



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1165815  
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: \_\_\_\_\_



1165815

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

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	<b>PRODUCTION INTERVAL:</b> _____ _____
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Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

October 29, 2013

Leon Rodak  
Murfin Drilling Co., Inc.  
250 N WATER STE 300  
WICHITA, KS 67202-1216

Re: ACO1  
API 15-153-20925-00-00  
Frisbie 2-23  
NE/4 Sec.23-02S-36W  
Rawlins County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Leon Rodak

MDCI Frisbie #2-23 2290' FNL 1950'FEL Sec. 23-2S-36W 3294' KB							MDCI Frisbie #1-23 2310' FNL 2310'FWL Sec. 23-2S-36W 3305' KB	
Formation	Sample top	Datum	Ref	Log tops	Datum	Ref	Log tops	Datum
Anhydrite	3156	+138	-11	3152	+142	-7	3156	+149
B/Anhydrite	3187	+107	-4	3182	+112	-1	3194	+111
Neva	3651	-357	-1	3649	-355	-1	3661	-356
Stotler				3921	-627	-1	3931	-626
Topeka	3998	-704	-7	3994	-700	-3	4002	-697
Heebner	4162	-868	-9	4155	-861	-2	4164	-859
Lansing	4209	-915	-6	4206	-912	-3	4214	-909
Stark	4430	-1136	-2	4424	-1130	+4	4439	-1134
BKC	4481	-1187	-4	4476	-1182	+1	4488	-1183
Pawnee	4608	-1314	-6	4605	-1311	-3	4613	-1308
Cherokee	4681	-1387	-6	4673	-1379	+2	4686	-1381
Mississippi	4880	-1586	-1	4875	-1581	+4	4890	-1585
RTD	4980						4990	
LTD				4977			4986	



**WESLEY D. HANSEN Consulting Petroleum Geologist**

212 N. Market, Suite 257, Wichita, KS 67202  
Office: 316-267-7313 Cellular ; 316-772-6188

**KGS  
AAPG  
Kansas License #418**



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

**Well Name:** Murfin Drilling Co., Inc. #2-23 Frisbie  
**Location:** 2290' FNL, 1950' FEL of Section 23-2S-36W  
**License Number:** API: 15-153-20925 **Region:** Rawlins County, KS  
**Spud Date:** 7-2-2013 **Drilling Completed:** 7-12-2013  
**Surface Coordinates:** 2290' FNL, 1950' FEL of Section 23-2S-36W

**Bottom Hole Vertical hole**  
**Coordinates:**  
**Ground Elevation (ft):** 3284' **K.B. Elevation (ft):** 3294'  
**Logged Interval (ft):** 3550' **To:** RTD **Total Depth (ft):** 4980'  
**Formation:** Mississippian at RTD  
**Type of Drilling Fluid:** Chemical - Displaced at 3300'

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

#### **OPERATOR**

**Company:** Murfin Drilling Co., Inc.  
**Address:** 250 N. Water  
Suite 300  
Wichita, KS 67202

#### **GEOLOGIST**

**Name:** Wesley D. Hansen  
**Company:** Wesley D. Hansen - Consulting Petroleum Geologist  
**Address:** 212 N. Market, Suite 257  
Wichita, KS 67202  
**Office:** 316-263-7313 **Cellular:** 316-772-6188

## COMMENTS

Contractor: Murfin Drilling Co., Inc. Rig #14  
Pusher: Greg Unruh

Surface Casing: 8 5/8" set at 392' w/350sx  
Production Casing: 5 1/2" set at 4559' w/650 sx

Mud by: Morgan Mud - Mike Morgan and Dave Lines were the engineers

DST's by: Trilobite - James Winder was the tester

Logs by: Pioneer Wireline (DIL, CN-CD, MEL, BHCS)

Deviation Surveys: 3/4 deg. @393'; 1 deg. @ 1209'; 1 deg. @3620'; 1 1/2 deg. @ 4140'; 2 deg. @ 4980'

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	rr	MTC-1	393'	393'	5 1/4
2	7 7/8"	HTC	DP5067	3620'	3227'	28 3/4
3	7 7/8"	HTC	GX20Crr	4980'	1360'	71 3/4

## FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELLS MDCI Frisbie 1-23 23-2S-36W 3305' KB
	Depth	Datum	Depth	Datum	
Anhydrite	3156'	+138	3152'	+142	-7
B/Anhydrite	3187'	+107	3182'	+112	-1
Neva	3651'	-357	3649'	-355	-1
Red Eagle	3720'	-426	3710'	-416	+3
Foraker	3770'	-476	3764'	-470	+1
Stotler	3926'	-632	3921'	-627	-1
Topeka	3998'	-704	3994'	-700	-3
Oread	4114'	-820	4109'	-815	-1
Heebner	4162'	-868	4155'	-861	-2
Lansing	4209'	-915	4206'	-912	-3
Stark Shale	4430'	-1136	4424'	-1130	+4
BKC	4481'	-1187	4476'	-1182	+1
Pawnee	4608'	-1314	4605'	-1311	-3
Cherokee Shale	4681'	-1387	4673'	-1379	+2
Mississippian	4880'	-1586	4875'	-1581	+4
RTD	4980'	-1686			
LTD			4977'	-1683	

# DRILL STEM TESTS

DST No. 1 Lecompton-Oread  
Interval: 4029'-4140'  
Times: 30-60-60-90  
Recovery: 95' VSLG&OCM (1g, 3o, 96m);  
275' VSLO&G&MCW (5g, 3o, 45m, 47w);  
630' MCW with trace oil (19m, 81w); chl.  
32,000; total fluid 1000'  
FP: 42-301/305-475 SIP: 1181-1148  
HP: 2038-2009 BHT: 139 deg. F

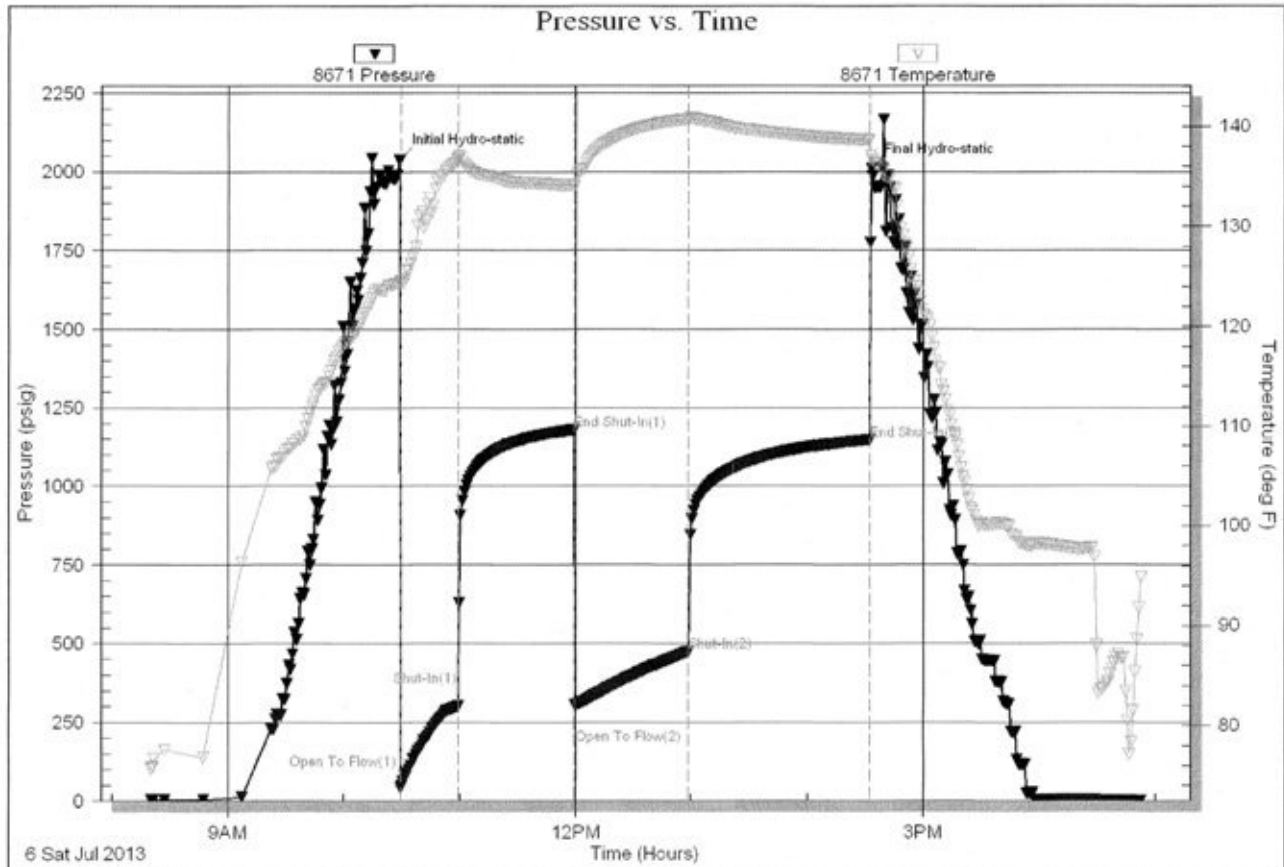
IFP: fair blow, bldg. to B.O.B. in 11 minutes  
ISIP: no return blow  
FFP: blow started in 2 minutes, reached  
B.O.B. in 16 minutes  
FSIP: no return blow

Serial #: 8671

Inside Marfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 1



# DRILL STEM TESTS

DST No. 2 Leavenworth - Lansing "A"  
Interval: 4154'-4235'  
Times: 30-60-45-60  
Recovery: 60' SLO&GCM (4g, 7o, 89m)  
FP: 20-29/33-45 SIP: 1165-1091  
HP: 2052-2026 BHT: 132 deg. F

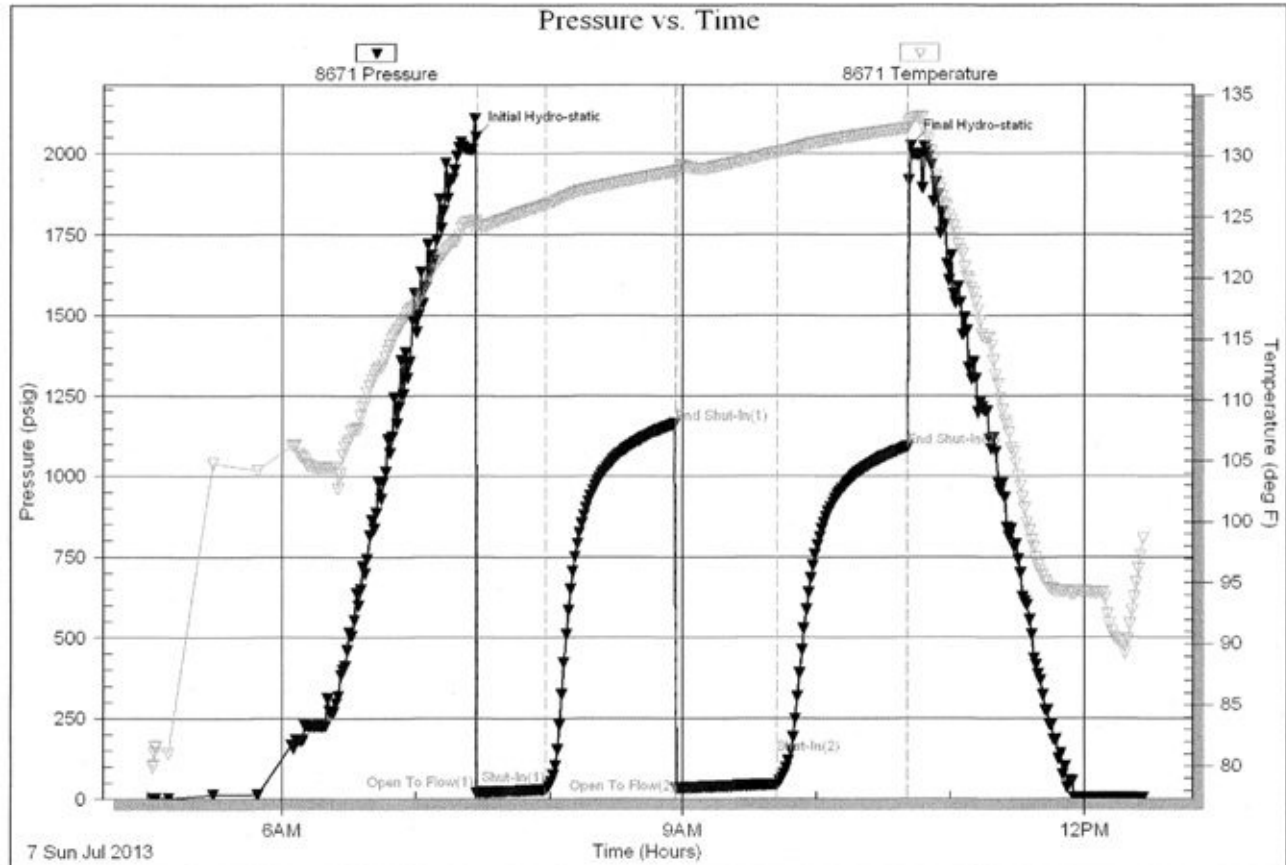
IFP: weak blow, bldg. to 1 1/8"  
ISIP: no return blow  
FFP: no blow  
FSIP: no return blow

Serial #: 8671

Inside Marfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 2





# DRILL STEM TESTS

DST No. 3 Lansing "A" Sand - "E" Zone  
 Interval: 4230'-4300'  
 Times: 30-60-60-90  
 Recovery: 180' GIP; 10' G&MCO (4g, 1m, 95o);  
 205' G&MCO (34g, 3m, 63o); 238' G&MCO  
 (31g, 31m, 38o); gravity 29 deg.  
 FP: 35-130/143-197 SIP: 1279-1279  
 HP: 2124-2059 BHT: 137 deg. F

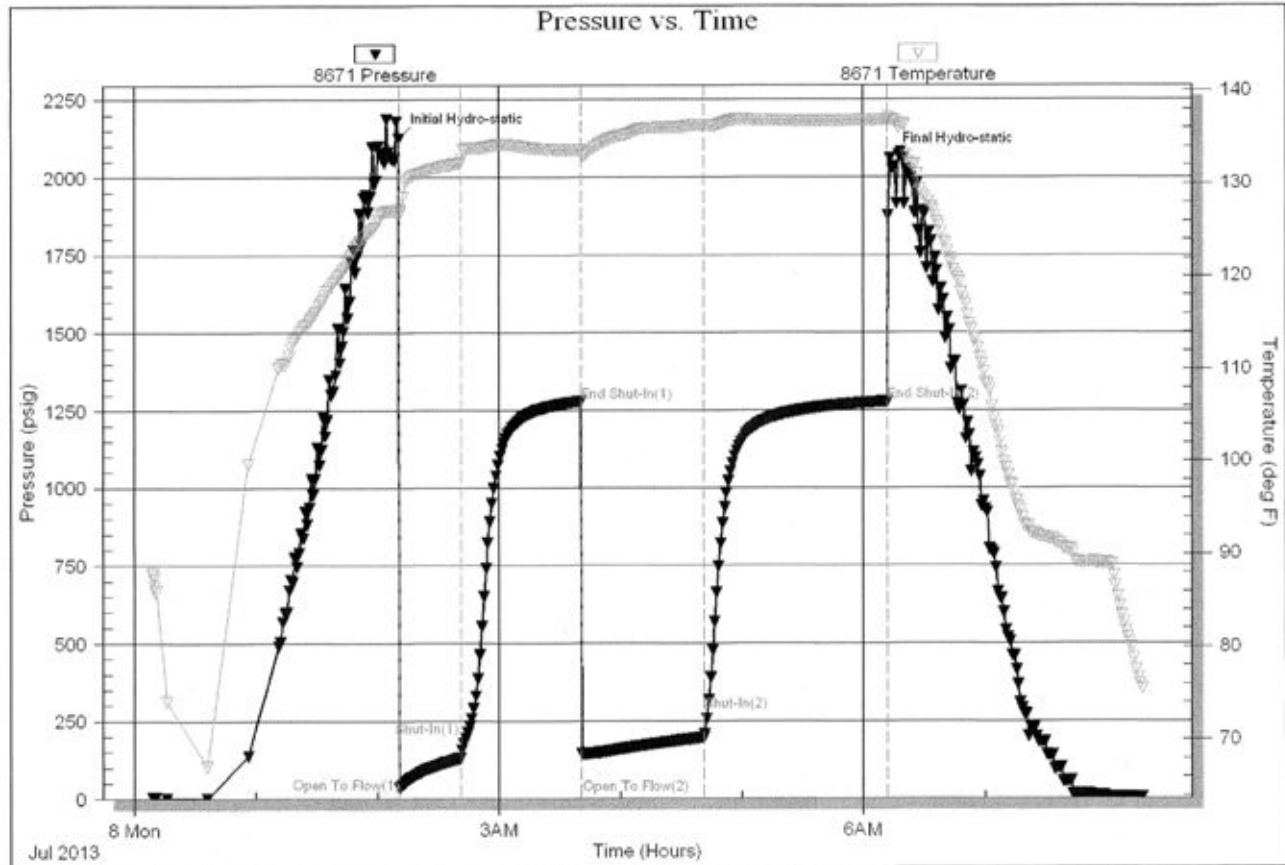
IFP: good blow, bldg. to B.O.B. in 17  
 minutes  
 ISIP: 1" return blow  
 FFP: fair blow, bldg. to B.O.B. in 47 1/2  
 minutes  
 FSIP: no return blow

Serial #: 8671

Inside Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 3



# DRILL STEM TESTS

DST No. 4 Lansing "G"  
 Interval: 4299'-4335'  
 Times: 30-60-60-90  
 Recovery: 180' GIP; 264' GCO (22g, 3m, 75o); 89'  
 G&OCM (24g, 30o, 46m), Gravity 30.4 deg.  
 FP: 22-75/81-152 SIP: 483-475  
 HP: 2128-2084 BHT: 137 deg. F

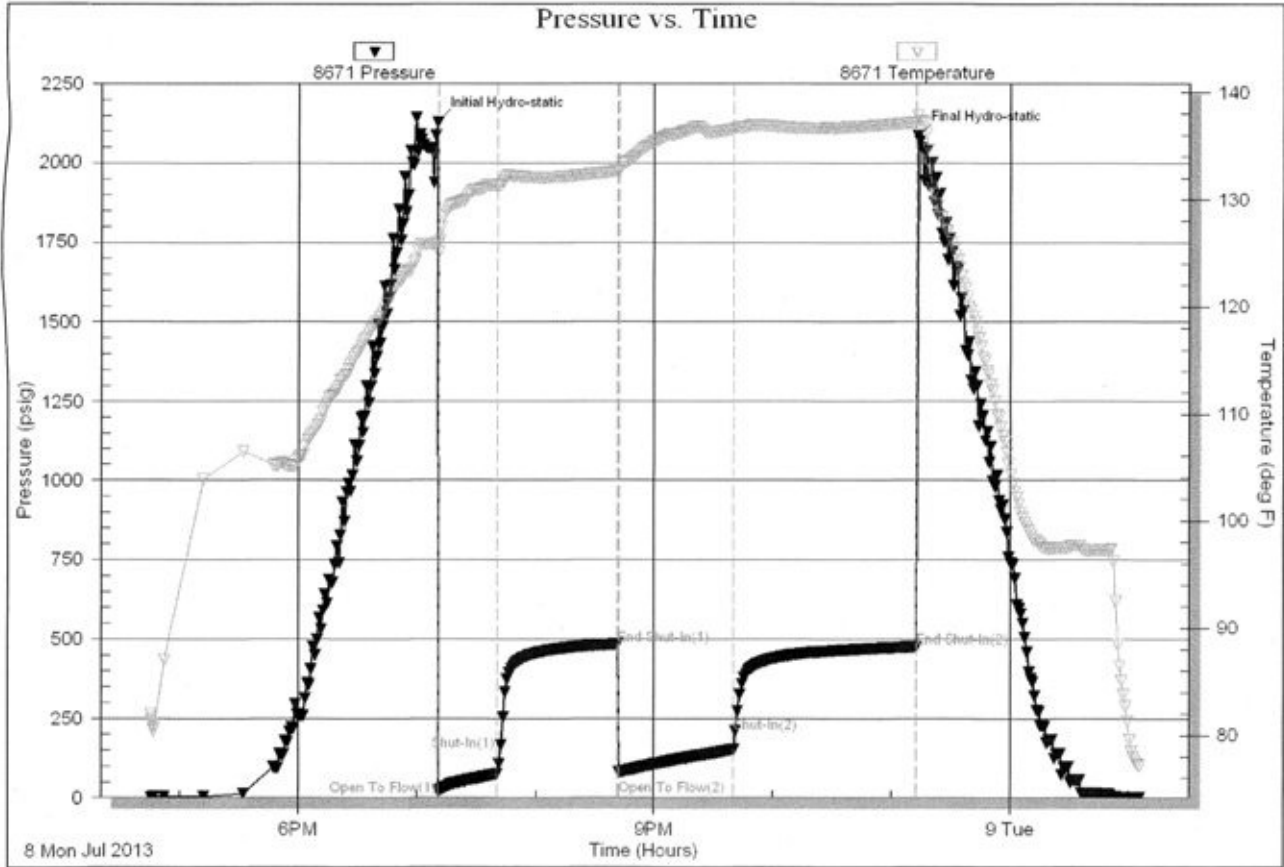
IFP: fair blow, bldg. to 9"  
 ISIP: 1/8" return blow  
 FFP: fair blow, bldg. to B.O.B. in 38  
 minutes  
 FSIP: 1/8" return blow

Serial # 8671

Inside Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 4



# DRILL STEM TESTS

DST No. 5 Lansing "H" and "J"  
 Interval: 4376'-4430'  
 Times: 30-60-60-90  
 Recovery: 1205' GIP; 125' CGO (1m, 33g, 66o); 2090' total fluid (reversed 17 bbl ((1876')) to tank truck) - 3 min. samples first 15 min. then 5 min. samples at 20 min. and 25 min. - average first 15 min. (84o, 11g, 5m); 20 min. sample (65o, 22m, 13g); 25 min. sample (93o, 4m, 3g); bottom stand of collars (89') (35m, 35g, 25o, 5w); gravity 39.6 degrees  
 FP: 77-408/415-755 SIP: 1339-1327  
 HP: 2152-2095 BHT: 147 deg. F

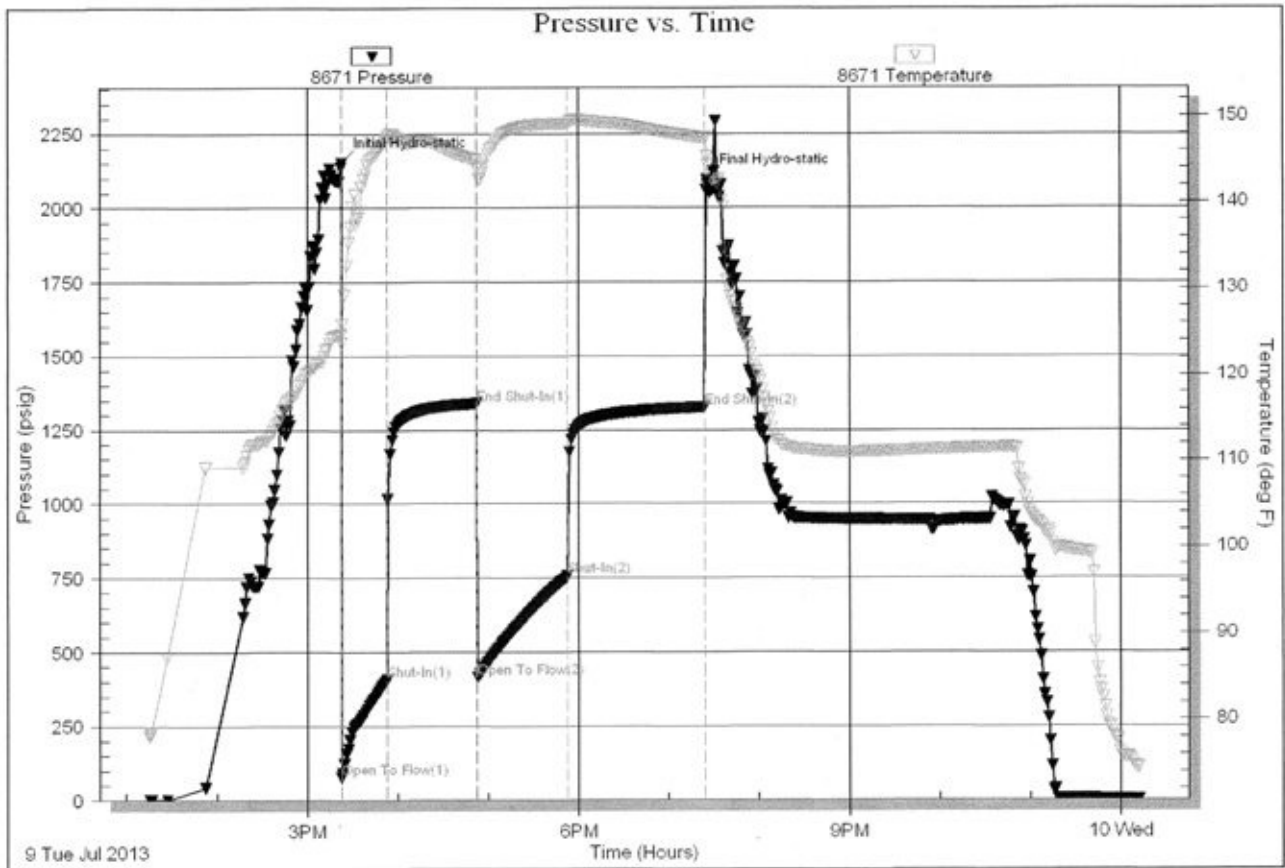
IFP: strong blow, B.O.B. in 3 minutes  
 ISIP: return blow, B.O.B. in 17 minutes  
 FFP: strong blow, B.O.B. in 4 minutes  
 FSIP: no return blow?

Serial #: 8671

Inside Marfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 5



Trilobite Testing, Inc

Ref. No: 52762

Printed: 2013.07.10 @ 00:44:55

# DRILL STEM TESTS

DST No. 6 Pawnee-Lower Pawnee  
 Interval: 4584'-4660'  
 Times: 30-60-30-60  
 Recovery: 2' SG&OCM (2g, 2o, 96m)  
 FP: 20-21/21-22 SIP: 74-49  
 HP: 2291-2284 BHT: 138 deg. F

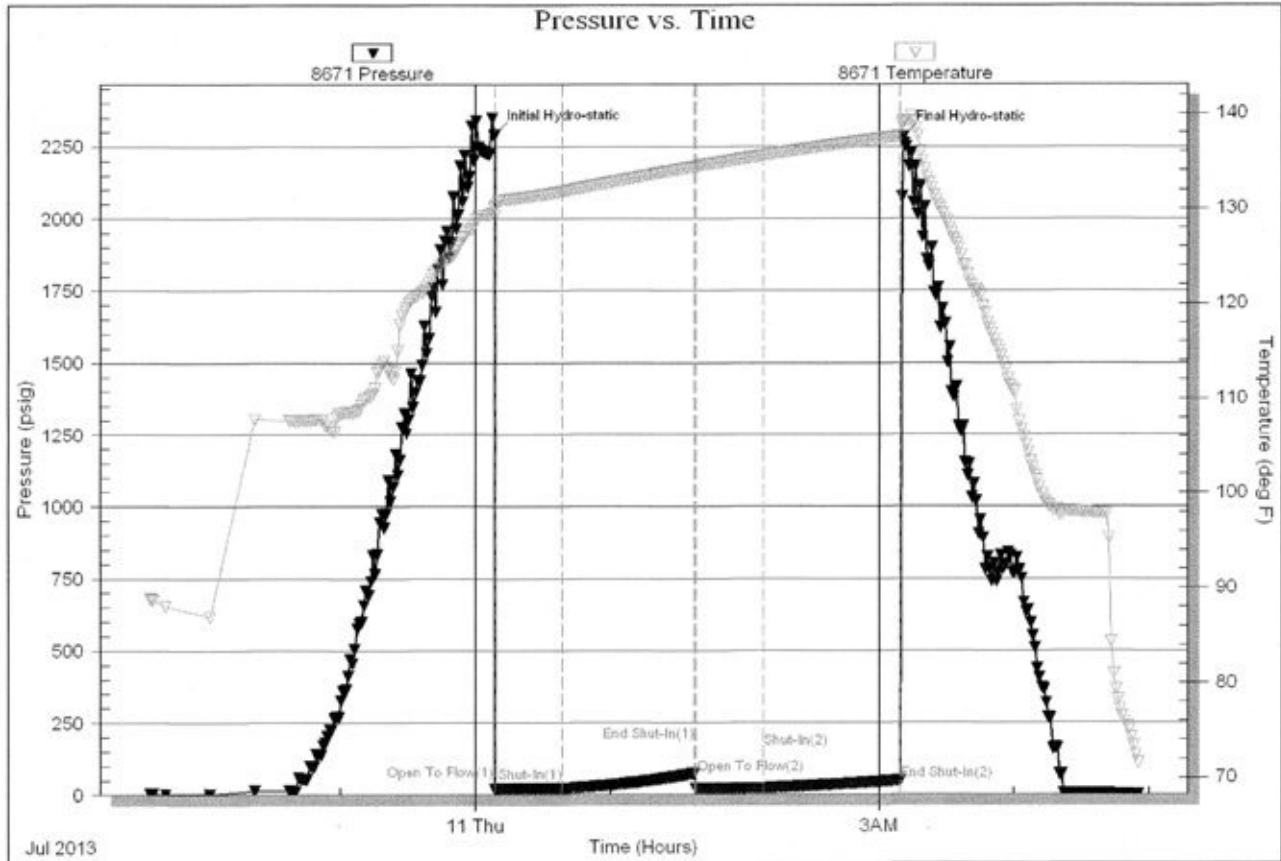
IFP: weak 1/2" blow, died in 22  
 minutes  
 ISIP: no return blow  
 FFP: no blow  
 FSIP: no return blow

Serial #: 8671

Inside Marfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 6



Tribble Testing, Inc

Ref. No: 52763

Printed: 2013.07.11 @ 05:12:52

## ROCK TYPES

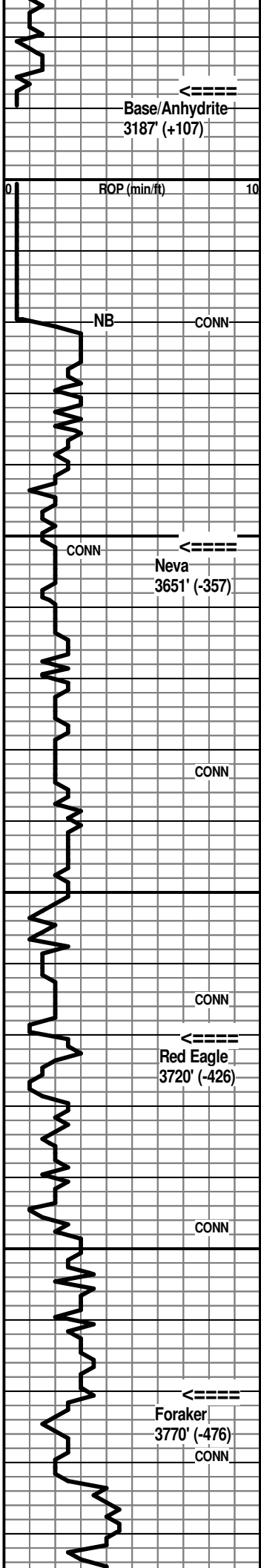
Anhy  
 Cht  
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 Congl  
 Gyp  
 Ls colorless  
 Lmst

Salt  
 Shale  
 Shcol  
 Shgy  
 Siltst  
 Ss  
 Carb sh

Dol  
 Dtd  
 Gry sh  
 Sandylms  
 redshale  
 Shale  
 Siltstn

Shlyslts  
 Sltys  
 Sdy dolo  
 Silty dolo  
 Shy dolo  
 Shaly ls



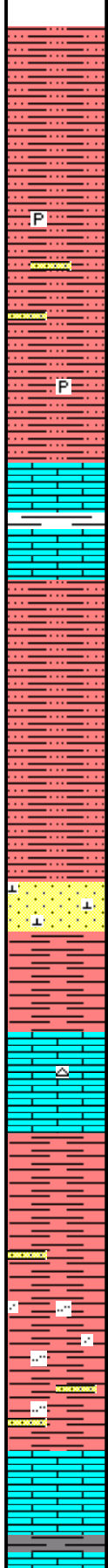


3600

3650

3700

3750



Sh: red silty, soft, finely sandy IP

Sh: AA with occ gray fn-med grnd pyritic Sst and gray pyritic shale

Sh: red silty and finely sandy; scatt. gray shaly pyrite

70' spl - flood Ls: mix tan fn granular with micxn matrix; abund. offwhite subchalky to chalky, N.S.

80' spl - Ls: mix AA with influx tan, lt brn, pinkish brn vf-cryptoxln, NVP; minor shale %

90' spl - Sh: influx red, red-brn silty and finely sandy; much decr. Ls %, predom. tan, offwhite fn granular

3700' spl - flood Sh: red, red-brn AA

AA

20' spl - Sst: good influx offwhite, lt gray vfg-vfg, calcar., N.S.

30' spl - decr. Sst with good influx red, soft gummy shale

40' spl - flood Ls: mix tan, lt gray fn granular with common offwhite subchalky to chalky; some offwhite, tan mic-vfxln dense; occ lt brn cryptoxln; occ mottled orange chert

50' spl - Ls: mix AA with influx Sh: lt red-brn, soft gummy; some med gray

Sh: some red, gummy with Sst: offwhite, lt gray vfg-vfg calcar.; much decr. Ls %

very predom. Sh: red-brn, silty and vfg sandy IP

80' spl - very predom. shale AA; some vfg-vfg Sst AA; vs! influx Sst: mottled red/offwhite/gray shaly and calcar.

90' spl - flood Ls: predom. tan, offwhite fn granular with inter-particle and pp por.; other brnsh gray vf-cryptoxln, NVP, N.S.

Sh: some med gray to black

Ls: good influx med gray, gray-brn vf-cryptoxln, shaly IP; some mottled granular, NVP, N.S.

Base/Anhydrite 3187' (+107)

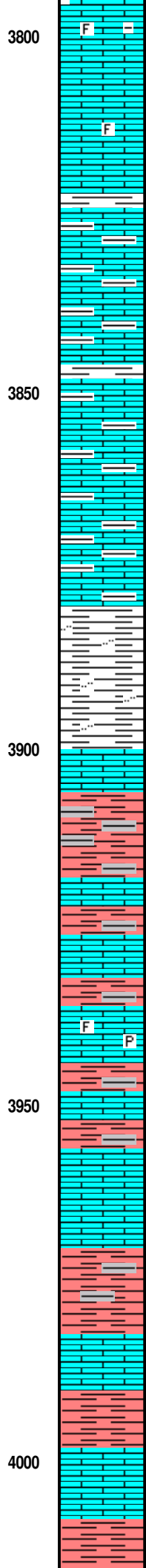
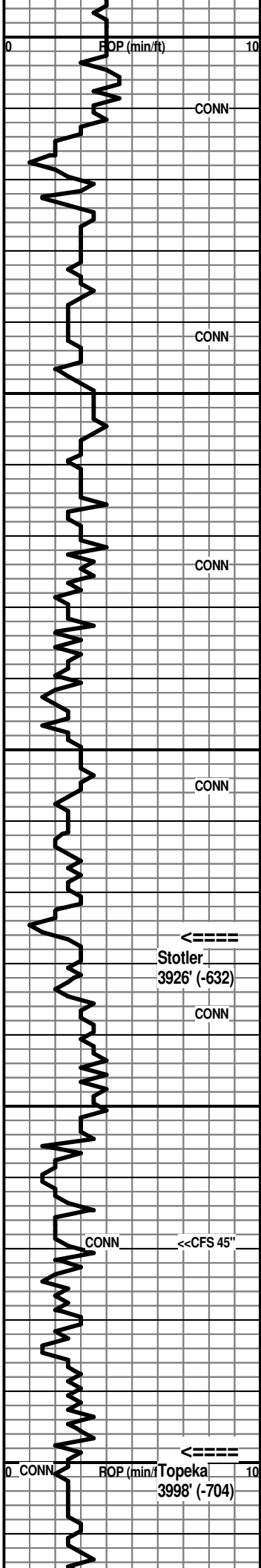
Bit trip at 3620' - pulled PDC  
Pipe strap was 1.53' short to board  
Geologist on location at 3620'

Neva 3651' (-357)

Red Eagle 3720' (-426)

Foraker 3770' (-476)

7:00 AM at 3775' on 7-5-2013



Ls: various gray, gray-brn mottled granular to dense, shaly; lesser tan granular, sl foss. and offwhite mic-vfxln dense

Ls: flood tan, lt brn, lt gray vfxln dense, rare fossils;, NVP

30' spl - Ls: various dense, vsl foss. AA with vsl influx offwhite subchalky to chalky

Ls: tan, lt brn vfxln dense; incr. lt to med gray fn-vfxln dense, shaly IP; Sh: sl incr. med gray, calcar. and finely pyritic IP

Ls: various tan, lt brn and gray dense, mixed AA with some lt to med gray shales

60' spl - Ls: mix AA with sl influx gray, lt brn, gray-brn vf-cryptoxln, NVP; some Sh: med gray, sl influx red-brn

Ls: various gray, tan, lt brn vf-cryptoxln, NVP; with Sh: streaks med to dark gray, red-brn

80' spl - Ls: various tan, lt gray, lt brn vfxln dense, NVP, occ pinkish red granular; thin shales of gray, red-brn and red-maroon

90' spl - Ls: lt to med gray, lt brn cryptoxln and offwhite, lt gray mic-vfxln dense; Sh: streaks red-brn and gray, calcar.

3900' spl - Ls: various gray, brn and offwhite dense AA; incr. Sh: red-brn, pinkish brn and gray, finely micac. and silty

10' spl - Sh: various AA with Ls: lt to med gray vf-cryptoxln and offwhite mic-vfxln dense

20' spl - dominantly Shales AA with lesser Ls's AA

30' spl - Ls: offwhite, lt gray, tan mic-vfxln; lesser med gray cryptoxln; Sh: red, red-brn and gray

40' spl - Ls: predom. lt to med gray cryptoxln; some mottled brn and lesser offwhite, tan mic-fxln dense; Sh: red-brn and med to dark gray

50' spl - much decr. shale %; Ls: tan, lt brn fn granular, foss., poor to NVP, N.S., occ with dess. pyrite; influx tan, lt brn foss. with black tarry stain and gilsonite flecks in vug and fossil moldic por., no odor, nfo

60' spl - Ls: influx lt to med brn and lt to med gray cryptoxln, NVP, N.S.; lesser offwhite mic-vfxln dense; several chips with shows and porosity AA; some red-brn and gray shale

69' spl - Ls: tan, lt to med brn fn granular, poor vis. por.; influx offwhite subchalky to chalky, very scatt. chips with black asphaltic stain, no odor, nfo

CFS 3969' 20" spl - Ls: influx tan, lt gray, lt brn cryptoxln, NVP; thin red-brn and gray shale beds; CFS 45" spl >>>

80' and 90' spls - Sh: flood red-brn with lesser med gray, gray-green; Ls: good influx tan, offwhite fn granular ith poor inter-particle por. with black and brn tarry pp stain, no odor, nfo

4000' spl - much decr. shale %; Ls: flood offwhite, tan mic-vfxln dense, subchalky IP, some spotty pp black gilsonite flecks; common tan, lt brn fn-med granular with gen. poor vis. por. with spotty black stain, no odor, nfo

10' spl - Sh: good influx red-brn, brick red; Ls: influx mottled red/offwhite/tan granular, N.S.

20' spl - Ls: influx pink mottled cryptoxln to granular, NVP; other lt to med brn cryptoxln

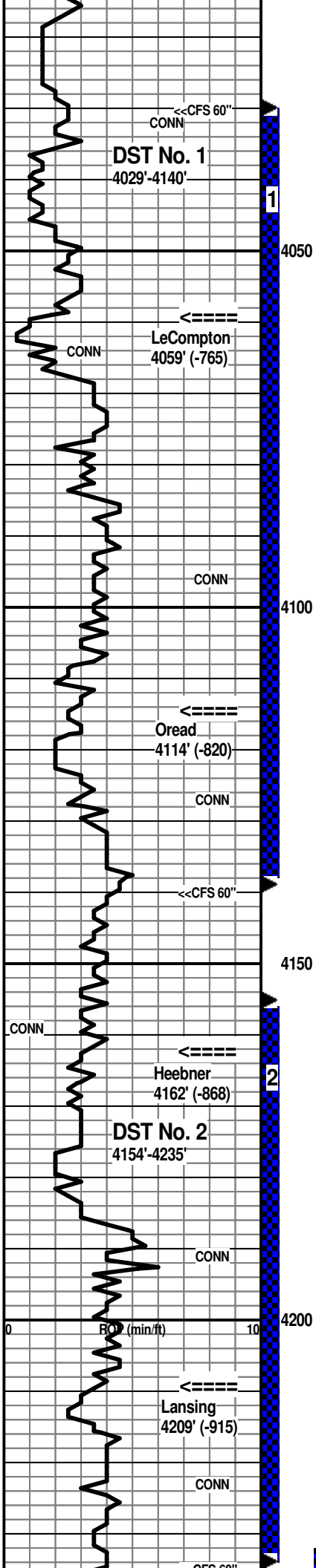
30' spl - Sh: good influx red-brn; Ls: brn, tan, gray cryptoxln

**Morgan Mud Check at 3830'**  
 9:30 AM on 7-5-2013  
 wt vis wl pH chl  
 8.9 75 6.2 9.5 550  
 PV YP GelS lcm solids  
 28 34 6/22 5# 4.3%

**Stotler 3926' (-632)**

45" spl - Ls: predom. lt gray, lt brn cryptoxln; lesser offwhite, lt gray mic-vfxln dense, no new shows; fairly minor shale %

**Topeka 3998' (-704)**



CFS 4030' 30" spl - flood Ls: tan, lt brn fn-vfxln with some pp and interln por., N.S.; common offwhite, tan mic-vfxln dense, subchalky IP, occ with very spotty asphaltic stain, no odor, nfo; 60" spl - Ls: tan fn-vfxln gen. dense, dolomitic IP; offwhite dense subchalky AA with very scatt. shows AA; Sh: sl incr. red-brn and gray

50' spl - strong influx Sh: dark red-brn, maroon-brn; lesser Ls: tan, lt gray, lt brn cryptoxln

60' spl - very predom. red-brn shale, commonly silty and finely sandy; scatt. Ls

70' spl - much decr. shale AA; Ls: tan, offwhite mic-fnxln gen. dense, N.S.; scatt. tan fn granular with some vug. and inter-particle por. with thick oily stain, no odor, nfo

80' spl - Ls: strong influx offwhite, tan finely oolitic with fair to good small oomoldic por. and some vug. por. with subsat. to sat. black gooe stain, vsl show black oil droplets, ?odor; some offwhite subchalky to chalky with spotty stain

90' spl - Ls: flood predom. lt gray vfxln, NVP; lesser tan, lt to med brn cryptoxln and offwhite mic-vfxln dense, N.S.

4100' spl - Ls: various dense AA with sl influx Sh: med to dark gray, pinkish-brn, red-brn

10' spl - good influx med to dark gray very calcar shale to shaly Ls; various dense Ls's AA; 3-4 chips brn granular with patchy to subsat. dark brn to black stain, pyritic IP, no odor, nfo

20' spl - abund. shaly Ls/calcar. shale AA; other med brn and gray cryptoxln Ls

30' spl - flood Ls: tan, offwhite mic-vfxln dense, N.S.; tan, lt brn cryptoxln with patchy stain and several chips tan, offwhite fn granular, foss. IP, with brn to black pp stain, ft odor, sfo in some pp and small vug. por.

40' spl - flood Ls: tan, lt brn cryptoxln, NVP, and offwhite, tan mic-vfxln dense, subchalky IP, NVP, N.S.

CFS 4140' 30" spl - Ls: mix AA, N.S.; 60" spl - Ls: predom. tan, lt brn cryptoxln AA; vsl influx red-brn shale

50' spl - trashy from trip; Ls: various dense AA; Sh: common med to dark gray

60' spl - Ls: tan, lt gray vf-cryptoxln and tan, offwhite mic-vfxln dense, NVP, N.S.; much decr. shale %

70' spl - flood Ls: med to dark gray and gray-brn cryptoxln, NVP

80' spl - Sh: strong influx dark gray, very calcar.; trace Sst: tan fn-med with Ls frag., vsl show very lt oil

90' spl - flood Sst: lt gray vvf-g vfg gen. poor to NVP, calcar., most clusters with pp stain, occ clusters with sat. stain, trace fo, no odor

4200' spl - Sst: very predom. lt gray, offwhite vvf-g, some pyritic, decr. shows AA; sl influx dark gray to black shale

10' spl - mix Sst AA with incr. shale % of med to dark gray, some pyritic

20' spl - shales and sst AA; Ls: good influx lt to med brn granular with good inter-particle and vug. por. with dark brn to black stain, gd sfo, sl sg, vsl lt odor; other lt to med brn cryptoxln, rarely pyritic, some with edge stain

30' spl - Ls: flood med brn cryptoxln, NVP; much lesser offwhite mic-vfxln dense

35' spl - Ls: very predom. cryptoxln AA

CFS 4235' 30" spl - Ls: very predom. cryptoxln AA; lesser offwhite, lt gray mic-vfxln dense, subchalky IP, N.S.; 60" spl - AA; one chip with spotty black stain

**LeCompton 4059' (-765)**

DST No. 1 LeCompton-Oread  
Interval: 4029'-4140'  
Times: 30-60-60-90  
IFP: fair blow, bldg. to B.O.B. in 11 minutes  
ISIP: no return blow  
FFP: blow started in 2 minutes, reached B.O.B. in 16 minutes  
FSIP: no return blow  
Recovery: 95' VSLG&OCM (1g, 3o, 96m); 275' VSLO&G&MCW (5g, 3o, 45m, 47w); 630' MCW with trace oil (19m, 81w); chl. 32,000; total fluid 1000'  
FP: 42-301/305-475 SIP: 1181-1148  
HP: 2038-2009 BHT: 139 deg. F

**Oread 4114' (-820)**

7:00 AM at 4140' on 7-6-2013  
**Morgan Mud Check at 4140'**  
11:15 AM on 7-6-2013  
wt vis wl pH chl  
9.4 60 6.8 8.5 600  
PV YP GelS lcm solids  
22 26 7/24 5# 7.8%

**Heebner 4162' (-868)**

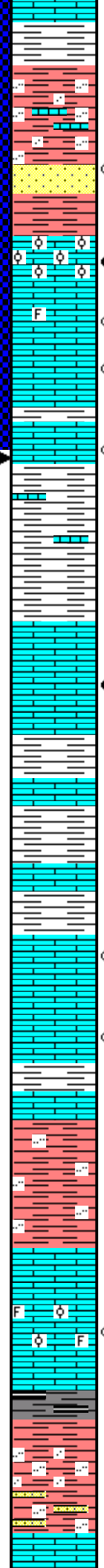
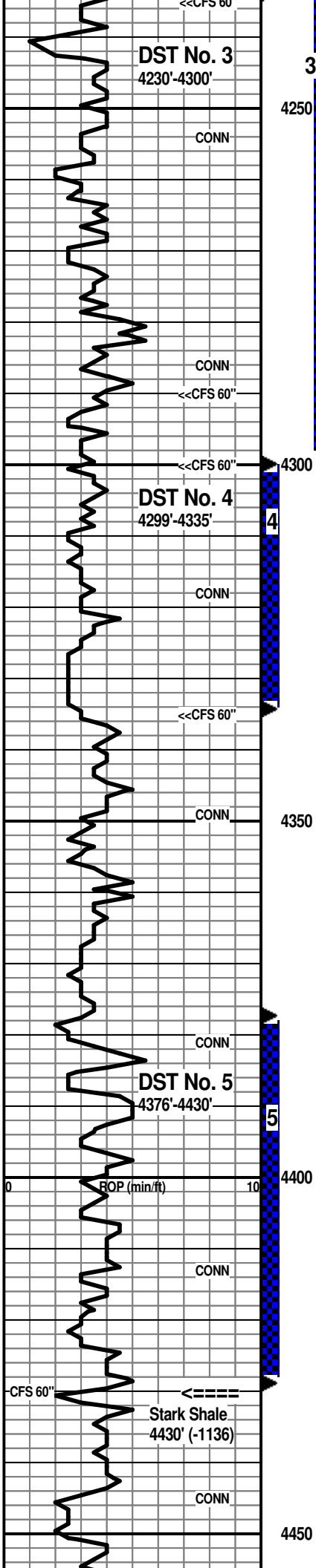
DST No. 2 Leavenworth - Lansing "A"  
Interval: 4154'-4235'  
Times: 30-60-45-60  
IFP: weak blow, bldg. to 1 1/8"  
ISIP: no return blow  
FFP: no blow  
FSIP: no return blow  
Recovery: 60' SLO&GCM (4g, 7o, 89m)  
FP: 20-29/33-45 SIP: 1165-1091  
HP: 2052-2026 BHT: 132 deg. F

**Lansing 4209' (-915)**

**Morgan Mud Check at 4235'**  
10:20 AM on 7-7-2013  
wt vis wl pH chl  
9.3 62 7.2 9.0 1,000  
PV YP GelS lcm solids  
18 23 10/28 5# 7.1%

7:00 AM at 4235' on 7-7-2013





50' spl - Ls: various cryptoxln AA; some offwhite fn-vfxln with spotty asphaltic stain in inter-particle and vug. por.; Sh: good influx lt to med gray, gray-green

60' spl - flood Sh: red-brn, silty and finely sandy; lt to med gray; minor Sst: offwhite, lt gray vvf, poor por. with some pp stain; occ Ls: med brn and red-brn cryptoxln

70' spl - Sh: various AA; good influx Sst: lt gray fg friable, finely micac. with sl sfo and some sat. stain; predom. offwhite, lt gray vvf-fg, N.S.; some clusters with dead black spotty stain

80' spl - still very shaly; influx Ls: offwhite, tan oolitic to granular with inter-oolitic and interparticle por., some vug. por. with subsat. to sat. stain, sfo, vsf sg; other mottled brn/gray granular, N.S.; tan, lt gray vf-cryptoxln, NVP, N.S.

90' spl - flood Ls: offwhite, tan, some lt gray vf-cryptoxln, foss. IP with interxln, vug. and edge por. with pp brn stain, ft odor, sl shows dark brn to black oil; abund. tan, offwhite vf-cryptoxln, NVP, N.S. and some offwhite dense, subchalky, N.S.

4290' CFS spls - >>>>

4300' CFS spls - >>>>

10'/20' spls - becoming shale dominated: lt to med gray, red-brn; Ls: med gray, med brn cryptoxln

30' spl - flood Sh: red-brn, maroon-brn, med gray; lesser Ls: gray, brn cryptoxln and offwhite, lt gray mic-fnxln dense

35' spl - very shaly AA with lesser various dense Ls's; scatt. patchy stain in offwhite, tan, brn cryptoxln Ls

CFS 4335' 30" spl - much decr. shale %; Ls: influx tan, brn cryptoxln to gran. IP with inter-particle and some vug. por., with ft odor, fair-gd shows dark brn to black oil, some sl gassy, patchy to sat. brn stain

50' spl - Ls: mix lt gray, lt brn cryptoxln and offwhite mic-vfxln dense, subchalky to chalky, N.S.; very scatt. lt gray, tan cryptoxln with some edge and vug. por. with lt stain, no odor, nfo; with Sh: med gray, red-brn; 60' spl - >>>>

70' spl - Sh: good influx med to dark gray; Ls: influx med to dark brn, gray-brn cryptoxln, gran. IP, NVP, N.S.

80' spl - predom. Sh: med to dark gray, influx red-brn; Ls: various gray, brn cryptoxln; lesser gray gran.; occ tan, brn gran. with patchy to subsat. dark brn to black tarry stain

90' spl - Ls: mix tan, lt brn, gray cryptoxln, NVP, N.S.; lesser offwhite, tan mic-vfxln dense with scatt. spotty stain; some tan granular with dark brn to black stain in inter-particle por., trace fo on break; some tan more cryptoxln with scatt. vug. por. with dark stain, trace fo on break, no odor

4400' spl - Ls: predom. tan, lt brn vf-cryptoxln; mix AA; Sh: influx med gray and gray-green

10' spl - Sh: influx red-brn silty IP; Ls: some lt gray, tan cryptoxln and tan, offwhite mic-vfxln dense

20' spl - Sh: predom. red-brn; minor Ls's AA; occ mottled brn and gray gran., NVP, N.S.

30' spl - flood Ls: predom. tan, offwhite mic-vfxln dense, foss. IP with some pp and moldic por., patchy to sat. stain; some tan foss., oolitic to granular with inter-particle and vug. por. with pp brn stain, even fluor., sl shows dark brn oil on break, milky to sl strm cut, no odor

CFS 4430' 30" spl - Ls: AA decr. shows; mix tan, offwhite mic-vfxln dense, subchalky to chalky IP and tan, lt gray cryptoxln, NVP; 60" spl - Ls's AA with some dark gray to black shale

40' spl - Sh: abund. dark gray, some black carbon. and fissile

50' spl - flood Sh: lt to med red-brn, finely sandy and silty IP; Sst: red-brn, silty and lt gray vvf, shaly and silty, N.S.

60' spl - Sh: good influx dark red-brn, silty, non-sandy; lesser med gray, gray-green; minor brn, gray cryptoxln Ls

DST No. 3 Lansing "A" Sand - "E" Zone  
Interval: 4230'-4300'  
Times: 30-60-60-90  
IFP: good blow, bldg. to B.O.B. in 17 minutes  
ISIP: 1" return blow  
FFP: fair blow, bldg. to B.O.B. in 47 1/2 minutes  
FSIP: no return blow  
Recovery: 180' GIP; 10' G&MCO (4g, 1m, 95o); 205' G&MCO (34g, 3m, 63o); 238' G&MCO (31g, 31m, 38o); gravity 29 deg.  
FP: 35-130/143-197 SIP: 1279-1279  
HP: 2124-2059 BHT: 137 deg. F

CFS 4290' 30" spl - Ls: very predom. offwhite, tan vf-cryptoxln and offwhite mic-vfxln dense, N.S.; scatt. shows AA; 60" spl - Ls: various dense, N.S.; scatt. chips with pp lt brn stain, sfo, vsf sg, ft odor; Sh: incr. red-brn, med gray

CFS 4300' 30" spl - Ls: pred. tan, lt gray, lt brn cryptoxln, NVP, N.S.; some offwhite mic-vfxln subchalky with spotty pp stain and offwhite, tan vf-cryptoxln with some interxln and edge por. with stain, sfo; 60" spl - Ls: occ fn gran. with inter-particle por. with spotty to sat. stain, sl show dark brn to black oil, no odor

7:00 AM at 4300' on 7-8-2013

Morgan Mud Check at 4300'

10:10 AM on 7-8-2013

wt	vis	wl	pH	chl
9.2	73	6.0	10.5	1,200
PV	YP	GelS	lcm	solids
20	24	11/26	5#	6.4%

CFS 4335' 60" spl - still shaly AA; Ls: scatt. shows AA; various brn, gray cryptoxln and offwhite, tan mic-vfxln dense, NVP, N.S.

60' spl - decr. Shale %; Ls: lt gray, tan, lt brn cryptoxln, gran. IP; offwhite dense subchalky to chalky

DST No. 4 Lansing "G"  
Interval: 4299'-4335'  
Times: 30-60-60-90  
IFP: fair blow, bldg. to 9"  
ISIP: 1/8" return blow  
FFP: fair blow, bldg. to B.O.B. in 38 minutes  
FSIP: 1/8" return blow  
Recovery: 180' GIP; 264' GCO (22g, 3m, 75o); 89' G&OCM (24g, 30o, 46m), Gravity 30.4 deg.  
FP: 22-75/81-152 SIP: 483-475  
HP: 2128-2084 BHT: 137 deg. F

7:00 AM at 4380' on 7-9-2013

Morgan Mud Check at 4414'

9:30 AM on 7-9-2013

wt	vis	wl	pH	chl
9.1	90	6.4	11.5	1,000
PV	YP	GelS	lcm	solids
25	35	10/60	2#	5.7%

### Stark Shale 4430' (-1136)

DST No. 5 Lansing "H" and "J"  
Interval: 4376'-4430'  
Times: 30-60-60-90  
IFP: strong blow, B.O.B. in 3 minutes  
ISIP: return blow, B.O.B. in 17 minutes  
FFP: strong blow, B.O.B. in 4 minutes  
FSIP: no return blow?

Recovery: 1205' GIP; 125' CGO (1m, 33g, 66o); 2090' total fluid (reversed 17 bbl ((1876')) to tank truck) - 3 min. samples first 15 min. then 5 min. samples at 20 min. and 25 min. - average first 15 min. (84o, 11g, 5m); 20 min. sample (65o, 22m, 13g); 25 min. sample (93o, 4m, 3g); bottom stand of collars (89') (35m, 35g, 25o, 5w); gravity 29.6 deg.

39.6 degrees  
FP: 77-408/415-755 SIP: 1339-1327  
HP: 2152-2095 BHT: 147 deg. F

7:00 AM at 4465' on 7-10-2013

### BKC 4481' (-1187)

Morgan Mud Check at 4527'

10:10 AM on 7-10-2013

wt vis wl pH chl  
9.0 57 5.8 11.0 800  
PV YP GelS lcm solids  
20 20 5/26 1# 5.0%

### Pawnee 4608' (-1314)

DST No. 6 Pawnee-Lower Pawnee  
Interval: 4584'-4660'  
Times: 30-60-30-60  
IFP: weak 1/2" blow, died in 22 minutes  
ISIP: no return blow  
FFP: no blow  
FSIP: no return blow  
Recovery: 2' SG&OCM (2g, 2o, 96m)  
FP: 20-21/21-22 SIP: 74-49  
HP: 2291-2284 BHT: 138 deg. F

7:00 AM at 4660' on 7-11-2013

Morgan Mud Check at 4660'

8:15 AM on 7-11-2013  
wt vis wl pH chl  
9.2 90 5.2 11.0 700  
PV YP GelS lcm solids

70' spl - flood Ls: mix tan, lt brn, lt gray cryptoxln; lesser offwhite dense and gray granular

80' spl - Ls: mix AA with med to dark brn cryptoxln; Sh: strong influx dark red-brn, med to dark gray, calcar.; some med gray dense, very shaly Ls

90' spl - Sh: abund. dark red-brn AA, some dark maroon; Ls med brn cryptoxln and med brn granular, NVP, N.S.

4500' spl - Ls: good influx med brn, lt gray, gray-brn cryptoxln to granular IP; offwhite, tan mic-fnxln sl gran. with micxn matrix; scatt. subchalky

10' spl - flood Ls: lt to med brn, lt gray predom. cryptoxln, NVP, N.S.

20' spl - Ls's AA; influx Sh: dark red-brn and maroon-brn

30' spl - Sh: incr. % of red-brn; Ls: various cryptoxln and granular AA; some mottled red granular to cryptoxln, shaly IP

40' spl - Ls: flood lt to med gray vfxln dense, shaly; Sh: common gray calcar. with red-brn and influx of brick red

50' spl - Sh: becoming dominant, lt to med gray calcar., some gray-green; decr. % Ls: mottled lt gray granular and gray vf-cryptoxln

60' spl - Sh: lt to med gray, red-brn, abund. maroon, brick red, gray-green; Ls: minor % of mottled tan/yellow/gray gran.

70' spl - Sh: influx dark red-brn, silty and vf sandy, finely micac.; other brick red and lt to med gray; occ lt gray vvfq shaly Sst, N.S.

80' spl - Sh: AA decr. %; Ls: good influx tan, lt gray granular, NVP; lesser lt gray, gray-brn cryptoxln and offwhite subchalky

90' spl - flood Ls: lt to med gray dense, silty to sl shaly, NVP, N.S.

4600' spl - Ls: lt gray, offwhite vfxln dense, silty, shaly IP

10' spl - Sh: flood dark gray to black carbon., subfissile

20' spl - Sh: red-brn, maroon-brn, med to dark gray, brick red; Ls: mix tan, lt brn vf-cryptoxln and tan sl granular, NVP; sl influx offwhite, lt brn vf-cryptoxln, poor vis. por. with dark brn to black pp stain, vsl show dark brn to black oil on break, no odor, patchy to sat. stain in dry spls

30' spl - flood Ls: tan vf-cryptoxln, faintly ool. IP with spar matrix; some offwhite subchalky and lt to med gray cryptoxln, N.S.

CFS 4630' 30" spl - Ls: lt to med brn cryptoxln and med gray dense, shaly; Sh: good influx med to dark gray, some black fissile, trace fusulinids

40' spl - decr. Sh %; Ls: flood tan, lt gray cryptoxln and offwhite, lt gray mic-vfxln dense, subchalky to white chalky, NVP, N.S.

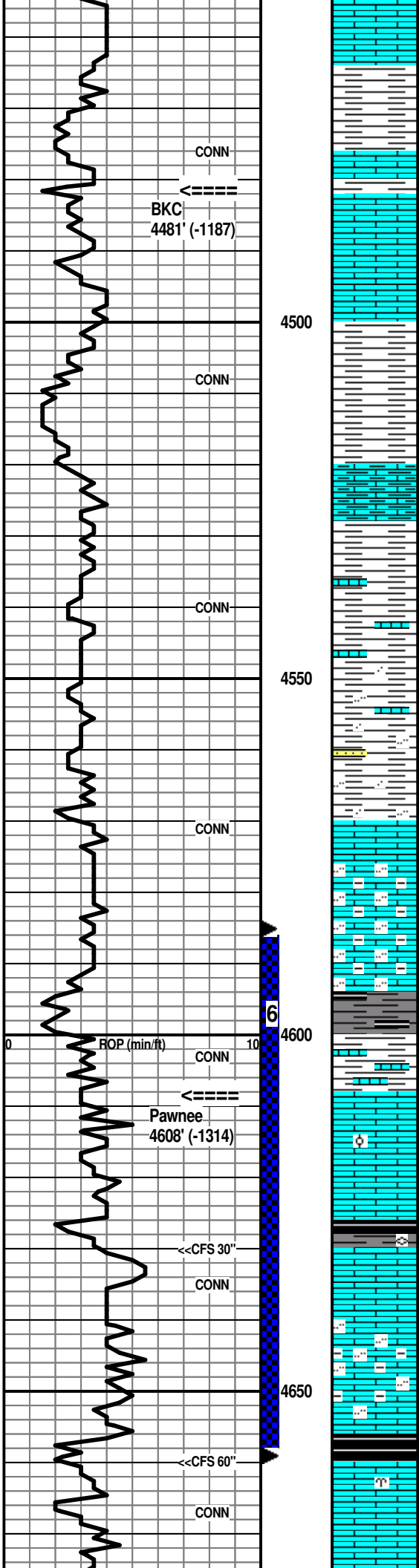
50' spl - Ls: flood lt to med gray dense, silty and shaly, NVP, N.S.

60' spl - Ls: AA

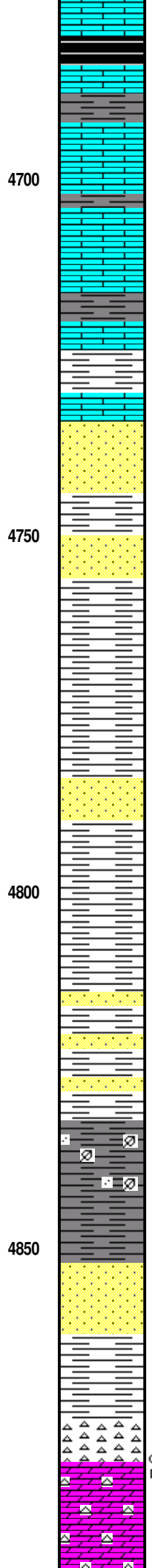
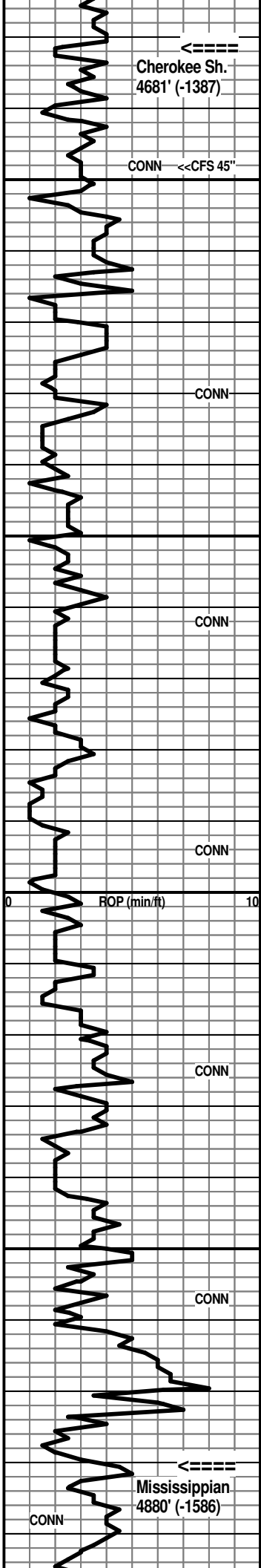
CFS 4660' 30" spl - Ls: med to dark gray vf-cryptoxln; Sh: flood black carbon., fissile; 60" spl - Sh: AA; Ls: incr. med to dark gray vf-cryptoxln; some lt brn cryptoxln to sl granular and some offwhite, lt gray mic-vfxln dense, N.S.

80' spl - Sh: dark gray to black; Ls: tan, lt gray, lt brn granular to cryptoxln, poor to NVP, N.S.; occ bryozoan foss. fragments

90' spl - flood Ls: lt gray, lt brn vf-cryptoxln; sl mottled tan, lt brn gran. with micxn matrix; abund. offwhite subchalky



Cherokee Sh. 4681' (-1387)



to chalky

98' spl - not caught

CFS 4698' 20" spl - Sh: med to dark gray, black, some red-brn; Ls: mix lt to med brn, lt gray cryptoxln and offwhite mic-vfxln dense, subchalky; 45" spl - Ls: good influx med to dark brn mottled gran. to cryptoxln, NVP, N.S.; incr. red-brn shale

10' spl - Ls: mix AA; Sh: med to dark gray, black, red-brn and maroon

20' spl - very minor shale; Ls: various lt to med brn, tan, lt gray cryptoxln to granular; lesser offwhite mic-vfxln subchalky

30' spl - Ls: mix AA with sl incr. Sh: med to dark gray, some maroon

40' spl - mix Ls's AA; Sh: minor % med to dark gray, dark red, dark maroon and purple; trace sst

50' spl - decr. Ls's AA, still common; Sh: good influx vc gray, red-brn, maroon, purple; Sst: sl influx lt to med red fg, calcar, IP, some f-gd inter granular por., N.S.

60' spl - flood Sst: coarse to very coarse, ang. to subrnd, loose grains, lt gray, yellow, orange, offwhite, transl to opq; lesser clusters fn-med grnd, N.S.; abund. multi-colored shales AA, occ dark yellow

70' spl - mix loose grains and sst clusters AA with abund. multi-colored shales; Ls: scatt. lt gray, lt brn cryptoxln

80' spl - predom. Sh: red-brn, maroon, purple, mottled maroon-green; decr. loose sand grains; Ls: incr. % lt gray, tan, lt brn cryptoxln

90' spl - Sh: multi-colored AA; Sst: influx red-brn, tan, offwhite vfg dirty, shaly; occ tan fn-med grnd, N.S.; very scatt. Ls

4800' spl - Sh: predom. red-brn, maroon and purple, some finely sandy; rare coarse qtz grains, scatt. tan, offwhite clusters, N.S.

10' spl - Sh: predom. maroon, purple, red-brn, some red-brn sandy; scatt. coarse to very coarse qtz grains

20' spl - Sh: influx lt gray, lt gray-green, dark yellow, other multi-colored AA with scatt. qtz grains; Ls: sl incr. med brn smooth cryptoxln

30' spl - flood red-brn fg shaly Sst and dark maroon shaly Sst; some tan, brn fg Sst, N.S.; multi-colored shales AA

40' spl - very predom. multi-colored shales; occ lt green fg Sst, sl glauc. and pyritic; occ tan vf-fg Sst, N.S.

50' spl - Sh: strong influx lt to med gray, some carbon. material, med to dark gray and black; scatt. Sst and coarse qtz grains

60' spl - Sh: predom. vc gray to black, sandy IP; Ls: scatt. gray vfxln, shaly; Sst: very minor fg shaly

70' spl - Sh: predom. med to dark gray, some black and dark maroon; Sst: good influx offwhite fg, sl glauc. tight to friable, sl micac., silica cement, some very shaly, N.S.

80' spl - predom. Sh: vc gray, black, dark red, dark maroon, brick red, purple, occ yellow; Sst: scatt. clusters AA, scatt. loose coarse grains; minor dark gray and offwhite dense Ls

90' spl - influx Chert: tan, yellow fresh, limy IP, some vug. por.; some white weath. with pp por., N.S.; occ cream sl weath. with black gilsonite specks, no odor, nfo, weak cut; occ Dolo: tan cryptoxln, cherty NVP, N.S.

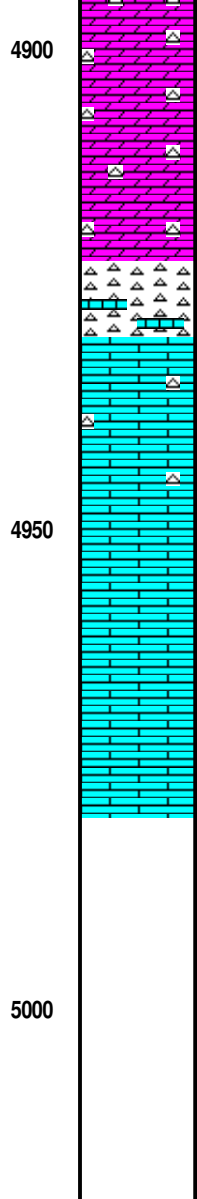
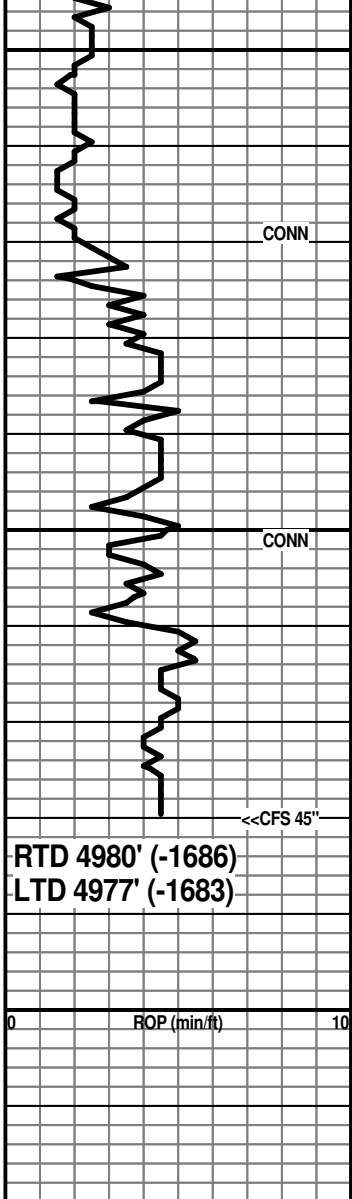
4900' spl - >>>>

10' spl - >>>>

20' spl - flood Dolo: tan, offwhite vfxln, vf sucrosic: with

Mississippian 4880' (-1586)

4900' spl - Dolo: influx lt gray vf-cryptoxln, NVP, N.S.; some offwhite, tan finely sucrosic, N.S.; with tan, brn and yellow fresh chert, trace tan oolitic chert; some Ls: sl mottled tan med granular



20' spl - flood Dolo: tan, offwhite vxn; v. sucrosic; with offwhite soft weath. and fresh cherts

30' spl - Dolo: AA with good influx Chert: offwhite, opq sharp; lt gray subopq, common offwhite weath., N.S.

40' spl - predom. Chert: offwhite, lt gray opq, fresh; much decr. Dolo; influx Ls: med to dark brn cryptoxln

50' spl - flood Ls: med to dark brn cryptoxln, mottled IP, NVP, N.S.; scatt. offwhite chert

60' spl - Ls: AA, some offwhite dense; occ chert

70' spl - Ls: influx dark brn cryptoxln

80' spl - Ls: dark brn cryptoxln AA; some offwhite micxn, subchalky and tan fn granular with offwhite micxn matrix, N.S.

CFS 4980' spls - Ls: flood offwhite chalky; lesser tan, lt brn granular, NVP, N.S.

Because of the positive results of DST's 3 through 5; 5 1/2" casing was set for completion.

Respectfully submitted,

Wesley D. Hansen  
 Petroleum Geologist  
 Kansas License No. 418

10' spl - flood Chert: offwhite, tan, yellow, fresh, opq; some white weath., N.S.; Dolo: tan, offwhite, lt gray fn-vfxln sucrosic, N.S.; some Ls: tan, offwhite micxn to fn granular, NVP, N.S.

7:00 AM at 4980' on 7-12-2013

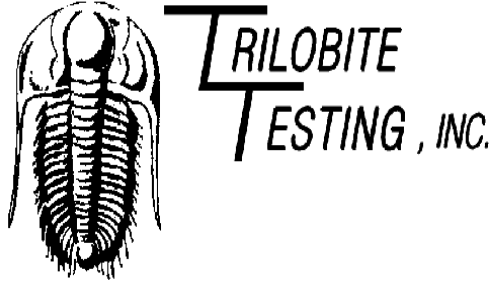
RTD reached at 5:00 AM on 7-12-2013  
 CFS 45" - short trip 10 stands - CTCH for 1 1/2 hours - drop survey - TOFL

Deviation at 4980' was 2 deg.

RTD 4980' (-1686)  
 LTD 4977' (-1683)

ROP (min/ft) 0 10

4900  
 4950  
 5000



## DRILL STEM TEST REPORT

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

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Wes Hansen

### **Frisbie #2-23**

#### **23-2s-36w Rawlins KS**

Start Date: 2013.07.06 @ 08:20:00

End Date: 2013.07.06 @ 16:52:15

Job Ticket #: 52758                      DST #: 1

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

Printed: 2013.07.11 @ 16:18:08



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc  
 250 N. Water Suite 300  
 Wichita, KS 67202  
 ATTN: Wes Hansen

**23-2s-36w Rawlins KS**

**Frisbie #2-23**

Job Ticket: 52758

**DST#: 1**

Test Start: 2013.07.06 @ 08:20:00

## GENERAL INFORMATION:

Formation: **LeCompton - Oread**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:29:00

Time Test Ended: 16:52:15

Test Type: Conventional Bottom Hole (Initial)

Tester: James Winder

Unit No: 57

Interval: **4029.00 ft (KB) To 4140.00 ft (KB) (TVD)**

Total Depth: 4140.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3294.00 ft (KB)

3284.00 ft (CF)

KB to GR/CF: 10.00 ft

**Serial #: 8671**

**Inside**

Press @ Run Depth: 475.28 psig @ 4030.00 ft (KB)

Start Date: 2013.07.06

End Date: 2013.07.06

Start Time: 08:20:05

End Time: 16:52:15

Capacity: 8000.00 psig

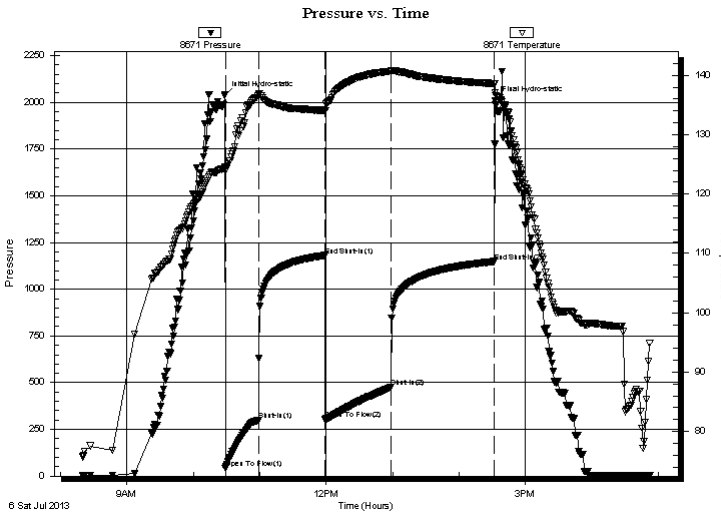
Last Calib.: 2013.07.06

Time On Btm: 2013.07.06 @ 10:28:30

Time Off Btm: 2013.07.06 @ 14:32:45

**TEST COMMENT:** 30 - IF: Blow built to BOB (11") in 11 min.  
 60 - IS: No blow back  
 60 - FF: Blow started at 2 min., built to BOB in 16 min.  
 90 - FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2038.38	124.47	Initial Hydro-static
1	41.96	124.51	Open To Flow (1)
31	300.67	136.69	Shut-In(1)
91	1181.05	134.09	End Shut-In(1)
91	305.01	134.04	Open To Flow (2)
150	475.28	140.69	Shut-In(2)
244	1148.49	138.61	End Shut-In(2)
245	2008.69	137.10	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
630.00	MCW w/trace oil 81%w, 19%m	3.97
275.00	MW w/oil spots 47%w, 45%m, 5%g, 3%o	3.86
95.00	Mud w/oil spots 96%m, 3%o, 1%g	1.33

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52758      **DST#: 1**  
Test Start: 2013.07.06 @ 08:20:00

**Tool Information**

Drill Pipe:	Length: 3489.00 ft	Diameter: 3.80 inches	Volume: 48.94 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 86000.00 lb
			<u>Total Volume: 51.57 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4029.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	111.00 ft			
Tool Length:	139.00 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			4006.00	
Hydraulic tool	5.00			4011.00	
Jars	5.00			4016.00	
Safety Joint	3.00			4019.00	
Packer	5.00			4024.00	28.00      Bottom Of Top Packer
Packer	5.00			4029.00	
Stubb	1.00			4030.00	
Recorder	0.00	8671	Inside	4030.00	
Recorder	0.00	8320	Outside	4030.00	
Perforations	8.00			4038.00	
Blank Spacing	97.00			4135.00	
Perforations	2.00			4137.00	
Bullnose	3.00			4140.00	111.00      Bottom Packers & Anchor

**Total Tool Length: 139.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52758      **DST#: 1**  
Test Start: 2013.07.06 @ 08:20:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	32000 ppm
Viscosity: 60.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.75 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 600.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
630.00	MCW w/trace oil 81%w , 19%m	3.973
275.00	MW w/oil spots 47%w , 45%m, 5%g, 3%o	3.858
95.00	Mud w/oil spots 96%m, 3%o, 1%g	1.333

Total Length: 1000.00 ft      Total Volume: 9.164 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: RW = .158 ohms @ 96.6 deg F  
Chlorides = 32,000 ppm

Serial #: 8671

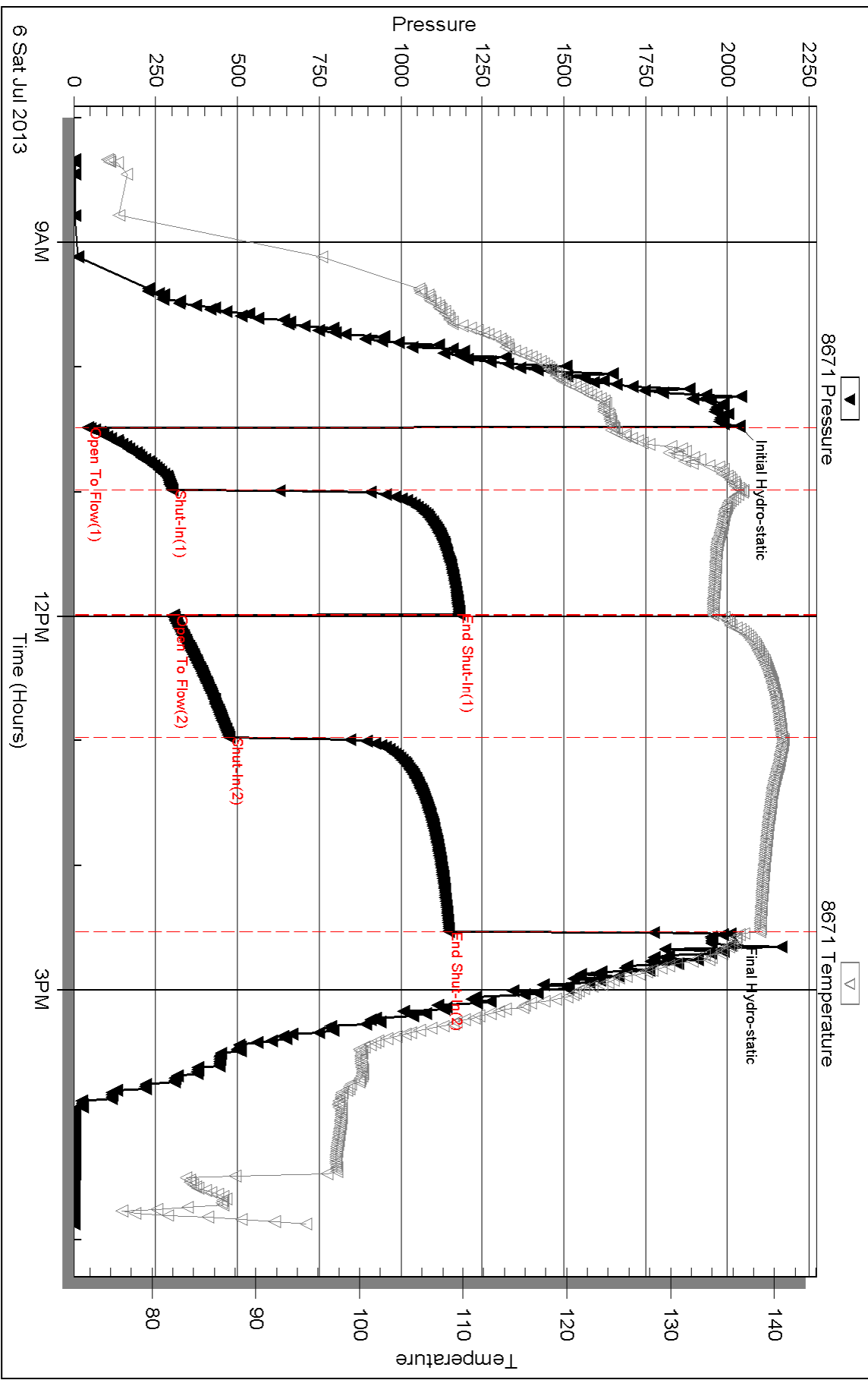
Inside

Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 1

# Pressure vs. Time



Triobite Testing, Inc

Ref. No: 52758

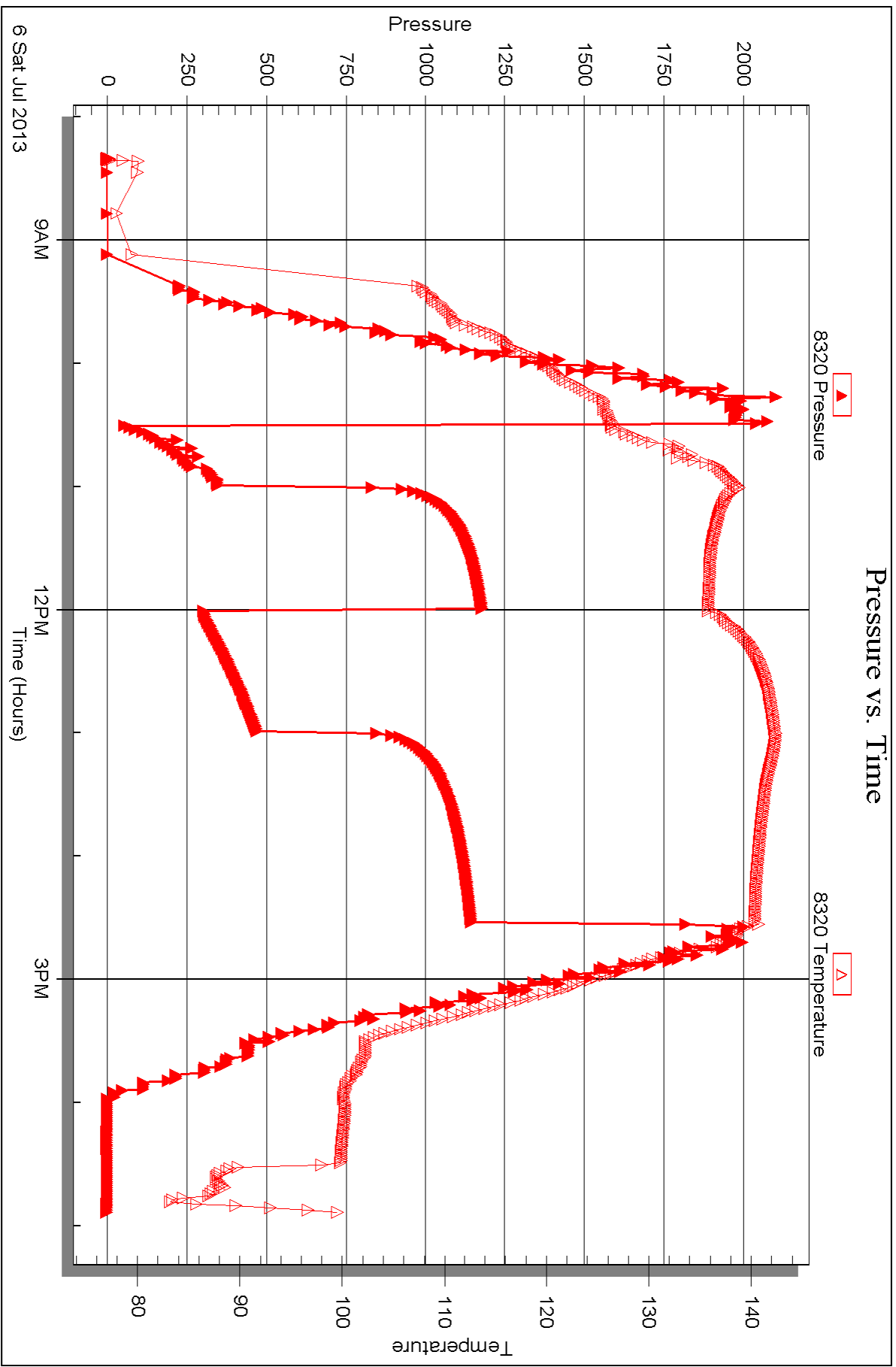
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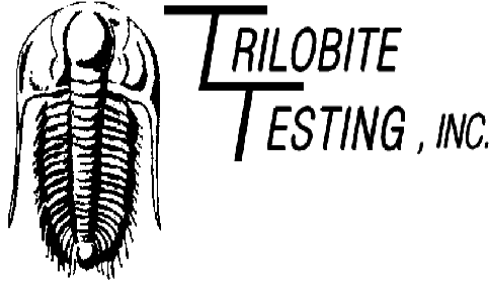
Serial #: 8320

Outside Murfin Drilling Co., Inc

Fisble #2-23

DST Test Number: 1





## DRILL STEM TEST REPORT

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

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Wes Hansen

### **Frisbie #2-23**

#### **23-2s-36w Rawlins KS**

Start Date: 2013.07.07 @ 05:02:00

End Date: 2013.07.07 @ 12:26:30

Job Ticket #: 52759                      DST #: 2

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

Printed: 2013.07.11 @ 16:17:17



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc  
 250 N. Water Suite 300  
 Wichita, KS 67202  
 ATTN: Wes Hansen

**23-2s-36w Rawlins KS**

**Frisbie #2-23**

Job Ticket: 52759

**DST#: 2**

Test Start: 2013.07.07 @ 05:02:00

## GENERAL INFORMATION:

Formation: **Douglas - Lans. "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:27:00

Time Test Ended: 12:26:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 57

**Interval: 4154.00 ft (KB) To 4235.00 ft (KB) (TVD)**

Total Depth: 4235.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3294.00 ft (KB)

3284.00 ft (CF)

KB to GR/CF: 10.00 ft

**Serial #: 8671**

**Inside**

Press @ Run Depth: 45.33 psig @ 4155.00 ft (KB)

Start Date: 2013.07.07

End Date:

2013.07.07

Start Time: 05:02:05

End Time:

12:26:29

Capacity: 8000.00 psig

Last Calib.: 2013.07.07

Time On Btm: 2013.07.07 @ 07:26:45

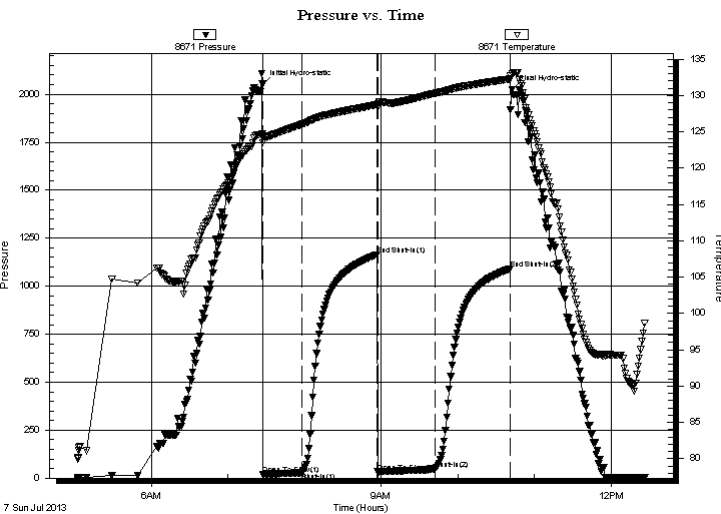
Time Off Btm: 2013.07.07 @ 10:42:15

**TEST COMMENT:** 30 - IF: Weak blow, built to 1 1/8"

60 - IS: No blow back

45 - FF: No blow

60 - FS: No blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2052.11	124.71	Initial Hydro-static
1	19.61	123.54	Open To Flow (1)
32	28.97	126.03	Shut-In(1)
90	1164.73	128.73	End Shut-In(1)
91	32.61	128.29	Open To Flow (2)
136	45.33	130.28	Shut-In(2)
194	1091.39	132.26	End Shut-In(2)
196	2025.50	132.97	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	Mud w /oil spots 89%m, 7%o, 4%g	0.30

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52759      **DST#: 2**  
Test Start: 2013.07.07 @ 05:02:00

**Tool Information**

Drill Pipe:	Length: 3616.00 ft	Diameter: 3.80 inches	Volume: 50.72 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 53.35 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4154.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	81.00 ft			
Tool Length:	109.00 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			4131.00	
Hydraulic tool	5.00			4136.00	
Jars	5.00			4141.00	
Safety Joint	3.00			4144.00	
Packer	5.00			4149.00	28.00      Bottom Of Top Packer
Packer	5.00			4154.00	
Stubb	1.00			4155.00	
Recorder	0.00	8671	Inside	4155.00	
Recorder	0.00	8320	Outside	4155.00	
Perforations	10.00			4165.00	
Blank Spacing	65.00			4230.00	
Perforations	2.00			4232.00	
Bullnose	3.00			4235.00	81.00      Bottom Packers & Anchor

**Total Tool Length: 109.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52759      **DST#: 2**  
Test Start: 2013.07.07 @ 05:02:00

## 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: bbl		
Water Loss: 7.15 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1000.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

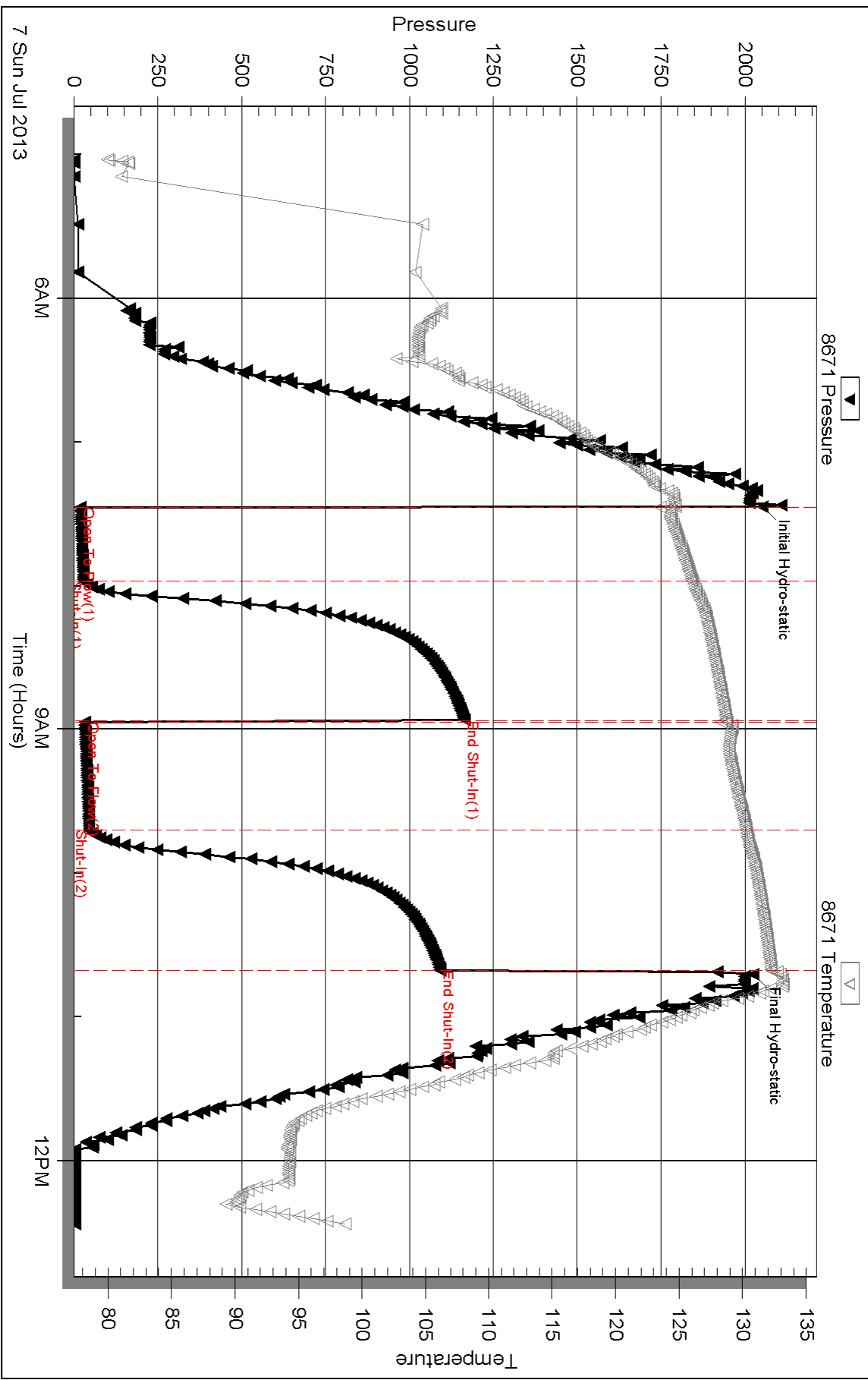
Recovery Table

Length ft	Description	Volume bbl
60.00	Mud w /oil spots 89%m, 7%o, 4%g	0.295

Total Length: 60.00 ft      Total Volume: 0.295 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:



### Pressure vs. Time

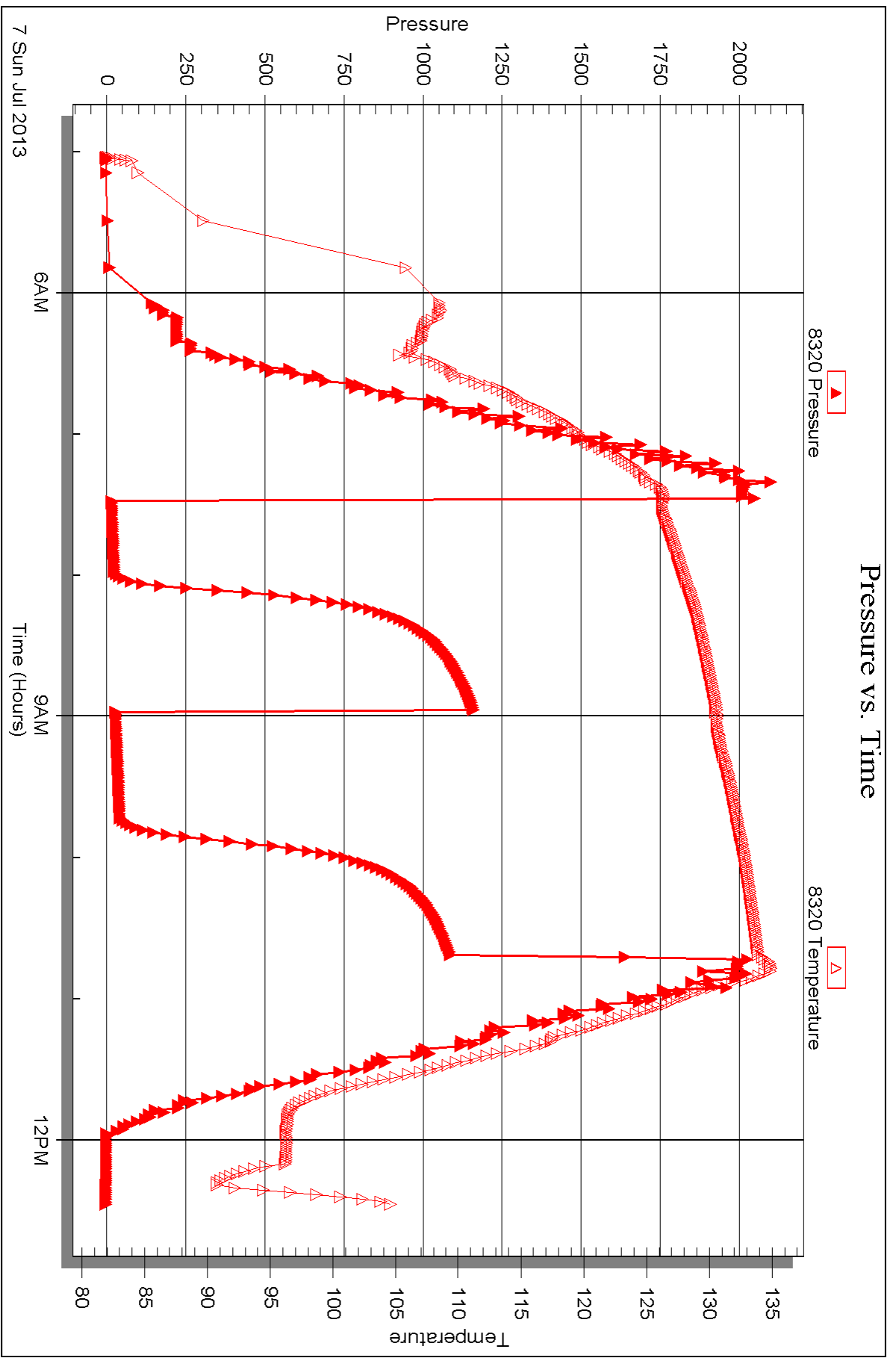


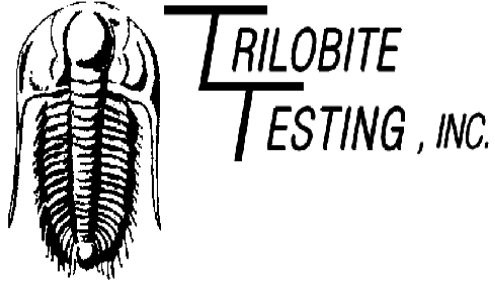
Serial #: 8320

Outside Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 2





## DRILL STEM TEST REPORT

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

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Wes Hansen

### **Frisbie #2-23**

#### **23-2s-36w Rawlins KS**

Start Date: 2013.07.08 @ 00:09:00

End Date: 2013.07.08 @ 08:18:00

Job Ticket #: 52760                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.07.11 @ 16:16:18



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**

**Frisbie #2-23**

Job Ticket: 52760

**DST#: 3**

Test Start: 2013.07.08 @ 00:09:00

## GENERAL INFORMATION:

Formation: **Lans. "D - E"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 02:10:45

Time Test Ended: 08:18:00

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 57

**Interval: 4230.00 ft (KB) To 4300.00 ft (KB) (TVD)**

Total Depth: 4300.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3294.00 ft (KB)

3284.00 ft (CF)

KB to GR/CF: 10.00 ft

**Serial #: 8671**

**Inside**

Press @ Run Depth: 196.57 psig @ 4231.00 ft (KB)

Start Date: 2013.07.08

End Date:

2013.07.08

Start Time: 00:09:05

End Time:

08:17:59

Capacity: 8000.00 psig

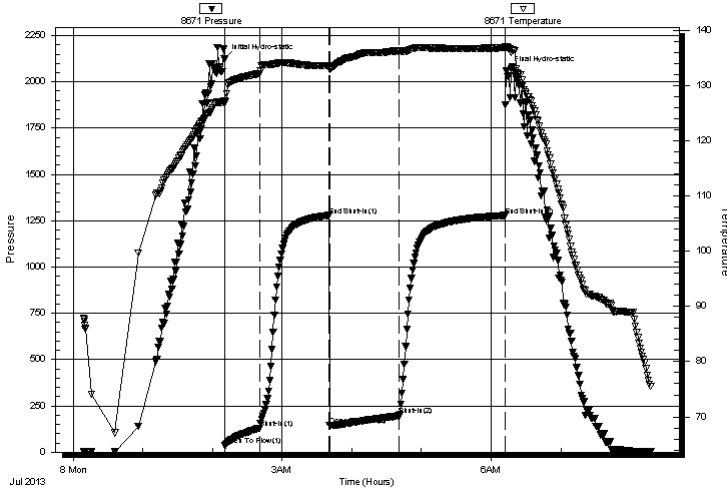
Last Calib.: 2013.07.08

Time On Btm: 2013.07.08 @ 02:10:15

Time Off Btm: 2013.07.08 @ 06:13:15

**TEST COMMENT:** 30 - IF: Blow built to BOB (11") in 17 min.  
60 - IS: Blow back built to 1"  
60 - FF: Blow built to BOB in 47 1/2 min.  
90 - FS: No blow back

Pressure vs. Time



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2123.68	127.25	Initial Hydro-static
1	34.54	126.89	Open To Flow (1)
31	130.28	132.18	Shut-In(1)
90	1279.08	133.59	End Shut-In(1)
91	143.30	133.08	Open To Flow (2)
151	196.57	136.26	Shut-In(2)
242	1278.67	136.85	End Shut-In(2)
243	2058.71	136.98	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
238.00	GMO 38%o, 31%g, 31%m	1.17
205.00	CGO 63%o, 34%g, 3%m	1.01
10.00	CO 95%o, 4%g, 1%m	0.05
0.00	GIP = 180'	0.00

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52760 **DST#: 3**  
Test Start: 2013.07.08 @ 00:09:00

**Tool Information**

Drill Pipe:	Length: 3679.00 ft	Diameter: 3.80 inches	Volume: 51.61 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 88000.00 lb
			<u>Total Volume: 54.24 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4230.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	70.00 ft			
Tool Length:	98.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Shut In Tool	5.00			4207.00	
Hydraulic tool	5.00			4212.00	
Jars	5.00			4217.00	
Safety Joint	3.00			4220.00	
Packer	5.00			4225.00	28.00 Bottom Of Top Packer
Packer	5.00			4230.00	
Stubb	1.00			4231.00	
Recorder	0.00	8671	Inside	4231.00	
Recorder	0.00	8320	Outside	4231.00	
Perforations	29.00			4260.00	
Blank Spacing	33.00			4293.00	
Perforations	4.00			4297.00	
Bullnose	3.00			4300.00	70.00 Bottom Packers & Anchor

**Total Tool Length: 98.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc

**23-2s-36w Rawlins KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Frisbie #2-23**

Job Ticket: 52760

**DST#: 3**

ATTN: Wes Hansen

Test Start: 2013.07.08 @ 00:09:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

29 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.16 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
238.00	GMO 38%o, 31%g, 31%m	1.170
205.00	CGO 63%o, 34%g, 3%m	1.008
10.00	CO 95%o, 4%g, 1%m	0.049
0.00	GIP = 180'	0.000

Total Length: 453.00 ft      Total Volume: 2.227 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 30.6 api @ 76 deg F  
Corrected Gravity = 29 api

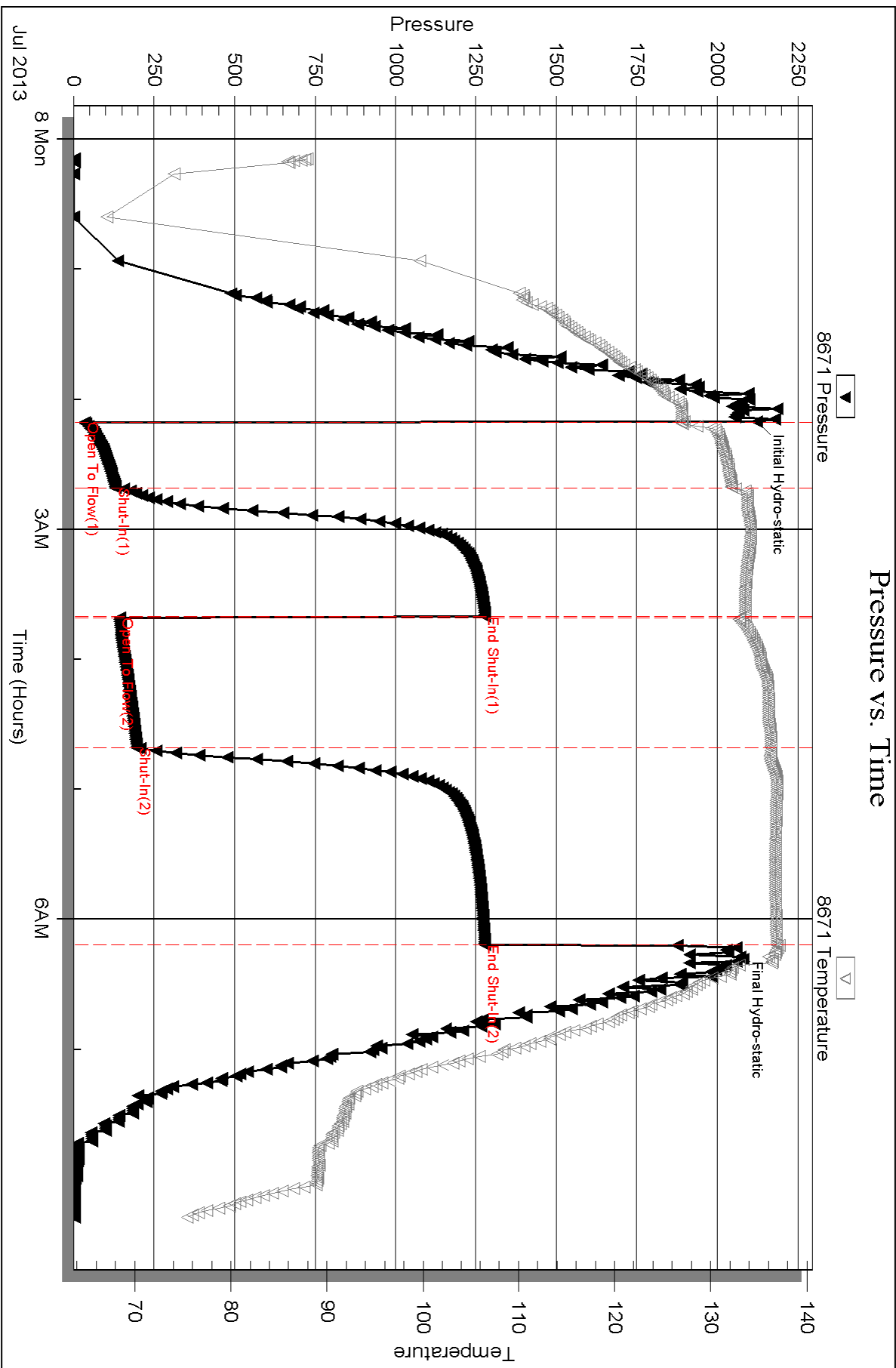
Serial #: 8671

Inside

Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 3



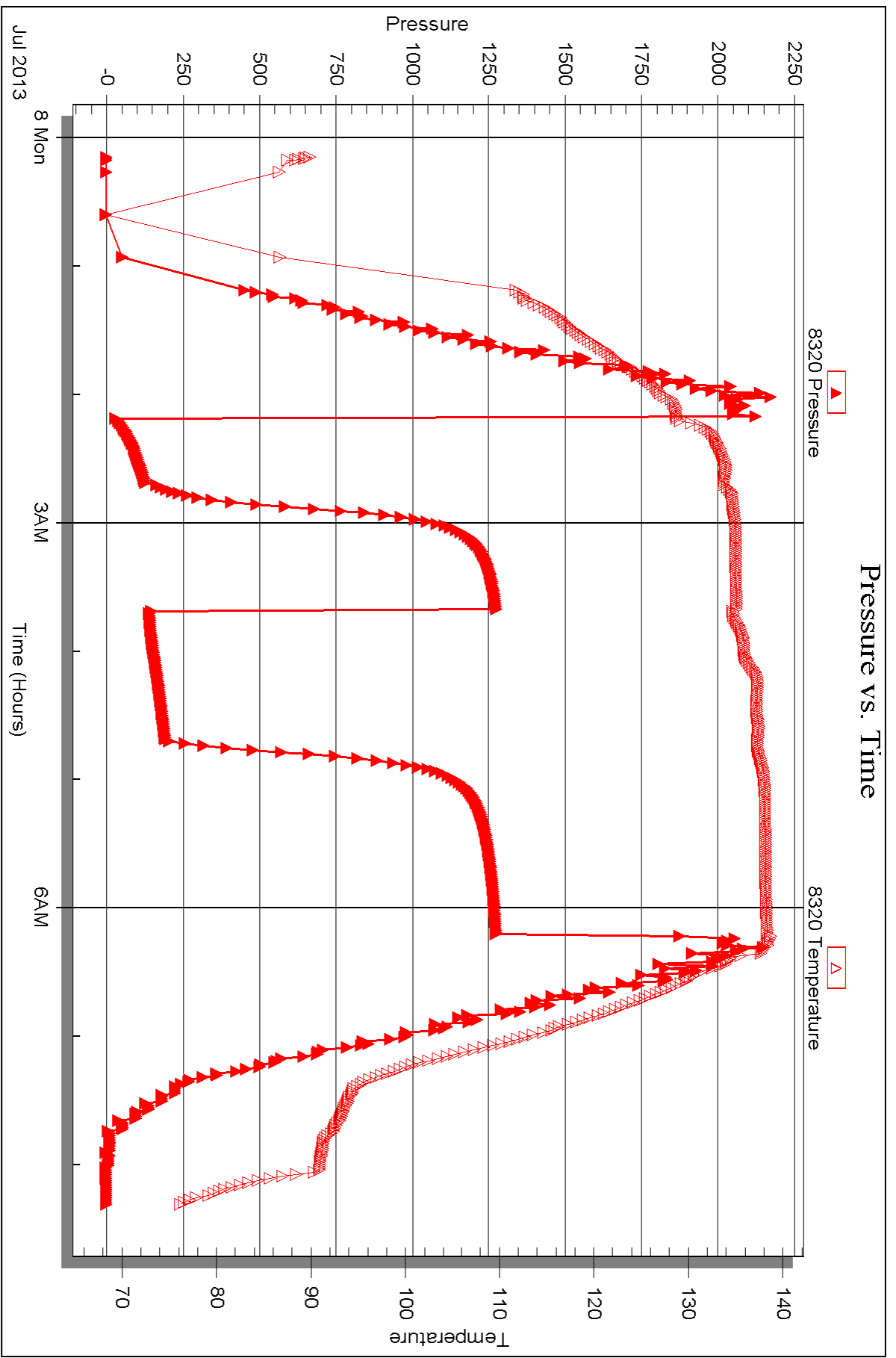


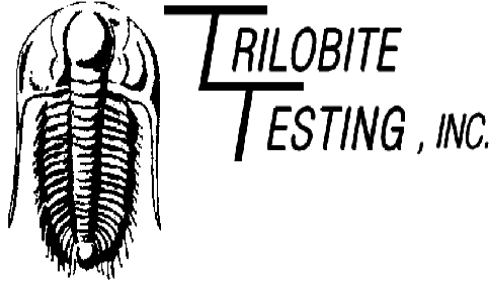
Serial #: 8320

Outside Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 3





## DRILL STEM TEST REPORT

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

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Wes Hansen

### **Frisbie #2-23**

#### **23-2s-36w Rawlins KS**

Start Date: 2013.07.08 @ 16:45:00

End Date: 2013.07.09 @ 01:05:30

Job Ticket #: 52761                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.07.11 @ 16:14:52



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc  
 250 N. Water Suite 300  
 Wichita, KS 67202  
 ATTN: Wes Hansen

**23-2s-36w Rawlins KS**

**Frisbie #2-23**

Job Ticket: 52761

**DST#: 4**

Test Start: 2013.07.08 @ 16:45:00

## GENERAL INFORMATION:

Formation: **Lans. "G"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 19:10:30  
 Tester: James Winder  
 Time Test Ended: 01:05:30  
 Unit No: 57  
 Interval: **4299.00 ft (KB) To 4335.00 ft (KB) (TVD)**  
 Reference Elevations: 3294.00 ft (KB)  
 Total Depth: 4335.00 ft (KB) (TVD)  
 3284.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 10.00 ft

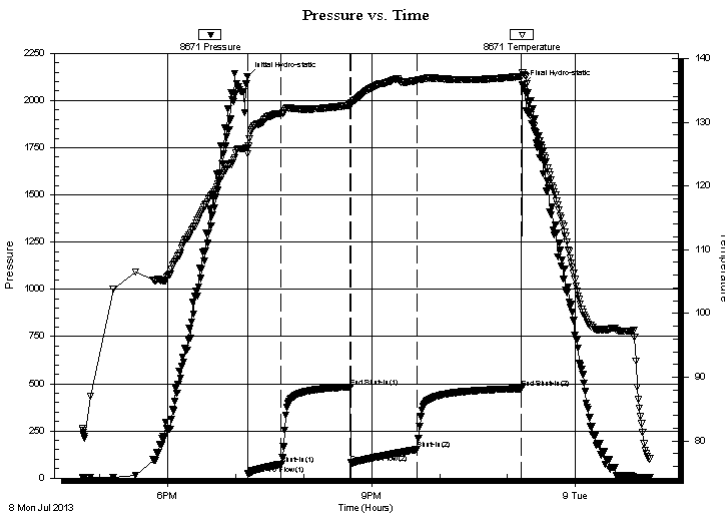
## Serial #: 8671

Inside

Press @ Run Depth: 151.70 psig @ 4300.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.07.08 End Date: 2013.07.09 Last Calib.: 2013.07.09  
 Start Time: 16:45:05 End Time: 01:05:29 Time On Btm: 2013.07.08 @ 19:10:15  
 Time Off Btm: 2013.07.08 @ 23:13:15

**TEST COMMENT:** 30 - IF: Blow built to 9"  
 60 - IS: Blow back built to 1/8"  
 60 - FF: Blow built to BOB (11") in 38 min.  
 90 - FS: Blow back built to 1/8"

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2128.28	126.03	Initial Hydro-static
1	21.74	125.09	Open To Flow (1)
30	74.78	131.29	Shut-In(1)
91	483.17	132.68	End Shut-In(1)
92	80.93	132.66	Open To Flow (2)
150	151.70	136.57	Shut-In(2)
242	474.73	137.19	End Shut-In(2)
243	2084.34	137.81	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
89.00	GOM 46% <sub>m</sub> , 30% <sub>o</sub> , 24% <sub>g</sub>	0.44
264.00	CGO 75% <sub>o</sub> , 22% <sub>g</sub> , 3% <sub>m</sub>	1.30
0.00	GIP = 180'+	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc  
 250 N. Water Suite 300  
 Wichita, KS 67202  
 ATTN: Wes Hansen

**23-2s-36w Rawlins KS**

**Frisbie #2-23**

Job Ticket: 52761

**DST#: 4**

Test Start: 2013.07.08 @ 16:45:00

## GENERAL INFORMATION:

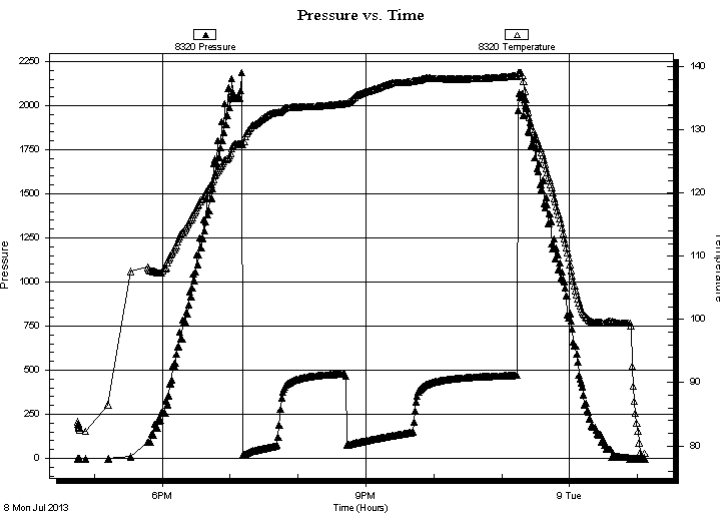
Formation: **Lans. "G"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 19:10:30 Tester: James Winder  
 Time Test Ended: 01:05:30 Unit No: 57  
 Interval: **4299.00 ft (KB) To 4335.00 ft (KB) (TVD)** Reference Elevations: 3294.00 ft (KB)  
 Total Depth: 4335.00 ft (KB) (TVD) 3284.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

## Serial #: 8320

**Outside**

Press @ Run Depth: psig @ 4300.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.07.08 End Date: 2013.07.09 Last Calib.: 2013.07.09  
 Start Time: 16:45:05 End Time: 01:06:14 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30 - IF: Blow built to 9"  
 60 - IS: Blow back built to 1/8"  
 60 - FF: Blow built to BOB (11") in 38 min.  
 90 - FS: Blow back built to 1/8"



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
89.00	GOM 46% <sub>m</sub> , 30% <sub>o</sub> , 24% <sub>g</sub>	0.44
264.00	CGO 75% <sub>o</sub> , 22% <sub>g</sub> , 3% <sub>m</sub>	1.30
0.00	GIP = 180'+	0.00

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52761 **DST#: 4**  
Test Start: 2013.07.08 @ 16:45:00

**Tool Information**

Drill Pipe:	Length: 3742.00 ft	Diameter: 3.80 inches	Volume: 52.49 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 82000.00 lb
			<u>Total Volume: 55.12 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4299.00 ft			Final 75000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	36.00 ft			
Tool Length:	64.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Shut In Tool	5.00			4276.00	
Hydraulic tool	5.00			4281.00	
Jars	5.00			4286.00	
Safety Joint	3.00			4289.00	
Packer	5.00			4294.00	28.00 Bottom Of Top Packer
Packer	5.00			4299.00	
Stubb	1.00			4300.00	
Recorder	0.00	8671	Inside	4300.00	
Recorder	0.00	8320	Outside	4300.00	
Perforations	32.00			4332.00	
Bullnose	3.00			4335.00	36.00 Bottom Packers & Anchor

**Total Tool Length: 64.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52761      **DST#: 4**  
Test Start: 2013.07.08 @ 16:45:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 30.4 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 73.00 sec/qt	Cushion Volume: bbl	
Water Loss: 5.97 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1200.00 ppm		
Filter Cake: 2.00 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
89.00	GOM 46% <i>m</i> , 30% <i>o</i> , 24% <i>g</i>	0.438
264.00	CGO 75% <i>o</i> , 22% <i>g</i> , 3% <i>m</i>	1.298
0.00	GIP = 180'+	0.000

Total Length: 353.00 ft      Total Volume: 1.736 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: Gravity = 32.4 api @ 80 deg F  
Corrected Gravity = 30.4 api

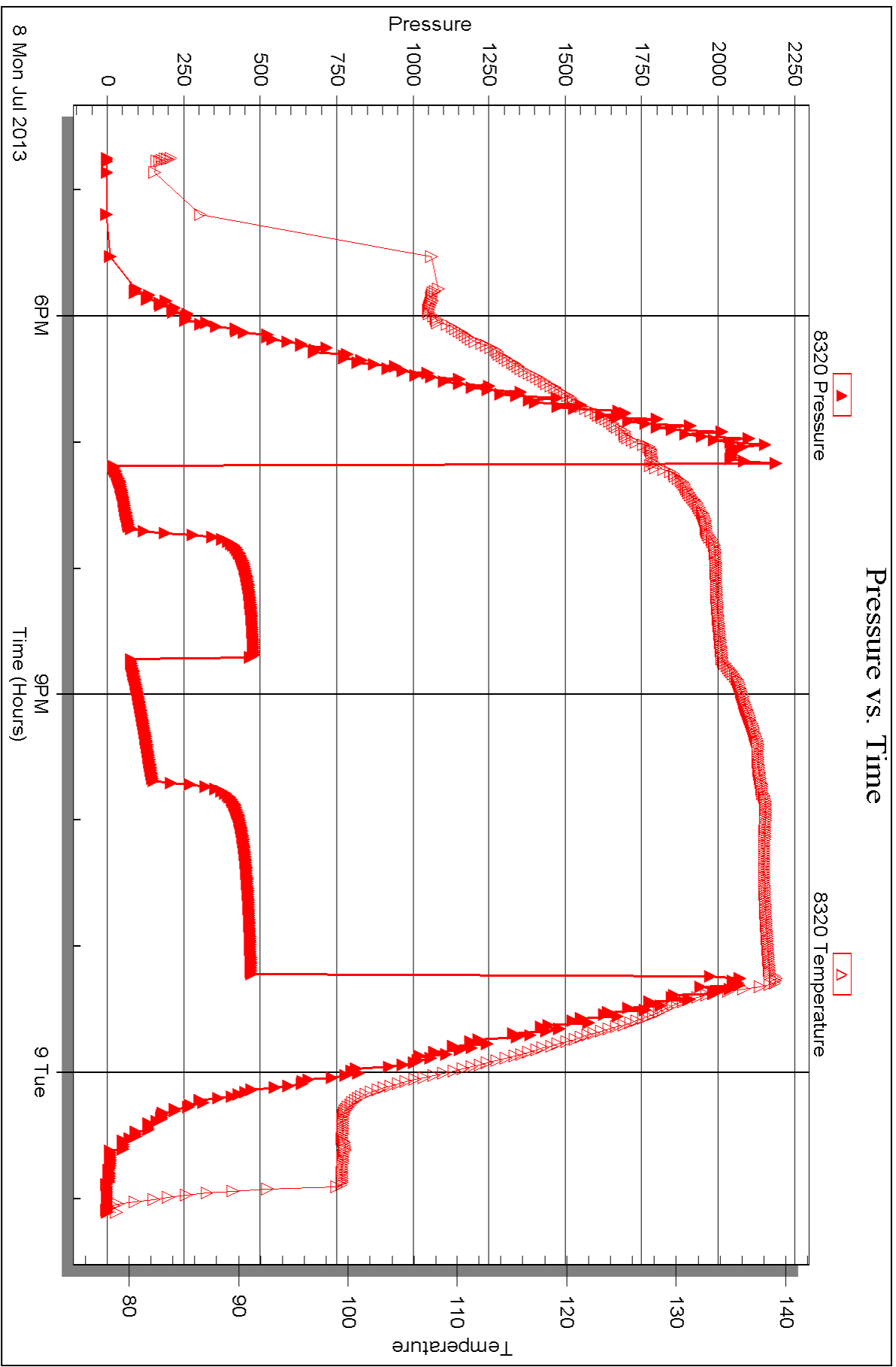


Serial #: 8320

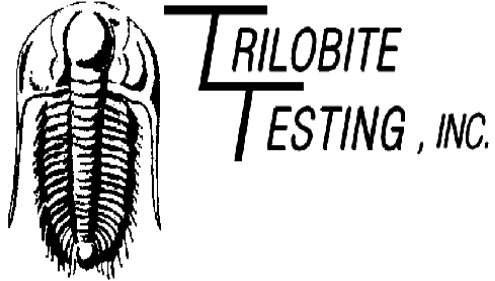
Outside Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 4







## DRILL STEM TEST REPORT

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

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Wes Hansen

### **Frisbie #2-23**

#### **23-2s-36w Rawlins KS**

Start Date: 2013.07.09 @ 13:15:00

End Date: 2013.07.10 @ 00:12:15

Job Ticket #: 52762                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.07.11 @ 16:14:05



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc  
 250 N. Water Suite 300  
 Wichita, KS 67202  
 ATTN: Wes Hansen

**23-2s-36w Rawlins KS**

**Frisbie #2-23**

Job Ticket: 52762

**DST#: 5**

Test Start: 2013.07.09 @ 13:15:00

## GENERAL INFORMATION:

Formation: **Lans. "H - J"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 15:22:45  
 Tester: James Winder  
 Time Test Ended: 00:12:15  
 Unit No: 57  
 Interval: **4376.00 ft (KB) To 4430.00 ft (KB) (TVD)**  
 Reference Elevations: 3294.00 ft (KB)  
 Total Depth: 4430.00 ft (KB) (TVD)  
 3284.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 10.00 ft

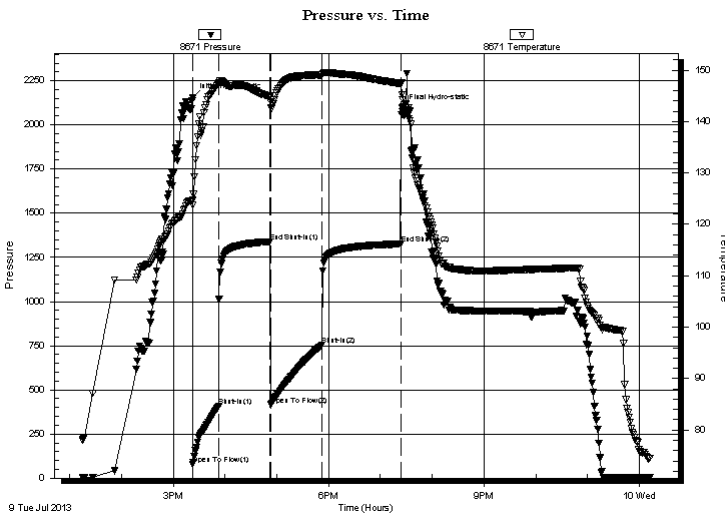
## Serial #: 8671

Inside

Press @ Run Depth: 755.08 psig @ 4377.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.07.09 End Date: 2013.07.10 Last Calib.: 2013.07.10  
 Start Time: 13:15:05 End Time: 00:12:15 Time On Btm: 2013.07.09 @ 15:22:30  
 Time Off Btm: 2013.07.09 @ 19:25:15

**TEST COMMENT:** 30 - IF: Blow built to BOB (11") in 3 1/4 min.  
 60 - IS: Bled off for about 5 min., Blow back built to BOB at 17 1/4 min.  
 60 - FF: Blow built to BOB in 4 min.  
 90 - FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2151.71	124.68	Initial Hydro-static
1	77.24	123.68	Open To Flow (1)
31	407.83	147.25	Shut-In(1)
90	1339.41	144.84	End Shut-In(1)
91	415.14	143.91	Open To Flow (2)
150	755.08	149.04	Shut-In(2)
242	1326.50	147.37	End Shut-In(2)
243	2094.70	145.25	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
89.00	SWC/GOM 35%m, 35%g, 25%o, 5%w	0.44
1876.00	Rev - sample at 3 min. intv for 15 min	22.26
0.00	then 5 min. intv - done at 25 min.	0.00
0.00	25 min sample CO 93%o, 4%m, 3%g	0.00
0.00	20 min sample GMCO 65%o, 22%m, 13%g	0.00
0.00	first 15 min CGO 84%o, 11%g, 5%m	0.00

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52762      **DST#: 5**  
Test Start: 2013.07.09 @ 13:15:00

**Tool Information**

Drill Pipe:	Length: 3837.00 ft	Diameter: 3.80 inches	Volume: 53.82 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 96000.00 lb
			<u>Total Volume: 56.45 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 74000.00 lb
Depth to Top Packer:	4376.00 ft			Final 84000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	54.00 ft			
Tool Length:	82.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
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Shut In Tool	5.00			4353.00	
Hydraulic tool	5.00			4358.00	
Jars	5.00			4363.00	
Safety Joint	3.00			4366.00	
Packer	5.00			4371.00	28.00      Bottom Of Top Packer
Packer	5.00			4376.00	
Stubb	1.00			4377.00	
Recorder	0.00	8671	Inside	4377.00	
Recorder	0.00	8320	Outside	4377.00	
Perforations	15.00			4392.00	
Blank Spacing	33.00			4425.00	
Perforations	2.00			4427.00	
Bullnose	3.00			4430.00	54.00      Bottom Packers & Anchor

**Total Tool Length: 82.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc

**23-2s-36w Rawlins KS**

250 N. Water Suite 300  
Wichita, KS 67202

**Frisbie #2-23**

Job Ticket: 52762

**DST#: 5**

ATTN: Wes Hansen

Test Start: 2013.07.09 @ 13:15:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

39.6 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 90.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: 2.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
89.00	SWC/GOM 35%m, 35%g, 25%o, 5%w	0.438
1876.00	Rev - sample at 3 min. intv for 15 min	22.262
0.00	then 5 min. intv - done at 25 min.	0.000
0.00	25 min sample CO 93%o, 4%m, 3%g	0.000
0.00	20 min sample GMCO 65%o, 22%m, 13%g	0.000
0.00	first 15 min CGO 84%o, 11%g, 5%m	0.000
125.00	CGO 66%o, 33%g, 1%m	1.753
0.00	GIP = 1205'	0.000

Total Length: 2090.00 ft      Total Volume: 24.453 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 41.2 api @ 76 deg F

Truck driver said he gauged 17 bbl of reversed fluid

Serial #: 8671

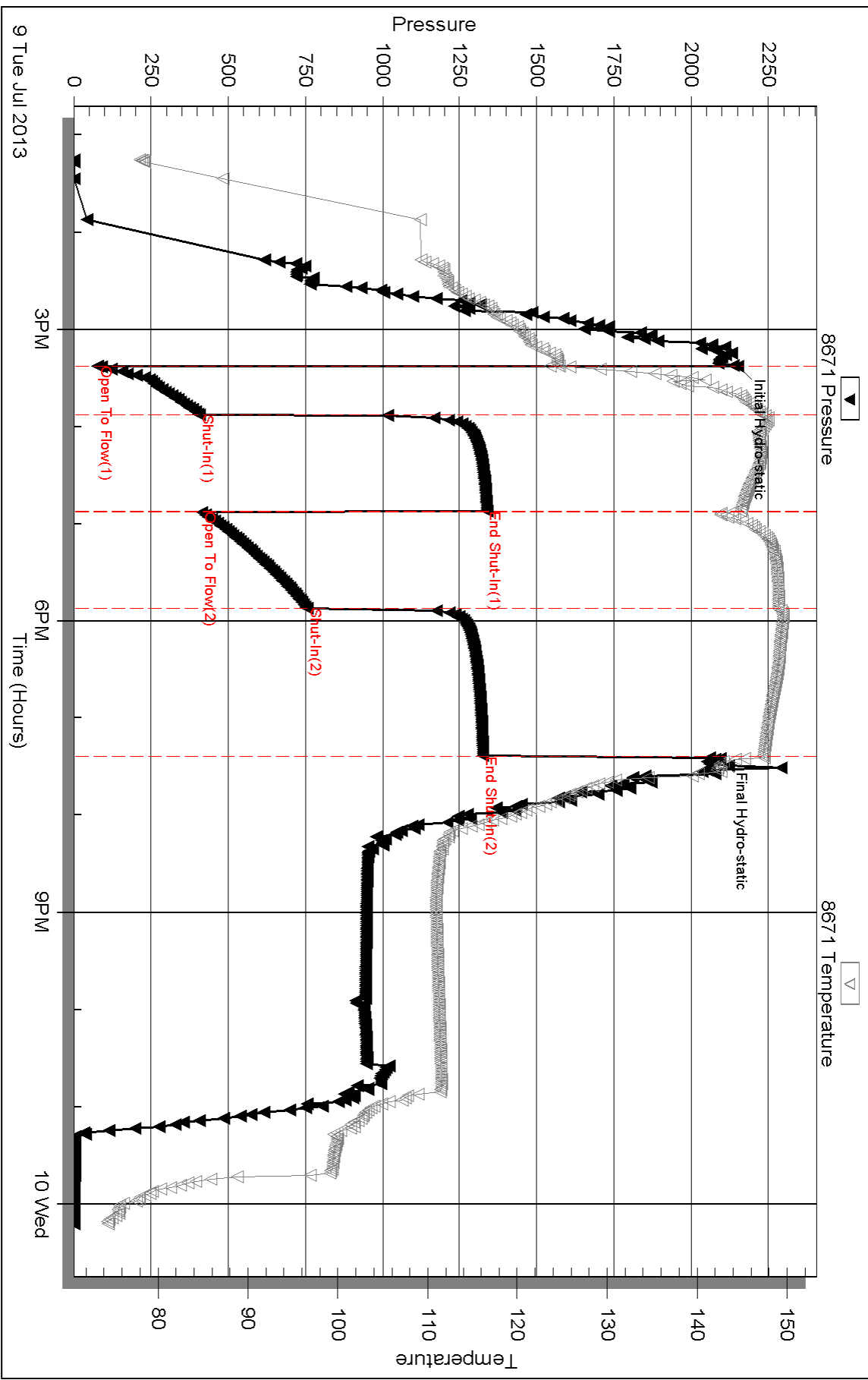
Inside

Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 5

### Pressure vs. Time

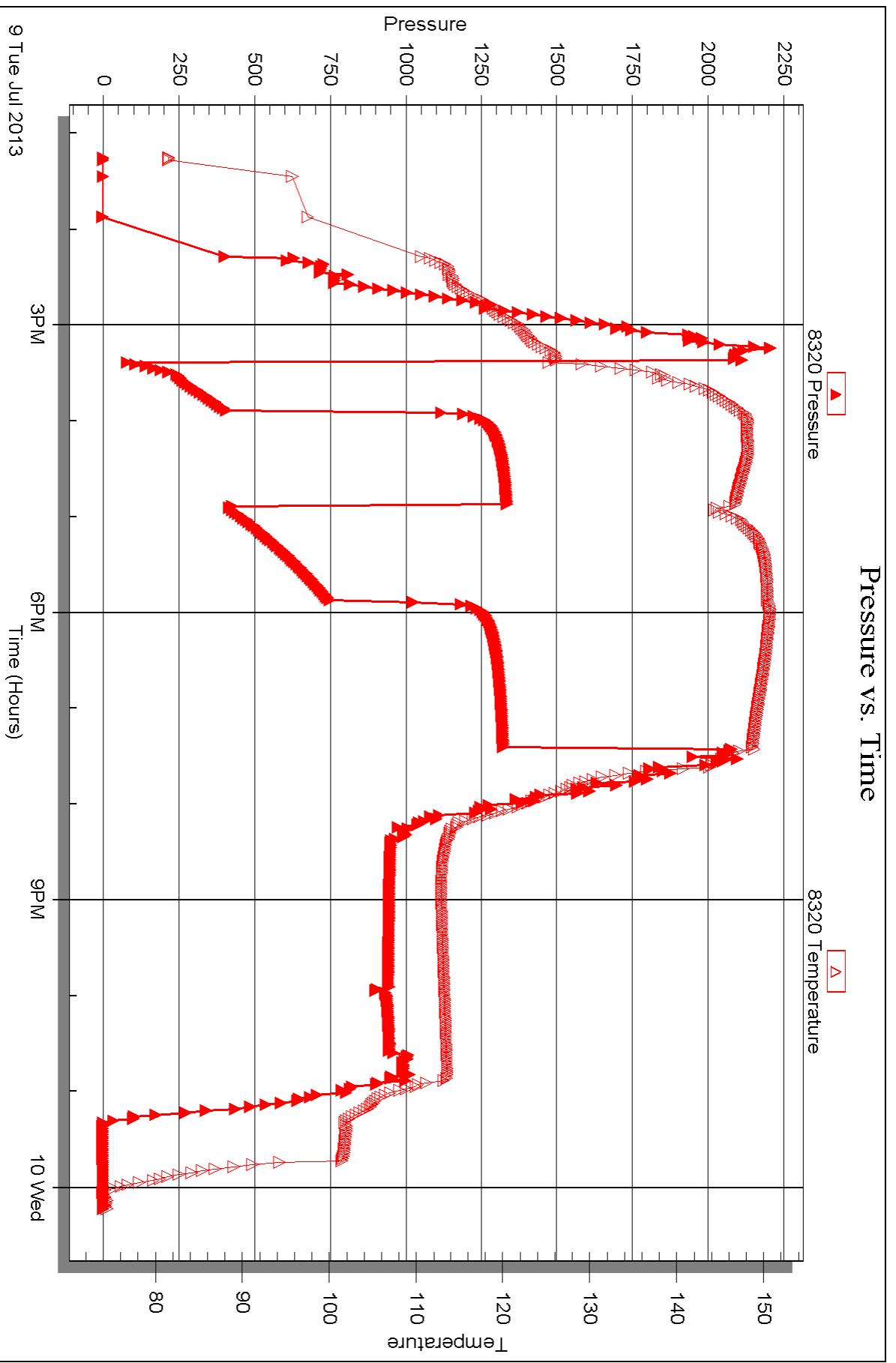


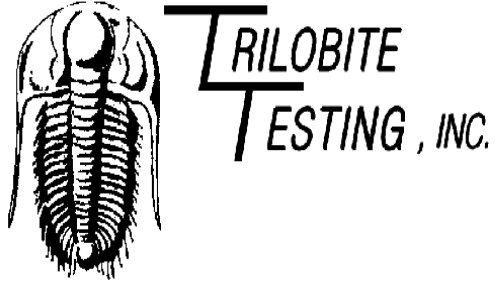
Serial #: 8320

Outside Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 5





## DRILL STEM TEST REPORT

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

250 N. Water Suite 300  
Wichita, KS 67202

ATTN: Wes Hansen

### **Frisbie #2-23**

#### **23-2s-36w Rawlins KS**

Start Date: 2013.07.10 @ 21:35:00

End Date: 2013.07.11 @ 04:55:30

Job Ticket #: 52763                      DST #: 6

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.07.11 @ 16:13:21





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc  
 250 N. Water Suite 300  
 Wichita, KS 67202  
 ATTN: Wes Hansen

**23-2s-36w Rawlins KS**

**Frisbie #2-23**

Job Ticket: 52763

**DST#: 6**

Test Start: 2013.07.10 @ 21:35:00

## GENERAL INFORMATION:

Formation: **Pawnee - Lower Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:08:45

Time Test Ended: 04:55:30

Test Type: Conventional Bottom Hole (Reset)

Tester: James Winder

Unit No: 57

Interval: **4584.00 ft (KB) To 4660.00 ft (KB) (TVD)**

Reference Elevations: 3294.00 ft (KB)

Total Depth: 4660.00 ft (KB) (TVD)

3284.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

**Serial #: 8671**

**Inside**

Press @ Run Depth: 22.34 psig @ 4585.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.07.10

End Date:

2013.07.11

Last Calib.:

2013.07.11

Start Time: 21:35:05

End Time:

04:55:29

Time On Btm:

2013.07.11 @ 00:08:30

Time Off Btm:

2013.07.11 @ 03:10:45

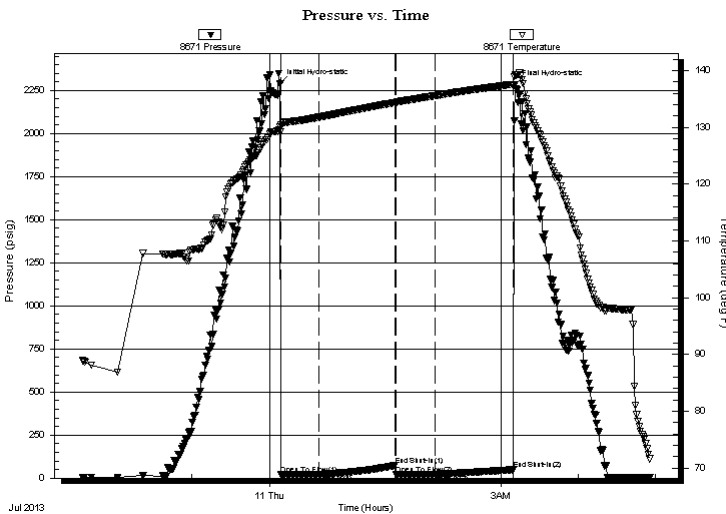
TEST COMMENT: 30 - IF: Blow built to 1/2" then died back, dead at 22 min.

60 - IS: No blow back

30 - FF: No blow

60 - FS: No blow back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2290.65	130.16	Initial Hydro-static
1	19.64	129.20	Open To Flow (1)
30	21.25	131.77	Shut-In(1)
90	73.81	134.37	End Shut-In(1)
90	21.05	134.35	Open To Flow (2)
120	22.34	135.55	Shut-In(2)
181	49.14	137.58	End Shut-In(2)
183	2284.11	139.18	Final Hydro-static

## Recovery

## Gas Rates

Length (ft)	Description	Volume (bbl)
2.00	SOCM 96%m, 2%o, 2%g	0.01

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

\* Recovery from multiple tests



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co., Inc  
 250 N. Water Suite 300  
 Wichita, KS 67202  
 ATTN: Wes Hansen

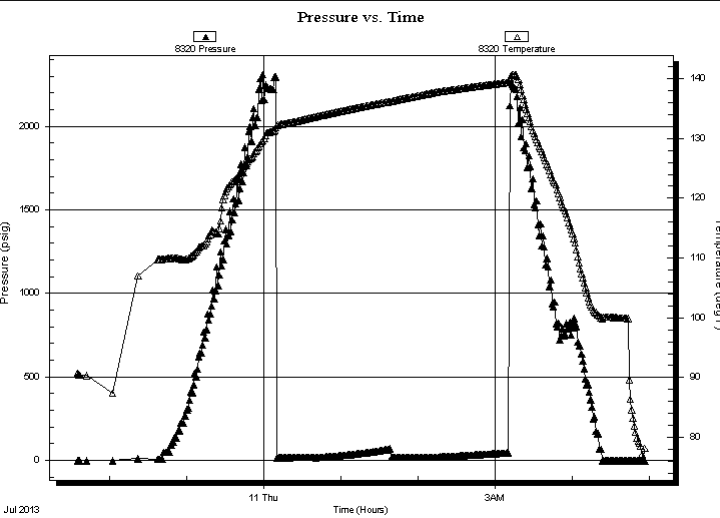
**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
 Job Ticket: 52763 **DST#: 6**  
 Test Start: 2013.07.10 @ 21:35:00

## GENERAL INFORMATION:

Formation: **Pawnee - Lower Pawnee**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 00:08:45 Tester: James Winder  
 Time Test Ended: 04:55:30 Unit No: 57  
 Interval: **4584.00 ft (KB) To 4660.00 ft (KB) (TVD)** Reference Elevations: 3294.00 ft (KB)  
 Total Depth: 4660.00 ft (KB) (TVD) 3284.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

**Serial #: 8320 Outside**  
 Press @ Run Depth: psig @ 4585.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.07.10 End Date: 2013.07.11 Last Calib.: 2013.07.11  
 Start Time: 21:35:05 End Time: 04:56:14 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** 30 - IF: Blow built to 1/2" then died back, dead at 22 min.  
 60 - IS: No blow back  
 30 - FF: No blow  
 60 - FS: No blow back



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

Recovery		
Length (ft)	Description	Volume (bbl)
2.00	SOCM 96% m, 2% o, 2% g	0.01

\* Recovery from multiple tests

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52763      **DST#: 6**  
Test Start: 2013.07.10 @ 21:35:00

**Tool Information**

Drill Pipe:	Length: 4028.00 ft	Diameter: 3.80 inches	Volume: 56.50 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: 534.00 ft	Diameter: 2.25 inches	Volume: 2.63 bbl	Weight to Pull Loose: 96000.00 lb
			<u>Total Volume: 59.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4584.00 ft			Final 76000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	76.00 ft			
Tool Length:	104.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

<b>Tool Description</b>	<b>Length (ft)</b>	<b>Serial No.</b>	<b>Position</b>	<b>Depth (ft)</b>	<b>Accum. Lengths</b>
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Shut In Tool	5.00			4561.00	
Hydraulic tool	5.00			4566.00	
Jars	5.00			4571.00	
Safety Joint	3.00			4574.00	
Packer	5.00			4579.00	28.00      Bottom Of Top Packer
Packer	5.00			4584.00	
Stubb	1.00			4585.00	
Recorder	0.00	8671	Inside	4585.00	
Recorder	0.00	8320	Outside	4585.00	
Perforations	5.00			4590.00	
Blank Spacing	65.00			4655.00	
Perforations	2.00			4657.00	
Bullnose	3.00			4660.00	76.00      Bottom Packers & Anchor

**Total Tool Length: 104.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co., Inc  
250 N. Water Suite 300  
Wichita, KS 67202  
ATTN: Wes Hansen

**23-2s-36w Rawlins KS**  
**Frisbie #2-23**  
Job Ticket: 52763      **DST#: 6**  
Test Start: 2013.07.10 @ 21:35:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 57.00 sec/qt	Cushion Volume: bbl		
Water Loss: 5.79 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 800.00 ppm			
Filter Cake: 2.00 inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	SOCM 96% <i>m</i> , 2% <i>o</i> , 2% <i>g</i>	0.010

Total Length: 2.00 ft      Total Volume: 0.010 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

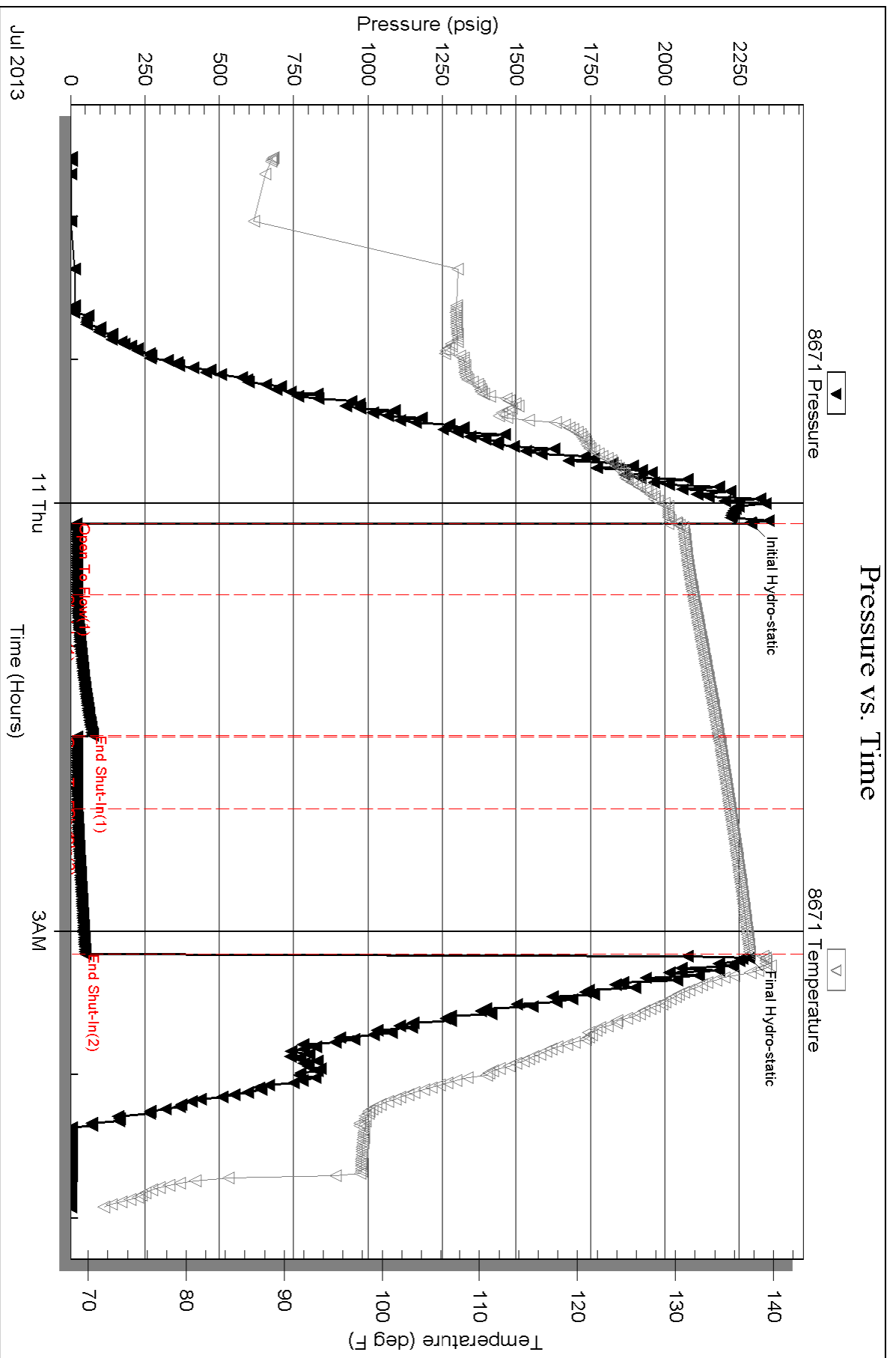
Serial #: 8671

Inside

Murfin Drilling Co., Inc

Frisbie #2-23

DST Test Number: 6







# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52758

Well Name & No. Frisbie #2-23 Test No. 1 Date 7-6-13  
 Company Murfin Drilling Co. Inc. Elevation 3294 KB 3284 GL  
 Address 250 N. Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Wes Hansen Rig Murfin #14  
 Location: Sec. 23 Twp. 2S Rge. 36W Co. ~~Osage~~ Rawlins State KS

Interval Tested 4029 - 4140 Zone Tested Lecompton - Oread  
 Anchor Length 111 Drill Pipe Run 3489 Mud Wt. 9.4  
 Top Packer Depth 4024 Drill Collars Run 534 Vis 60  
 Bottom Packer Depth 4029 Wt. Pipe Run - WL 6.8  
 Total Depth 4140 Chlorides 600 ppm System LCM 5

Blow Description IF: Blow built to BOB (11") in 11min.  
ISI: No blowback  
FF: Blow started at 2min., built to BOB in 16min.  
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>95</u>	<u>mud w/oil spots</u>	<u>1</u>	<u>3</u>	<u>-</u>	<u>96</u>
<u>275</u>	<u>Muddy Water w/oil spots</u>	<u>5</u>	<u>3</u>	<u>47</u>	<u>45</u>
<u>630</u>	<u>MCLW w/trace oil</u>	<u>-</u>	<u>trace</u>	<u>81</u>	<u>19</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1000 BHT 139 Gravity - API RW .158 @ 96.6 °F Chlorides 32,000 ppm

(A) Initial Hydrostatic <u>2038</u>	<input type="checkbox"/> Test <u>*</u> 1250	T-On Location <u>7:30</u>
(B) First Initial Flow <u>42</u>	<input type="checkbox"/> Jars <u>*</u> 250	T-Started <u>8:20</u>
(C) First Final Flow <u>301</u>	<input type="checkbox"/> Safety Joint <u>*</u> 75	T-Open <u>10:29</u>
(D) Initial Shut-In <u>1181</u>	<input type="checkbox"/> Circ Sub <u>*NA</u>	T-Pulled <u>14:31</u>
(E) Second Initial Flow <u>305</u>	<input checked="" type="checkbox"/> Hourly Standby	T-Out <u>16:45</u>
(F) Second Final Flow <u>475</u>	<input type="checkbox"/> Mileage <u>108 RT</u> 167.40	Comments
(G) Final Shut-In <u>1148</u>	<input checked="" type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2009</u>	<input checked="" type="checkbox"/> Straddle	<input checked="" type="checkbox"/> Ruined Shale Packer

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90

Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility

Sub Total 1742.40

Sub Total 1742.40

Approved By Wesley Hansen Our Representative James Windes

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. 52759

Well Name & No. Frisbie # 2-23 Test No. 2 Date 7-7-13  
 Company Murfin Drilling Co Inc Elevation 3294 KB 3284 GL  
 Address 250 N Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Wes Hansen Rig Murfin # 14  
 Location: Sec. 23 Twp. 2 S Rge. 36w Co. Rawlins State KS

Interval Tested 4154 - 4235 Zone Tested Douglas - Lans "A"  
 Anchor Length 85 Drill Pipe Run 3616 Mud Wt. 9.3  
 Top Packer Depth 4149 Drill Collars Run 534 Vis 62  
 Bottom Packer Depth 4154 Wt. Pipe Run - WL 7.2  
 Total Depth 4235 Chlorides 1000 ppm System LCM 5

Blow Description IF: Weak blow, built to 1 1/8"  
ISI: No blowback  
FF: No blow  
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>Mud w/oil spots</u>	<u>4</u>	<u>7</u>	<u>-</u>	<u>89</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

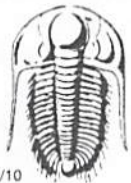
Rec Total 60 BHT 132 Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2052</u>	<input type="checkbox"/> Test <u>*</u> 1250	T-On Location <u>4:15</u>
(B) First Initial Flow <u>20</u>	<input type="checkbox"/> Jars <u>*</u> 250	T-Started <u>5:02</u>
(C) First Final Flow <u>29</u>	<input type="checkbox"/> Safety Joint <u>*</u> 75	T-Open <u>7:27</u>
(D) Initial Shut-In <u>1165</u>	<input checked="" type="checkbox"/> Circ Sub <u>*</u>	T-Pulled <u>10:40</u>
(E) Second Initial Flow <u>33</u>	<input checked="" type="checkbox"/> Hourly Standby	T-Out <u>12:20</u>
(F) Second Final Flow <u>45</u>	<input type="checkbox"/> Mileage <u>108RT</u> 167.40	Comments
(G) Final Shut-In <u>1091</u>	<input checked="" type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>2026</u>	<input checked="" type="checkbox"/> Straddle	<input checked="" type="checkbox"/> Ruined Shale Packer
	<input checked="" type="checkbox"/> Shale Packer	<input checked="" type="checkbox"/> Ruined Packer
	<input checked="" type="checkbox"/> Extra Packer	<input checked="" type="checkbox"/> Extra Copies
	<input checked="" type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
	<input checked="" type="checkbox"/> Day Standby	Total <u>1742.40</u>
	<input checked="" type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1742.40</u>	

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 45  
 Final Shut-In 60  
 Approved By Wesley Hansen Our Representative James Winder

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52760

Well Name & No. Frisbie # 2-23 Test No. 3 Date 7-8-13  
 Company Murfin Drilling Co. Inc Elevation 3294 KB 3284 GL  
 Address 250 N. Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Wes Hansen Rig Murfin #14  
 Location: Sec. 23 Twp. 25 Rge. 36w Co. Rawlins State KS

Interval Tested 4230 - 4300 Zone Tested Lans. "D-E"  
 Anchor Length 70 Drill Pipe Run 3679 Mud Wt. 9.3  
 Top Packer Depth 4225 Drill Collars Run 534 Vis 58  
 Bottom Packer Depth 4230 Wt. Pipe Run - WL 7.2  
 Total Depth 4300 Chlorides 1000 ppm System LCM 4

Blow Description IF: Blow built to BOB (11") in 17 min.  
ISI: Blowback built to 1"  
FF: Blow built to BOB in 47 1/2 min  
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>CO</u>	<u>4</u>	<u>95</u>	<u>-</u>	<u>1</u>
<u>205</u>	<u>CGO</u>	<u>34</u>	<u>63</u>	<u>-</u>	<u>3</u>
<u>238</u>	<u>GMO</u>	<u>31</u>	<u>38</u>	<u>-</u>	<u>31</u>
	<u>GIP = 180'</u>				

Rec Total 453 BHT 137 Gravity 29 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2124  Test \* 1250 T-On Location 23:40 ~~26:27~~  
 (B) First Initial Flow 35  Jars \* 250 T-Started 00:09 7/8  
 (C) First Final Flow 130  Safety Joint \* 75 T-Open 2:10  
 (D) Initial Shut-In 1279  Circ Sub \*NA T-Pulled 6:11  
 (E) Second Initial Flow 143  Hourly Standby T-Out 8:15  
 (F) Second Final Flow 197  Mileage 108RT 167.40  
 (G) Final Shut-In 1279  Sampler  
 (H) Final Hydrostatic 2059  Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 60  
 Final Shut-In 90  
 Sub Total 0  
 Total 1742.40  
 MP/DST Disc't \_\_\_\_\_  
 Sub Total 1742.40

Approved By Wesley Hanson Our Representative James Windes

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52761

Well Name & No. Frisbie #2-23 Test No. 4 Date 7-8-13  
 Company Murfin Drilling Co. Inc Elevation 3294 KB 3284 GL  
 Address 250 N. Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Wes Hansen Rig Murfin #14  
 Location: Sec. 23 Twp. 2S Rge. 36W Co. Rawlins State KS

Interval Tested 4299 - 4335 Zone Tested Lans. "G"  
 Anchor Length 36 Drill Pipe Run 3742 Mud Wt. 9.2  
 Top Packer Depth 4294 Drill Collars Run 534 Vis 73  
 Bottom Packer Depth 4299 Wt. Pipe Run - WL 6.0  
 Total Depth 4335 Chlorides 1200 ppm System LCM 5

Blow Description IF: Blow built to 9"  
ISI: Blowback built to 1/8"  
FF: Blow built to BOB (11") in 38 min.  
FSI: Blowback built to 1/8"

Rec	Feet of	%gas	%oil	%water	%mud
<u>264</u>	<u>CGO</u>	<u>22</u>	<u>75</u>	<u>-</u>	<u>3</u>
<u>89</u>	<u>GOM</u>	<u>24</u>	<u>30</u>	<u>-</u>	<u>46</u>
	<u>GIP = 180+'</u>				

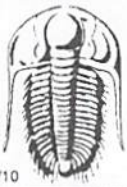
Rec Total 353 BHT 137 Gravity 30.4 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 2128  Test \* 1250 T-On Location 16:15 78  
 (B) First Initial Flow 22  Jars \* 250 T-Started 16:45  
 (C) First Final Flow 75  Safety Joint \* 75 T-Open 19:10  
 (D) Initial Shut-In 483  Circ Sub \*NA T-Pulled 23:12  
 (E) Second Initial Flow 81  Hourly Standby T-Out 1:00 79  
 (F) Second Final Flow 152  Mileage 108 RT 167.40  
 (G) Final Shut-In 475  Sampler  
 (H) Final Hydrostatic 2084  Straddle  Ruined Shale Packer

Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Extra Recorder Sub Total 0  
 Day Standby Total 1742.40  
 Accessibility MP/DST Disc't  
 Sub Total 1742.40

Approved By \_\_\_\_\_ Our Representative James Winder

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52762

Well Name & No. Frisbie #2-23 Test No. 5 Date 7-9-13  
 Company Murfin Drilling Co. Inc Elevation 3294 KB 3284 GL  
 Address 250 N. Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Wes Hansen Rig Murfin #14  
 Location: Sec. 23 Twp. 2s Rge. 36w Co. Rawlins State KS

Interval Tested 4376 - 4430 Zone Tested Lans. "H-J"  
 Anchor Length 54 Drill Pipe Run 3837 Mud Wt. 9.1  
 Top Packer Depth 4371 Drill Collars Run 534 Vis 90  
 Bottom Packer Depth 4376 Wt. Pipe Run - WL 6.4  
 Total Depth 4430 Chlorides 1000 ppm System LCM 2

Blow Description IF: Blow built to BOB in 3 1/4 min.  
ISI: Bled off about 5 min., Blowback built to BOB at 17 1/4 min.  
FF: Blow built to BOB in 4 min  
FSI: No blowback

Rec <u>125</u> Feet of <u>CGO</u>	<u>33%</u> gas	<u>66%</u> oil	<u>-</u> %water	<u>1</u> %mud
Rec <u>Rev. First 15 min</u> Feet of <u>CGO</u>	<u>11</u> %gas	<u>84</u> %oil	<u>-</u> %water	<u>5</u> %mud
Rec <u>20 min sample</u> Feet of <u>GMCO</u>	<u>13</u> %gas	<u>65</u> %oil	<u>-</u> %water	<u>22</u> %mud
Rec <u>25 min sample</u> Feet of <u>CO</u>	<u>3</u> %gas	<u>93</u> %oil	<u>-</u> %water	<u>4</u> %mud
Rec <u>Bottom Collar</u> Feet of <u>SWC/60M</u>	<u>35</u> %gas	<u>25</u> %oil	<u>5</u> %water	<u>35</u> %mud

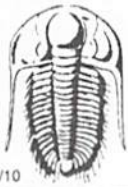
Rec Total 2090 Fluid 1205 BHT 147° Gravity 39.6 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>2152</u>	<input type="checkbox"/> Test <u>+</u> 1250	T-On Location <u>12:30</u> <u>79</u>
(B) First Initial Flow <u>77</u>	<input type="checkbox"/> Jars <u>+</u> 250	T-Started <u>13:15</u>
(C) First Final Flow <u>408</u>	<input type="checkbox"/> Safety Joint <u>+</u> 75	T-Open <u>15:22</u>
(D) Initial Shut-In <u>1339</u>	<input type="checkbox"/> Circ Sub <u>+ Dropped Bar</u> 50	T-Pulled <u>19:23</u>
(E) Second Initial Flow <u>415</u>	<input type="checkbox"/> Hourly Standby <u>1 1/2 hr</u> 150	T-Out <u>00:00</u> <u>710</u>
(F) Second Final Flow <u>755</u>	<input type="checkbox"/> Mileage <u>108 RT</u> 167.40	Comments <u>Rev 1876' (Truck</u>
(G) Final Shut-In <u>1327</u>	<input checked="" type="checkbox"/> Sampler	<u>driver gauged 17661) sample</u>
(H) Final Hydrostatic <u>2095</u>	<input checked="" type="checkbox"/> Straddle	<u>every 3 min for 15 min then</u>

Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer	<input checked="" type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input checked="" type="checkbox"/> Extra Packer	<input checked="" type="checkbox"/> Extra Copies
Final Flow <u>60</u>	<input checked="" type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input checked="" type="checkbox"/> Day Standby	Total <u>1942.40</u>
	<input checked="" type="checkbox"/> Accessibility	MP/DST Disc't

Approved By Wesley Hansen Our Representative James Winder

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52763

Well Name & No. Frisbie #2-23 Test No. 6 Date 7-10-13  
 Company Murfin Drilling Co.-Inc Elevation 3294 KB 3284 GL  
 Address 250 N. Water Suite 300 Wichita, KS 67202  
 Co. Rep / Geo. Wes Hansen Rig Murfin #14  
 Location: Sec. 23 Twp. 2s Rge. 36w Co. Rawlins State KS

Interval Tested 4584 - 4660 Zone Tested Pawnee - Lwr Pawnee  
 Anchor Length 76 Drill Pipe Run 4028 Mud Wt. 9.0  
 Top Packer Depth 4579 Drill Collars Run 534 Vis 57  
 Bottom Packer Depth 4584 Wt. Pipe Run - WL 5.8  
 Total Depth 4660 Chlorides 800 ppm System LCM 1  
 Blow Description IF: Blow built to 1/2" then died back, dead at 22 min.  
ISI: No blowback  
FF: No blow  
FSI: No blowback

Rec	Feet of	%gas	%oil	%water	%mud
<u>2</u>	<u>1000 SOCM</u>	<u>2</u>	<u>2</u>	<u>-</u>	<u>96</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 2 BHT 138 Gravity - API RW - @ - °F Chlorides - ppm  
 (A) Initial Hydrostatic 2291  Test X 1250 T-On Location 21:15 9/10  
 (B) First Initial Flow 20  Jars X 250 T-Started 21:35  
 (C) First Final Flow 21  Safety Joint X 75 T-Open 00:08  
 (D) Initial Shut-In 74  Circ Sub X NH T-Pulled 3:09  
 (E) Second Initial Flow 21  Hourly Standby T-Out 4:50 9/11  
 (F) Second Final Flow 22  Mileage 108RT 167.40 Comments \_\_\_\_\_  
 (G) Final Shut-In 49  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2284  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open 30  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In 60  Day Standby \_\_\_\_\_ Total 1742.40  
 Final Flow 30  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In 60 Sub Total 1742.40

Approved By

Wesley Hansen

Our Representative

Jamer Winder

acct.  
Prod-LH

## INVOICE

PO Box 93999  
Southlake, TX 76092

Invoice Number: 137195

Invoice Date: Jul 3, 2013

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

Page: 1

**PROD COPY**

**Bill To:**

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

Now Includes:



Customer ID	Field Ticket #	Payment Terms	
Murfin	60756	Net 30 Days	
Job Location	Camp Location	Service Date	Due Date
KS1-01	Oakley	Jul 3, 2013	8/2/13

Quantity	Item	Description	Unit Price	Amount
350.00	MAT	Frisbie #2-23	17.90	6,265.00
12.00	MAT	Class A Common Chloride	64.00	768.00
367.50	SER	Cubic Feet	2.48	911.40
1,270.50	SER	Ton Mileage	2.60	3,303.30
1.00	SER	Surface	1,512.25	1,512.25
75.00	SER	Pump Truck Mileage	7.70	577.50
1.00	SER	Manifold Head Rental	275.00	275.00
75.00	SER	Light Vehicle Mileage	4.40	330.00
1.00	EQP	8.5/8 Wooden Surface Plug	107.64	107.64
1.00	CEMENTER	Andrew Forslund		
1.00	EQUIP OPER	D J Gray		
1.00	OPER ASSIST	David Scariano		

*OK*

Account	Unit	W	No.	Amount	Description
10203					
3			2410.0002	9696.67	Cement S. Co #2-23

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

\$ 4,917.53

ONLY IF PAID ON OR BEFORE  
Jul 28, 2013

Subtotal	14,050.09
Sales Tax	564.11
Total Invoice Amount	14,614.20
Payment/Credit Applied	
<b>TOTAL</b>	<b>14,614.20</b>

*OK* - 4917.53  
9696.67

# ALLIED OIL & GAS SERVICES, LLC 060756

Federal Tax I.D. # 20-8651475

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

SERVICE POINT:

Dakota

DATE <u>7-3-13</u>	SEC. <u>23</u>	TWP. <u>2</u>	RANOB <u>36</u>	CALLED OUT	ON LOCATION	JOB START <u>4:00 AM</u>	JOB FINISH <u>4:30 AM</u>
LEASE <u>Prisbie</u>	WELL # <u>2-23</u>	LOCATION <u>McDonald E roads</u>			COUNTY <u>Rusk</u>	STATE <u>TX</u>	
OLD OR (NEW) (Circle one)		<u>NEW</u>					

CONTRACTOR <u>Murfin 14</u>	OWNER <u>same</u>
TYPE OF JOB <u>Surface</u>	CEMENT
HOLE SIZE <u>18 1/8</u>	AMOUNT ORDERED <u>350 sks com 3% cc.</u>
CASING SIZE <u>8 5/8</u>	
TUBING SIZE	
DRILL PIPE	
TOOL	
PRES. MAX	
MEAS. LINE	
CEMENT LEFT IN CSG. <u>15'</u>	
PERFS.	
DISPLACEMENT <u>24.07 BBL</u>	

EQUIPMENT

PUMP TRUCK # <u>431</u>	CEMENTER <u>Andrew Farlund</u>
BULK TRUCK # <u>396</u>	HELPER <u>O J Gray</u>
BULK TRUCK #	DRIVER <u>David Scardano</u>
BULK TRUCK #	DRIVER

REMARKS:

Cement did circulate

Thank you

HANDLING <u>362.5 cu/ft</u>	@ <u>2.48</u>	<u>911.40</u>
MILEAGE <u>2.60 70/mile</u>	@ <u>16.94</u>	<u>3203.20</u>
		TOTAL <u>11247.20</u>

SERVICE

DEPTH OF JOB <u>393'</u>		
PUMP TRUCK CHARGE		<u>1512.25</u>
EXTRA FOOTAGE	@	
MILEAGE <u>25 miles</u>	@ <u>21.20</u>	<u>577.50</u>
MANIFOLD <u>head</u>	@	<u>225.00</u>
<u>light vehicle</u>	@ <u>4.40</u>	<u>330.00</u>
		TOTAL <u>2694.25</u>

PLUG & FLOAT EQUIPMENT

<u>8 5/8</u>		
<u>1 wooden surface plug</u>	@	<u>107.64</u>
		TOTAL <u>107.64</u>

SALES TAX (If Any)

TOTAL CHARGES 14,050.09

DISCOUNT 4,917.53 IF PAID IN 30 DAYS

9,132.55 Net.

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 one to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Greg Clark

SIGNATURE Greg Clark



Acidizing

cc: WT

cc: L-1

cc: L-1

# Invoice

DATE	INVOICE #
7/13/2013	24881

BILL TO
Murfin Drilling Co Inc PO Box 661 Colby, KS 67701-0661

- Acidizing
- Cement
- Tool Rental

TERMS	Well No.	Lease	County	Contractor	Well Type	Well Category	Job Purpose	Operator
Net 30	#2-23	Frisbie	Rawlins	Company Tools #14	Oil	Development	LongString	Nick
PRICE REF.	DESCRIPTION				QTY	UM	UNIT PRICE	AMOUNT
575D	Mileage - 1 Way				140	Miles	6.00	840.00
578D-L	Pump Charge - Long String - 4980 Feet				1	Job	1,500.00	1,500.00
221	Liquid KCL (Clayfix)				4	Gallon(s)	25.00	100.00T
281	Mud Flush				500	Gallon(s)	1.25	625.00T
290	D-Air				5	Gallon(s)	42.00	210.00T
403-5	5 1/2" Cement Basket				3	Each	285.00	855.00T
406-5	5 1/2" Latch Down Plug & Baffle				1	Each	275.00	275.00T
407-5	5 1/2" Insert Float Shoe With Auto Fill				1	Each	375.00	375.00T
409-5	5 1/2" Turbolizer				15	Each	90.00	1,350.00T
419-5	5 1/2" Rotating Head Rental				1	Each	200.00	200.00T
413-5	5 1/2" Roto Wall Scratcher				10	Each	40.00	400.00T
325	Standard Cement				200	Sacks	14.00	2,800.00T
330	Swift Multi-Density Standard (MIDCON II)				300	Sacks	17.00	5,100.00T
276	Flocele				150	Lb(s)	2.00	300.00T
283	Salt				1,000	Lb(s)	0.20	200.00T
284	Calseal				9	Sack(s)	35.00	315.00T
285	CFR-1				150	Lb(s)	4.00	600.00T
581D	Service Charge Cement				500	Sacks	2.00	1,000.00
583D	Drayage				3,523	Ton Miles	1.00	3,523.00
	Subtotal							20,568.00
	Sales Tax Rawlins County						7.90%	1,082.70

USED FOR IC 103

APPROVED JR

**We Appreciate Your Business!**

**Total**

\$21,650.70



Services, Inc.

CHARGE TO: Martin Dly Co Inc  
 ADDRESS  
 CITY, STATE, ZIP CODE

TICKET No 24881

PAGE 1 OF 2

SERVICE LOCATIONS

1. Hays, KS WELL PROJECT NO. #2-23 LEASE Friskie COUNTY/PARISH Radwin STATE KS DATE 7-13-13 OWNER sgme

2. Ness City, KS TICKET TYPE CONTRACTOR CONTRACTOR Co Tools #14 RIG NAME/NO. CT Location ORDER NO.

3. WELL TYPE oil WELL CATEGORY Development JOB PURPOSE Longstring WELL PERMIT NO. WELL LOCATION

4. REFERRAL LOCATION INVOICE INSTRUCTIONS

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	MILEAGE	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT	DF								
575					MILEAGE #111	140	mi				6.00	840.00
578					Pump Charge (Longstring)	1	ea	4980'			1500.00	1500.00
221					KCL	4	gal				25.00	100.00
281					Mudflush	500	gal				1.25	625.00
290					D-Air	5	gal				42.00	210.00
403					Baskets	5	ea	5 1/2"			285.00	855.00
406					LD Plug & Baffle	1	ea				275.00	275.00
407					Insert Float Shoe w/ #111	1	ea				375.00	375.00
409					Turbelizers	15	ea				90.00	1350.00
419					Rotating Head	1	ea				200.00	200.00
413					Rotowall Scratchers	10	ea				40.00	400.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS

X [Signature] DATE SIGNED 7-13-13 TIME SIGNED 0615

A.M.  P.M.

REMIT PAYMENT TO:  
 SWIFT SERVICES, INC.  
 P.O. BOX 466  
 NESS CITY, KS 67560  
 785-798-2300

SURVEY	AGREE	UN-DECIDED	DIS-AGREE	PAGE TOTAL	AMOUNT
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				Page 2	13838.00
WE UNDERSTOOD AND MET YOUR NEEDS?				subtotal	20568.00
OUR SERVICE WAS PERFORMED WITHOUT DELAY?					
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?					
ARE YOU SATISFIED WITH OUR SERVICE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO			
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				TOTAL	21,650.70

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

SWIFT OPERATOR [Signature] APPROVAL [Signature]

Thank You!





JOB LOG

SWIFT Services, Inc.

DATE 7-13-13 PAGE NO.

CUSTOMER Martin Drilling Co Inc WELL NO. # 2-23 LEASE Frisbie JOB TYPE Longstring TICKET NO. 24881

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0100							02100 W/FE
								RTD 4980' LTD 4977'
								5 1/2" x 15.5 # x 4560' x 21'
								Turbo 1-13, 34, 44
								Base 10, 35, 45
	0130							start FE
	0225							1/2 way circ
	0345							Bottom Circ
	0440	2.5	7/4					Plug RH&MH 30/15 SMD
	0450	5	0			250		start 500 gal Mud Flush
		5	12/0			250		start 2066l KCL Flush
		5	20/0			250		start 255sks SMD
		5	155/0			250		start 200sks EA-2
	0540		48					End Cement
								wash P+h
								Drop L.D. Plug
	0548	6	0			200		start Displacement
	0555	5	50			300		Catch Cement
	0605		108			900/1100		Land Plug
								Release Pressure
								Efloat Held
								circ 50 sks to pit
								Thank you
								Nick, David E, Gideon & Russ