

### Cement Job Log

|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|---|------------------|---|------------------|--------------------------|-------------------|------------------|-------------------------|---|---------------------|------------------|-----------------|--------------------|---------------------|------------------|
| <b>C&amp;J ENERGY SERVICES</b>                |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| Customer: PDC ENERGY                          |                  |   |                  | Date: 12/31/2018         |                   |                  |                         | Serv. Supervisor: Sam Cheal                   |                     |                  |                 |                    |                     |                  |
| Cust. Rep.: Brady Sharp                       |                  |   |                  | Ticket #: BCO-1812-0127  |                   |                  |                         | Serv. Center Brighton - 3021                  |                     |                  |                 |                    |                     |                  |
| Lease: Harold 6Y-312                          |                  |   |                  | API Well #: 05-123-45752 |                   |                  |                         | County: Weld                                  |                     | State: CO        |                 |                    |                     |                  |
| Well Type: Oil                                |                  |   |                  | Rig: Ensign 161          |                   |                  |                         | Type of Job: Production Casing                |                     |                  |                 |                    |                     |                  |
| Materials Furnished by C&J ENERGY SERVICES    |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| Plugs   |                  | Casing Hardware   |                  |                          |                   |                  |                         | Physical Slurry Properties                    |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         | Sacks of Cement                               | Fluid Dens (lb/gal) | Excess           | Yield (cuft/sk) | Mix Water (gal/sk) | Fluid Volume (bbls) | Mix Water (bbls) |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| 0   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| 0   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| 150 bbls ppg Weighted Spacer - 150 bbls of 12 |                  | +10.0 PPB CJ890+222.16 PPB CJ300+1.0 PPB CJ209+0.5 PPB CJ776+8.1 PPB CJ801  |                  |                          |                   |                  |                         |   | 12.5                |                  |                 |                    | 150.00              |                  |
| C&J Non Latex Lead 1-1                        |                  | 50 % CJ914+50 % CJ010-74<br>+2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJ157011                              |                  |                          |                   |                  |                         | 25  | 14                  |                  | 1.37            | 5.98               | 6.08                | 4                |
| C&J Latex Lead 1-1                            |                  | 50 % CJ914+50 % CJ010-74<br>+2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJ157011+1.0 GPS CJ550L+0.2 GPS CJ891 |                  |                          |                   |                  |                         | 755   | 14                  |                  | 1.37            | 4.71               | 183.66              | 85               |
| C&J Tail 1-1                                  |                  | 65 % CJ914+35 % CJ010-74<br>+0.3 % CJ704+0.15 % CJ210K+0.5 % CJ511  |                  |                          |                   |                  |                         | 2020  | 14.5                |                  | 1.22            | 5.41               | 437.37              | 260              |
| Displacement                                  |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    | 391.33              |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| 50 % CJ914+50 % CJ010-74+2.0 % CJ020+0.4      |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| Displacement Chemicals:                       |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| OPEN HOLE DATA                                |                  | TUBULAR DATA  |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| 8.5 in. O.H. (1,655 to 17,688 ft)             |                  | 5.5 in. 20#, ( 0 to 17,688 ft)  |                  | SIZE WEIGHT              | THREAD            | DEPTH (ft)       | GRADE                   | ID (in)                                       | BURST (psi)         | COLLAPSE (psi)   |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| PREVIOUS CASING DATA                          |                  | PERFORATED INTERVAL DATA  |                  |                          |                   |                  | CASING EQUIPMENT DEPTHS |   |                     |                  |                 |                    |                     |                  |
| 9.625 in. 36# ( 0 to 1,655 ft)                |                  | TOP   |                  | BTM                      |                   | SPF              | SIZE                    | SHOE  | FLOAT               | STAGE            | ACP             |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         | 17674   | 17641               | N/A              |                 |                    |                     |                  |
| WELL FLUID                                    |                  | DISPLACEMENT FLUID  |                  |                          |                   | DIFF PRESS (psi) | CSG LIFT (psi)          | MAX PRESS (psi)                               |                     |                  |                 | WATER ON LOC (bbl) |                     |                  |
| TYPE  | DENSITY          | VOLUME  | TYPE             | DENSITY                  |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| Mud   | 10.6 ppg         | 391.6 bbl   | Water            | 8.3 ppg                  |                   |                  |                         |   |                     |                  |                 | 1000               |                     |                  |
| Time  | Rate (bbl/min)   | Csg. Press. (psi)   | Tbg. Press (psi) | Ann. Press. (psi)        |                   | Stg. Vol. (bbl)  | Cum. Vol. (bbl)         | Stage Details                                 |                     |                  |                 |                    |                     |                  |
| 4:00 AM                                       |                  |   |                  |                          |                   |                  | 0                       | ARRIVE ON LOCATION                            |                     |                  |                 |                    |                     |                  |
| 10:00 AM                                      |                  |   |                  |                          |                   |                  | 0                       | SPOT EQUIPMENT                                |                     |                  |                 |                    |                     |                  |
| 10:20 AM                                      |                  |   |                  |                          |                   |                  | 0                       | RIG UP IRON AND HOSES                         |                     |                  |                 |                    |                     |                  |
| 5:30 PM                                       |                  |   |                  |                          |                   |                  | 0                       | PRE JOB SAFETY MEETING                        |                     |                  |                 |                    |                     |                  |
| 6:00 PM                                       | 2                | 400   |                  |                          |                   |                  | 5                       | 5 LOAD LINES TO TEST                          |                     |                  |                 |                    |                     |                  |
| 6:03 PM                                       |                  | 5000  |                  |                          |                   |                  | 5                       | TEST PUMP AND LINES TO 5,000 PSI              |                     |                  |                 |                    |                     |                  |
| 6:15 PM                                       | 8                | 890   |                  |                          |                   | 150              | 155                     | MIX / PUMP WEIGHTED SPACER                    |                     |                  |                 |                    |                     |                  |
| 6:40 PM                                       | 4                | 600   |                  |                          |                   |                  | 6                       | 161 MIX / PUMP NON-LATEX LEAD CEMENT @14.0PPG |                     |                  |                 |                    |                     |                  |
| 6:41 PM                                       | 8.5              | 670   |                  |                          |                   | 184.2            | 345.2                   | MIX / PUMP LATEX LEAD CEMENT @14.0PPG         |                     |                  |                 |                    |                     |                  |
| 7:15 PM                                       | 8.5              | 860   |                  |                          |                   | 438.9            | 784.1                   | MIX / PUMP TAIL CEMENT @14.5PPG               |                     |                  |                 |                    |                     |                  |
| 8:20 PM                                       |                  | 0   |                  |                          |                   |                  | 784.1                   | SHUTDOWN / WASH PUMP UNIT / DROP PLUG         |                     |                  |                 |                    |                     |                  |
| 8:31 PM                                       | 9                | 2400  |                  |                          |                   | 391.6            | 1175.7                  | DISPLACE WITH FRESH WATER                     |                     |                  |                 |                    |                     |                  |
| 9:20 PM                                       | 5                | 2600  |                  |                          |                   |                  | 1175.7                  | BUMP PLUG                                     |                     |                  |                 |                    |                     |                  |
| 9:21 PM                                       | 1.5              | 3600  |                  |                          |                   |                  | 1175.7                  | PRESSURE UP WELL TO OPEN WSS                  |                     |                  |                 |                    |                     |                  |
| 9:22 PM                                       | 4                | 1980  |                  |                          |                   |                  | 1180.7                  | DISPLACE WITH FRESH WATER                     |                     |                  |                 |                    |                     |                  |
| 9:25 PM                                       |                  | 0   |                  |                          |                   |                  |                         | SHUTDOWN / CHECK FLOATS                       |                     |                  |                 |                    |                     |                  |
| 9:30 PM                                       |                  |   |                  |                          |                   |                  |                         | RIG OUT                                       |                     |                  |                 |                    |                     |                  |
| 11:50 PM                                      |                  |   |                  |                          |                   |                  |                         | AAR / DISCUSS LEAVING LOCATION                |                     |                  |                 |                    |                     |                  |
| 11:00 PM                                      |                  |   |                  |                          |                   |                  |                         | LEAVE LOCATION                                |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
|   |                  |   |                  |                          |                   |                  |                         |   |                     |                  |                 |                    |                     |                  |
| Left Yard                                     | 12/31/18 3:00 AM |   |                  | Left Loc.                | 12/31/18 11:00 PM |                  |                         | Start Pump                                    |                     | 12/31/18 6:00 PM |                 |                    |                     |                  |
| Arrived Loc.                                  | 12/31/18 4:00 AM |   |                  | Returned Yd.             | 12/31/18 11:59 PM |                  |                         | End Pump                                      |                     |                  |                 |                    |                     |                  |