

**HALLIBURTON**

**CHEVRON - MID-CONTINENT EBIZ  
DO NOT MAIL - 1400 SMITH ST  
HOUSTON, Texas**

MC Hagood B2

H&P 304 432-238-4515

## **Post Job Summary**

### **Cement Intermediate Casing**

Prepared for: Theodore Groff  
Date Prepared: 3 July 2011  
Version: 1

Service Supervisor: DEAN, MARK

Submitted by: M.C.Dube

**HALLIBURTON**

# HALLIBURTON

## ***Wellbore Geometry***

| Job Tubulars      |                   |         |       |              | MD       |           | Shoe Joint Length<br>ft |
|-------------------|-------------------|---------|-------|--------------|----------|-----------|-------------------------|
| Type              | Description       | Size in | ID in | Wt<br>lbm/ft | Top ft   | Bottom ft |                         |
| Casing            | Surface Casing    | 9.63    | 8.921 | 36.00        | 0.00     | 2,000.00  | 40.00                   |
| Open Hole Section | 8-3/4" Hole       |         | 8.750 |              | 2,000.00 | 6,685.00  |                         |
| Casing            | Production Casing | 7.00    | 6.366 | 23.00        | 0.00     | 6,685.00  | 40.00                   |

## ***Pumping Schedule***

| Fluid # | Fluid Type    | Fluid Name       | Surface Density<br>lbm/gal | Avg Rate<br>bbl/min | Surface Volume |
|---------|---------------|------------------|----------------------------|---------------------|----------------|
| 1       | Spacer        | Tuned Spacer III | 10.50                      | 4.00                | 30 bbl         |
| 2       | Cement Slurry | Tuned Light      | 11.00                      | 6.00                | 168.5 bbl      |
| 3       | Cement Slurry | Tuned Light      | 11.70                      | 6.00                | 61.3 bbl       |
| 4       | Spacer        | Displacement     | 8.30                       | 0.00                |                |

## ***Fluids Pumped***

# HALLIBURTON

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**Stage/Plug # 1    Fluid 1:**    Tuned Spacer III  
TUNED SPACER III - SBM (483826)  
92.34    Barite  
lbm/bbl

Fluid Density: 10.50 lbm/gal  
Pump Rate: 4.00 bbl/min

**Stage/Plug # 1    Fluid 2:**    Tuned Light  
TUNED LIGHT (TM) SYSTEM  
0.2 lbm    HR-800  
0.25 lbm    Poly-E-Flake

Fluid Weight: 11.00 lbm/gal  
Slurry Yield: 2.20 ft<sup>3</sup>/sack  
Total Mixing Fluid: 9.48 Gal  
Calculated Fill: 4,750.00 ft  
Calculated Top of Fluid: 0.00 ft  
Estimated Top of Fluid:

**Stage/Plug # 1    Fluid 3:**    Tuned Light  
TUNED LIGHT (TM) SYSTEM  
0.4 lbm    HR-800  
0.3 lbm    D-AIR 3000  
0.25 lbm    Poly-E-Flake

Fluid Weight: 11.70 lbm/gal  
Slurry Yield: 1.72 ft<sup>3</sup>/sack  
Total Mixing Fluid: 5.93 Gal  
Calculated Fill: 1,536.00 ft  
Calculated Top of Fluid: 4,750.00 ft  
Estimated Top of Fluid:

**Stage/Plug # 1    Fluid 4:**    Displacement  
SPACER

Fluid Density: 8.30 lbm/gal  
Pump Rate: 0.00 bbl/min

# HALLIBURTON

## ***Job Summary***

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### **Job Information**

|   |                      |
|---|----------------------|
| <b>Job Start Date</b>                       | 6/28/2011 9:10:00 PM |
| <b>Job MD</b>                               | 6,685.0 ft           |
| <b>Job TVD</b>                              | 6,685.0 ft           |
| <b>Annular flow Before Job? (Water/Gas)</b> | Unknown              |
| <b>Annular flow After Job? (Water/Gas)</b>  | Unknown              |

# HALLIBURTON

## Service Supervisor Reports

### Job Log

| Date/Time        | Activity Code                                    | Pump Rate | Cum Vol | Pressure (psig) | Comments                 |
|------------------|--|-----------|---------|-----------------|--------------------------|
| 06/28/2011 07:00 | Call Out   |           |         |                 |                          |
| 06/28/2011 09:15 | Pre-Convoy Safety Meeting                        |           |         |                 |                          |
| 06/28/2011 11:00 | Arrive at Location from Service Center           |           |         |                 |                          |
| 06/28/2011 12:30 | Pre-Rig Up Safety Meeting                        |           |         |                 |                          |
| 06/28/2011 12:45 | Rig-Up Equipment                                 |           |         |                 |                          |
| 06/28/2011 20:10 | Test Lines                                       |           |         |                 | 5000 psi (held 3 min)    |
| 06/28/2011 20:45 | Pre-Job Safety Meeting                           |           |         |                 |                          |
| 06/28/2011 21:20 | Pump Spacer                                      | 6         | 30      | 450.0           | Tuned Spacer III (10.5#) |
| 06/28/2011 21:29 | Drop Bottom Plug                                 |           |         |                 |                          |
| 06/28/2011 21:30 | Pump Lead Cement                                 | 6         | 184.15  | 430.0           | 11# (470 sks)            |
| 06/28/2011 22:05 | Pump Tail Cement                                 | 6         | 85.77   | 200.0           | 11.7# (280 sks)          |
| 06/28/2011 22:20 | Drop Top Plug                                    |           |         |                 | Wash up on top           |
| 06/28/2011 22:24 | Pump Displacement                                | 8         | 259.03  | 2300.0          |                          |
| 06/28/2011 22:51 | Cement Returns to Surface                        | 5.5       | 200     | 2030.0          | 60 bbl cement returned   |
| 06/28/2011 22:57 | Slow Rate  | 3         | 230     | 1300.0          |                          |
| 06/28/2011 23:06 | Bump Plug  | 3         | 259     | 1750.0          | 1000 psi over            |
| 06/28/2011 23:08 | Check Floats                                     |           |         |                 | 2 bbl back               |
| 06/28/2011 23:15 | Post-Job Safety Meeting (Pre Rig-Down)           |           |         |                 |                          |
| 06/28/2011 23:30 | Rig-Down Equipment                               |           |         |                 |                          |
| 06/29/2011 01:30 | Pre-Convoy Safety Meeting                        |           |         |                 |                          |
| 06/29/2011 01:45 | Depart Location for Service Center or Other Site |           |         |                 |                          |

### The Road to Excellence Starts with Safety

|  |                               |  |                               |
|--|-------------------------------|--|-------------------------------|
| <b>Sold To #:</b> 338668                       | <b>Ship To #:</b> 2861883     | <b>Quote #:</b>                                | <b>Sales Order #:</b> 8277546 |
| <b>Customer:</b> CHEVRON - MID-CONTINENT EBIZ  |                               | <b>Customer Rep:</b>                           |                               |
| <b>Well Name:</b> MC Hagood                    |                               | <b>Well #:</b> B2                              | <b>API/UWI #:</b>             |
| <b>Field:</b>                                  | <b>City (SAP):</b><br>RANGELY | <b>County/Parish:</b> Rio Blanco               | <b>State:</b> Colorado        |
| <b>Contractor:</b> H&P                         |                               | <b>Rig/Platform Name/Num:</b> 304 432-238-4515 |                               |
| <b>Job Purpose:</b> Cement Intermediate Casing |                               |  |                               |
| <b>Well Type:</b> Development Well             |                               | <b>Job Type:</b> Cement Intermediate Casing    |                               |
| <b>Sales Person:</b> GROFF, THEODORE           |                               | <b>Srvc Supervisor:</b> DEAN, MARK             | <b>MBU ID Emp #:</b> 454214   |

### Job Personnel

| HES Emp Name             | Exp Hrs | Emp #  | HES Emp Name      | Exp Hrs | Emp #  | HES Emp Name            | Exp Hrs | Emp #  |
|--------------------------|---------|--------|-------------------|---------|--------|-------------------------|---------|--------|
| DEAN, MARK<br>Christophe |         | 454214 | ESTEP, KENNETH    |         | 121420 | Fortin, Dylan           |         | 497259 |
| FUCHS, ERIC James        |         | 471203 | SAGE, JAMES Edwin |         | 470468 | SHIFLETT, JESSE<br>Amos |         | 469551 |

### Equipment

| HES Unit # | Distance-1 way | HES Unit # | Distance-1 way | HES Unit # | Distance-1 way | HES Unit # | Distance-1 way |
|------------|----------------|------------|----------------|------------|----------------|------------|----------------|
|            |                |            |                |            |                |            |                |

### Job Hours

| Date         | On Location Hours | Operating Hours | Date                                       | On Location Hours | Operating Hours | Date | On Location Hours | Operating Hours |
|--------------|-------------------|-----------------|--|-------------------|-----------------|------|-------------------|-----------------|
|              |                   |                 |  |                   |                 |      |                   |                 |
| <b>TOTAL</b> |                   |                 | Total is the sum of each column separately |                   |                 |      |                   |                 |

### Job

### Job Times

| Formation Name | Formation Depth (MD) | Top | Bottom | Form Type | Job depth MD | Job Depth TVD | Water Depth | Perforation Depth (MD) | From | To | Called Out    | Date            | Time  | Time Zone |
|----------------|----------------------|-----|--------|-----------|--------------|---------------|-------------|------------------------|------|----|---------------|-----------------|-------|-----------|
|                |                      |     |        | BHST      | 6685. ft     | 6685. ft      |             |                        |      |    |               | 28 - Jun - 2011 | 07:00 | CST       |
|                |                      |     |        |           |              |               |             |                        |      |    | On Location   | 28 - Jun - 2011 | 11:00 | CST       |
|                |                      |     |        |           |              |               |             |                        |      |    | Job Started   | 28 - Jun - 2011 | 21:10 | CST       |
|                |                      |     |        |           |              |               |             |                        |      |    | Job Completed | 28 - Jun - 2011 | 23:08 | CST       |
|                |                      |     |        |           |              |               |             |                        |      |    | Departed Loc  | 29 - Jun - 2011 | 01:15 | CST       |

### Well Data

| Description       | New / Used | Max pressure psig | Size in | ID in | Weight lbm/ft | Thread | Grade | Top MD ft | Bottom MD ft | Top TVD ft | Bottom TVD ft |
|-------------------|------------|-------------------|---------|-------|---------------|--------|-------|-----------|--------------|------------|---------------|
| 8-3/4" Hole       |            |                   |         | 8.75  |               |        |       | 2000.     | 6685.        |            |               |
| Production Casing | New        |                   | 7.      | 6.366 | 23.           |        | K-55  | .         | 6685.        |            |               |
| Surface Casing    | New        |                   | 9.625   | 8.921 | 36.           |        | H-40  | .         | 2000.        |            |               |

### Sales/Rental/3<sup>rd</sup> Party (HES)

| Description                              | Qty | Qty uom | Depth | Supplier |
|--|-----|---------|-------|----------|
| PLUG,CMTG,TOP,7,HWE,5.66 MIN/6.54 MAX CS | 1   | EA      |       |          |
| PLUG,CMTG,BOT,7,HWE,5.66 MIN/6.54 MAX CS | 1   | EA      |       |          |
| SUGAR - GRANULATED                       | 20  | LB      |       |          |

### Tools and Accessories

| Type         | Size | Qty | Make | Depth | Type        | Size | Qty | Make | Depth | Type           | Size | Qty | Make |
|--------------|------|-----|------|-------|-------------|------|-----|------|-------|----------------|------|-----|------|
| Guide Shoe   |      |     |      |       | Packer      |      |     |      |       | Top Plug       |      |     |      |
| Float Shoe   |      |     |      |       | Bridge Plug |      |     |      |       | Bottom Plug    |      |     |      |
| Float Collar |      |     |      |       | Retainer    |      |     |      |       | SSR plug set   |      |     |      |
| Insert Float |      |     |      |       |             |      |     |      |       | Plug Container |      |     |      |

Summit  
Version:

Sunday, July 03, 2011 14:05:00

|                                |  |      |  |            |  |      |  |           |  |              |  |      |   |
|--------------------------------|--|------|--|------------|--|------|--|-----------|--|--------------|--|------|---|
| Stage Tool                     |  |      |  |            |  |      |  |           |  | Centralizers |  |      |   |
| <b>Miscellaneous Materials</b> |  |      |  |            |  |      |  |           |  |              |  |      |   |
| Gelling Agt                    |  | Conc |  | Surfactant |  | Conc |  | Acid Type |  | Qty          |  | Conc | % |
| Treatment Fld                  |  | Conc |  | Inhibitor  |  | Conc |  | Sand Type |  | Size         |  | Qty  |   |

| Fluid Data                               |                  |                                  |                 |                                   |                        |                           |                  |              |                        |    |
|--|------------------|----------------------------------|-----------------|-----------------------------------|------------------------|---------------------------|------------------|--------------|------------------------|----|
| Stage/Plug #: 1                          |                  |                                  |                 |                                   |                        |                           |                  |              |                        |    |
| Fluid #                                  | Stage Type       | Fluid Name                       | Qty             | Qty uom                           | Mixing Density lbm/gal | Yield ft <sup>3</sup> /sk | Mix Fluid Gal/sk | Rate bbl/min | Total Mix Fluid Gal/sk |    |
| 1  | Tuned Spacer III | TUNED SPACER III - SBM (483826)  | 30              | bbl                               | 10.5                   | 6.48                      | 43.37            | 6.0          |                        |    |
|  | 43.37 gal/bbl    | FRESH WATER                      |                 |                                   |                        |                           |                  |              |                        |    |
|  | 92.34 lbm/bbl    | BARITE, BULK (100003681)         |                 |                                   |                        |                           |                  |              |                        |    |
| 2  | Tuned Light      | TUNED LIGHT (TM) SYSTEM (452984) | 430             | sacks                             | 11.                    | 2.2                       | 9.48             | 6.0          | 9.48                   |    |
|  | 0.2 lbm          | HR-800, 50 LB SACK (101619742)   |                 |                                   |                        |                           |                  |              |                        |    |
|  | 0.25 lbm         | POLY-E-FLAKE (101216940)         |                 |                                   |                        |                           |                  |              |                        |    |
|  | 9.48 Gal         | FRESH WATER                      |                 |                                   |                        |                           |                  |              |                        |    |
| 3  | Tuned Light      | TUNED LIGHT (TM) SYSTEM (452984) | 200             | sacks                             | 11.7                   | 1.72                      | 5.93             | 6.0          | 5.93                   |    |
|  | 0.4 lbm          | HR-800, 50 LB SACK (101619742)   |                 |                                   |                        |                           |                  |              |                        |    |
|  | 0.3 lbm          | D-AIR 3000 (101007446)           |                 |                                   |                        |                           |                  |              |                        |    |
|  | 5.93 Gal         | FRESH WATER                      |                 |                                   |                        |                           |                  |              |                        |    |
|  | 0.25 lbm         | POLY-E-FLAKE (101216940)         |                 |                                   |                        |                           |                  |              |                        |    |
| 4  | Displacement     |                                  |                 | bbl                               | 8.3                    | .0                        | .0               | .0           |                        |    |
| Calculated Values                        |                  |                                  | Pressures       |                                   |                        | Volumes                   |                  |              |                        |    |
| Displacement                             |                  | Shut In: Instant                 |                 | Lost Returns                      |                        | Cement Slurry             |                  | Pad          |                        |    |
| Top Of Cement                            |                  | 5 Min                            |                 | Cement Returns                    |                        | Actual Displacement       |                  | Treatment    |                        |    |
| Frac Gradient                            |                  | 15 Min                           |                 | Spacers                           |                        | Load and Breakdown        |                  | Total Job    |                        |    |
| Rates                                    |                  |                                  |                 |                                   |                        |                           |                  |              |                        |    |
| Circulating                              |                  | Mixing                           |                 | Displacement                      |                        | Avg. Job                  |                  |              |                        |    |
| Cement Left In Pipe                      | Amount           | 40 ft                            | Reason          | Shoe Joint                        |                        |                           |                  |              |                        |    |
| Frac Ring # 1 @                          | ID               |                                  | Frac ring # 2 @ | ID                                |                        | Frac Ring # 3 @           | ID               |              | Frac Ring # 4 @        | ID |
| The Information Stated Herein Is Correct |                  |                                  |                 | Customer Representative Signature |                        |                           |                  |              |                        |    |

# HALLIBURTON

## Lab Data

# HALLIBURTON

Cementing Rockies, Vernal

LAB RESULTS - Lead

### Job Information

|                |             |          |                     |            |              |
|----------------|-------------|----------|---------------------|------------|--------------|
| Request/Slurry | 157679/1    | Rig Name | H&P 304             | Date       | 25/JUN/2011  |
| Submitted By   | Isaac Whorl | Job Type | Intermediate Casing | Bulk Plant | Vernal       |
| Customer       | Chevron     | Location | Rio Blanco          | Well       | MC Hagood B2 |

### Well Information

|                   |        |           |         |      |       |
|-------------------|--------|-----------|---------|------|-------|
| Casing/Liner Size | 7"     | Depth MD  | 6537 ft | BHST | 158 F |
| Hole Size         | 8 3/4" | Depth TVD | 0 ft    | BHCT | 112 F |

### Cement Information - Lead Design

| Conc  | UOM      | Cement/Additive | Sample Type | Sample Date  | Lot No.   | Cement Properties |             |        |
|-------|----------|-----------------|-------------|--------------|-----------|-------------------|-------------|--------|
|       |          | Tuned Light     |             |              |           | Slurry Density    | 11.00       | PPG    |
| 0.200 | lb/sk    | HR-800          | Bulk        | Jun 26, 2011 | 09241005  | Slurry Yield      | 2.2         | ft3/sk |
| 9.48  | gal/sack | Fresh Water     | Lab         | May 29, 2011 | 5-29-2011 | Water Requirement | 9.48        | GPS    |
|       |          |                 |             |              |           | Water Source      | Fresh Water |        |

### Operation Test Results Request ID 157679/1

#### Thickening Time

| Temp (°F) | Pressure (psi) | Reached in (min) | Start BC | 30 Bc (hh:mm) | 50 Bc (hh:mm) | 70 Bc (hh:mm) | 100 Bc (hh:mm) |
|-----------|----------------|------------------|----------|---------------|---------------|---------------|----------------|
| 112       | 3,876          | 35               | 19       | 05:06         | 05:06         | 05:06         | 05:06          |

#### Marsh Funnel

| Volume [ml] | Time [Sec] | Foam Quality |
|-------------|------------|--------------|
| 250         | 132        | 0            |

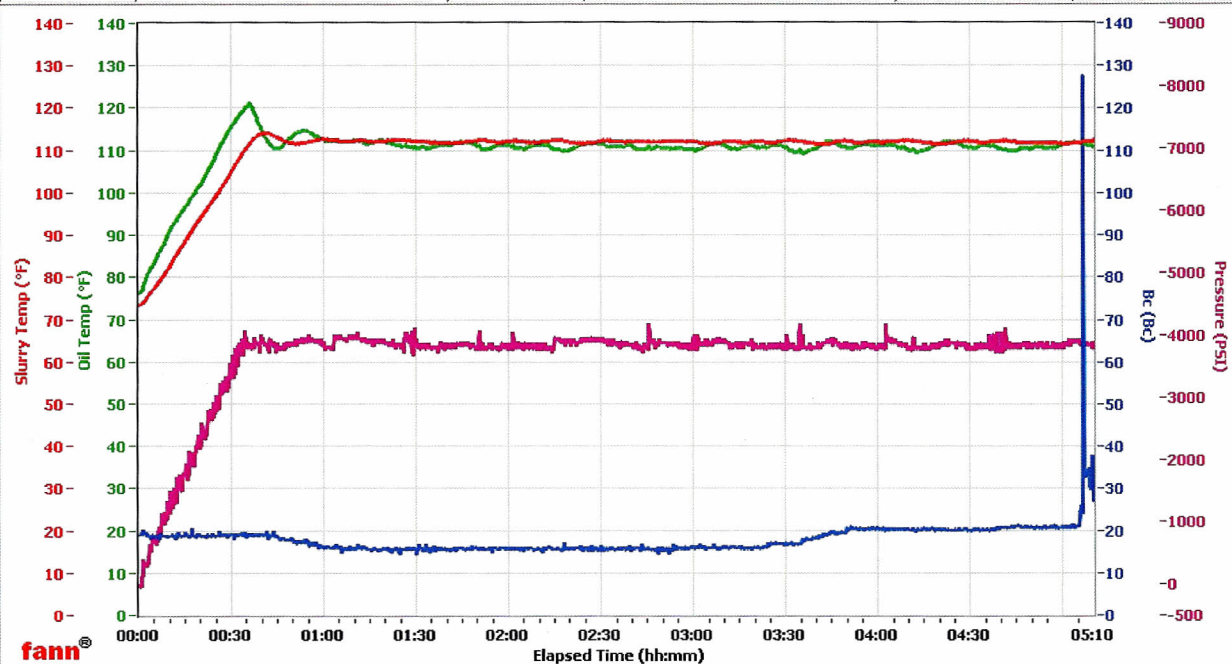
#### Free Water

| Test Temp (°F) | % FW Vert |
|----------------|-----------|
| 112            | 0.2       |
| Trace only.    |           |

# HALLIBURTON

## Vernal

| Fields            | Values           | Fields         | Values       | Events    | Results |
|-------------------|------------------|----------------|--------------|-----------|---------|
| Project Name      | Chevron 157679-1 | Job Type       | Pro Lead     | 30.00 Bc  | 05h:06m |
| Test ID           | 157679-1         | Cement Type    | G            | 50.00 Bc  | 05h:06m |
| Request ID        | HPHT #3          | Cement Weight  | Light Weight | 60.00 Bc  | 05h:06m |
| Tested by         | D.O.             | Test Date      | 06/26/11     | 70.00 Bc  | 05h:06m |
| Customer          | Chevron          | Test Time      | 10:10 AM     | 100.00 Bc | 05h:06m |
| Well No           | MC Hagood B2     | Temp. Units    | degF         | 200.00 Bc | NaN     |
| Rig               | H&P 304          | Pressure Units | PSI          | 03h:00m   | 15.90   |
| Casing/Liner Size | 7                |                |              | 06h:00m   | NaN     |



Data File Z:\HPHT Data Files\Vernal Consistometer #3\Chevron 157679-1.tdms

Comments 71 G, 1.0 ECON, 11 den, 2.21 yd

# HALLIBURTON

## HALLIBURTON

Cementing Rockies, Vernal

LAB RESULTS - Tail

### Job Information

|                |             |          |                     |            |              |
|----------------|-------------|----------|---------------------|------------|--------------|
| Request/Slurry | 157680/1    | Rig Name | H&P 304             | Date       | 25/JUN/2011  |
| Submitted By   | Isaac Whorl | Job Type | Intermediate Casing | Bulk Plant | Vernal       |
| Customer       | Chevron     | Location | Rio Blanco          | Well       | MC Hagood B2 |

### Well Information

|                   |        |           |         |      |       |
|-------------------|--------|-----------|---------|------|-------|
| Casing/Liner Size | 7"     | Depth MD  | 6537 ft | BHST | 158 F |
| Hole Size         | 8 3/4" | Depth TVD | 0 ft    | BHCT | 112 F |

### Cement Information - Tail Design

| Conc  | UOM      | Cement/Additive | Sample Type | Sample Date  | Lot No.   | Cement Properties |             |        |
|-------|----------|-----------------|-------------|--------------|-----------|-------------------|-------------|--------|
|       |          | Tuned Light     |             |              |           | Slurry Density    | 11.70       | PPG    |
|       |          |                 |             |              |           | Slurry Yield      | 1.72        | ft3/sk |
| 0.400 | lb/sk    | HR-800          | Bulk        | Jun 26, 2011 | 09241005  | Water Requirement | 5.93        | GPS    |
| 5.93  | gal/sack | Fresh Water     | Lab         | May 29, 2011 | 5-29-2011 | Water Source      | Fresh Water |        |

### Operation Test Results Request ID 157680/1

#### Thickening Time

| Temp (°F) | Pressure (psi) | Reached in (min) | Start BC | 30 Bc (hh:mm) | 50 Bc (hh:mm) | 70 Bc (hh:mm) | 100 Bc (hh:mm) |
|-----------|----------------|------------------|----------|---------------|---------------|---------------|----------------|
| 112       | 3,876          | 35               | 27       | 03:00         | 03:10         | 03:14         | 03:14          |

#### Marsh Funnel

| Volume [ml] | Time [Sec] | Foam Quality |
|-------------|------------|--------------|
| 74          | 27         | 0            |

Stopped flowing at 27 seconds.

#### Free Water

| Test Temp (°F) | % FW Vert |
|----------------|-----------|
| 112            | 0.2       |

Trace only.

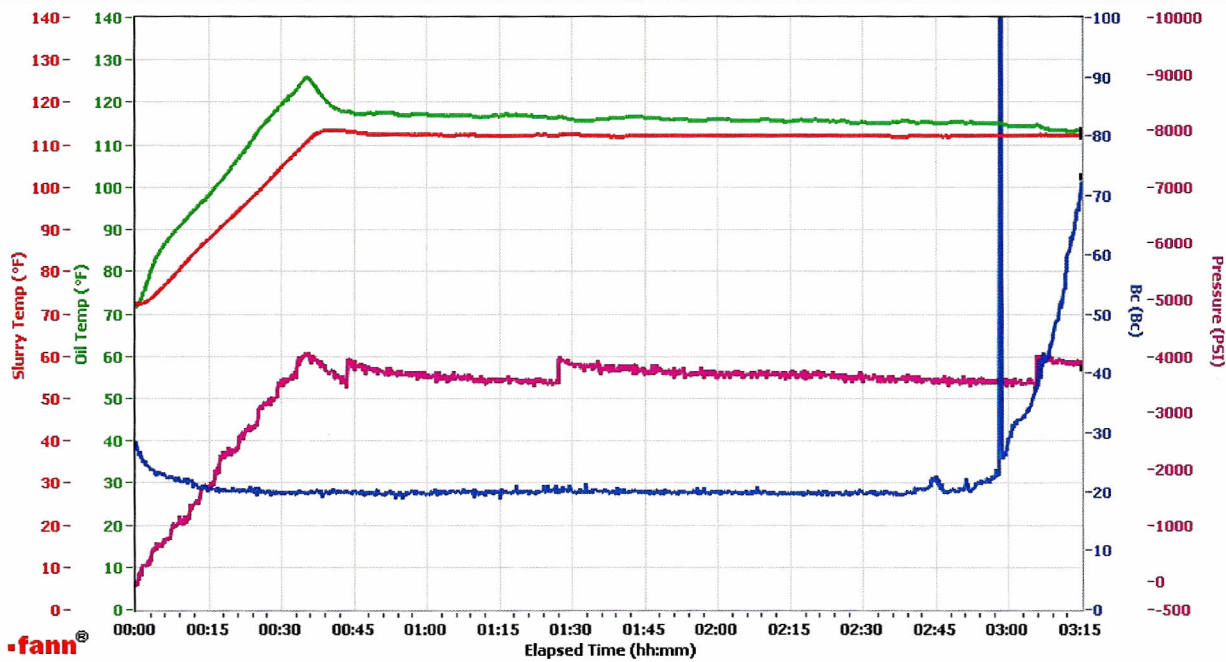
# HALLIBURTON

## Vernal

| Fields            | Values           |
|-------------------|------------------|
| Project Name      | Chevron 157680-1 |
| Test ID           | 157680-1         |
| Request ID        | HPHT#2           |
| Tested by         | SMR              |
| Customer          | Chevron          |
| Well No           | MC Hagood B2     |
| Rig               | H8P 304          |
| Casing/Liner Size | 7                |

| Fields         | Values       |
|----------------|--------------|
| Job Type       | Prod Tail    |
| Cement Type    | G            |
| Cement Weight  | Light Weight |
| Test Date      | 06/26/11     |
| Test Time      | 05:42 PM     |
| Temp. Units    | degF         |
| Pressure Units | PSI          |

| Events    | Results |
|-----------|---------|
| 30.00 Bc  | 03h:00m |
| 50.00 Bc  | 03h:10m |
| 60.00 Bc  | 03h:12m |
| 70.00 Bc  | 03h:14m |
| 100.00 Bc | 03h:14m |
| 200.00 Bc | NaN     |
| 03h:00m   | 29.00   |
| 06h:00m   | NaN     |



Data File Z:\HPHT Data Files\Vernal Consistometer #2\Chevron 157680-1.tdms

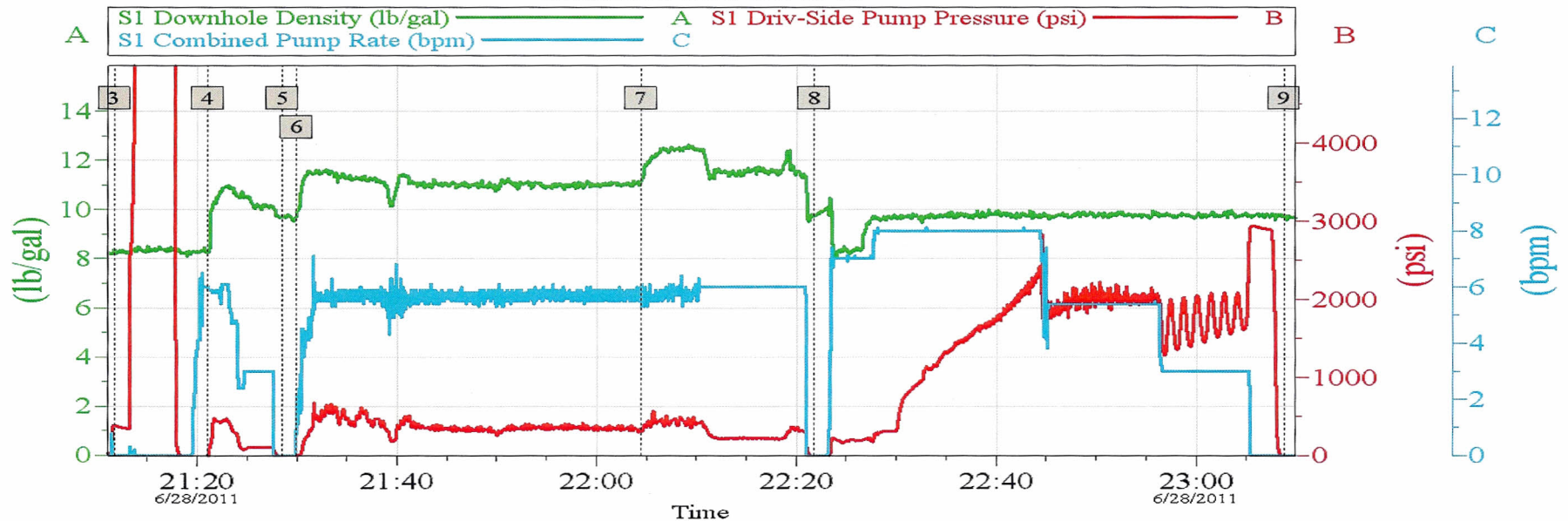
Comments Tuned Light, 0.4 #/sk HR-800, 11.7 Density, 1.72 Yield

# HALLIBURTON

## Data Acquisition

### Chevron 7" Intermediate

6/28/2011 SO# 8277546



| Global Event Log |                  |                  |              |                   |                 |
|------------------|------------------|------------------|--------------|-------------------|-----------------|
| Intersection     |                  | SDPP             | Intersection |                   | SDPP            |
| 3                | Test Lines       | 21:11:38 385.0   | 4            | Pump Spacer 1     | 21:21:02 -5.000 |
| 5                | Drop Bottom Plug | 21:28:33 -7.000  | 6            | Pump Lead Cement  | 21:29:58 -1.998 |
| 7                | Pump Tail Cement | 22:04:25 323.0   | 8            | Pump Displacement | 22:21:49 -10.00 |
| 9                | Check Floats     | 23:08:47 -10.000 |              |                   |                 |

|                             |                       |                        |
|-----------------------------|-----------------------|------------------------|
| Customer: Chevron           | Job Date: 28-Jun-2011 | Sales Order #: 8277546 |
| Well Description: MC Hagood | Well #: B2            | PUMP TRUCK: 2113       |
| SVC LDR: K. Estep           | SVC SUP: M. Dean      | SVC OPR: E. Fuchs      |

OptiCen v6.4.10  
28-Jun-11 23:52