



1261234



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			
Geologist Report / Mud Logs	<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)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

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>			PRODUCTION INTERVAL: Top _____ Bottom _____	

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:
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Form	ACO1 - Well Completion
Operator	Murfin Drilling Co., Inc.
Well Name	Frisbie 'A' 4-6
Doc ID	1261234

All Electric Logs Run

DIL
DUCP
MEL
BHCS
CBL



# Saman Sharifaie

## Petroleum Geologist

### GEOLOGIST'S REPORT

#### DRILLING TIME AND SAMPLE LOG

COMPANY: **Martin Drilling Co., Inc.**  
LEASE: **Frisbie "A" #4-6**

FIELD: **Wildcat**  
LOCATION: **2140 FSL & 2150 FVTL**  
SEC: **6** TWP: **2S** RGE: **36W**  
COUNTY: **Rushville** STATE: **Kansas**

CONTRACTOR: **Martin Drilling R/S**  
SPUD: **06/17/15** COMP: **06/26/15**  
RTD: **4860'** TYPE MUD: **4888'**

MUD UP: **3360'** TYPED MUD: **Chemical**  
SAMPLES SAVED FROM: **3970'** TO RTD  
DRILLING TIME KEPT FROM: **3970'** TO RTD  
SAMPLES EXAMINED FROM: **3970'** TO RTD

GEOLOGICAL SUPERVISION FROM: **3670'**  
REFERENCE WELL: **MDCL- Frisbie "A" #2-6**

CONDUCTOR: **8-5/8" at 345'**  
SURFACE: **8-5/8" at 345'**  
PRODUCTION: **5-1/2" at 4840'**

CASING: **MEASUREMENTS ARE ALL FROM KENNEDY BUSHING**

ELECTRICAL SUPPLIES: **CND, DLT, MEEL, Somic**

FORMATION: **MDCL- Frisbie "A" #2-6**

Formation	Sample Tops	E-log Tops	Stand Feet
Anhydrite	3265 (-497)	3260 (+102)	4
Base Anhydrite	3295 (-467)	3293 (+69)	1
Trilobite	4074 (-712)	4072 (-710)	2
Oolite	4306 (-484)	4306 (-484)	1
Limestone	4290 (-492)	4287 (-495)	2
Siltst	4308 (-484)	4305 (-485)	1
BKC	4358 (-1196)	4356 (-1194)	1
Pawnee	4684 (-1322)	4683 (-1321)	1
Cherokee	4754 (-1402)	4756 (-1394)	1



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

Respectfully Submitted,  
Saman Sharifaie  
Petroleum Geologist

API #15-153-21151

Curve Track 1	ROP (Min/Ft)	Gamma (API)	Caliper (Inches)

Geological Descriptions	Engineering Data
<b>Anhydrite 3260 (+102)</b>	
<b>Base 3293 (+69)</b>	

Geological Descriptions	Engineering Data
<b>DAILY PENETRATION @ 7:00 AM</b> 06/17/15 - Spudded at 3:45 PM 06/18/15 - WOC at 345' 06/19/15 - Drilling at 2920' 06/20/15 - Bit Trip at 3920' 06/21/15 - Drilling at 4298' 06/22/15 - Drilling at 4390' 06/23/15 - Drilling at 4490' 06/24/15 - Drilling at 4562' 06/25/15 - Drilling at 4840'	Pipe Strap @ 3920': 0.46" Short to Board Deviation Survey: 1"

Geological Descriptions	Engineering Data
<b>Stotler 4005 (-643)</b> Ls., gry/brn/blk, fss IP, pyrc Sh., rd/gry, stly IP, pyrc Sh., brn/dk org, stly, pyrc Ls., tan/crm, fn xln, foss/Oolc, no-pr vis por, dns, calc cmt, sbang, hd to sub-chky, Tr pyr, n/s Sh., gry/brn/dk org, mica, brit, sli stly, pyrc IP Ls., a.a. pred crm, incr ang, v calc Sh., gry/brn/blk carb, pyrc, fss IP, brit to sli sft Ls., crm, v-fn xln, NVP, dns, calc cmt, hd to sub-chky, sbang, shly, n/s Sh., dk org, stly, fri & Sh., gry, pyrc, sli sft Ls., crm, v-fn xln, NVP, dns, calc cmt, hd to sub-chky, sbang, shly, n/s Sh., dk org/gry/gn, mica IP, stly to brit, Tr pyrc <b>Topeka 4072 (-710)</b> Ls., crm/wht, mott IP, fn xln, Oolc IP, pr vis por, dns to sub-chky, calc cmt, sbang, imbdd w/ rd Sh, n/s Ls., wht/crm, sing, v-fn xln, Tr pr int/Oolc por, pred NVP, dns to sub-chky, calc cmt, sbang, calc gry Sh, n/s Ls., crm, sing, fn xln, Tr vug por, pred NVP, hd/dns, calc cmt, sbang to bily, abund Chk, n/s Sh., gry/gn/purp, sft to brit, sli pyrc, fss IP Silst., brn/dk org, fn gr, srt/d, fri, sndy IP, fr intgran por, sub-mdd, consl, shly, n/s Sh., brn/dk org, stly, fri Sh., gry/gn, sli stly, pyrc IP, sli sft to brit <b>LeCompton 4148 (-786)</b> Ls., wht/crm/lt gry, fn xln, Tr pr int/Oolc IP, pr vis por, dns, calc IP, ang to bily, hd to sub-chky, Tr pyr, n/s Sh., purp/gry/gn, sli stly, calc, fri, pyrc IP Sh., gry/varic, sli stly, calc IP, pyrc IP, fri to sft Sh., gry/org, sli stly, calc IP, fss, sft to brit Sh., gry/blk carb, calc IP, brit, pyrc IP	<b>Morgan Mud @ 3945'</b> Wt: 8.9 Vis: 52 Wf: 6.8 Chl: 700 LCM: 4#

Geological Descriptions	Engineering Data
<b>Oread 4206 (-844)</b> Ls., crm/wht/lt gry, fn-med xln, foss IP, Tr pr fr int/Oolc & xln por, rexdz IP, hd/dns to sub-chky/brit, scat Chk, pyrc, rr dk brn/blk pch spld stn, pred d/glis, Tr min floor, no odr, NSFO Ls., crm, sing, fn xln, Tr pr int/Oolc & xln por, rr mior vug por, pt dns, sli fri, abund Chk, Tr Sd, calc IP, sli bily, Tr try blk stn, d/d/glis, no odr, NSLO Ls., tan/brn, sing, v-fn xln, NVP, v dns, hd, decr Chk abund, sbang to bily, scat gry Sh, n/s Sh., gry/blk carb, sli stly, pyrc Ls., tan/brn/gry, sing, v-fn xln, Tr foss, no-pr vis por, dns to chky, sli bily, Tr pyr, shly, n/s Sat., lt gry/crm, v-fn gr, srt/d, stly, pr intgran por, consl, sub-mdd, fri, calc, rexdz, Tr glucr, rr dd blk spld stn, lt sat, no floor, no odr, NSLO Sh., brn/gry/org/gn, stly to sli sndy, fri to brit, pyrc Sh., gry, fss IP, pyrc, sft to brit <b>Lansing 4287 (-925)</b> Ls., tan/crm, v-fn xln, foss/Oolc IP, pr intbn & frac por, Tr fr-gd vug por, dns to sli fri, calc IP, ang to bily, scat blk spld stn, sub-bit sat, gils IP, Tr pp FO & G Bubbles, rr dl floor, no-fr cut, frt odr, SSFO Ls., tan/brn, sing, v-fn xln, Tr pr intbn por, pred NVP, dns, calc IP, hd to sub-chky, sbang to bily, Tr dd blk spld stn, no odr, NSLO Sat., crm, v-fn gr, srt/d, pr-fr intgran por, consl, sub-mdd, fri, intbdd Ls, fr amt blk spld stn, lt-mod sat, dl yel floor, fr cut, frt odr, SSFO Sh., brn/dk org, stly Sh., gry/brn/blk, sft to brit Ls., crm/tan, fn xln, pr pp intbn por, pt dns, fri to sub-chky, scat try blk surf stn, gils IP, Tr dl floor, no odr, NSFO Ls., crm/wht, fn xln, pr-fr pp int/Oolc por, Tr gd xln vug por, dns to sub-chky, calc, sbang, fr amt med brn/blk spld stn, lt-mod sat, abund pp FO, Tr G Bubbles, irid OCW, Tr floor, gd cut, fr odr, F-GSFO Sh., gry/brn/blk carb, pyrc IP Ls., lt gry/crm, fn-med xln, foss IP, pr intbn por in 50%, sli dolc, fri, suc cut, calc, sbang to sub-mdd, pyrc IP, n/s Sh., dk gry/dk brn/blk carb, pyrc, fss IP Sh., brn/gry/gn, stly IP, brit to sft Sh., brn, stly, calc, sli bily Ls., crm, sing, fn xln, Oolc, pr-fr int/Oolc por, Tr xln incls, dns to sub-chky, calc IP, scat med brn/blk spld stn, sub-bit sat, gils IP, sli irid OCW, Tr sw bid FO, dl gn floor, v frt odr, SSFO Ls., a.a. tan IP, decr Shw abund, NSFO Sh., blk carb/dk gry, fss, pyrc, brit Sh., lt gry/blk carb/gn, pyrc, sndy IP, gmy to brit Sh., brn/gry/gn, dns, fri to brit Ls., crm/tan, fn-med xln, Tr foss, pr-fr intbn por, scat incls/vugs, rexdz IP, suc bt, dns to chky, sli fri IP, calc, sbang, scat blk/dk brn spld stn, lt sat, Tr slw bid pp FO, dl floor, no odr, VSSFO Ls., a.a. lt gry IP, scat dd blk spld stn, pr por, NSLO Sh., gry/varic, pyrc Sh., brn/dk org, stly to sndy, fri to sft Sh., gry/blk carb, fss, pyrc Silst., brn/dk org, fn gr, srt/d, pr intgran por, consl, dns, calc, fri to sli sft, sbang to bily, shly, n/s Ls., crm/wht/tan, v-fn xln, sli foss, pr pp intpart & xln por, rexdz, dns to sub-chky, calc, ang to bily, Tr imbdd pyr, scat med brn/blk spld stn, try/gils IP, sub-bit sat, Tr slw bid pp FO, Tr dl yel/gld floor, no odr, VSSFO <b>Stark 4505 (-1143)</b> Sh., gry/brn/blk carb, sli stly, pyrc, fss IP Silst., brn/dk org, fn gr, srt/d, pr intgran por, consl, dns, calc, fri to sli sft, sub-mdd, shly, n/s Sh., gry/gn/varic, mica, brit, pyrc Ls., crm/tan/lt gry, mott IP, fn xln, foss IP, no-pr vis por, dns to sub-chky, sli dolc IP, sbang to bily, sli calc, n/s Sh., brn/gry/brn/blk carb, stly IP, fri to brit, dns, bily Ls., crm/tan, fn xln, Oolc IP, Tr pr pp intbn & int/Oolc por, dns to chky, calc cmt, rexdz, ang to bily, rr (3-6 scs) try blk sin, gils, no floor, no odr, NSFO <b>BKC 4556 (-1194)</b> Sh., brn/gry/gn, stly to sndy IP <b>Lenapah 4569 (-1207)</b> Ls., crm, sing, v-fn xln, rr foss, NVP, dns, calc cmt, bily, hd to sub-chky, n/s Sh., brn/dk org, stly IP, fri to sft Sh., gry/gn, sli fss, pyrc, sft to brit <b>Marmaton 4598 (-1236)</b> Ls., crm/lt gry, fn xln, rr foss, calc IP, pr intbn por, pt dns to sub-chky, calc cmt, stly IP, sli pyrc, scat n/s Sh., gry/purp, stly, sli calc, pyrc IP, fri to sli sft Sh., gry/blk, sli carb IP, pyrc Sh., brn/lt gry, stly to gmy Sh., crm/wht, mott IP, fri to sli sft Ls., crm/tan/lt, stly, fn xln, foss, pr intpart por, calc IP, fri to chky, intbdd Sh, sndy IP, n/s Sh., brn, stly, fri to sli sft Ls., crm/tan/lt gry, mott, fn xln, foss, pr pp intpart por, sli fri to chky, calc IP, sbang, n/s Ls., gry, sing, fn-med xln, Tr foss, pr intbn por, pt dns, stly, calc, rexdz, pyrc, shly, n/s Sh., brn/varic, stly, fri Sh., gry/blk carb, fss IP, sli pyrc, brit to sft Sh., lt gry, gmy <b>Pawnee 4683 (-1321)</b> Ls., crm, fn xln, foss/Oolc, no-pr vis por, dns, calc cmt & imbdd xls, hd to sli brit, sub-chky IP, sbang, n/s Ls., wht/lt gry/crm, v-fn xln, NVP, dns, calc, hd to chky, ang to bily, sli stly/suc IP, n/s Sh., gry/blk carb, pyrc, brit to sli sft Ls., crm/tan/lt gry, sing, fn xln, Oolc, pr vis por, dns to sub-chky, calc cmt, sli fri, sbang, rexdz IP, n/s Ls., crm/tan/brn, sing, fn xln, Tr foss, sli dolc IP, Tr pr intgran por, pred NVP, dns to sub-chky, sbang to bily, n/s Sh., gry/blk carb, pyrc <b>Ft Scott 4742 (-1380)</b> Ls., tan/crm/gry, fn xln, Oolc, no-pr por, dns to sli brit, calc cmt & imbdd xls, sbang to bily, sub-chky to chky IP, sli suc/rexdz IP, n/s <b>Cherokee 4756 (-1394)</b> Sh., gry/blk carb, fss IP, pyrc, sft to brit Ls., tan/crm/lt brn, v-fn xln, Tr foss, no-pr vis por, calc cmt & imbdd xls, pred dns to sub-chky, sbang to bily, scat dr Sd w/ glau spts, n/s Ls., tan/lt brn, v-fn xln, Tr foss, Tr pr frac por, dns, hd, calc IP, bily to sbang, incr Sd abund, n/s Sh., gry/brn/blk carb, fss, bily IP, brit to fri Sh., gry/brn/brn, sli stly, fss IP, fri to sft Ls., crm/tan/lt gry, fn xln, foss IP, no-pr por, calc, pt dns to sub-chky, sli brit IP, sbang to bily, shly, n/s Sh., gry/blk carb, fss IP, pyrc, sli sft to brit Sat., crm/wht/dl, sli mott, fn-med gr, pr-mod srt/d, pr intgran por, consl, calc, rexdz, sli fri, shly, n/s Sh., gry/gn/purp, stly to sndy IP, Tr varic, 30% Ls a.a Sh., brn/org/gry/varic, fss to bily IP, stly to sndy IP	<b>DST #1</b> (LKC A-D) 4238'-4360' 30-60-30-60 IF: BOB in 4 mins ISI: No return FF: BOB in 5 mins FSI: No return Rec: 815' MW (15%M, 85%W), 950' WM (20%W, 80%M) IFP: 81 - 526 FFP: 541 - 517 ISIP: 1100 FHP: 1099 IHP: 2171 BHT: 2086 BHT: 149°  <b>DST #2</b> (LKC G) 4360'-4420' 15-60-15-60 IF: BOB in 1 min ISI: Surf return, died at 40 mins FF: BOB in 2 mins FSI: No return Rec: 660' GOCM (5%G, 25%O, 70%W), 750' MCWGO (15%M, 25%W, 30%G, 30%O), 630' OCW (5%O, 95%W) IFP: 450 - 721 FFP: 757 - 893 ISIP: 981 FHP: 954 IHP: 2232 BHT: 2203 BHT: 153°  <b>Morgan Mud @ 4351'</b> Wt: 9.1 Vis: 68 Wf: 7.6 Chl: 1,100 LCM: 4# Deviation Survey @ 4360': 1/2°  <b>DST #3</b> (LKC H-J) 4420'-4510' 30-60-60-90 IF: Blow built to 8 3/4" ISI: No return FF: BOB in 57 mins FSI: No return Rec: 40' OCM (30%O, 70%M), 320' OCWM (5%O, 10%W, 85%M) IFP: 23 - 106 FFP: 114 - 168 ISIP: 1478 FHP: 1200 IHP: 2254 BHT: 2249 BHT: 145°  <b>Morgan Mud @ 4510'</b> Wt: 9.2 Vis: 62 Wf: 6.4 Chl: 1,100 LCM: 4# Deviation Survey @ 4510': 3/2°  <b>Morgan Mud @ 4588'</b> Wt: 9.2 Vis: 70 Wf: 6.0 Chl: 1,000 LCM: 6# Deviation Survey @ 4860': 3/2°

Geological Descriptions	Engineering Data
<b>Stark 4505 (-1143)</b> Sh., gry/brn/blk carb, sli stly, pyrc, fss IP Silst., brn/dk org, fn gr, srt/d, pr intgran por, consl, dns, calc, fri to sli sft, sub-mdd, shly, n/s Sh., gry/gn/varic, mica, brit, pyrc Ls., crm/tan/lt gry, mott IP, fn xln, foss IP, no-pr vis por, dns to sub-chky, sli dolc IP, sbang to bily, sli calc, n/s Sh., brn/gry/brn/blk carb, stly IP, fri to brit, dns, bily Ls., crm/tan, fn xln, Oolc IP, Tr pr pp intbn & int/Oolc por, dns to chky, calc cmt, rexdz, ang to bily, rr (3-6 scs) try blk sin, gils, no floor, no odr, NSFO <b>BKC 4556 (-1194)</b> Sh., brn/gry/gn, stly to sndy IP <b>Lenapah 4569 (-1207)</b> Ls., crm, sing, v-fn xln, rr foss, NVP, dns, calc cmt, bily, hd to sub-chky, n/s Sh., brn/dk org, stly IP, fri to sft Sh., gry/gn, sli fss, pyrc, sft to brit <b>Marmaton 4598 (-1236)</b> Ls., crm/lt gry, fn xln, rr foss, calc IP, pr intbn por, pt dns to sub-chky, calc cmt, stly IP, sli pyrc, scat n/s Sh., gry/purp, stly, sli calc, pyrc IP, fri to sli sft Sh., gry/blk, sli carb IP, pyrc Sh., brn/lt gry, stly to gmy Sh., crm/wht, mott IP, fri to sli sft Ls., crm/tan/lt, stly, fn xln, foss, pr intpart por, calc IP, fri to chky, intbdd Sh, sndy IP, n/s Sh., brn, stly, fri to sli sft Ls., crm/tan/lt gry, mott, fn xln, foss, pr pp intpart por, sli fri to chky, calc IP, sbang, n/s Ls., gry, sing, fn-med xln, Tr foss, pr intbn por, pt dns, stly, calc, rexdz, pyrc, shly, n/s Sh., brn/varic, stly, fri Sh., gry/blk carb, fss IP, sli pyrc, brit to sft Sh., lt gry, gmy <b>Pawnee 4683 (-1321)</b> Ls., crm, fn xln, foss/Oolc, no-pr vis por, dns, calc cmt & imbdd xls, hd to sli brit, sub-chky IP, sbang, n/s Ls., wht/lt gry/crm, v-fn xln, NVP, dns, calc, hd to chky, ang to bily, sli stly/suc IP, n/s Sh., gry/blk carb, pyrc, brit to sli sft Ls., crm/tan/lt gry, sing, fn xln, Oolc, pr vis por, dns to sub-chky, calc cmt, sli fri, sbang, rexdz IP, n/s Ls., crm/tan/brn, sing, fn xln, Tr foss, sli dolc IP, Tr pr intgran por, pred NVP, dns to sub-chky, sbang to bily, n/s Sh., gry/blk carb, pyrc <b>Ft Scott 4742 (-1380)</b> Ls., tan/crm/gry, fn xln, Oolc, no-pr por, dns to sli brit, calc cmt & imbdd xls, sbang to bily, sub-chky to chky IP, sli suc/rexdz IP, n/s <b>Cherokee 4756 (-1394)</b> Sh., gry/blk carb, fss IP, pyrc, sft to brit Ls., tan/crm/lt brn, v-fn xln, Tr foss, no-pr vis por, calc cmt & imbdd xls, pred dns to sub-chky, sbang to bily, scat dr Sd w/ glau spts, n/s Ls., tan/lt brn, v-fn xln, Tr foss, Tr pr frac por, dns, hd, calc IP, bily to sbang, incr Sd abund, n/s Sh., gry/brn/blk carb, fss, bily IP, brit to fri Sh., gry/brn/brn, sli stly, fss IP, fri to sft Ls., crm/tan/lt gry, fn xln, foss IP, no-pr por, calc, pt dns to sub-chky, sli brit IP, sbang to bily, shly, n/s Sh., gry/blk carb, fss IP, pyrc, sli sft to brit Sat., crm/wht/dl, sli mott, fn-med gr, pr-mod srt/d, pr intgran por, consl, calc, rexdz, sli fri, shly, n/s Sh., gry/gn/purp, stly to sndy IP, Tr varic, 30% Ls a.a Sh., brn/org/gry/varic, fss to bily IP, stly to sndy IP	

Geological Descriptions	Engineering Data
<b>Stark 4505 (-1143)</b> Sh., gry/brn/blk carb, sli stly, pyrc, fss IP Silst., brn/dk org, fn gr, srt/d, pr intgran por, consl, dns, calc, fri to sli sft, sub-mdd, shly, n/s Sh., gry/gn/varic, mica, brit, pyrc Ls., crm/tan/lt gry, mott IP, fn xln, foss IP, no-pr vis por, dns to sub-chky, sli dolc IP, sbang to bily, sli calc, n/s Sh., brn/gry/brn/blk carb, stly IP, fri to brit, dns, bily Ls., crm/tan, fn xln, Oolc IP, Tr pr pp intbn & int/Oolc por, dns to chky, calc cmt, rexdz, ang to bily, rr (3-6 scs) try blk sin, gils, no floor, no odr, NSFO <b>BKC 4556 (-1194)</b> Sh., brn/gry/gn, stly to sndy IP <b>Lenapah 4569 (-1207)</b> Ls., crm, sing, v-fn xln, rr foss, NVP, dns, calc cmt, bily, hd to sub-chky, n/s Sh., brn/dk org, stly IP, fri to sft Sh., gry/gn, sli fss, pyrc, sft to brit <b>Marmaton 4598 (-1236)</b> Ls., crm/lt gry, fn xln, rr foss, calc IP, pr intbn por, pt dns to sub-chky, calc cmt, stly IP, sli pyrc, scat n/s Sh., gry/purp, stly, sli calc, pyrc IP, fri to sli sft Sh., gry/blk, sli carb IP, pyrc Sh., brn/lt gry, stly to gmy Sh., crm/wht, mott IP, fri to sli sft Ls., crm/tan/lt, stly, fn xln, foss, pr intpart por, calc IP, fri to chky, intbdd Sh, sndy IP, n/s Sh., brn, stly, fri to sli sft Ls., crm/tan/lt gry, mott, fn xln, foss, pr pp intpart por, sli fri to chky, calc IP, sbang, n/s Ls., gry, sing, fn-med xln, Tr foss, pr intbn por, pt dns, stly, calc, rexdz, pyrc, shly, n/s Sh., brn/varic, stly, fri Sh., gry/blk carb, fss IP, sli pyrc, brit to sft Sh., lt gry, gmy <b>Pawnee 4683 (-1321)</b> Ls., crm, fn xln, foss/Oolc, no-pr vis por, dns, calc cmt & imbdd xls, hd to sli brit, sub-chky IP, sbang, n/s Ls., wht/lt gry/crm, v-fn xln, NVP, dns, calc, hd to chky, ang to bily, sli stly/suc IP, n/s Sh., gry/blk carb, pyrc, brit to sli sft Ls., crm/tan/lt gry, sing, fn xln, Oolc, pr vis por, dns to sub-chky, calc cmt, sli fri, sbang, rexdz IP, n/s Ls., crm/tan/brn, sing, fn xln, Tr foss, sli dolc IP, Tr pr intgran por, pred NVP, dns to sub-chky, sbang to bily, n/s Sh., gry/blk carb, pyrc <b>Ft Scott 4742 (-1380)</b> Ls., tan/crm/gry, fn xln, Oolc, no-pr por, dns to sli brit, calc cmt & imbdd xls, sbang to bily, sub-chky to chky IP, sli suc/rexdz IP, n/s <b>Cherokee 4756 (-1394)</b> Sh., gry/blk carb, fss IP, pyrc, sft to brit Ls., tan/crm/lt brn, v-fn xln, Tr foss, no-pr vis por, calc cmt & imbdd xls, pred dns to sub-chky, sbang to bily, scat dr Sd w/ glau spts, n/s Ls., tan/lt brn, v-fn xln, Tr foss, Tr pr frac por, dns, hd, calc IP, bily to sbang, incr Sd abund, n/s Sh., gry/brn/blk carb, fss, bily IP, brit to fri Sh., gry/brn/brn, sli stly, fss IP, fri to sft Ls., crm/tan/lt gry, fn xln, foss IP, no-pr por, calc, pt dns to sub-chky, sli brit IP, sbang to bily, shly, n/s Sh., gry/blk carb, fss IP, pyrc, sli sft to brit Sat., crm/wht/dl, sli mott, fn-med gr, pr-mod srt/d, pr intgran por, consl, calc, rexdz, sli fri, shly, n/s Sh., gry/gn/purp, stly to sndy IP, Tr varic, 30% Ls a.a Sh., brn/org/gry/varic, fss to bily IP, stly to sndy IP	

Geological Descriptions	Engineering Data
<b>Stark 4505 (-1143)</b> Sh., gry/brn/blk carb, sli stly, pyrc, fss IP Silst., brn/dk org, fn gr, srt/d, pr intgran por, consl, dns, calc, fri to sli sft, sub-mdd, shly, n/s Sh., gry/gn/varic, mica, brit, pyrc Ls., crm/tan/lt gry, mott IP, fn xln, foss IP, no-pr vis por, dns to sub-chky, sli dolc IP, sbang to bily, sli calc, n/s Sh., brn/gry/brn/blk carb, stly IP, fri to brit, dns, bily Ls., crm/tan, fn xln, Oolc IP, Tr pr pp intbn & int/Oolc por, dns to chky, calc cmt, rexdz, ang to bily, rr (3-6 scs) try blk sin, gils, no floor, no odr, NSFO <b>BKC 4556 (-1194)</b> Sh., brn/gry/gn, stly to sndy IP <b>Lenapah 4569 (-1207)</b> Ls., crm, sing, v-fn xln, rr foss, NVP, dns, calc cmt, bily, hd to sub-chky, n/s Sh., brn/dk org, stly IP, fri to sft Sh., gry/gn, sli fss, pyrc, sft to brit <b>Marmaton 4598 (-1236)</b> Ls., crm/lt gry, fn xln, rr foss, calc IP, pr intbn por, pt dns to sub-chky, calc cmt, stly IP, sli pyrc, scat n/s Sh., gry/purp, stly, sli calc, pyrc IP, fri to sli sft Sh., gry/blk, sli carb IP, pyrc Sh., brn/lt gry, stly to gmy Sh., crm/wht, mott IP, fri to sli sft Ls., crm/tan/lt, stly, fn xln, foss, pr intpart por, calc IP, fri to chky, intbdd Sh, sndy IP, n/s Sh., brn, stly, fri to sli sft Ls., crm/tan/lt gry, mott, fn xln, foss, pr pp intpart por, sli fri to chky, calc IP, sbang, n/s Ls., gry, sing, fn-med xln, Tr foss, pr intbn por, pt dns, stly, calc, rexdz, pyrc, shly, n/s Sh., brn/varic, stly, fri Sh., gry/blk carb, fss IP, sli pyrc, brit to sft Sh., lt gry, gmy <b>Pawnee 4683 (-1321)</b> Ls., crm, fn xln, foss/Oolc, no-pr vis por, dns, calc cmt & imbdd xls, hd to sli brit, sub-chky IP, sbang, n/s Ls., wht/lt gry/crm, v-fn xln, NVP, dns, calc, hd to chky, ang to bily, sli stly/suc IP, n/s Sh., gry/blk carb, pyrc, brit to sli sft Ls., crm/tan/lt gry, sing, fn xln, Oolc, pr vis por, dns to sub-chky, calc cmt, sli fri, sbang, rexdz IP, n/s Ls., crm/tan/brn, sing, fn xln, Tr foss, sli dolc IP, Tr pr intgran por, pred NVP, dns to sub-chky, sbang to bily, n/s Sh., gry/blk carb, pyrc <b>Ft Scott 4742 (-1380)</b> Ls., tan/crm/gry, fn xln, Oolc, no-pr por, dns to sli brit, calc cmt & imbdd xls, sbang to bily, sub-chky to chky IP, sli suc/rexdz IP, n/s <b>Cherokee 4756 (-1394)</b> Sh., gry/blk carb, fss IP, pyrc, sft to brit Ls., tan/crm/lt brn, v-fn xln, Tr foss, no-pr vis por, calc cmt & imbdd xls, pred dns to sub-chky, sbang to bily, scat dr Sd w/ glau spts, n/s Ls., tan/lt brn, v-fn xln, Tr foss, Tr pr frac por, dns, hd, calc IP, bily to sbang, incr Sd abund, n/s Sh., gry/brn/blk carb, fss, bily IP, brit to fri Sh., gry/brn/brn, sli stly, fss IP, fri to sft Ls., crm/tan/lt gry, fn xln, foss IP, no-pr por, calc, pt dns to sub-chky, sli brit IP, sbang to bily, shly, n/s Sh., gry/blk carb, fss IP, pyrc, sli sft to brit Sat., crm/wht/dl, sli mott, fn-med gr, pr-mod srt/d, pr intgran por, consl, calc, rexdz, sli fri, shly, n/s Sh., gry/gn/purp, stly to sndy IP, Tr varic, 30% Ls a.a Sh., brn/org/gry/varic, fss to bily IP, stly to sndy IP	

Geological Descriptions	Engineering Data
<b>Stark 4505 (-1143)</b> Sh., gry/brn/blk carb, sli stly, pyrc, fss IP Silst., brn/dk org, fn gr, srt/d, pr intgran por, consl, dns, calc, fri to sli sft, sub-mdd, shly, n/s Sh., gry/gn/varic, mica, brit, pyrc Ls., crm/tan/lt gry, mott IP, fn xln, foss IP, no-pr vis por, dns to sub-chky, sli dolc IP, sbang to bily, sli calc, n/s Sh., brn/gry/brn/blk carb, stly IP, fri to brit, dns, bily Ls., crm/tan, fn xln, Oolc IP, Tr pr pp intbn & int/Oolc por, dns to chky, calc cmt, rexdz, ang to bily, rr (3-6 scs) try blk sin, gils, no floor, no odr, NSFO <b>BKC 4556 (-1194)</b> Sh., brn/gry/gn, stly to sndy IP <b>Lenapah 4569 (-1207)</b> Ls., crm, sing, v-fn xln, rr foss, NVP, dns, calc cmt, bily, hd to sub-chky, n/s Sh., brn/dk org, stly IP, fri to sft Sh., gry/gn, sli fss, pyrc, sft to brit <b>Marmaton 4598 (-1236)</b> Ls., crm/lt gry, fn xln, rr foss, calc IP, pr intbn por, pt dns to sub-chky, calc cmt, stly IP, sli pyrc, scat n/s Sh., gry/purp, stly, sli calc, pyrc IP, fri to sli sft Sh., gry/blk, sli carb IP, pyrc Sh., brn/lt gry, stly to gmy Sh., crm/wht, mott IP, fri to sli sft Ls., crm/tan/lt, stly, fn xln, foss, pr intpart por, calc IP, fri to chky, intbdd Sh, sndy IP, n/s Sh., brn, stly, fri to sli sft Ls., crm/tan/lt gry, mott, fn xln, foss, pr pp intpart por, sli fri to chky, calc IP, sbang, n/s Ls., gry, sing, fn-med xln, Tr foss, pr intbn por, pt dns, stly, calc, rexdz, pyrc, shly, n/s Sh., brn/varic, stly, fri Sh., gry/blk carb, fss IP, sli pyrc, brit to sft Sh., lt gry, gmy <b>Pawnee 4683 (-1321)</b> Ls., crm, fn xln, foss/Oolc, no-pr vis por, dns, calc cmt & imbdd xls, hd to sli brit, sub-chky IP, sbang, n/s Ls., wht/lt gry/crm, v-fn xln, NVP, dns, calc, hd to chky, ang to bily, sli stly/suc IP, n/s Sh., gry/blk carb	



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman Sharifaie

### **Frisbie A #4-6**

#### **6-2s-36w Rawlins,KS**

Start Date: 2015.06.21 @ 16:25:00

End Date: 2015.06.22 @ 01:25:00

Job Ticket #: 65062                      DST #: 1

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

Printed: 2015.06.26 @ 09:21:43

Murfin Drilling Co  
6-2s-36w Rawlins,KS  
Frisbie A #4-6  
DST # 1  
LKC "A-D"  
2015.06.21



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co  
250 N Water STE 300  
Wichita KS 67202  
ATTN: Saman Sharifaie

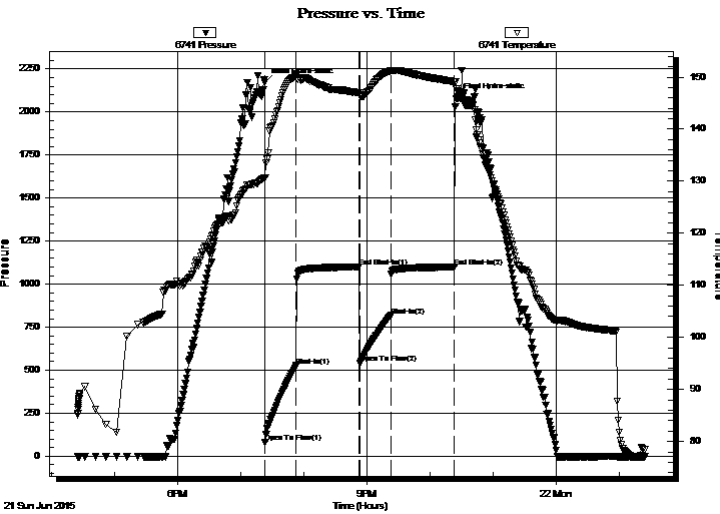
**6-2s-36w Rawlins,KS**  
**Frisbie A #4-6**  
Job Ticket: 65062 **DST#: 1**  
Test Start: 2015.06.21 @ 16:25:00

## GENERAL INFORMATION:

Formation: **LKC "A-D"**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 19:23:30  
Time Test Ended: 01:25:00  
Interval: **4238.00 ft (KB) To 4360.00 ft (KB) (TVD)**  
Total Depth: 4360.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Robert Zodrow  
Unit No: 66  
Reference Elevations: 3362.00 ft (KB)  
3357.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 6741 Inside**  
Press@RunDepth: 817.21 psig @ 4239.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2015.06.21 End Date: 2015.06.22 Last Calib.: 2015.06.22  
Start Time: 16:25:05 End Time: 01:25:00 Time On Btm: 2015.06.21 @ 19:23:00  
Time Off Btm: 2015.06.21 @ 22:26:00

TEST COMMENT: 30-IF- Bob in 4 mins  
60-ISI- No return  
30-FF- Bob in 5 mins  
60-FSI- No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2171.15	130.61	Initial Hydro-static
1	81.21	130.67	Open To Flow (1)
30	526.33	150.26	Shut-In(1)
90	1100.12	146.95	End Shut-In(1)
91	540.77	146.45	Open To Flow (2)
120	817.21	151.17	Shut-In(2)
181	1099.25	149.14	End Shut-In(2)
183	2086.23	147.40	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
815.00	MW 15%M 85%W	9.75
950.00	WM 20%W 80%M	13.33

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**6-2s-36w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Frisbie A #4-6**

Job Ticket: 65062

**DST#: 1**

ATTN: Saman Sharifaie

Test Start: 2015.06.21 @ 16:25:00

## Tool Information

Drill Pipe:	Length: 4045.00 ft	Diameter: 3.80 inches	Volume: 56.74 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 76000.00 lb
			<u>Total Volume: 57.65 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4238.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	122.00 ft			
Tool Length:	149.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4216.00	
Hydraulic tool	5.00			4221.00	
Jars	5.00			4226.00	
Safety Joint	3.00			4229.00	
Packer	5.00			4234.00	27.00 Bottom Of Top Packer
Packer	4.00			4238.00	
Stubb	1.00			4239.00	
Recorder	0.00	6741	Inside	4239.00	
Recorder	0.00	8521	Outside	4239.00	
Perforations	22.00			4261.00	
Change Over Sub	1.00			4262.00	
Drill Pipe	94.00			4356.00	
Change Over Sub	1.00			4357.00	
Bullnose	3.00			4360.00	122.00 Bottom Packers & Anchor

**Total Tool Length: 149.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co

**6-2s-36w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Frisbie A #4-6**

Job Ticket: 65062

**DST#: 1**

ATTN: Saman Sharifaie

Test Start: 2015.06.21 @ 16:25:00

### 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:

15000 ppm

Viscosity: 68.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1100.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
815.00	MW 15%M 85%W	9.747
950.00	WM 20%W 80%M	13.326

Total Length: 1765.00 ft      Total Volume: 23.073 bbl

Num Fluid Samples: 0

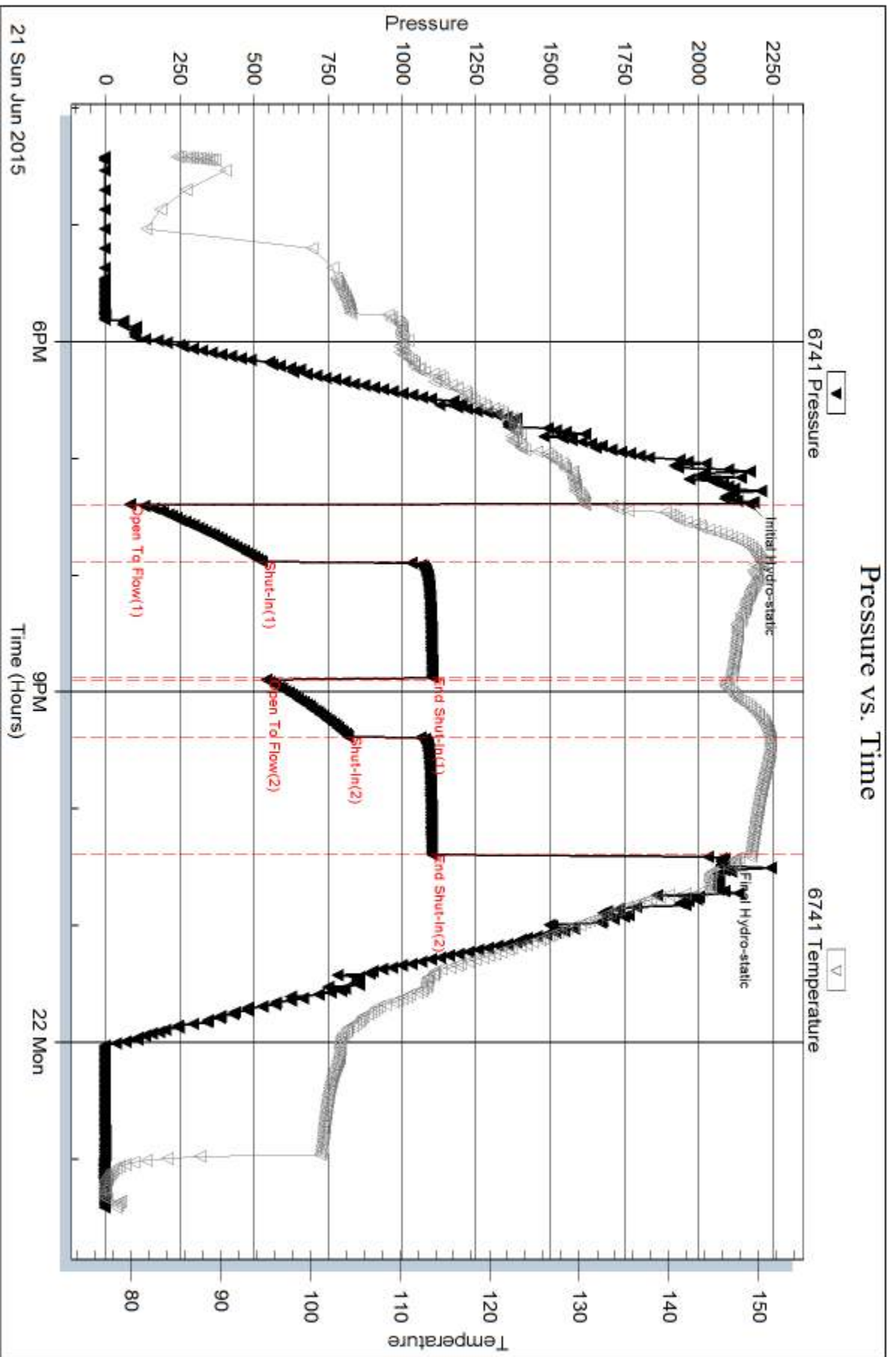
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .425 @ 78 Deg = 15000

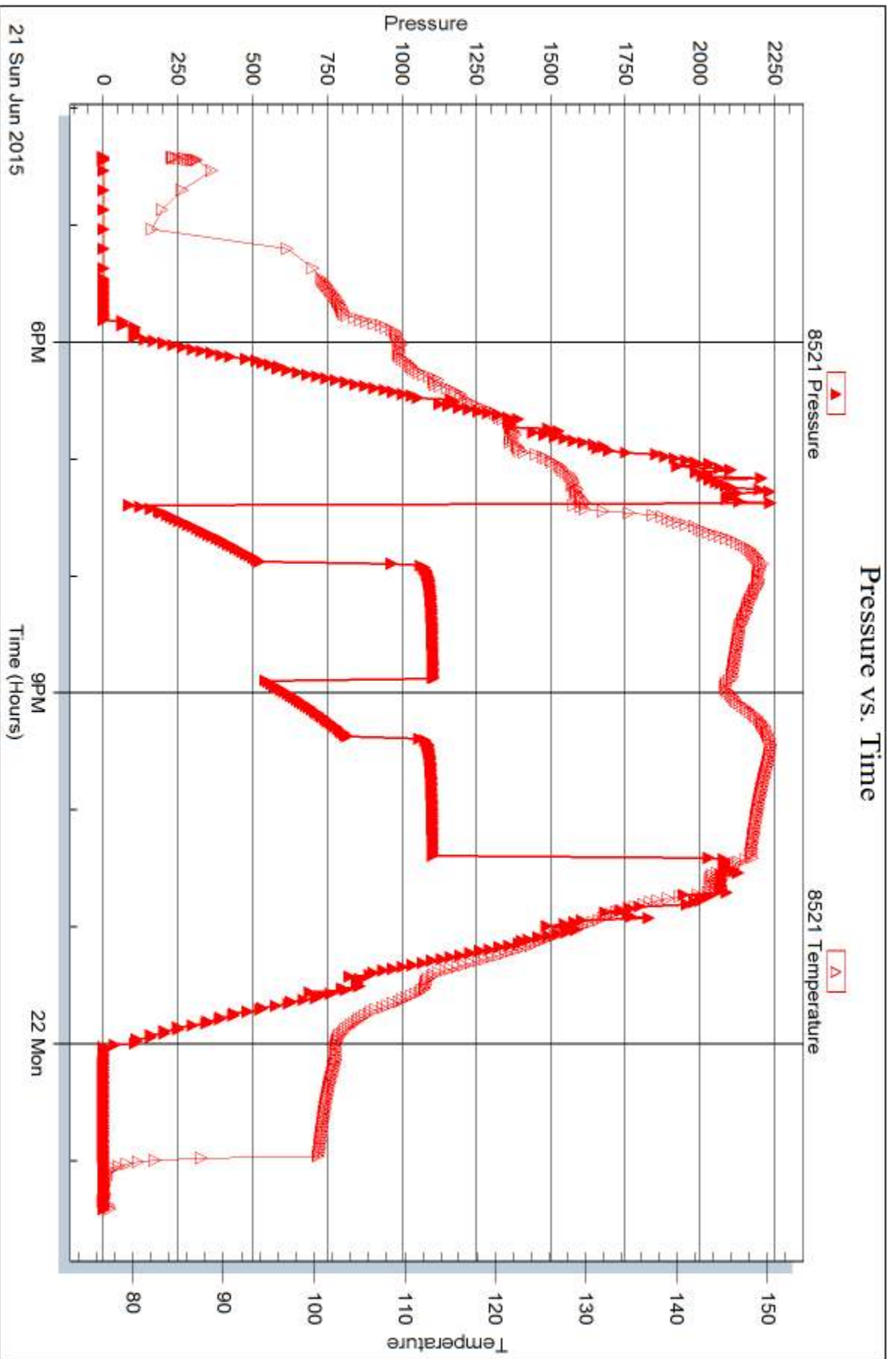


Serial #: 8521

Outside Murfin Drilling Co

Frisbie A #4-6

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 65062

Printed: 2015.06.26 @ 09:21:45



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman Sharifaie

### **Frisbie A #4-6**

#### **6-2s-36w Rawlins,KS**

Start Date: 2015.06.22 @ 11:17:00

End Date: 2015.06.22 @ 20:38:00

Job Ticket #: 65063                      DST #: 2

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

Printed: 2015.06.26 @ 09:21:28



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co  
 250 N Water STE 300  
 Wichita KS 67202  
 ATTN: Saman Sharifaie

**6-2s-36w Rawlins,KS**  
**Frisbie A #4-6**  
 Job Ticket: 65063 **DST#: 2**  
 Test Start: 2015.06.22 @ 11:17:00

## GENERAL INFORMATION:

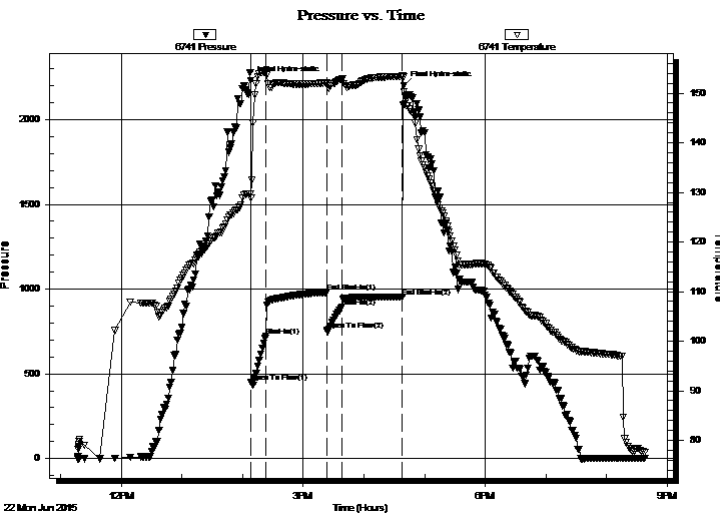
Formation: **LKC "G"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 14:08:30  
 Time Test Ended: 20:38:00  
 Interval: **4360.00 ft (KB) To 4420.00 ft (KB) (TVD)**  
 Total Depth: 4420.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Robert Zodrow  
 Unit No: 66  
 Reference Elevations: 3362.00 ft (KB)  
 3357.00 ft (CF)  
 KB to GR/CF: 5.00 ft

## Serial #: 6741

Inside

Press@RunDepth: 892.82 psig @ 4361.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2015.06.22 End Date: 2015.06.22 Last Calib.: 2015.06.22  
 Start Time: 11:17:05 End Time: 20:38:00 Time On Btm: 2015.06.22 @ 14:08:00  
 Time Off Btm: 2015.06.22 @ 16:39:30

TEST COMMENT: 15-IF- Bob in 1 min  
 60-IS- Surface blow on return died in 40 mins  
 15-FF- Bob in 2 mins  
 60-FS- No return



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2232.04	129.63	Initial Hydro-static
1	450.33	128.89	Open To Flow (1)
15	720.96	154.18	Shut-In(1)
75	980.96	152.07	End Shut-In(1)
76	757.18	151.96	Open To Flow (2)
91	892.82	152.81	Shut-In(2)
150	953.68	153.41	End Shut-In(2)
152	2202.70	150.28	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
630.00	OCW 5%O 95%W	7.15
750.00	MCWGO 15%M 25%W 30%G 30%O	10.52
660.00	GOCM 5%G 25%O 70%M	9.26

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**6-2s-36w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Frisbie A #4-6**

Job Ticket: 65063

**DST#: 2**

ATTN: Saman Sharifaie

Test Start: 2015.06.22 @ 11:17:00

## Tool Information

Drill Pipe:	Length: 4170.00 ft	Diameter: 3.80 inches	Volume: 58.49 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 78000.00 lb
			<u>Total Volume: 59.40 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4360.00 ft			Final 66000.00 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			4338.00	
Hydraulic tool	5.00			4343.00	
Jars	5.00			4348.00	
Safety Joint	3.00			4351.00	
Packer	5.00			4356.00	27.00 Bottom Of Top Packer
Packer	4.00			4360.00	
Stubb	1.00			4361.00	
Recorder	0.00	6741	Inside	4361.00	
Recorder	0.00	8521	Outside	4361.00	
Perforations	22.00			4383.00	
Change Over Sub	1.00			4384.00	
Drill Pipe	32.00			4416.00	
Change Over Sub	1.00			4417.00	
Bullnose	3.00			4420.00	60.00 Bottom Packers & Anchor

**Total Tool Length: 87.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co

**6-2s-36w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Frisbie A #4-6**

Job Ticket: 65063

**DST#: 2**

ATTN: Saman Sharifaie

Test Start: 2015.06.22 @ 11:17:00

## 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:

17000 ppm

Viscosity: 69.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1100.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
630.00	OCW 5%O 95%W	7.152
750.00	MCWGO 15%M 25%W 30%G 30%O	10.521
660.00	GOCM 5%G 25%O 70%M	9.258

Total Length: 2040.00 ft      Total Volume: 26.931 bbl

Num Fluid Samples: 0

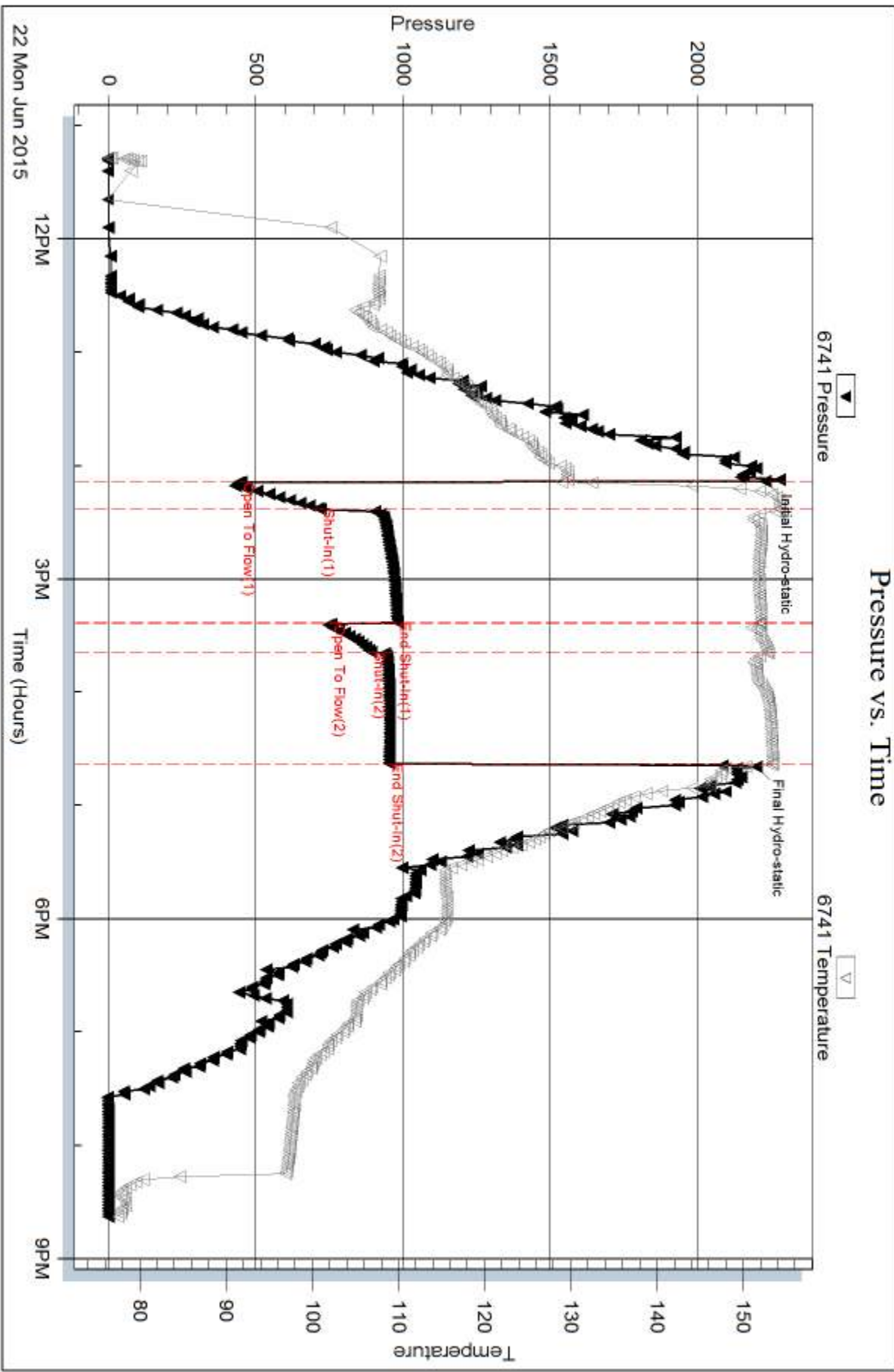
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .380 @ 82 Deg F = 17000

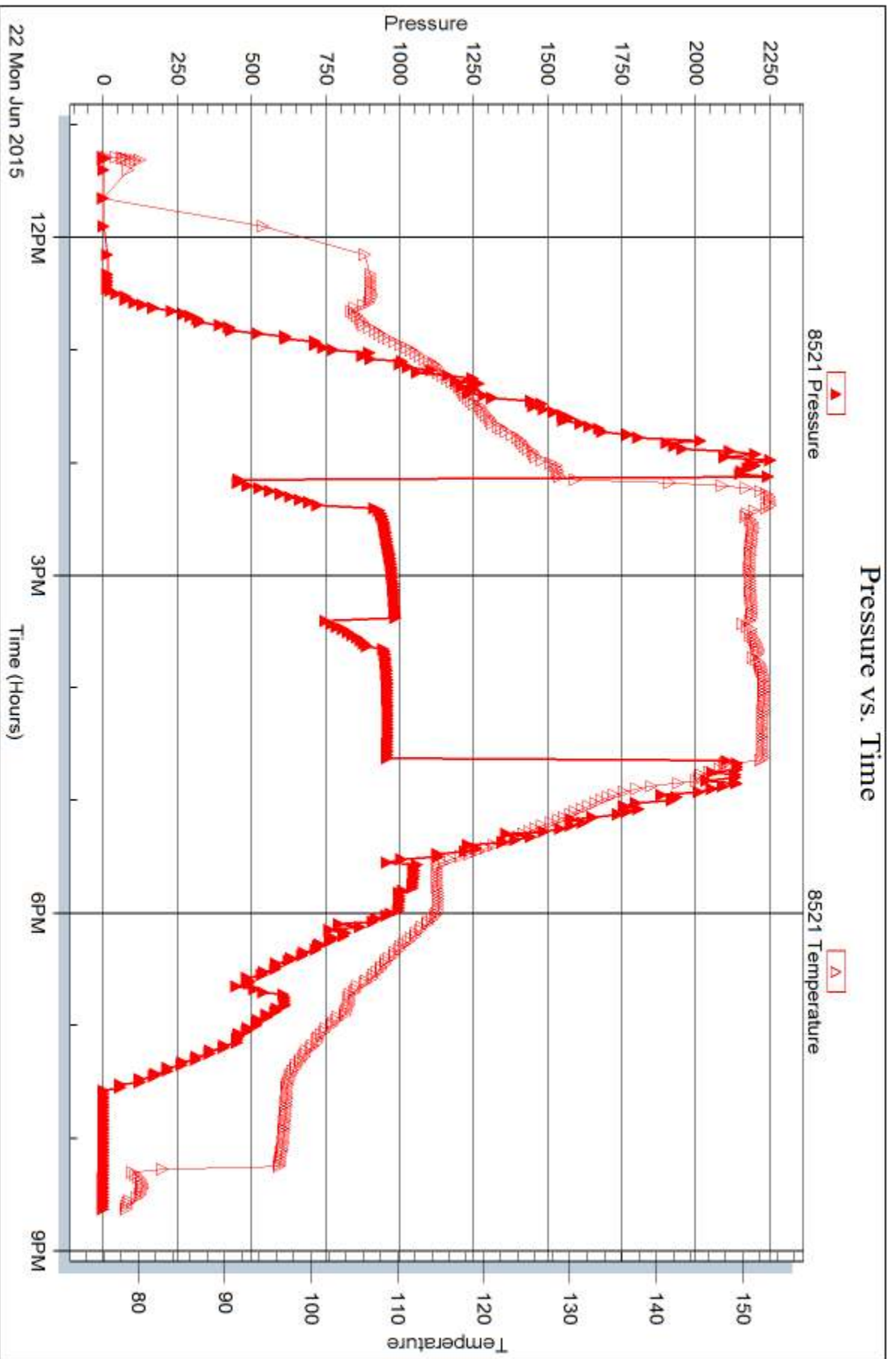


Serial #: 8521

Outside Murfin Drilling Co

Frisbie A #4-6

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 65063

Printed: 2015.06.26 @ 09:21:30



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N Water STE 300  
Wichita KS 67202

ATTN: Saman Sharifaie

### **Frisbie A #4-6**

#### **6-2s-36w Rawlins,KS**

Start Date: 2015.06.23 @ 11:30:00

End Date: 2015.06.23 @ 20:36:30

Job Ticket #: 65064                      DST #: 3

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

Printed: 2015.06.26 @ 09:21:05



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Murfin Drilling Co  
 250 N Water STE 300  
 Wichita KS 67202  
 ATTN: Saman Sharifaie

**6-2s-36w Rawlins,KS**  
**Frisbie A #4-6**  
 Job Ticket: 65064 **DST#: 3**  
 Test Start: 2015.06.23 @ 11:30:00

## GENERAL INFORMATION:

Formation: **LKC "H-J"**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 13:46:30  
 Time Test Ended: 20:36:30  
 Interval: **4420.00 ft (KB) To 4510.00 ft (KB) (TVD)**  
 Total Depth: 4510.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Robert Zodrow  
 Unit No: 66  
 Reference Elevations: 3362.00 ft (KB)  
 3357.00 ft (CF)  
 KB to GR/CF: 5.00 ft

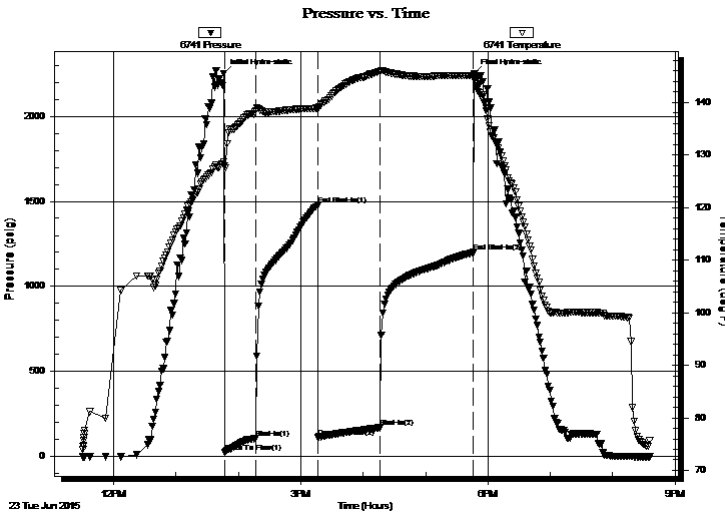
## Serial #: 6741

Inside

Press@RunDepth: 168.41 psig @ 4421.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2015.06.23 End Date: 2015.06.23 Last Calib.: 2015.06.23  
 Start Time: 11:30:05 End Time: 20:36:30 Time On Btm: 2015.06.23 @ 13:46:00  
 Time Off Btm: 2015.06.23 @ 17:47:00

TEST COMMENT: 30-IF- Blow built to 8 3/4"  
 60-ISI- No return  
 60-FF- Bob in 57 mins  
 90-FSI- No return

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2253.71	128.68	Initial Hydro-static
1	22.92	127.95	Open To Flow (1)
31	106.44	138.50	Shut-In(1)
90	1477.68	138.92	End Shut-In(1)
91	113.66	138.70	Open To Flow (2)
150	168.41	145.93	Shut-In(2)
240	1200.32	144.95	End Shut-In(2)
241	2249.49	144.71	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
320.00	OCWM 5%O 10%W 85%M	2.80
40.00	OCM 30%O 70%M	0.56

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co

**6-2s-36w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Frisbie A #4-6**

Job Ticket: 65064

**DST#: 3**

ATTN: Saman Sharifaie

Test Start: 2015.06.23 @ 11:30:00

## Tool Information

Drill Pipe:	Length: 4232.00 ft	Diameter: 3.80 inches	Volume: 59.36 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: 185.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 60.27 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4420.00 ft			Final 60000.00 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			4398.00	
Hydraulic tool	5.00			4403.00	
Jars	5.00			4408.00	
Safety Joint	3.00			4411.00	
Packer	5.00			4416.00	27.00 Bottom Of Top Packer
Packer	4.00			4420.00	
Stubb	1.00			4421.00	
Recorder	0.00	6741	Inside	4421.00	
Recorder	0.00	8521	Outside	4421.00	
Perforations	21.00			4442.00	
Change Over Sub	1.00			4443.00	
Drill Pipe	63.00			4506.00	
Change Over Sub	1.00			4507.00	
Bullnose	3.00			4510.00	90.00 Bottom Packers & Anchor

**Total Tool Length: 117.00**





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Murfin Drilling Co

**6-2s-36w Rawlins,KS**

250 N Water STE 300  
Wichita KS 67202

**Frisbie A #4-6**

Job Ticket: 65064

**DST#: 3**

ATTN: Saman Sharifaie

Test Start: 2015.06.23 @ 11:30:00

### 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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1100.00 ppm

Filter Cake: 2.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
320.00	OCWM 5%O 10%W 85%M	2.803
40.00	OCM 30%O 70%M	0.561

Total Length: 360.00 ft      Total Volume: 3.364 bbl

Num Fluid Samples: 0

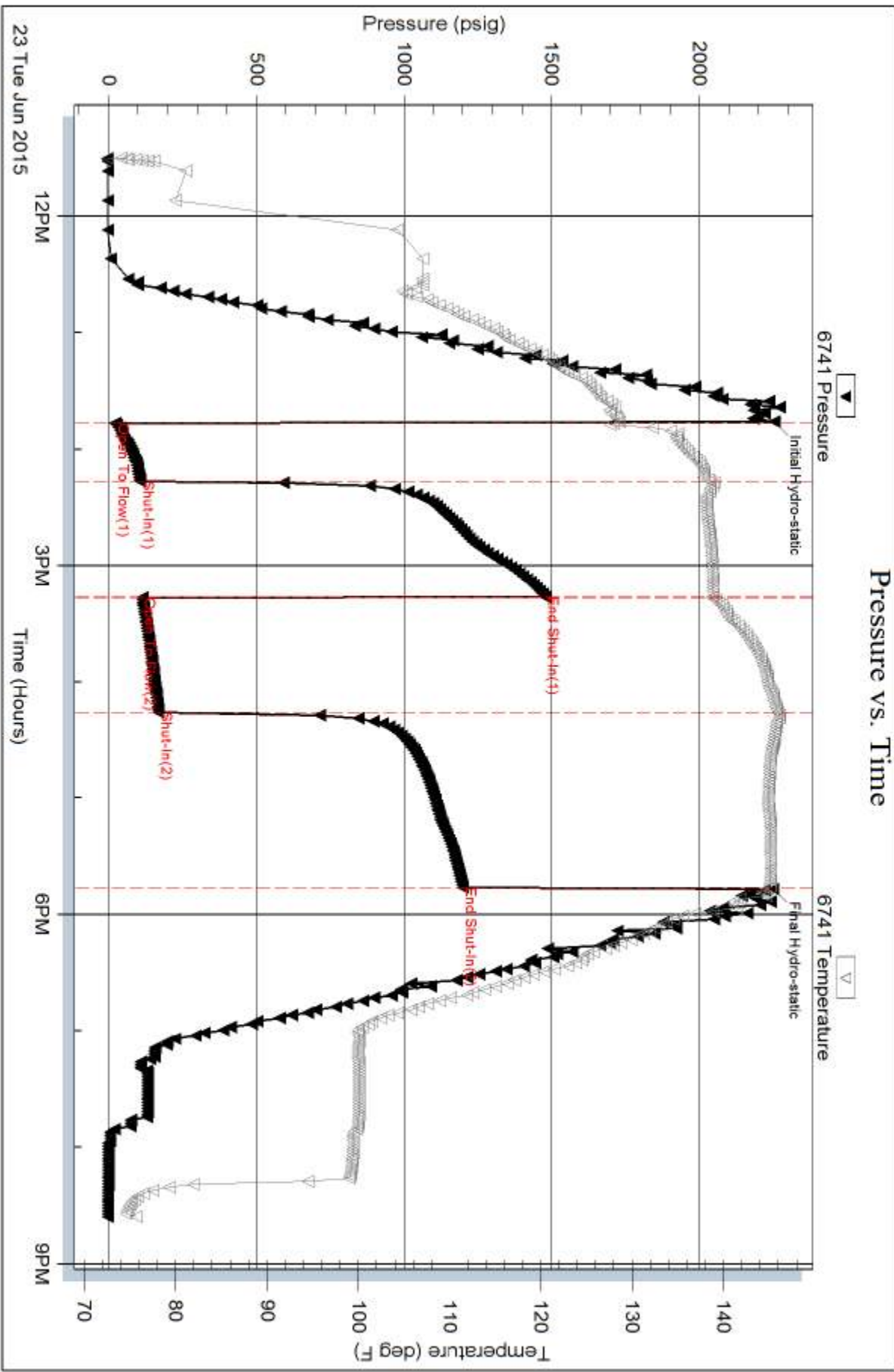
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

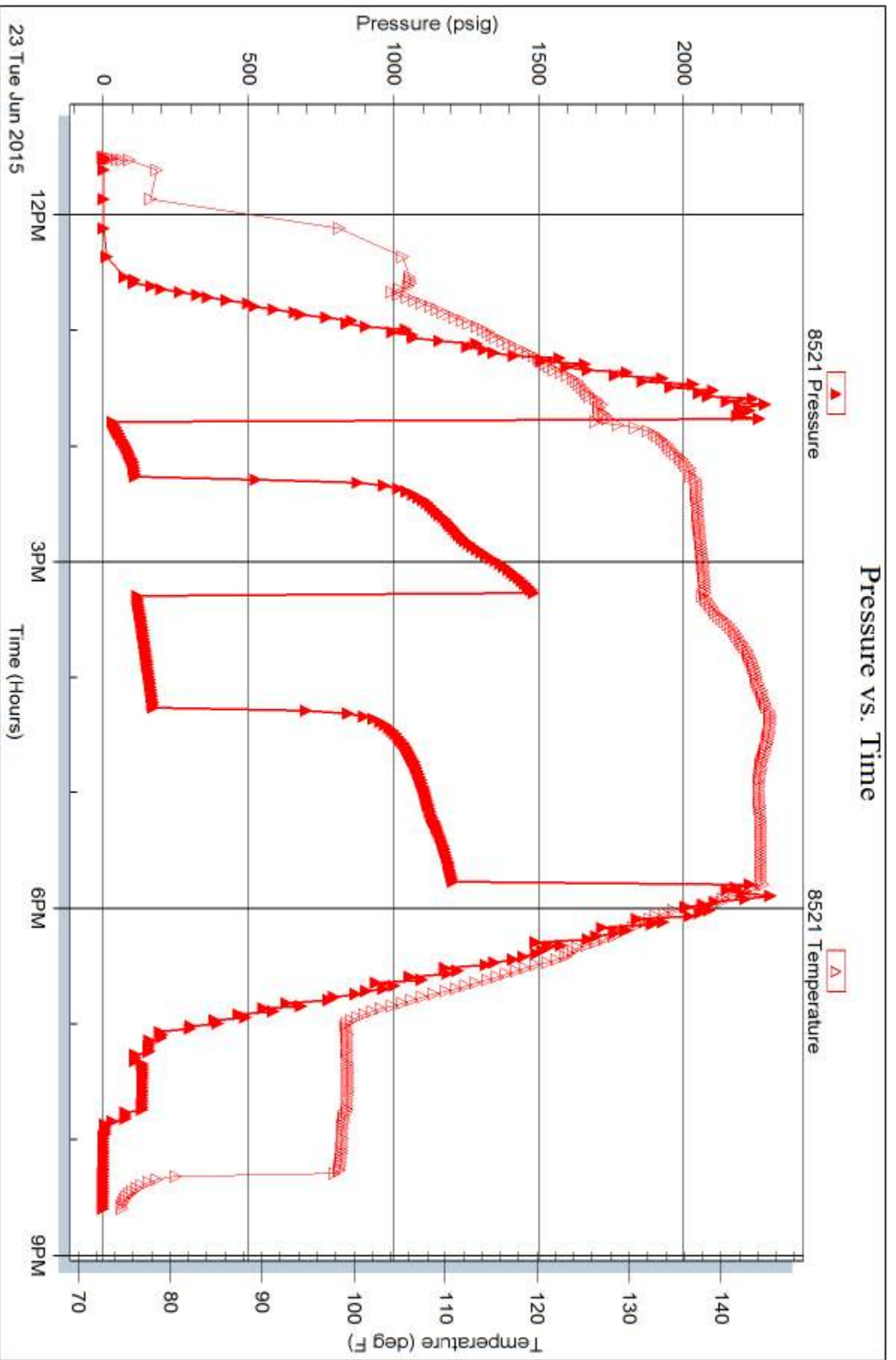


Serial #: 8521

Outside Murfin Drilling Co

Frisbie A #4-6

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 65064

Printed: 2015.06.26 @ 09:21:07



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65062

Well Name & No. Frisbie "A" #4-6 Test No. 1 Date 6-21-2015  
 Company Murfin Drilling CO Inc Elevation 3362 KB 3357 GL  
 Address 250 N Water STE 300 Wichita KS, 67202  
 Co. Rep / Geo. Saman Sharifaie Rig Murfin #8  
 Location: Sec. 6 Twp. 25 Rge. 36W Co. Rawlins State KS

Interval Tested 4238 — 4360 Zone Tested LKC "A-0"  
 Anchor Length 122 Drill Pipe Run 4045 Mud Wt. 9.1  
 Top Packer Depth 4234 Drill Collars Run 185 Vis 68  
 Bottom Packer Depth 4238 Wt. Pipe Run 0 WL 7.6  
 Total Depth 4360 Chlorides 1,100 ppm System LCM 4  
 Blow Description IF - Bob in 4mins  
ISI - NO return  
FF - Bob in 5mins  
FSI - NO return

Rec	Feet of	%gas	%oil	%water	%mud
<u>950</u>	<u>WM</u>		<u>20</u>	<u>80</u>	
<u>815</u>			<u>85</u>	<u>15</u>	

Rec Total 1765 BHT 149 Gravity — API RW .425 @ 78 °F Chlorides 15,000 ppm

(A) Initial Hydrostatic 2171  Test 1150 T-On Location 15:20 6-21  
 (B) First Initial Flow 81  Jars 250 T-Started 16:25 6-21  
 (C) First Final Flow 526  Safety Joint 75 T-Open 19:23 6-21  
 (D) Initial Shut-In 1100  Circ Sub \_\_\_\_\_ T-Pulled 22:23 6-21  
 (E) Second Initial Flow 540  Hourly Standby \_\_\_\_\_ T-Out 01:25 6-22  
 (F) Second Final Flow 817  Mileage 124 RT 116  
 (G) Final Shut-In 1099  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2086  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

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

Sub Total 1591

MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Robert Zeders  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **65063**

Well Name & No. Frisbie "A" # 4-6 Test No. 2 Date 6-22-2015  
 Company Murfin Drilling Co Inc Elevation 3362 KB 3357 GL  
 Address 250 N water STE. 300 Wichita KS, 67202  
 Co. Rep / Geo. Suman SharifAie Rig Murfin #8  
 Location: Sec. 6 Twp. 25 Rge. 36W Co. Rawlins State K5

Interval Tested 4360 — 4420 Zone Tested LKC "A"  
 Anchor Length 60 Drill Pipe Run 4170 Mud Wt. 9.4  
 Top Packer Depth 4356 Drill Collars Run 185 Vis 69  
 Bottom Packer Depth 4360 Wt. Pipe Run 0 WL 7.2  
 Total Depth 4420 Chlorides 1,100 ppm System LCM 4.0

Blow Description IF - Bob in 1 min  
ISF - surface blow on return died in 40 mins  
FF - Bob in 2 mins  
FST - No return

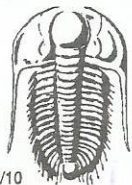
Rec	Feet of	%gas	%oil	%water	%mud
<u>660</u>	<u>90cm</u>	<u>5</u>	<u>25</u>	<u>70</u>	
<u>750</u>	<u>mcwgo</u>	<u>30</u>	<u>30</u>	<u>25</u>	<u>15</u>
<u>630</u>	<u>OCW</u>		<u>5</u>	<u>95</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 2040 BHT 153 Gravity — API RW .380 @ 82 °F Chlorides 17000 ppm  
 (A) Initial Hydrostatic 2232  Test 1150 T-On Location 10:45 6-22  
 (B) First Initial Flow 450  Jars 250 T-Started 11:17 6-22  
 (C) First Final Flow 720  Safety Joint 75 T-Open 14:08 6-22  
 (D) Initial Shut-In 980  Circ Sub \_\_\_\_\_ T-Pulled 16:38 6-22  
 (E) Second Initial Flow 757  Hourly Standby \_\_\_\_\_ T-Out 20:38 6-22  
 (F) Second Final Flow 892  Mileage 124 RT 116 Comments \_\_\_\_\_  
 (G) Final Shut-In 953  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2202  Straddle \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Initial Open 15  
 Initial Shut-In 60  
 Final Flow 15  
 Final Shut-In 60

Sub Total 0  
 Total 1591  
 MP/DST Disc't \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative Robert Zichow  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. **65064**

Well Name & No. Frisbie "A" # 4-6 Test No. 3 Date 6-23-2015  
 Company Murfin Drilling CO Inc Elevation 3362 KB 3357 GL  
 Address 250 N Water STB 300 Wichita KS, 67202  
 Co. Rep / Geo. Saman ShariFaic Rig murfin #8  
 Location: Sec. 6 Twp. 25 Rge. 36W Co. Rawlins State KS

Interval Tested 4420 — 4510 Zone Tested LKC "H-J"  
 Anchor Length 90 Drill Pipe Run 4232 Mud Wt. 9.2  
 Top Packer Depth 4416 Drill Collars Run 185 Vis 62  
 Bottom Packer Depth 4420 Wt. Pipe Run 0 WL 6.4  
 Total Depth 4510 Chlorides 1100 ppm System LCM 4  
 Blow Description IF - Blow built to 8 3/4"  
ISI - No return  
FF - Bob in 57 mins  
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>90</u>	<u>0CM</u>	<u>30</u>		<u>70</u>	
<u>320</u>		<u>5</u>	<u>10</u>	<u>85</u>	

Rec Total 360 BHT 145 Gravity 1150 API RW 116+116 @ 1707 °F Chlorides 1100 ppm

(A) Initial Hydrostatic 2253  Test 1150 T-On Location 11:00 6-23  
 (B) First Initial Flow 23  Jars 250 T-Started 11:30 6-23  
 (C) First Final Flow 106  Safety Joint 75 T-Open 13:46 6-23  
 (D) Initial Shut-In 1477  Circ Sub \_\_\_\_\_ T-Pulled 17:46 6-23  
 (E) Second Initial Flow 114  Hourly Standby \_\_\_\_\_ T-Out 20:36 6-23  
 (F) Second Final Flow 168  Mileage 124 RT X2 Comments Drove out loaded tool on 6-25-2015 at 19:30  
 (G) Final Shut-In 1200  Sampler \_\_\_\_\_ ~~\_\_\_\_\_~~  
 (H) Final Hydrostatic 2249  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 800  
 Day Standby 1.5d 11h Total 2507  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1707

Approved By \_\_\_\_\_ Our Representative Robert Zecher  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

Acct  
Prod-MG



P.O. Box 205803  
Dallas, TX 75320-5803

Voice: (832) 482-3742  
Fax: (832) 482-3738

# INVOICE

Invoice Number: 149931  
Invoice Date: Jun 17, 2015  
Page: 1

Federal Tax I.D.#: 20-8651475

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

Customer ID	Field Ticket #	Payment Terms	
Murfin	64746	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Jun 17, 2015	7/17/15

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Frisbie A #4-6		
265.00	CEMENT MATERIALS	Class A Common	17.90	4,743.50
498.00	CEMENT MATERIALS	Gel	0.50	249.00
747.00	CEMENT MATERIALS	Chloride	1.10	821.70
286.55	CEMENT SERVICE	Cubic Feet Charge	2.48	710.64
653.49	CEMENT SERVICE	Ton Mileage Charge	2.75	1,797.10
1.00	CEMENT SERVICE	Surface	1,512.25	1,512.25
50.00	CEMENT SERVICE	Pump Truck Mileage	7.70	385.00
1.00	CEMENT SERVICE	Swedge Manifold Rental	275.00	275.00
50.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	220.00
1.00	CEMENT SUPERVISOR	Andrew Forslund		
1.00	EQUIPMENT OPERATOR	Darren Racette		
1.00	EQUIPMENT OPERATOR	Brandon Wilkinson		

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

\$ 5,357.09

ONLY IF PAID ON OR BEFORE

Jul 17, 2015

Subtotal	10,714.19
Sales Tax	459.32
Total Invoice Amount	11,173.51
Payment/Credit Applied	
<b>TOTAL</b>	<b>11,173.51</b>

- 5,357.09  
5,816.42

mjr



**CONSOLIDATED**  
Oil Well Services, LLC

REMIT TO  
Consolidated Oil Well Services, LLC  
Dept:970  
P.O.Box 4346  
Houston, TX 77210-4346

*Margo*

MAIN OFFICE

P.O.Box 884  
Chanute, KS 66720  
620/431-9210, 1-800/467-8676  
Fax 620/431-0012

Invoice # 804828

Invoice Date: 06/30/15 Terms: C.O.D. Page 1

MURFIN DRILLING

P.O. BOX 288  
RUSSELL KS 67665  
USA

USED FOR IC 103 FRISBIE A #4-6  
APPROVED JJ FHR

Part No	Description	Quantity	Unit Price	Discount(%)	Total
:E0453	Cement Pump Charge 4001' - 5000'	1.000	3,175.0000	25.000	2,381.25
:E0002	Equipment Mileage Charge - Heavy Equipment	75.000	5.2500	25.000	295.31
:E0710	Cement Delivery Charge	1.000	3,430.0000	25.000	2,572.50
:C5860	ThixdoBlend I	200.000	23.7000	25.000	3,555.00
:C6077	Kolseal	1,000.000	0.5600	25.000	420.00
:C5800A	Class A Cement Sack	300.000	27.9700	25.000	6,293.25
:P8485	5 1/2" Float Shoe, AFU	1.000	433.7500	25.000	325.31
:P8254	5 1/2" Latch Down Plug & Assembly	1.000	318.2500	25.000	238.69
:P8629	5 1/2" Basket	3.000	290.0000	25.000	652.50
:P8576	5 1/2" Turbolizer	15.000	75.7500	25.000	852.19
:P8676	5 1/2" Scratcher	20.000	94.5000	25.000	1,417.50
:C6075	Celloflake	150.000	2.9700	25.000	334.13
:C6125	Mud Flush, Viscous	500.000	1.0000	25.000	375.00

Subtotal 26,283.50  
Discounted Amount 6,570.88  
SubTotal After Discount 19,712.62

Amount Due 27,807.00 If paid after 07/30/15

Tax: 1,142.62  
Total: 20,855.25





**CONSOLIDATED**  
Oil Well Services, LLC

3295  
3217

TICKET NUMBER 49459  
LOCATION Oakley, KS  
FOREMAN Kelly Gale  
Miles snow  
KS

PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

**FIELD TICKET & TREATMENT REPORT**  
**CEMENT**

**INVOICE #84828**

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY	
6-26-15	5406	Frisbie A #4-6	6	25	36W	Rawlins	
CUSTOMER Murf: n		Mc donal W to Co. line Q 1/2 N E into		TRUCK #	DRIVER	TRUCK #	DRIVER
MAILING ADDRESS				399	Jeremy		
CITY		STATE		528	Lance		
		ZIP CODE		460	Rob		

JOB TYPE PROD HOLE SIZE 7 7/8 HOLE DEPTH 4350 CASING SIZE & WEIGHT 5 1/2 15.5 #  
CASING DEPTH \_\_\_\_\_ DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
SLURRY WEIGHT 105,142 SLURRY VOL \_\_\_\_\_ WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING 21,29'  
DISPLACEMENT 11472 DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: Safety meeting, rigged up on Murf: n #8, ran float  
Equip on ST #s, turbost-5, 7, 9, 10, 11, 13, 15, 16, 19, baskets 20, 39, 67  
ran 59 STS, & circulated 30 mins, ran pipe to bottom & circulated  
for 1 hr. mixed mud flush, mixed 30SKS RH, 20SKS MH, mixed  
250SKS CMD 1/2 # flo-seal, tailed in with 200SKS owc 5# Kol-seal  
washed out pump, released plug & displaced with 114 bbl water  
lift pressure 1700 # Plug landed @ 2300 # Cement did circulate

APPROX 30 SKS TO PIT

Thank You  
Kelly, Miles & crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401C	1	PUMP CHARGE	CE 0453 3175.00	3175.00
5406	75 mi	MILEAGE	CE 0002 5.35	393.75
5407	19.6 ton	Ton mileage delivered	CE 0710 17.5	3430.00
1126	200 SKS	OWC	CE 5800 23.70	4740.00
1110A	1000 #	Kol-seal	CL 0077 .56	560.00
1104D	300 SKS	CMD	CL 5800A 27.97	8391.00
4159	1	AFU Float shoe (w)	CP 8485 433.75	433.75
41454	1	5 1/2 latchdown (I)	CP 7054 318.35	318.35
41104	3	5 1/2 basket (w)	CP 8129 290.00	870.00
4136	15	5 1/2 turbolizer (w)	CP 8576 75.35	1136.35
4315	20	Rotating scratchers	CP 8076 94.50	1890.00
11446	500 gal	mud flush	CL 1025 1.00	500.00
1107	150 #	Flo-seal	CL 0075 2.97	445.50
			Sub	26,283.50
			Tax 25%	6570.88
				19712.62
			SALES TAX	1142.69
			ESTIMATED TOTAL	20855.25

Ravin 3737

AUTHORIZATION [Signature] TITLE \_\_\_\_\_ DATE 6-26-15

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

## TERMS

In consideration of the prices to be charged for Consolidated Oil Well Services, LLC (COWS) services, equipment and products and for the performance of services and supplying of materials, Customer agrees to the following terms and conditions.

Terms. Cash in advance unless satisfactory credit is established. On credit sales, invoices are payable within 30 days of the invoice date. On all invoices not paid within 30 days, Customer agrees to pay COWS interest at the rate of 18% per annum or the maximum rate allowed by law, whichever is higher. In the event COWS retains an attorney to pursue collection of any account, Customer agrees to pay all collection costs and attorney's fees incurred by COWS.

Any applicable federal, state or local sales, use occupation, consumer's or emergency taxes shall be added to the quoted price. All process license fees required to be paid to others will be added to the scheduled prices.

All COWS' prices are subject to change without notice.

## SERVICE CONDITIONS

Customer warrants that the well is in proper condition to receive the services, equipment, products and materials to be supplied by COWS. The Customer shall at all time have complete care, custody, and control of the well, the drilling and production equipment at the well, and the premises about the well. A responsible representative of the Customer shall be present to specify depths, pressures, or materials used for any service which is to be performed.

(a) COWS shall not be responsible for any claim, cause of action or demand (hereinafter referred to as a 'claim') for damage to property, or injury to or death of employees and representatives, of Customer or the well owner (if different from Customer), unless such damage, injury or death is caused by the willful misconduct or gross negligence of COWS, including but not limited to sub-surface damage and surface damage arising from sub-surface damage.

(b) Unless a claim is the result of the sole willful misconduct or gross negligence of COWS, Customer shall be responsible for and indemnify and hold COWS harmless from any claim for: (1) reservoir loss or damage, or property damage resulting from sub-surface pressure, losing control of the well and/or a well blowout; (2) damages as a result of a subsurface trespass, or an action in the nature thereof, arising from a service operation performed by COWS; (3) injury to or death of persons, other than employees of COWS, or damage to property (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the use of radioactive material in the well hole; and (4) well damage or reservoir damage caused by (i) loss of circulation, cement invasion, cement misplacement, pumping cement or cement plugs on wells with loss of circulation, including the failure to displace plug to proper depth, (ii) sub-surface pressure and resulting failure to complete pumping of cement or cement plug, including dehydration of cement slurry or flashing, plugged float-shoe, annulus bridging or plugging, or (iii) down hole tools being lost or left in the well, or becoming stuck in the well for any reason and by any cause. COWS may furnish down hole tools and may supply supervision for the running and placement of such tools but will not be liable for any damage, loss or result caused by the use of such tools.

Furthermore, Customer will be responsible for the cost to replace such tools if they are lost or left in the well.

(c) COWS makes no guarantee of the effectiveness of any COWS' products, supplies or materials, or the results of any COWS' treatment or services.

(d) Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, COWS is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by COWS. COWS' personnel will use their best efforts in gathering such information and their best judgement in interpreting it, but Customer agrees that COWS shall not be responsible for any damage arising from the use of such information except where due to COWS' gross negligence or willful misconduct in the preparation or furnishing of it.

(e) COWS may buy and re-sell to Customer down hole equipment, including but not limited to float equipment, DV tools, port collars, type A & B packers, and Customer agrees that COWS is not an agent or dealer for the companies who manufacture such items, and further agrees that Customer shall be solely responsible for and indemnify COWS against any claim with regard to the effectiveness, malfunction of, or functionality of such items.

## WARRANTIES - LIMITATION OF LIABILITY

COWS warrants title to the products, supplies and materials, and that the same are free from defects in workmanship and materials. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, NOR ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE, WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. COWS's liability and Customer's exclusive remedy in any claim (whether in contract, tort, breach of warranty or otherwise,) arising out of the sale or use of any COWS' products, supplies, materials or services is expressly limited to the replacement of such products, supplies, materials or services or their return to COWS or, at COWS' option, an allowance to Customer of credit for the cost of such items.

Customer waives and releases all claims against COWS for any special, incidental, indirect, consequential or punitive damages.

MDCI  
 Frisbie 'A' #4-6  
 2140' FSL 2150'FWL  
 Sec. 6-2S-36W  
 3362' KB

Formation	Sample top	Datum	Ref	Log tops	Datum	Ref
Anhydrite	3265	+97	-5	3260	+102	Flat
B/Anhydrite	3295	+67	-6	3293	+69	-4
Topeka	4074	-712	-3	4072	-710	-1
Oread	4206	-844	-2	4206	-844	-2
Lansing	4290	-928	-1	4287	-925	+2
Stark	4508	-1146	-1	4505	-1143	+2
BKC	4558	-1196	-1	4556	-1194	+1
Pawnee	4684	-1322	-1	4683	-1321	Flat
Cherokee	4764	-1402	-4	4756	-1394	+4
RTD	4860	-1498				
LTD				4858	-1496	