

## DRILL STEM TEST REPORT

Prepared For: **Cla-Mar Oil Company**

PO Box 1197  
Hays KS 67601-1197

ATTN: Jim Clark

### **Schumacher #2**

### **21-13s-20w Ellis,KS**

Start Date: 2013.06.01 @ 06:40:38

End Date: 2013.06.01 @ 11:25:47

Job Ticket #: 52086                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.05 @ 14:56:57



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Cla-Mar Oil Company  
PO Box 1197  
Hays KS 67601-1197  
ATTN: Jim Clark

**21-13s-20w Ellis,KS**  
**Schumacher #2**  
Job Ticket: 52086 **DST#: 1**  
Test Start: 2013.06.01 @ 06:40:38

## GENERAL INFORMATION:

Formation: **LKC H-I**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 08:09:03  
Time Test Ended: 11:25:47  
Interval: **3635.00 ft (KB) To 3685.00 ft (KB) (TVD)**  
Total Depth: 3685.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Fair  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Ray Schwager  
Unit No: 42  
Reference Elevations: 2215.00 ft (KB)  
2210.00 ft (CF)  
KB to GR/CF: 5.00 ft

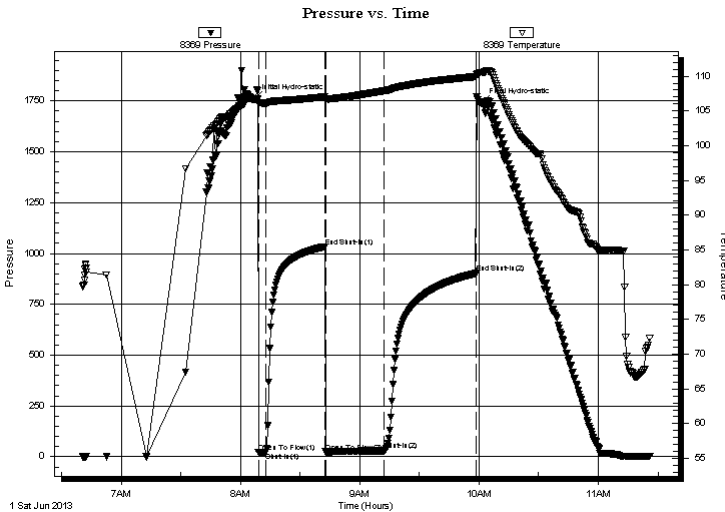
## Serial #: 8369

Inside

Press @ Run Depth: 29.56 psig @ 3649.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2013.06.01 End Date: 2013.06.01 Last Calib.: 2013.06.01  
Start Time: 06:40:38 End Time: 11:25:47 Time On Btm: 2013.06.01 @ 08:07:18  
Time Off Btm: 2013.06.01 @ 10:01:33

TEST COMMENT: 3-IFP-surface bl  
30-ISIP-no bl  
30-FFP-surface to 1/16" bl  
45-FSIP-no bl

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1761.16         | 106.69       | Initial Hydro-static |
| 2           | 21.61           | 106.06       | Open To Flow (1)     |
| 6           | 23.60           | 106.12       | Shut-In(1)           |
| 35          | 1033.03         | 107.03       | End Shut-In(1)       |
| 36          | 24.05           | 106.74       | Open To Flow (2)     |
| 65          | 29.56           | 107.88       | Shut-In(2)           |
| 111         | 901.66          | 109.93       | End Shut-In(2)       |
| 115         | 1739.79         | 110.52       | Final Hydro-static   |

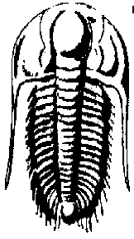
## Recovery

| Length (ft) | Description       | Volume (bbl) |
|-------------|-------------------|--------------|
| 15.00       | Mud w/show of oil | 0.21         |
|             |                   |              |
|             |                   |              |
|             |                   |              |
|             |                   |              |

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Cla-Mar Oil Company  
PO Box 1197  
Hays KS 67601-1197  
ATTN: Jim Clark

**21-13s-20w Ellis,KS**  
**Schumacher #2**  
Job Ticket: 52086      **DST#: 1**  
Test Start: 2013.06.01 @ 06:40:38

**Tool Information**

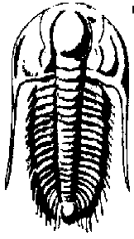
|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3646.00 ft | Diameter: 3.80 inches | Volume: 51.14 bbl              | Tool Weight: 2200.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight to Pull Loose: 80000.00 lb  |
|                           |                    |                       | <u>Total Volume: 51.14 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 32.00 ft           |                       |                                | String Weight: Initial 67000.00 lb |
| Depth to Top Packer:      | 3635.00 ft         |                       |                                | Final 67000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 50.00 ft           |                       |                                |                                    |
| Tool Length:              | 71.00 ft           |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

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

|                 |       |      |         |         |                                    |
|-----------------|-------|------|---------|---------|------------------------------------|
| Change Over Sub | 1.00  |      |         | 3615.00 |                                    |
| Shut In Tool    | 5.00  |      |         | 3620.00 |                                    |
| Hydraulic tool  | 5.00  |      |         | 3625.00 |                                    |
| Packer          | 5.00  |      |         | 3630.00 | 21.00      Bottom Of Top Packer    |
| Packer          | 5.00  |      |         | 3635.00 |                                    |
| Stubb           | 1.00  |      |         | 3636.00 |                                    |
| Perforations    | 13.00 |      |         | 3649.00 |                                    |
| Recorder        | 0.00  | 8369 | Inside  | 3649.00 |                                    |
| Recorder        | 0.00  | 8700 | Outside | 3649.00 |                                    |
| Blank Spacing   | 33.00 |      |         | 3682.00 |                                    |
| Bullnose        | 3.00  |      |         | 3685.00 | 50.00      Bottom Packers & Anchor |

**Total Tool Length: 71.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Cla-Mar Oil Company  
PO Box 1197  
Hays KS 67601-1197  
ATTN: Jim Clark

**21-13s-20w Ellis,KS**  
**Schumacher #2**  
Job Ticket: 52086      **DST#: 1**  
Test Start: 2013.06.01 @ 06:40:38

## Mud and Cushion Information

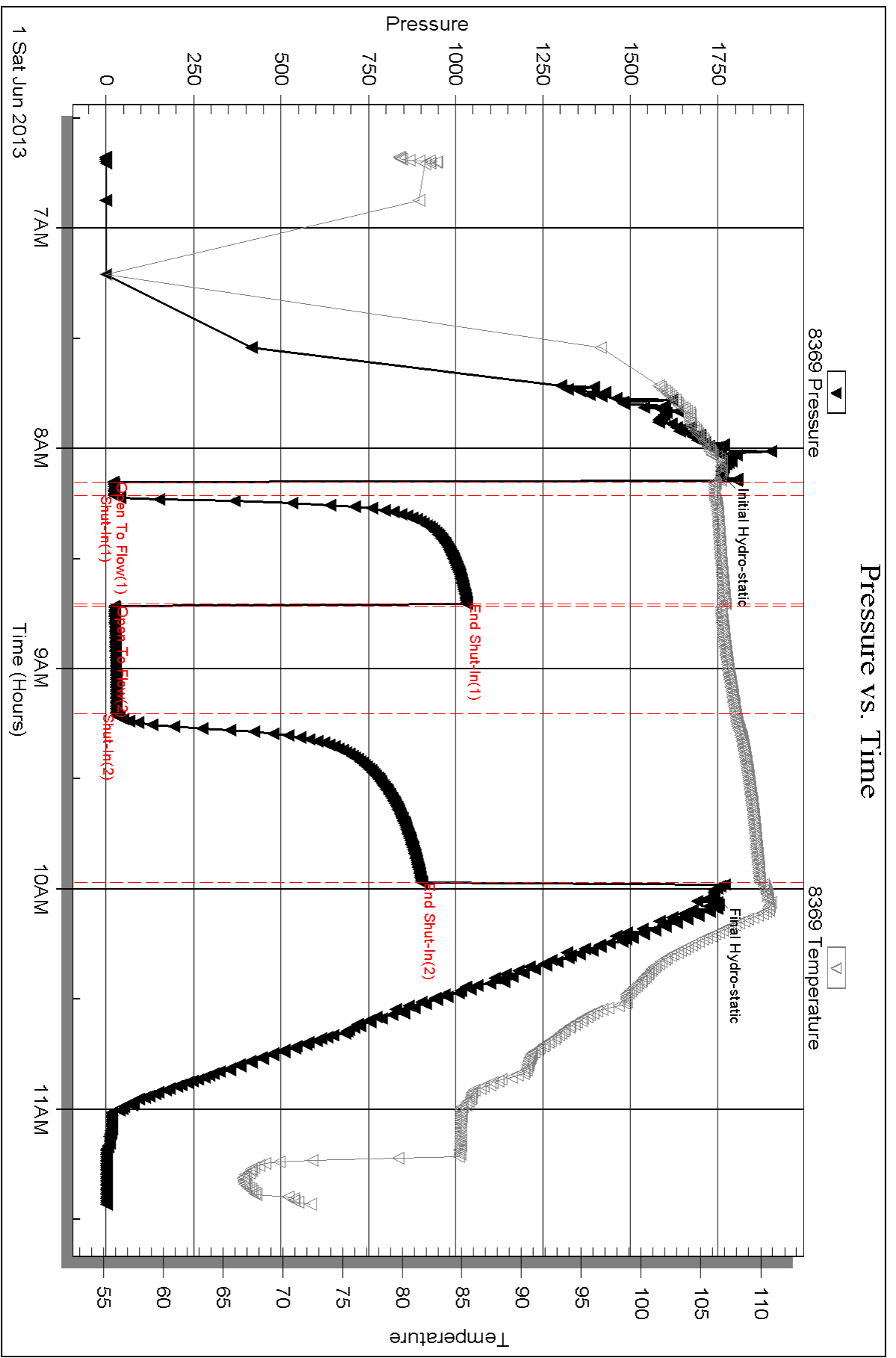
|                                  |                            |                 |         |
|----------------------------------|----------------------------|-----------------|---------|
| Mud Type: Gel Chem               | Cushion Type:              | Oil API:        | deg API |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: | ppm     |
| Viscosity: 56.00 sec/qt          | Cushion Volume: bbl        |                 |         |
| Water Loss: 8.37 in <sup>3</sup> | Gas Cushion Type:          |                 |         |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                 |         |
| Salinity: 3000.00 ppm            |                            |                 |         |
| Filter Cake: 1.00 inches         |                            |                 |         |

## Recovery Information

Recovery Table

| Length<br>ft | Description       | Volume<br>bbl |
|--------------|-------------------|---------------|
| 15.00        | Mud w/show of oil | 0.210         |

Total Length: 15.00 ft      Total Volume: 0.210 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments:

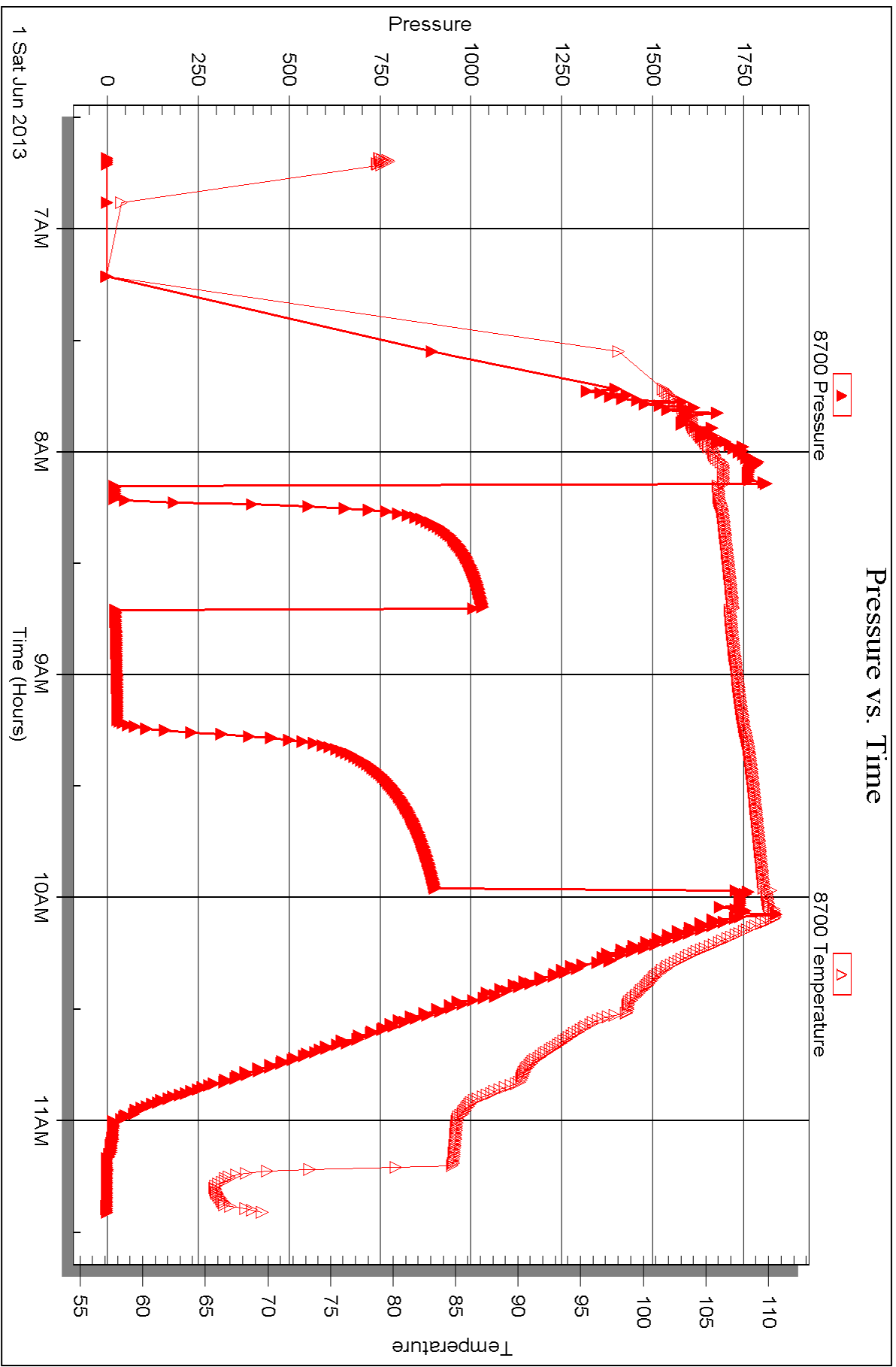


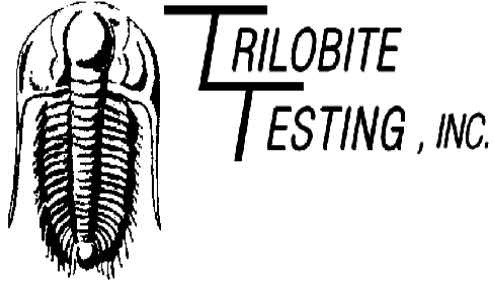
Serial #: 8700

Outside Cla-Mar Oil Company

Schumacher #2

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Cla-Mar Oil Company**

PO Box 1197  
Hays KS 67601-1197

ATTN: Jim Clark

### **Schumacher #2**

### **21-13s-20w Ellis,KS**

Start Date: 2013.06.02 @ 05:40:38

End Date: 2013.06.02 @ 11:49:17

Job Ticket #: 52087                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2013.06.05 @ 14:56:10





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Cla-Mar Oil Company  
 PO Box 1197  
 Hays KS 67601-1197  
 ATTN: Jim Clark

**21-13s-20w Ellis, KS**  
**Schumacher #2**  
 Job Ticket: 52087 **DST#: 2**  
 Test Start: 2013.06.02 @ 05:40:38

## GENERAL INFORMATION:

Formation: **Marmaton**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 07:23:33  
 Time Test Ended: 11:49:17  
 Interval: **3808.00 ft (KB) To 3830.00 ft (KB) (TVD)**  
 Total Depth: 3830.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ray Schwager  
 Unit No: 42  
 Reference Elevations: 2215.00 ft (KB)  
 2210.00 ft (CF)  
 KB to GR/CF: 5.00 ft

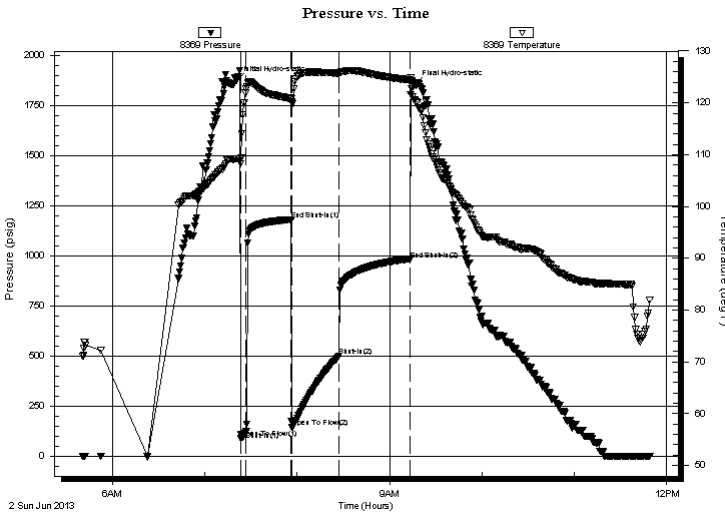
## Serial #: 8369

Inside

Press @ Run Depth: 502.04 psig @ 3809.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.06.02 End Date: 2013.06.02 Last Calib.: 2013.06.02  
 Start Time: 05:40:38 End Time: 11:49:17 Time On Btm: 2013.06.02 @ 07:20:48  
 Time Off Btm: 2013.06.02 @ 09:16:18

TEST COMMENT: 3-IFP-strg bl in 1 min  
 30-ISIP-6" bl bk  
 30-FFP-strg bl thru-out  
 45-FSIP-1/4" bl bk

## PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 1873.00         | 109.17       | Initial Hydro-static |
| 3           | 92.03           | 109.29       | Open To Flow (1)     |
| 6           | 124.66          | 122.75       | Shut-In(1)           |
| 36          | 1181.29         | 120.84       | End Shut-In(1)       |
| 36          | 144.42          | 119.95       | Open To Flow (2)     |
| 67          | 502.04          | 125.70       | Shut-In(2)           |
| 113         | 982.79          | 124.40       | End Shut-In(2)       |
| 116         | 1852.67         | 120.49       | Final Hydro-static   |

## Recovery

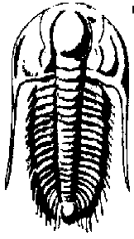
| Length (ft) | Description      | Volume (bbl) |
|-------------|------------------|--------------|
| 0.00        | 1030' GIP        | 0.00         |
| 1200.00     | CO               | 16.83        |
| 124.00      | SMGO 10%G5%M85%O | 1.74         |
|             |                  |              |
|             |                  |              |

\* Recovery from multiple tests

## Gas Rates

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





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Cla-Mar Oil Company  
PO Box 1197  
Hays KS 67601-1197  
ATTN: Jim Clark

**21-13s-20w Ellis,KS**  
**Schumacher #2**  
Job Ticket: 52087      **DST#: 2**  
Test Start: 2013.06.02 @ 05:40:38

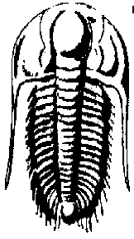
### Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 3807.00 ft | Diameter: 3.80 inches | Volume: 53.40 bbl              | Tool Weight: 2200.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 25000.00 lb  |
| Drill Collar:             | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight to Pull Loose: 75000.00 lb  |
|                           |                    |                       | <u>Total Volume: 53.40 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 20.00 ft           |                       |                                | String Weight: Initial 68000.00 lb |
| Depth to Top Packer:      | 3808.00 ft         |                       |                                | Final 72000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 22.00 ft           |                       |                                |                                    |
| Tool Length:              | 43.00 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         |      |         | 3788.00 |                                    |
| Shut In Tool              | 5.00         |      |         | 3793.00 |                                    |
| Hydraulic tool            | 5.00         |      |         | 3798.00 |                                    |
| Packer                    | 5.00         |      |         | 3803.00 | 21.00      Bottom Of Top Packer    |
| Packer                    | 5.00         |      |         | 3808.00 |                                    |
| Stubb                     | 1.00         |      |         | 3809.00 |                                    |
| Recorder                  | 0.00         | 8369 | Inside  | 3809.00 |                                    |
| Recorder                  | 0.00         | 8700 | Outside | 3809.00 |                                    |
| Perforations              | 18.00        |      |         | 3827.00 |                                    |
| Bullnose                  | 3.00         |      |         | 3830.00 | 22.00      Bottom Packers & Anchor |
| <b>Total Tool Length:</b> | <b>43.00</b> |      |         |         |                                    |



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Cla-Mar Oil Company  
PO Box 1197  
Hays KS 67601-1197  
ATTN: Jim Clark

**21-13s-20w Ellis,KS**  
**Schumacher #2**  
Job Ticket: 52087      **DST#: 2**  
Test Start: 2013.06.02 @ 05:40:38

### Mud and Cushion Information

|                                  |                            |                     |
|----------------------------------|----------------------------|---------------------|
| Mud Type: Gel Chem               | Cushion Type:              | Oil API: 41 deg API |
| Mud Weight: 9.00 lb/gal          | Cushion Length: ft         | Water Salinity: ppm |
| Viscosity: 53.00 sec/qt          | Cushion Volume: bbl        |                     |
| Water Loss: 8.77 in <sup>3</sup> | Gas Cushion Type:          |                     |
| Resistivity: ohm.m               | Gas Cushion Pressure: psig |                     |
| Salinity: 5000.00 ppm            |                            |                     |
| Filter Cake: 1.00 inches         |                            |                     |

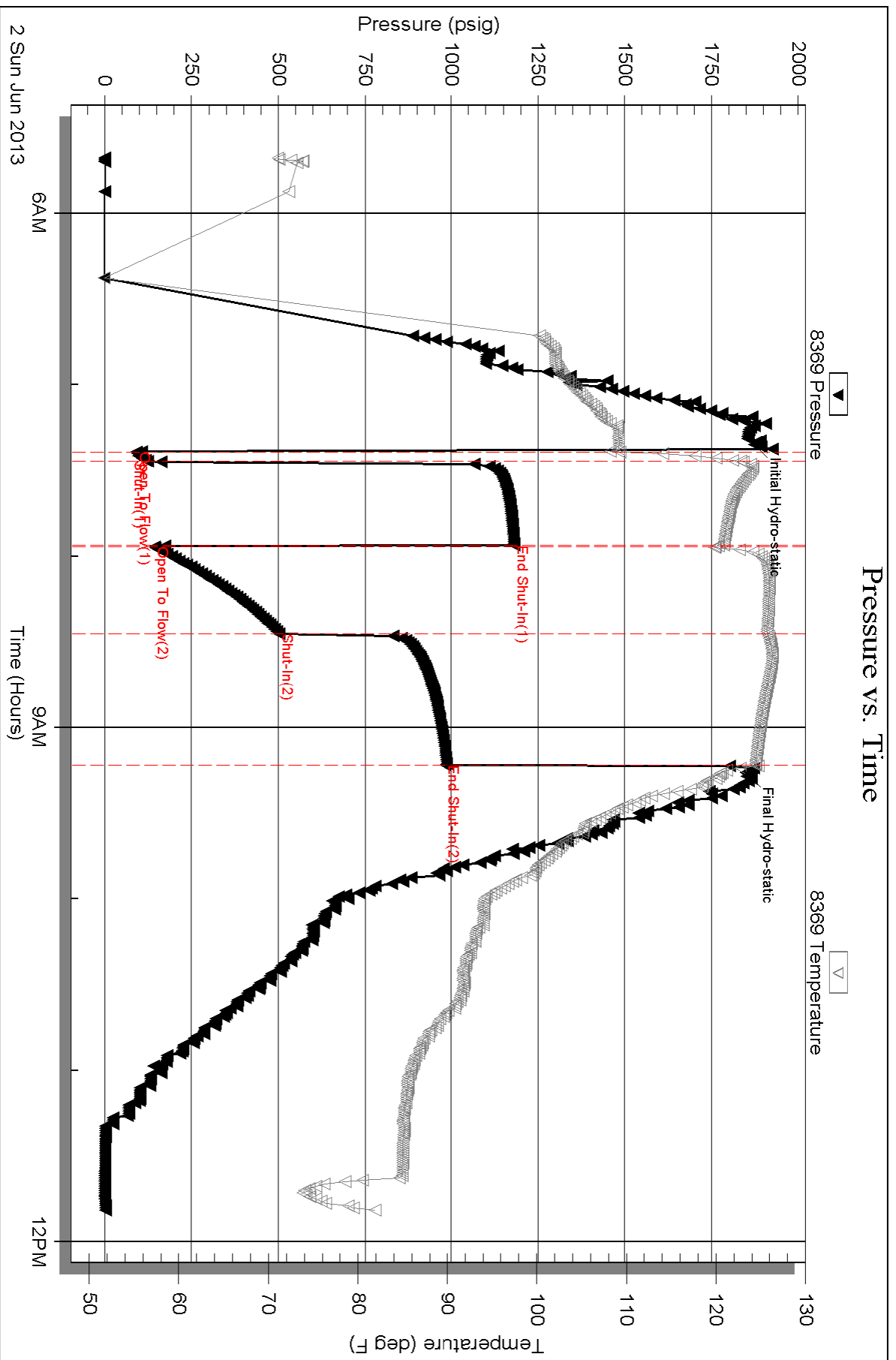
### Recovery Information

Recovery Table

| Length<br>ft | Description      | Volume<br>bbl |
|--------------|------------------|---------------|
| 0.00         | 1030' GIP        | 0.000         |
| 1200.00      | CO               | 16.833        |
| 124.00       | SMGO 10%G5%M85%O | 1.739         |

Total Length: 1324.00 ft      Total Volume: 18.572 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments:

# Pressure vs. Time

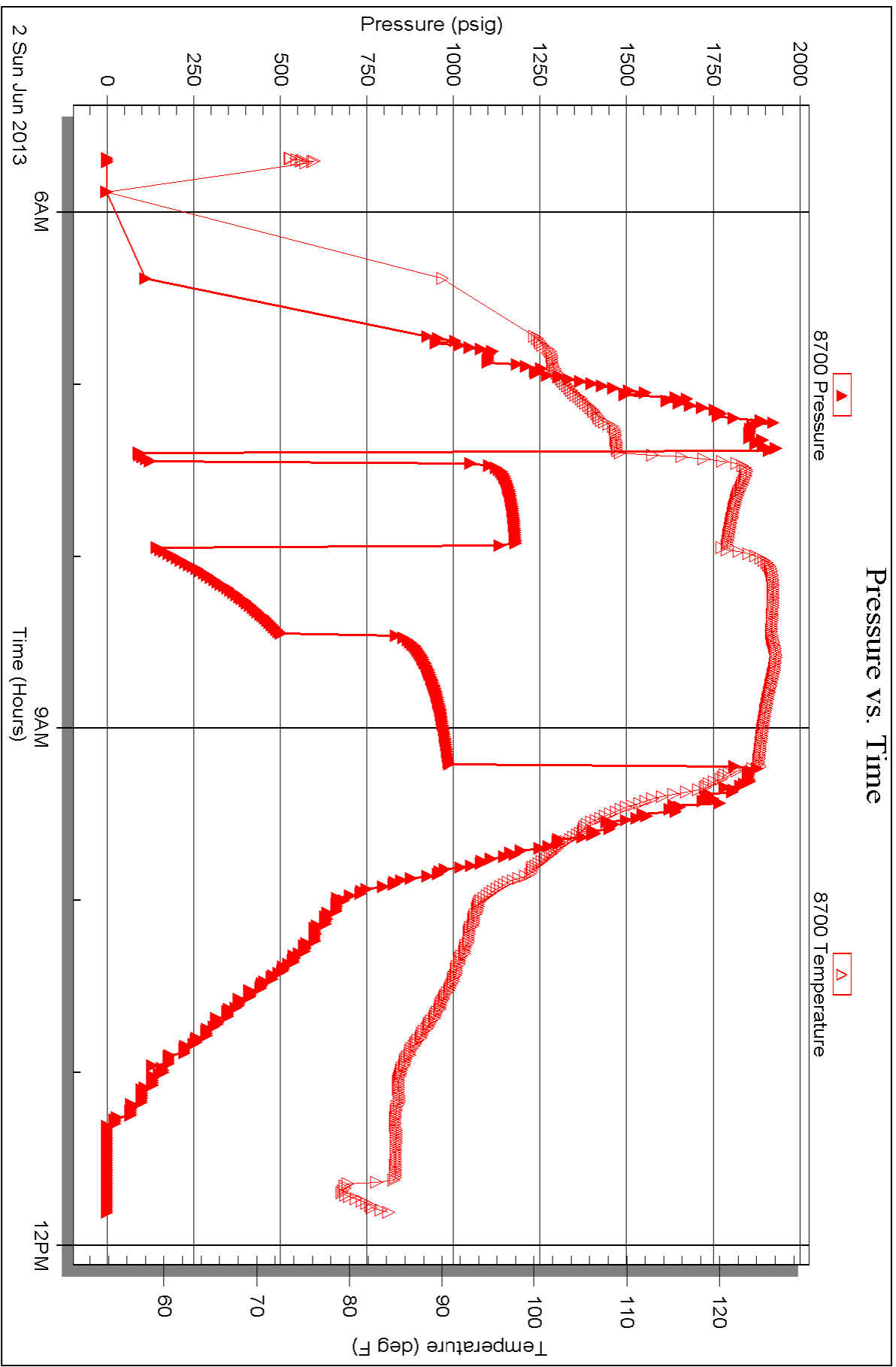


Serial #: 8700

Outside Cla-Mar Oil Company

Schumacher #2

DST Test Number: 2





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52086

Well Name & No. Schumacher #2 Test No. 1 Date 6-1-13  
 Company CLA-MAR OIL Company Elevation 2215 KB 2210 GL  
 Address PO Box 1197 Hays, Ks 67601-1197  
 Co. Rep / Geo. Roger Fisher Rig Royal rig 1  
 Location: Sec. 21 Twp. 13<sup>s</sup> Rge. 20<sup>w</sup> Co. ELLIS State Ks

Interval Tested 3635-3685 Zone Tested LKC H-I  
 Anchor Length 50 Drill Pipe Run 3646 Mud Wt. 9  
 Top Packer Depth 3630 Drill Collars Run - Vis 56  
 Bottom Packer Depth 3635 Wt. Pipe Run - WL 8.4  
 Total Depth 3685 Chlorides 3000 ppm System LCM 1 1/2 #

Blow Description IFP - SURFACE BLOW  
ISIP - NO BLOW  
FFP - SURFACE TO 1/16" BLOW  
FSIP - NO BLOW

| Rec       | Feet of              | %gas | %oil | %water | %mud |
|-----------|----------------------|------|------|--------|------|
| <u>15</u> | <u>Mud</u>           |      |      |        |      |
|           | <u>w/show of oil</u> |      |      |        |      |
|           |                      |      |      |        |      |
|           |                      |      |      |        |      |
|           |                      |      |      |        |      |

Rec Total 15 BHT 110 Gravity - API RW - @ - °F Chlorides - ppm

|                                     |   |  |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1761</u> | <input checked="" type="checkbox"/> Test <u>1150</u>        | T-On Location <u>0600</u>                    |
| (B) First Initial Flow <u>21</u>    | <input type="checkbox"/> Jars                               | T-Started <u>0640</u>                        |
| (C) First Final Flow <u>23</u>      | <input type="checkbox"/> Safety Joint                       | T-Open <u>0810</u>                           |
| (D) Initial Shut-In <u>1033</u>     | <input type="checkbox"/> Circ Sub                           | T-Pulled <u>0958</u>                         |
| (E) Second Initial Flow <u>24</u>   | <input type="checkbox"/> Hourly Standby                     | T-Out <u>1125</u>                            |
| (F) Second Final Flow <u>29</u>     | <input checked="" type="checkbox"/> Mileage <u>40 RT</u> 62 | Comments                                     |
| (G) Final Shut-In <u>901</u>        | <input type="checkbox"/> Sampler                            |  |
| (H) Final Hydrostatic <u>1739</u>   | <input type="checkbox"/> Straddle                           | <input type="checkbox"/> Ruined Shale Packer |
|                                     | <input type="checkbox"/> Shale Packer                       | <input type="checkbox"/> Ruined Packer       |

Initial Open 3  
 Initial Shut-In 30  
 Final Flow 30  
 Final Shut-In 45

127 Fm

Sub Total 1212

Approved By [Signature] Our Representative RAY SCHWAGER THANK YOU

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



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 52087

Well Name & No. Schumacher #2 Test No. 2 Date 6-2-13  
 Company CLA-MAR OIL COMPANY Elevation 2215 KB 2210 GL  
 Address PO Box 1197, Hays, KS 67601-1197  
 Co. Rep / Geo. Roger Fisher Rig Royal rig 1  
 Location: Sec. 21 Twp. 13<sup>s</sup> Rge. 20<sup>w</sup> Co. Ellis State Ks

Interval Tested 3808-3830 Zone Tested MARMATON  
 Anchor Length 22 Drill Pipe Run 3807 Mud Wt. 9.2  
 Top Packer Depth 3803 Drill Collars Run - Vis 53  
 Bottom Packer Depth 3808 Wt. Pipe Run - WL 8.8  
 Total Depth 3830 Chlorides 5000 ppm System LCM 1 1/2 #

Blow Description IFP - STRONG Blow IN 1 min  
ISIP - 6" Blow Back  
FFP - STRONG Blow thru-out  
FSIP - 1/4" Blow Back

| Rec         | Feet of     | %gas      | %oil      | %water | %mud     |
|-------------|-------------|-----------|-----------|--------|----------|
| <u>1030</u> | <u>GIP</u>  |           |           |        |          |
| <u>1200</u> | <u>CO</u>   |           |           |        |          |
| <u>124</u>  | <u>SMGO</u> | <u>10</u> | <u>85</u> |        | <u>5</u> |
|             |             |           |           |        |          |
|             |             |           |           |        |          |

Rec Total 1324 BHT 124 Gravity 41 API RW - @ - °F Chlorides - ppm  
 Test 1150 T-On Location 0510  
 Jars T-Started 0540  
 Safety Joint T-Open 0725  
 Circ Sub T-Pulled 0915  
 Hourly Standby T-Out 1149  
 Mileage 40 RT 124 Comments loaded tools 6/2 18:00  
 Sampler  
 Straddle  Ruined Shale Packer  
 Shale Packer  Ruined Packer  
 Extra Packer  Extra Copies  
 Extra Recorder Sub Total 0  
 Day Standby Total 1274  
 Accessibility MP/DST Disc't \_\_\_\_\_  
 Sub Total 1274

Initial Open 3  
 Initial Shut-In 30  
 Final Flow 30  
 Final Shut-In 45

Approved By OB 7 FA

Our Representative Ray Schwann Thank you