



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1146156  
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<br>Recompletion Date | Date Reached TD | Completion Date or<br>Recompletion Date |
|-----------------------------------|-----------------|---|

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: \_\_\_\_\_



1146156

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](mailto:kcc-well-logs@kcc.ks.gov). Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

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

| 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<br><input type="checkbox"/> Protect Casing<br><input type="checkbox"/> Plug Back TD<br><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<br>Specify Footage of Each Interval Perforated | Acid, Fracture, Shot, Cement Squeeze Record<br><i>(Amount and Kind of Material Used)</i> | Depth |
|----------------|---|--|-------|
|                |   |  |       |
|                |   |  |       |
|                |   |  |       |
|                |   |  |       |
|                |   |  |       |

|                |       |         |            |   |
|----------------|-------|---------|------------|---|
| TUBING RECORD: | Size: | Set At: | Packer At: | Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No |
|----------------|-------|---------|------------|---|

|   |  |
|---|--|
| Date of First, Resumed Production, SWD or ENHR. | Producing Method:<br><input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____ |
|---|--|

| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
|-----------------------------------|-----------|---------|-------------|---------------|---------|
|                                   |           |         |             |               |         |

|  |   |   |
|--|---|---|
| <b>DISPOSITION OF GAS:</b><br><input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease<br><i>(If vented, Submit ACO-18.)</i> | <b>METHOD OF COMPLETION:</b><br><input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled<br><i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____<br><i>(Submit ACO-4)</i> | <b>PRODUCTION INTERVAL:</b><br>_____<br>_____ |
|--|---|---|

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

June 07, 2013

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

Re: ACO1  
API 15-051-26472-00-00  
Emmerentia 1-23  
SW/4 Sec.23-15S-19W  
Ellis 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<br>Emmerentia #1-23<br>2310' FSL 800' FWL<br>Sec. 23-T15S-R19W<br>1981' KB |            |       |     |          |       |     | Cla Mar Oil Co.<br>Herl #1<br>N2 NW NW SE<br>Sec. 23-T15S-R19W<br>1971' KB |       |
|---|------------|-------|-----|----------|-------|-----|--|-------|
| Formation   | Sample top | Datum | Ref | Log tops | Datum | Ref | Log tops   | Datum |
| Anhydrite   | 1172       | +809  | -6  | 1174     | +807  | -8  | 1156   | +815  |
| B/Anhydrite   | 1219       | +762  | -12 | 1218     | +763  | -11 | 1197   | +774  |
| Topeka  | 2971       | -990  | -6  | 2969     | -988  | -4  | 2955   | -984  |
| Heebner   | 3234       | -1253 | -4  | 3233     | -1252 | -3  | 3220   | -1249 |
| Toronto   | 3255       | -1275 | -5  | 3256     | -1275 | -6  | 3240   | -1269 |
| Lansing   | 3281       | -1300 | -5  | 3279     | -1298 | -3  | 3266   | -1295 |
| Stark   | 3483       | -1502 | +3  | 3481     | -1500 | -5  | 3476   | -1505 |
| BKC   | 3530       | -1549 | +6  | 3528     | -1547 | +8  | 3526   | -1555 |
| Arbuckle  | 3618       | -1637 | +9  | 3614     | -1633 | +13 | 3617   | -1646 |
| RTD   | 3700       |       |     |          |       |     | 3635   |       |
| LTD   |            |       |     | 3698     |       |     | 3639   |       |

# Robert L. Milford

PETROLEUM GEOLOGIST  
Wichita, Kansas

## GEOLOGISTS' REPORT

DRILLING TIME AND SAMPLE LOG

OPERATOR: **Murfin Drilling Company, Inc.**  
 LEASE: **Emmeretia #1-23**  
 LOC. SPOT: **140'E of C N2 NW SW**

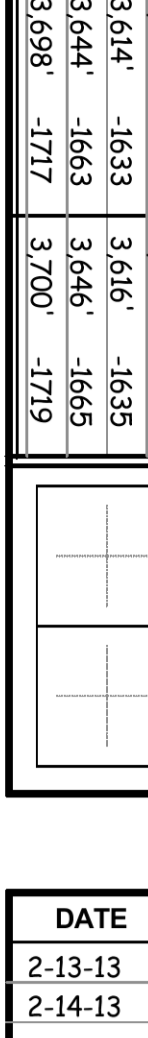
LOC. FOOTAGE: **2,310' FSL 800' FWL**  
 SEC: **23** TWP: **15S** RNG: **19W**  
 COUNTY: **Ellis** STATE: **Kansas**

API: **15-051-26472-00-00**  
 CONTRACTOR: **Murfin Drilling Co., Inc.** R/O NO. **16**  
 DRILLING STARTED: **2-13-2013** COMPLETED: **2-25-2013**  
 MUD DISPLACED: **2,540'** MUD TYPE: **Chemical**  
 DRILLING TIME (KEPT FROM): **2,860'** TO: **RTD**  
 SAMPLES SAVED FROM: **2,860'** TO: **RTD**  
 SAMPLES EXAMINED FROM: **2,860'** TO: **RTD**  
 GEOLOGICAL SUPERVISION FROM: **2,750'** TO: **RTD**

NEUTRON/GRAB  
 CASING RECORD  
 CONDUCTOR  
 SURFACE: **8.5/8' @ 1175'**  
 W/ 600 SOURCE CEMENT  
 PRODUCTION NAME

ELECTRICAL SURVEYS:  
 Pioneer Wireline  
 Dual Induction Log  
 Dual Compensated -  
 Density Log  
 Microresistivity Log  
 Borehole Compensated -  
 Sonic Log

| FORMATION NAME    | LOG TOP DATUM | SAMPLE TOP DATUM |
|-------------------|---------------|------------------|
| Stone Corral      | 1174' +807'   | 1173' +808'      |
| Base Stone Corral | 1218' +763'   | 1217' +764'      |
| Topeka            | 2,969' -988'  | 2,970' -989'     |
| Heebner           | 3,233' -1252' | 3,234' -1253'    |
| Lansing           | 3,279' -1298' | 3,280' -1299'    |
| Stark             | 3,481' -1500' | 3,482' -1501'    |
| B/KC              | 3,528' -1547' | 3,530' -1549'    |
| Arbuckle          | 3,614' -1633' | 3,616' -1635'    |
| Reagan            | 3,644' -1663' | 3,646' -1665'    |
| Total Depth       | 3,698' -1717' | 3,700' -1719'    |



| DATE    | 7:00 AM DEPTH | REMARKS  |
|---------|---------------|--|
| 2-13-13 | 0'            | Spud @ 4:00 pm.  |
| 2-14-13 | 990'          | Cut 990' in last 24 hrs. 14.75 hrs drlg. Dev. 0.25' @ 1176'. Set surface casing. Plug down @ 6:00 pm. Drilled out plug @ 6:00 am on 2-15-13. |
| 2-15-13 | 1,190'        | Cut 200' in last 24 hrs; 5.25 hrs drlg. Lost circ @ 2056' (down 1 hr). Dev. 0.5' @ 2223'.  |
| 2-16-13 | 2,415'        | Cut 1,225' in last 24 hrs; 21.25 hrs drlg.   |
| 2-17-13 | 3,120'        | Cut 705' in last 24 hrs; 20.25 hrs drlg. DST #1 @ 3318'  |
| 2-18-13 | 3,318'        | Cut 198' in last 24 hrs; 6.5 hrs drlg. DST #2 @ 3372', DST #3 @ 3459'  |
| 2-19-13 | 3,459'        | Cut 141' in last 24 hrs; 6.75 hrs drlg. DST #4 @ 3507'   |
| 2-20-13 | 3,507'        | Cut 48' in last 24 hrs; 2.25 hrs drlg. Shut down 3602' @ 2:15 pm due to snow storm   |
| 2-21-13 | 3,602'        | Cut 95' in last 24 hrs; 4 hrs drlg. Shut down due to snow storm  |
| 2-22-13 | 3,602'        | Cut 0' in last 24 hrs. Shut down. Clean snow off location.   |
| 2-23-13 | 3,602'        | Cut 0' in last 24 hrs. Start up @ 7:00 am; started drlg @ 1:15 pm. DST #5 @ 3612'  |
| 2-24-13 | 3,622'        | Cut 20' in last 24 hrs; 0.5 hrs drlg. DST's #6 & #7 @ 3627'. RTD 3700'   |
| 2-25-13 | 3,700'        | Cut 78' in last 24 hrs; 2.75 hrs drlg. P&A   |

**Remarks**

The electric log measurements correlate from 1' lower to 2' higher to the drilling measurements.

Formation tops and lithology on this report have been corrected to the electric log.

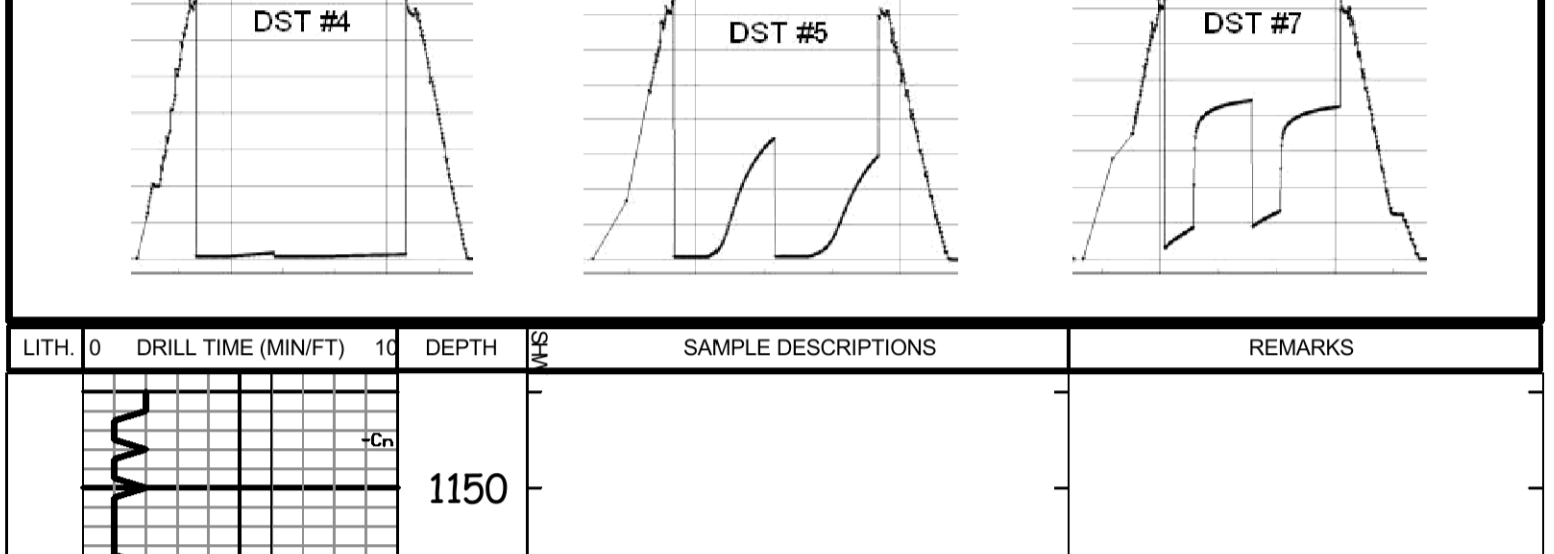
The drilling samples were deposited at the Kansas Geological Survey office in Wichita.

Respectfully submitted,

Robert L. Milford

### Drill Stem Test Charts

Drill Stem Test by Trilobite Testing, Inc.



| LITH. | DRILL TIME (MIN/FT) | DEPTH | SAMPLE DESCRIPTIONS | REMARKS                        |
|-------|---------------------|-------|---------------------|--------------------------------|
|       |                     | 1150  |                     | Stone Corral 1174' (+807) EL   |
|       |                     | 1200  |                     | B/Stone Corral 1218' (+763) EL |
|       |                     | 1250  |                     |                                |

|  |  |      |   |  |
|--|--|------|---|--|
|  |  | 2850 | LS: crm-gry w/ some brn, fxl, fos in prt, some shly, sub chky-prtly dns, pr por, NS<br>Sh: lt-med gry, some silty<br>LS: crm-gry, fxl, fos in prt, some shly, sub chky-prtly dns, pr por, NS  | Mud displaced from 2540' to 2548'<br>Morgan Mud check @ 2555': 69 Vis, 8.6 Wt, 6.4 WL, 6,500 ppm Chl, tr LCM   |
|  |  | 2900 | LS: crm-gry, fxl, sli fos, some shly, sub chky-prtly dns w/ some chky, pr por, NS<br>Sh: lt-med gry<br>LS: crm-gry, fxl, fos in prt, some blk mineralization, sub chky-prtly dns, pr por, NS  |  |
|  |  | 2950 | LS: crm-gry, fxl, sli fos, some shly, sub chky-prtly dns, pr por, NS<br>Sh: med gry, some silty & mic, some soft & gummy<br>LS: brn, fxl, sli fos, prtly dns, pr por, NS<br>Sh: med-gry, some silty & sli mic, some sli calc, some soft & gummy<br>Sh: A.A. w/ tr Sd: gry, fn-med grain, sli shly, sli calc, semi fri-brittle, pr vis por, NS<br>LS: crm-tan, fxl, sli fos, sub chky-prtly dns, pr por, NS  |  |
|  |  | 3000 | LS: crm-brn, fxl, sli fos (some crs), sub chky-prtly dns w/ some chky, pr por, NS<br>LS: crm-gry, fxl, fos in prt, sub chky-prtly dns w/ some chky, pr por, NS<br>LS: crm-gry, fxl, fos in prt, some shly, sub chky-prtly dns w/ some chky-vry chky, pr por, NS<br>LS: wh-gry, fxl, fos-ool in prt, some shly, chky-prtly dns w/ some vry chky, pr w/ some fr intrprt por, NS<br>Sh: Black Carb<br>Sh: lt-med gry<br>LS: wh-tan, fxl, fos in prt, chky-prtly dns w/ some vry chky, pr por, NS   |  |
|  |  | 3100 | LS: wh-gry, fxl, ool (small) w/ some fos, chky-prtly dns w/ some chky-vry chky, fr-gd ooc & vug por, NS<br>LS: crm-gry, fxl, sli fos, sli chty (gry), sub chky-prtly dns w/ some chky-vry chky, pr por, NS<br>Sh: med gry<br>LS: wh-gry, fxl, fos in prt, chky-prtly dns w/ some vry chky, pr por, NS<br>Sh: Black Carb<br>LS: crm-tan, fxl, fos in prt, sub chky-prtly dns w/ some chky, pr por, NS<br>LS: wh-tan, fxl, fos-ool (small) in prt, sli chty, chky-prtly dns w/ some vry chky, pr por, NS  |  |
|  |  | 3200 | LS: wh-tan, fxl, fos-ool (small) in prt, chky-prtly dns w/ some vry chky, tr ooc por, NS<br>LS: A.A., tr ooc por, tr blk tarry spdt stn, NSFO, no odor<br>LS: wh-tan, fxl, fos in prt, vry chky-prtly dns, pr por, vry scat brn dead-blk tarry spdt-patchy stn, NSFO, no odor<br>LS: A.A. w/ vry scat stn A.A., NSFO, no odor   |  |
|  |  | 3250 | LS: A.A., incrs prtly dns, pr por, tr stn, NSFO, no odor<br>Sh: Black Carb<br>LS: crm-tan, fxl, sli fos, sub chky-prtly dns, pr por, scat brn spdt-patchy stn, NSFO, no odor<br>Sh: med gry & gry-grn   | Heebner 3233' (-1252) EL   |
|  |  | 3300 | LS: crm-tan, fxl, fos in prt, sub chky-prtly dns w/ some chky, pr por, scat med-drk brn spdt-patchy stn, NSFO, no odor<br>Sh: med gry & grn<br>LS: wh-tan, fxl, fos in prt, sub chky-prtly dns w/ some chky, pr intrprt-vug por, vry scat lt brn spdt-sub sat stn, SFSO, fnt odor<br>Sh: med gry w/ lt gry-grn, soft & gummy  | Toronto 3256' (-1275) EL<br>Morgan Mud check @ 3272': 56 Vis, 9.2 Wt, 7.6 WL, 6,000 ppm Chl, tr LCM<br>Lansing 3279' (-1298) EL<br>DST #1 3263'-3318' LKC 'A'-'B' zns<br>IF: blow built to 2" FF: blow built to 1"<br>Rec. 100' Mud w/ show of oil<br>IFP: 16-42#/30" ISIP: 777#/60"<br>FFP: 44-64#/60" FSIP: 761#/90"   |
|  |  | 3350 | LS: wh-tan, fxl, fos in prt, sli chty (wh-tan), sub chky-prtly dns w/ some chky, med-drk brn & blk spdt-sub sat stn, SFSO, no odor<br>Sh: some gry<br>LS: wh-tan, fxl, sli ool-fos, sub chky-prtly dns w/ some chky, pr intrprt-vug por, vry scat lt brn spdt-sub sat stn, SFSO, fnt odor<br>LS: tan-brn, fxl, prtly dns, pr por, NS<br>LS: wh-crm, fxl, ool in prt, chky-prtly dns, pr introol w/ some fr vug por, vry scat lt brn spdt-sub sat stn, SFSO, no odor<br>LS: wh-tan, fxl, ool-fos in prt, chty (wh-tan), vry chky-prtly dns, some pr-fr intrprt-vug por, vry scat lt-drk brn spdt-sub sat stn, SFSO, fnt odor   | Ran 20 stand short trip prior to DST #1<br>Pipe Strap @ 3318': Strap long 0.04'<br>Straight Hole Survey @ 3318': 1" Dev.<br>DST #2 3317'-3372' LKC 'D'-'F' zns<br>IF: blow built to 4.25" ISI: no blow back<br>FF: blow built to 2" FS: no blow back<br>Rec. 150' Water<br>Chl ppm: 55,000 DST: 8,400 Mud<br>IFP: 17-60#/30" ISIP: 634#/60"<br>FFP: 59-102#/60" FSIP: 559#/90"   |
|  |  | 3400 | LS: wh-crm, fxl, ool in prt, sli chty, gd amt chky-vry chky w/ some sub chky-prtly dns, some pr-fr dvlp ooc por, rare brn spdt stn, NSFO, no odor<br>LS: wh-tan, fxl, sli ool-fos, sli chty (wh-crm), chky-prtly dns w/ some vry chky, pr por, cpl pcs w/ brn-blk spdt stn, NSFO, no odor<br>LS: A.A., pr por, NS<br>Sh: med-drk gry  | Morgan Mud check @ 3347': 58 Vis, 9.2 Wt, 8.0 WL, 8,400 ppm Chl, tr LCM<br>ran another bit (-run) in @ 3372'   |
|  |  | 3450 | LS: wh-tan, fxl, fos-ool in prt, sli chty (wh), sub chky-prtly dns w/ some chky, pr w/ tr fr intrprt-small vug por, vry scat lt-drk brn spdt-patchy stn, some pcs w/ SFSO, fnt odor on brk<br>LS: wh-tan, fxl, ool-fos in prt, some calcite, sub chky-prtly dns w/ some vry chky, pr-fr intrprt-por, scat lt-drk brn spdt-sub sat stn, S-FSFO, no odor  | DST #3 3405'-3459' LKC 'H'-'I' zns<br>IF: blow built to 0.25" FF: no blow<br>Rec. 10' Mud<br>IFP: 17-17#/30" ISIP: 823#/60"<br>FFP: 22-25#/30" FSIP: 785#/60"  |
|  |  | 3500 | LS: wh-crm, fxl, ool in prt, sub chky-prtly dns w/ some chky, pr introol & few pcs pry dvlp ooc por, vry scat lt-drk brn spdt-sub sat stn, SFSO, no odor<br>LS: wh-tan, fxl, chky-prtly dns w/ some vry chky, pr por, tr brn stn, NSFO, no odor<br>Sh: gry, some soft & gummy<br>LS: wh-tan, fxl, ool-fos in prt, sub chky-prtly dns w/ some chky, pr w/ tr fr intrprt-por, vry scat lt-drk brn spdt-patchy stn, few pcs w/ VSFO, fnt odor on brk<br>LS: A.A., sli fos, some vry chky, pr por, rare spdt brn stn, NSFO, no odor<br>LS: crm-tan, fxl, sli fos, sli chty (tan), sub chky-prtly dns w/ some chky-vry chky, pr por, NS<br>LS: A.A., some wh cht, pr por, NS<br>Sh: lt-med gry & red-brn, some grn   | Morgan Mud check @ 3520': 61 Vis, 9.3 Wt, 7.0 WL, 8,900 ppm Chl, 2# LCM<br>B/KC 3528' (-1547) EL   |
|  |  | 3550 | Sh: lt-drk gry & red-brn, w/ Sdy Sh: red-brn, fn-vry fn grain sd, some sli calc<br>LS: crm-tan, fxl, sub chky-prtly dns, tr cht (crm-org), pr por, NS<br>Sh: red-brn, some gry & grn<br>Sh: red-brn, some gry & grn (30% Sh) intermixed w/ LS: wh-tan, fxl, sli chty (wh-tan), sub chky-prtly dns w/ some dns, pr por, cpl pcs blk spdt stn, NSFO no odor (70% LS)<br>20' & 40' Circ @ 3592': LS: A.A., some chky, incrs cht (wh-tan-org), pr por, few pcs drk brn-blk spdt stn, NSFO, no odor, w/ some Sdy Shly LS: red-brn & crm mottled, pr por, NS, w/ 25% Sh: mstly red-brn, w/ gry, brn, grn<br>Chy LS: wh-tan, fxl, cht (wh-tan), some sli weathered, pr por, few pcs w/ brn-blk stn, NSFO, no odor w/ Sh: red-brn, grn, some gry<br>Sd: clr-wh, fn-med w/ some crs grain, fr sort, FFI brittle, fr-gd por, scat lt-drk brn sat stn, SFSO, sli gold flur, gd cut, gd odor, intrmxd w/ mstly Sh: red-brn, some sdy, w/ grn, & some gry<br>Dol: crm, fn-med w/ some crs xln, some sub chky-prtly dns, some fr-gd intrxln por, fr amt med-drk brn sub sat stn, SFSO, fr odor<br>Dol: A.A. w/ incrs crs xln, some vug por, abund stn (mstly sub sat, dcrs sat), S-FSFO, sli-fr odor<br>Dol: crm, fn-med w/ some crs xln, some sub chky-prtly dns, some fr-gd intrxln por, dcrs amt of string but w/ gd amt blk spdt-sub sat stn, SFSO w/ few pcs FS (mstly thick-hvy oil), no odor, tr barren por<br>Dol: crm-lt gry, fn-med-crs xln, sli chty (wh-amber), fr-gd intrxln por, vry scat blk spdt-sub sat stn, VSFO, no odor<br>Sd: clr-crm, med-crs grain, sli pyr, fr sort, sub rnd, mstly brittle, pr vis por, NS | Note: facies change from B/KC to top of lower Wammaton limestone thickened approx 16' compared to nearby wells<br>DST #4 3481'-3507' LKC 'J'-'K' zns<br>IF: blow built to 1" FF: no blow<br>Rec. 10' VSOCM (5% O, 95% M)<br>IFP: 15-17#/30" ISIP: 865#/60"<br>FFP: 19-20#/30" FSIP: 732#/60"   |
|  |  | 3600 | Sd: A.A., sub rnd-sub ang, fr-gd por, NS<br>Sd: A.A. some sli shly (pale blu-grn), NS, w/ some Sh: pale blu-grn<br>Sd: clr-crm, med-crs grain, some sli shly (blu-grn), sub rnd, fr sort, mstly brittle w/ some fri, fr-gd por, NS<br>Sd: A.A., NS  | Morgan Mud check @ 3612': 48 Vis, 9.3 Wt, 7.6 WL, 7,600 ppm Chl, 4# LCM<br>DST #6 3587'-3627' Arbuckle<br>MISRUN: packers failed<br>Morgan Mud check @ 3627': 43 Vis, 9.3 Wt, 8.4 WL, 8,900 ppm Chl, 4# LCM<br>Note: no "rough" drilling in Arbuckle or Reagan sand<br>Reagan 3644' (-1663) EL<br>DST #7 3523'-3627' Arbuckle<br>IF: BOB in 4" ISI: no blow back<br>FF: BOB in 6" FS: no blow back<br>Recovery: 603' TOTAL FLUID<br>310' WM (100% M)<br>186' WM (20% W, 80% M)<br>107' Mud (100% M)<br>Chl ppm: 14,000 DST: 8,900 Mud<br>IFP: 17-216#/30" ISIP: 1103#/60"<br>FFP: 223-332#/30" FSIP: 1062#/60" |
|  |  | 3700 |   | L.T.D. 3698' (-1717)<br>R.T.D. 3700' (-1719)<br>RTD reached at 3:30 am on 2-25-2013  |



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Ken Dean

### **Emmerentia #1-23**

#### **23-15s-19w Ellis,KS**

Start Date: 2013.02.17 @ 20:35:57

End Date: 2013.02.18 @ 04:35:06

Job Ticket #: 50355                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.03.06 @ 13:46:24

Murfin Drilling Co Inc  
23-15s-19w Ellis,KS  
Emmerentia #1-23  
DST # 1  
LKC A-B  
2013.02.17



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
250 N. Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**

**Emmerentia #1-23**

Job Ticket: 50355

**DST#: 1**

Test Start: 2013.02.17 @ 20:35:57

## GENERAL INFORMATION:

Formation: **LKC A-B**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 22:39:22  
 Time Test Ended: 04:35:06  
 Interval: **3263.00 ft (KB) To 3318.00 ft (KB) (TVD)**  
 Total Depth: 3318.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Ray Schwager  
 Unit No: 42  
 Reference Elevations: 1981.00 ft (KB)  
 1976.00 ft (CF)  
 KB to GR/CF: 5.00 ft

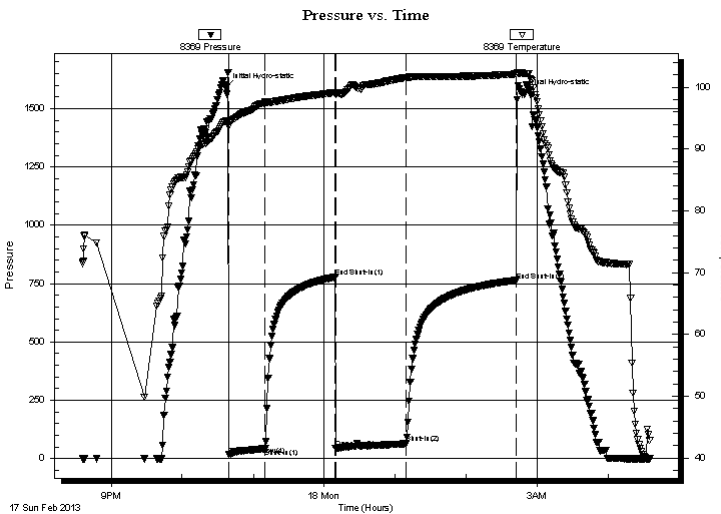
## Serial #: 8369

Inside

Press @ Run Depth: 64.18 psig @ 3264.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.02.17 End Date: 2013.02.18 Last Calib.: 2013.02.18  
 Start Time: 20:35:57 End Time: 04:35:06 Time On Btm: 2013.02.17 @ 22:37:07  
 Time Off Btm: 2013.02.18 @ 02:47:06

TEST COMMENT: 30-IFP-w k bl thru-out 1/2" to 2" bl  
 60-ISIP-no bl bk  
 60-FFP-w k bl thru-out 1/2" to 1" bl  
 90-FSIP-no bl bk

## PRESSURE SUMMARY



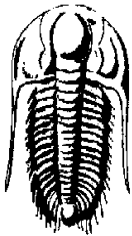
| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1588.63         | 94.49        | Initial Hydro-static |
| 3           | 16.10           | 93.59        | Open To Flow (1)     |
| 33          | 42.44           | 97.58        | Shut-In(1)           |
| 92          | 777.98          | 99.15        | End Shut-In(1)       |
| 93          | 44.34           | 98.77        | Open To Flow (2)     |
| 152         | 64.18           | 101.55       | Shut-In(2)           |
| 245         | 761.34          | 102.10       | End Shut-In(2)       |
| 250         | 1562.91         | 102.25       | Final Hydro-static   |

## Recovery

| Length (ft) | Description        | Volume (bbl) |
|-------------|--------------------|--------------|
| 100.00      | Mud w /show of oil | 1.13         |
|             |                    |              |
|             |                    |              |
|             |                    |              |
|             |                    |              |

## Gas Rates

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



**TRILOBITE**  
**TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Ken Dean

**23-15s-19w Ellis, KS**

**Emmerentia #1-23**

Job Ticket: 50355

**DST#: 1**

Test Start: 2013.02.17 @ 20:35:57

## GENERAL INFORMATION:

Formation: **LKC A-B**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:39:22

Time Test Ended: 04:35:06

**Interval: 3263.00 ft (KB) To 3318.00 ft (KB) (TVD)**

Total Depth: 3318.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)

Tester: Ray Schwager

Unit No: 42

Reference Elevations: 1981.00 ft (KB)

1976.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8700** Outside

Press @ Run Depth: psig @ 3264.00 ft (KB)

Start Date: 2013.02.17 End Date: 2013.02.18

Start Time: 20:36:00 End Time: 04:33:39

Capacity: 8000.00 psig

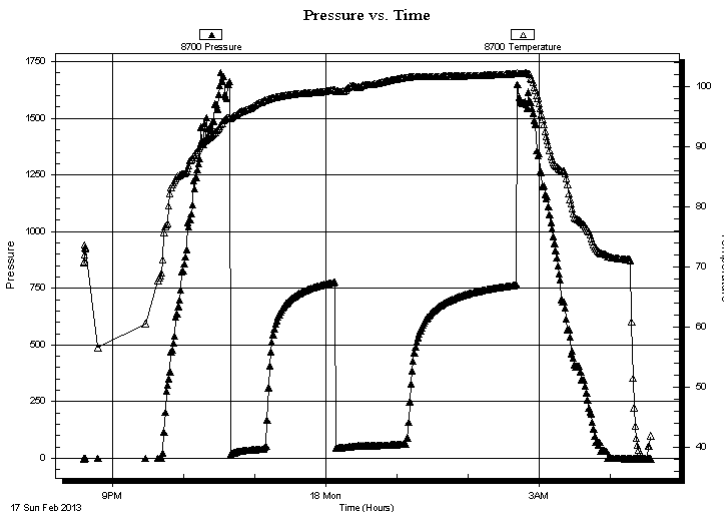
Last Calib.: 2013.02.18

Time On Btm:

Time Off Btm:

**TEST COMMENT:** 30-IFP-w k bl thru-out 1/2" to 2" bl  
60-ISIP-no bl bk  
60-FFP-w k bl thru-out 1/2" to 1" bl  
90-FSIP-no bl bk

## PRESSURE SUMMARY



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

## Recovery

| Length (ft) | Description       | Volume (bbl) |
|-------------|-------------------|--------------|
| 100.00      | Mud w/show of oil | 1.13         |
|             |                   |              |
|             |                   |              |
|             |                   |              |
|             |                   |              |

## 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 Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 50355 **DST#: 1**  
Test Start: 2013.02.17 @ 20:35:57

**Tool Information**

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3232.00 ft | Diameter: 3.80 inches | Volume: 45.34 bbl              | Tool Weight: 2200.00 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: 30.00 ft   | Diameter: 2.25 inches | Volume: 0.15 bbl               | Weight to Pull Loose: 55000.00 lb  |
|                           |                    |                       | <u>Total Volume: 45.49 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 22.00 ft           |                       |                                | String Weight: Initial 44000.00 lb |
| Depth to Top Packer:      | 3263.00 ft         |                       |                                | Final 44000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 55.00 ft           |                       |                                |                                    |
| Tool Length:              | 78.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3241.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3246.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3251.00    |                               |
| Safety Joint     | 2.00        |            |          | 3253.00    |                               |
| Packer           | 5.00        |            |          | 3258.00    | 23.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3263.00    |                               |
| Stubb            | 1.00        |            |          | 3264.00    |                               |
| Recorder         | 0.00        | 8369       | Inside   | 3264.00    |                               |
| Recorder         | 0.00        | 8700       | Outside  | 3264.00    |                               |
| Blank Spacing    | 33.00       |            |          | 3297.00    |                               |
| Perforations     | 18.00       |            |          | 3315.00    |                               |
| Bullnose         | 3.00        |            |          | 3318.00    | 55.00 Bottom Packers & Anchor |

**Total Tool Length: 78.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N. Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 50355      **DST#: 1**  
Test Start: 2013.02.17 @ 20:35:57

## 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: 54.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 7.53 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |         |
| Salinity: 6000.00 ppm            |                            |                 |         |
| Filter Cake: 1.00 inches         |                            |                 |         |

## Recovery Information

Recovery Table

| Length<br>ft | Description       | Volume<br>bbl |
|--------------|-------------------|---------------|
| 100.00       | Mud w/show of oil | 1.129         |

Total Length: 100.00 ft      Total Volume: 1.129 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

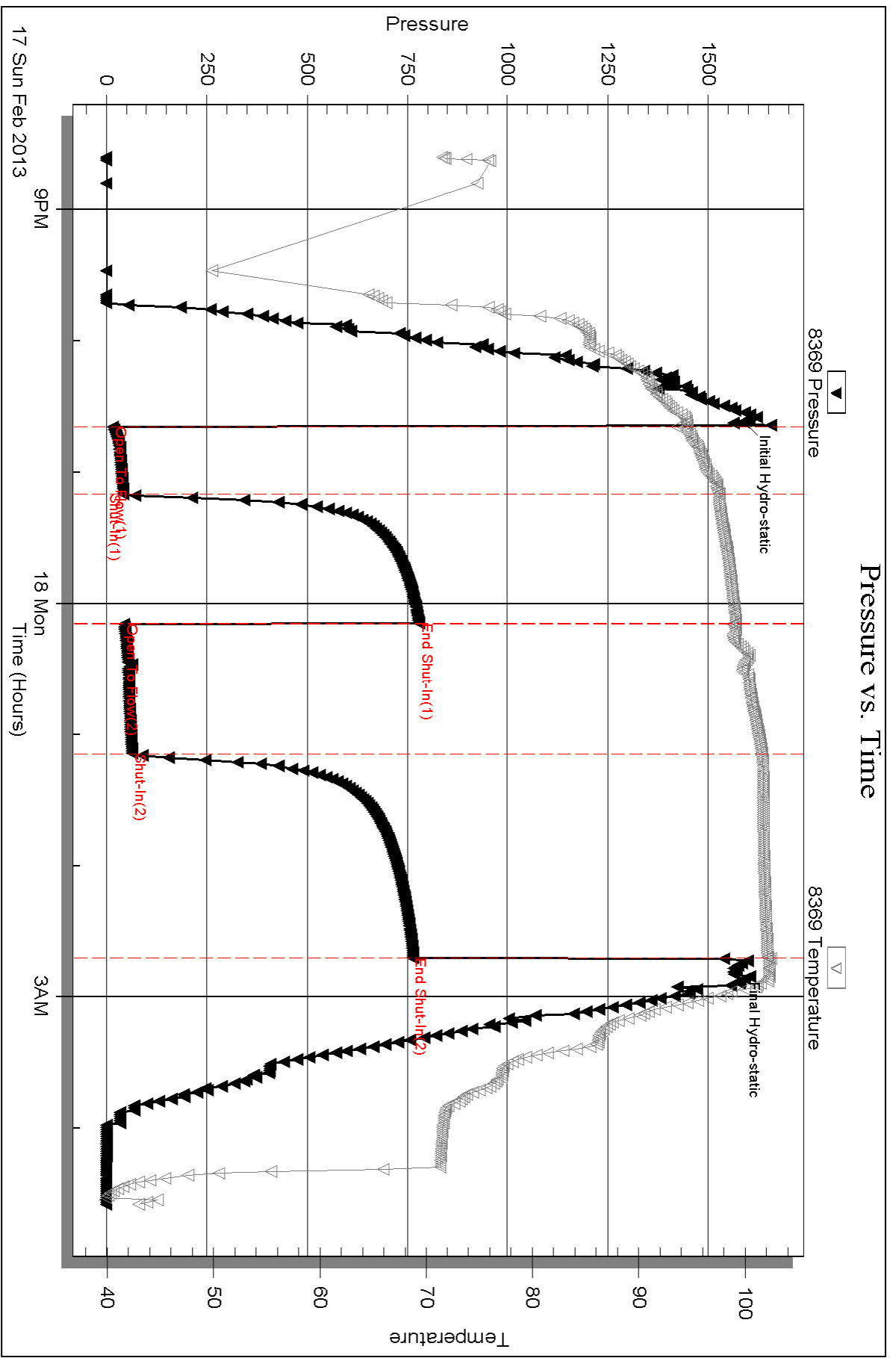
Serial #: 8369

Inside

Murfin Drilling Co Inc

Emmerentia #1-23

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 50355

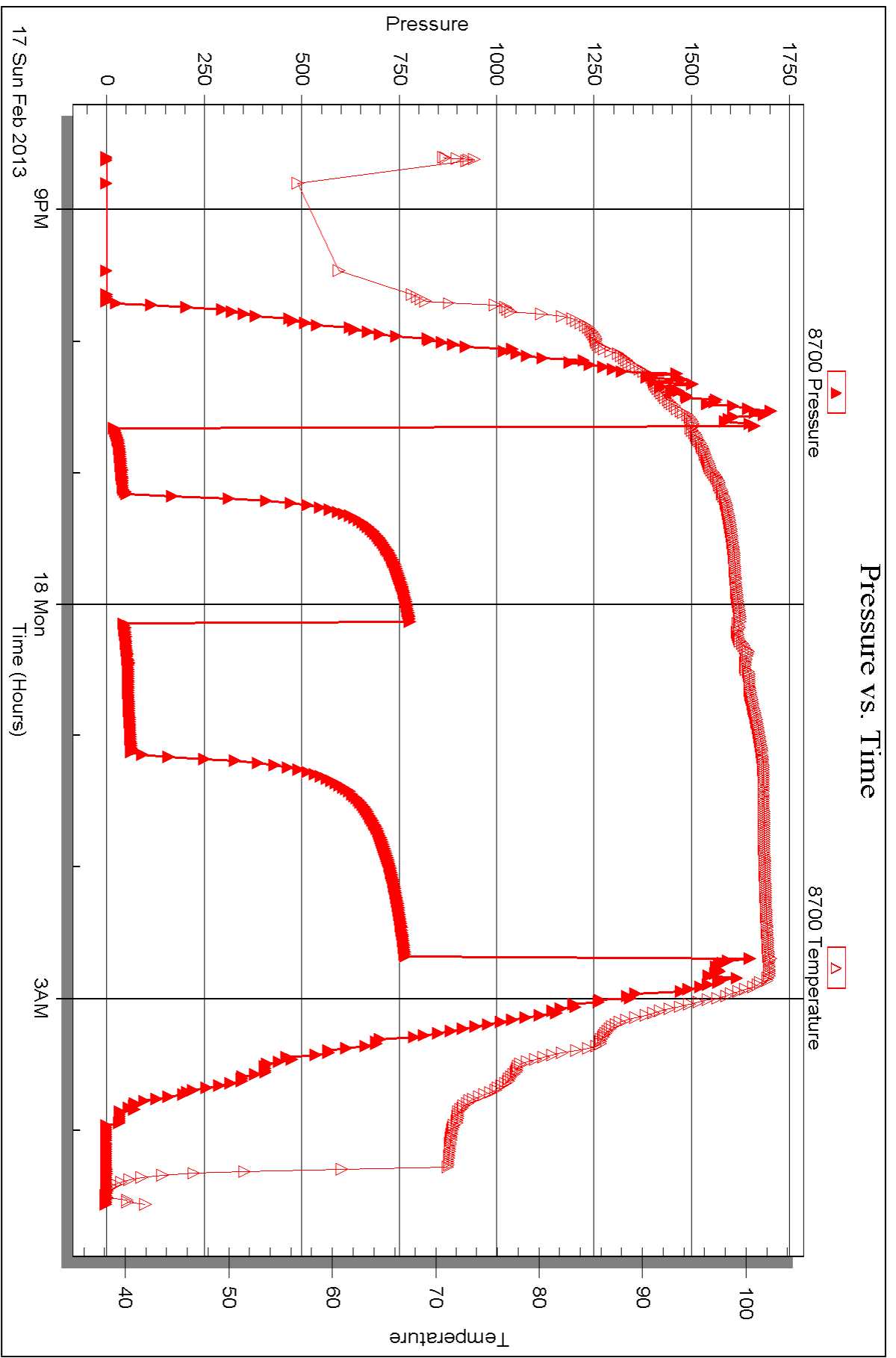
Printed: 2013.03.06 @ 13:46:26

Serial #: 8700

Outside Murfin Drilling Co Inc

Emmerentia #1-23

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Ken Dean

### **Emmerentia #1-23**

#### **23-15s-19w Ellis,KS**

Start Date: 2013.02.18 @ 13:35:23

End Date: 2013.02.18 @ 20:59:02

Job Ticket #: 50356                      DST #: 2

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

Printed: 2013.03.06 @ 13:45:47

Murfin Drilling Co Inc  
23-15s-19w Ellis,KS  
Emmerentia #1-23  
DST # 2  
LKC D-F  
2013.02.18



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N. Water Ste 300  
 Wichita KS 67202  
 ATTN: Ken Dean

**23-15s-19w Ellis, KS**

**Emmerentia #1-23**

Job Ticket: 50356

**DST#: 2**

Test Start: 2013.02.18 @ 13:35:23

## GENERAL INFORMATION:

Formation: **LKC D-F**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 15:16:18  
 Tester: Ray Schwager  
 Time Test Ended: 20:59:02  
 Unit No: 42  
 Interval: **3317.00 ft (KB) To 3372.00 ft (KB) (TVD)**  
 Reference Elevations: 1981.00 ft (KB)  
 Total Depth: 3372.00 ft (KB) (TVD)  
 1976.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 5.00 ft

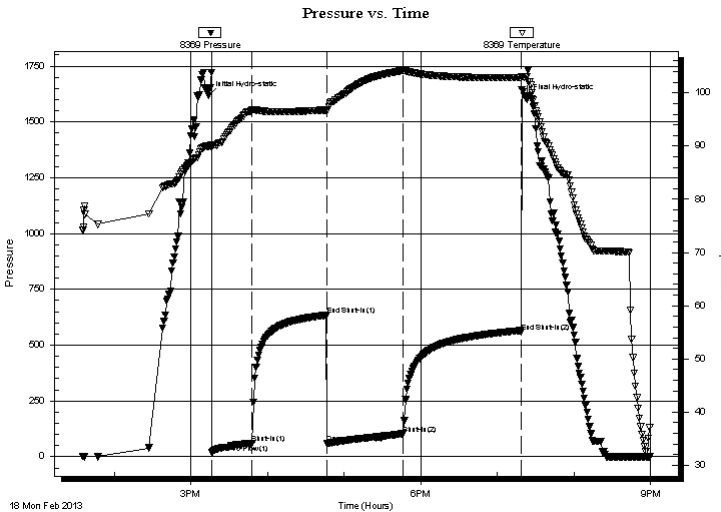
## Serial #: 8369

Inside

Press @ Run Depth: 102.59 psig @ 3318.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.02.18 End Date: 2013.02.18 Last Calib.: 2013.02.18  
 Start Time: 13:35:23 End Time: 20:59:02 Time On Btm: 2013.02.18 @ 15:14:03  
 Time Off Btm: 2013.02.18 @ 19:22:32

TEST COMMENT: 30-IFP-w k to a fr bl 1/2" to 4 1/4" bl  
 60-ISIP-no bl  
 60-FFP-w k bl thru-out 1/4" to 2" bl  
 90-FSIP-no bl

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1618.85         | 90.02        | Initial Hydro-static |
| 3           | 17.91           | 89.69        | Open To Flow (1)     |
| 34          | 60.70           | 96.77        | Shut-In(1)           |
| 92          | 634.23          | 96.82        | End Shut-In(1)       |
| 93          | 59.99           | 96.53        | Open To Flow (2)     |
| 153         | 102.59          | 104.25       | Shut-In(2)           |
| 245         | 559.61          | 102.84       | End Shut-In(2)       |
| 249         | 1603.49         | 103.02       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 150.00      | Water       | 1.83         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

\* 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 Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 50356      **DST#: 2**  
Test Start: 2013.02.18 @ 13:35:23

**Tool Information**

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3295.00 ft | Diameter: 3.80 inches | Volume: 46.22 bbl              | Tool Weight:           | 2200.00 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: 30.00 ft   | Diameter: 2.25 inches | Volume: 0.15 bbl               | Weight to Pull Loose:  | 60000.00 lb |
|                           |                    |                       | <u>Total Volume: 46.37 bbl</u> | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 31.00 ft           |                       |                                | String Weight: Initial | 45000.00 lb |
| Depth to Top Packer:      | 3317.00 ft         |                       |                                | Final                  | 46000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 55.00 ft           |                       |                                |                        |             |
| Tool Length:              | 78.00 ft           |                       |                                |                        |             |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                        |             |

Tool Comments:

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

|                 |       |      |         |         |                                    |
|-----------------|-------|------|---------|---------|------------------------------------|
| Change Over Sub | 1.00  |      |         | 3295.00 |                                    |
| Shut In Tool    | 5.00  |      |         | 3300.00 |                                    |
| Hydraulic tool  | 5.00  |      |         | 3305.00 |                                    |
| Safety Joint    | 2.00  |      |         | 3307.00 |                                    |
| Packer          | 5.00  |      |         | 3312.00 | 23.00      Bottom Of Top Packer    |
| Packer          | 5.00  |      |         | 3317.00 |                                    |
| Stubb           | 1.00  |      |         | 3318.00 |                                    |
| Recorder        | 0.00  | 8369 | Inside  | 3318.00 |                                    |
| Recorder        | 0.00  | 8700 | Outside | 3318.00 |                                    |
| Blank Spacing   | 33.00 |      |         | 3351.00 |                                    |
| Perforations    | 18.00 |      |         | 3369.00 |                                    |
| Bullnose        | 3.00  |      |         | 3372.00 | 55.00      Bottom Packers & Anchor |

**Total Tool Length: 78.00**





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N. Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 50356      **DST#: 2**  
Test Start: 2013.02.18 @ 13:35:23

**Mud and Cushion Information**

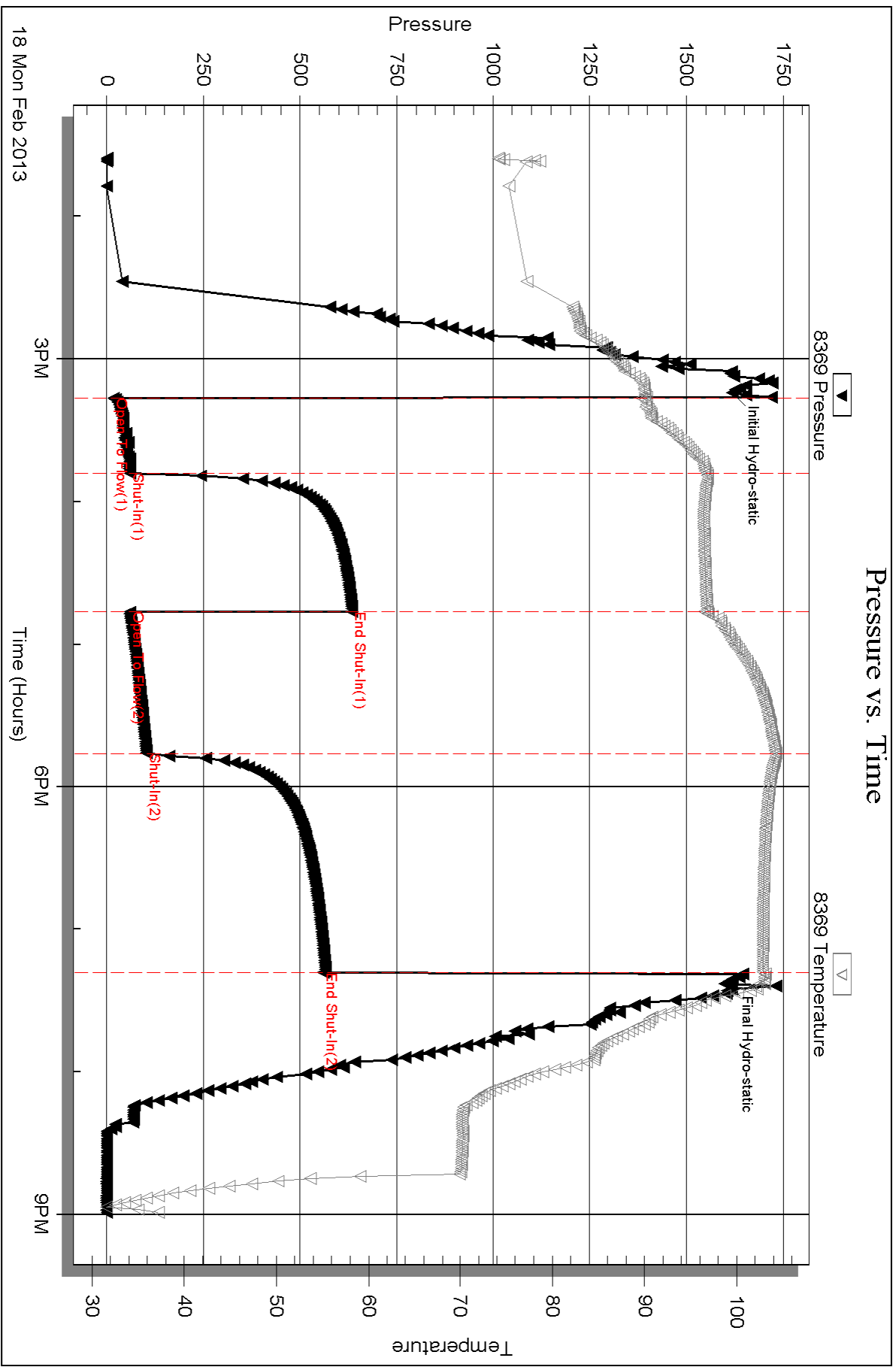
|                                  |                            |                 |           |
|----------------------------------|----------------------------|-----------------|-----------|
| Mud Type: Gel Chem               | Cushion Type:              | Oil API:        | deg API   |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: | 55000 ppm |
| Viscosity: 58.00 sec/qt          | Cushion Volume: bbl        |                 |           |
| Water Loss: 7.92 in <sup>3</sup> | Gas Cushion Type:          |                 |           |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |           |
| Salinity: 8400.00 ppm            |                            |                 |           |
| Filter Cake: 1.00 inches         |                            |                 |           |

**Recovery Information**

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 150.00       | Water       | 1.831         |

Total Length: 150.00 ft      Total Volume: 1.831 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: RW .19@55F

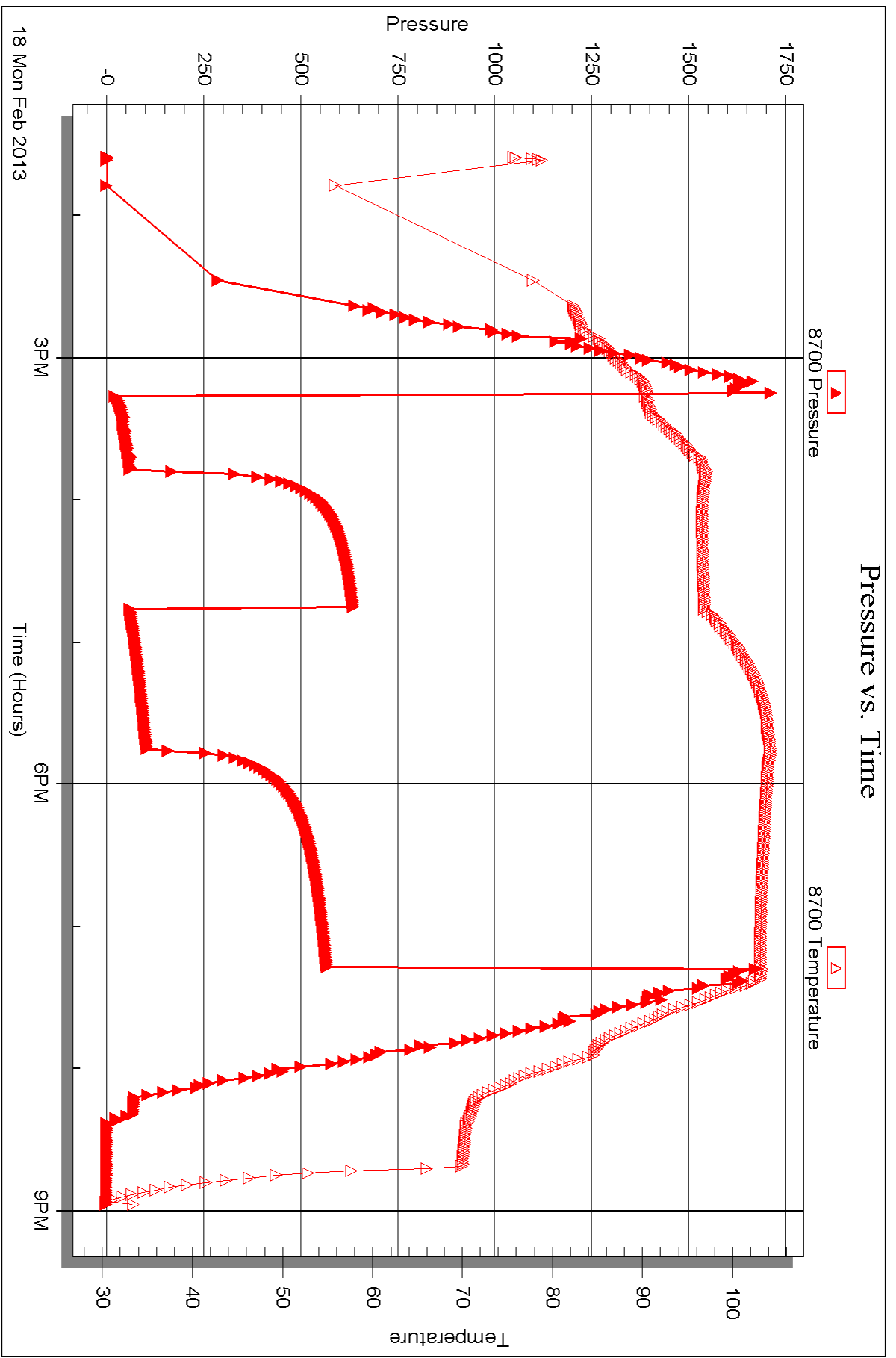


Serial #: 8700

Outside Murfin Drilling Co Inc

Emergentia #1-23

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 50356

Printed: 2013.03.06 @ 13:45:50



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Ken Dean

### **Emmerentia #1-23**

### **23-15s-19w Ellis,KS**

Start Date: 2013.02.19 @ 07:40:13

End Date: 2013.02.19 @ 13:34:07

Job Ticket #: 50357                      DST #: 3

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

Printed: 2013.03.06 @ 13:45:07



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
250 N. Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**

**Emmerentia #1-23**

Job Ticket: 50357

**DST#: 3**

Test Start: 2013.02.19 @ 07:40:13

## GENERAL INFORMATION:

Formation: **LKC H-I**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:15:23

Time Test Ended: 13:34:07

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 42

**Interval: 3405.00 ft (KB) To 3459.00 ft (KB) (TVD)**

Reference Elevations: 1981.00 ft (KB)

Total Depth: 3318.00 ft (KB) (TVD)

1976.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 8369**

**Inside**

Press @ Run Depth: 25.04 psig @ 3406.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.02.19

End Date:

2013.02.19

Last Calib.: 2013.02.19

Start Time: 07:40:13

End Time:

13:34:07

Time On Btm: 2013.02.19 @ 09:13:23

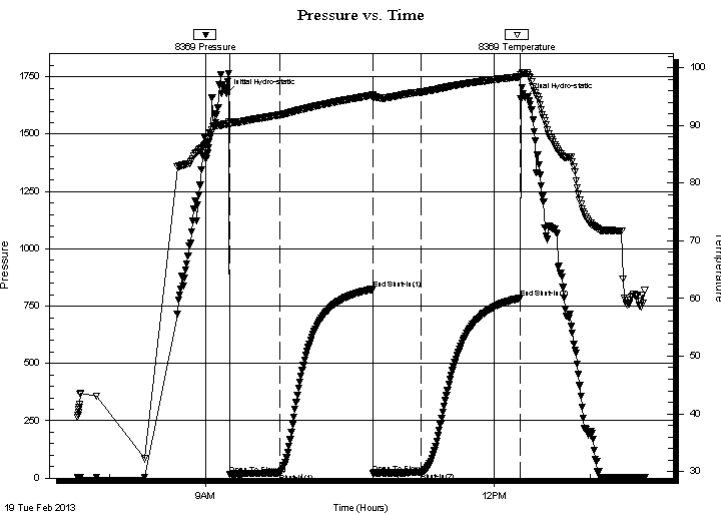
Time Off Btm: 2013.02.19 @ 12:19:37

**TEST COMMENT:** 30-IFP-w k bl thru-out 1/4" bl

60-ISIP-no bl

30-FFP-no bl

60-FSIP-no bl



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1677.73         | 90.25        | Initial Hydro-static |
| 2           | 17.20           | 90.26        | Open To Flow (1)     |
| 33          | 22.57           | 91.83        | Shut-In(1)           |
| 91          | 823.58          | 95.26        | End Shut-In(1)       |
| 92          | 22.24           | 94.85        | Open To Flow (2)     |
| 122         | 25.04           | 95.79        | Shut-In(2)           |
| 183         | 785.15          | 98.46        | End Shut-In(2)       |
| 187         | 1659.25         | 99.21        | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 10.00       | Mud         | 0.05         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

\* 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 Ste 300  
 Wichita KS 67202  
 ATTN: Ken Dean

**23-15s-19w Ellis, KS**

**Emmerentia #1-23**

Job Ticket: 50357

**DST#: 3**

Test Start: 2013.02.19 @ 07:40:13

### GENERAL INFORMATION:

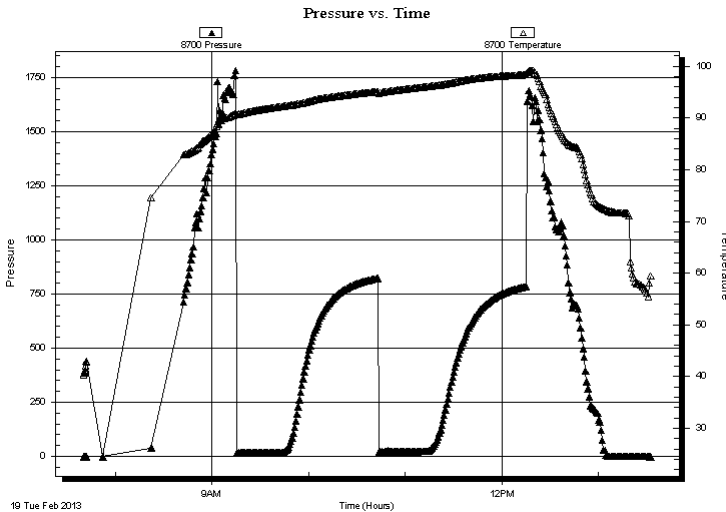
Formation: **LKC H-I**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 09:15:23  
 Tester: Ray Schwager  
 Time Test Ended: 13:34:07  
 Unit No: 42  
 Interval: **3405.00 ft (KB) To 3459.00 ft (KB) (TVD)**  
 Reference Elevations: 1981.00 ft (KB)  
 Total Depth: 3318.00 ft (KB) (TVD)  
 1976.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 5.00 ft

**Serial #: 8700 Outside**

|                    |            |                 |            |               |            |
|--------------------|------------|-----------------|------------|---------------|------------|
| Press @ Run Depth: | psig @     | 3406.00 ft (KB) | Capacity:  | 8000.00 psig  |            |
| Start Date:        | 2013.02.19 | End Date:       | 2013.02.19 | Last Calib.:  | 2013.02.19 |
| Start Time:        | 07:40:09   | End Time:       | 13:32:48   | Time On Btm:  |            |
|                    |            |                 |            | Time Off Btm: |            |

TEST COMMENT: 30-IFP-w k bl thru-out 1/4" bl  
 60-ISIP-no bl  
 30-FFP-no bl  
 60-FSIP-no bl

### PRESSURE SUMMARY



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

### Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 10.00       | Mud         | 0.05         |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

\* 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 Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 50357      **DST#: 3**  
Test Start: 2013.02.19 @ 07:40:13

**Tool Information**

|                           |                    |                       |                                |                        |             |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe:               | Length: 3360.00 ft | Diameter: 3.80 inches | Volume: 47.13 bbl              | Tool Weight:           | 2200.00 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: 30.00 ft   | Diameter: 2.25 inches | Volume: 0.15 bbl               | Weight to Pull Loose:  | 60000.00 lb |
|                           |                    |                       | <u>Total Volume: 47.28 bbl</u> | Tool Chased            | 0.00 ft     |
| Drill Pipe Above KB:      | 8.00 ft            |                       |                                | String Weight: Initial | 44000.00 lb |
| Depth to Top Packer:      | 3405.00 ft         |                       |                                | Final                  | 44000.00 lb |
| Depth to Bottom Packer:   | ft                 |                       |                                |                        |             |
| Interval between Packers: | 54.00 ft           |                       |                                |                        |             |
| Tool Length:              | 77.00 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> |
|-------------------------|--------------------|-------------------|-----------------|-------------------|-----------------------|
|-------------------------|--------------------|-------------------|-----------------|-------------------|-----------------------|

|                 |       |      |         |         |                                    |
|-----------------|-------|------|---------|---------|------------------------------------|
| Change Over Sub | 1.00  |      |         | 3383.00 |                                    |
| Shut In Tool    | 5.00  |      |         | 3388.00 |                                    |
| Hydraulic tool  | 5.00  |      |         | 3393.00 |                                    |
| Safety Joint    | 2.00  |      |         | 3395.00 |                                    |
| Packer          | 5.00  |      |         | 3400.00 | 23.00      Bottom Of Top Packer    |
| Packer          | 5.00  |      |         | 3405.00 |                                    |
| Stubb           | 1.00  |      |         | 3406.00 |                                    |
| Recorder        | 0.00  | 8369 | Inside  | 3406.00 |                                    |
| Recorder        | 0.00  | 8700 | Outside | 3406.00 |                                    |
| Blank Spacing   | 32.00 |      |         | 3438.00 |                                    |
| Perforations    | 18.00 |      |         | 3456.00 |                                    |
| Bullnose        | 3.00  |      |         | 3459.00 | 54.00      Bottom Packers & Anchor |

**Total Tool Length: 77.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N. Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 50357      **DST#: 3**  
Test Start: 2013.02.19 @ 07:40:13

## 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: 53.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 7.92 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |         |
| Salinity: 8400.00 ppm            |                            |                 |         |
| Filter Cake: 1.00 inches         |                            |                 |         |

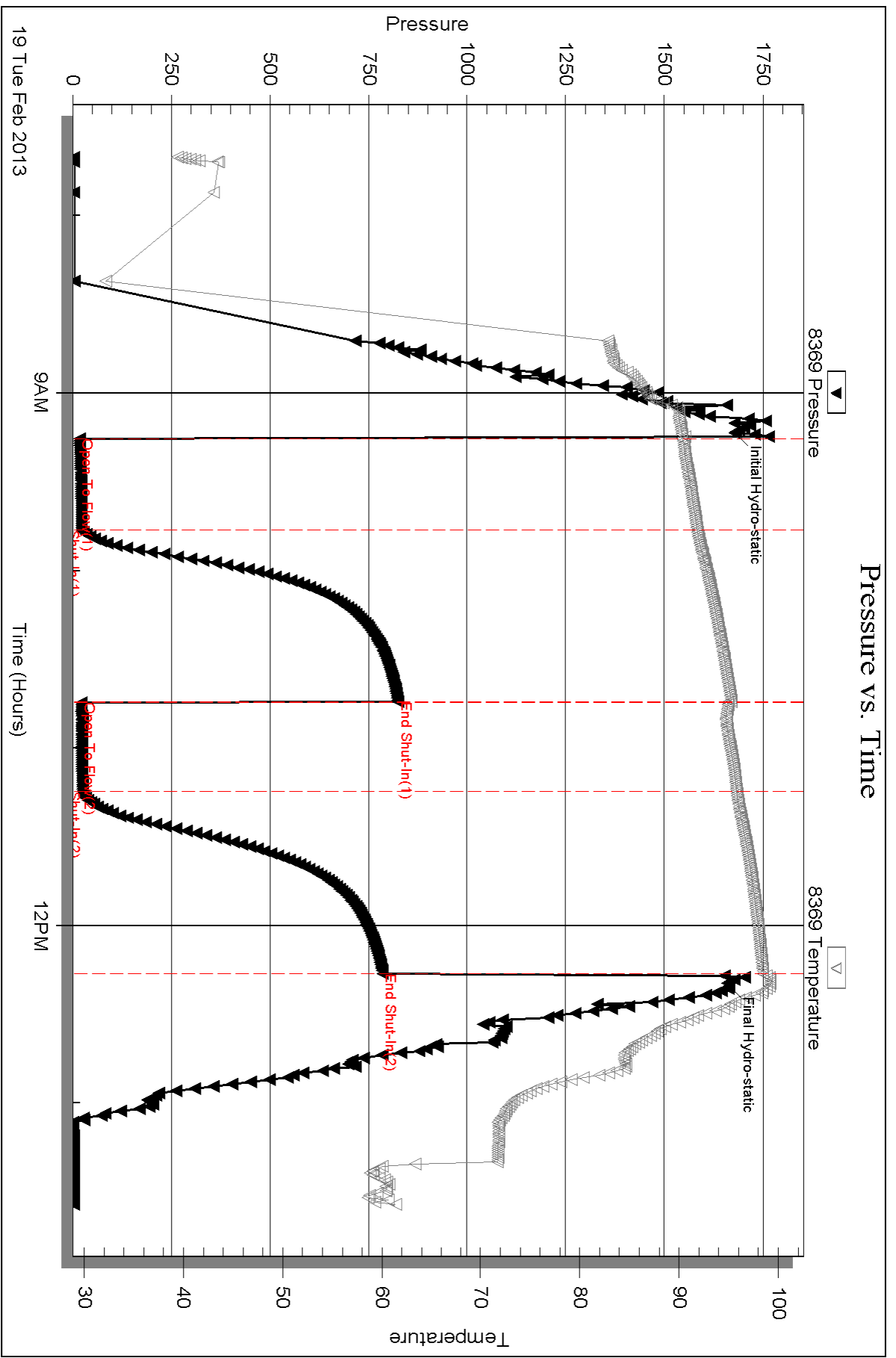
## Recovery Information

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 10.00        | Mud         | 0.049         |

Total Length: 10.00 ft      Total Volume: 0.049 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:



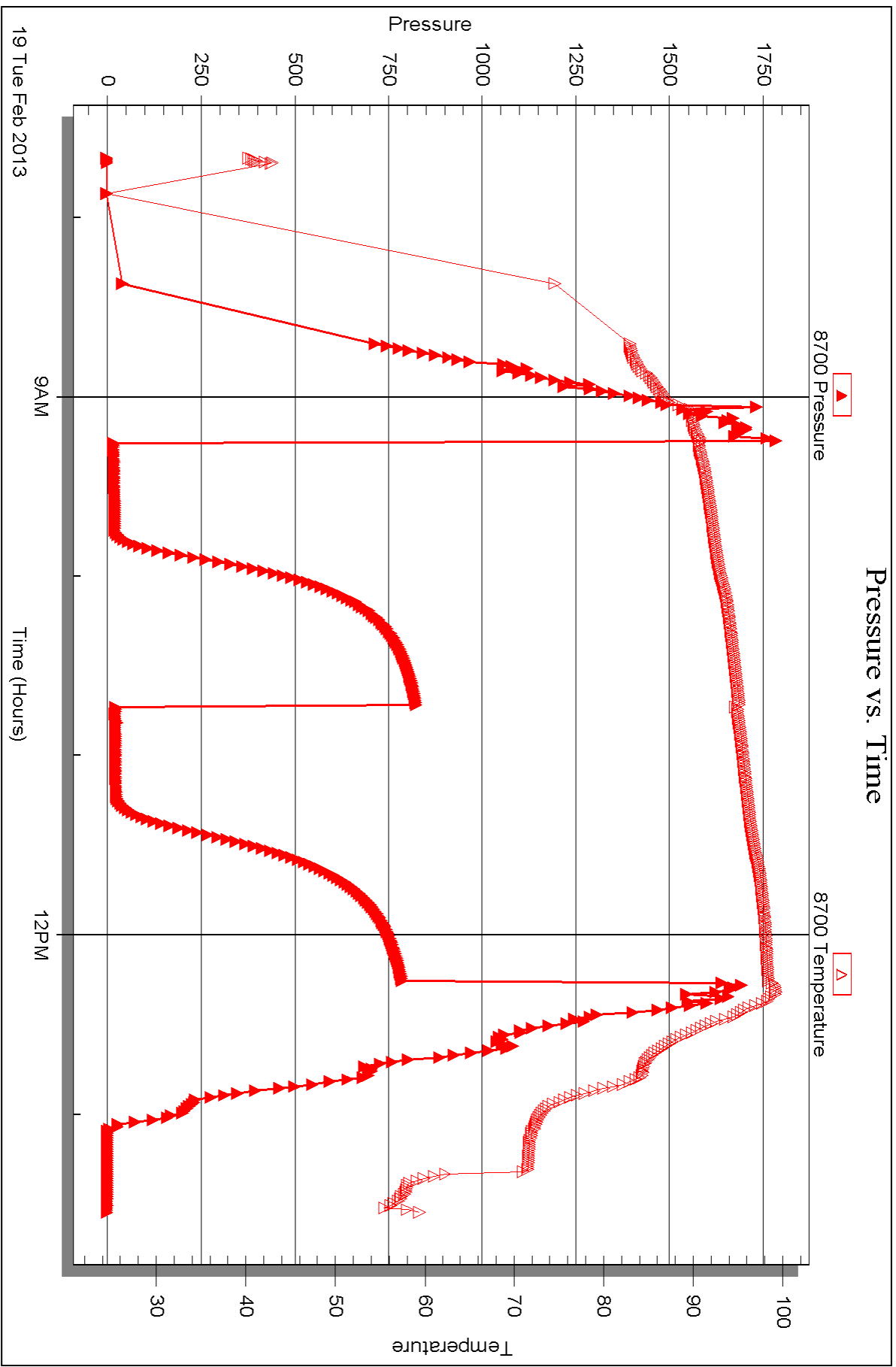


Serial #: 8700

Outside Murfin Drilling Co Inc

Emergentia #1-23

DST Test Number: 3





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Ken Dean

### **Emmerentia #1-23**

#### **23-15s-19w Ellis,KS**

Start Date: 2013.02.19 @ 21:20:15

End Date: 2013.02.20 @ 05:08:09

Job Ticket #: 50358                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.03.06 @ 13:44:25



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N.Water Ste 300  
 Wichita KS 67202  
 ATTN: Ken Dean

**23-15s-19w Ellis,KS**  
**Emmerentia #1-23**  
 Job Ticket: 50358 **DST#: 4**  
 Test Start: 2013.02.19 @ 21:20:15

## GENERAL INFORMATION:

Formation: **LKC J-K**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 23:20:10  
 Time Test Ended: 05:08:09  
 Interval: **3455.00 ft (KB) To 3507.00 ft (KB) (TVD)**  
 Total Depth: 3507.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ray Schwager  
 Unit No: 42  
 Reference Elevations: 1981.00 ft (KB)  
 1976.00 ft (CF)  
 KB to GR/CF: 5.00 ft

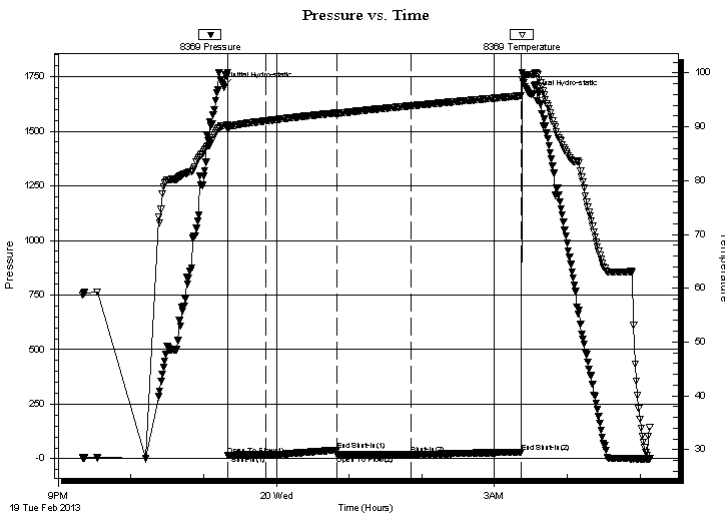
## Serial #: 8369

Inside

Press @ Run Depth: 18.57 psig @ 3456.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.02.19 End Date: 2013.02.20 Last Calib.: 2013.02.20  
 Start Time: 21:20:15 End Time: 05:08:09 Time On Btm: 2013.02.19 @ 23:16:55  
 Time Off Btm: 2013.02.20 @ 03:29:09

TEST COMMENT: 30-IFP-w k bl thru-out 1/2" to 3/4" bl  
 60-ISIP-no bl  
 60-FFP-w k bl thru-out surface to 1/4" bl  
 90-FSIP-no bl

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1702.62         | 90.18        | Initial Hydro-static |
| 4           | 17.54           | 89.68        | Open To Flow (1)     |
| 34          | 17.13           | 91.10        | Shut-In(1)           |
| 93          | 40.17           | 92.59        | End Shut-In(1)       |
| 94          | 17.93           | 92.57        | Open To Flow (2)     |
| 154         | 18.57           | 93.90        | Shut-In(2)           |
| 246         | 30.04           | 95.78        | End Shut-In(2)       |
| 253         | 1670.05         | 99.78        | Final Hydro-static   |

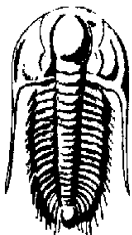
## Recovery

| Length (ft) | Description       | Volume (bbl) |
|-------------|-------------------|--------------|
| 5.00        | Mud w/show of oil | 0.02         |
|             |                   |              |
|             |                   |              |
|             |                   |              |
|             |                   |              |

\* 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 Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

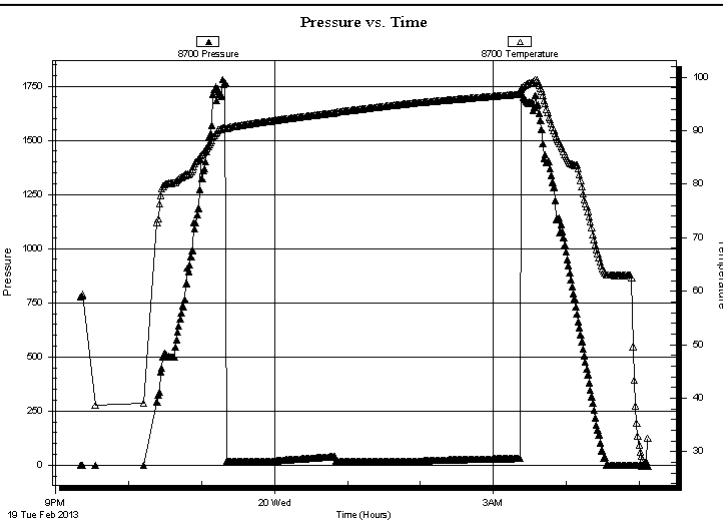
**23-15s-19w Ellis,KS**  
**Emmerentia #1-23**  
Job Ticket: 50358 **DST#: 4**  
Test Start: 2013.02.19 @ 21:20:15

**GENERAL INFORMATION:**

Formation: **LKC J-K**  
Deviated: **No** Whipstock: **ft (KB)** Test Type: **Conventional Bottom Hole (Reset)**  
Time Tool Opened: **23:20:10** Tester: **Ray Schwager**  
Time Test Ended: **05:08:09** Unit No: **42**  
**Interval: 3455.00 ft (KB) To 3507.00 ft (KB) (TVD)** Reference Elevations: **1981.00 ft (KB)**  
Total Depth: **3507.00 ft (KB) (TVD)** **1976.00 ft (CF)**  
Hole Diameter: **7.88 inches** Hole Condition: **Fair** KB to GR/CF: **5.00 ft**

**Serial #: 8700** **Outside**  
Press @ Run Depth: **psig @ 3456.00 ft (KB)** Capacity: **8000.00 psig**  
Start Date: **2013.02.19** End Date: **2013.02.20** Last Calib.: **2013.02.20**  
Start Time: **21:20:55** End Time: **05:07:19** Time On Btm:  
Time Off Btm:

**TEST COMMENT:** 30-IFP-w k bl thru-out 1/2" to 3/4" bl  
60-ISIP-no bl  
60-FFP-w k bl thru-out surface to 1/4" bl  
90-FSIP-no bl



**PRESSURE SUMMARY**

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

**Recovery**

| Length (ft) | Description        | Volume (bbl) |
|-------------|--------------------|--------------|
| 5.00        | Mud w /show of oil | 0.02         |
|             |                    |              |
|             |                    |              |
|             |                    |              |
|             |                    |              |

\* 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 Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 50358 **DST#: 4**  
Test Start: 2013.02.19 @ 21:20:15

**Tool Information**

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3413.00 ft | Diameter: 3.80 inches | Volume: 47.88 bbl              | Tool Weight: 2200.00 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: 30.00 ft   | Diameter: 2.25 inches | Volume: 0.15 bbl               | Weight to Pull Loose: 60000.00 lb  |
|                           |                    |                       | <u>Total Volume: 48.03 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 11.00 ft           |                       |                                | String Weight: Initial 44000.00 lb |
| Depth to Top Packer:      | 3455.00 ft         |                       |                                | Final 44000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 52.00 ft           |                       |                                |                                    |
| Tool Length:              | 75.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3433.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3438.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3443.00    |                               |
| Safety Joint     | 2.00        |            |          | 3445.00    |                               |
| Packer           | 5.00        |            |          | 3450.00    | 23.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3455.00    |                               |
| Stubb            | 1.00        |            |          | 3456.00    |                               |
| Recorder         | 0.00        | 8369       | Inside   | 3456.00    |                               |
| Recorder         | 0.00        | 8700       | Outside  | 3456.00    |                               |
| Blank Spacing    | 33.00       |            |          | 3489.00    |                               |
| Perforations     | 15.00       |            |          | 3504.00    |                               |
| Bullnose         | 3.00        |            |          | 3507.00    | 52.00 Bottom Packers & Anchor |

**Total Tool Length: 75.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N. Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 50358      **DST#: 4**  
Test Start: 2013.02.19 @ 21:20:15

## 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: 73.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 7.96 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |         |
| Salinity: 8200.00 ppm            |                            |                 |         |
| Filter Cake: 1.00 inches         |                            |                 |         |

## Recovery Information

Recovery Table

| Length<br>ft | Description       | Volume<br>bbl |
|--------------|-------------------|---------------|
| 5.00         | Mud w/show of oil | 0.025         |

Total Length: 5.00 ft      Total Volume: 0.025 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

Serial #: 8369

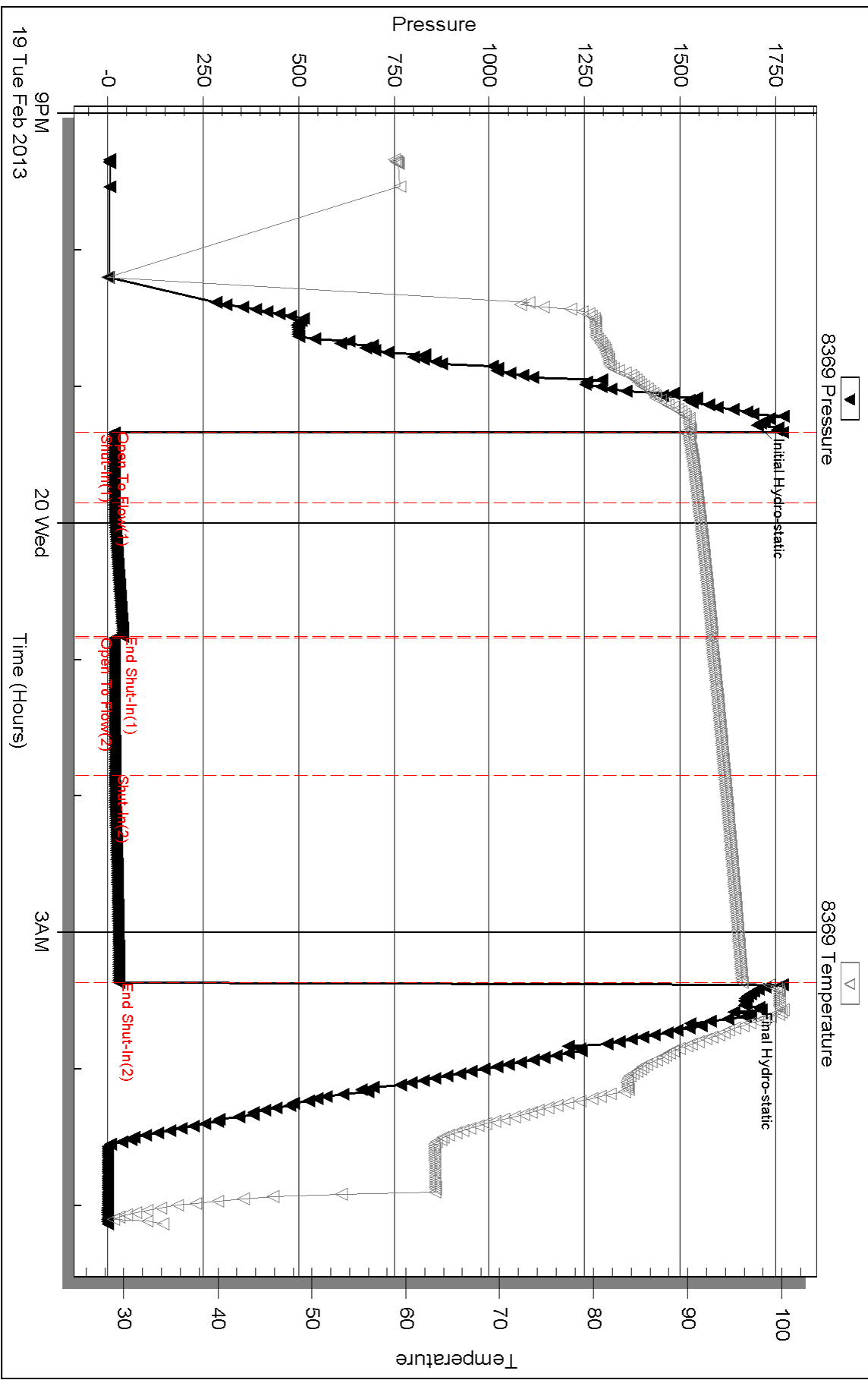
Inside

Murfin Drilling Co Inc

Emmerentia #1-23

DST Test Number: 4

### Pressure vs. Time



Triobite Testing, Inc

Ref. No: 50358

Printed: 2013.03.06 @ 13:44:28

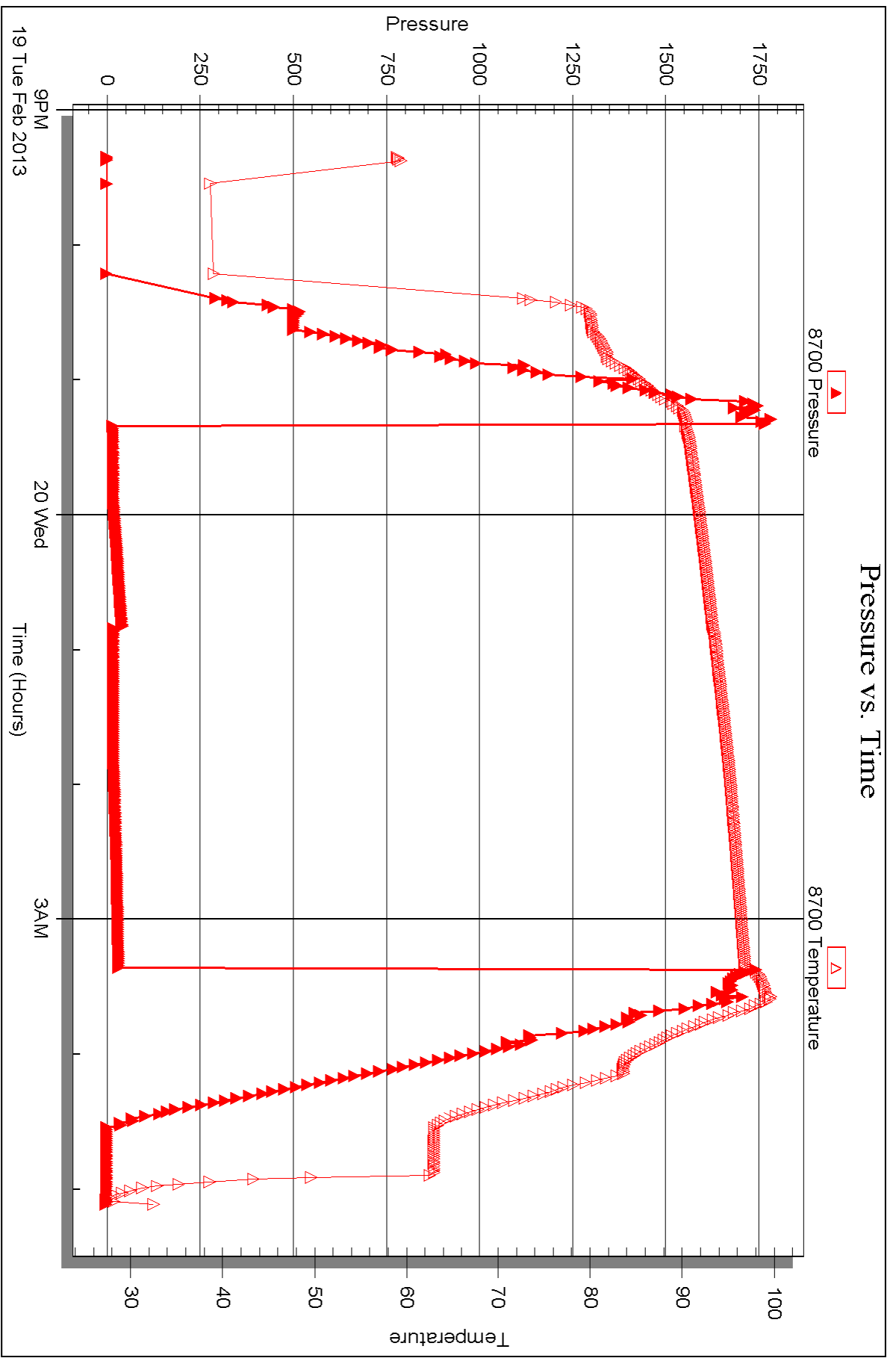


Serial #: 8700

Outside Murfin Drilling Co Inc

Emmerentia #1-23

DST Test Number: 4



Triobite Testing, Inc

Ref. No: 50358

Printed: 2013.03.06 @ 13:44:28



## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Ken Dean

### **Emmerentia #1-23**

#### **23-15s-19w Ellis,KS**

Start Date: 2013.02.23 @ 16:16:00

End Date: 2013.02.23 @ 22:18:30

Job Ticket #: 51595                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.03.06 @ 13:42:11

Murfin Drilling Co Inc  
23-15s-19w Ellis,KS  
Emmerentia #1-23  
DST # 5  
Cong. Sand  
2013.02.23



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N. Water Ste 300  
 Wichita KS 67202  
 ATTN: Ken Dean

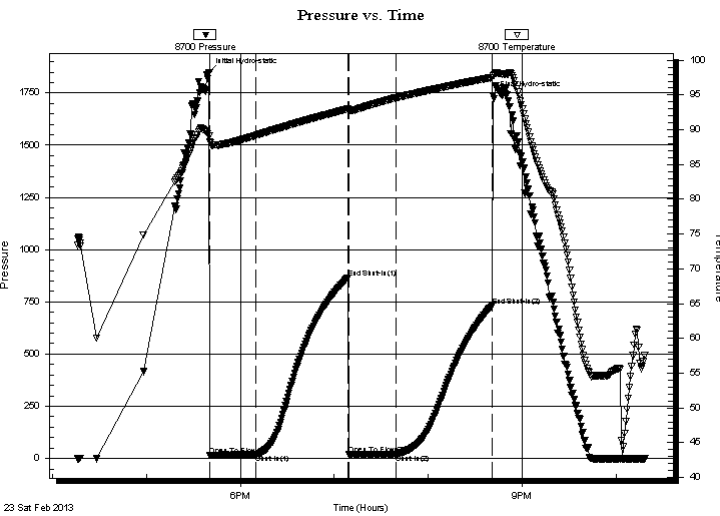
**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
 Job Ticket: 51595 **DST#: 5**  
 Test Start: 2013.02.23 @ 16:16:00

## GENERAL INFORMATION:

Formation: **Cong. Sand**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 17:40:15  
 Time Test Ended: 22:18:30  
 Interval: **3588.00 ft (KB) To 3612.00 ft (KB) (TVD)**  
 Total Depth: 3612.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Cody Bloedorn  
 Unit No: 42  
 Reference Elevations: 1981.00 ft (KB)  
 1976.00 ft (CF)  
 KB to GR/CF: 5.00 ft

**Serial #: 8700 Outside**  
 Press @ Run Depth: 20.55 psig @ 3589.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.02.23 End Date: 2013.02.23 Last Calib.: 2013.02.23  
 Start Time: 16:16:05 End Time: 22:18:29 Time On Btm: 2013.02.23 @ 17:40:00  
 Time Off Btm: 2013.02.23 @ 20:41:30

TEST COMMENT: 30 - IF- 1" blow  
 60 - IS- No return  
 30 - FF- No blow  
 60 - FS- No return



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1848.71         | 89.08        | Initial Hydro-static |
| 1           | 15.42           | 88.30        | Open To Flow (1)     |
| 30          | 17.75           | 89.19        | Shut-In(1)           |
| 89          | 865.82          | 93.00        | End Shut-In(1)       |
| 90          | 19.12           | 92.80        | Open To Flow (2)     |
| 120         | 20.55           | 94.58        | Shut-In(2)           |
| 181         | 732.04          | 97.51        | End Shut-In(2)       |
| 182         | 1738.93         | 97.82        | Final Hydro-static   |

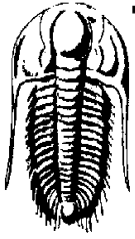
## Recovery

| Length (ft) | Description      | Volume (bbl) |
|-------------|------------------|--------------|
| 10.00       | VSOCM, 5%O, 95%M | 0.05         |
|             |                  |              |
|             |                  |              |
|             |                  |              |
|             |                  |              |

\* 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 Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 51595      **DST#: 5**  
Test Start: 2013.02.23 @ 16:16:00

**GENERAL INFORMATION:**

Formation: **Cong. Sand**  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 17:40:15  
Time Test Ended: 22:18:30

Test Type: Conventional Bottom Hole (Reset)  
Tester: Cody Bloedorn  
Unit No: 42

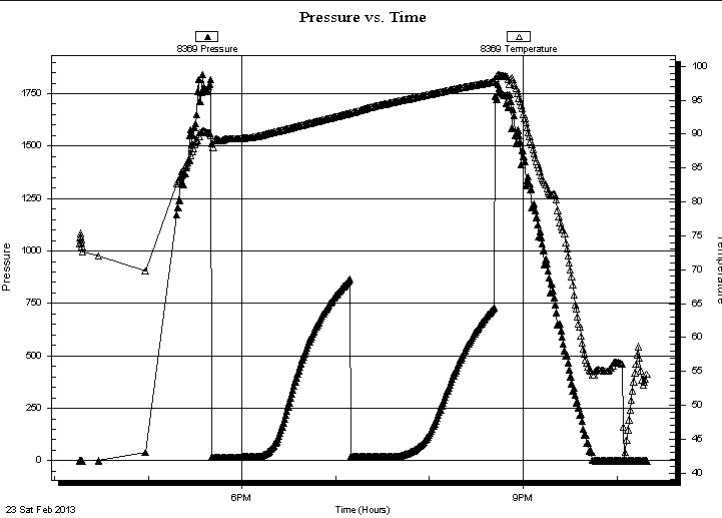
Interval: **3588.00 ft (KB) To 3612.00 ft (KB) (TVD)**  
Total Depth: 3612.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1981.00 ft (KB)  
1976.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 8369      Inside**

Press @ RunDepth:                      psig @ 3589.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2013.02.23      End Date: 2013.02.23      Last Calib.: 2013.02.23  
Start Time: 16:16:05      End Time: 22:19:29      Time On Btm:  
Time Off Btm:

**TEST COMMENT:** 30 - IF- 1" blow  
60 - IS- No return  
30 - FF- No blow  
60 - FS- No return



**PRESSURE SUMMARY**

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

**Recovery**

| Length (ft) | Description      | Volume (bbl) |
|-------------|------------------|--------------|
| 10.00       | VSOCM, 5%O, 95%M | 0.05         |
|             |                  |              |
|             |                  |              |
|             |                  |              |
|             |                  |              |

**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 Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 51595 **DST#: 5**  
Test Start: 2013.02.23 @ 16:16:00

**Tool Information**

|                           |                    |                         |                   |                                    |
|---------------------------|--------------------|-------------------------|-------------------|------------------------------------|
| Drill Pipe:               | Length: 3549.00 ft | Diameter: 3.80 inches   | Volume: 49.78 bbl | Tool Weight: 2200.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches   | Volume: 0.00 bbl  | Weight set on Packer: 30000.00 lb  |
| Drill Collar:             | Length: 31.00 ft   | Diameter: 2.25 inches   | Volume: 0.15 bbl  | Weight to Pull Loose: 50000.00 lb  |
|                           |                    | Total Volume: 49.93 bbl |                   | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 15.00 ft           |                         |                   | String Weight: Initial 46000.00 lb |
| Depth to Top Packer:      | 3588.00 ft         |                         |                   | Final 46000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                         |                   |                                    |
| Interval between Packers: | 24.00 ft           |                         |                   |                                    |
| Tool Length:              | 47.00 ft           |                         |                   |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches   |                   |                                    |

Tool Comments: I ran a shale packer as the bottom packer, however when I put the shale packer into the tool diagram it messes up my anchor. So I left the bottom packer as a regular packer in the diagram, but we did run a shale packer. Cody Bloedorn.

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3566.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3571.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3576.00    |                               |
| Safety Joint     | 2.00        |            |          | 3578.00    |                               |
| Packer           | 5.00        |            |          | 3583.00    | 23.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3588.00    |                               |
| Stubb            | 1.00        |            |          | 3589.00    |                               |
| Recorder         | 0.00        | 8369       | Inside   | 3589.00    |                               |
| Recorder         | 0.00        | 8700       | Outside  | 3589.00    |                               |
| Perforations     | 20.00       |            |          | 3609.00    |                               |
| Bullnose         | 3.00        |            |          | 3612.00    | 24.00 Bottom Packers & Anchor |

**Total Tool Length: 47.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N. Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 51595      **DST#: 5**  
Test Start: 2013.02.23 @ 16:16:00

## Mud and Cushion Information

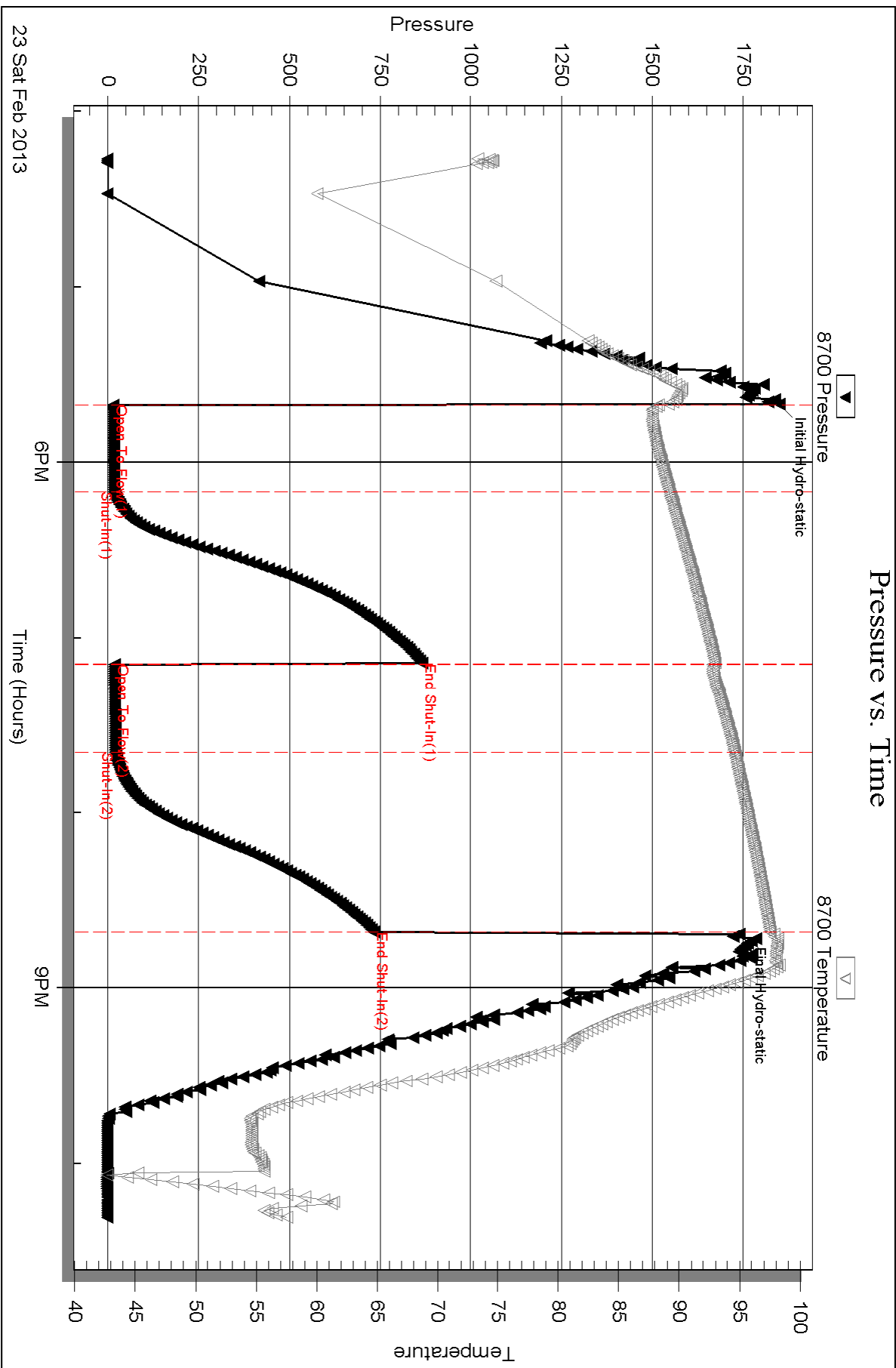
|                                  |                            |                 |         |
|----------------------------------|----------------------------|-----------------|---------|
| Mud Type: Gel Chem               | Cushion Type:              | Oil API:        | deg API |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: | ppm     |
| Viscosity: 48.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 7.59 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |         |
| Salinity: 7600.00 ppm            |                            |                 |         |
| Filter Cake: inches              |                            |                 |         |

## Recovery Information

Recovery Table

| Length<br>ft | Description      | Volume<br>bbl |
|--------------|------------------|---------------|
| 10.00        | VSOCM, 5%O, 95%M | 0.049         |

Total Length: 10.00 ft      Total Volume: 0.049 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:



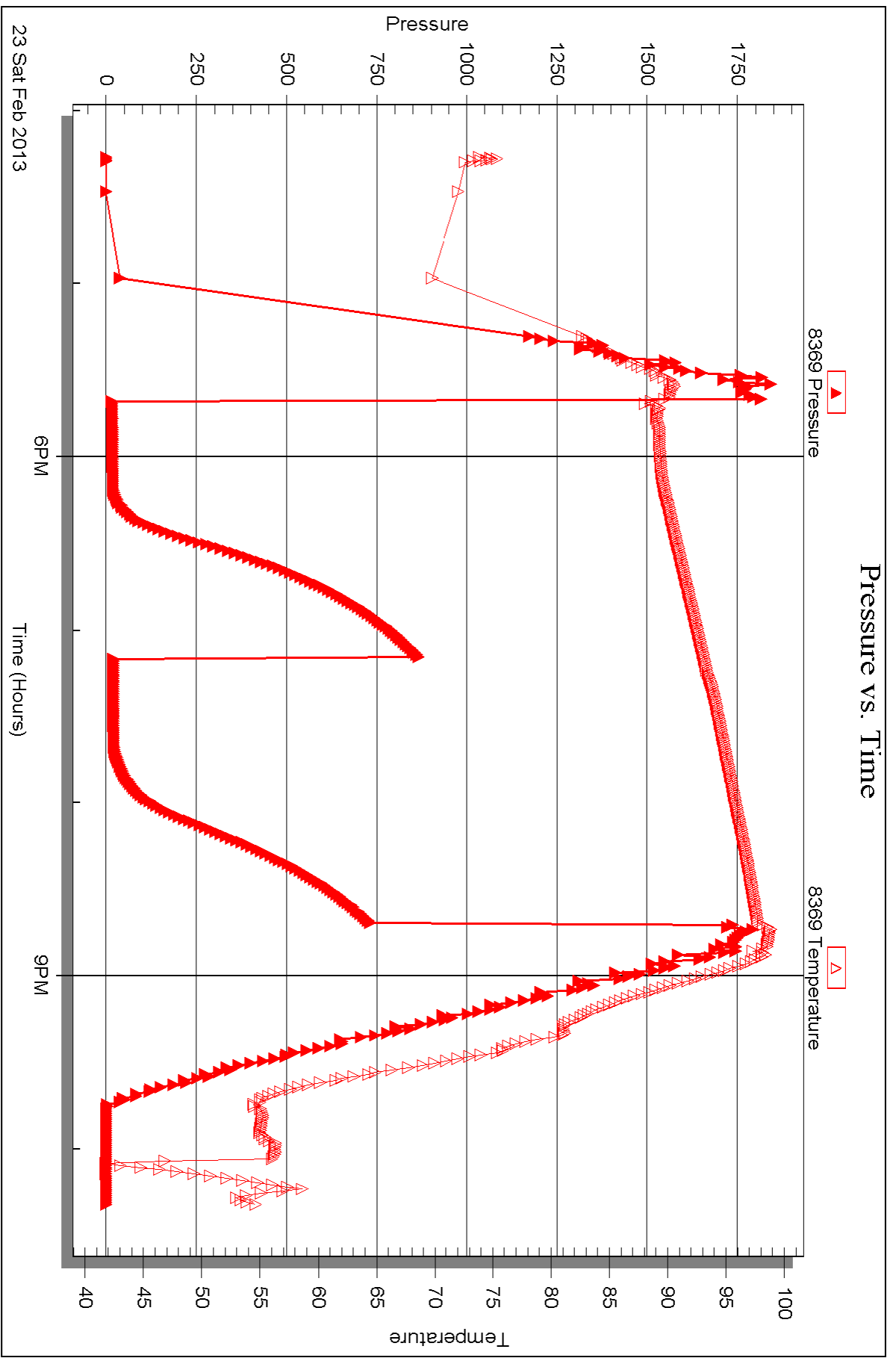
Serial #: 8369

Inside

Murfin Drilling Co Inc

Emmerentia #1-23

DST Test Number: 5







## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Ken Dean

### **Emmerentia #1-23**

#### **23-15s-19w Ellis,KS**

Start Date: 2013.02.24 @ 09:10:00

End Date: 2013.02.24 @ 13:11:30

Job Ticket #: 51596                      DST #: 6

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

Printed: 2013.03.06 @ 13:41:21







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Murfin Drilling Co Inc  
250 N. Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 51596 **DST#: 6**  
Test Start: 2013.02.24 @ 09:10:00

## Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3549.00 ft | Diameter: 3.80 inches | Volume: 49.78 bbl              | Tool Weight: 2200.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 30000.00 lb  |
| Drill Collar:             | Length: 31.00 ft   | Diameter: 2.25 inches | Volume: 0.15 bbl               | Weight to Pull Loose: 52000.00 lb  |
|                           |                    |                       | <u>Total Volume: 49.93 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 16.00 ft           |                       |                                | String Weight: Initial 46000.00 lb |
| Depth to Top Packer:      | 3587.00 ft         |                       |                                | Final 48000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 40.00 ft           |                       |                                |                                    |
| Tool Length:              | 63.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

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

|                 |       |      |         |         |                               |
|-----------------|-------|------|---------|---------|-------------------------------|
| Change Over Sub | 1.00  |      |         | 3565.00 |                               |
| Shut In Tool    | 5.00  |      |         | 3570.00 |                               |
| Hydraulic tool  | 5.00  |      |         | 3575.00 |                               |
| Safety Joint    | 2.00  |      |         | 3577.00 |                               |
| Packer          | 5.00  |      |         | 3582.00 | 23.00 Bottom Of Top Packer    |
| Packer          | 5.00  |      |         | 3587.00 |                               |
| Stubb           | 1.00  |      |         | 3588.00 |                               |
| Recorder        | 0.00  | 8369 | Inside  | 3588.00 |                               |
| Recorder        | 0.00  | 8700 | Outside | 3588.00 |                               |
| Perforations    | 3.00  |      |         | 3591.00 |                               |
| Change Over Sub | 1.00  |      |         | 3592.00 |                               |
| Drill Pipe      | 31.00 |      |         | 3623.00 |                               |
| Change Over Sub | 1.00  |      |         | 3624.00 |                               |
| Bullnose        | 3.00  |      |         | 3627.00 | 40.00 Bottom Packers & Anchor |

**Total Tool Length: 63.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N. Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 51596      **DST#: 6**  
Test Start: 2013.02.24 @ 09:10:00

## Mud and Cushion Information

|                                  |                            |                 |         |
|----------------------------------|----------------------------|-----------------|---------|
| Mud Type: Gel Chem               | Cushion Type:              | Oil API:        | deg API |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: | ppm     |
| Viscosity: 48.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 7.59 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |         |
| Salinity: 7600.00 ppm            |                            |                 |         |
| Filter Cake: inches              |                            |                 |         |

## Recovery Information

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 355.00       | Rig mud     | 4.697         |

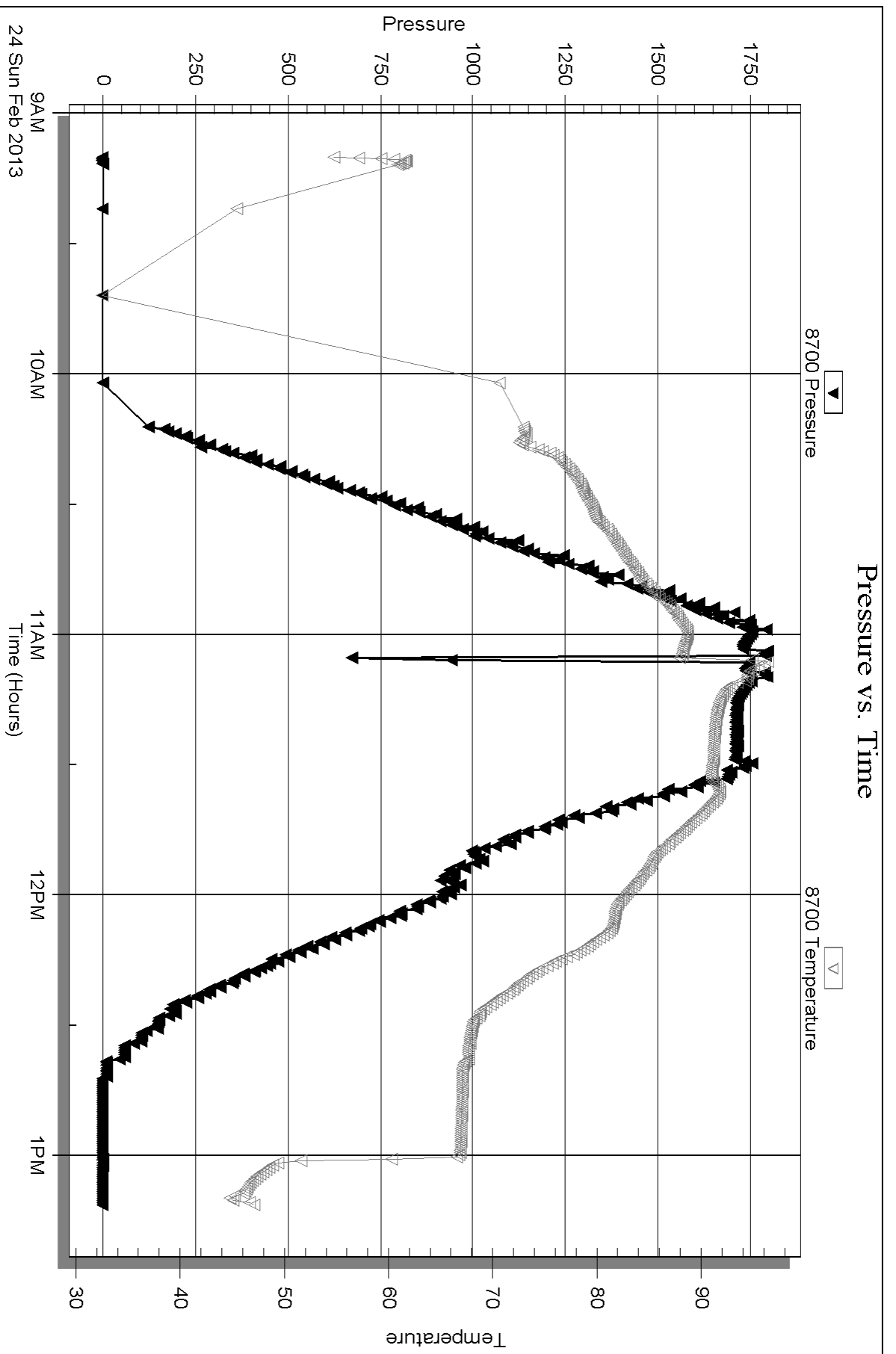
Total Length: 355.00 ft      Total Volume: 4.697 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

Serial #: 8700

Outside Murfin Drilling Co Inc

Emergentia #1-23

DST Test Number: 6



Triobite Testing, Inc

Ref. No: 51596

Printed: 2013.03.06 @ 13:41:24

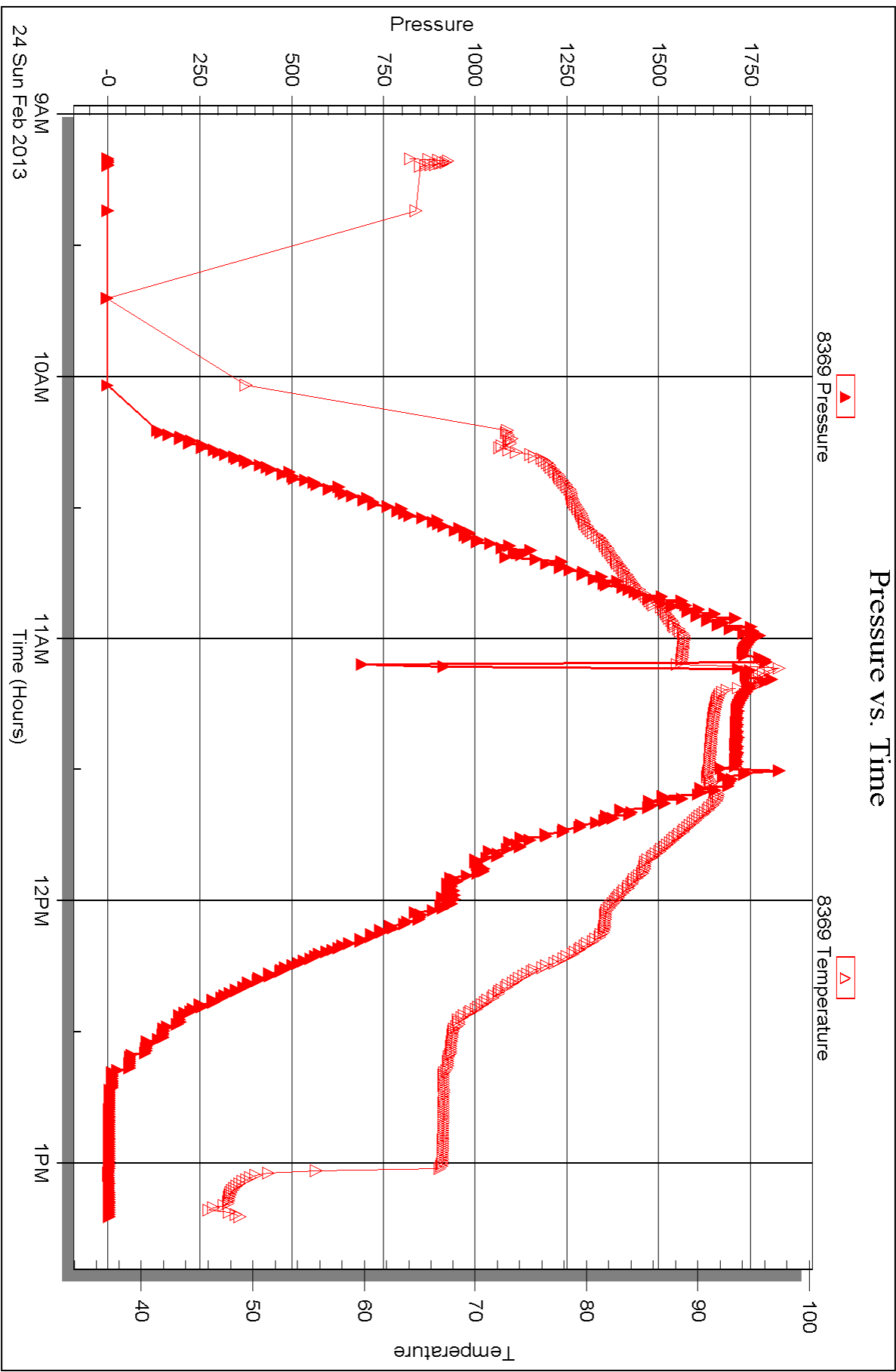
Serial #: 8369

Inside

Murfin Drilling Co Inc

Emergentia #1-23

DST Test Number: 6





## DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N. Water Ste 300  
Wichita KS 67202

ATTN: Ken Dean

### **Emmerentia #1-23**

### **23-15s-19w Ellis,KS**

Start Date: 2013.02.24 @ 13:29:00

End Date: 2013.02.24 @ 20:26:45

Job Ticket #: 51570                      DST #: 7

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.03.06 @ 13:40:39





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Murfin Drilling Co Inc  
 250 N. Water Ste 300  
 Wichita KS 67202  
 ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
 Job Ticket: 51570 **DST#: 7**  
 Test Start: 2013.02.24 @ 13:29:00

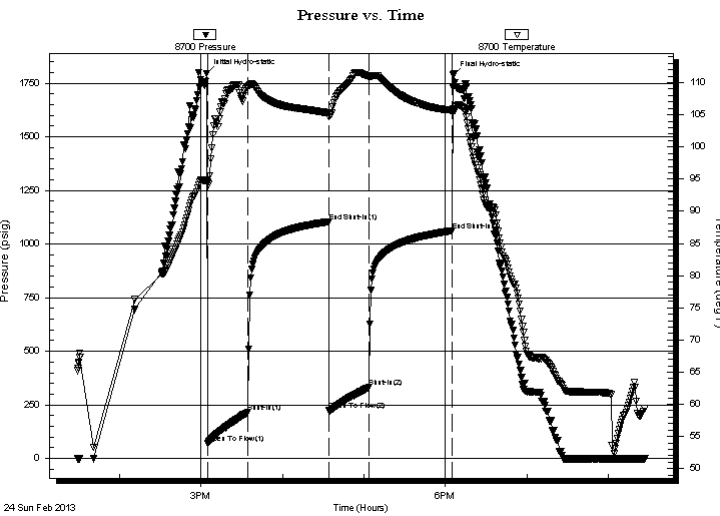
## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 15:04:45 Tester: Cody Bloedorn  
 Time Test Ended: 20:26:45 Unit No: 42  
 Interval: **3523.00 ft (KB) To 3627.00 ft (KB) (TVD)** Reference Elevations: 1981.00 ft (KB)  
 Total Depth: 3627.00 ft (KB) (TVD) 1976.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

## Serial #: 8700 Outside

Press @ Run Depth: 332.73 psig @ 3528.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.02.24 End Date: 2013.02.24 Last Calib.: 2013.02.24  
 Start Time: 13:29:05 End Time: 20:26:44 Time On Btm: 2013.02.24 @ 15:04:15  
 Time Off Btm: 2013.02.24 @ 18:05:30

TEST COMMENT: 30 - IF- B.O.B. in 4 Minutes  
 60 - IS- No return  
 30 - FF- B.O.B. in 6 Minutes  
 60 - FS- No return



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1795.45         | 94.75        | Initial Hydro-static |
| 1           | 72.19           | 94.33        | Open To Flow (1)     |
| 31          | 216.49          | 109.32       | Shut-In(1)           |
| 90          | 1103.20         | 105.29       | End Shut-In(1)       |
| 91          | 223.00          | 104.73       | Open To Flow (2)     |
| 120         | 332.73          | 110.93       | Shut-In(2)           |
| 181         | 1062.20         | 105.71       | End Shut-In(2)       |
| 182         | 1787.61         | 105.95       | Final Hydro-static   |

## Recovery

| Length (ft) | Description    | Volume (bbl) |
|-------------|----------------|--------------|
| 107.00      | Mud, 100%M     | 1.23         |
| 186.00      | WM, 20%W, 80%M | 2.61         |
| 310.00      | Mud, 100%M     | 4.35         |
|             |                |              |
|             |                |              |

\* 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

23-15s-19w Ellis, KS

250 N. Water Ste 300  
Wichita KS 67202

Emmerentia #1-23

Job Ticket: 51570

**DST#: 7**

ATTN: Ken Dean

Test Start: 2013.02.24 @ 13:29:00

### GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock:                      ft (KB)

Time Tool Opened: 15:04:45

Time Test Ended: 20:26:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Cody Bloedorn

Unit No: 42

Interval: **3523.00 ft (KB) To 3627.00 ft (KB) (TVD)**

Total Depth: 3627.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1981.00 ft (KB)

1976.00 ft (CF)

KB to GR/CF: 5.00 ft

**Serial #: 8369**      **Inside**

Press @ Run Depth:                    psig @ 3528.00 ft (KB)

Start Date: 2013.02.24

End Date:

2013.02.24

Capacity: 8000.00 psig

Last Calib.:

2013.02.24

Start Time: 13:29:05

End Time:

20:27:59

Time On Btm:

Time Off Btm:

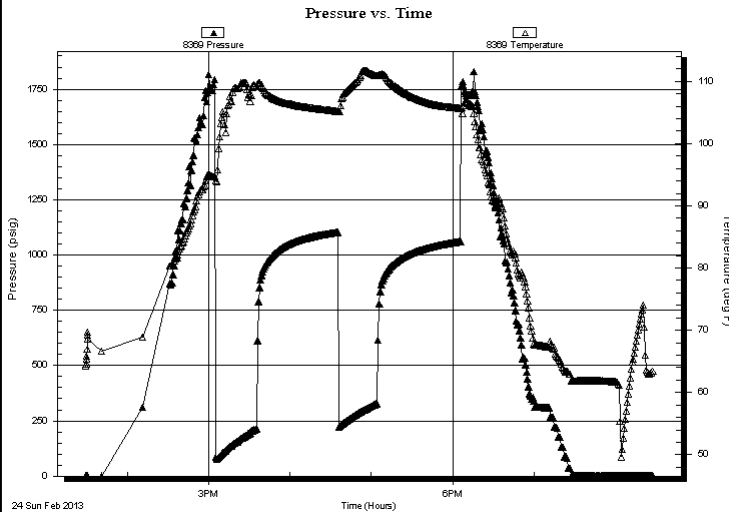
TEST COMMENT: 30 - IF- B.O.B. in 4 Minutes

60 - IS- No return

30 - FF- B.O.B. in 6 Minutes

60 - FS- No return

### PRESSURE SUMMARY



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

### Recovery

### Gas Rates

| Length (ft) | Description    | Volume (bbl) |
|-------------|----------------|--------------|
| 107.00      | Mud, 100%M     | 1.23         |
| 186.00      | WM, 20%W, 80%M | 2.61         |
| 310.00      | Mud, 100%M     | 4.35         |
|             |                |              |
|             |                |              |
|             |                |              |

|  | 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 Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis, KS**  
**Emmerentia #1-23**  
Job Ticket: 51570      **DST#: 7**  
Test Start: 2013.02.24 @ 13:29:00

**Tool Information**

|                           |                    |                         |                   |                                    |
|---------------------------|--------------------|-------------------------|-------------------|------------------------------------|
| Drill Pipe:               | Length: 3487.00 ft | Diameter: 3.80 inches   | Volume: 48.91 bbl | Tool Weight: 2200.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches   | Volume: 0.00 bbl  | Weight set on Packer: 30000.00 lb  |
| Drill Collar:             | Length: 30.00 ft   | Diameter: 2.25 inches   | Volume: 0.15 bbl  | Weight to Pull Loose: 54000.00 lb  |
|                           |                    | Total Volume: 49.06 bbl |                   | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 17.00 ft           |                         |                   | String Weight: Initial 46000.00 lb |
| Depth to Top Packer:      | 3523.00 ft         |                         |                   | Final 49000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                         |                   |                                    |
| Interval between Packers: | 104.00 ft          |                         |                   |                                    |
| Tool Length:              | 127.00 ft          |                         |                   |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches   |                   |                                    |

Tool Comments:

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

|                 |       |      |         |         |                                     |
|-----------------|-------|------|---------|---------|-------------------------------------|
| Change Over Sub | 1.00  |      |         | 3501.00 |                                     |
| Shut In Tool    | 5.00  |      |         | 3506.00 |                                     |
| Hydraulic tool  | 5.00  |      |         | 3511.00 |                                     |
| Safety Joint    | 2.00  |      |         | 3513.00 |                                     |
| Packer          | 5.00  |      |         | 3518.00 | 23.00      Bottom Of Top Packer     |
| Packer          | 5.00  |      |         | 3523.00 |                                     |
| Stubb           | 1.00  |      |         | 3524.00 |                                     |
| Perforations    | 3.00  |      |         | 3527.00 |                                     |
| Change Over Sub | 1.00  |      |         | 3528.00 |                                     |
| Recorder        | 0.00  | 8369 | Inside  | 3528.00 |                                     |
| Recorder        | 0.00  | 8700 | Outside | 3528.00 |                                     |
| Blank Spacing   | 62.00 |      |         | 3590.00 |                                     |
| Change Over Sub | 1.00  |      |         | 3591.00 |                                     |
| Perforations    | 33.00 |      |         | 3624.00 |                                     |
| Bullnose        | 3.00  |      |         | 3627.00 | 104.00      Bottom Packers & Anchor |

**Total Tool Length: 127.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Murfin Drilling Co Inc  
250 N.Water Ste 300  
Wichita KS 67202  
ATTN: Ken Dean

**23-15s-19w Ellis,KS**  
**Emmerentia #1-23**  
Job Ticket: 51570      **DST#: 7**  
Test Start: 2013.02.24 @ 13:29:00

## Mud and Cushion Information

|                             |                            |                 |           |
|-----------------------------|----------------------------|-----------------|-----------|
| Mud Type: Gel Chem          | Cushion Type:              | Oil API:        | deg API   |
| Mud Weight: lb/gal          | Cushion Length: ft         | Water Salinity: | 14000 ppm |
| Viscosity: 43.00 sec/qt     | Cushion Volume: bbl        |                 |           |
| Water Loss: in <sup>3</sup> | Gas Cushion Type:          |                 |           |
| Resistivity: ohm.m          | Gas Cushion Pressure: psig |                 |           |
| Salinity: ppm               |                            |                 |           |
| Filter Cake: inches         |                            |                 |           |

## Recovery Information

Recovery Table

| Length<br>ft | Description    | Volume<br>bbl |
|--------------|----------------|---------------|
| 107.00       | Mud, 100%M     | 1.228         |
| 186.00       | WM, 20%W, 80%M | 2.609         |
| 310.00       | Mud, 100%M     | 4.348         |

Total Length: 603.00 ft      Total Volume: 8.185 bbl

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

Laboratory Name:      Laboratory Location:

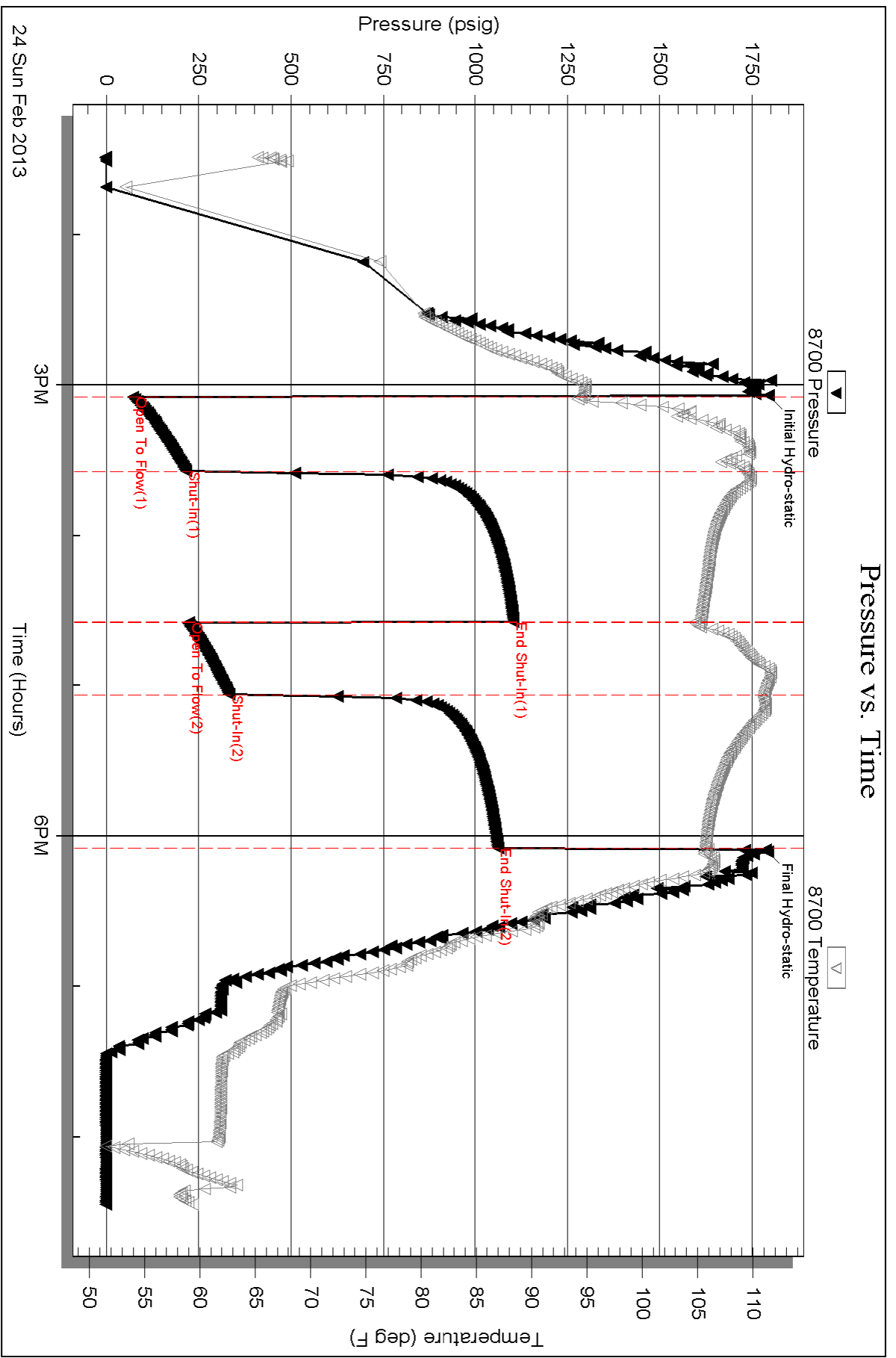
Recovery Comments: Salinity: 1.25 @ 32 Degrees = 14000

Serial #: 8700

Outside Murfin Drilling Co Inc

Emmerentia #1-23

DST Test Number: 7



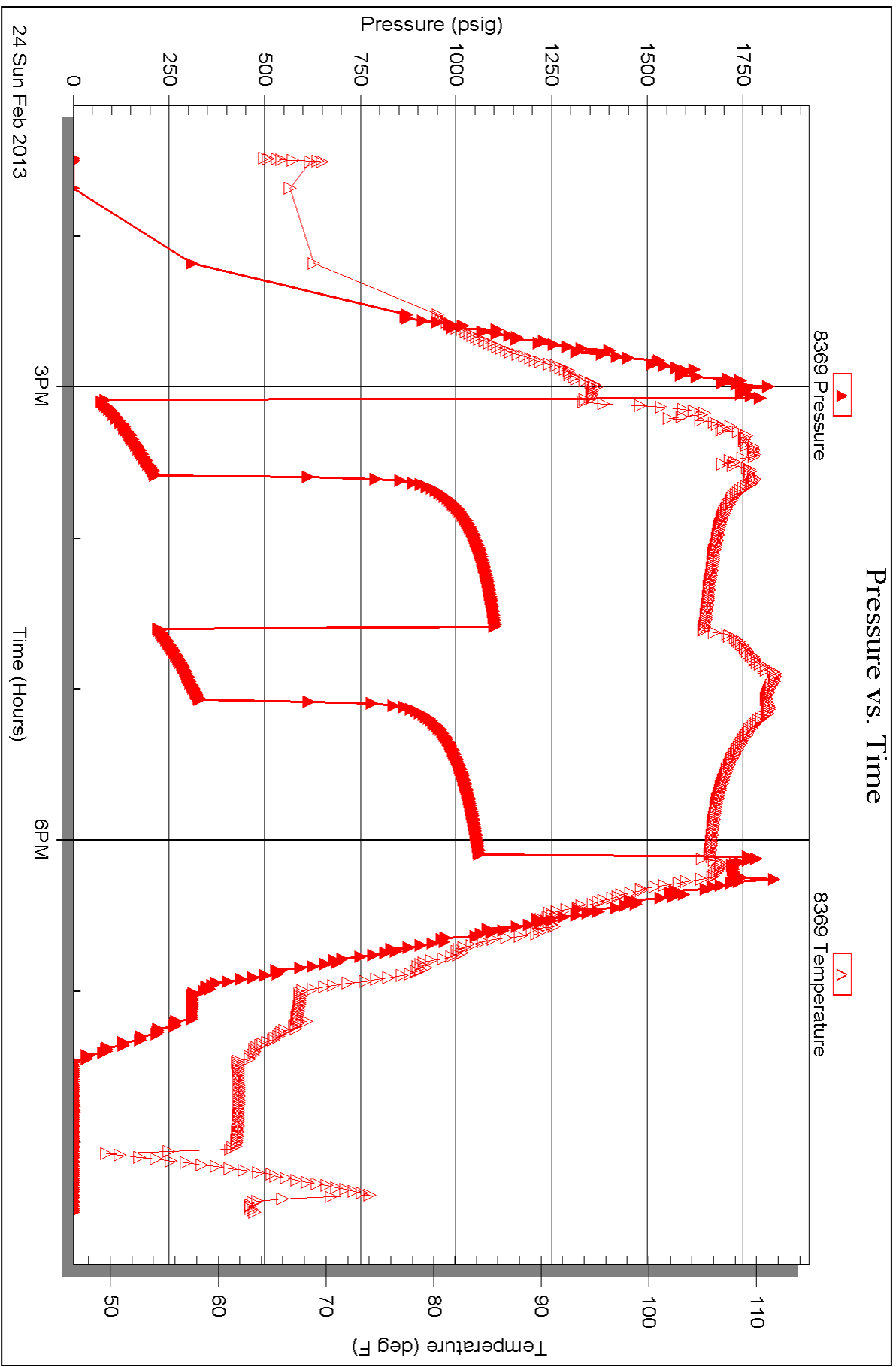
Serial #: 8369

Inside

Murfin Drilling Co Inc

Emergentia #1-23

DST Test Number: 7





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50355

4/10

Well Name & No. Emmerentia #1-23 Test No. 1 Date 2-17-13  
 Company Murfin Drilling Co Inc Elevation 1981 KB 1976 GL  
 Address 250 N. WATER ST 300 WICHITA, Ks 67202-1216  
 Co. Rep / Geo. Rocky Milford Rig Murfin rig 16  
 Location: Sec. 23 Twp. 15<sup>s</sup> Rge. 19<sup>w</sup> Co. ELLIS State Ks

Interval Tested 3263-3318 Zone Tested LKC A-B  
 Anchor Length 55 Drill Pipe Run 3232 Mud Wt. 9.2  
 Top Packer Depth 3258 Drill Collars Run 30 Vis 54  
 Bottom Packer Depth 3263 Wt. Pipe Run - WL 7.6  
 Total Depth 3318 Chlorides 6000 ppm System LCM TR

Blow Description IFP - WEAK BLOW 1/2" TO 2" BLOW  
ISIP - NO BLOW  
FFP - WEAK BLOW 1/2" TO 1" BLOW  
FSTP - NO BLOW

| Rec        | Feet of              | %gas | %oil | %water | %mud |
|------------|----------------------|------|------|--------|------|
| <u>100</u> | <u>Mud</u>           |      |      |        |      |
|            | <u>w/show of a l</u> |      |      |        |      |
|            |                      |      |      |        |      |
|            |                      |      |      |        |      |
|            |                      |      |      |        |      |

Rec Total 100 BHT 102 Gravity - API RW - @ - ° F Chlorides - ppm

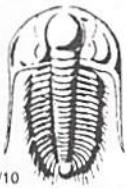
|                                     |   |  |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1588</u> | <input checked="" type="checkbox"/> Test <u>1150</u>          | T-On Location <u>1850</u>                    |
| (B) First Initial Flow <u>16</u>    | <input type="checkbox"/> Jars                                 | T-Started <u>2035</u>                        |
| (C) First Final Flow <u>42</u>      | <input checked="" type="checkbox"/> Safety Joint <u>75</u>    | T-Open <u>2240</u>                           |
| (D) Initial Shut-In <u>777</u>      | <input type="checkbox"/> Circ Sub                             | T-Pulled <u>0240</u>                         |
| (E) Second Initial Flow <u>44</u>   | <input type="checkbox"/> Hourly Standby                       | T-Out <u>0435</u>                            |
| (F) Second Final Flow <u>64</u>     | <input checked="" type="checkbox"/> Mileage <u>35RT</u> 54.25 | Comments                                     |
| (G) Final Shut-In <u>761</u>        | <input type="checkbox"/> Sampler                              |  |
| (H) Final Hydrostatic <u>1562</u>   | <input type="checkbox"/> Straddle                             | <input type="checkbox"/> Ruined Shale Packer |
|                                     | <input type="checkbox"/> Shale Packer                         | <input type="checkbox"/> Ruined Packer       |

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

Sub Total 1279.25

Approved By Rocky Milford Our Representative Ray Schwager Thank you  
 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. 50356

Well Name & No. Emmerentia #1-23 Test No. 2 Date 2-18-13  
 Company Murfin Drilling Co Inc Elevation 1981 KB 1976 GL  
 Address 250 N. WATER ST 300 WICHITA, Ks 67202-1216  
 Co. Rep / Geo. Rocky Milford Rig Murfin rig 16  
 Location: Sec. 23 Twp. 15<sup>s</sup> Rge. 19<sup>w</sup> Co. ELLIS State Ks

Interval Tested 3317-3372 Zone Tested LKC D-F  
 Anchor Length 55 Drill Pipe Run 3295 Mud Wt. 9.2  
 Top Packer Depth 3312 Drill Collars Run 30 Vis 58  
 Bottom Packer Depth 3317 Wt. Pipe Run - WL 8  
 Total Depth 3372 Chlorides 8400 ppm System LCM TR

Blow Description IFP - WEAK TO A FAIR BLOW 1/2" TO 4 1/4" BLOW  
ISIP - NO BLOW  
FFP - WEAK BLOW THRU-OUT 1/4" TO 2" BLOW  
FSIP - NO BLOW

| Rec        | Feet of      | %gas | %oil | %water | %mud |
|------------|--------------|------|------|--------|------|
| <u>150</u> | <u>WATER</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 150 BHT 103 Gravity - API RW .19 @ 55 ° F Chlorides 55000 ppm

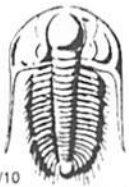
|                                     |   |  |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1618</u> | <input checked="" type="checkbox"/> Test <u>1150</u>          | T-On Location <u>1310</u>                    |
| (B) First Initial Flow <u>17</u>    | <input type="checkbox"/> Jars                                 | T-Started <u>1335</u>                        |
| (C) First Final Flow <u>60</u>      | <input checked="" type="checkbox"/> Safety Joint <u>75</u>    | T-Open <u>1515</u>                           |
| (D) Initial Shut-In <u>634</u>      | <input type="checkbox"/> Circ Sub                             | T-Pulled <u>1915</u>                         |
| (E) Second Initial Flow <u>59</u>   | <input type="checkbox"/> Hourly Standby                       | T-Out <u>2059</u>                            |
| (F) Second Final Flow <u>102</u>    | <input checked="" type="checkbox"/> Mileage <u>35RT</u> 54.25 | Comments                                     |
| (G) Final Shut-In <u>559</u>        | <input type="checkbox"/> Sampler                              |  |
| (H) Final Hydrostatic <u>1603</u>   | <input type="checkbox"/> Straddle                             | <input type="checkbox"/> Ruined Shale Packer |
|                                     | <input type="checkbox"/> Shale Packer                         | <input type="checkbox"/> Ruined Packer       |

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

Sub Total 1279.25

Approved By Rocky Milford Our Representative RAY SCHWAGER Thank you  
 Trilobite Testing Inc. shall not be liable for damaged or 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. 50357

Well Name & No. Emmeentia # 1-23 Test No. 3 Date 2-19-13  
 Company Murfin Drilling Co Inc Elevation 1981 KB 1976 GL  
 Address 250 N. WATER ST 300 WICHITA, KS 67202-1216  
 Co. Rep / Geo. Rocky Milford Rig Murfin rig 16  
 Location: Sec. 23 Twp. 15<sup>s</sup> Rge. 19<sup>w</sup> Co. ELLIS State Ks

Interval Tested 3405-3459 Zone Tested LKC H-I  
 Anchor Length 54 Drill Pipe Run 3360 Mud Wt. 9.3  
 Top Packer Depth 3400 Drill Collars Run 30 Vis 53  
 Bottom Packer Depth 3405 Wt. Pipe Run - WL 8  
 Total Depth 3459 Chlorides 8400 ppm System LCM TR

Blow Description IFP - WEAK Blow then-out 1/4" Blow  
ISIP - NO Blow  
FFP - NO Blow  
FSIP - NO Blow

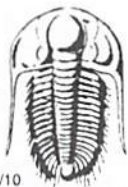
| Rec       | Feet of    | %gas | %oil | %water | %mud |
|-----------|------------|------|------|--------|------|
| <u>10</u> | <u>Mud</u> |      |      |        |      |
|           |            |      |      |        |      |
|           |            |      |      |        |      |
|           |            |      |      |        |      |

Rec Total 10 BHT 98 Gravity - API RW - @ - ° F Chlorides - ppm

(A) Initial Hydrostatic 1677  Test 1150 T-On Location 0725  
 (B) First Initial Flow 17  Jars \_\_\_\_\_ T-Started 0740  
 (C) First Final Flow 22  Safety Joint 75 T-Open 0915  
 (D) Initial Shut-In 823  Circ Sub \_\_\_\_\_ T-Pulled 1215  
 (E) Second Initial Flow 22  Hourly Standby \_\_\_\_\_ T-Out 1334  
 (F) Second Final Flow 25  Mileage 35RT 54.25 Comments \_\_\_\_\_  
 (G) Final Shut-In 785  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1659  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_

Initial Open 30  Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Shut-In 60  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Flow 30  Day Standby \_\_\_\_\_ Total 1279.25  
 Final Shut-In 60  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1279.25

Approved By Rocky Milford Our Representative RAY Schwaner *thank you*  
 Trilobite Testing Inc. shall not be liable for damages 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. 50358

4/10

Well Name & No. Emmerentia #1-23 Test No. 4 Date 2-19-13  
 Company Murfin Drilling Co Inc Elevation 1981 KB 1976 GL  
 Address 250 N. WATER STE 300 WICHITA KS 67202-1216  
 Co. Rep / Geo. Rocky Milford Rig Murfin rig 16  
 Location: Sec. 23 Twp. 15<sup>s</sup> Rge. 19<sup>w</sup> Co. Ellis State Ks

Interval Tested 3455-3507 Zone Tested LKC J-K  
 Anchor Length 52 Drill Pipe Run 3413 Mud Wt. 9.3  
 Top Packer Depth 3450 Drill Collars Run 30 Vis 73  
 Bottom Packer Depth 3455 Wt. Pipe Run - WL 8  
 Total Depth 3507 Chlorides 8200 ppm System LCM TR  
 Blow Description IFP - WEAK Blow thru-out 1/2" to 3/4" Blow  
ISIP - NO BLOW  
FFP - WEAK Blow thru-out surface to 1/4" Blow  
FSIP - NO BLOW

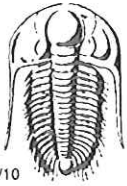
| Rec      | Feet of              | %gas | %oil | %water | %mud |
|----------|----------------------|------|------|--------|------|
| <u>5</u> | <u>Mud</u>           |      |      |        |      |
|          | <u>w/shallow oil</u> |      |      |        |      |
|          |                      |      |      |        |      |
|          |                      |      |      |        |      |
|          |                      |      |      |        |      |

Rec Total 5 BHT 96 Gravity - API RW - @ - ° F Chlorides - ppm

|                                     |   |  |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1702</u> | <input checked="" type="checkbox"/> Test <u>1150</u>          | T-On Location <u>2100</u>                    |
| (B) First Initial Flow <u>17</u>    | <input type="checkbox"/> Jars                                 | T-Started <u>2120</u>                        |
| (C) First Final Flow <u>17</u>      | <input checked="" type="checkbox"/> Safety Joint <u>75</u>    | T-Open <u>2320</u>                           |
| (D) Initial Shut-In <u>40</u>       | <input type="checkbox"/> Circ Sub                             | T-Pulled <u>0320</u>                         |
| (E) Second Initial Flow <u>17</u>   | <input type="checkbox"/> Hourly Standby                       | T-Out <u>0508</u>                            |
| (F) Second Final Flow <u>18</u>     | <input checked="" type="checkbox"/> Mileage <u>35RT</u> 54.25 | Comments                                     |
| (G) Final Shut-In <u>30</u>         | <input type="checkbox"/> Sampler                              |  |
| (H) Final Hydrostatic <u>1670</u>   | <input type="checkbox"/> Straddle                             | <input type="checkbox"/> Ruined Shale Packer |
|                                     | <input type="checkbox"/> Shale Packer                         | <input type="checkbox"/> Ruined Packer       |
| Initial Open <u>30</u>              | <input type="checkbox"/> Extra Packer                         | <input type="checkbox"/> Extra Copies        |
| Initial Shut-In <u>60</u>           | <input type="checkbox"/> Extra Recorder                       | Sub Total <u>0</u>                           |
| Final Flow <u>60</u>                | <input type="checkbox"/> Day Standby                          | Total <u>1279.25</u>                         |
| Final Shut-In <u>90</u>             | <input type="checkbox"/> Accessibility                        | MP/DST Disc't                                |
|                                     | Sub Total <u>1279.25</u>                                      |  |

Approved By Rocky Milford Our Representative Ray Schwagn *thank you*  
 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. 51595

4/10

Well Name & No. Emmerentia 1-23 Test No. 5 Date 2-23-13  
 Company Murfin Drilling Co Inc Elevation 1981 KB 1976 GL  
 Address 250 N. Water, STE 300, Wichita KS, 67202  
 Co. Rep / Geo. Ken Dean Rig Murfin #16  
 Location: Sec. 23 Twp. 15S Rge. 19W Co. Ellis State KS

Interval Tested 3588-3612 Zone Tested Conglomerate Sand  
 Anchor Length 24' Drill Pipe Run 3549' Mud Wt. 9.3  
 Top Packer Depth 3583 Drill Collars Run 31' Vis 48  
 Bottom Packer Depth 3588 Wt. Pipe Run — WL 7.6  
 Total Depth 3612 Chlorides 7,600 ppm System LCM —

Blow Description IF- 1" blow  
ISI- No return  
FF- No blow  
FSI- No return

| Rec        | Feet of      | %gas     | %oil     | %water    | %mud     |
|------------|--------------|----------|----------|-----------|----------|
| <u>10'</u> | <u>VSOCM</u> | <u>5</u> | <u>—</u> | <u>95</u> | <u>—</u> |
| Rec        | Feet of      | %gas     | %oil     | %water    | %mud     |
| Rec        | Feet of      | %gas     | %oil     | %water    | %mud     |
| Rec        | Feet of      | %gas     | %oil     | %water    | %mud     |
| Rec        | Feet of      | %gas     | %oil     | %water    | %mud     |

Rec Total 10' BHT 97° Gravity — API RW — @ — ° F Chlorides — ppm

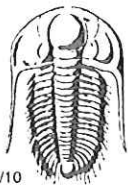
|                                     |  |   |
|-------------------------------------|--|---|
| (A) Initial Hydrostatic <u>1848</u> | <input checked="" type="checkbox"/> Test <u>1150</u>       | T-On Location <u>3:58 pm</u>                          |
| (B) First Initial Flow <u>15</u>    | <input type="checkbox"/> Jars <u>—</u>                     | T-Started <u>4:16 pm</u>                              |
| (C) First Final Flow <u>17</u>      | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>5:41 pm</u>                                 |
| (D) Initial Shut-In <u>865</u>      | <input type="checkbox"/> Circ Sub <u>—</u>                 | T-Pulled <u>8:41 pm</u>                               |
| (E) Second Initial Flow <u>19</u>   | <input type="checkbox"/> Hourly Standby <u>—</u>           | T-Out <u>10:20 pm</u>                                 |
| (F) Second Final Flow <u>20</u>     | <input checked="" type="checkbox"/> Mileage <u>54.25</u>   | Comments <u>—</u>                                     |
| (G) Final Shut-In <u>732</u>        | <input type="checkbox"/> Sampler <u>—</u>                  | <input type="checkbox"/> Ruined Shale Packer <u>—</u> |
| (H) Final Hydrostatic <u>1738</u>   | <input type="checkbox"/> Straddle <u>—</u>                 | <input type="checkbox"/> Ruined Packer <u>—</u>       |

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

Sub Total 1529.25

Approved By \_\_\_\_\_ Our Representative Cody Blake

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51596

Well Name & No. Emmerentia 1-23 Test No. 6 Date 2-24-13  
 Company Murfin Drilling Co Inc Elevation 1981 KB 1976 GL  
 Address 250 N. Water, STE 300, Wichita KS, 67202  
 Co. Rep / Geo. Ken Dean Rig Murfin #16  
 Location: Sec. 23 Twp. 15s Rge. 19w Co. Ellis State KS

Interval Tested 3587 - 3627 Zone Tested Arbuckle  
 Anchor Length 40' Drill Pipe Run 3549' Mud Wt. 9.3  
 Top Packer Depth 3582 Drill Collars Run 31' Vis 48  
 Bottom Packer Depth 3587 Wt. Pipe Run — WL 7.6  
 Total Depth 3627 Chlorides 7,600 ppm System LCM —  
 Blow Description IF - Opened tool, Packer failure. Pulled tool, bled off  
ISI - Pressure & refilled hole. opened again. Packer failure.  
FF - \* Pulled Tool \*  
FSI -

| Rec        | Feet of        | %gas | %oil | %water | %mud |
|------------|----------------|------|------|--------|------|
| <u>355</u> | <u>Rig Mud</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 |

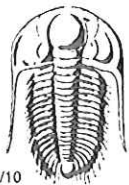
Rec Total 355 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic \_\_\_\_\_  Test 950 T-On Location 8:28am  
 (B) First Initial Flow \_\_\_\_\_  Jars \_\_\_\_\_ T-Started 9:10am  
 (C) First Final Flow \_\_\_\_\_  Safety Joint 75 T-Open 11:06am  
 (D) Initial Shut-In \_\_\_\_\_  Circ Sub \_\_\_\_\_ T-Pulled 11:20am  
 (E) Second Initial Flow \_\_\_\_\_  Hourly Standby \_\_\_\_\_ T-Out 1:12 pm  
 (F) Second Final Flow \_\_\_\_\_  Mileage 54.25 Comments \_\_\_\_\_  
 (G) Final Shut-In \_\_\_\_\_  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic \_\_\_\_\_  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer 250  Ruined Packer \_\_\_\_\_  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Initial Open \_\_\_\_\_  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Initial Shut-In \_\_\_\_\_  Day Standby \_\_\_\_\_ Total 1329.25  
 Final Flow \_\_\_\_\_  Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Final Shut-In \_\_\_\_\_ Sub Total 1329.25

Approved By \_\_\_\_\_ Our Representative Cody Bledorn

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 51597

4/10

Well Name & No. Emmerentic 1-23 Test No. 7 Date 2-24-13  
 Company Murfin Drilling Co INC Elevation 1981 KB 1976 GL  
 Address 250 N. Water STE 300, Wichita KS, 67202  
 Co. Rep / Geo. Ken Dean Rig Murfin #16  
 Location: Sec. 23 Twp. 15s Rge. 19w Co. Ellis State KS

Interval Tested 3523 - 3627 Zone Tested Arbuckle  
 Anchor Length 104' Drill Pipe Run 3487' Mud Wt. \_\_\_\_\_  
 Top Packer Depth 3518 Drill Collars Run 31' Vis 43  
 Bottom Packer Depth 3523 Wt. Pipe Run \_\_\_\_\_ WL \_\_\_\_\_  
 Total Depth 3627 Chlorides \_\_\_\_\_ ppm System \_\_\_\_\_ LCM \_\_\_\_\_

Blow Description IF - B.O.B. in 4 Minutes  
ISI - No return  
FF - B.O.B. in 6 Minutes  
FSL - No return

| Rec        | Feet of       | %gas       | %oil       | %water       | %mud       |
|------------|---------------|------------|------------|--------------|------------|
| <u>107</u> | <u>Mud</u>    |            |            | <u>100</u>   |            |
| <u>186</u> | <u>WM</u>     |            |            | <u>20</u>    | <u>80</u>  |
| <u>310</u> | <u>Mud</u>    |            |            | <u>100</u>   |            |
| Rec _____  | Feet of _____ | %gas _____ | %oil _____ | %water _____ | %mud _____ |
| Rec _____  | Feet of _____ | %gas _____ | %oil _____ | %water _____ | %mud _____ |

Rec Total 603' BHT 105° Gravity \_\_\_\_\_ API RW 1.25 @ 32 °F Chlorides 14,000 ppm

|                                     |   |  |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1795</u> | <input checked="" type="checkbox"/> Test <u>1150</u>                | T-On Location <u>8:28am</u>                        |
| (B) First Initial Flow <u>72</u>    | <input type="checkbox"/> Jars _____                                 | T-Started <u>1:29pm</u>                            |
| (C) First Final Flow <u>216</u>     | <input checked="" type="checkbox"/> Safety Joint <u>75</u>          | T-Open <u>3:05 pm</u>                              |
| (D) Initial Shut-In <u>1103</u>     | <input type="checkbox"/> Circ Sub _____                             | T-Pulled <u>6:05pm</u>                             |
| (E) Second Initial Flow <u>223</u>  | <input type="checkbox"/> Hourly Standby _____                       | T-Out <u>8:28pm</u>                                |
| (F) Second Final Flow <u>332</u>    | <input checked="" type="checkbox"/> Mileage <u>108.50</u> <u>X2</u> | Comments <u>loaded tools 2-25-13</u>               |
| (G) Final Shut-In <u>1062</u>       | <input type="checkbox"/> Sampler _____                              | <u>@ 3:10am</u>                                    |
| (H) Final Hydrostatic <u>1787</u>   | <input type="checkbox"/> Straddle _____                             | <input type="checkbox"/> Ruined Shale Packer _____ |

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

Shale Packer 250  
 Extra Packer \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_  
 Day Standby \_\_\_\_\_  
 Accessibility \_\_\_\_\_

Sub Total 1583.50

Sub Total 1583.50

Approved By \_\_\_\_\_

Our Representative Cody Bled

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.



**QUALITY OILWELL CEMENTING, INC.**  
 PO Box 32 - 740 West Wichita Ave, Russell KS 67665  
 Phone: 785-324-1041 fax: 785-483-1087  
 Email: cementing@ruraltel.net

Date: 3/2/2013  
 Invoice # 6420

P.O.#:

Due Date: 4/1/2013 ✓

Division: Russell

*acct. Prod. - L.H.*

# Invoice

**Contact:**  
 Murfin Drilling Company  
**Address/Job Location:**  
 Murfin Drilling Company  
 P.O. Box 288  
 Russell Ks 67665

USED FOR Drilling A+A  
 APPROVED [Signature]

**Reference:**  
 EMMERENTIA 1-23

**Description of Work:**  
 PLUG JOB

| Services / Items Included:                   | Quantity | Price       | Taxable | Item | Quantity | Price | Taxable |
|--|----------|-------------|---------|------|----------|-------|---------|
| Labor  |          | \$ 1,239.23 | Yes     |      |          |       |         |
| Common-Class A                               | 123      | \$ 1,674.63 | Yes     |      |          |       |         |
| Bulk Truck Matl-Material Service Charge      | 212      | \$ 460.34   | Yes     |      |          |       |         |
| POZ Mix-Standard                             | 82       | \$ 409.53   | Yes     |      |          |       |         |
| Pump Truck Mileage-Job to Nearest Camp       | 13       | \$ 140.86   | Yes     |      |          |       |         |
| Premium Gel (Bentonite)                      | 7        | \$ 123.73   | Yes     |      |          |       |         |
| Flo Seal                                     | 50       | \$ 108.57   | Yes     |      |          |       |         |
| Bulk Truck Mileage-Job to Nearest Bulk Plant | 13       | \$ 82.43    | Yes     |      |          |       |         |
| Dry Hole Plug                                | 1        | \$ 60.80    | Yes     |      |          |       |         |

*TO Plug*

**Invoice Terms:**

Net 30

|       |  |    |          |
|-------|--|----|----------|
|       | SubTotal:  | \$ | 4,300.12 |
|       | Discount Available <u>ONLY</u> if Invoice is Paid & Received within listed terms of invoice: | \$ | (645.02) |
| <hr/> |  |    |          |
|       | SubTotal for Taxable Items:  | \$ | 3,655.10 |
|       | SubTotal for Non-Taxable Items:  | \$ | -        |
| <hr/> |  |    |          |
|       | Total:   | \$ | 3,655.10 |
|       | Tax:   | \$ | 230.27   |
| <hr/> |  |    |          |

6.30% Ellis County Sales Tax

**Thank You For Your Business!**

**Amount Due: \$ 3,885.37**  
**Applied Payments:**  
**Balance Due: \$ 3,885.37**

Past Due Invoices are subject to a service charge (annual rate of 24%)  
 This does not include any applicable taxes unless it is listed.  
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*RC*  
*OK*

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Home Office P.O. Box 32 Russell, KS 67665

No. 6420

Phone 785-483-2025  
Cell 785-324-1041

|      |         |      |    |      |    |       |    |          |       |       |        |             |  |        |         |
|------|---------|------|----|------|----|-------|----|----------|-------|-------|--------|-------------|--|--------|---------|
| Date | 2-25-13 | Sec. | 23 | Twp. | 15 | Range | 19 | County   | ELLIS | State | KANSAS | On Location |  | Finish | 5:00 pm |
|      |         |      |    |      |    |       |    | Location |       |       |        |             |  |        |         |

|                     |             |  |  |                         |                 |
|---------------------|-------------|--|--|-------------------------|-----------------|
| Lease               | EMMERENTIA  | Well No.   | #1-23  | Owner                   | MURFIN DRILLING |
| Contractor          | MURFIN #116 | To Quality Oilwell Cementing, Inc.<br>You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed. |  |                         |                 |
| Type Job            | P.T.A       | Charge To  |  |                         |                 |
| Hole Size           | 7 7/8"      | T.D.   | 3,700'   | MURFIN DRILLING         |                 |
| Csg.                | 4 1/2"      | Depth  |  | Street                  |                 |
| Tbg. Size           |             | Depth  |  | 250 WATER STE. 300      |                 |
| Tool                |             | Depth  |  | City                    |                 |
| Cement Left in Csg. |             | Shoe Joint   |  | WICHITA State KS, 67202 |                 |
|                     |             |  | The above was done to satisfaction and supervision of owner agent or contractor. |                         |                 |
|                     |             |  | Cement Amount Ordered  |                         |                 |

|             |          |           |        |          |          |
|-------------|----------|-----------|--------|----------|----------|
| Meas Line   | Displace | EQUIPMENT |        |          |          |
| Pumptrk #15 | No.      | Cementer  | Helper | NTCK W.  | Common   |
| Bulktrk #14 | No.      | Driver    | Driver | Billy K. | Poz. Mix |
| Bulktrk     | No.      | Driver    | Driver | CISCO.   | Gel.     |
|             |          |           |        |          | Calcium  |

|                        |        |  |                         |  |
|------------------------|--------|--|-------------------------|--|
| JOB SERVICES & REMARKS |        |  | Hulls                   |  |
| Remarks:               |        |  | Salt                    |  |
| Rat Hole               |        |  | Flowseal                |  |
| Mouse Hole             |        |  | Kol-Seal                |  |
| Centralizers           |        |  | Mud CLR 48              |  |
| Baskets                |        |  | CFL-117 or CD110 CAF 38 |  |
| D/V or Port Collar     |        |  | Sand                    |  |
| 1st @ 3,598'           | 50 SKS |  | Handling                |  |
| 2nd @ 1,195'           | 25 SKS |  | Mileage                 |  |
| 3rd @ 475'             | 90 SKS |  | FLOAT EQUIPMENT         |  |
| 4th @ 40'              | 10 SKS |  | Guide Shoe              |  |
| RATHOLE                | 30 SKS |  | Centralizer             |  |
| TOTAL 205 SKS          |        |  | Baskets                 |  |
|                        |        |  | AFU Inserts             |  |
|                        |        |  | Float Shoe              |  |
|                        |        |  | Latch Down              |  |
|                        |        |  | 1-8 5/8" WOODEN PLUG    |  |

|                |      |              |  |
|----------------|------|--------------|--|
| Pumptrk Charge | plug | Tax          |  |
| Mileage        | 13   | Discount     |  |
|                |      | Total Charge |  |

x Signature *Aug. [unclear]*



**QUALITY OILWELL CEMENTING, INC.**

PO Box 32 - 740 West Wichita Ave, Russell KS 67665  
 Phone: 785-324-1041 fax: 785-483-1087  
 Email: cementing@ruratel.net

Date: 2/14/2013  
 Invoice # 6413

P.O.#:

Due Date: 3/16/2013

Division: Russell

*acct Prod.-Liz*

# Invoice

**Contact:**  
 Murfin Drilling Company  
**Address/Job Location:**  
 Murfin Drilling Company  
 P.O. Box 288  
 Russell Ks 67665

USED FOR Drilling  
 APPROVED [Signature]

OPERATOR PAY MDC  
 LEASE: Emmerentia

*1-23*

**Reference:**  
 EMMERENTIA 1-23

**Description of Work:**  
 LONG SURFACE JOB

*0150*

| Services / Items Included:                   | Quantity | Price       | Taxable | Item | Quantity | Price | Taxable |
|--|----------|-------------|---------|------|----------|-------|---------|
| Labor  |          | \$ 1,275.15 | No      |      |          |       |         |
| Common-Class A                               | 600      | \$ 8,168.91 | Yes     |      |          |       |         |
| Bulk Truck Matl-Material Service Charge      | 633      | \$ 1,374.51 | No      |      |          |       |         |
| Calcium Chloride                             | 21       | \$ 1,086.65 | Yes     |      |          |       |         |
| Premium Gel (Bentonite)                      | 12       | \$ 212.11   | Yes     |      |          |       |         |
| Pump Truck Mileage-Job to Nearest Camp       | 13       | \$ 140.86   | No      |      |          |       |         |
| 8 5/8" Top Rubber Plug                       | 1        | \$ 115.09   | Yes     |      |          |       |         |
| Baffle Plate Aluminum, 8 5/8"                | 1        | \$ 97.71    | Yes     |      |          |       |         |
| Bulk Truck Mileage-Job to Nearest Bulk Plant | 13       | \$ 82.43    | No      |      |          |       |         |

**Invoice Terms:**

Net 30

SubTotal: \$ 12,553.42  
 Discount Available ONLY if Invoice is Paid & Received within listed terms of invoice: \$ (1,883.01)

|                                 |                     |
|---------------------------------|---------------------|
| SubTotal for Taxable Items:     | \$ 8,228.40         |
| SubTotal for Non-Taxable Items: | \$ 2,442.01         |
| <b>Total:</b>                   | <b>\$ 10,670.41</b> |
| <b>Tax:</b>                     | <b>\$ 518.39</b>    |

6.30% Ellis County Sales Tax

**Thank You For Your Business!**

**Amount Due: \$ 11,188.80**  
**Applied Payments:**  
**Balance Due: \$ 11,188.80**

Past Due Invoices are subject to a service charge (annual rate of 24%)  
 This does not include any applicable taxes unless it is listed.  
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*[Signature]*



# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025  
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 6413

| Date    | Sec. | Twp. | Range | County | State  | On Location | Finish |
|---------|------|------|-------|--------|--------|-------------|--------|
| 2-14-13 | 23   | 15   | 19    | ELLIS  | KANSAS |             | 6:00pm |

Location *ANTIN, NO 1 W 2 1/2 S*

|                           |                         |  |
|---------------------------|-------------------------|--|
| Lease <i>EMMERENTIA</i>   | Well No. <i>#1-23</i>   | Owner <i>MURFIN DRILLING</i>   |
| Contractor <i>M.D #16</i> |                         | To Quality Oilwell Cementing, Inc.<br>You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed. |
| Type Job <i>L SURFACE</i> |                         | Charge To <i>MURFIN DRILLING</i>   |
| Hole Size <i>12 1/4"</i>  | T.D. <i>1,176'</i>      | Street <i>250 N WATER STE 300</i>  |
| Csg. <i>8 5/8"</i>        | Depth <i>1,175'</i>     | City <i>WICHITA</i> State <i>KS, 67202</i>   |
| Tbg. Size                 | Depth                   | The above was done to satisfaction and supervision of owner agent or contractor.   |
| Tool                      | Depth                   | Cement Amount Ordered <i>600 com-322-282</i>   |
| Cement Left in Csg.       | Shoe Joint <i>29'</i>   |  |
| Meas Line                 | Displace <i>73 BBLs</i> |  |

**EQUIPMENT**

|                     |                            |                   |
|---------------------|----------------------------|-------------------|
| Pumptrk # <i>15</i> | No. Cementer <i>CISCOA</i> | Common <i>600</i> |
|                     | Helper <i>NICK W.</i>      | Poz. Mix          |
| Bulktrk # <i>14</i> | No. Driver <i>HEATH F.</i> | Gel. <i>12</i>    |
| Bulktrk # <i>13</i> | No. Driver <i>DOUG H.</i>  | Calcium <i>21</i> |

**JOB SERVICES & REMARKS**

|                    |                         |
|--------------------|-------------------------|
| Remarks:           | Hulls                   |
| Rat Hole           | Salt                    |
| Mouse Hole         | Flowseal                |
| Centralizers       | Kol-Seal                |
| Baskets            | Mud CLR 48              |
| D/V or Port Collar | CFL-117 or CD110 CAF 38 |
|                    | Sand                    |
|                    | Handling <i>633</i>     |
|                    | Mileage                 |

**CEMENT DID CIRCULATE!**

**FLOAT EQUIPMENT**

|  |                                     |
|--|-------------------------------------|
|  | Guide Shoe                          |
|  | Centralizer                         |
|  | Baskets                             |
|  | AFU Inserts                         |
|  | Float Shoe <i>8 1/4 Rubber plug</i> |
|  | Latch Down                          |
|  | <i>1- 8 3/8 BAFFLE PLATE</i>        |

**THANK YOU!**

|                                    |              |
|------------------------------------|--------------|
| Pumptrk Charge <i>Long Surface</i> | Tax          |
| Mileage <i>13</i>                  | Discount     |
|                                    | Total Charge |
| X Signature <i>Ag Oshel</i>        |              |