



## DRILL STEM TEST REPORT

Prepared For: **GRAND MESA OPERATING COMPANY**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

ATTN: BOB PETERSON

**26-12S-32W LOGAN**

**G ANDERSEN 2-26**

Start Date: 2010.10.07 @ 18:00:00

End Date: 2010.10.08 @ 01:11:30

Job Ticket #: 1033                      DST #: 5

Eagle Testers LLC.

P.O.Box 1011, Great Bend, KS 67530

620-617-7548

Printed: 2010.10.07 @ 18:35:42



# DRILL STEM TEST REPORT

GRAND MESA OPERATING COMPANY

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WICHITA KS 67206

**26-12S-32W LOGAN**

Job Ticket: 1033

**DST#: 5**

ATTN: BOB PETERSON

Test Start: 2010.10.07 @ 18:00:00

## GENERAL INFORMATION:

Formation: **LKC K-L-**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:59:30

Time Test Ended: 01:11:30

Test Type: Conventional Bottom Hole (Initial)

Tester: DAVID NICHOLS

Unit No: 15 70 MRT SCOTT CIT

**Interval: 4244.00 ft (KB) To 4321.00 ft (KB) (TVD)**

Reference Elevations: 2995.00 ft (KB)

Total Depth: 4321.00 ft (KB) (TVD)

2990.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

**Serial #: 6666**

**Inside**

Press @ RunDepth: 584.86 psig @ 4283.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2010.10.07

End Date: 2010.10.08

Last Calib.: 2010.10.07

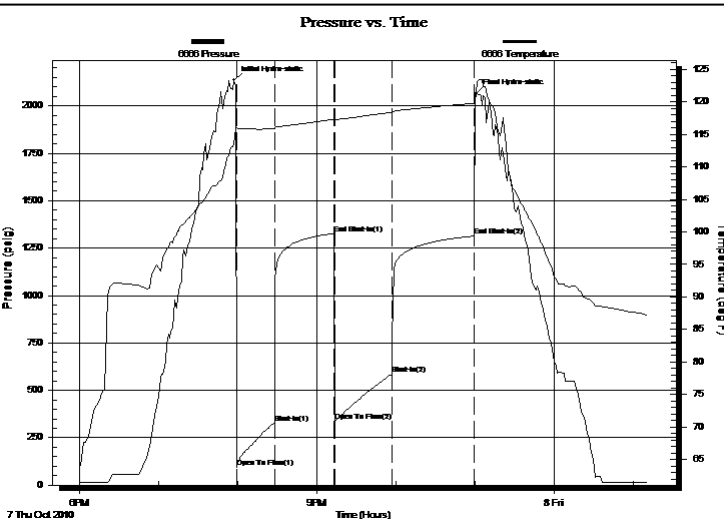
Start Time: 18:00:00

End Time: 01:11:30

Time On Btm: 2010.10.07 @ 19:57:30

Time Off Btm: 2010.10.07 @ 23:01:00

**TEST COMMENT:** 30-INITIAL OPENING GOOD BLOW BOTTOM BUCKET IN 7 MINS  
45-INITIAL SHUT IN NO BLOW BACK  
45-FINAL OPENING GOOD BLOW BOTTOM BUCKET IN 7 MINS  
60-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2135.86         | 113.35       | Initial Hydro-static |
| 2           | 92.33           | 115.95       | Open To Flow (1)     |
| 31          | 329.18          | 115.91       | Shut-In(1)           |
| 76          | 1327.87         | 117.30       | End Shut-In(1)       |
| 76          | 335.68          | 117.21       | Open To Flow (2)     |
| 120         | 584.86          | 118.37       | Shut-In(2)           |
| 182         | 1313.67         | 119.76       | End Shut-In(2)       |
| 184         | 2065.20         | 121.40       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 1080.00     | MUDDY WATER | 14.63        |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

## Gas Rates

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



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1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**26-12S-32W LOGAN**

Job Ticket: 1033

**DST#: 5**

ATTN: BOB PETERSON

Test Start: 2010.10.07 @ 18:00:00

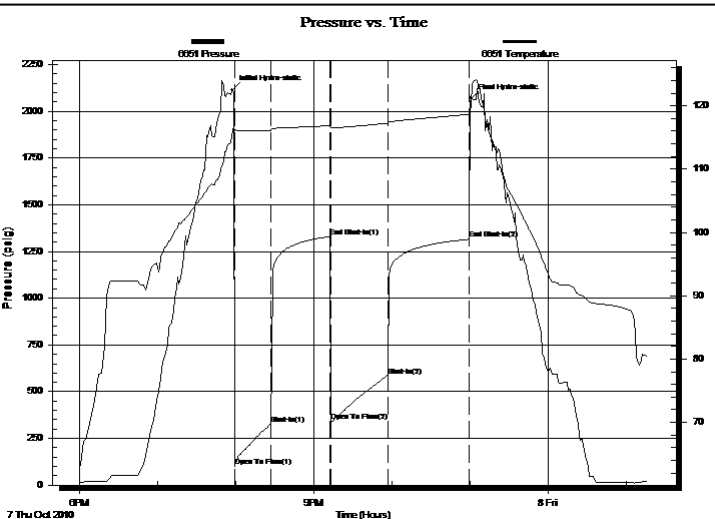
## GENERAL INFORMATION:

Formation: **LKC K-L-**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Bottom Hole (Initial)  
 Time Tool Opened: 19:59:30  
 Tester: DAVID NICHOLS  
 Time Test Ended: 01:11:30  
 Unit No: 15 70 MRT SCOTT CIT  
 Interval: **4244.00 ft (KB) To 4321.00 ft (KB) (TVD)**  
 Reference Elevations: 2995.00 ft (KB)  
 Total Depth: 4321.00 ft (KB) (TVD)  
 2990.00 ft (CF)  
 Hole Diameter: 7.88 inches  
 Hole Condition: Fair  
 KB to GR/CF: 5.00 ft

## Serial #: 6651

Press @ RunDepth: 1315.30 psig @ ft (KB) Capacity: 5000.00 psig  
 Start Date: 2010.10.07 End Date: 2010.10.08 Last Calib.: 2010.10.07  
 Start Time: 18:00:00 End Time: 01:16:00 Time On Btm: 2010.10.07 @ 19:57:30  
 Time Off Btm: 2010.10.07 @ 23:00:30

TEST COMMENT: 30-INITIAL OPENING GOOD BLOW BOTTOM BUCKET IN 7 MINS  
 45-INITIAL SHUT IN NO BLOW BACK  
 45-FINAL OPENING GOOD BLOW BOTTOM BUCKET IN 7 MINS  
 60-FINAL SHUT IN NO BLOW BACK



## PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation           |
|-------------|-----------------|--------------|----------------------|
| 0           | 2115.42         | 116.21       | Initial Hydro-static |
| 2           | 98.46           | 116.01       | Open To Flow (1)     |
| 30          | 328.29          | 116.15       | Shut-In(1)           |
| 76          | 1329.27         | 116.87       | End Shut-In(1)       |
| 76          | 339.70          | 116.51       | Open To Flow (2)     |
| 119         | 585.63          | 117.26       | Shut-In(2)           |
| 182         | 1315.30         | 118.66       | End Shut-In(2)       |
| 183         | 2068.26         | 120.39       | Final Hydro-static   |

## Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 1080.00     | MUDDY WATER | 14.63        |
|             |             |              |
|             |             |              |
|             |             |              |
|             |             |              |

## Gas Rates

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



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

GRAND MESA OPERATING COMPANY

**G ANDERSEN 2-26**

1700 N WATERFRONT PKWY BLDG 600  
WICHITA KS 67206

**26-12S-32W LOGAN**

Job Ticket: 1033

**DST#: 5**

ATTN: BOB PETERSON

Test Start: 2010.10.07 @ 18:00:00

## Tool Information

|                           |                    |                       |                                |                                    |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe:               | Length: 4101.00 ft | Diameter: 3.88 inches | Volume: 59.97 bbl              | Tool Weight: 2000.00 lb            |
| Heavy Wt. Pipe:           | Length: 0.00 ft    | Diameter: 0.00 inches | Volume: 0.00 bbl               | Weight set on Packer: 20000.00 lb  |
| Drill Collar:             | Length: 120.00 ft  | Diameter: 2.25 inches | Volume: 0.59 bbl               | Weight to Pull Loose: 80000.00 lb  |
|                           |                    |                       | <u>Total Volume: 60.56 bbl</u> | Tool Chased 0.00 ft                |
| Drill Pipe Above KB:      | 0.00 ft            |                       |                                | String Weight: Initial 48000.00 lb |
| Depth to Top Packer:      | 4244.00 ft         |                       |                                | Final 56000.00 lb                  |
| Depth to Bottom Packer:   | ft                 |                       |                                |                                    |
| Interval between Packers: | 77.00 ft           |                       |                                |                                    |
| Tool Length:              | 100.00 ft          |                       |                                |                                    |
| Number of Packers:        | 2                  | Diameter: 6.75 inches |                                |                                    |

Tool Comments:

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths                     |
|------------------|-------------|------------|----------|------------|------------------------------------|
| SHUT IN TOOL     | 5.00        |            |          | 4226.00    |                                    |
| HYD S.I. Tool    | 5.00        |            |          | 4231.00    |                                    |
| jars             | 6.00        |            |          | 4237.00    |                                    |
| safty joint      | 2.00        |            |          | 4239.00    |                                    |
| TRAVEL COLER     | 2.00        |            |          | 4241.00    |                                    |
| Packer           | 3.00        |            |          | 4244.00    | 23.00 Bottom Of Top Packer         |
| travel collar    | 2.00        |            |          | 4246.00    | 77.00 Tool Interval                |
| Packer           | 3.00        |            |          | 4249.00    |                                    |
| change over sub  | 0.75        |            |          | 4249.75    |                                    |
| drill pipe       | 31.50       |            |          | 4281.25    |                                    |
| change over sub  | 0.75        |            |          | 4282.00    |                                    |
| Recorder         | 1.00        | 6666       | Inside   | 4283.00    |                                    |
| Perforations     | 34.00       |            |          | 4317.00    |                                    |
| Recorder         | 1.00        | 6651       | Outside  | 4318.00    |                                    |
| bull plug        | 3.00        |            |          | 4321.00    | 1000099.00 Bottom Packers & Anchor |

**Total Tool Length: 100.00**



# DRILL STEM TEST REPORT

## FLUID SUMMARY

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WICHITA KS 67206  
ATTN: BOB PETERSON

**G ANDERSEN 2-26**  
**26-12S-32W LOGAN**  
Job Ticket: 1033      **DST#: 5**  
Test Start: 2010.10.07 @ 18:00:00

### Mud and Cushion Information

|              |                      |                       |      |                 |         |
|--------------|----------------------|-----------------------|------|-----------------|---------|
| Mud Type:    | Gel Chem             | Cushion Type:         |      | Oil API:        | deg API |
| Mud Weight:  | 9.00 lb/gal          | Cushion Length:       | ft   | Water Salinity: | ppm     |
| Viscosity:   | 62.00 sec/qt         | Cushion Volume:       | bbbl |                 |         |
| Water Loss:  | 8.20 in <sup>3</sup> | Gas Cushion Type:     |      |                 |         |
| Resistivity: | ohm.m                | Gas Cushion Pressure: | psig |                 |         |
| Salinity:    | 2000.00 ppm          |                       |      |                 |         |
| Filter Cake: | inches               |                       |      |                 |         |

### Recovery Information

Recovery Table

| Length<br>ft | Description | Volume<br>bbl |
|--------------|-------------|---------------|
| 1080.00      | MUDDY WATER | 14.629        |

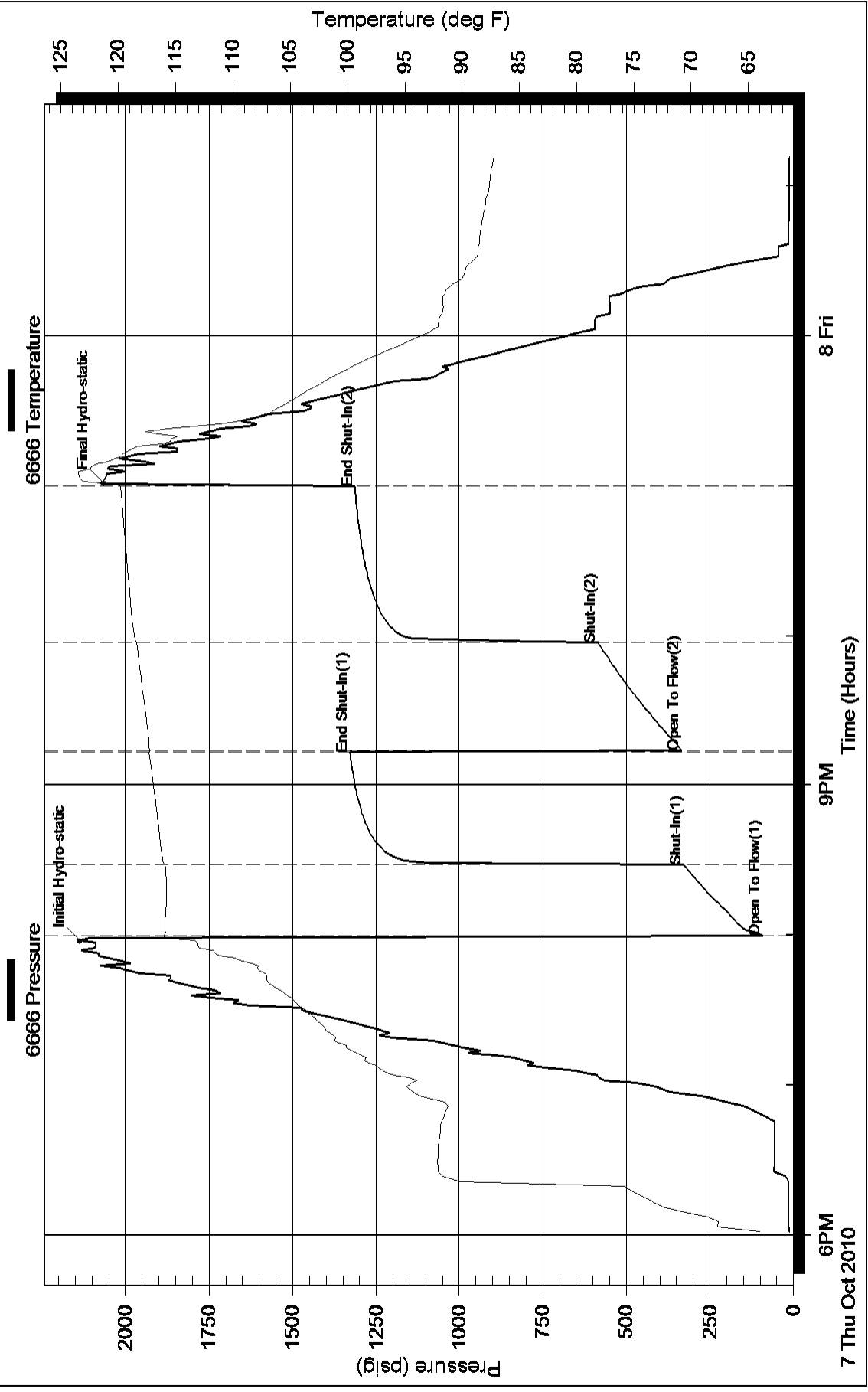
Total Length: 1080.00 ft      Total Volume: 14.629 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: RECOVERY CHLORQIDES 35 ,000

### Pressure vs. Time



### Pressure vs. Time

