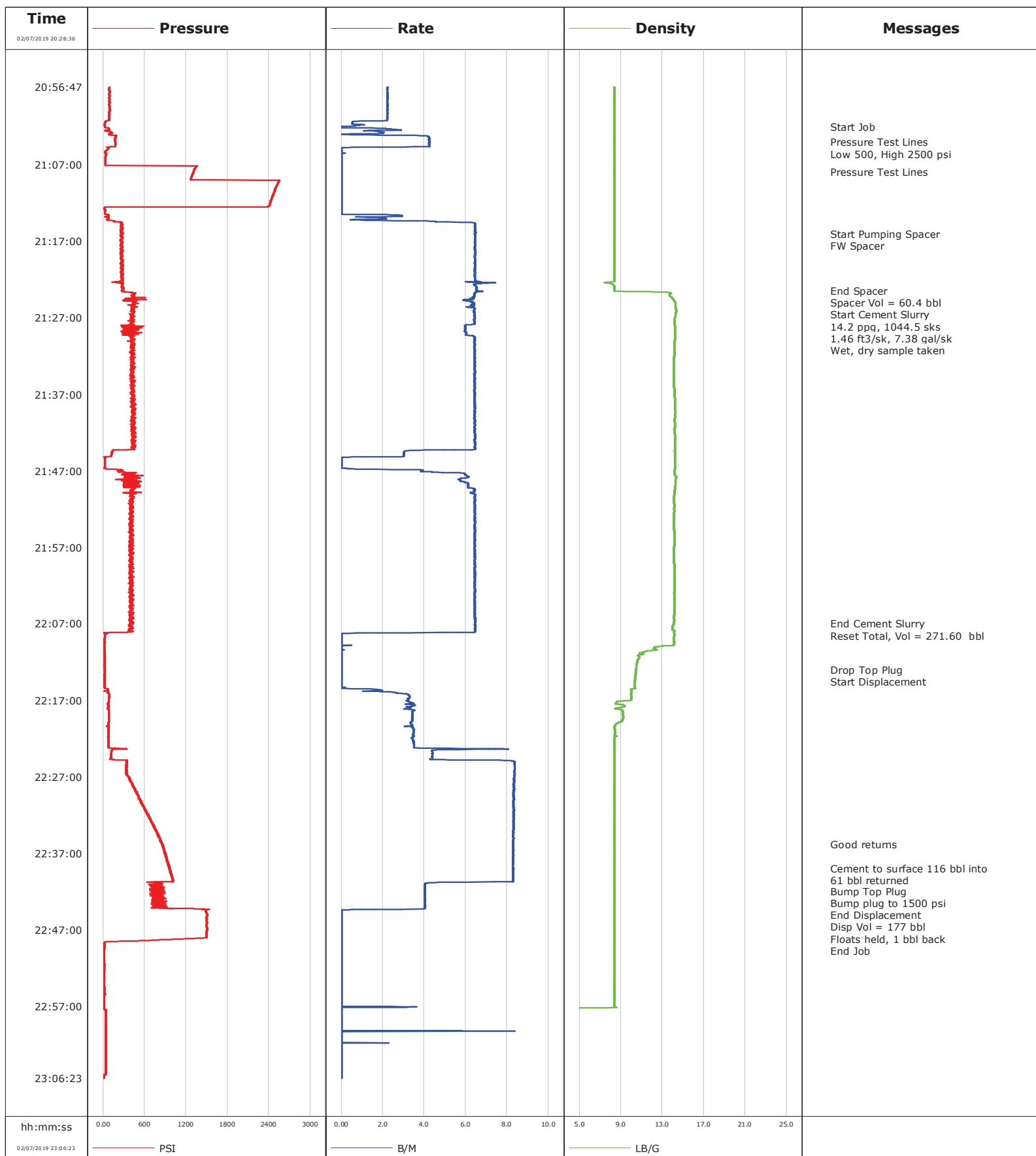


**Well** Bighorn 4Q-17H-p267  
**Field** Wattenberg  
**Engineer** Michael Navoy / Andrew Black  
**Country** United States

**Client** Crestone Peak Resources  
**SIR No.** DN38-00447  
**Job Type** Surface  
**Job Date** 02-07-2019



# Cementing Service Report

|  |                        |   |                     | Customer<br>Crestone Peak Resources |                    |                                   | Job Number<br>DN38-00447 |                      |                          |                        |                                |               |        |                      |        |
|--|------------------------|---|---------------------|-------------------------------------|--------------------|-----------------------------------|--------------------------|----------------------|--------------------------|------------------------|--------------------------------|---------------|--------|----------------------|--------|
| Well<br>Bighorn 4Q-17H-p267                    |                        |   | Location (legal)    |                                     |                    | Schlumberger Location<br>Cheyenne |                          |                      | Job Start<br>Feb/07/2019 |                        |                                |               |        |                      |        |
| Field<br>Wattenberg                            |                        | Formation Name/Type   |                     |                                     | Deviation<br>0 deg |                                   | Bit Size<br>13.5 in      |                      | Well MD<br>2380.0 ft     |                        | Well TVD<br>2380.0 ft          |               |        |                      |        |
| County<br>Weld                                 |                        | State/Province<br>Colorado                                      |                     |                                     | BHP<br>psi         |                                   | BHST<br>110 degF         |                      | BHCT<br>80 degF          |                        | Pore Press. Gradient<br>lb/gal |               |        |                      |        |
| Well Master<br>0631799842                      |                        | API/UWI   |                     |                                     |                    |                                   |                          |                      |                          |                        |                                |               |        |                      |        |
| Rig Name<br>Ensign 153                         |                        | Drilled For<br>Oil  |                     | Service Via<br>Land                 |                    | Casing / Liner                    |                          |                      |                          |                        |                                |               |        |                      |        |
|  |                        |   |                     |                                     |                    | Depth, ft                         |                          | Size, in             |                          | Weight, lb/ft          |                                | Grade         | Thread |                      |        |
| Offshore Zone                                  |                        | Well Class<br>New   |                     | Well Type<br>Development            |                    | 100.0                             |                          | 16.0                 |                          | 55.0                   |                                | F25           | N/A    |                      |        |
|  |                        |   |                     |                                     |                    | 2378.4                            |                          | 9.6                  |                          | 40.0                   |                                | J55           | BUTT   |                      |        |
| Drilling Fluid Type<br>Spud Mud                |                        | Max. Density<br>8.40 lb/gal                                     |                     | Plastic Viscosity<br>27.000 cP      |                    | Tubing / Drill Pipe               |                          |                      |                          |                        |                                |               |        |                      |        |
|  |                        |   |                     |                                     |                    | T/D                               |                          | Depth, ft            |                          | Size, in               |                                | Weight, lb/ft |        | Grade                | Thread |
| Service Line<br>Cementing                      |                        | Job Type<br>Surface   |                     |                                     |                    |                                   |                          |                      |                          |                        |                                |               |        |                      |        |
|  |                        |   |                     |                                     |                    |                                   |                          |                      |                          |                        |                                |               |        |                      |        |
| Max. Allowed Tub. Press<br>psi                 |                        | Max. Allowed Ann. Press<br>psi                                  |                     | WH Connection                       |                    | Perforations / Open Hole          |                          |                      |                          |                        |                                |               |        |                      |        |
|  |                        |   |                     |                                     |                    | Top, ft                           |                          | Bottom, ft           |                          | shot/ft                |                                | No. of Shots  |        | Total Interval<br>ft |        |
| Service Instructions<br>9 5/8 Surface Casing   |                        |   |                     |                                     |                    | ft                                |                          | ft                   |                          |                        |                                |               |        |                      |        |
|  |                        |   |                     |                                     |                    | ft                                |                          | ft                   |                          |                        |                                |               |        | Diameter<br>in       |        |
|  |                        |   |                     |                                     |                    | ft                                |                          | ft                   |                          |                        |                                |               |        |                      |        |
|  |                        | Treat Down<br>Casing  |                     | Displacement<br>177.0 bbl           |                    | Packer Type                       |                          | Packer Depth<br>ft   |                          |                        |                                |               |        |                      |        |
|  |                        | Tubing Vol.<br>bbl  |                     | Casing Vol.<br>180.3 bbl            |                    | Annular Vol.<br>213.3 bbl         |                          | Openhole Vol.<br>bbl |                          |                        |                                |               |        |                      |        |
| Casing/Tubing Secured <input type="checkbox"/> |                        | 1 Hole Vol. Circulated prior to Cement <input type="checkbox"/> |                     |                                     |                    | Casing Tools                      |                          |                      |                          | Squeeze Job            |                                |               |        |                      |        |
| Lift Pressure<br>psi                           |                        |   |                     |                                     |                    | Shoe Type<br>Float                |                          |                      |                          | Squeeze Type           |                                |               |        |                      |        |
| Pipe Rotated <input type="checkbox"/>          |                        | Pipe Reciprocated <input type="checkbox"/>                      |                     |                                     |                    | Shoe Depth<br>2378.4 ft           |                          |                      |                          | Tool Type              |                                |               |        |                      |        |
| No. Centralizers                               |                        | Top Plugs<br>1  |                     | Bottom Plugs                        |                    | Stage Tool Type                   |                          |                      |                          | Tool Depth<br>ft       |                                |               |        |                      |        |
| Cement Head Type                               |                        |   |                     |                                     |                    | Stage Tool Depth<br>ft            |                          |                      |                          | Tail Pipe Size<br>in   |                                |               |        |                      |        |
| Job Scheduled For<br>Feb/07/2019 17:00         |                        | Arrived on Location<br>Feb/07/2019 16:40                        |                     | Leave Location<br>Feb/08/2019 00:15 |                    | Collar Type<br>Float              |                          |                      |                          | Tail Pipe Depth<br>ft  |                                |               |        |                      |        |
|  |                        |   |                     |                                     |                    | Collar Depth<br>2334.6 ft         |                          |                      |                          | Sqz. Total Vol.<br>bbl |                                |               |        |                      |        |
| Date   | Time<br>24-hr<br>clock | Treating<br>Pressure<br>PSI                                     | Flow<br>Rate<br>B/M | Density<br>LB/G                     | Volume<br>BBL      | Message                           |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:02:00               | 27  | 0.0                 | 8.38                                | 26.6               | Start Job                         |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:04:00               | 177   | 4.2                 | 8.38                                | 4.4                | Pressure Test Lines               |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:05:00               | 57  | 0.0                 | 8.38                                | 7.1                | Low 500, High 2500 psi            |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:07:57               | 1305  | 0.0                 | 8.38                                | 7.1                | Pressure Test Lines               |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:16:00               | 256   | 6.4                 | 8.38                                | 19.5               | Start Pumping Spacer              |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:17:00               | 266   | 6.4                 | 8.38                                | 25.9               | FW Spacer                         |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:23:29               | 271   | 6.8                 | 8.74                                | 67.9               | End Spacer                        |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:23:30               | 276   | 6.8                 | 9.47                                | 68.0               | Spacer Vol = 60.4 bbl             |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:24:00               | 425   | 6.4                 | 13.67                               | 71.2               | Start Cement Slurry               |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:24:01               | 421   | 6.4                 | 13.67                               | 71.3               | 14.2 ppg, 1044.5 sks              |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:24:02               | 403   | 6.4                 | 13.66                               | 71.4               | 1.46 ft3/sk, 7.38 gal/sk          |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 21:24:03               | 419   | 6.4                 | 13.67                               | 71.5               | Wet, dry sample taken             |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 22:07:00               | 422   | 6.5                 | 14.14                               | 331.8              | End Cement Slurry                 |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 22:08:12               | 59  | 0.3                 | 14.15                               | 339.1              | Reset Total, Vol = 271.60 bbl     |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 22:13:00               | 22  | 0.0                 | 10.45                               | 339.1              | Drop Top Plug                     |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 22:14:00               | 21  | 0.0                 | 10.37                               | 339.1              | Start Displacement                |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 22:35:46               | 858   | 8.3                 | 8.37                                | 463.4              | Good returns                      |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 22:39:00               | 966   | 8.3                 | 8.37                                | 490.2              | Cement to surface 116 bbl into    |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 22:39:01               | 961   | 8.3                 | 8.37                                | 490.3              | 61 bbl returned                   |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 22:42:00               | 818   | 4.0                 | 8.37                                | 509.7              | Bump Top Plug                     |                          |                      |                          |                        |                                |               |        |                      |        |
| 02/07/2019                                     | 22:42:01               | 725   | 4.0                 | 8.37                                | 509.8              | Bump plug to 1500 psi             |                          |                      |                          |                        |                                |               |        |                      |        |

|                             |                        |                             |                     |                 |                          |                         |                                     |  |                          |  |
|-----------------------------|------------------------|-----------------------------|---------------------|-----------------|--------------------------|-------------------------|-------------------------------------|--|--------------------------|--|
| Well<br>Bighorn 4Q-17H-p267 |                        |                             | Field<br>Wattenberg |                 | Job Start<br>Feb/07/2019 |                         | Customer<br>Crestone Peak Resources |  | Job Number<br>DN38-00447 |  |
| Date                        | Time<br>24-hr<br>clock | Treating<br>Pressure<br>PSI | Flow<br>Rate<br>B/M | Density<br>LB/G | Volume<br>BBL            | Message                 |                                     |  |                          |  |
| 02/07/2019                  | 22:45:22               | 1496                        | 0.0                 | 8.37            | 519.0                    | Disp Vol = 177 bbl      |                                     |  |                          |  |
| 02/07/2019                  | 22:45:25               | 1497                        | 0.0                 | 8.37            | 519.0                    | Floats held, 1 bbl back |                                     |  |                          |  |

### Post Job Summary

|  |                                   |                           |   |  |   |  |                   |  |
|--|-----------------------------------|---------------------------|---|--|---|--|-------------------|--|
| Average Pump Rates, bbl/min                          |                                   |                           |   |  | Volume of Fluid Injected, bbl             |  |                   |  |
| Slurry<br>3.5  | N2                                | Mud                       | Maximum Rate<br>0.0                                     | Total Slurry<br>271.6                                  | Mud<br>0.0                                | Spacer<br>60.4                         | N2                |  |
| Treating Pressure Summary, psi                       |                                   |                           |   |  | Breakdown Fluid                           |  |                   |  |
| Maximum<br>0   | Final<br>429                      | Average<br>169            | Bump Plug to<br>1500                                    | Breakdown  | Type                                      | Volume<br>bbl                          | Density<br>lb/gal |  |
| Avg. N2 Percent<br>%                                 | Designed Slurry Volume<br>0.0 bbl | Displacement<br>177.0 bbl | Mix Water Temp<br>degF                                  | Cement Circulated to Surface? <input type="checkbox"/> | Volume<br>bbl                             |  |                   |  |
|  |                                   |                           |   | Washed Thru Perfs <input type="checkbox"/>             | To<br>ft                                  |  |                   |  |
| Customer or Authorized Representative<br>Company Man |                                   |                           | Schlumberger Supervisor<br>Michael Navoy / Andrew Black |  | Circulation Lost <input type="checkbox"/> | Job Completed <input type="checkbox"/> |                   |  |
|  |                                   |                           |   |  | -   | -                                      |                   |  |