

**EXXONMOBIL CORPORATION**

**HOUSTON, Texas**

PCU 197-36A5

H&P 326

## **Post Job Summary**

### **Cement Intermediate Casing**

Date Prepared: 8/20/10  
Version: 1

Service Supervisor: DEARING, KEN

Submitted by: Isaac Whorl

**HALLIBURTON**

# HALLIBURTON

## Wellbore Geometry

| Job Tubulars      |                        |         |       |           | MD     |           | TVD    |           | Excess % | Shoe Joint Length ft |
|-------------------|------------------------|---------|-------|-----------|--------|-----------|--------|-----------|----------|----------------------|
| Type              | Description            | Size in | ID in | Wt lbm/ft | Top ft | Bottom ft | Top ft | Bottom ft |          |                      |
| Casing            | Surface Casing         | 10.75   | 9.950 | 45.50     | 0      | 4,074     | 0      | 4,069     |          | 80.00                |
| Open Hole Section | Intermediate Open Hole |         | 9.875 |           | 4,074  | 9,223     | 4,069  | 9,218     | 100.00   |                      |
| Casing            | Intermediate Casing    | 7.00    | 6.276 | 26.00     | 0      | 9,208     | 0      | 9,203     |          | 95.56                |

## Pumping Schedule

| Fluid # | Fluid Type    | Fluid Name                 | Density lbm/gal | Avg Rate bbl/min | Volume       |
|---------|---------------|----------------------------|-----------------|------------------|--------------|
| 1       | Spacer        | TUNED SPACER III           | 10.00           | 6.00             | 80.0 bbl     |
| 2       | Cement Slurry | New Vernal Tuned Light     | 11.00           | 6.00             | 1310.0 sacks |
| 3       | Spacer        | Treated Water Displacement | 0.00            | 6.00             | 345.0 bbl    |

## Fluids Pumped

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

Fluid Density: 10.00 lbm/gal  
Fluid Volume: 80.00 bbl

**Stage/Plug # 1    Fluid 2:**    New Vernal Tuned Light  
TUNED LIGHT (TM) SYSTEM  
0.75 lbm    HR-601

Fluid Weight: 11.00 lbm/gal  
Slurry Yield: 2.25 ft<sup>3</sup>/sack  
Total Mixing Fluid: 10.04 Gal  
Volume: 1310.0 sacks

**Stage/Plug # 1    Fluid 3:**    Treated Water Displacement  
DISPLACEMENT FLUID

Fluid Density: 0.00 lbm/gal  
Fluid Volume: 345.00 bbl

# HALLIBURTON

## ***Job Summary***

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### **Job Information**

|   |                      |
|---|----------------------|
| <b>Job Start Date</b>                                 | 8/18/2010 6:30:00 AM |
| <b>Job MD</b>   | 9,245.0 ft           |
| <b>Height of Plug Container/Swage Above Rig Floor</b> | 5.1 ft               |
| <b>Mud Type</b>                                       | Water Based Mud      |
| <b>Name of Mud Company</b>                            | BAROID               |
| <b>Actual Mud Density</b>                             | 9 lbm/gal            |
| <b>Time Circulated before job</b>                     | 2.00 hour(s)         |
| <b>Rate at Which Well was Circulated</b>              | 4.500 bbl/min        |
| <b>Units of Gas Detected While Circulating</b>        | 40 API Gas Units     |
| <b>Pipe Movement During Hole Circulation</b>          | Reciprocated         |
| <b>Time From End Mud Circ. to Job Start</b>           | 5.00 minute          |
| <b>Pipe Movement During Cementing</b>                 | Reciprocated         |
| <b>Calculated Displacement</b>                        | 350.68 bbl           |
| <b>Job Displaced by (rig/halco)</b>                   | Cement Unit HP Pumps |
| <b>Length of Rat Hole</b>                             | 15.00 ft             |

### **Cementing Equipment**

|  |                              |
|--|------------------------------|
| <b>Number of Centralizers Used</b>       | 51                           |
| <b>Pipe Centralization</b>               | Through Entire Cement Column |
| <b>Brand of Float Equipment Used</b>     | Weatherford                  |
| <b>Did Float Equipment Hold?</b>         | Yes                          |
| <b>Plug set used?</b>                    | Yes                          |
| <b>Brand of Plug set used?</b>           | Weatherford                  |
| <b>Did Plugs Bump?</b>                   | Yes                          |
| <b>Calculated Pressure to Bump Plugs</b> | 605.0 psig                   |

# HALLIBURTON

## Service Supervisor Reports

### Job Log

| Date/Time           | Activity Code                         | Pump Rate | Cum Vol | Pressure (psig) | Comments  |
|---------------------|---------------------------------------|-----------|---------|-----------------|---|
| 08/17/2010<br>06:00 | Call Out                              |           |         |                 |   |
| 08/17/2010<br>08:00 | Pre-Convoy Safety Meeting             |           |         |                 | DISCUSS SAFETY AND HAZARDS OF TRAVEL.   |
| 08/17/2010<br>08:15 | Other                                 |           |         |                 | LOAD EQUIPMENT FOR JOB.   |
| 08/17/2010<br>09:45 | Depart Yard Safety Meeting            |           |         |                 | DISCUSS SAFETY AND HAZARDS OF TRAVEL.   |
| 08/17/2010<br>10:00 | Crew Leave Yard                       |           |         |                 |   |
| 08/17/2010<br>13:00 | Arrive At Loc                         |           |         |                 |   |
| 08/17/2010<br>13:05 | Assessment Of Location Safety Meeting |           |         |                 | SIGN IN AT SAFETY SHACK, GET WORK PERMIT SIGNED, WALK LOCATION, DISCUSS SPOTING OF TRUCKS AND SAFETY AND HAZARDS.                   |
| 08/17/2010<br>13:15 | Safety Meeting                        |           |         |                 | MEET WITH CO.MAN GET WELL INFORMATION, DISCUSS WELL CONDITIONS, DISCUSS PRESSURE TEST AND MAX PRESSURE, DISCUSS SAFETY AND HAZARDS. |
| 08/17/2010<br>13:30 | Safety Huddle                         |           |         |                 | DISCUSS SAFETY AND HAZARDS.   |
| 08/17/2010<br>13:35 | Other                                 |           |         |                 | SPOT EQUIPMENT.   |
| 08/17/2010<br>13:45 | Safety Meeting - Pre Rig-Up           |           |         |                 | DISCUSS SAFETY AND HAZARDS.   |
| 08/17/2010<br>13:50 | Rig-Up Equipment                      |           |         |                 | RIG UP IRON AND SUCTION HOSE TO RED ZONE, TEST H2O.   |
| 08/17/2010<br>17:15 | Safety Huddle                         |           |         |                 | DISCUSS SAFETY AND HAZARDS.   |
| 08/17/2010<br>17:20 | Prime Pumps                           |           |         |                 | PRIME UP RCM AND PREFORM WATER TEST AND CHECK OUT FOR JOB.  |
| 08/17/2010<br>17:57 | Pressure Test                         |           |         | 5000.0          | PRE-JOB PRESSURE TEST.  |
| 08/17/2010<br>18:30 | Other                                 |           |         |                 | WAIT FOR RIG TO FINISH RUNNING CASING, CASING @ 8225.0'.  |
| 08/18/2010<br>00:15 | Casing on Bottom                      |           |         |                 | RIG STARTS CIRCULATING WELL.  |

# HALLIBURTON

| Date/Time        | Activity Code               | Pump Rate | Cum Vol | Pressure (psig) | Comments   |
|------------------|-----------------------------|-----------|---------|-----------------|--|
| 08/18/2010 00:30 | Safety Meeting - Pre Rig-Up |           |         |                 | DISCUSS SAFETY AND HAZARDS.  |
| 08/18/2010 00:45 | Rig-Up Equipment            |           |         |                 | FINISH RIGGING UP IRON ON GROUND.  |
| 08/18/2010 03:30 | Other                       |           |         |                 | RIG RIGS DOWN CRT.   |
| 08/18/2010 04:45 | Safety Meeting - Pre Rig-Up |           |         |                 | SAFETY MEETING WITH RIG CREW AND CO.MAN, DISCUSS SAFETY AND HAZARDS OF RIGGING UP ON RIG FLOOR.. |
| 08/18/2010 05:00 | Rig-Up Equipment            |           |         |                 | RIG UP IRON ON RIG FLOOR.  |
| 08/18/2010 05:20 | Other                       |           |         |                 | RIG STARTS CIRCULATING THROUGH HES IRON.   |
| 08/18/2010 06:10 | Safety Meeting - Pre Job    |           |         |                 | SAFETY MEETING WITH RIG CREW AND CO.MAN, DISCUSS SAFETY AND HAZARDS OF JOB.                      |
| 08/18/2010 06:35 | Other                       |           |         |                 | SAFETY HUDDLE, RIG SHUT DOWN, SWAP TO HES LINES.   |
| 08/18/2010 06:40 | Pump Water                  | 4         | 5       | 365.0           | START PUMPING H2O TO FILL LINES.   |
| 08/18/2010 06:42 | Pressure Test               |           |         | 290.0           | LOW PRESSURE TEST.   |
| 08/18/2010 06:46 | Pressure Test               |           |         | 5000.0          | HIGH PRESSURE TEST.  |
| 08/18/2010 06:53 | Pump Spacer                 | 6         | 80      | 525.0           | START PUMPING 80bbls-10.0# TUNED SPACER III, 5.285cf/ft, 35.72gal/sk, 85sks.                     |
| 08/18/2010 07:09 | Shutdown                    |           |         |                 | END SPACER-SHUT DOWN, DROP BOTTOM PLUG.  |
| 08/18/2010 07:15 | Pump Cement                 | 5         | 515.6   | 550.0           | START PUMPING 515.6bbls-11.0# TUNED LIGHT CEMENT, 1310sks, 2.21cf/ft, 9.7gal/sk.                 |
| 08/18/2010 08:08 | Other                       | 6         |         | 450.0           | INCREASE RATE AS PER CO.MAN.   |
| 08/18/2010 08:59 | Shutdown                    |           |         |                 | END CEMENT-SHUT DOWN.  |
| 08/18/2010 09:00 | Drop Top Plug               |           |         |                 |  |
| 08/18/2010 09:03 | Pump Displacement           | 6         | 348.3   | 235.0           | START DISPLACEMENT WITH 20bbls H2O WASHING ON TOP OF PLUG AS PER CO.MAN.                         |
| 08/18/2010 09:07 | Pump Displacement           | 6         |         | 195.0           | START MUD DISPLACEMENT.  |
| 08/18/2010 09:10 | Other                       | 7         |         | 160.0           | INCREASE RATE AS PER CO.MAN.   |

# HALLIBURTON

| Date/Time        | Activity Code                          | Pump Rate | Cum Vol | Pressure (psig) | Comments  |
|------------------|--|-----------|---------|-----------------|---|
| 08/18/2010 09:11 | Displ Reached Cmmt                     | 7         |         | 330.0           | SEE CEMENT LIFT PRESSURE.   |
| 08/18/2010 09:14 | Other                                  | 8         |         | 445.0           | INCREASE RATE AS PER CO.MAN.  |
| 08/18/2010 09:45 | Slow Rate                              | 6         |         | 885.0           | SLOW RATE AS PER CO.MAN.  |
| 08/18/2010 09:47 | Slow Rate                              | 3         |         | 615.0           | SLOW RATE AS PER CO.MAN.  |
| 08/18/2010 09:50 | Pump Displacement                      | 3         |         | 635.0           | START H2O DISPLACEMENT, LAST 15bbls.  |
| 08/18/2010 09:55 | Bump Plug                              | 3         |         | 650.0           | BUMP PLUG AT 650psi.  |
| 08/18/2010 09:55 | Shutdown                               |           |         | 1400.0          | PRESSURE OVER 750psi TO 1400psi-SHUT DOWN.  |
| 08/18/2010 10:02 | Check Floats                           |           |         |                 | FLOATS HOLD, 2bbls BACK GOOD CIRCULATION THROUGH OUT JOB.                                 |
| 08/18/2010 10:05 | Post-Job Safety Meeting (Pre Rig-Down) |           |         |                 | DISCUSS JOB, GO OVER BBP AND HOC OBSERVATIONS, DISCUSS SAFETY AND HAZARDS.                |
| 08/18/2010 10:20 | Safety Meeting - Pre Rig-Down          |           |         |                 | SAFETY MEETING WITH RIG CREW AND CO.MAN, DISCUSS SAFETY AND HAZARDS OF RIGGING DOWN IRON. |
| 08/18/2010 10:30 | Rig-Down Equipment                     |           |         |                 | RIG IRON OFF OF RIG FLOOR.  |
| 08/18/2010 10:40 | Safety Huddle                          |           |         |                 | DISCUSS SAFETY AND HAZARDS.   |
| 08/18/2010 10:45 | Other                                  |           |         |                 | WASH UP RCM TO PIT.   |
| 08/18/2010 11:25 | Safety Meeting - Pre Rig-Down          |           |         |                 | DISCUSS SAFETY AND HAZARDS.   |
| 08/18/2010 11:30 | Rig-Down Equipment                     |           |         |                 | RIG DOWN AND RACK UP IRON AND SUCTION HOSE.   |
| 08/18/2010 13:45 | Pre-Convoy Safety Meeting              |           |         |                 | DISCUSS SAFETY AND HAZARDS.   |
| 08/18/2010 14:00 | Crew Leave Location                    |           |         |                 |   |
| 08/18/2010 14:00 | Other                                  |           |         |                 | THANK YOU-KEN, JASON, ISAAC, AND CREW.  |



## Cementing Job Summary

## *The Road to Excellence Starts with Safety*

|  |  |                           |   |                                  |                                  |                               |  |
|--|--|---------------------------|---|----------------------------------|----------------------------------|-------------------------------|--|
| <b>Sold To #:</b> 331699                                   |  | <b>Ship To #:</b> 2795936 |   | <b>Quote #:</b>                  |                                  | <b>Sales Order #:</b> 7556894 |  |
| <b>Customer:</b> EXXONMOBIL CORPORATION                    |  |                           |   | <b>Customer Rep:</b> WOOD, JOHN  |                                  |                               |  |
| <b>Well Name:</b> PCU                                      |  |                           | <b>Well #:</b> 197-36A5                     |                                  | <b>API/UWI #:</b> 05103111840000 |                               |  |
| <b>Field:</b> PICEANCE CREEK                               |  | <b>City (SAP):</b> MEEKER |   | <b>County/Parish:</b> Rio Blanco |                                  | <b>State:</b> Colorado        |  |
| <b>Legal Description:</b> Section 36 Township 1S Range 97W |  |                           |   |                                  |                                  |                               |  |
| <b>Job Purpose:</b> Cement Intermediate Casing             |  |                           |   |                                  |                                  |                               |  |
| <b>Well Type:</b> Development Well                         |  |                           | <b>Job Type:</b> Cement Intermediate Casing |                                  |                                  |                               |  |
| <b>Sales Person:</b> TURNER, JAMIE                         |  |                           | <b>Srvs Supervisor:</b> DEARING, KEN        |                                  |                                  | <b>MBU ID Emp #:</b> 239372   |  |

## Job Personnel

| HES Emp Name           | Exp Hrs | Emp #  | HES Emp Name             | Exp Hrs | Emp #  | HES Emp Name     | Exp Hrs | Emp #  |
|------------------------|---------|--------|--------------------------|---------|--------|------------------|---------|--------|
| BERGIN, JASON P        | 25.0    | 293977 | DEAN, MARK<br>Christophe | 25.0    | 454214 | DEARING, KEN A   | 25.0    | 239372 |
| MCGHIE, SETH<br>Bunker | 25.0    | 470775 | PEAY, SHANE              | 25.0    | 472880 | WEYERMAN, JEREMY | 25.0    | 477287 |
| WHORL, ISAAC<br>Jacob  | 25.0    | 464968 |                          |         |        |                  |         |        |

## Equipment

| HES Unit # | Distance-1 way | HES Unit # | Distance-1 way | HES Unit # | Distance-1 way | HES Unit # | Distance-1 way |
|------------|----------------|------------|----------------|------------|----------------|------------|----------------|
| 10572545   | 45 mile        | 10872435   | 45 mile        | 10897817   | 45 mile        | 10982742   | 45 mile        |
| 10991611   | 45 mile        | 11041164   | 45 mile        | 11263211   | 45 mile        | 11398321   | 45 mile        |

## Job Hours

| Date       | On Location Hours | Operating Hours | Date       | On Location Hours | Operating Hours | Date | On Location Hours | Operating Hours |
|------------|-------------------|-----------------|------------|-------------------|-----------------|------|-------------------|-----------------|
| 08-17-2010 | 11                | 0               | 08-18-2010 | 14                | 3.5             |      |                   |                 |

|              |  |   |
|--------------|--|---|
| <b>TOTAL</b> |  | <i>Total is the sum of each column separately</i> |
|--------------|--|---|

| Job                    |  |          |  |                   |        | Job Times |               |                 |           |     |
|------------------------|--|----------|--|-------------------|--------|-----------|---------------|-----------------|-----------|-----|
| Formation Name         |  |          |  |                   |        |           | Date          | Time            | Time Zone |     |
| Formation Depth (MD)   |  | Top      |  |                   | Bottom |           | Called Out    | 17 - Aug - 2010 | 06:00     | MST |
| Form Type              |  |          |  | BHST              |        |           | On Location   | 17 - Aug - 2010 | 13:00     | MST |
| Job depth MD           |  | 9245. ft |  | Job Depth TVD     |        |           | Job Started   | 18 - Aug - 2010 | 06:30     | MST |
| Water Depth            |  |          |  | Wk Ht Above Floor |        | 5.1 ft    | Job Completed | 18 - Aug - 2010 | 10:00     | MST |
| Perforation Depth (MD) |  | From     |  |                   | To     |           | Departed Loc  | 18 - Aug - 2010 | 14:00     | MST |

## Well Data

| Description               | New /<br>Used | Max<br>pressure<br>psig | Size<br>in | ID<br>in | Weight<br>lbm/ft | Thread                          | Grade | Top MD<br>ft | Bottom<br>MD<br>ft | Top<br>TVD<br>ft | Bottom<br>TVD<br>ft |
|---------------------------|---------------|-------------------------|------------|----------|------------------|---------------------------------|-------|--------------|--------------------|------------------|---------------------|
| Intermediate<br>Open Hole |               |                         |            | 9.875    |                  |                                 |       | 4074.        | 9223.              | 4069.            | 9218.               |
| Intermediate<br>Casing    | New           |                         | 7.         | 6.276    | 26.              | HYDRIL - SERIES 500<br>TYPE 513 | P-110 | .            | 9208.              | .                | 9203.               |
| Surface Casing            | Unknown       |                         | 10.75      | 9.95     | 45.5             | BTC                             | J-55  | .            | 4074.              | .                | 4069.               |

## Tools and Accessories

| Type         | Size | Qty | Make  | Depth   | Type        | Size | Qty | Make | Depth | Type           | Size | Qty | Make    |
|--------------|------|-----|-------|---------|-------------|------|-----|------|-------|----------------|------|-----|---------|
| EZ Case Bit  | 8.5  | 1   |       | 9204.45 | Packer      |      |     |      |       | Top Plug       | 7.0  | 1   | Weather |
| Float Shoe   |      |     |       |         | Bridge Plug |      |     |      |       | Bottom Plug    | 7.0  | 1   | Weather |
| Float Collar | 7.0  | 2   | Weath | 9202.8  | Retainer    |      |     |      |       | SSR plug set   |      |     |         |
|              |      |     |       | 9112.4  |             |      |     |      |       | Plug Container | 7.0  | 1   | HES     |
| Stage Tool   |      |     |       |         |             |      |     |      |       | Centralizers   | 7.0  | 51  | Weather |

Summit  
Version:

Friday, August 20, 2010 15:10:00

| Miscellaneous Materials                  |                        |                                  |        |                 |                                   |                 |                        |                           |                  |              |                        |        |
|--|------------------------|----------------------------------|--------|-----------------|-----------------------------------|-----------------|------------------------|---------------------------|------------------|--------------|------------------------|--------|
| 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)  |        |                 | 80.00                             | bbl             | 10.                    | .0                        | .0               | 6.0          |                        |        |
|  | 38.32 gal/bbl          | FRESH WATER                      |        |                 |                                   |                 |                        |                           |                  |              |                        |        |
|  | 59.8 lbm/bbl           | BARITE, 100 LB SK (100003680)    |        |                 |                                   |                 |                        |                           |                  |              |                        |        |
| 2  | New Vernal Tuned Light | TUNED LIGHT (TM) SYSTEM (452984) |        |                 | 1310.0                            | sacks           | 11.                    | 2.21                      | 9.70             | 6.0          | 9.70                   |        |
|  | 0.75 lbm               | HR-601, 50 LB BAG (101328348)    |        |                 |                                   |                 |                        |                           |                  |              |                        |        |
|  | 10.035 Gal             | FRESH WATER                      |        |                 |                                   |                 |                        |                           |                  |              |                        |        |
| 3  | Mud Displacement       |                                  |        |                 | 345.00                            | bbl             | 9.2                    | .0                        | .0               | .0           |                        |        |
| Calculated Values                        |                        | Pressures                        |        |                 | Volumes                           |                 |                        |                           |                  |              |                        |        |
| Displacement                             | 348.3                  | Shut In: Instant                 | 1400   |                 | Lost Returns                      | yes             | Cement Slurry          | 515.6                     | Pad              |              |                        |        |
| Top Of Cement                            | 5134                   | 5 Min                            | 1500   |                 | Cement Returns                    | 0               | Actual Displacement    | 345                       | Treatment        |              |                        |        |
| Frac Gradient                            |                        | 15 Min                           |        |                 | Spacers                           | 0               | Load and Breakdown     |                           | Total Job        |              |                        |        |
| Rates                                    |                        |                                  |        |                 |                                   |                 |                        |                           |                  |              |                        |        |
| Circulating                              | 6                      | Mixing                           | 6      |                 | Displacement                      | 8               |                        | Avg. Job                  | 7                |              |                        |        |
| Cement Left In Pipe                      | Amount                 | 95.56 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 |                 |                        |                           |                  |              |                        |        |

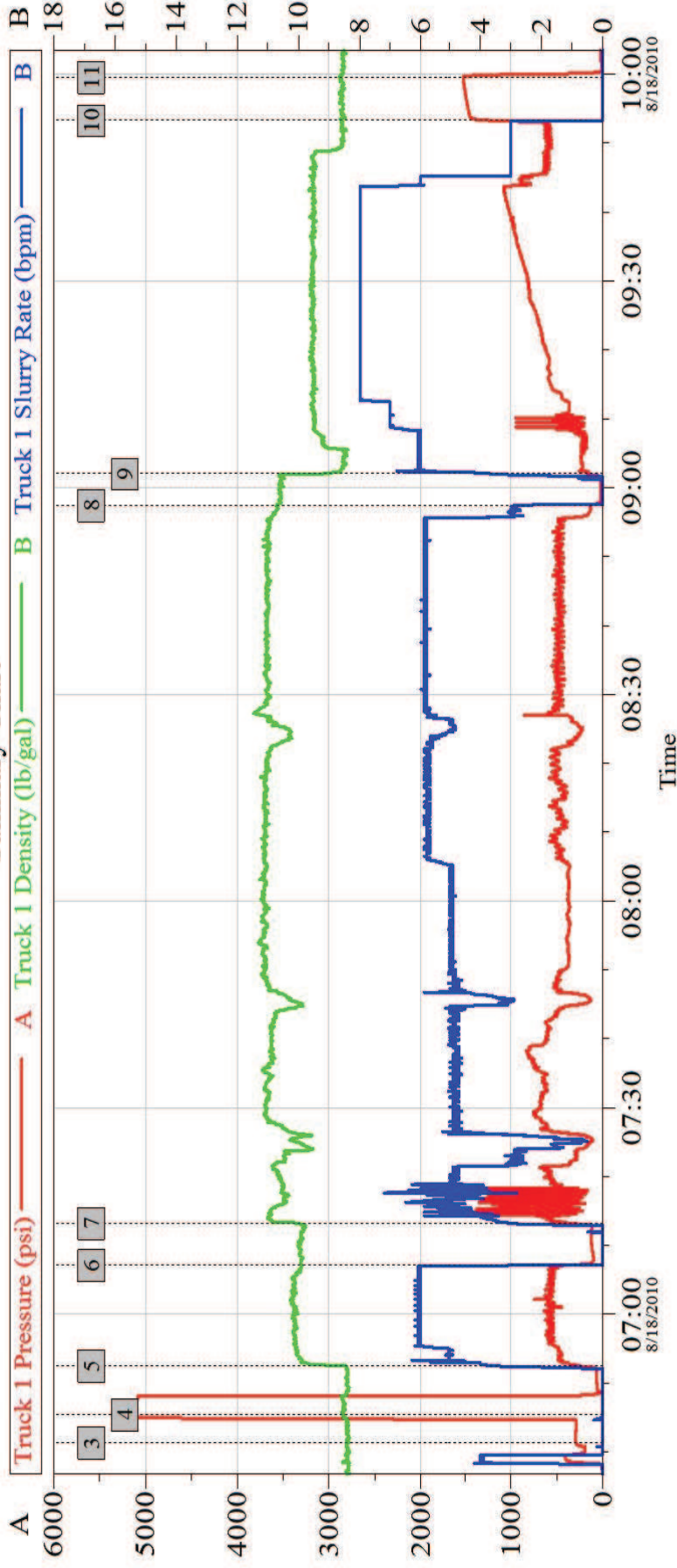


# HALLIBURTON

## Data Acquisition

### PCU 197-36A5 2 Intermediate

#### Summary Chart



#### Global Event Log

|   |                   |          |    |               |          |    |               |          |
|---|-------------------|----------|----|---------------|----------|----|---------------|----------|
| 3 | Pressure Test     | 06:41:22 | 4  | Pressure Test | 06:45:30 | 5  | Pump Spacer   | 06:52:32 |
| 6 | Drop Bottom Plug  | 07:07:08 | 7  | Pump Cement   | 07:13:15 | 8  | Drop Top Plug | 08:57:28 |
| 9 | Pump Displacement | 09:02:02 | 10 | Bump Plug     | 09:53:20 | 11 | Check Floats  | 09:59:37 |

Customer: EXXONMOBIL  
Well Description: PPCU 197-36A5

Job Date: 18-Aug-2010  
UWI/API: 05-103-11184

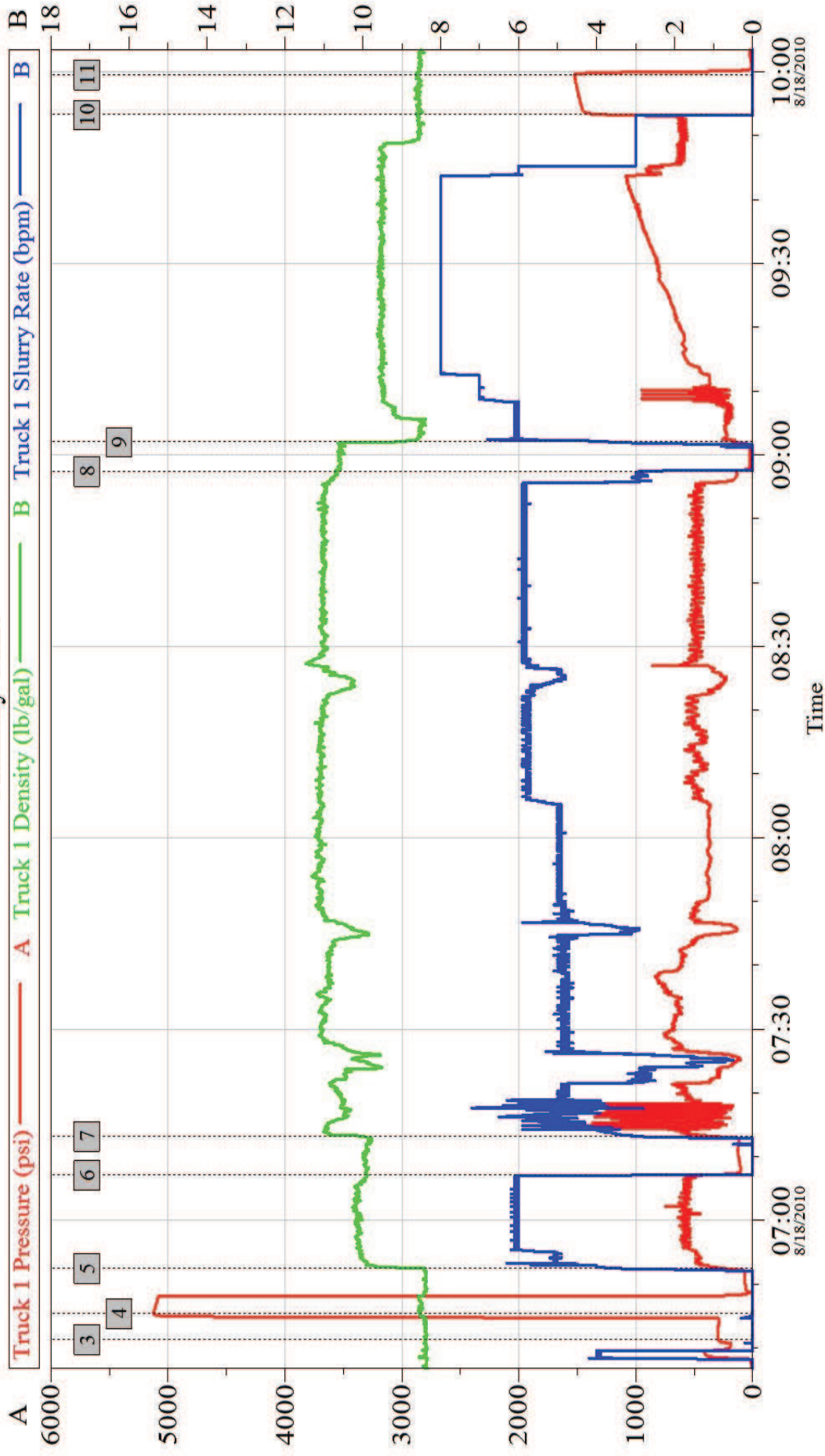
Sales Order #: 7556894

OptiCem v6.4.9  
18-Aug-10 10:15

# HALLIBURTON

## PCU 197-36A5 Intermediate

### Summary Chart



|                                 |                       |                        |
|---------------------------------|-----------------------|------------------------|
| Customer: EXXONMOBIL            | Job Date: 18-Aug-2010 | Sales Order #: 7556894 |
| Well Description: PPCU 197-36A5 | UWI/API: 05-103-11184 |                        |

# HALLIBURTON

## Lab Data

# HALLIBURTON

Cementing Rockies, Vernal

LAB RESULTS - Primary

### Job Information

|                |             |          |                     |            |                  |
|----------------|-------------|----------|---------------------|------------|------------------|
| Request/Slurry | 94039/1     | Rig Name |                     | Date       | August 20th 2010 |
| Submitted By   | Isaac Whorl | Job Type | Intermediate Casing | Bulk Plant | Vernal           |
| Customer       | Halliburton | Location |                     | Well       | PCU 197-36A5     |

### Well Information

|                   |        |           |         |      |       |
|-------------------|--------|-----------|---------|------|-------|
| Casing/Liner Size | 7"     | Depth MD  | 9245 ft | BHST | 210 F |
| Hole Size         | 9 7/8" | Depth TVD | 9240 ft | BHCT | 154 F |

### Cement Information - Primary Design

| Conc   | UOM     | Cement/Additive          | Sample Type | Sample Date  | Lot No.    | Cement Properties |             |     |
|--------|---------|--------------------------|-------------|--------------|------------|-------------------|-------------|-----|
|        |         |                          |             |              |            | Slurry Density    | 10.999      | PPG |
|        |         |                          |             |              |            | Slurry Yield      | 2.21        | FT3 |
|        |         |                          |             |              |            | Water Requirement | 9.67        | GPS |
|        |         |                          |             |              |            | Water Source      | Fresh Water |     |
|        |         | <b>Tuned Light</b>       |             |              |            |                   |             |     |
| 100.00 | % BWOC  | Cement Blend             | Bulk        | Aug 12, 2010 |            |                   |             |     |
| 36.88  | %       | > Boral Craig Pozmix     | Bulk        | Aug 12, 2010 |            |                   |             |     |
| 11     | %       | > HGS 6000 dry blended   | Bulk        | Aug 12, 2010 |            |                   |             |     |
| 53.19  | %       | > Holcim Type V          | Bulk        | Aug 12, 2010 |            |                   |             |     |
| 13     | %       | > Silicalite - Compacted | Bulk        | Aug 12, 2010 |            |                   |             |     |
| 0.70   | lb/sk   | HR-601                   | Bulk        | Aug 12, 2010 | 05X-185201 |                   |             |     |
| 0.50   | lb/sk   | D-Air 3000               | Bulk        | Aug 12, 2010 | 2010163AC  |                   |             |     |
| 0.20   | lb/sk   | FWCA                     | Bulk        | Aug 12, 2010 | YB015556P4 |                   |             |     |
| 80.73  | L/100kg | Fresh Water              | Lab         | Jul 07, 2010 | 07/07/2010 |                   |             |     |

### Project Test Results Request ID 94039/1

#### UCA Comp. Strength, Request Test ID:999530

| End Temp (°F) | Pressure (psi) | 50 psi (hh:mm) | 500 psi (hh:mm) | 12 hr CS (psi) | 24 hr CS (psi) | 48 hr CS (psi) | End CS (psi) | End Time (hrs) |
|---------------|----------------|----------------|-----------------|----------------|----------------|----------------|--------------|----------------|
| 191           | 3,000          | 09:45          | 11:26           | 877            | 1,598          | 1,671          | 1,705        | 72             |

#### Thickening Time, Request Test ID:999529

| 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) |
|-----------|----------------|------------------|----------|---------------|---------------|---------------|----------------|
| 154       | 5,007          | 60               | 8        | 04:42         | 05:14         | 05:55         | 09:38          |

#### Free Water, Request Test ID:999532

| Test Temp (°F) | % FW 45 Inc | Conditioning time |
|----------------|-------------|-------------------|
| 154            | 0           | 30                |

#### API Rheology, Request Test ID:999531

| Temp (°F) | 600 | 300 | 200 | 100 | 60 | 30 | 6  | 3  | Cond Time (min) | PV/YP      |
|-----------|-----|-----|-----|-----|----|----|----|----|-----------------|------------|
| 80        | 176 | 84  | 58  | 33  | 23 | 16 | 10 | 10 | 0               | 75.2 / 8.8 |

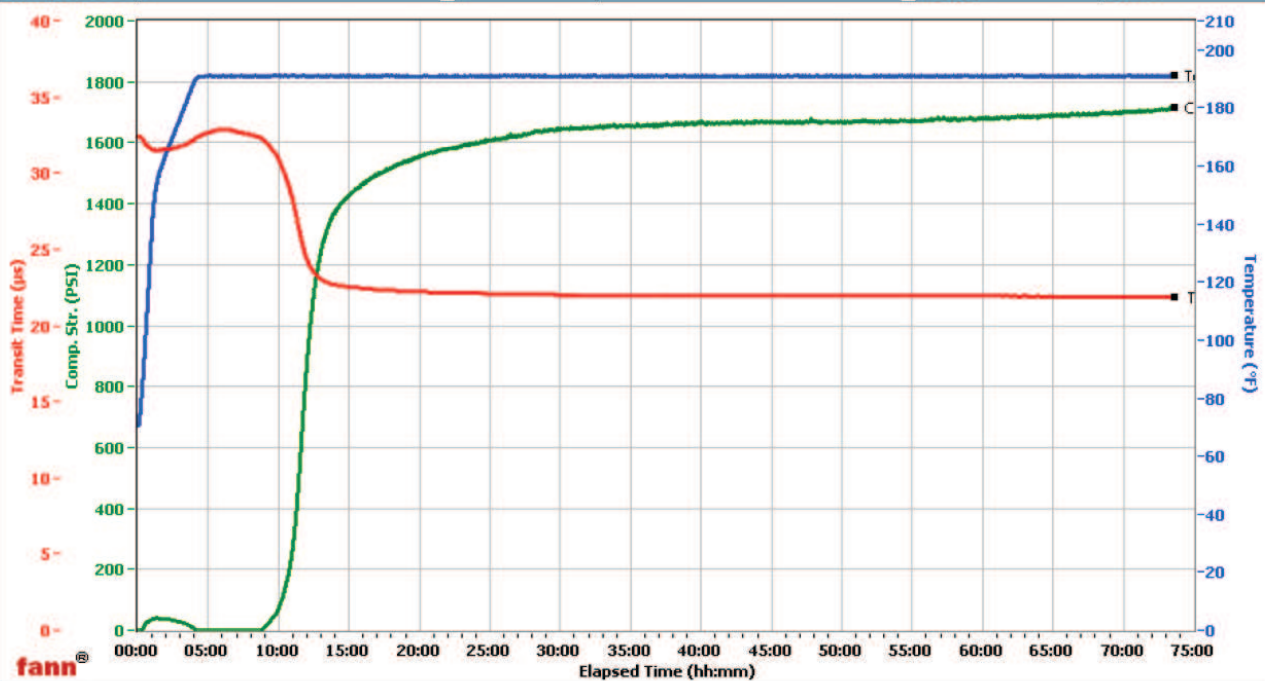
#### API Fluid Loss, Request Test ID:999533

# HALLIBURTON

| Test Temp (°F) | Test Pressure (psi) | Test Time (min) | Meas. Vol (< 30 min, cc) | Extr. ISO FL (cc/30 min) | Conditioning time (min) |
|----------------|---------------------|-----------------|--------------------------|--------------------------|-------------------------|
| 154            | 1,000               | 9               | 47                       | 172                      | 30                      |

## Vernal

| Fields            | Values              | Fields         | Values                     | Events      | Results |
|-------------------|---------------------|----------------|----------------------------|-------------|---------|
| Project Name      | HALLIBURTON 94039-1 | Job Type       | INTERMEDIATE PRIMARY FINAL | 50.00 PSI   | 09h:45m |
| Test ID           | 94039-1             | Cement Type    | V                          | 100.00 PSI  | 10h:13m |
| Request ID        | UCA #4              | Cement Weight  | Light Weight               | 500.00 PSI  | 11h:26m |
| Tested by         | PBL                 | Test Date      | 8/12/2010                  | 1000.00 PSI | 12h:14m |
| Customer          | Halliburton         | Test Time      | 8:34 AM                    | 12h:00m     | 876.77  |
| Well No           | PCU 197-36A5        | Temp. Units    | degF                       | 24h:00m     | 1598.46 |
| Rig               | H8P 326             | Pressure Units | PSI                        | 48h:00m     | 1670.78 |
| Casing/Liner Size | 7                   |                |                            | 72h:00m     | 1704.94 |



Data File C:\Data Files\94039-1.tdms

Comments TYPE V/POZ 53.19/36.88%, HR-601 0.70 LB/SK, DEN 10.999, YLD 2.21



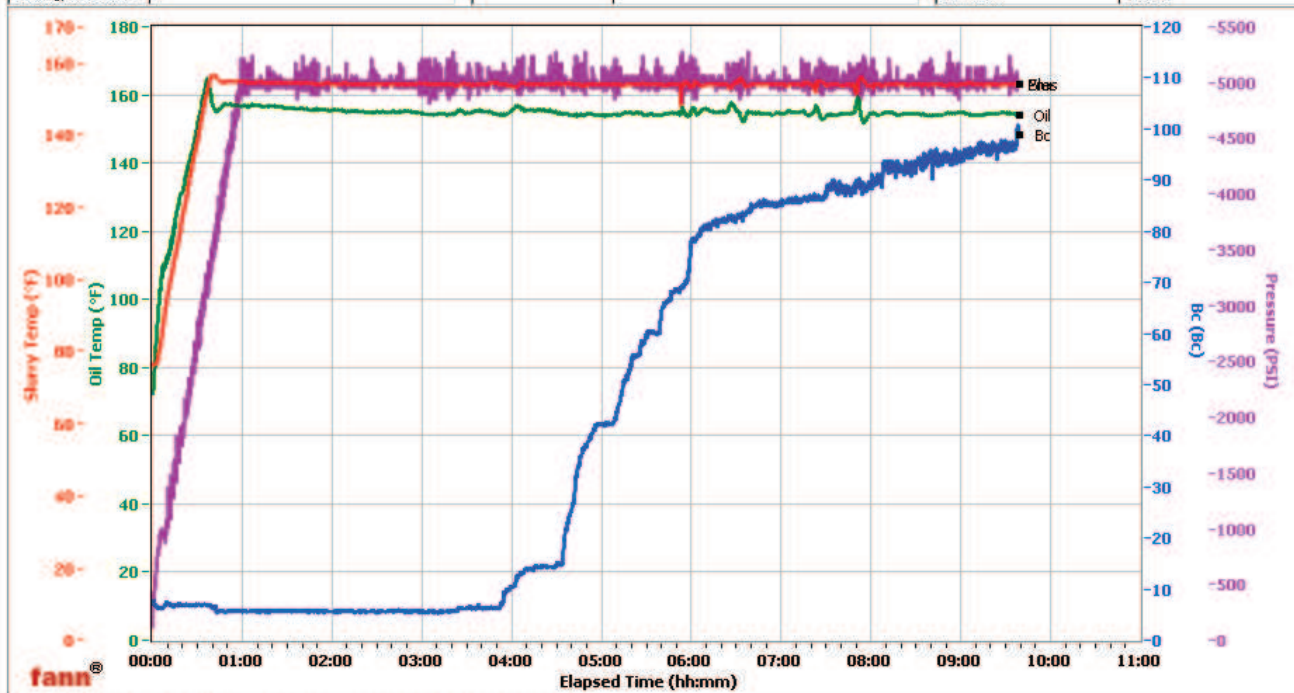
# HALLIBURTON

## VERNAL

| Fields            | Values              |
|-------------------|---------------------|
| Project Name      | HALLIBURTON 94039-1 |
| Test ID           | 94039-1             |
| Request ID        | HPHT #1             |
| Tested by         | PBL                 |
| Customer          | HALLIBURTON         |
| Well No           | PCU 197-36A5        |
| Rig               | H&P 326             |
| Casing/Liner Size | 7                   |

| Fields         | Values                     |
|----------------|----------------------------|
| Job Type       | INTERMEDIATE PRIMARY FINAL |
| Cement Type    | V                          |
| Cement Weight  | Light Weight               |
| Test Date      | 08/12/10                   |
| Test Time      | 08:10 AM                   |
| Temp. Units    | degF                       |
| Pressure Units | PSI                        |

| Events    | Results |
|-----------|---------|
| 30.00 Bc  | 04h:42m |
| 50.00 Bc  | 05h:14m |
| 60.00 Bc  | 05h:30m |
| 70.00 Bc  | 05h:55m |
| 100.00 Bc | 09h:38m |
| 200.00 Bc | NaN     |
| 03h:00m   | 5.28    |
| 06h:00m   | 78.03   |



Data File O:\HPHT Data Files\Vernal Consistometer #1\HALLIBURTON 94039-1.tdms

Comments TYPE V/POZ 53.19/36.88%, HR-601 0.70 LB/SK, DEN 10.999, YLD 2.21