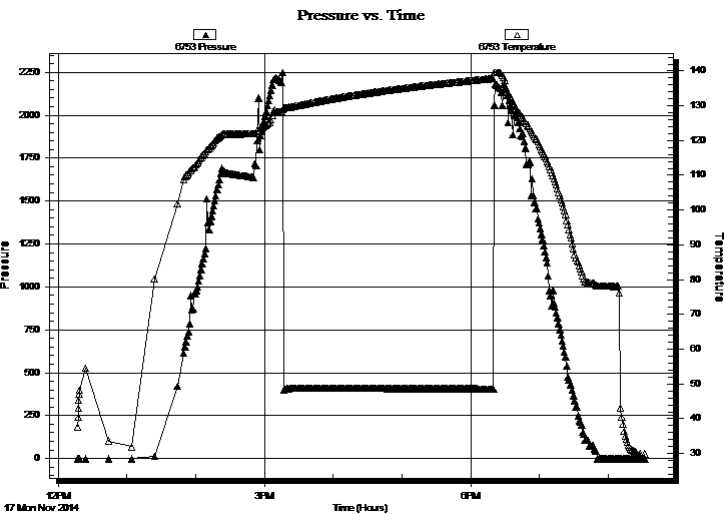
Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow built to 3/4" and then died off to 1/4"

60 - ISI - No Return

30 - FF - No Surface blow

60 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
5.00	Mud - 100M	0.02

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61006

DST#: 6

ATTN: Kent Matson

Test Start: 2014.11.17 @ 12:17:00

Tool Information

Drill Pipe:	Length: 4303.49 ft	Diameter: 3.80 inches	Volume: 60.37 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: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 96000.00 lb
			<u>Total Volume: 61.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.97 ft			String Weight: Initial 90000.00 lb
Depth to Top Packer:	4502.00 ft			Final 92000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	85.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

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

Shut In Tool	5.00			4480.00	
Hydraulic tool	5.00			4485.00	
Jars	5.00			4490.00	
Safety Joint	3.00			4493.00	
Packer	4.00			4497.00	27.00 Bottom Of Top Packer
Packer	5.00			4502.00	
Stubb	1.00			4503.00	
Recorder	0.00	8368	Inside	4503.00	
Recorder	0.00	6753	Outside	4503.00	
Perforations	20.00			4523.00	
Change Over Sub	1.00			4524.00	
Drill Pipe	31.00			4555.00	
Change Over Sub	1.00			4556.00	
Bullnose	4.00			4560.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61006

DST#: 6

ATTN: Kent Matson

Test Start: 2014.11.17 @ 12:17:00

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

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	Mud - 100M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

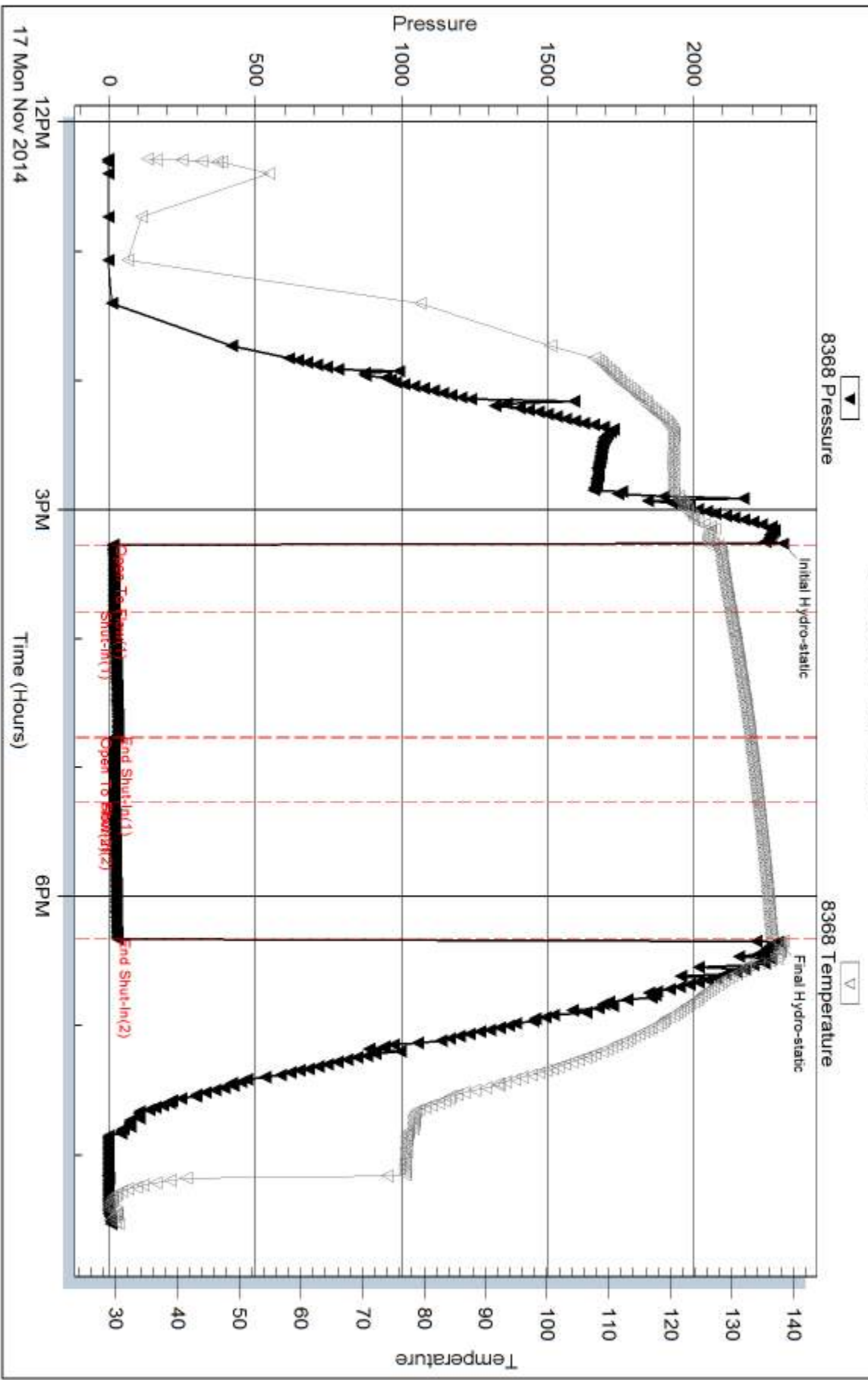
Serial #:

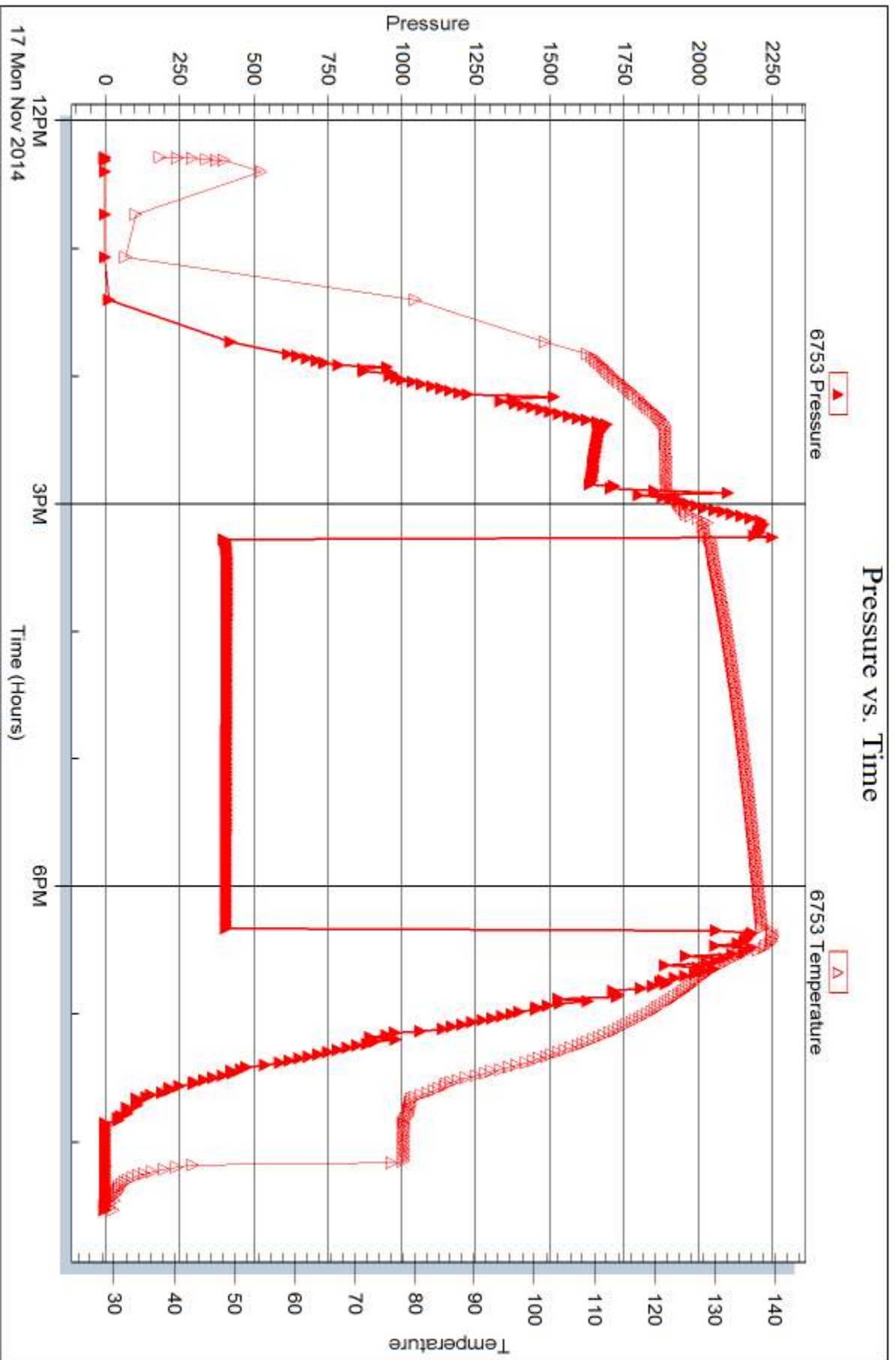
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

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

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.19 @ 14:10:00

End Date: 2014.11.19 @ 23:06:45

Job Ticket #: 61007 DST #: 7

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

Printed: 2014.11.22 @ 12:34:05



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61007

DST#: 7

ATTN: Kent Matson

Test Start: 2014.11.19 @ 14:10:00

GENERAL INFORMATION:

Formation: **LKC 'K'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:32:45

Time Test Ended: 23:06:45

Test Type: Conventional Straddle (Initial)

Tester: Royal Fisher

Unit No: #54

Interval: 4356.00 ft (KB) To 4446.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4720.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6753

Inside

Press@RunDepth: 212.12 psig @ 4357.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.19

End Date:

2014.11.19

Last Calib.:

2014.11.19

Start Time: 14:10:05

End Time:

23:06:45

Time On Btm:

2014.11.19 @ 16:32:30

Time Off Btm:

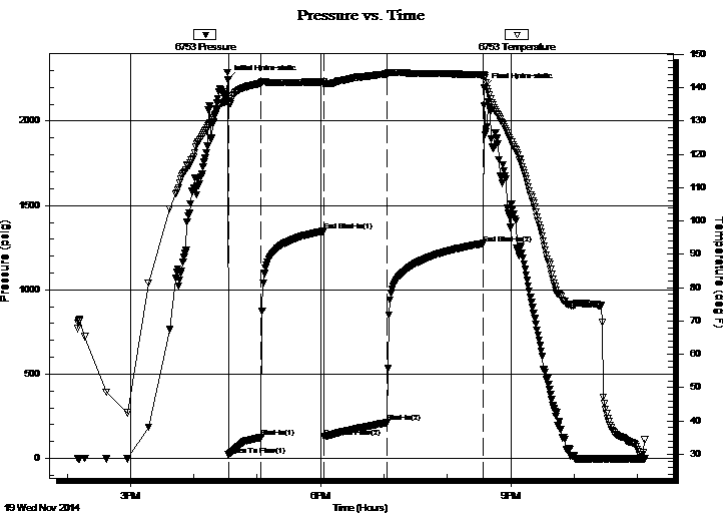
2014.11.19 @ 20:35:15

TEST COMMENT: 30 - IF - Surface blow built to 10 3/4"

60 - ISI - No Return

60 - FF - Surface blow built to 10"

90 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2246.70	136.16	Initial Hydro-static
1	22.01	134.95	Open To Flow (1)
32	125.27	141.36	Shut-In(1)
91	1348.06	141.70	End Shut-In(1)
91	128.23	140.82	Open To Flow (2)
151	212.12	144.09	Shut-In(2)
242	1275.00	143.77	End Shut-In(2)
243	2197.90	143.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
217.00	WM - 85M - 15W	1.35
217.00	MW - 40M - 60W	3.04

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61007

DST#: 7

ATTN: Kent Matson

Test Start: 2014.11.19 @ 14:10:00

GENERAL INFORMATION:

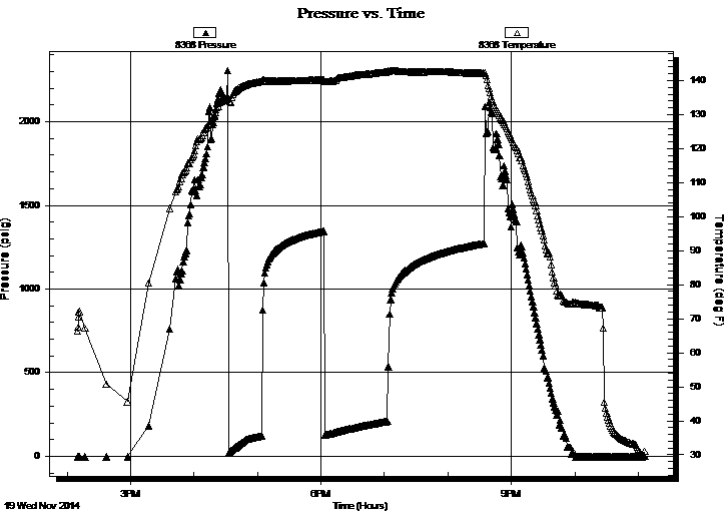
Formation: **LKC 'K'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 16:32:45
 Time Test Ended: 23:06:45
 Interval: **4356.00 ft (KB) To 4446.00 ft (KB) (TVD)**
 Total Depth: 4720.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Straddle (Initial)
 Tester: Royal Fisher
 Unit No: #54
 Reference Elevations: 3184.00 ft (KB)
 3173.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 8368

Outside

Press@RunDepth: psig @ 4357.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.19 End Date: 2014.11.19 Last Calib.: 2014.11.19
 Start Time: 14:10:05 End Time: 23:06:30 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow built to 10 3/4"
 60 - ISI - No Return
 60 - FF - Surface blow built to 10"
 90 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
217.00	WM - 85M - 15W	1.35
217.00	MW - 40M - 60W	3.04

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61007

DST#: 7

ATTN: Kent Matson

Test Start: 2014.11.19 @ 14:10:00

GENERAL INFORMATION:

Formation: **LKC 'K'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:32:45

Time Test Ended: 23:06:45

Test Type: Conventional Straddle (Initial)

Tester: Royal Fisher

Unit No: #54

Interval: 4356.00 ft (KB) To 4446.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4720.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6755 Below (Straddle)

Press@RunDepth: psig @ 4474.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.19

End Date:

2014.11.19

Last Calib.:

2014.11.19

Start Time:

14:10:05

End Time:

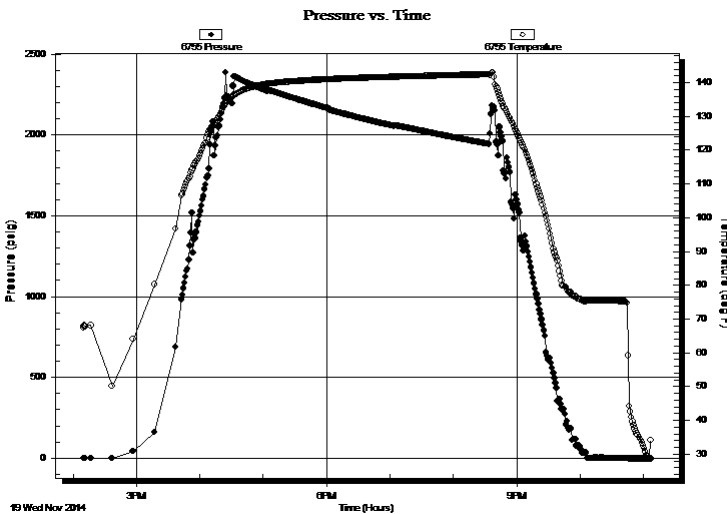
23:06:45

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow built to 10 3/4"
60 - ISI - No Return
60 - FF - Surface blow built to 10"
90 - FSI - No Return

PRESSURE SUMMARY



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

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
217.00	WM - 85M - 15W	1.35
217.00	MW - 40M - 60W	3.04

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61007

DST#: 7

ATTN: Kent Matson

Test Start: 2014.11.19 @ 14:10:00

Tool Information

Drill Pipe:	Length: 4159.12 ft	Diameter: 3.80 inches	Volume: 58.34 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: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 110000.0 lb
			<u>Total Volume: 59.26 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.60 ft			String Weight: Initial 88000.00 lb
Depth to Top Packer:	4356.00 ft			Final 95000.00 lb
Depth to Bottom Packer:	4446.00 ft			
Interval between Packers:	90.00 ft			
Tool Length:	394.00 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			4342.00	
Hydraulic tool	5.00			4347.00	
Packer	4.00			4351.00	19.00 Bottom Of Top Packer
Packer	5.00			4356.00	
Stubb	1.00			4357.00	
Recorder	0.00	6753	Inside	4357.00	
Recorder	0.00	8368	Outside	4357.00	
Perforations	20.00			4377.00	
Change Over Sub	1.00			4378.00	
Drill Pipe	63.00			4441.00	
Change Over Sub	1.00			4442.00	
Blank Off Sub	1.00			4443.00	
Stubb	3.00			4446.00	90.00 Tool Interval
Packer	5.00			4451.00	
Stubb	1.00			4452.00	
Perforations	21.00			4473.00	
Change Over Sub	1.00			4474.00	
Recorder	0.00	6755	Below	4474.00	
Drill Pipe	252.00			4726.00	
Change Over Sub	1.00			4727.00	
Bullnose	4.00			4731.00	285.00 Bottom Packers & Anchor

Total Tool Length: 394.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61007

DST#: 7

ATTN: Kent Matson

Test Start: 2014.11.19 @ 14:10:00

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:

34000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

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
217.00	WM - 85M - 15W	1.345
217.00	MW - 40M - 60W	3.044

Total Length: 434.00 ft

Total Volume: 4.389 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

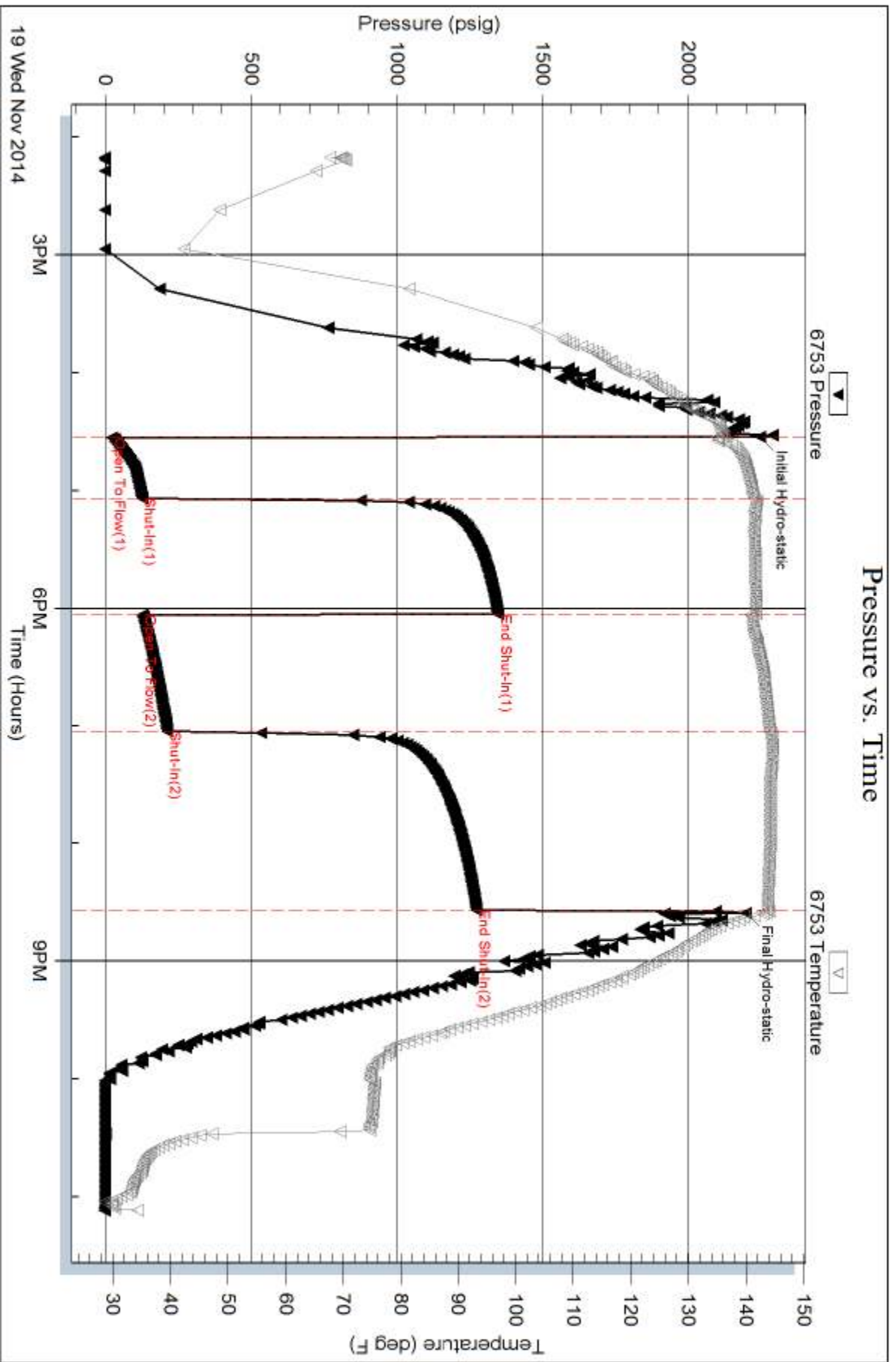
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

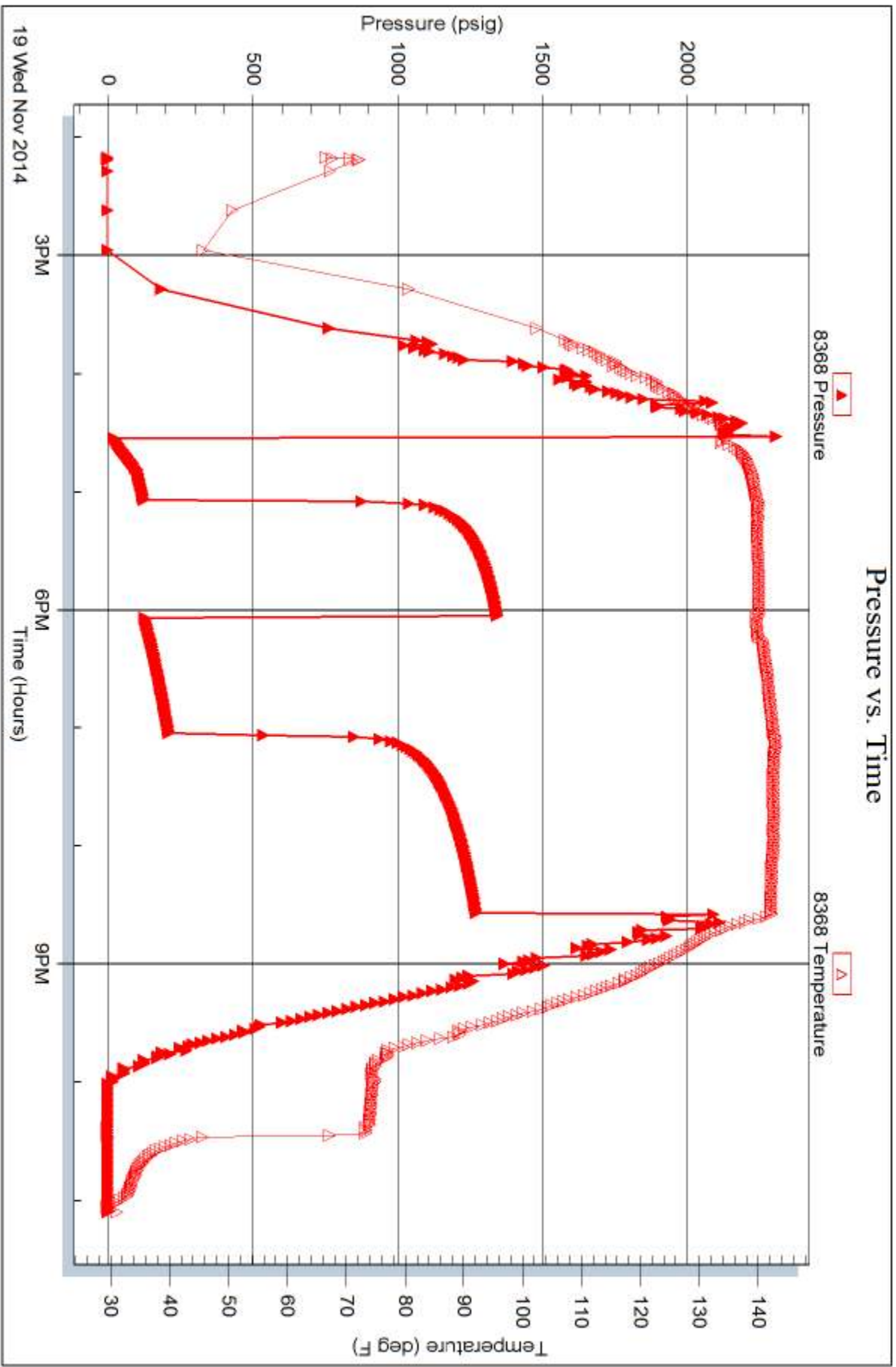


Serial #: 8368

Outside Murfin Drilling Company, Inc.

Waters #1-32

DST Test Number: 7



Trilobite Testing, Inc

Ref. No: 61007

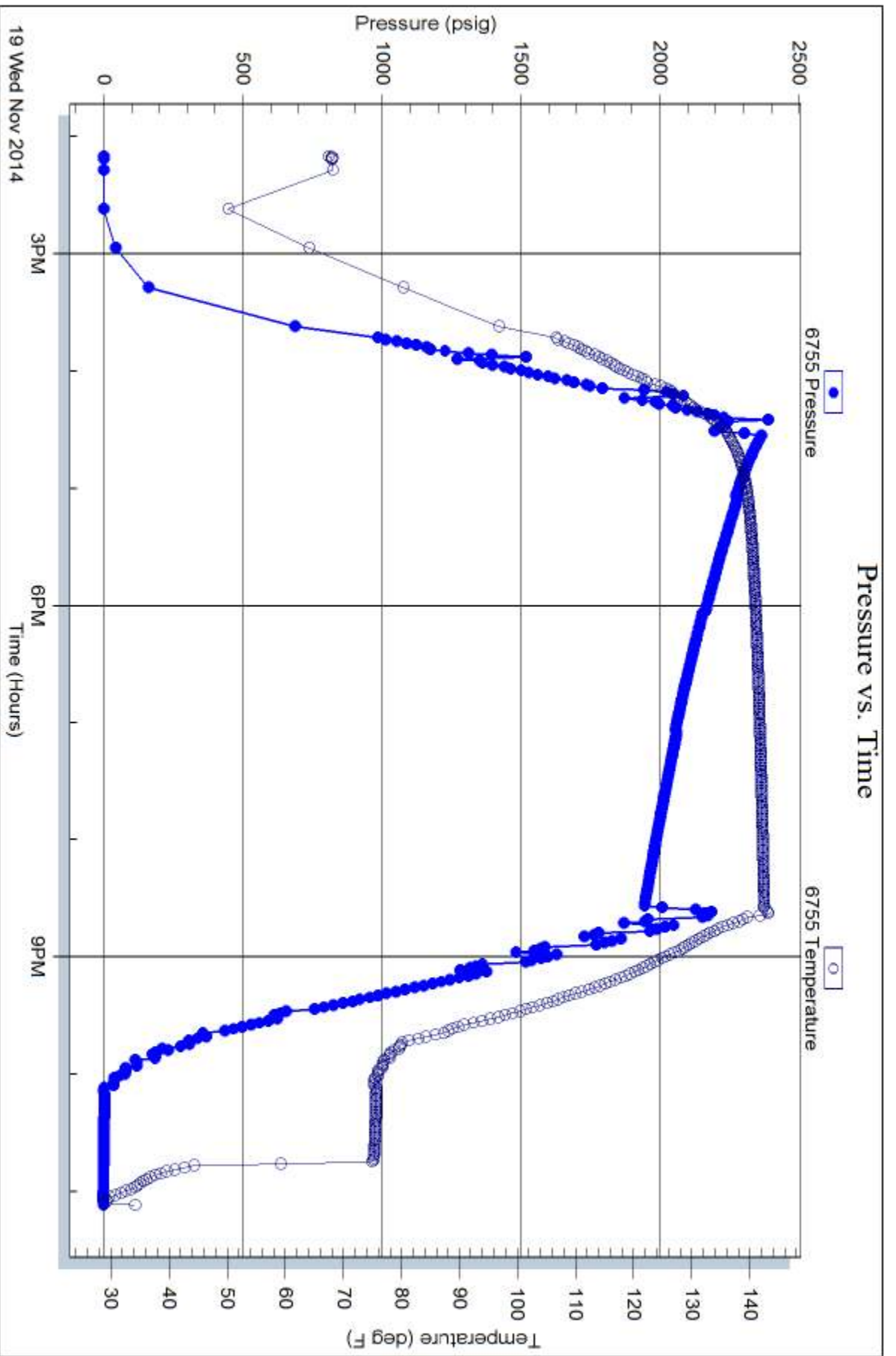
Printed: 2014.11.22 @ 12:34:06

Serial #: 6755

Below (Str Adulfer) Drilling Company, Inc.

Waters #1-32

DST Test Number: 7



Triobite Testing, Inc

Ref. No: 61007

Printed: 2014.11.22 @ 12:34:06



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **60863**

4/10

Well Name & No. Waters # 1-32 Test No. 1 Date 11-11-14
 Company Murfin Drilling Company, Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water STE 300, Wichita, KS, 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38w Co. Cheyenne State KS

Interval Tested 3795' - 3861' Zone Tested Statler
 Anchor Length 66' Drill Pipe Run 3641 Mud Wt. 9.2
 Top Packer Depth 3790' Drill Collars Run 153.36 Vis 58
 Bottom Packer Depth 3795' Wt. Pipe Run 0 WL 8
 Total Depth 3861' Chlorides 500 ppm System LCM #6

Blow Description IF - Surface blow started 15 min. in at a weak surface & stayed there
FSI - for first 1/2 of the time - NO return
FF - NO surface 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 Total 5 BHT 129 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1976 Test 1150 T-On Location 8:10 pm
 (B) First Initial Flow 18 Jars 250 T-Started 9:07 pm
 (C) First Final Flow 21 Safety Joint 75 T-Open 11:57 pm
 (D) Initial Shut-In 49 Circ Sub n/c T-Pulled 2:57 am 11-12
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 5:32 am 11-12
 (F) Second Final Flow 22 Mileage 150 R/T 232.50 Comments _____
 (G) Final Shut-In 35 Sampler _____
 (H) Final Hydrostatic 1853 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Sub Total 1707.50
 Total 1707.50
 MP/DST Disc't _____

Approved By _____ Our Representative Poncrum Newman

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

61002

NO.

Well Name & No. Waters #1-32 Test No. 2 Date 11-13-14
 Company Murfin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita KS 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38W Co. Cheyenne State KS

Interval Tested 4094-4130 Zone Tested Lans - 'A'
 Anchor Length 36' Drill Pipe Run 3894.52' Mud Wt. 9.3
 Top Packer Depth 4089 Drill Collars Run ~~158.134~~ 186.48' Vis 68
 Bottom Packer Depth 4094 Wt. Pipe Run 0 WL 8.0
 Total Depth 4130 Chlorides 600 ppm System LCM 6#

Blow Description IF - Surface blow started with a weak blow & built to 1 3/4"
ISI - No Return
FF - No Surface blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</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 10' BHT 130°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2078</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>9:40 am</u>
(B) First Initial Flow <u>28</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>10:16 am</u>
(C) First Final Flow <u>30</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>12:47 pm</u>
(D) Initial Shut-In <u>51</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>3:47 pm</u>
(E) Second Initial Flow <u>30</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>6:03 6:03 pm</u>
(F) Second Final Flow <u>31</u>	<input checked="" type="checkbox"/> Mileage <u>150 R/T</u> <u>232.50</u>	Comments <u>Chased tool 4'</u>
(G) Final Shut-In <u>42</u>	<input type="checkbox"/> Sampler _____	<u>to bottom</u>
(H) Final Hydrostatic <u>2010</u>	<input type="checkbox"/> Straddle _____	

<input type="checkbox"/> Ruined Shale Packer _____
<input type="checkbox"/> Ruined Packer _____
<input type="checkbox"/> Extra Copies _____
Sub Total <u>0</u>
Total <u>1807.50</u>
MP/DST Disc't _____
Sub Total <u>1807.50</u>

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61003

Well Name & No. Waters #1-32 Test No. 3 Date 11-14-14
 Company Murfin Drilling Co., Inc Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita KS 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38W Co. Cheyenne State Ks

Interval Tested 4160-4220 Zone Tested Lans. - 'D'
 Anchor Length 60' Drill Pipe Run 3958.16' Mud Wt. 9.1
 Top Packer Depth 4155 Drill Collars Run 186.48' Vis 50
 Bottom Packer Depth 4160 Wt. Pipe Run 0 WL 6.8
 Total Depth 4220 Chlorides 500 ppm System LCM 6#

Blow Description IF - Surface blow slowly built to 1/4" in 20 mins., then stayed there
ISI - No Return
FF - Had a very faint surface blow through the whole open
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>asm</u>	<u>spots</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 10' BHT 131°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2141 Test 1250 T-On Location 8:45am
 (B) First Initial Flow 34 Jars 250 T-Started 9:33am
 (C) First Final Flow 50 Safety Joint 75 T-Open 11:23am
 (D) Initial Shut-In 752 Circ Sub N/C T-Pulled 2:23pm
 (E) Second Initial Flow 32 Hourly Standby _____ T-Out 4:36pm
 (F) Second Final Flow 55 Mileage 150 R/T 232.50 Comments _____
 (G) Final Shut-In 291 Sampler _____
 (H) Final Hydrostatic 2107 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 60 Ruined Packer _____
 Final Flow 30 Extra Copies _____
 Final Shut-In 60 Sub Total 0
 Sub Total 1807.50 Total 1807.50
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61004

Well Name & No. Waters #1-32 Test No. 4 Date 11-15-14
 Company Murfin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38 W Co. Cheyenne State KS

Interval Tested 4202-4260 Zone Tested Lans. - 'G'
 Anchor Length 58' Drill Pipe Run 4020.37' Mud Wt. 9.4
 Top Packer Depth 4197 Drill Collars Run 186.48' Vis 56
 Bottom Packer Depth 4202 Wt. Pipe Run 0 WL 7.6
 Total Depth 4260 Chlorides 600 ppm System LCM 4#

Blow Description IF - Surface blow slowly built to 3/4"
ISI - No Return
FF - No Surface blow
FST - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>6'</u>	<u>asm</u>	<u>spots</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 6' BHT 129°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2208</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>2:36am</u>
(B) First Initial Flow <u>40</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:03am</u>
(C) First Final Flow <u>71</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>4:53am</u>
(D) Initial Shut-In <u>553</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>7:55am</u>
(E) Second Initial Flow <u>49</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>9:51am</u>
(F) Second Final Flow <u>73</u>	<input checked="" type="checkbox"/> Mileage <u>150 R/T</u> 232.50	Comments _____
(G) Final Shut-In <u>128</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2152</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

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

Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Sub Total 1807.50

Total 1807.50
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61005

Well Name & No. Waters #1-32 Test No. 5 Date 11-16-14
 Company Murfin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #22
 Location: Sec. 32 Twp. 1S Rge. 38 W Co. Cheyenne State Ks

Interval Tested 4260 - 4350 Zone Tested Lans. - 'H-J'
 Anchor Length 90' Drill Pipe Run 4078.52' Mud Wt. 9.5
 Top Packer Depth 4255 Drill Collars Run 186.48' Vis 85
 Bottom Packer Depth 4260 Wt. Pipe Run 0 WL 7.6
 Total Depth 4350 Chlorides 500 ppm System LCM 60#

Blow Description IF - Surface blow slowly built to 3/4"
ISI - No Return
FF - No Surface blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>OSM</u>	<u>Spots</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 130°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2171 Test 1250 T-On Location 2:41am
 (B) First Initial Flow 18 Jars 250 T-Started 2:56am
 (C) First Final Flow 20 Safety Joint 75 T-Open 5:14am
 (D) Initial Shut-In 235 Circ Sub N/C T-Pulled 8:14am
 (E) Second Initial Flow 22 Hourly Standby _____ T-Out 10:31am
 (F) Second Final Flow 23 Mileage 150 R/T 232.50 Comments _____
 (G) Final Shut-In 172 Sampler _____
 (H) Final Hydrostatic 2096 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Sub Total 0
 Total 1807.50
 MP/DST Disc't _____
 Sub Total 1807.50

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **61006**

Well Name & No. Waters #1-32 Test No. 6 Date 11-17-14
 Company Martin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Bert Matson Rig Martin #20
 Location: Sec. 32 Twp. 1S Rge. 38W Co. Cheyenne State Ks

Interval Tested 4502 - 4560 Zone Tested Pawnee
 Anchor Length 58' Drill Pipe Run 4303.49' Mud Wt. 9.4
 Top Packer Depth 4497 Drill Collars Run 186.48' Vis ~~57~~
 Bottom Packer Depth 4502 Wt. Pipe Run 0 WL 6.8
 Total Depth 4560 Chlorides 600 ppm System LCM 6#

Blow Description IF - Surface blow built to 3/4" then died off to 1/4"
ISI - No return
FF - No surface 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

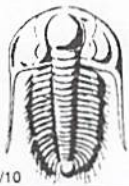
Rec Total 5' BHT 136°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2306 Test 1250 T-On Location 11:54am
 (B) First Initial Flow 13 Jars 250 T-Started 12:17pm
 (C) First Final Flow 17 Safety Joint 75 T-Open 3:16pm
 (D) Initial Shut-In 30 Circ Sub _____ T-Pulled 6:16pm
 (E) Second Initial Flow 17 Hourly Standby _____ T-Out 8:31pm
 (F) Second Final Flow 19 Mileage 150 R/T 232.50 Comments Computer shut down
 (G) Final Shut-In 27 Sampler _____ when I was trying to
 (H) Final Hydrostatic 2287 Straddle _____ download recorder 6753
 Ruined Shale Packer _____
 Ruined Packer _____

Initial Open 30 Extra Packer _____
 Initial Shut-In 60 Extra Recorder _____
 Final Flow 30 Extra Recorder _____
 Final Shut-In 60 Day Standby _____
 Accessibility _____
 Sub Total 1807.50 Total 1807.50
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61007

Well Name & No. Waters #132 Test No. 7 Date 11-19-14
 Company Murfin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste. 300 Wichita KS 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38W Co. Cheyenne State KS

Interval Tested 4356-4446 Zone Tested Lans. - K
 Anchor Length 90' Drill Pipe Run 4159.12' Mud Wt. 9.3
 Top Packer Depth 4351 Drill Collars Run 186.48' Vis 53
 Bottom Packer Depth 4356 Wt. Pipe Run 0 WL 6.8
 Total Depth 4720 Chlorides 900 ppm System LCM 4#

Blow Description IF - Surface blow built to 10 3/4"
ISI - No Return
FF - Surface blow built to 10"
FST - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>217</u>	<u>Wm</u>		<u>15</u>	<u>85</u>	
<u>217</u>	<u>mW</u>		<u>60</u>	<u>40</u>	

Rec Total 4134' BHT 143°F Gravity _____ API RW .495 @ 28 °F Chlorides 34,000 ppm

(A) Initial Hydrostatic 2246 Test 1250 T-On Location 9:50 am
 (B) First Initial Flow 22 Jars 250 T-Started 2:10 pm
 (C) First Final Flow 125 Safety Joint 75 T-Open 4:33 pm
 (D) Initial Shut-In 1348 Circ Sub N/C T-Pulled 8:33 pm
 (E) Second Initial Flow 128 Hourly Standby _____ T-Out 11:07 pm
 (F) Second Final Flow 212 Mileage 150 R/T 232.50 Comments Had to go get
 (G) Final Shut-In 1275 Sampler 232.50 a two foot perf from bubble
 (H) Final Hydrostatic 2197 Straddle 600 back @ 1:17 pm, loaded tool

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30
 Initial Shut-In 60 Extra Recorder 200 Sub Total 0
 Final Flow 60 Day Standby _____ Total 2840
 Final Shut-In 90 Accessibility _____ MP/DST Disc't _____
 Sub Total 2840

Approved By _____ Our Representative _____

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PO Box 93999
Southlake, TX 76092

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

*acct
Prd-MG*

INVOICE

Invoice Number: 1469 47

Invoice Date: Nov 7, 2014

Page: 1

Federal Tax I.D.#: 20-8651475

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	64309	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Nov 7, 2014	12/7/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Waters #1-32		
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
1,089.00	CEMENT SERVICE	Ton Mileage Charge	2.75	2,994.75
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
100.00	CEMENT SERVICE	Pump Truck Mileage	7.70	770.00
100.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	440.00
1.00	CEMENT SERVICE	Manifold Head Rental	275.00	275.00
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

\$ 3,956.36 *356*

ONLY IF PAID ON OR BEFORE
Dec 7, 2014

Subtotal	11,303.90
Sales Tax	385.17
Total Invoice Amount	11,689.07
Payment/Credit Applied	
TOTAL	11,689.07

3956.36
7,732.71
OK RR

ALLIED OIL & GAS SERVICES, LLC 064309

Federal Tax I.D. # 20-8651475

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

SERVICE POINT: Oakley, KS

DATE <u>11-7-14</u>	SEC <u>32</u>	TWP. <u>1</u>	RANGE <u>38</u>	CALLED OUT	ON LOCATION <u>2:30 p.m.</u>	JOB START <u>4:30 p.m.</u>	JOB FINISH <u>5:00 p.m.</u>
LEASE <u>Wells</u>	WELL # <u>1-32</u>	LOCATION <u>Bird City N to BB, 4w,</u>		COUNTY <u>Cherokee</u>	STATE <u>KS</u>		
OLD OR <u>NEW</u> (Circle one)		<u>2 1/2 S, E + S into</u>					

CONTRACTOR Martin D
 TYPE OF JOB Surface
 HOLE SIZE 12 1/4 T.D. 210'
 CASING SIZE 8 5/8 DEPTH 22.5'
 TUBING SIZE DEPTH
 DRILL PIPE DEPTH
 TOOL DEPTH
 PRES. MAX MINIMUM
 MEAS. LINE SHOE JOINT
 CEMENT LEFT IN CSG. 15'
 PERFS.
 DISPLACEMENT 13 bbl water

OWNER Same
 CEMENT AMOUNT ORDERED 22.5 sks Com 3/1 CC
 COMMON 22.5 sks @ 17.90 4027.50
 POZMIX @
 GEL @
 CHLORIDE 635 # @ 1.10 698.50
 ASC @
 @
 @
 @
 @
 @
 @

EQUIPMENT
 PUMP TRUCK CEMENTER Paul Beaver
 # 120 HELPER Tyler Flipse / Juan 3
 BULK TRUCK DRIVER Marco Tus
 # 600
 BULK TRUCK DRIVER
 #

Material 2.10 @ 4,126.00
(1654.10 / 35%)
 HANDLING 236.25 @ 2.48 585.90
 MILEAGE 10,894 mi @ 2.75 2994.75
 TOTAL

REMARKS:
Mix 22.5 sks Com 3/1 CC
Displace w/ water
cement did circ
5 bbl cement to pit
Thank You!
Paul + Crew

CHARGE TO: Martin D
 STREET
 CITY STATE ZIP

SERVICE
 DEPTH OF JOB 22.5'
 PUMP TRUCK CHARGE 1512.25
 EXTRA FOOTAGE @
 MILEAGE MLHV 100 @ 7.90 790.00
 MANIFOLD Head 275.00
MLV 100 @ 4.40 440.00

(2,302.26 / 35%) TOTAL 6,571.90

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.

PLUG & FLOAT EQUIPMENT
 @
 @
 @
 @
 @
 TOTAL

PRINTED NAME Greg Cordun
 SIGNATURE Greg Cordun

SALES TAX (If Any)
 TOTAL CHARGES 11,303.90
 DISCOUNT 3,956.36 (35%) IF PAID IN 30 DAYS
7,347.53 Net.



PO Box 93999
Southlake, TX 76092

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

acct
Prod-MG

INVOICE

Invoice Number: 147230
Invoice Date: Nov 20, 2014
Page: 1

Federal Tax I.D.#: 20-8651475

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	64357	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-03	Oakley	Nov 20, 2014	12/20/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Waters #1-32		
141.00	CEMENT MATERIALS	Class A Common	17.90	2,523.90
94.00	CEMENT MATERIALS	Pozmix	9.35	878.90
808.00	CEMENT MATERIALS	Gel	0.50	404.00
59.00	CEMENT MATERIALS	Flo Seal	2.97	175.23
252.39	CEMENT SERVICE	Cubic Feet Charge	2.48	625.93
1,054.00	CEMENT SERVICE	Ton Mileage Charge	2.75	2,898.50
1.00	CEMENT SERVICE	Plug to Abandon	2,800.47	2,800.47
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	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

\$ 4,030.92 ✓

ONLY IF PAID ON OR BEFORE

Dec 20, 2014

Subtotal	11,626.93
Sales Tax	947.59
Total Invoice Amount	12,574.52
Payment/Credit Applied	
TOTAL	12,574.52

- 4030.92
8543.60

OK JK

ALLIED OIL & GAS SERVICES, LLC 064357

Federal Tax I.D. # 20-8651475

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

SERVICE POINT: Dakota, KS

DATE <u>11-20-14</u>	SEC. <u>32</u>	TWP. <u>1</u>	RANGE <u>38</u>	CALLED OUT	ON LOCATION <u>5:00am</u>	JOB START <u>8:00am</u>	JOB FINISH <u>7:00pm</u>
LEASE <u>Waters</u>	WELL# <u>1-32</u>	LOCATION <u>Bankelman St to BB, 401</u>			COUNTY <u>Cheyenne</u>	STATE <u>KS</u>	
OLD OR NEW (Circle one)				<u>2 1/2 Cements</u>			

CONTRACTOR Marfan 2D

TYPE OF JOB PTA

HOLE SIZE 7 1/8 T.D. 4720

CASING SIZE _____ DEPTH _____

TUBING SIZE _____ DEPTH _____

DRILL PIPE 4 1/2 DEPTH 31201

TOOL _____ DEPTH _____

PRES. MAX _____ MINIMUM _____

MEAS. LINE _____ SHOE JOINT _____

CEMENT LEFT IN CSG. _____

PERFS. _____

DISPLACEMENT 37.83 bbl

OWNER Same

CEMENT AMOUNT ORDERED 2355 to 60740 4999
1/2 # 16-50P

COMMON	<u>1415#</u>	@ <u>17.90</u>	<u>2523.90</u>
POZMIX	<u>995#</u>	@ <u>9.35</u>	<u>9302.75</u>
GEL	<u>808#</u>	@ <u>.50</u>	<u>404.00</u>
CHLORIDE		@	
ASC		@	

EQUIPMENT

PUMP TRUCK # 378 CEMENTER Lakene Eubank

BULK TRUCK # 818/287 HELPER Wynne McElghy

BULK TRUCK # _____ DRIVER Dan Mascono (TWS)

BULK TRUCK # _____ DRIVER Shawn Tatro

16-50P 59# @ 2.71 1722.3

Material Total @ _____ 3,982.03

(1393.71 / 353)

HANDLING 2523.90 @ 2.48 6279.23

MILEAGE 10.54 hr X 100 X 2.75 2898.50

TOTAL _____

REMARKS:

Mix 505# 31201

Mix 1005# 23201

Mix 805# 2751

Mix 105# 40' w/ plug

Mix 105# M.G.

Mix 155# R.H.

Thank You

CHARGE TO: Marfan

STREET _____

CITY _____ STATE _____ ZIP _____

SERVICE

DEPTH OF JOB 31201

PUMP TRUCK CHARGE _____ 2800.92

EXTRA FOOTAGE @ _____

MILEAGE MTH 100 @ 2.70 270.00

MANIFOLD MTH 100 @ 4.40 440.00

(2637.21 / 353) TOTAL 7,531.90

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.

PLUG & FLOAT EQUIPMENT

Wooden Plug @ _____ 110.00

TOTAL 110.00

PRINTED NAME _____

SIGNATURE [Signature]

SALES TAX (If Any) _____

TOTAL CHARGES 11,626.93

DISCOUNT 4,036.92 (35%) IF PAID IN 30 DAYS

7590.01 Net.

Water #1-32
 Daily Drilling Report
 Page Two

- 11/16/14 Depth 4350'. Cut 90'. DT: None. CT: 16 ¾ hrs. Dev.: None. **DST # 4 4202-4260 (LKC D'-LKC G)**: 30-60-30-60. IF: surf blw built to ¾". FF: no blw. Rec.: 6'OSM (Oil Spots). HP: 2208-2152. FP: 40/72, 50/74. SIP: 553-129. BHT: 130°. **DST #5 4260-4350 (LKC H-LKC J)**: 30-60-30-60. IF: surf blw built to ¾". FF: no blw. Rec.: 5'OSM (Oil Spots). HP: 2171-2097. FP: 18/21, 22/23. SIP: 236-172. BHT: 130°.
- 11/17/14 Depth 4545'. Cut: 195'. DT: None. CT: 7¼ hrs. Dev.: None. **Pawnee**: Ls, pp-med inter xln por, fn grn oolites w/inter oolitic por, some crs grn oolites, GSFO, drk brn. **DST #6 4502-4560 (Pawnee)**:
- 11/18/14 Depth 4620'. Cut 75'. DT: None. CT: 17½ hrs. Dev.: None. **DST #6 4502-4560 (Pawnee)**: 30-60-30-60. IF: surf blw built to ¾" & then died off to ¼". FF: no surf blw. Rec.: 5'M. HP: 2306-2288. FP: 14/17, 17/19. 31-27. BHT: 136°.
- 11/19/14 RTD 4720'. Cut 100'. DT: None. CT: 17¾ hrs. Dev.: None. TD @ 2:15PM 11/18. Pioneer logged 8:00PM 11/18 – 3:30AM 11/19. LTD: 4726'. **DST #7 4356-4446 (LKC K Straddle)**:
- 11/20/14 RTD 4720'. CT: 24hrs. Dev.: None. **DST #7 4356-4446 (LKC K Straddle)**: 30-60-60-90. IF: surf blw built to 10¾". FF: surf blw built to 10". Rec.: 217'WM (85%M, 15%W), 217'MW (40%M, 60%W). HP: 2247-2198. FP: 22/125, 128/212. SIP: 1348-1275. BHT: 144°. Chl 34,000ppm. RW .495 @ 28° F=.114 @ 144° F. Allied plugged (4:30AM – 8:00AM 11/20) as follows using 60/40 Poz, 4%Gel, ¼# Floseal, 50sxs @ 3160', 100sxs @ 2320', 50sxs @ 275', 10sxs @ 40', 15sxs RH, 10sxs MH. Orders Bruce Rodie KCC Hays.
- 11/21/14 RTD: 4720'. CT: 5hrs. RR @ 12:00PM 11/20/14. FINAL REPORT

MDCI Waters #1-32 800' FNL 1410' FWL Sec. 29-T1S-R38W 3184' KB							MDCI Bash #1-29 1665' FNL 800' FEL Sec. 29-T1S-R38W 3216' KB	
Formation	Sample top	Datum	Ref	Log Top	Datum	Ref	Log Top	Datum
Anhydrite	3124	+60	+12	3124	+60	+12	3168	+48
B/Anhydrite	3156	+28	+15	3158	+26	+13	3203	+13
Neva	3583	-399	Flat	3580	-396	+3	3615	-399
Red Eagle	3650	-466	+3	3650	-466	+3	3685	-469
Foraker	3703	-519	+4	3704	-520	+3	3739	-523
Topeka	3931	-747	+5	3931	-747	+5	3968	-752
Oread	4055	-871	+7	4066	-882	-4	4094	-878
Lansing	4124	-940	+8	4138	-954	-6	4164	-948
Stark	4350	-1166	+5	4364	-1180	-9	4387	-1171
BKC	4404	-1222	+5	4426	-1242	-15	4443	-1227
Pawnee	4531	-1347	+8	4552	-1368	-13	4571	-1355
Cherokee	4618	-1434	+6	4636	-1452	+12	4656	-1440
Mississippi							4890	-1674
RTD	4720	-1536					5000	-1784
LTD				4726	-1542		5002	-1786