



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1094464  
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: \_\_\_\_\_

1094464

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

|  |   |
|--|---|
| Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No<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:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

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

|  |   |   |
|--|---|---|
| <b>DISPOSITION OF GAS:</b><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><input type="checkbox"/> Other <i>(Specify)</i> _____ | <b>PRODUCTION INTERVAL:</b><br>_____<br>_____ |
|--|---|---|



## DRILL STEM TEST REPORT

Prepared For: **TDI**

1310 Bison Rd  
Hays, KS 67601

ATTN: Jeff Lawler

### **Derrick Unit #1**

### **4-15s-18w Ellis,KS**

Start Date: 2012.07.08 @ 14:57:33

End Date: 2012.07.08 @ 20:18:33

Job Ticket #: 47414                      DST #: 1

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

Printed: 2012.07.17 @ 16:17:37

TDI  
4-15s-18w Ellis,KS  
Derrick Unit #1  
DST # 1  
Arbuckle  
2012.07.08



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TDI  
1310 Bison Rd  
Hays, KS 67601  
ATTN: Jeff Lawler

**4-15s-18w Ellis, KS**  
**Derrick Unit #1**  
Job Ticket: 47414 **DST#: 1**  
Test Start: 2012.07.08 @ 14:57:33

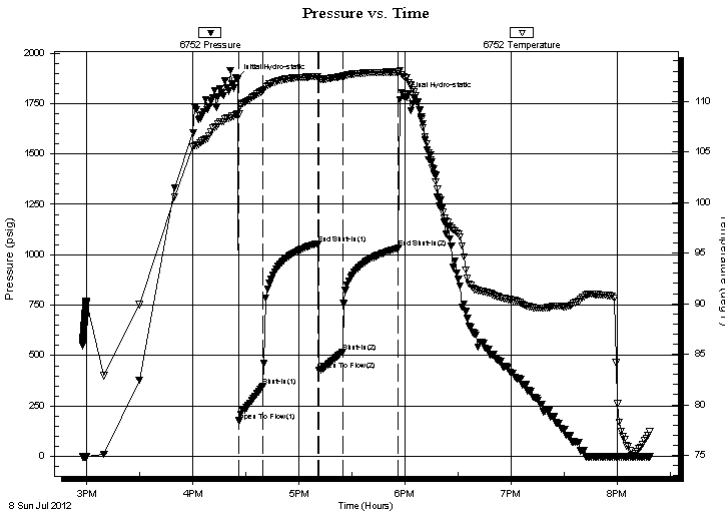
## GENERAL INFORMATION:

Formation: **Arbuckle**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 16:26:03  
Time Test Ended: 20:18:33  
Interval: **3603.00 ft (KB) To 3645.00 ft (KB) (TVD)**  
Total Depth: 3645.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Straddle (Initial)  
Tester: Brian Fairbank  
Unit No: 41  
Reference Elevations: 2037.00 ft (KB)  
2027.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 6752 Inside**  
Press @ Run Depth: 518.67 psig @ 3620.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2012.07.08 End Date: 2012.07.08 Last Calib.: 2012.07.08  
Start Time: 14:57:34 End Time: 20:18:33 Time On Btm: 2012.07.08 @ 16:24:33  
Time Off Btm: 2012.07.08 @ 17:59:03

TEST COMMENT: IFP - BOB 1 min  
ISI - 1 1/2" blow back  
FFP - BOB 1 1/2 min  
FSI - 2" blow back

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1873.39         | 108.74       | Initial Hydro-static |
| 2           | 176.87          | 108.74       | Open To Flow (1)     |
| 15          | 348.09          | 111.07       | Shut-In(1)           |
| 46          | 1052.09         | 112.49       | End Shut-In(1)       |
| 47          | 427.69          | 112.28       | Open To Flow (2)     |
| 60          | 518.67          | 112.45       | Shut-In(2)           |
| 92          | 1033.03         | 112.91       | End Shut-In(2)       |
| 95          | 1784.23         | 112.46       | Final Hydro-static   |

## Recovery

| Length (ft) | Description            | Volume (bbl) |
|-------------|------------------------|--------------|
| 45.00       | VSOCM 5%O, 95%M        | 0.63         |
| 140.00      | GHOCM 20%G, 30%O, 50%M | 1.96         |
| 965.00      | FREE OIL 95%O, 5%M     | 13.54        |
| 90.00       | OCM 20%O, 80%M         | 1.26         |
| 0.00        | 60' GIP                | 0.00         |

## Gas Rates

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







**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

TDI  
1310 Bison Rd  
Hays, KS 67601  
ATTN: Jeff Lawler

**4-15s-18w Ellis, KS**  
**Derrick Unit #1**  
Job Ticket: 47414      **DST#: 1**  
Test Start: 2012.07.08 @ 14:57:33

**Tool Information**

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3606.00 ft | Diameter: 3.80 inches | Volume: 50.58 bbl              | Tool Weight: 2500.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight to Pull Loose: 52000.00 lb  |
|                           |                    |                       | <u>Total Volume: 50.58 bbl</u> | Tool Chased 4.00 ft                |
| Drill Pipe Above KB:      | 23.00 ft           |                       |                                | String Weight: Initial 36000.00 lb |
| Depth to Top Packer:      | 3603.00 ft         |                       |                                | Final 40000.00 lb                  |
| Depth to Bottom Packer:   | 3645.00 ft         |                       |                                |                                    |
| Interval between Packers: | 42.00 ft           |                       |                                |                                    |
| Tool Length:              | 165.00 ft          |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

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

|                           |               |      |         |         |                                     |
|---------------------------|---------------|------|---------|---------|-------------------------------------|
| Shut In Tool              | 5.00          |      |         | 3588.00 |                                     |
| Hydraulic tool            | 5.00          |      |         | 3593.00 |                                     |
| Packer                    | 5.00          |      |         | 3598.00 | 20.00      Bottom Of Top Packer     |
| Packer                    | 5.00          |      |         | 3603.00 |                                     |
| Stubb                     | 1.00          |      |         | 3604.00 |                                     |
| Perforations              | 16.00         |      |         | 3620.00 |                                     |
| Recorder                  | 0.00          | 6752 | Inside  | 3620.00 |                                     |
| Recorder                  | 0.00          | 6741 | Outside | 3620.00 |                                     |
| Perforations              | 20.00         |      |         | 3640.00 |                                     |
| Blank Off Sub             | 1.00          |      |         | 3641.00 |                                     |
| Blank Spacing             | 4.00          |      |         | 3645.00 | 42.00      Tool Interval            |
| Packer                    | 5.00          |      |         | 3650.00 |                                     |
| Stubb                     | 1.00          |      |         | 3651.00 |                                     |
| Perforations              | 2.00          |      |         | 3653.00 |                                     |
| Recorder                  | 0.00          | 8365 | Below   | 3653.00 |                                     |
| Change Over Sub           | 1.00          |      |         | 3654.00 |                                     |
| Blank Spacing             | 94.00         |      |         | 3748.00 | 103.00      Bottom Packers & Anchor |
| <b>Total Tool Length:</b> | <b>165.00</b> |      |         |         |                                     |



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

TDI **4-15s-18w Ellis,KS**  
 1310 Bison Rd **Derrick Unit #1**  
 Hays, KS 67601 Job Ticket: 47414 **DST#: 1**  
 ATTN: Jeff Lawler Test Start: 2012.07.08 @ 14:57:33

## Mud and Cushion Information

|                                  |                            |                     |
|----------------------------------|----------------------------|---------------------|
| Mud Type: Gel Chem               | Cushion Type:              | Oil API: 28 deg API |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: ppm |
| Viscosity: 57.00 sec/qt          | Cushion Volume: bbl        |                     |
| Water Loss: 7.19 in <sup>3</sup> | Gas Cushion Type:          |                     |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                     |
| Salinity: 2100.00 ppm            |                            |                     |
| Filter Cake: inches              |                            |                     |

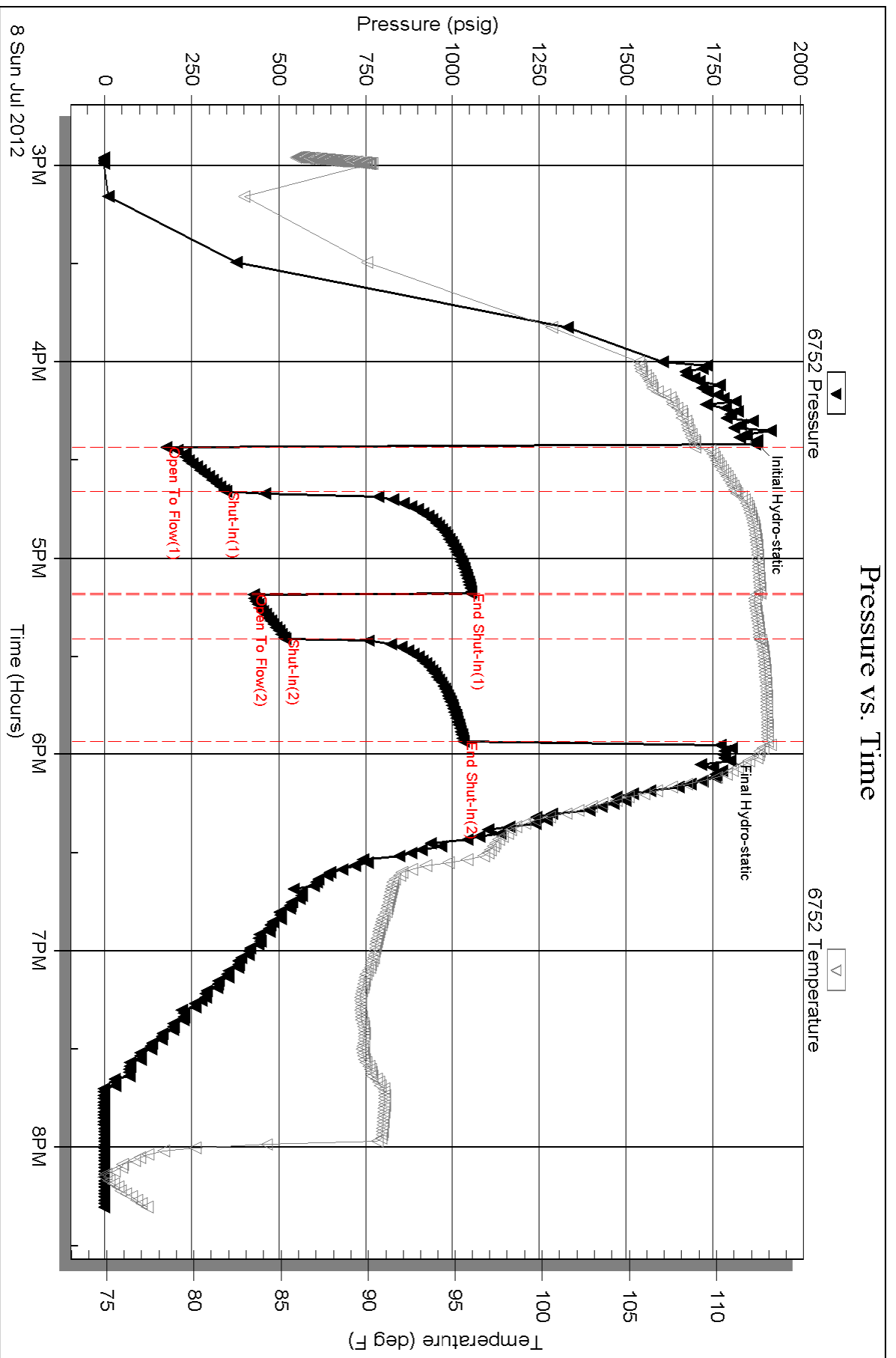
## Recovery Information

Recovery Table

| Length<br>ft | Description            | Volume<br>bbl |
|--------------|------------------------|---------------|
| 45.00        | VSOCM 5%O, 95%M        | 0.631         |
| 140.00       | GHOCM 20%G, 30%O, 50%M | 1.964         |
| 965.00       | FREE OIL 95%O, 5%M     | 13.536        |
| 90.00        | OCM 20%O, 80%M         | 1.262         |
| 0.00         | 60' GIP                | 0.000         |

Total Length: 1240.00 ft      Total Volume: 17.393 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:



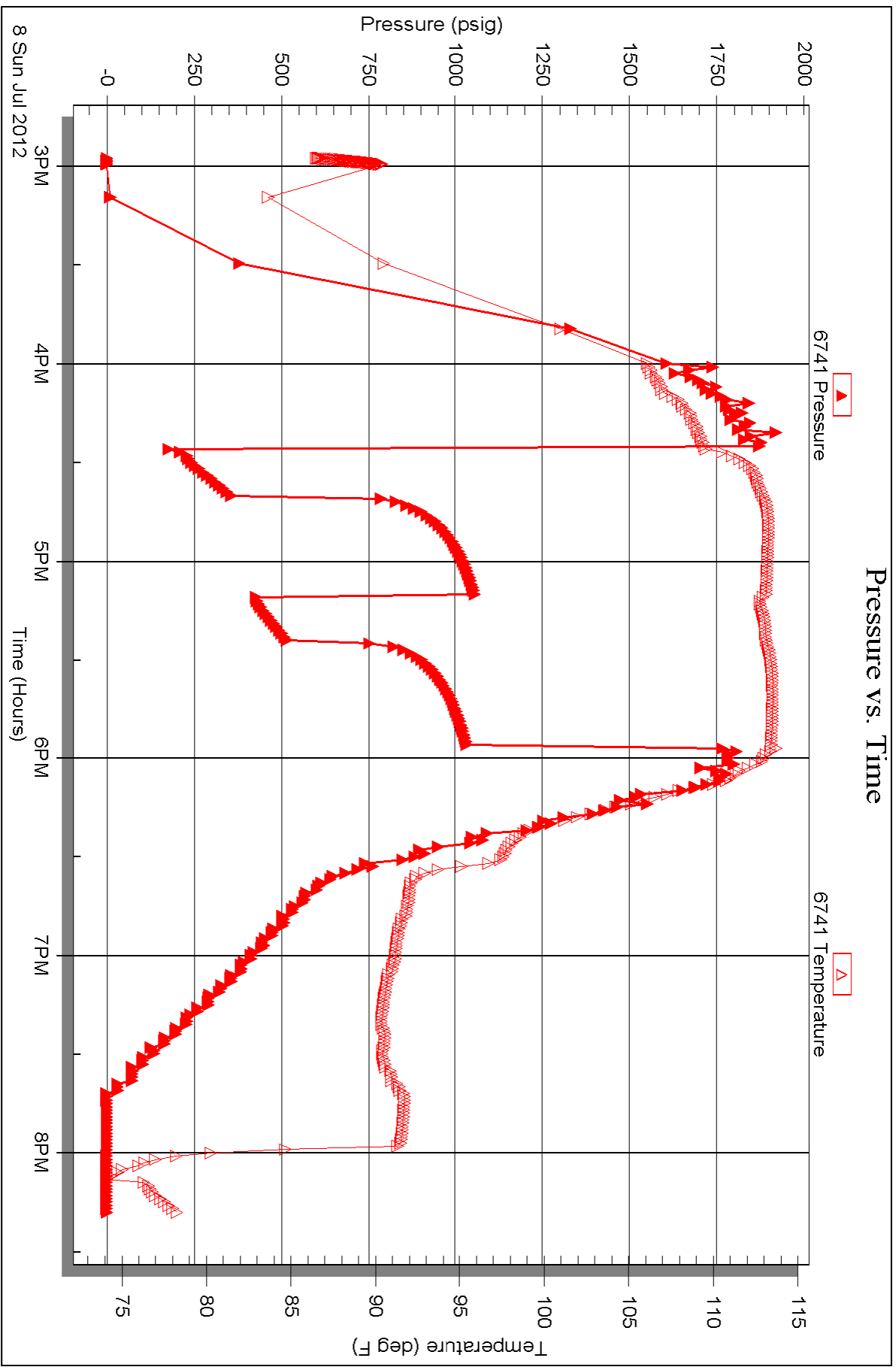


Serial #: 6741

Outside TDI

Derrick Unit #1

DST Test Number: 1

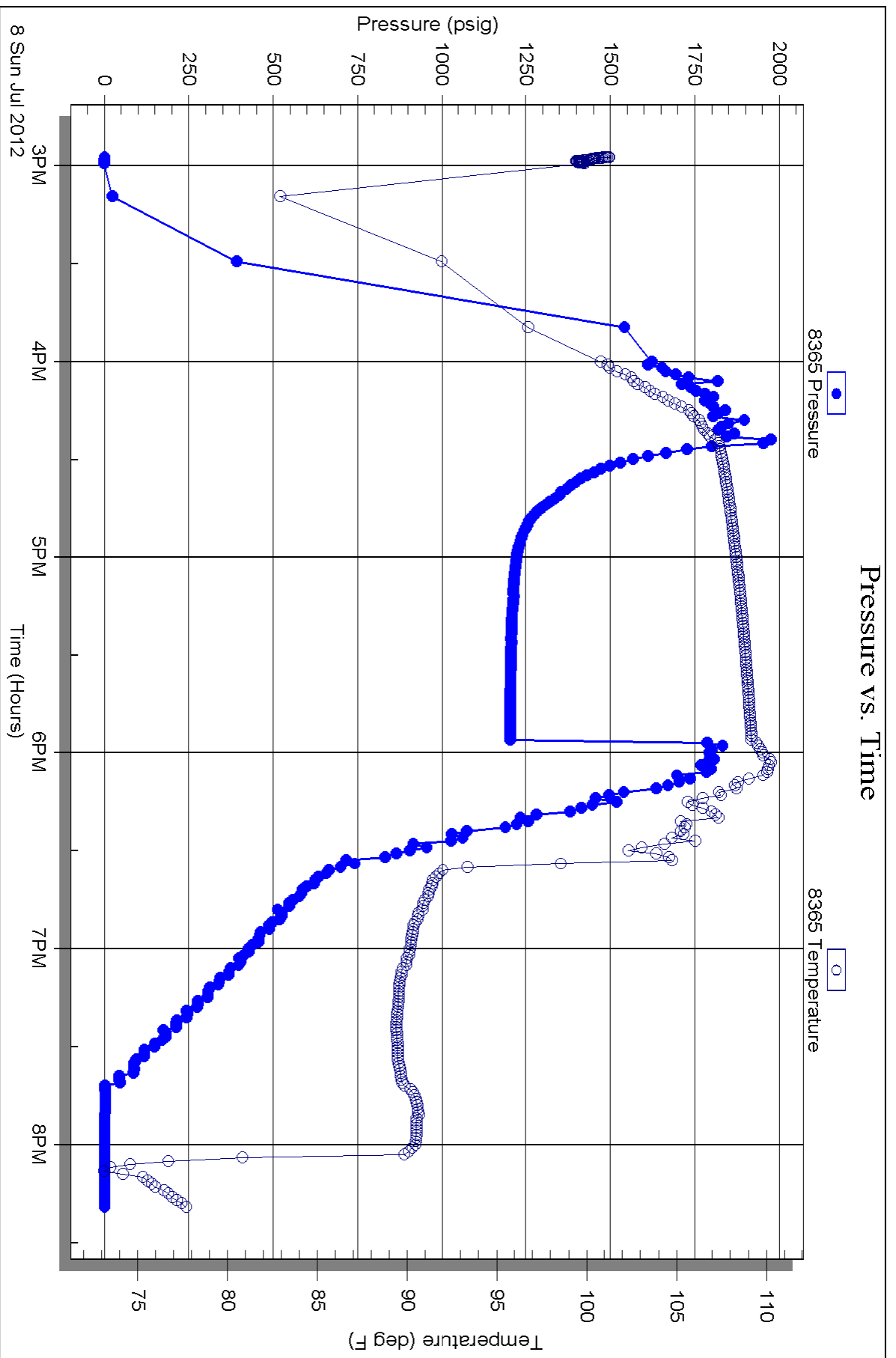


Serial #: 8365

Below (Straddle)

Derrick Unit #1

DST Test Number: 1





# TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

## Test Ticket

NO. 47414

4/10

Well Name & No. Derrick Unit #1 Test No. 1 Date 7-8-12  
 Company TDI Elevation 2037 KB 2027 GL  
 Address 1310 Bosa Rd Hays, Ks 67601  
 Co. Rep / Geo. Jeff Laska Rig Sutherland 1  
 Location: Sec. 4 Twp. 15 Rge. 18 Co. Ellis State Ks

Interval Tested 3603 - 3645 Zone Tested Arbuckle  
 Anchor Length 42 Drill Pipe Run 3606 Mud Wt. 9.3  
 Top Packer Depth 3598 Drill Collars Run — Vis 57  
 Bottom Packer Depth 3603 Wt. Pipe Run — WL 7.2  
 Total Depth 3750 RTD - 3743<sup>LD</sup> Chlorides 2100 ppm System LCM  
 Blow Description IFP - BOB 1 min  
ISI - 1 1/2" blow back  
FFP - BOB 1 1/2 min  
FSI - 2" blow back

| Rec        | Feet of         | %gas      | %oil       | %water  | %mud      |
|------------|-----------------|-----------|------------|---------|-----------|
| <u>60</u>  | <u>GIP</u>      |           |            |         |           |
| <u>90</u>  | <u>OCM</u>      |           | <u>20</u>  |         | <u>80</u> |
| <u>965</u> | <u>Free Oil</u> |           | <u>95</u>  |         | <u>5</u>  |
| <u>140</u> | <u>GHO CM</u>   | <u>20</u> | <u>30</u>  |         | <u>50</u> |
| <u>45</u>  | <u>USOCM</u>    |           | <u>5</u>   |         | <u>95</u> |
| Rec Total  | <u>1240</u>     | BHT       | <u>113</u> | Gravity | <u>28</u> |
|            |                 |           |            | API RW  | @         |

(A) Initial Hydrostatic 1873  Test 1150 T-On Location 1330  
 (B) First Initial Flow 177  Jars T-Started  
 (C) First Final Flow 348  Safety Joint T-Open 1626  
 (D) Initial Shut-In 1052  Circ Sub T-Pulled 1756  
 (E) Second Initial Flow 428  Hourly Standby T-Out 2018  
 (F) Second Final Flow 519  Mileage 19 RT 29.45 Comments 4' fill on bottom  
 (G) Final Shut-In 1033  Sampler  
 (H) Final Hydrostatic 1784  Straddle 600  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Extra Recorder Sub Total 0  
 Day Standby Total 1779.45  
 Accessibility MP/DST Disc't  
 Sub Total 1779.45

Approved By \_\_\_\_\_ Our Representative Brian Farbak

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.



Scale 1:240 Imperial

Well Name: DERRICK UNIT #1  
Surface Location: SE SE SE SE 4-15S-18W  
Bottom Location:  
API: 15-059-26317-0000  
License Number: 4787  
Spud Date: 7/2/2012 Time: 3:34 PM  
Region: ELLIS  
Drilling Completed: 7/8/2012 Time: 4:27 AM  
Surface Coordinates: 100' FSL & 230' FEL  
Bottom Hole Coordinates:  
Ground Elevation: 2027.00ft  
K.B. Elevation: 2037.00ft  
Logged Interval: 213.00ft To: 3743.00ft  
Total Depth: 3750.00ft  
Formation: ARBUCKLE  
Drilling Fluid Type: FRESH WATER/CHEMICAL GEL

#### OPERATOR

Company: TDI, INC.  
Address: 1310 BISON RD.  
HAYS, KS 67601  
Contact Geologist: TOM DENNING  
Contact Phone Nbr: (785) 628-2593  
Well Name: DERRICK UNIT #1  
Location: SE SE SE SE 4-15S-18W API: 15-059-26317-0000  
Pool: DINGES  
State: KANSAS Country: USA

#### SURFACE CO-ORDINATES

Well Type: Vertical  
Longitude: -99.3196032 Latitude: 38.7697467  
N/S Co-ord: 100' FSL  
E/W Co-ord: 230' FEL

#### LOGGED BY



Company: SOLUTIONS CONSULTING  
Address: 108 W 35TH  
HAYS, KS 67601  
Phone Nbr: (785) 259-3737  
Logged By: Geologist Name: JEFF LAWLER

#### CONTRACTOR

**CONTRACTOR**

Contractor: SOUTHWIND DRILLING, INC.  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 7/2/2012  
 TD Date: 7/8/2012  
 Rig Release: 7/9/2012

Time: 3:34 PM  
 Time: 4:27 AM  
 Time: 12:00 PM

**ELEVATIONS**

K.B. Elevation: 2037.00ft  
 K.B. to Ground: 10.00ft

Ground Elevation: 2027.00ft

**NOTES**

**\*NOTE - THERE IS AN APPROXIMATE 11' UPHOLE CORRECTION MADE TO CORRELATE DRILL TIME WITH LOG CURVES\***


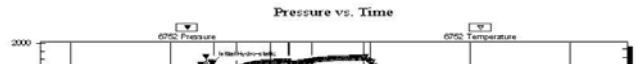
DUE TO STRUCTURAL POSITION, LOG AND SAMPLE ANALYSIS, AND DRILLSTEM TEST RESULTS DECISION WAS MADE TO SET PRODUCTION CASING AND FURTHER EVALUATE THE ARBUCKLE.

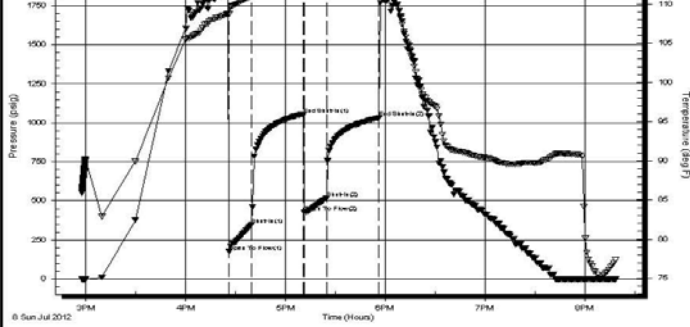
RESPECTFULLY SUBMITTED,  
 JEFF LAWLER

**WELL COMPARISON SHEET**

| FORMATION     | DERRICK UNIT #1 |       |             |       | SW NW NE NW 10-15-18 |       |           |       | NE/4 9-15-18 |       |       |       | SE SE SE 4-15-18 |       |       |       | NE NE NE 9-15-18 |       |           |       |       |       |       |       |
|---------------|-----------------|-------|-------------|-------|----------------------|-------|-----------|-------|--------------|-------|-------|-------|------------------|-------|-------|-------|------------------|-------|-----------|-------|-------|-------|-------|-------|
|               | LOG TOPS        |       | SAMPLE TOPS |       | LOGS                 |       | LOG CORR. |       | SMPL.        |       | LOGS  |       | LOG CORR.        |       | SMPL. |       | LOGS             |       | LOG CORR. |       | SMPL. |       |       |       |
|               | DEPTH           | DATUM | DEPTH       | DATUM | DEPTH                | DATUM | CORR.     | CORR. | DEPTH        | DATUM | CORR. | CORR. | DEPTH            | DATUM | CORR. | CORR. | DEPTH            | DATUM | CORR.     | CORR. | DEPTH | DATUM | CORR. | CORR. |
|               | 2037            | 2037  | 2037        | 2037  | 2034                 | 2034  | 2034      | 2034  | 2031         | 2031  | 2031  | 2031  | 2031             | 2031  | 2031  | 2031  | 2031             | 2032  | 2032      | 2032  | 2032  | 2032  | 2032  | 2032  |
| ANHYDRITE TOP | 1207            | 830   | 1218        | 819   | 1209                 | 825   | + 5       | - 6   | 1193         | 838   | - 8   | - 19  | 1210             | 821   | + 9   | - 2   | 1210             | 822   | + 8       | - 3   |       |       |       |       |
| BASE          | 1247            | 790   | 1255        | 782   | 1246                 | 788   | + 2       | - 6   | 1238         | 793   | - 3   | - 11  |                  |       |       |       |                  |       |           |       |       |       |       |       |
| TOPEKA        | 3001            | -964  | 3017        | -980  | 3004                 | -970  | + 6       | - 10  | 2996         | -965  | + 1   | - 15  |                  |       |       |       |                  |       |           |       |       |       |       |       |
| HEEBNER SHALE | 3280            | -1243 | 3290        | -1253 | 3281                 | -1247 | + 4       | - 6   | 3271         | -1240 | - 3   | - 13  | 3286             | -1255 | + 12  | + 2   | 3275             | -1243 | + 0       | - 10  |       |       |       |       |
| TORONTO       | 3301            | -1264 | 3311        | -1274 | 3301                 | -1267 | + 3       | - 7   | 3290         | -1259 | - 5   | - 15  |                  |       |       |       |                  |       |           |       |       |       |       |       |
| LKC           | 3335            | -1298 | 3338        | -1301 | 3327                 | -1293 | - 5       | - 8   | 3319         | -1288 | - 10  | - 13  | 3340             | -1309 | + 11  | + 8   | 3326             | -1294 | - 4       | - 7   |       |       |       |       |
| BKC           | 3557            | -1520 | 3566        | -1529 | 3553                 | -1519 | - 1       | - 10  | 3550         | -1519 | - 1   | - 10  | 3553             | -1522 | + 2   | - 7   | 3545             | -1513 | - 7       | - 16  |       |       |       |       |
| CONGLOMERATE  |                 |       |             |       |                      |       |           |       |              |       |       |       | 3611             | -1580 |       |       |                  |       |           |       |       |       |       |       |
| ARBUCKLE      | 3623            | -1586 | 3635        | -1598 | 3638                 | -1604 | + 18      | + 6   | 3618         | -1587 | + 1   | - 11  | 3675             | -1644 | + 58  | + 46  | 3625             | -1593 | + 7       | - 5   |       |       |       |       |
| RTD           |                 |       | 3750        | -1713 | 3750                 | -1716 |           | + 3   | 3730         | -1699 |       | - 14  | 3688             | -1657 |       | - 56  | 3636             | -1604 |           | - 109 |       |       |       |       |
| LTD           | 3743            | -1706 |             |       | 3751                 | -1717 | + 11      |       | 3728         | -1697 | - 9   |       |                  |       |       |       |                  |       |           |       |       |       |       |       |

**DST #1 (STRADDLE) ARBUCKLE 3603' - 3645'**

|  <p><b>TRILOBITE TESTING, INC.</b></p>   | <b>DRILL STEM TEST REPORT</b>  |  |             |                 |              |            |  |  |  |  |
|---|--|--|-------------|-----------------|--------------|------------|--|--|--|--|
|   | TDI<br>1310 Bison Rd<br>Hays, Ks 67601<br><br>ATTN: Jeff Lawler  | 4-15-18 Ellis, Ks<br><br><b>Derrick Unit #1</b><br>Job Ticket: 47414<br>Test Start: 2012.07.08 @ 14:57:33  |             |                 |              |            |  |  |  |  |
| <b>GENERAL INFORMATION:</b><br>Formation: <b>Arbuckle</b><br>Deviated: No Whipstock: ft (KB)<br>Time Tool Opened: 16:26:03<br>Time Test Ended: 20:18:33<br><br>Interval: <b>3603.00 ft (KB) To 3645.00 ft (KB) (TVD)</b><br>Total Depth: 3645.00 ft (KB) (TVD)<br>Hole Diameter: 7.88 inches Hole Condition: Good |  |  |             |                 |              |            |  |  |  |  |
| Test Type: Conventional Straddle (Initial)<br>Tester: Brian Fairbank<br>Unit No: 41<br><br>Reference Elevations: 2037.00 ft (KB)<br>2027.00 ft (CF)<br>KB to GR/CF: 10.00 ft  |  |  |             |                 |              |            |  |  |  |  |
| Serial #: <b>6752</b> <b>Inside</b><br>Press@RunDepth: 518.67 psig @ 3620.00 ft (KB)<br>Start Date: 2012.07.08      End Date: 2012.07.08<br>Start Time: 14:57:34      End Time: 20:18:33  | Capacity: 8000.00 psig<br>Last Calib.: 2012.07.08<br>Time On Btm: 2012.07.08 @ 16:24:33<br>Time Off Btm: 2012.07.08 @ 17:59:03 |  |             |                 |              |            |  |  |  |  |
| <b>TEST COMMENT:</b> IFP - BOB 1 min<br>ISI - 1 1/2" blow back<br>FFP - BOB 1 1/2 min<br>FSI - 2" blow back   |  |  |             |                 |              |            |  |  |  |  |
| Pressure vs. Time<br>  |  | <b>PRESSURE SUMMARY</b><br><table border="1"> <tr> <th>Time (Min.)</th> <th>Pressure (psig)</th> <th>Temp (deg F)</th> <th>Annotation</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table> | Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |  |  |  |  |
| Time (Min.)   | Pressure (psig)  | Temp (deg F)   | Annotation  |                 |              |            |  |  |  |  |
|   |  |  |             |                 |              |            |  |  |  |  |



|    |         |        |                      |
|----|---------|--------|----------------------|
| 0  | 1873.39 | 108.74 | Initial Hydro-static |
| 2  | 176.87  | 108.74 | Open To Flow (1)     |
| 15 | 348.09  | 111.07 | Shut-In(1)           |
| 46 | 1052.09 | 112.49 | End Shut-In(1)       |
| 47 | 427.69  | 112.28 | Open To Flow (2)     |
| 60 | 518.67  | 112.45 | Shut-In(2)           |
| 92 | 1033.03 | 112.91 | End Shut-In(2)       |
| 95 | 1784.23 | 112.46 | Final Hydro-static   |

**Recovery**

| Length (ft) | Description            | Volume (bbl) |
|-------------|------------------------|--------------|
| 45.00       | V SOCM 5%O, 95%M       | 0.63         |
| 140.00      | GHOCM 20%G, 30%O, 50%M | 1.96         |
| 965.00      | FREE OIL 95%O, 5%M     | 13.54        |
| 90.00       | OCM 20%O, 80%M         | 1.26         |
| 0.00        | 60' GIP                | 0.00         |

**Gas Rates**

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

Trilobite Testing, Inc

Ref. No: 47414

Printed: 2012.07.08 @ 20:53:07

**ROCK TYPES**

|          |           |            |            |
|----------|-----------|------------|------------|
| Cht      | Dolprim   | shale, grn | shale, red |
| Cht vari | Dolsec    | shale, gry | Shcol      |
| Congl    | Lmst fw7> | Carbon Sh  | Ss         |

**ACCESSORIES**

**MINERAL**  
 .\* Sandy

**OTHER SYMBOLS**

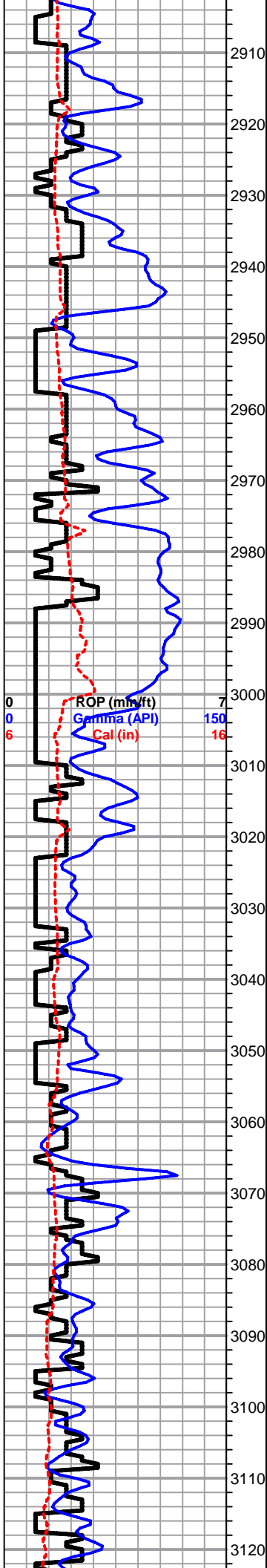
**DST**  
 DST Int  
 DST alt  
 Core

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)

| Curve Track #1   | Depth   Intervals              | DST | Lithology | Oil Show | Geological Descriptions  | TG, C1 - C5   |
|--|--------------------------------|-----|-----------|----------|--|---|
| ROP (min/ft) —<br>Gamma (API) —<br>Cal (in) - - -                        | Cored Interval<br>DST Interval |     |           |          |  | Total Gas (units) —<br>C1 (units) —<br>C2 (units) —<br>C3 (units) —<br>C4 (units) — |
| 1:240 Imperial<br>0 ROP (min/ft) 7<br>0 Gamma (API) 150<br>6 Cal (in) 16 | 2870<br>2880<br>2890<br>2900   |     |           |          | 1:240 Imperial<br>0 Total Gas (units) 00<br>0 C1 (units) 100<br>0 C2 (units) 100<br>0 C3 (units) 100<br>0 C4 (units) 100 |   |
|  |                                |     |           |          | <b>ANHYDRITE TOP 1218' (+819) E-LOG 1207' (+830)</b><br><b>BASE 1255' (+782) E-LOG 1247' (+790)</b>                      | 8 5/8" @ 213' w/<br>150 sxs Cmn<br>SLOPE 1/2 dgr.<br><br>DISPLACE @<br>2897'        |

1' DRILL TIME THROUGH ANHYDRITE FROM 1200' - 1260'  
 1' DRILL TIME FROM 2900' - RTD  
 10' WET/DRY SAMPLES FROM 3000' - RTD  
 GEOLOGICAL SUPERVISON BY JEFF LAWLER FROM 3000' - RTD

\*LITHOLOGY REPRESENTATIVE OF SAMPLES\*  
 \*APPROXIMATE 11' CORRECTION MADE TO MATCH DRILL TIME TO LOGS\*



Sh/Ss- Gray, mix of smooth slivers, gray wash & fn. grn. well consolidated friable clusters, speckled w/ glauconite

Sh- Gray Lm Green, A/A, soft, gritty sl. sandy lime, clusters A/A

Sh- A/A w/ red gritty & earthy

**TOPEKA 3017' (-980) E-LOG 3001' (-964)** Lm- Cream, Fn grn., chalky in part, sl. fsl, few visible grains

Lm- Cream Tan, FXLN, fsl w/ fusulinids, mostly tight w/ minimal sctrd porosity, clean & barren

Lm- Cream Tan, A/A, few gritty & grainy w/ ppt porosity, fsl, chalky in part

Lm- Cream Buff Gray, mix of FXLN dense, crypto XLN w/o visible grains, 1-2 chips of pearl spherical shaped oolite clusters, soft sl. chalky, and interbedded shales & white wash lime

Lm/Ss- Drk Gray Buff, mix of vf gr. calcareous cemented Ss & trashy high energy bio-clasts w/ fsl. fragments

Lm- Cream Tan, mix of crypto XLN & moderately developed fsl w/ sctrd ppt porosity, fusulinids, interbedded various colored shales and gummy clumps of chalk

Sh- Drk Gray Drk Brown, abundant waxy slivers & brown wash

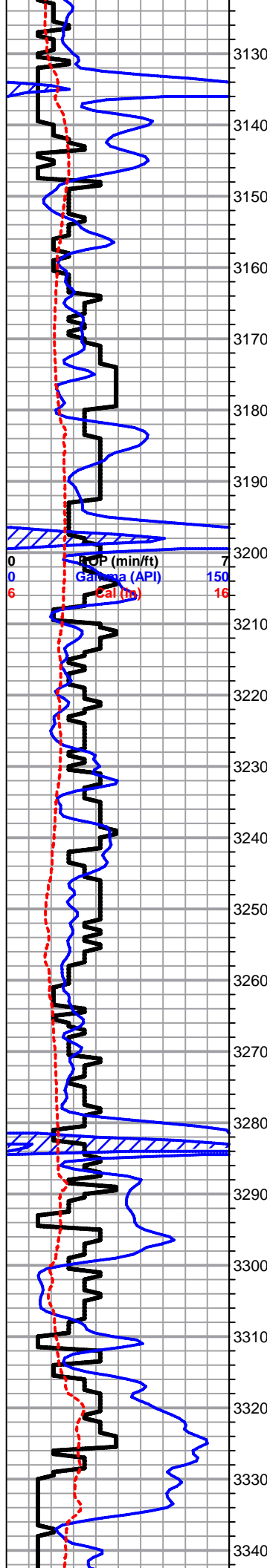
Lm- Cream Tan, VF-FXLN, fsl, some trashy w/ fsl fragments, few chips of fusulinid biomicrite, tight w/ dense clean cementation, mostly w/ sctrd ppt porosity, fsl, moderately well developed, clean & barren

Sh- Black Gray Lm Green, soft smooth

Lm- Cream Tan Gray, mix of dense, very well cemented w/ few visible grains, FXLN fsl. w/ sctrd secondary porosity, & cream granular gritty & grainy, moderately well developed, sl.

0 Total Gas (units) 100  
 0 C1 (units) 100  
 0 C2 (units) 100  
 0 C3 (units) 100  
 0 C4 (units) 100





sctrd secondary porosity, & cream granular gritty & grainy, moderately well developed, sl. chalky & crumbly, fsl, all clean & barren

Lm- Cream Tan, gritty & granular, fsl., loosely cemented, few w/ mud supported matrix, few chips of argillaceous Ls w/o visible grains, few chips of bedded chert

Sh- Black Gray Maroon Lm Green, soft carbonaceous, soft, thin, slatey, lm grn sl. unconsolidated & pebbly,

Lm- Cream Tan, F-Med XLN, most granular, well developed w/ consistant fine ppt porosity, abundant dense secondary porosity, few chips of VF XLN w/ dense secondary micro XLN porosity, clean & barren, mottled, few w/ mud supported matrix

Lm- Cream Tan, VFXLN, most very well cemented, brittle & semi-siliceous crypto XLN w/o visible grains or porosity, porcelain like, few pcs of FXLN, gritty, sl. dolomitic w/ sctrd vry fine ppt porosity, clean & barren

Lm- Tan, FXLN, gritty & grainy, sl. granular, moderately developed w/ consistant vry fn ppt porosity, oolitic & fsl, clean & barren

Lm- Cream Tan, VF-FXLN, tight, well cemented, minimal primary porosity, some sctrd secondary XLN porosity, clean & barren

Sh- Drk Gray Lm Green, soft, smooth,

Lm- Cream, FXLN, well cemented, poorly developed, sl. fsl, few w/ sctrd micro pyrite inclusions, sctrd fine ppt porosity, clean & barren

Sh- Black Gray Lm Green, fissile, carbonaceous, soft smooth slivers, sl. grainy soft limes, Dove Gray fn grn. consolidated & sorted, well cemented Ss

Lm- Cream Tan Gray, FXLN, dense, most semi-brittle, tight w/ minimal visible porosity, several chips of cream, mud supported matrix, tight w/ vry sctrd fine ppt porosity, sl fsl, SCTRDRK STN, 1-2 CHIPS W/ VSSFO, FNT ODR, DULL FLOR. W/ VRY SLW STRM WET CUT

Lm- Cream Tan, FXLN, sl. fsl, semi-brittle, mostly tight w/ minimal development, dense XLN porosity, clean & barren

Sh- Gray Lm Green Maroon Brown, soft, some gray wash, few sl. sandy lime

Lm- Cream, FXLN, sl. fsl, tight w/ minimal visible porosity, chalky in part

Lm- A/A, tan smokey gray fsl. bedded chert

Lm- Cream, Fn grn., mottled, mostly mud supported matrix, chalky

**HEEBNER 3290' (-1253) E-LOG 3280' (-1243)** Sh- Black Gray Lm Green Maroon, soft, carbonaceous, thin slivers

Sh- Gray Brown Cream, gritty & earthy, soft calcareous & chalky

**TORONTO 3311' (-1274) E-LOG 3301' (-1264)** Lm/Chert- Cream Tan, FXLN, chalky in part, crumbly, some sl. granular, clean, pristine clean bedded chert

Lm- White Cream, Fn grn., soft crumbly, pristine clean & barren, chalky in part

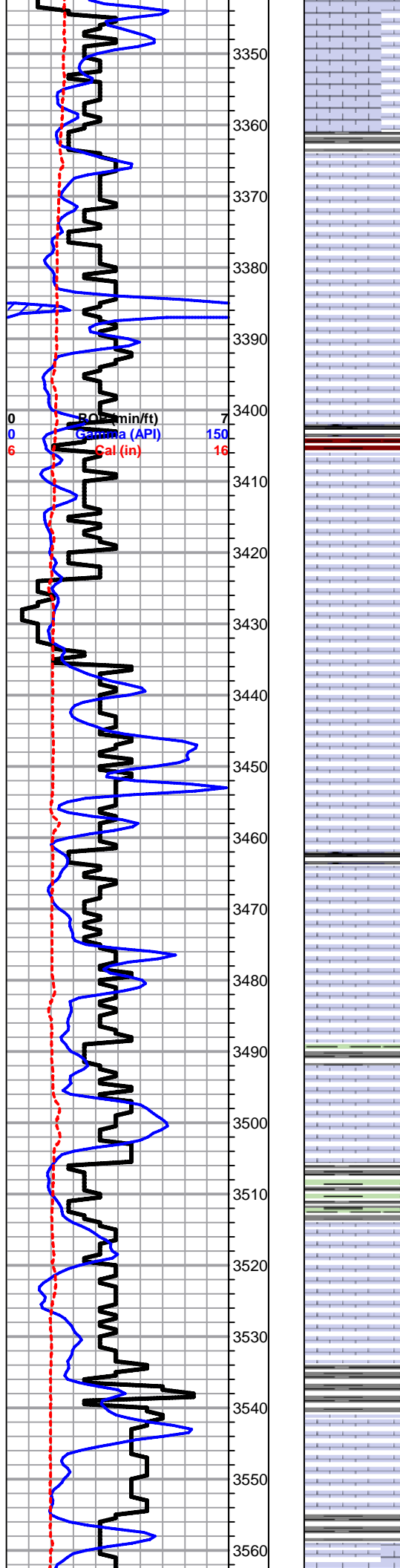
Sh- Gray Maroon Brown Lm Green, gritty & earthy, sl. argillaceous

Sh- A/A w/ soft gray wash

**LKC 3338' (-1307) E-LOG 3335' (-1298)** Lm- Cream Tan, FXLN, mostly well cemented, poorly cemented w/ minimal visible porosity, few small chips w/ dense secondary porosity,

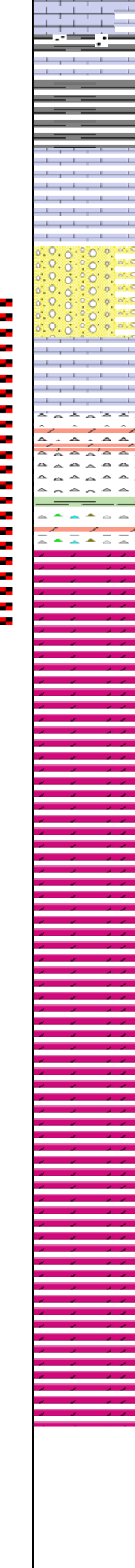
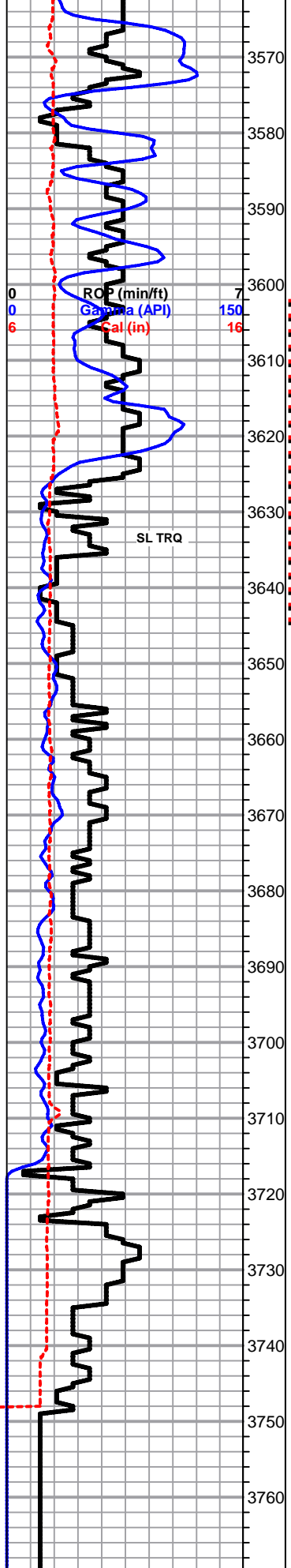
|   |                   |     |
|---|-------------------|-----|
| 0 | Total Gas (units) | 100 |
| 0 | C1 (units)        | 100 |
| 0 | C2 (units)        | 100 |
| 0 | C3 (units)        | 100 |
| 0 | C4 (units)        | 100 |

SCTRD LT GSY STN, 1 W/ VSSFO, FNT ODR



- Lm- Cream Tan, F-Med XLN, mostly dense & semi-brittle, sctrd Med XLN secondary porosity, recrystallization along edges, SCTRD LT GSY STN, VSL GSY SHEEN, FNT ODR
- Sh- Maroon Gray, dense & blocky, sticky argillaceous gra clumps
- Lm- Cream Tan, FXLN, sl. fsl., poorly developed, chalky in part, mostly tight w/ sctrd fine ppt porosity, LT BRWN GSY STN, NOSFO, FNT ODR UPON CRUSH
- Lm- Cream, Med Coarse XLN, fsl, well developed w/ ppt - sub-vugular porosity, SCTRD STN, GSY SHEEN, VSSFO UPON CRUSH, FNT ODR UPON CRUSH
- Lm- Off White Cream, FXLN, fsl, sctrd development, mostly tight w/ minimal visible porosity, some w/ sctrd edge ppt porosity w/ associated recrystallization, SCTRD LT STN, NSFO, NO ODR, sctrd chalk
- Sh- Black Maroon, soft, massive, carbonaceous, soft & earthy, sl. pebbly
- Lm- Tan Cream, VF-FXLN, mostly tight cryptocrystalline w/o visible grains w/ sctrd ppt porosity, 1 chip w/ sctrd vuggy porosity, SCTRD DRK BRWN STN, GD SGSYFO UPON CRUSH, ODR W/ CRUSH
- Lm- Off White Cream, FXLN, loosely cemented, sl. fsl. sctrd ppt porosity, SCTRD LT STN, VSSFO UPON CRUSH, VRY FNT ODR
- Lm-Cream White, VFXLN, densely packed oolites w/ dense sl. siliceous cementation, no visible porosity
- Lm- Off White Cream, Med-Coarse XLN, very well developed, oolitic-oolitic, poor intercastic connectivity, loosely cemented, sctrd small oolites w/ good interoolitic porosity, LT BRWN FLAKEY STN, NO SFO, RECRYSTALLIZATION, NO ODR
- Lm- Cream Off White, sl oolitic, loosely cemented, chalky in part, sctrd ppt porosity, clean & barren
- Sh- Black Gray Maroon, semi fissile, carbonaceous, smooth sl. waxy chips, soft & earthy
- Lm- Cream Tan, VF-FXLN, dense, tight, sub-crypto XLN w/ minimal to no visible porosity
- Lm- Cream Tan, FLXN, poorly developed, few small chips w/ fine ppt porosity, most w/ minimal visible porosity, 1-2 CHIPS W/ LT SCTRD STN, NSFO, DULL FLOR. STRM WET CUT, NO ODR
- Sh- Lt Gray Lm Green, soft, crumbly, semi-argillaceous, sl. gritty
- Lm- Cream Off White, FXLN, moderately developed w/ ppt porosity, sctrd connectivity, MINMAL STN, SL. GSY SHEEN, NSFO, NO ODR
- Lm- Off White Cream, VF-FXLN, tight, poorly developed, sl. fsl, micro XLN porosity, few w/ dense secondary XLN porosity, chalky, clean & barren, mostly tight
- Sh- Gray Lm Green Maroon, waxy slivers, very soft grainy chips, gritty & earthy
- Lm- Off White Tan, VF-FXLN, mix of densely packed, oolitic, semi-siliceous tan matrix, tight w/o visible porosity, soft, sl. chalky, dense VF XLN porosity, chalky in part, and crypto XLN w/o visible grains, all clean & barren
- Lm- Off White Semi-Translucent, VFLXN, sl. oolitic, tight w/ no visible porosity
- Lm- Cream Tan, VF-FXLN, tight, minimal visible porosity, few w/ recrystallization secondary porosity, clean & barren, chalky
- Lm- A/A, w/ some very well cemented, dense crypto XLN w/o visible grains
- Lm- Cream Off White, F-Med grn., chalky & crumbly, loosely cemented, ppt porosity, clean

|   |                   |     |
|---|-------------------|-----|
| 0 | Total Gas (units) | 00  |
| 0 | C1 (units)        | 100 |
| 0 | C2 (units)        | 100 |
| 0 | C3 (units)        | 100 |
| 0 | C4 (units)        | 100 |



& barren

**BKC 3566' (-1529) E-LOG 3557' (-1520)** Sh- Gray Lm Green Brown Maroon, soft, gritty & earthy, few med grn, consolidated & sorted Ss clusters speckled w/ glauconite

Sh- Gray Lm Green Maroon, waxy & massive lm green, gritty & earthy

Lm- Cream Lt Gray, mix of fine grn, semi-soft, mix of sl. chalky mud supported matrix & some dense algal Ls and FXLN, tight w/ minimal porosity, 1 chips w/ sctrd ppt porosity, SCTRD STN, GSY SHEEN UPON CRUSH, VSSFO, NO ODR (probably carryover) & interbedded shale lenses

○ Conglomerate- Mix of various dark colored conglomerate shales, sl. unconsolidated & pebbly, Off white Ls conglomerate mottled w/ shale & few chips of dense cherty Ls

Lm- Off White Cream, VF-FXLN, tight, sl. oolitic & fsl., no development, minimal visible porosity, clean & barren

Chert- Orange, mix of sl. cherty Ls, & sl. gritty lt tan dolomitic chert, bedded

Chert- Tan Buff, gritty FXLN, sl. dolomitic chert

Sh/Chert- Mint Green, thin, waxy, brittle, well compacted, tan buff gritty mix of cherty dolomite & dolomitic chert

● **ARBUCKLE 3635' (-1598) E-LOG 3623' (-1586)** Dolomite- Off White, Med XLN, well developed w/ good visible euhedral rhombs, loosely cemented, good interstitial porosity, GOOD SCTRD STN, GSY FO, FR GSY ODR

● Dolomite- A/A, F-Med XLN, few w/ sl. siliceous cementation, fine ppt porosity, STN A/A, well cemented

○ Dolomite- White Buff, F-Med XLN, development begins to deplete to constant ppt porosity, few sl. sandy, sctrd barren porosity, well cemented & sorted, SCTRD STN, GOOD SFO, FR ODR

D Dolomite- Off White Salmon Buff, VF-Med XLN, mix of sl. cherty dolomite, gritty & grainy, FXLN well cemented & consolidated, mostly barren porosity, few chips of lm green soft lime

D Dolomite- Off White, Med-Coarse XLN, consolidated & well cemented, sl. euhedral med XLN rhombs & euhedral coarse XLN mix, 1-2 chps w/ large vuggy porosity, DRK DO STN

Dolomite-Off White, FXLN, very well cemented w/ constant ppt porosity, few loosely cemented, barren

Dolomite- VFXLN, tight, very well cemented, fine ppt - XLN porosity, clean & barren

Dolomite- Med XLN, sl. sandy & sl. unconsolidated, mixed w/ sctrd visible euhedral rhombs in tight matrix, clean & barren

Dolomite- VF-FXLN, unconsolidated, mixed w/ large euhedral rhombs & round qtz inclusions in tight clear cementation, few oolitic chips, few coarse XLN w/ green glauconite stain, few chips of large euhedral pyrite

|   |                   |     |
|---|-------------------|-----|
| 0 | Total Gas (units) | 100 |
| 0 | C1 (units)        | 100 |
| 0 | C2 (units)        | 100 |
| 0 | C3 (units)        | 100 |
| 0 | C4 (units)        | 100 |

**DST #1  
STRADDLE  
ARBUCKLE  
3603' - 3645'**

**TD 3750', CFS  
SHORT TRIP  
SLOPE 1 1/2 dgr.**

**RTD 3750' (-1713) LTD 3743' (-1706) @ 04:37 7/8/2012**

# 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. 891

|                                   |                      |          |       |            |            |       |    |  |                                |       |                         |             |          |         |  |
|-----------------------------------|----------------------|----------|-------|------------|------------|-------|----|--|--------------------------------|-------|-------------------------|-------------|----------|---------|--|
| Date                              | 12-3-12              | Sec.     | 4     | Twp.       | 15         | Range | 13 | County   | BUTTS                          | State | KANSAS                  | On Location | Finish   | 4:30 AM |  |
| Lease                             | NORWELL              |          |       | Well No.   | #1         |       |    | Location   | HAYS FIELD #2111 - WINTCO      |       |                         |             |          |         |  |
| Contractor                        | SOUTHWEST SERVICE #1 |          |       |            |            |       |    | Owner  | T.D.T. INC.                    |       |                         |             |          |         |  |
| Type Job                          | SURFACE              |          |       |            |            |       |    | 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. |                                |       |                         |             |          |         |  |
| Hole Size                         | 12 1/4"              |          |       | T.D.       | 215'       |       |    | Charge To  | T.D.T. INC.                    |       |                         |             |          |         |  |
| Csg.                              | 8 5/8"               |          |       | Depth      | 313'       |       |    | Street   | 1300 BROWN DR.                 |       |                         |             |          |         |  |
| Tbg. Size                         |                      |          |       | Depth      |            |       |    | City   | HAYS                           |       |                         | State       | KS 67101 |         |  |
| Tool                              |                      |          |       | Depth      |            |       |    | The above was done to satisfaction and supervision of owner agent or contractor.   |                                |       |                         |             |          |         |  |
| Cement Left in Csg.               |                      |          |       | Shoe Joint | 15'        |       |    | Cement Amount Ordered  | 150 csgs @ 300 lbs = 45000 lbs |       |                         |             |          |         |  |
| Meas Line                         |                      |          |       | Displace   | 12 1/2 BBL |       |    |  |                                |       |                         |             |          |         |  |
| <b>EQUIPMENT</b>                  |                      |          |       |            |            |       |    |  |                                |       |                         |             |          |         |  |
| Pumptrk #15                       | No.                  | Cementer | NECK  |            | Common     |       |    |  |                                |       |                         |             |          |         |  |
| Bulktrk #12                       | No.                  | Driver   | LOANE |            | Poz. Mix   |       |    |  |                                |       |                         |             |          |         |  |
| Bulktrk #10                       | No.                  | Driver   | CASSO |            | Gel.       |       |    |  |                                |       |                         |             |          |         |  |
| <b>JOB SERVICES &amp; REMARKS</b> |                      |          |       |            |            |       |    |  |                                |       |                         |             |          |         |  |
| Remarks:                          | CEMENTING ACCURATE!  |          |       |            |            |       |    |  |                                |       | Calcium                 |             |          |         |  |
| Rat Hole                          |                      |          |       |            |            |       |    |  |                                |       | Hulls                   |             |          |         |  |
| Mouse Hole                        |                      |          |       |            |            |       |    |  |                                |       | Salt                    |             |          |         |  |
| Centralizers                      |                      |          |       |            |            |       |    |  |                                |       | Flowseal                |             |          |         |  |
| Baskets                           |                      |          |       |            |            |       |    |  |                                |       | Kol-Seal                |             |          |         |  |
| D/V or Port Collar                |                      |          |       |            |            |       |    |  |                                |       | Mud CLR 48              |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | CFL-117 or CD110 CAF 38 |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Sand                    |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Handling                |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Mileage                 |             |          |         |  |
| <b>FLOAT EQUIPMENT</b>            |                      |          |       |            |            |       |    |  |                                |       |                         |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Guide Shoe              |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Centralizer             |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Baskets                 |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | AFU Inserts             |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Float Shoe              |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Latch Down              |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Pumptrk Charge          |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Mileage                 |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Tax                     |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Discount                |             |          |         |  |
|                                   |                      |          |       |            |            |       |    |  |                                |       | Total Charge            |             |          |         |  |
| X Signature                       |                      |          |       |            |            |       |    |  |                                |       |                         |             |          |         |  |



Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
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Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

September 24, 2012

Tom Denning  
TDI, Inc.  
1310 BISON RD  
HAYS, KS 67601-9696

Re: ACO1  
API 15-051-26317-00-00  
Derrick Unit 1  
SE/4 Sec.04-15S-18W  
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,  
Tom Denning