



Great Western Operating Company, LLC

TOLLWAY LC 24-362HN

API # 05-001-10444

Surface

March 13, 2020

Quote #: QUO-43348-P7T6Z4

Execution #: EXC-25198-C9G5W702



Great Western Operating Company, LLC

Great Western Operating Company, LLC | 1801 Broadway, Suite 500 | Denver, CO 80202

Dear Great Western Operating Company, LLC,

Thank you for the opportunity to provide cementing services on this well. BJ Services strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact BJ Services at any time.

Sincerely,
Jason Creel
Field Engineer I | (307) 256-0306 | Jason.Creel@BJServices.com

Field Office
1716 East Allison Rd., Cheyenne WY. 82007 | (307) 638-5585

Sales Office
999 18th St. Suite 1200, Denver, CO. 80202 | (281) 408-2361

BJ Cementing Treatment Report

| | | | |
|--------------------|--------------|------------------|---------|
| SERVICE SUPERVISOR | Chad Johnson | RIG | Ikon 12 |
| DISTRICT | Cheyenne, WY | COUNTY | ADAMS |
| SERVICE | Cementing | STATE / PROVINCE | CO |

WELL GEOMETRY

| TYPE | ID (in) | OD (in) | WEIGHT (lb/ft) | MD (ft) | TVD (ft) | EXCESS (%) | GRADE | THREAD |
|-----------|---------|---------|----------------|----------|----------|------------|-------|--------|
| Open Hole | 13.50 | 0.00 | 0.00 | 2,020.00 | 2,019.00 | 30.00 | | |
| Casing | 8.92 | 9.63 | 36.00 | 2,020.00 | 2,019.00 | | J-55 | LTC |

HARDWARE

| | | | |
|-----------------------|--------|---------------------------|----------|
| Bottom Plug Used? | No | Centralizers Type | Bow |
| Top Plug Used? | Yes | Landing Collar Depth (ft) | 1,975.26 |
| Top Plug Provided By | Non BJ | Pipe Movement | None |
| Top Plug Size | 9.630 | Job Pumped Through | Manifold |
| Centralizers Used | Yes | Top Connection Thread | LTC |
| Centralizers Quantity | 19.00 | Top Connection Size | 9.63 |

CIRCULATION PRIOR TO JOB

| | | | |
|--------------------------------------|--------|--|------|
| Well Circulated By | Rig | Mud Density In (ppg) | 8.40 |
| Circulation Prior to Job | Yes | Mud Density Out (ppg) | 8.40 |
| Circulation Time (min) | 30.00 | Solids Present at End of Circulation | No |
| Circulation Rate (bpm) | 8.00 | Flare Prior to / during the Cement Job | No |
| Circulation Volume (bbls) | 240.00 | Gas Present | No |
| Lost Circulation Prior to Cement Job | No | | |

TEMPERATURE

| | | | |
|--------------------------|-------|----------------------------|-------|
| Ambient Temperature (°F) | 35.00 | Mix Water Temperature (°F) | 60.00 |
|--------------------------|-------|----------------------------|-------|

FLUID DETAILS

| FLUID TYPE | FLUID NAME | DENSITY (ppg) | YIELD (Cu Ft/sk) | H ₂ O REQ (gals/sk) | PLN TOP FLD (ft) | LENGTH (ft) | VOL (sk) | VOL (Cu Ft) | VOL (bbls) |
|----------------------------|-----------------|---------------|------------------|--------------------------------|------------------|-------------|----------|-------------|------------|
| Spacer / Pre Flush / Flush | Water | 8.3300 | | | 0.00 | | | | 20.0000 |
| Tail Slurry | BJCem S100.3.XC | 14.5000 | 1.3902 | 6.81 | 0.00 | 2,000.00 | 930 | 1293.0000 | 230.3000 |
| Displacement Final | Water | 8.3300 | | | 0.00 | | | 0.0000 | 151.4000 |

| FLUID TYPE | FLUID NAME | COMPONENT | CONCENTRATION | UOM |
|-------------|-----------------|-----------------------|---------------|-----|
| Tail Slurry | BJCem S100.3.XC | CEMENT, ASTM TYPE III | 100.0000 | PCT |

DISPLACEMENT AND END OF JOB SUMMARY

| | | | |
|------------------------------------|--------|------------------------------------|--------|
| Displaced By | BJ | Amt of Cement Returned / Reversed | 33.00 |
| Calculated Displacement Vol (bbls) | 153.00 | Method Used to Verify Returns | Visual |
| Actual Displacement Vol (bbls) | 153.00 | Amt of Spacer to Surface | 20.00 |
| Did Float Hold? | Yes | Pressure Left on Casing (psi) | 0.00 |
| Bump Plug | Yes | Amt Bled Back After Job | 1.00 |
| Bump Plug Pressure (psi) | 700.00 | Total Volume Pumped (bbls) | 407.00 |
| Were Returns Planned at Surface | Yes | Top Out Cement Spotted | No |
| Cement Returns During Job | Yes | Lost Circulation During Cement Job | No |

BJ Cementing Event Log

Surface - Cheyenne, WY - Chad Johnson

| SEQ | START DATE / TIME | EVENT | DENSITY (ppg) | PUMP RATE (bpm) | PUMP VOL (bbls) | PIPE PRESSURE (psi) | COMMENTS |
|-----|-------------------|------------------------|------------------|--------------------|-----------------------|---------------------------|--|
| 1 | 03/13/2020 03:30 | Callout | | | | | Crew called out requested on location for 0900 |
| 2 | 03/13/2020 07:00 | Arrive on Location | | | | | Crew arrived on location |
| 3 | 03/13/2020 07:05 | STEACS Briefing | | | | | Safety meeting |
| 4 | 03/13/2020 07:20 | Spot Units | | | | | Spotted all units |
| 5 | 03/13/2020 07:30 | Rig Up | | | | | Rigged up all equipment |
| 6 | 03/13/2020 08:30 | Client | | | | | Waiting on rig to finish running casing and circulate the well |
| 7 | 03/13/2020 09:30 | STEACS Briefing | | | | | Safety meeting |
| 8 | 03/13/2020 09:54 | Prime Up | 8.3400 | 3.00 | 5.00 | 100.00 | Fill lines |
| 9 | 03/13/2020 09:57 | Pressure Test | | | | | Pressure test lines to 2500 psi |
| 10 | 03/13/2020 10:00 | Pump Spacer | 8.3400 | 6.00 | 20.00 | 200.00 | Pump water spacer |
| 11 | 03/13/2020 10:04 | Pump Tail Cement | 14.5000 | 6.00 | 230.00 | 250.00 | Pump cement (930 sks, 1.39 Y, 6.81 gal/sk) |
| 12 | 03/13/2020 10:48 | Other (See comment) | | | | | Shutdown |
| 13 | 03/13/2020 10:52 | Drop Top Plug | | | | | Drop top plug |
| 14 | 03/13/2020 10:53 | Pump Displacement | 8.3400 | 8.00 | 140.00 | 800.00 | Pump displacement |
| 15 | 03/13/2020 11:14 | Cement Back-to-Surface | | | | | Cement back to surface, 33 bbls cement to surface |
| 16 | 03/13/2020 11:18 | Other (See comment) | 8.3400 | 3.00 | 13.00 | 700.00 | Slow pump rate |
| 17 | 03/13/2020 11:23 | Land Plug | | | | | Land plug at 700 psi. 30 min csg test: start 1523 psi, end 1543 psi. |
| 18 | 03/13/2020 11:54 | Check Floats | | | | | Check floats, floats holding, 1 bbls back |
| 19 | 03/13/2020 12:00 | STEACS Briefing | | | | | Safety meeting |
| 20 | 03/13/2020 12:20 | Rig Down | | | | | Rigged down all equipment |
| 21 | 03/13/2020 13:30 | Leave Location | | | | | Crew departed location |



JobMaster Program Version 5.00C1

Job Number:

Customer: Great Western

Well Name: Tollway LC 24-362HN

