



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1146591  
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: \_\_\_\_\_



1146591

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>_____ |
|--|---|---|

# 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. 6858

|      |         |      |    |      |    |       |    |        |        |       |    |             |  |        |         |
|------|---------|------|----|------|----|-------|----|--------|--------|-------|----|-------------|--|--------|---------|
| Date | 5-25-13 | Sec. | 17 | Twp. | 10 | Range | 25 | County | Graham | State | KS | On Location |  | Finish | 9:30 PM |
|------|---------|------|----|------|----|-------|----|--------|--------|-------|----|-------------|--|--------|---------|

Location St. Peter 3w, 1s, 74E, N02

Lease Riedel Well No. 17-1 Owner \_\_\_\_\_

Contractor Murfco # 21  
 Type Job Surface  
 To Quality Oilwell Cementing, Inc.  
 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. 266 Charge H&C Oil Operating Inc.  
 Csg. 8 5/8 Depth 270 Street \_\_\_\_\_  
 Tbg. Size \_\_\_\_\_ Depth \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Tool \_\_\_\_\_ The above was done to satisfaction and supervision of owner agent or contractor.  
 Cement Left in Csg. 20 Shoe Joint 20 Cement Amount Ordered 150 sacks Com 3% cc 2% gel

| Meas Line |        | EQUIPMENT |            |
|-----------|--------|-----------|------------|
| Pumptrk   | No. 16 | Cementer  | Common 150 |
|           |        | Helper    | Poz. Mix   |
| Bulktrk   | No. 8  | Driver    | Gel. 3     |
|           |        | Driver    | Calcium 5  |
| Bulktrk   | No. P4 | Driver    | Hulls      |
|           |        | Driver    | Salt       |

**JOB SERVICES & REMARKS**  
 Remarks: Cement did circulate  
 Rat Hole \_\_\_\_\_ Flowseal \_\_\_\_\_  
 Mouse Hole \_\_\_\_\_ Kol-Seal \_\_\_\_\_  
 Centralizers \_\_\_\_\_ Mud CLR 48 \_\_\_\_\_  
 Baskets \_\_\_\_\_ CFL-117 or CD110 CAF 38 \_\_\_\_\_  
 DV or Port Collar \_\_\_\_\_ Sand \_\_\_\_\_  
 Handling 158  
 Mileage \_\_\_\_\_

CEMENT DID CIRCULATE!  
 FLOAT EQUIPMENT  
 Guide Shoe \_\_\_\_\_  
 Centralizer \_\_\_\_\_  
 Baskets \_\_\_\_\_  
 AFU Inserts \_\_\_\_\_  
 Float Shoe \_\_\_\_\_  
 Latch Down \_\_\_\_\_

Pumptrk Charge Surface  
 Mileage 35

|              |  |
|--------------|--|
| Tax          |  |
| Discount     |  |
| Total Charge |  |

X Signature Juan Torres

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

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

No. 6942

Cell 785-324-1041

|                        |                        |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|------------------------|------------------------|---|-------|--|---------------------|-------|-----|--------|---------|-------|----|-------------|--|--------|--------|
| Date                   | S-31-13                | Sec.  | 17    | Twp.   | 10                  | Range | Q9S | County | Cochran | State | KS | On Location |  | Finish | 400 pm |
| Lease                  | Riedel                 | Well No.  | 17-1  | Location: <u>Stout</u> <u>Patel</u> <u>YN to RD E 34</u>                         |                     |       |     |        |         |       |    |             |  |        |        |
| Contractor             | Muffin 21              | Owner <u>15 SE N10</u>  |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| Type Job               | Plug Set               | To Quality Oilwell Cementing, Inc.<br>You are hereby requested to rent cementing equipment and furnish<br>cement and helper to assist owner or contractor to do work as listed. |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| Hole Size              | 7 7/8                  | T.D.  |       | Charge To  | HHC                 |       |     |        |         |       |    |             |  |        |        |
| Csg.                   | D.I.P. Pipe            | Depth   |       | Street   |                     |       |     |        |         |       |    |             |  |        |        |
| Tbg. Size              |                        | Depth   |       | City   | State               |       |     |        |         |       |    |             |  |        |        |
| Tool                   |                        | Depth   |       | The above was done to satisfaction and supervision of owner agent or contractor. |                     |       |     |        |         |       |    |             |  |        |        |
| Cement Left in Csg.    |                        | Shoe Joint  |       | Cement Amount Ordered  | <u>220 gyo Wood</u> |       |     |        |         |       |    |             |  |        |        |
| Meas Line              |                        | Displace  |       | <u>1/4 flow</u>  |                     |       |     |        |         |       |    |             |  |        |        |
| EQUIPMENT              |                        |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| Pumptrk                | 5                      | No. Cementer  | Antel | Common   | 132                 |       |     |        |         |       |    |             |  |        |        |
|                        |                        | Helper  |       | Poz. Mix   | 88                  |       |     |        |         |       |    |             |  |        |        |
| Bulktrk                | 1                      | No. Driver  | Prett | Gel.   | 8                   |       |     |        |         |       |    |             |  |        |        |
| Bulktrk                | per                    | No. Driver  | Doves | Calcium  |                     |       |     |        |         |       |    |             |  |        |        |
| JOB SERVICES & REMARKS |                        |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| Remarks:               |                        |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| Flat Hole              | <u>30 SKS</u>          |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| Mouse Hole             | <u>15 SKS</u>          |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| Centralizers           |                        |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| Baskets                |                        |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| D/V or Port Collar     |                        |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | <u>15x 2220-ft</u>     | <u>25 SKS</u>   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | <u>2nd 1300-ft</u>     | <u>100 SKS</u>  |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | <u>3rd 305-ft</u>      | <u>40 SKS</u>   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | <u>4th 40-ft</u>       | <u>10 SKS</u>   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | FLOAT EQUIPMENT        |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Guide Shoe             |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Centralizer            |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Baskets                |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | AFU Inserts            |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Float Shoe             |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Latch Down             |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | <u>wood plug</u>       |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Pumptrk Charge         |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Mileage <u>35 plug</u> |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Tax                    |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Discount               |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
|                        | Total Charge           |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |
| X Signature            | <u>Juan Torres</u>     |   |       |  |                     |       |     |        |         |       |    |             |  |        |        |



## DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating**

PO Box 86  
Plainville KS 67663

ATTN: Clayton Erickson

**Riedel #17-1**

**17-10s-25w Graham,KS**

Start Date: 2013.05.29 @ 02:55:00

End Date: 2013.05.29 @ 09:59:00

Job Ticket #: 53886                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.05 @ 08:56:46



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

H&C Oil Operating

**17-10s-25w Graham,KS**

PO Box 86  
Plainville KS 67663

**Riedel #17-1**

Job Ticket: 53886

**DST#: 1**

ATTN: Clayton Erickson

Test Start: 2013.05.29 @ 02:55:00

## GENERAL INFORMATION:

Formation: **KC "C,D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:40:30

Time Test Ended: 09:59:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

**Interval: 3848.00 ft (KB) To 3885.00 ft (KB) (TVD)**

Reference Elevations: 2561.00 ft (KB)

Total Depth: 3885.00 ft (KB) (TVD)

2550.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

**Serial #: 8319 Outside**

Press @ Run Depth: 35.02 psig @ 3849.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.29

End Date: 2013.05.29

Last Calib.: 2013.05.29

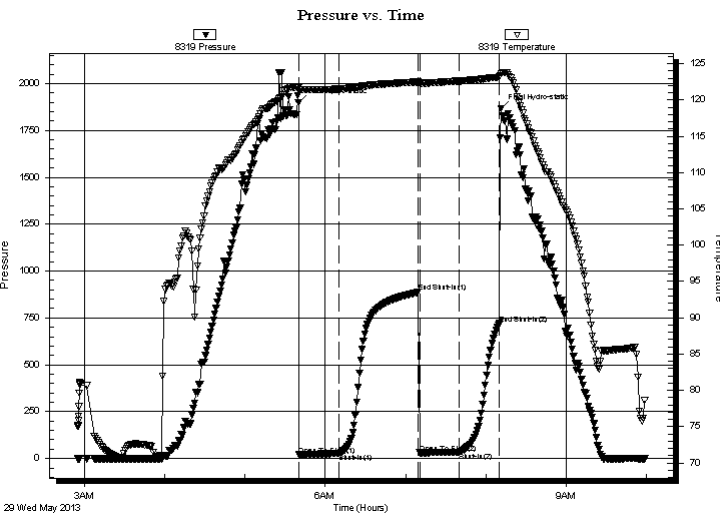
Start Time: 02:55:05

End Time: 09:58:59

Time On Btm: 2013.05.29 @ 05:40:00

Time Off Btm: 2013.05.29 @ 08:11:30

**TEST COMMENT:** IF-1/4" blow  
ISI-No blow  
FF-No blow  
FSI-No blow



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1899.34         | 121.75       | Initial Hydro-static |
| 1           | 20.02           | 121.41       | Open To Flow (1)     |
| 30          | 27.58           | 121.52       | Shut-In(1)           |
| 90          | 886.57          | 122.51       | End Shut-In(1)       |
| 91          | 30.28           | 122.32       | Open To Flow (2)     |
| 120         | 35.02           | 122.62       | Shut-In(2)           |
| 150         | 719.14          | 123.15       | End Shut-In(2)       |
| 152         | 1865.92         | 123.67       | Final Hydro-static   |

## 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) |
|--|----------------|-----------------|------------------|
|  |                |                 |                  |



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

H&C Oil Operating

17-10s-25w Graham,KS

PO Box 86  
Plainville KS 67663

Riedel #17-1

Job Ticket: 53886

DST#: 1

ATTN: Clayton Erickson

Test Start: 2013.05.29 @ 02:55:00

### GENERAL INFORMATION:

Formation: **KC "C,D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:40:30

Time Test Ended: 09:59:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

Interval: **3848.00 ft (KB) To 3885.00 ft (KB) (TVD)**

Reference Elevations: 2561.00 ft (KB)

Total Depth: 3885.00 ft (KB) (TVD)

2550.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

### Serial #: 8166

Inside

Press @ RunDepth: psig @ 3849.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2013.05.29

End Date: 2013.05.29

Last Calib.: 2013.05.29

Start Time: 02:55:05

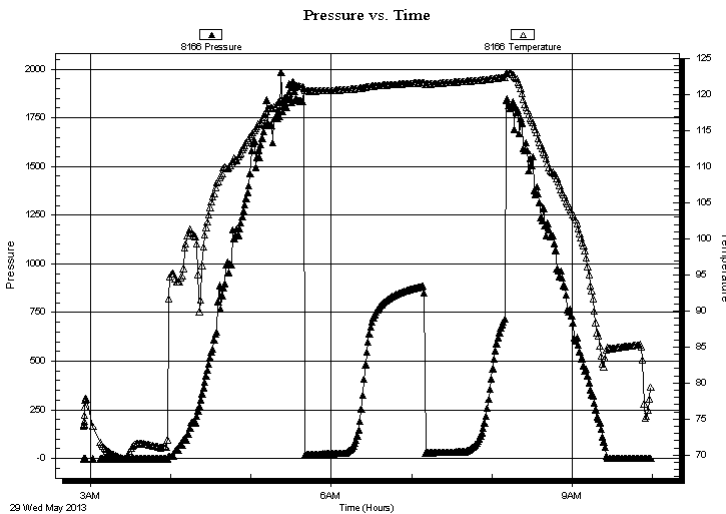
End Time: 09:58:29

Time On Btm:

Time Off Btm:

TEST COMMENT: IF-1/4" blow  
ISI-No blow  
FF-No blow  
FSI-No blow

### 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) |
|--|----------------|-----------------|------------------|
|  |                |                 |                  |



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H&C Oil Operating

**17-10s-25w Graham,KS**

PO Box 86  
Plainville KS 67663

**Riedel #17-1**

Job Ticket: 53886

**DST#: 1**

ATTN: Clayton Erickson

Test Start: 2013.05.29 @ 02:55:00

## 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: 2.70 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 240.00 ft  | Diameter: 2.25 inches | Volume: 1.18 bbl               | Weight to Pull Loose: 75000.00 lb  |
|                           |                    |                       | <u>Total Volume: 51.76 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 26.00 ft           |                       |                                | String Weight: Initial 70000.00 lb |
| Depth to Top Packer:      | 3848.00 ft         |                       |                                | Final 70000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 37.00 ft           |                       |                                |                                    |
| Tool Length:              | 65.00 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  |      |         | 3821.00 |                               |
| Shut In Tool    | 5.00  |      |         | 3826.00 |                               |
| Hydraulic tool  | 5.00  |      |         | 3831.00 |                               |
| Jars            | 5.00  |      |         | 3836.00 |                               |
| Safety Joint    | 2.00  |      |         | 3838.00 |                               |
| Packer          | 5.00  |      |         | 3843.00 | 28.00 Bottom Of Top Packer    |
| Packer          | 5.00  |      |         | 3848.00 |                               |
| Stubb           | 1.00  |      |         | 3849.00 |                               |
| Recorder        | 0.00  | 8166 | Inside  | 3849.00 |                               |
| Recorder        | 0.00  | 8319 | Outside | 3849.00 |                               |
| Perforations    | 33.00 |      |         | 3882.00 |                               |
| Bullnose        | 3.00  |      |         | 3885.00 | 37.00 Bottom Packers & Anchor |

**Total Tool Length: 65.00**





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

H&C Oil Operating

**17-10s-25w Graham,KS**

PO Box 86  
Plainville KS 67663

**Riedel #17-1**

Job Ticket: 53886

**DST#: 1**

ATTN: Clayton Erickson

Test Start: 2013.05.29 @ 02:55:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

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

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 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

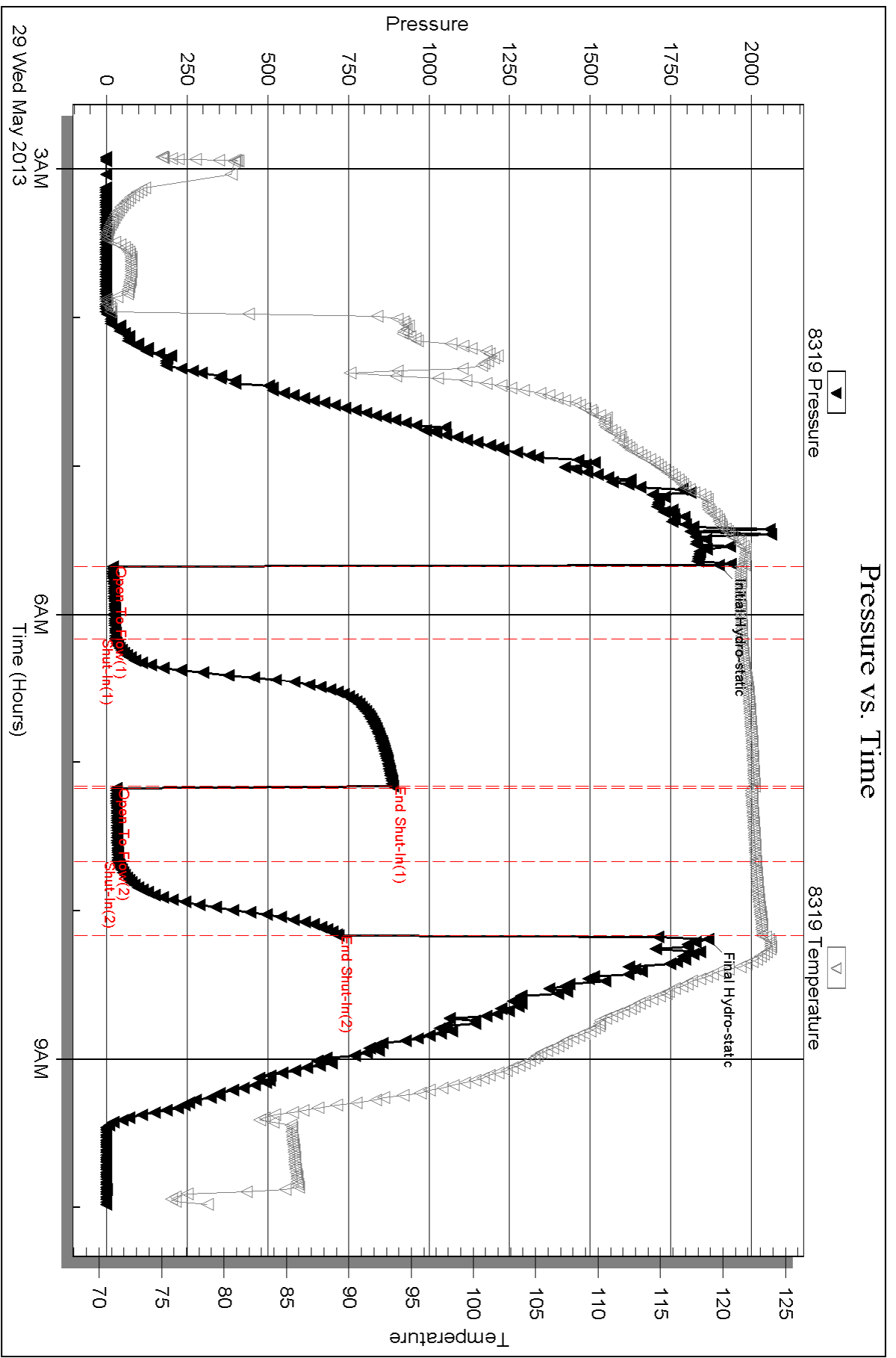
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



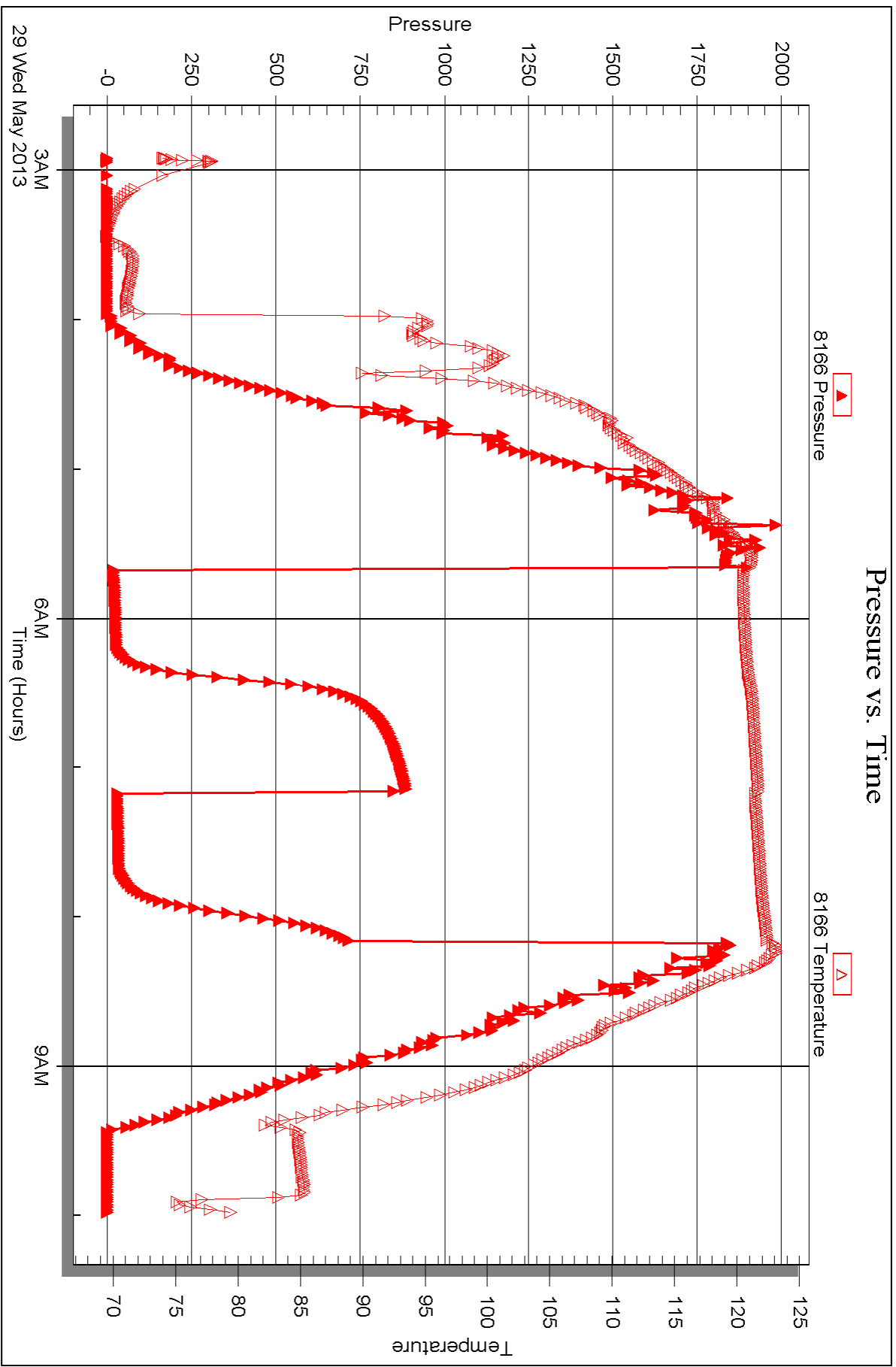
Serial #: 8166

Inside

H&C Oil Operating

Riedel #17-1

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating**

PO Box 86  
Plainville KS 67663

ATTN: Clayton Erickson

**Riedel #17-1**

**17-10s-25w Graham,KS**

Start Date: 2013.05.30 @ 04:45:00

End Date: 2013.05.30 @ 11:42:30

Job Ticket #: 53887                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.05 @ 08:56:05

H&C Oil Operating  
17-10s-25w Graham,KS  
Riedel #17-1  
DST # 2  
KC "I-J"  
2013.05.30



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

H&C Oil Operating

**17-10s-25w Graham,KS**

PO Box 86  
Plainville KS 67663

**Riedel #17-1**

Job Ticket: 53887

**DST#: 2**

ATTN: Clayton Erickson

Test Start: 2013.05.30 @ 04:45:00

## GENERAL INFORMATION:

Formation: **KC "I-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:07:00

Time Test Ended: 11:42:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Brett Dickinson

Unit No: 59

**Interval: 3972.00 ft (KB) To 4020.00 ft (KB) (TVD)**

Total Depth: 4020.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2561.00 ft (KB)

2550.00 ft (CF)

KB to GR/CF: 11.00 ft

**Serial #: 8166 Inside**

Press @ Run Depth: 47.38 psig @ 3973.00 ft (KB)

Start Date: 2013.05.30

End Date: 2013.05.30

Start Time: 04:45:05

End Time: 11:42:29

Capacity: 8000.00 psig

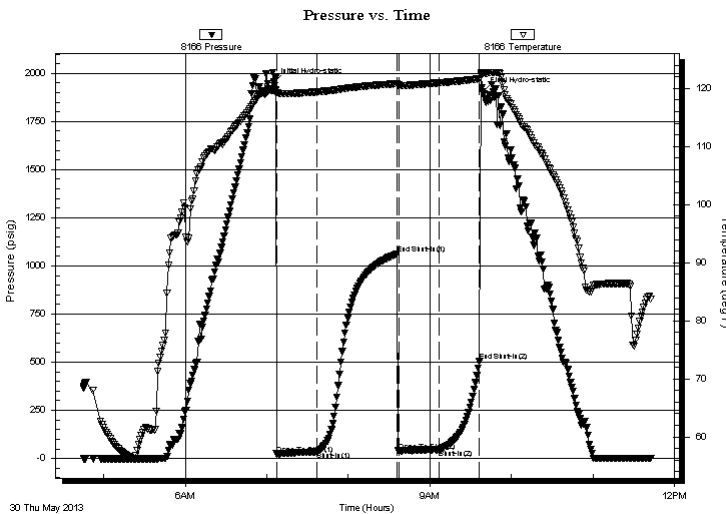
Last Calib.: 2013.05.30

Time On Btm: 2013.05.30 @ 07:05:00

Time Off Btm: 2013.05.30 @ 09:39:00

**TEST COMMENT:** IF-3/4" blow  
IS- No blow  
FF- No blow  
FS- No blow

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1954.06         | 119.57       | Initial Hydro-static |
| 2           | 24.05           | 119.30       | Open To Flow (1)     |
| 32          | 35.39           | 119.40       | Shut-In(1)           |
| 91          | 1060.97         | 120.82       | End Shut-In(1)       |
| 92          | 39.98           | 120.56       | Open To Flow (2)     |
| 122         | 47.38           | 120.97       | Shut-In(2)           |
| 152         | 505.10          | 121.68       | End Shut-In(2)       |
| 154         | 1907.12         | 122.64       | Final Hydro-static   |

## Recovery

| Length (ft) | Description    | Volume (bbl) |
|-------------|----------------|--------------|
| 15.00       | VSOCM 5%O 95%M | 0.07         |
|             |                |              |
|             |                |              |
|             |                |              |
|             |                |              |

## Gas Rates

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

\* Recovery from multiple tests



# TRILOBITE TESTING, INC.

## DRILL STEM TEST REPORT

H&C Oil Operating

**17-10s-25w Graham,KS**

PO Box 86  
Plainville KS 67663

**Riedel #17-1**

ATTN: Clayton Erickson

Job Ticket: 53887

**DST#: 2**

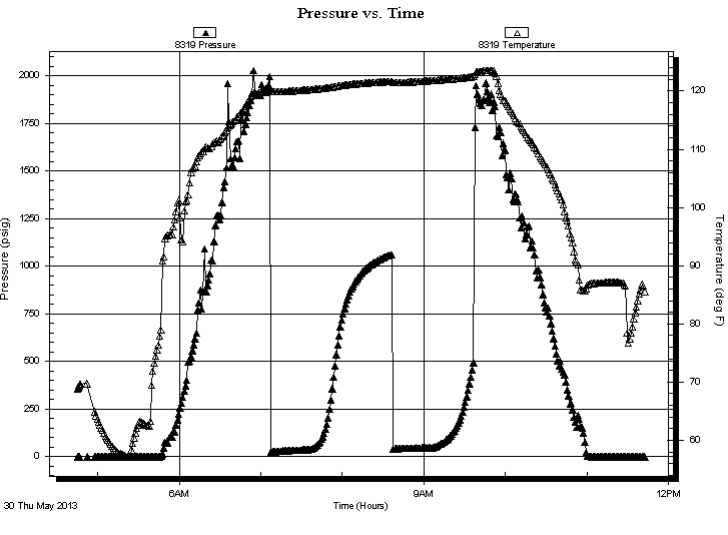
Test Start: 2013.05.30 @ 04:45:00

### GENERAL INFORMATION:

Formation: **KC "I-J"**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Reset)  
 Time Tool Opened: 07:07:00 Tester: Brett Dickinson  
 Time Test Ended: 11:42:30 Unit No: 59  
 Interval: **3972.00 ft (KB) To 4020.00 ft (KB) (TVD)** Reference Elevations: 2561.00 ft (KB)  
 Total Depth: 4020.00 ft (KB) (TVD) 2550.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 11.00 ft

**Serial #: 8319 Outside**  
 Press @RunDepth: psig @ 3973.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.05.30 End Date: 2013.05.30 Last Calib.: 2013.05.30  
 Start Time: 04:45:05 End Time: 11:42:29 Time On Btm:  
 Time Off Btm:

TEST COMMENT: IF-3/4" blow  
 IS-No blow  
 FF-No blow  
 FS-No blow



### PRESSURE SUMMARY

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

### Recovery

| Length (ft) | Description    | Volume (bbl) |
|-------------|----------------|--------------|
| 15.00       | VSOCM 5%O 95%M | 0.07         |
|             |                |              |
|             |                |              |
|             |                |              |
|             |                |              |
|             |                |              |

\* Recovery from multiple tests

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

H&C Oil Operating

**17-10s-25w Graham,KS**

PO Box 86  
Plainville KS 67663

**Riedel #17-1**

Job Ticket: 53887

**DST#: 2**

ATTN: Clayton Erickson

Test Start: 2013.05.30 @ 04:45:00

## Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3730.00 ft | Diameter: 3.80 inches | Volume: 52.32 bbl              | Tool Weight: 2500.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 2.70 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 240.00 ft  | Diameter: 2.25 inches | Volume: 1.18 bbl               | Weight to Pull Loose: 80000.00 lb  |
|                           |                    |                       | <u>Total Volume: 53.50 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 26.00 ft           |                       |                                | String Weight: Initial 70000.00 lb |
| Depth to Top Packer:      | 3972.00 ft         |                       |                                | Final 70000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 48.00 ft           |                       |                                |                                    |
| Tool Length:              | 76.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

## Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub  | 1.00        |            |          | 3945.00    |                               |
| Shut In Tool     | 5.00        |            |          | 3950.00    |                               |
| Hydraulic tool   | 5.00        |            |          | 3955.00    |                               |
| Jars             | 5.00        |            |          | 3960.00    |                               |
| Safety Joint     | 2.00        |            |          | 3962.00    |                               |
| Packer           | 5.00        |            |          | 3967.00    | 28.00 Bottom Of Top Packer    |
| Packer           | 5.00        |            |          | 3972.00    |                               |
| Stubb            | 1.00        |            |          | 3973.00    |                               |
| Recorder         | 0.00        | 8166       | Inside   | 3973.00    |                               |
| Recorder         | 0.00        | 8319       | Outside  | 3973.00    |                               |
| Perforations     | 11.00       |            |          | 3984.00    |                               |
| Change Over Sub  | 1.00        |            |          | 3985.00    |                               |
| Drill Pipe       | 31.00       |            |          | 4016.00    |                               |
| Change Over Sub  | 1.00        |            |          | 4017.00    |                               |
| Bullnose         | 3.00        |            |          | 4020.00    | 48.00 Bottom Packers & Anchor |

**Total Tool Length: 76.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

H&C Oil Operating

**17-10s-25w Graham,KS**

PO Box 86  
Plainville KS 67663

**Riedel #17-1**

Job Ticket: 53887

**DST#: 2**

ATTN: Clayton Erickson

Test Start: 2013.05.30 @ 04:45:00

## 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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

| Length<br>ft | Description    | Volume<br>bbl |
|--------------|----------------|---------------|
| 15.00        | VSOCM 5%O 95%M | 0.074         |

Total Length: 15.00 ft      Total Volume: 0.074 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

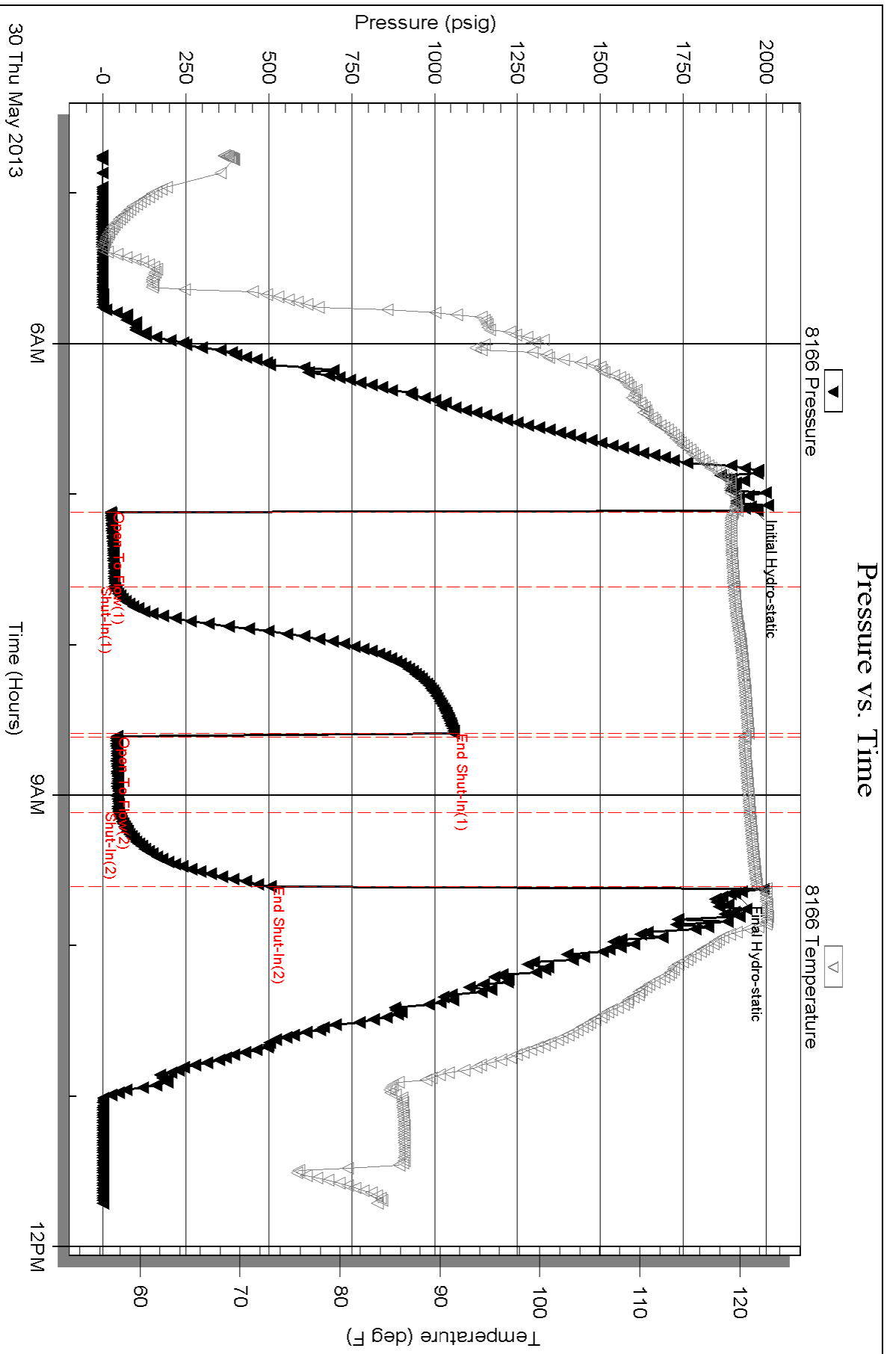
Serial #:

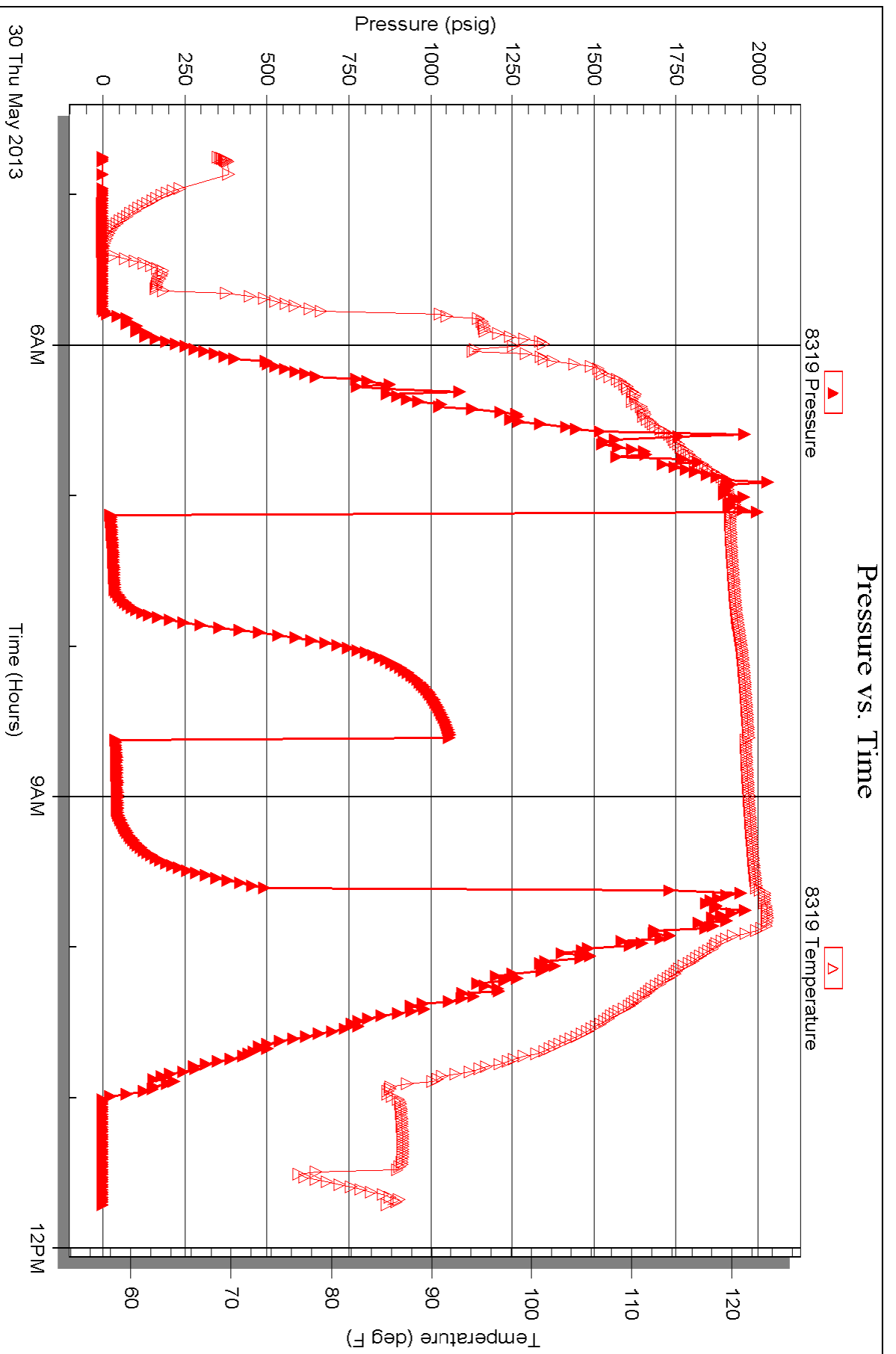
Laboratory Name:

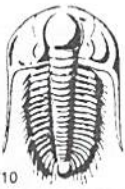
Laboratory Location:

Recovery Comments:









# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 53886

4/10

Well Name & No. Riedel # 1-17 Test No. 1 Date 07/29/13  
 Company H & C Oil Operating Elevation 2561 KB 2550 GL  
 Address PO Box 86 Plainville KS 67663  
 Co. Rep / Geo. Clayton Erickson Rig Martin #21  
 Location: Sec. 17 Twp. 10s Rge. 25w Co. Graham State KS

Interval Tested 3848 - 3885 Zone Tested KC" C+D"  
 Anchor Length 37 Drill Pipe Run \_\_\_\_\_ Mud Wt. ~~8.9~~ 9.1  
 Top Packer Depth 3843 Drill Collars Run 240 Vis ~~42~~ 58  
 Bottom Packer Depth 3848 Wt. Pipe Run \_\_\_\_\_ WL 7.6  
 Total Depth 3885 Chlorides 1,000 ppm System LCM 2 1/2 #  
 Blow Description IF - 1/4 in blow  
ISI - No blow  
FF - No blow  
FSI - No blow

| Rec       | Feet of      | %gas | %oil     | %water | %mud      |
|-----------|--------------|------|----------|--------|-----------|
| <u>10</u> | <u>VSOCM</u> |      | <u>5</u> |        | <u>95</u> |
| 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 123 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ ° F Chlorides \_\_\_\_\_ ppm

|                                      |   |  |
|--------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1,899</u> | <input checked="" type="checkbox"/> Test <u>1150</u>            | T-On Location <u>2:10</u>                          |
| (B) First Initial Flow <u>20</u>     | <input checked="" type="checkbox"/> Jars <u>250</u>             | T-Started <u>2:55</u>                              |
| (C) First Final Flow <u>28</u>       | <input checked="" type="checkbox"/> Safety Joint <u>75</u>      | T-Open <u>5:40</u>                                 |
| (D) Initial Shut-In <u>887</u>       | <input type="checkbox"/> Circ Sub _____                         | T-Pulled <u>8:10</u>                               |
| (E) Second Initial Flow <u>30</u>    | <input type="checkbox"/> Hourly Standby _____                   | T-Out <u>10:00</u>                                 |
| (F) Second Final Flow <u>35</u>      | <input checked="" type="checkbox"/> Mileage <u>139rt</u> 215.45 | Comments _____                                     |
| (G) Final Shut-In <u>719</u>         | <input type="checkbox"/> Sampler _____                          |  |
| (H) Final Hydrostatic <u>6,866</u>   | <input type="checkbox"/> Straddle _____                         | <input type="checkbox"/> Ruined Shale Packer _____ |
| Initial Open <u>30</u>               | <input type="checkbox"/> Shale Packer _____                     | <input type="checkbox"/> Ruined Packer _____       |
| Initial Shut-In <u>60</u>            | <input type="checkbox"/> Extra Packer _____                     | <input type="checkbox"/> Extra Copies _____        |
| Final Flow <u>30</u>                 | <input type="checkbox"/> Extra Recorder _____                   | Sub Total <u>0</u>                                 |
| Final Shut-In <u>30</u>              | <input type="checkbox"/> Day Standby _____                      | Total <u>1690.45</u>                               |
|                                      | <input type="checkbox"/> Accessibility _____                    | MP/DST Disc't _____                                |
|                                      | Sub Total <u>1690.45</u>  |  |

Approved By \_\_\_\_\_ Our Representative Beth D...

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. 53887

Well Name & No. ~~Riedel #1-17~~ Riedel #1-17 Test No. 2 Date 5/30/13  
 Company H+C Oil Operating Elevation 2561 KB 2550 GL  
 Address PO Box 86 Plainville KS 67663  
 Co. Rep / Geo. Clayton Erickson Rig Murfin #21  
 Location: Sec. 17 Twp. 10s Rge. 25w Co. Graham State KS

Interval Tested 3972 - 4020 Zone Tested KC "I, J"  
 Anchor Length 48 Drill Pipe Run Mud Wt. 9.2  
 Top Packer Depth 3967 Drill Collars Run 240 Vis 51  
 Bottom Packer Depth 3972 Wt. Pipe Run - WL 7.6  
 Total Depth 4020 Chlorides 1,000 ppm System LCM 2

Blow Description IF - 3/4 in blow  
 ISF - No blow  
 FF - No blow  
 FSF - No blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----|---------|------|------|--------|------|
| 15  | 150 CM  |      | 5    |        | 95   |
|     |         |      |      |        |      |
|     |         |      |      |        |      |
|     |         |      |      |        |      |
|     |         |      |      |        |      |

Rec Total 15 BHT 122 Gravity API RW @ ° F Chlorides ppm

(A) Initial Hydrostatic 1,954  Test 1250 T-On Location 4:20  
 (B) First Initial Flow 24  Jars 250 T-Started 4:45  
 (C) First Final Flow 36  Safety Joint 75 T-Open 7:04  
 (D) Initial Shut-In 1,061  Circ Sub T-Pulled 9:34  
 (E) Second Initial Flow 40  Hourly Standby T-Out 11:40  
 (F) Second Final Flow 47  Mileage 139 rT X 2 430.90  
 (G) Final Shut-In 505  Sampler  
 (H) Final Hydrostatic 1,907  Straddle  
 Shale Packer  
 Extra Packer  
 Extra Recorder  
 Day Standby  
 Accessibility

Comments  
 load tools 5/31 5:45

Initial Open 30  
 Initial Shut-In 60  
 Final Flow 30  
 Final Shut-In 30  
 Sub Total 2005.90

Approved By \_\_\_\_\_ Our Representative Burt D...

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.

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 10, 2013

Charles Ramsay  
H & C Oil Operating Inc.  
PO BOX 86  
PLAINVILLE, KS 67663-0086

Re: ACO1  
API 15-065-23935-00-00  
Riedel 17-1  
SW/4 Sec.17-10S-25W  
Graham 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,  
Charles Ramsay



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

Well Name: Reidel #17-1  
 Location: E2 SW SE SW Sec 17 T10S R25W  
 License Number: Spud Date: 5/25/2013  
 Surface Coordinates: 330' FSL 1900' FEL  
 Region: Graham County, KS  
 Drilling Completed: 5/30/2013  
 Bottom Hole Coordinates: 2550  
 Ground Elevation (ft): 2550  
 Logged Interval (ft): 3500  
 Formation: To: TD  
 K.B. Elevation (ft): 2561  
 Total Depth (ft): 4120  
 Type of Drilling Fluid:

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

OPERATOR

Company: H&C Oil Operating, Inc.  
 Address: P.O. Box 86  
 Plainville, KS 67663

GEOLOGIST

Name: Clayton Erickson  
 Company: Erickson Wellsite Geology  
 Address: P.O. Box 294  
 Loomis, NE 68958

DSTs

DST #1 3848-3885; 30-60-30-30; Hydro: 1899-1866 IFF: 20-28 ISIP: 887 FFP: 30-35 FSIP: 719; Rec: 10' 5%o 95%<sub>m</sub>; BHT: 123; IF: 1/4" IS: dead FF: dead FSI: dead

DST #2 3972-4020; 30-60-30-30; Hydro: 1954-1907 IFF: 24-36 ISIP: 1061 FFP: 40-47 FSIP: 505; Rec: 15' 5%o 95%<sub>m</sub>; BHT: 122; IF: 3/4" IS: dead FF: dead FSI: dead

COMMENTS

FORMATION TOPS

E-log  
 Anhydrite  
 Base Anhydrite  
 TOPEKA  
 HEEBNER  
 TORONTO  
 LANSING  
 BKC  
 TD

ROCK TYPES

Anhy, Bent, Brec, Cht, Clyst, Carb. shale, Arkose, Dol, Gyp, Igne, Lmst, Meta, Mrfst, Salt, Shale, Shcol, Shgy, Siltst, Ss, Till

OTHER SYMBOLS

OIL SHOW Even, Spotted Ques, Dead, INTERVAL Dst

