

| C&J ENERGY SERVICES<br>8N_1-BCO_190423105336-JLPjob 1.xlsm] | PDC ENERGY | YARD CALL   | 4/25/2019 |               | DISTRICT                                  |
|---|------------|---|-----------|---------------|---|
|   | Popham 8N  | RTS DATE  | 4/25/2019 | 7:00 PM       | Brighton                                  |
|   |            | YARD RTN  | 4/26/2019 |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
| Personnel/Equipment   |            |   |           |               |   |
| Driver  | Assignment |   | Tractor   | Trailer       | Comments                                  |
| Francisco Flores  | Supervisor |   | 530317    | 449088        |   |
| Sam Cheal   | Supervisor |   |           | 446903        |   |
| Brett Moll  | Operator   |   |           | 445070        |   |
| Alex Garza  | Bulker     |   |           | 993357        |   |
| Vernon Fox  | Bulker     |   | 201386    |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
|   |            |   |           |               |   |
| BLEND INFO  |            |   |           |               |   |
| Amount  | Units      | System/Additives  |           | Density (ppg) | Yield (cuft/sk)<br>Water Req.<br>(gal/sk) |
| 0   | SX         | 0   |           |               |   |
| 0.00  |            |   |           |               |   |
| 0.00  | SX         | 80 bbls water + 1600 lbs SAPP   |           |               |   |
| 80.00   | bbl        | +20.0 PPB CJ890   |           |               |   |
| 0   | SX         | 80 bbls ppg Weighted Spacer - 80 bbls of 12.5 ppg Weighted Spacer: 66.3 bbl Fresh Water +<br>17570 lbs Barite + 80 lbs Citric Acid + 997 lbs MS Spacer + 40 lbs X-Air |           |               |   |
| 80.00   | bbl        | +219.63 PPB CJ300+1.0 PPB CJ209+0.5 PPB CJX157011+12.46 PPB CJ801   |           | 12.5          |   |
| 25  | SX         | C&J Non Latex Lead 1-1  |           |               |   |
| 0.00  |            | 50 % CJ914+50 % CJ010-74<br>+2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011   |           | 14            | 1.37<br>5.98                              |
| 755   | SX         | C&J Latex Lead 1-1  |           |               |   |
| 183.60  | bbl        | 50 % CJ914+50 % CJ010-74<br>+2.0 % CJ020+0.4 % CJ548+0.3 % CJ240+10.0 % CJ041+0.3 % CJX157011+1.0 GPS CJ550L+0.2 GPS CJ891  |           | 14            | 1.37<br>4.71                              |
| 970   | SX         | C&J Tail 1-1  |           |               |   |
| 209.91  | bbl        | 65 % CJ914+35 % CJ010-74<br>+0.3 % CJ704+0.15 % CJ210K+0.5 % CJ511  |           | 14.5          | 1.22<br>5.41                              |
| 0   | SX         | Displacement  |           |               |   |
|   |            |   |           |               |   |
| 0   | SX         |   |           |               |   |
|   |            |   |           |               |   |
| 0   | SX         |   |           |               |   |
| 267.90  | bbl        |   |           |               |   |

# Job Summary

 Ticket Number  
 TN# **BCO-1904-0124** Ticket Date  
**4/25/2019**

|                            |                         |                           |
|----------------------------|-------------------------|---------------------------|
| COUNTY                     | COMPANY                 | API Number                |
| <b>Weld</b>                | <b>PDC ENERGY</b>       | <b>05-123-47817</b>       |
| WELL NAME                  | RIG                     | JOB TYPE                  |
| <b>Popham 8N</b>           | <b>Ensign 161</b>       | <b>Production Casing</b>  |
| SURFACE WELL LOCATION      | CJES Field Supervisor   | CUSTOMER REP              |
| <b>40.33704 -104.53805</b> | <b>Francisco Flores</b> | <b>Antonio Barrientos</b> |

|                   |                   |  |
|-------------------|-------------------|--|
| EMPLOYEES         |                   |  |
| <i>Sam Chael</i>  | <i>Vernon Fox</i> |  |
| <i>Brett Moll</i> |                   |  |
| <i>Alex Garza</i> |                   |  |

|   |      |                                      |     |
|---|------|--------------------------------------|-----|
| WELL PROFILE                              |      |                                      |     |
| Max Treating Pressure (psi):              | 3500 | Bottom Hole Static Temperature (°F): |     |
| Bottom Hole Circulating Temperature (°F): |      | Well Type:                           | Oil |

## Open Hole

|   |           |               |             |               |             |
|---|-----------|---------------|-------------|---------------|-------------|
| 1 | Size (in) | TMD From (ft) | TMD to (ft) | TVD From (Ft) | TVD to (Ft) |
|   | 8.5       | 12132         | 1631        |               |             |
| 2 | Size (in) | TMD From (ft) | TMD to (ft) | TVD From (Ft) | TVD to (Ft) |
|   |           |               |             |               |             |

|                          |           |                |       |               |             |               |             |
|--------------------------|-----------|----------------|-------|---------------|-------------|---------------|-------------|
| Casing/Tubing/Drill Pipe |           |                |       |               |             |               |             |
| Type                     | Size (in) | Weight (lb/ft) | Grade | TMD From (ft) | TMD to (ft) | TVD From (Ft) | TVD to (Ft) |
| Surface                  | 9.625     | 36             |       | 1631          | 0           |               |             |
| Type                     | Size (in) | Weight (lb/ft) | Grade | TMD From (ft) | TMD to (ft) | TVD From (Ft) | TVD to (Ft) |
| Production               | 5.5       | 20             |       | 12132         | 0           |               |             |
| Type                     | Size (in) | Weight (lb/ft) | Grade | TMD From (ft) | TMD to (ft) | TVD From (Ft) | TVD to (Ft) |
|                          |           |                |       |               |             |               |             |

## CEMENT DATA

|                     |                   |       |                |                |            |
|---------------------|-------------------|-------|----------------|----------------|------------|
| Stage 1:            | From Depth (ft):  | 12132 | To Depth (ft): | 6974           |            |
|                     | Type: Tail Cement |       |                |                |            |
|                     | Volume (sacks):   | 970   | Volume (bbls): | 210.7          |            |
| Cement & Additives: |                   |       | Density (ppg)  | Yield (ft³/sk) | Water Req. |
|                     |                   |       | 14.5           | 1.22           | 5.41       |

|                     |                         |      |                |                |            |
|---------------------|-------------------------|------|----------------|----------------|------------|
| Stage 2:            | From Depth (ft):        | 6974 | To Depth (ft): | 2459           |            |
|                     | Type: <b>Latex Lead</b> |      |                |                |            |
|                     | Volume (sacks):         | 755  | Volume (bbls): | 184.2          |            |
| Cement & Additives: |                         |      | Density (ppg)  | Yield (ft³/sk) | Water Req. |
|                     |                         |      | 14             | 1.37           | 4.71       |

|                     |                             |      |                |                |            |
|---------------------|-----------------------------|------|----------------|----------------|------------|
| Stage 3:            | From Depth (ft):            | 2459 | To Depth (ft): | 2312           |            |
|                     | Type: <b>Non-Latex Lead</b> |      |                |                |            |
|                     | Volume (sacks):             | 25   | Volume (bbls): | 6              |            |
| Cement & Additives: |                             |      | Density (ppg)  | Yield (ft³/sk) | Water Req. |
|                     |                             |      | 14             | 1.37           | 5.98       |

Stage 4:

From Depth (ft):

To Depth (ft):

Type:

Volume (sacks):

Volume (bbls):

| Cement & Additives: | Density (ppg) | Yield (ft³/sk) | Water Req. |
|---------------------|---------------|----------------|------------|
|                     |               |                |            |

## SUMMARY

|                                     |                            |                                |         |                      |
|-------------------------------------|----------------------------|--------------------------------|---------|----------------------|
| Preflushes:                         | 80 bbls of SAPP            | Calculated Displacement (bbl): | Stage 1 | Stage 2              |
|                                     | 80 bbls of Weighted Spacer | Actual Displacement (bbl):     | 268.4   |                      |
|                                     | 3 bbls of Fresh Water      |                                | 269     |                      |
| Total Preflush/Spacer Volume (bbl): | 160                        | Plug Bump (Y/N):               | Y       | Bump Pressure (psi): |
| Total Slurry Volume (bbl):          | 400.9                      | Lost Returns (Y/N):            | N       | (if Y, when)         |
| Total Fluid Pumped                  | 832.9                      |                                |         | 2552                 |
| Returns to Surface:                 | Preflush                   |                                |         |                      |
|                                     | 54 bbls                    |                                |         |                      |

Job Notes (fluids pumped / procedures / tools / etc.):

Mix/pump 1600 Lbs(SAPP) 80 bbls followed by 80 bbls weighted barite spacer@12.5ppg. Mix/pump 25sx@14ppg 1.37Y non latex lead, followed by 755sx@14ppg 1.37Y Latex lead cement. Mix/pump 970sx@14.5ppg 1.22Y Tail cement. Shut down washed up SCM and drop top plug. Displaced 269 bbls of fresh treated water bumped plug@2552 Psi.Held for 5 mins. Burst wet shoe sub@3611 Psi at 1 bbl away. Pumped 4 bbls afterward shut down checked floats and they held got back 1 bbl back. Pumped job per customers request. Thank you!

Customer Representative Signature:

 Thank You For Using  
 CJES O-TEX Cementing

## Cement Job Log



|  |                    |  |             |                            |                     |                   |                   |                     |
|--|--------------------|--|-------------|----------------------------|---------------------|-------------------|-------------------|---------------------|
| Customer:                                  | PDC ENERGY         |  | Date:       | 4/25/2019                  |                     | Serv. Supervisor: | Francisco Flores  |                     |
| Cust. Rep.:                                | Antonio Barrientos |  | Ticket #:   | BCO-1904-0124              |                     | Serv. Center      | Brighton - 3021   |                     |
| Lease:                                     | Popham 8N          |  | API Well #: | 05-123-47817               |                     | 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  |                    |  |             |                            |                     |                   |                   |                     |
| 80 bbls water + 1600 lbs SAPP              |                    | +20.0 PPB CJ890  |             |                            |                     |                   |                   | 80.00               |
| 80 bbls ppg Weighted Spacer - 80 bbls of   |                    | +219.63 PPB CJ300+1.0 PPB CJ209+0.5 PPB CJX157011+12.46 PPB CJ801  |             |                            | 12.5                |                   |                   | 80.00               |
| 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 % CJX157011                              |             | 25                         | 14                  |                   | 1.37              | 5.98                |
| 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 % CJX157011+1.0 GPS CJ550L+0.2 GPS CJ891 |             | 755                        | 14                  |                   | 1.37              | 4.71                |
| C&J Tail 1-1                               |                    | 65 % CJ914+35 % CJ010-74<br>+0.3 % CJ704+0.15 % CJ210K+0.5 % CJ511   |             | 970                        | 14.5                |                   | 1.22              | 5.41                |
| Displacement                               |                    |  |             |                            |                     |                   |                   | 267.90              |
|  |                    |  |             |                            |                     |                   |                   |                     |
|  |                    |  |             |                            |                     |                   |                   |                     |
| 50 % CJ914+50 % CJ010-74+2.0 % CJ020       |                    |  |             |                            |                     |                   |                   |                     |
|  |                    |  |             |                            |                     |                   |                   |                     |
|  |                    |  |             |                            |                     |                   |                   |                     |
| Displacement Chemicals:                    |                    |  |             |                            |                     |                   |                   |                     |

**C&J ENERGY SERVICES**

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5/4/2019