



Caerus

Surface Post Job Report

Puckett 15B-23 697 05-045-23380

S:23 T:6S R:97W Garfield CO

Quote #:

I Execution #:



Caerus

Attention: Mr. Steve Schmitz | (720) 880-6412 | sschmitz@caerusoilandgas.com

Caerus | 1001 17th Street, Suite 1600 | Denver, CO 80202

Dear Mr. Schmitz,

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,

Gage Putnam
Field Engineer I | (970) 632-2006 | Gage.Putnam@BJServices.com

Field Office 28730 US-6, Rifle, CO 81650
Phone: (970) 632-2412

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

Cementing Treatment



| | | | |
|--------------------|---------------------------|----------------|--------------------|
| Start Date | 10/18/2017 | Well | Puckett 15B-23 697 |
| End Date | 11/30/2017 | County | GARFIELD |
| Client | CAERUS OPERATING, LLC | State/Province | CO |
| Client Field Rep | Doug McAdams | API | 05-045-23380 |
| Service Supervisor | Andrew Linn | Formation | - |
| Field Ticket No. | FT-00329-Y8F8S60202-38291 | Rig | H&P 330 |
| District | Rifle, CO | Type of Job | Surface |

WELL GEOMETRY

| Type | ID (in) | OD (in) | Wt. (lb/ft) | MD (ft) | TVD (ft) | Excess(%) | Grade | Thread |
|-----------------|---------|---------|-------------|----------|----------|-----------|-------|--------|
| Previous Casing | 19.50 | 20.00 | 52.73 | 100.00 | 100.00 | | | |
| Open Hole | 14.75 | | | 2,000.00 | 2,000.00 | 25.00 | | |
| Open Hole | 14.75 | | | 2530 | 2530 | | | |
| Casing | 8.92 | 9.63 | 36.00 | 2,515.00 | 2,515.00 | | | |

Shoe Length (ft): 41.97

HARDWARE

| | | | |
|---------------------------|--------|--------------------------------------|----------------|
| Bottom Plug Used? | No | Tool Type | Float Collar |
| Bottom Plug Provided By | - | Tool Depth (ft) | 2,471 |
| Bottom Plug Size | - | Max Tubing Pressure - Rated (psi) | - |
| Top Plug Used? | Yes | Max Tubing Pressure - Operated (psi) | - |
| Top Plug Provided By | Non-BJ | Max Casing Pressure - Rated (psi) | 3425.00 |
| Top Plug Size | 8.92 | Max Casing Pressure - Operated (psi) | 2740.00 |
| Centralizers Used | Yes | Pipe Movement | No |
| Centralizers Quantity | 10 | Job Pumped Through | Plug Container |
| Centralizers Type | Bow | Top Connection Thread | 8 RND |
| Landing Collar Depth (ft) | 2,471 | Top Connection Size | 9 5/8 |

Cementing Treatment



CIRCULATION PRIOR TO JOB

| | | | |
|--------------------------------------|------|--------------------------------------|-------|
| Well Circulated By | Rig | Solids Present at End of Circulation | No |
| Circulation Prior to Job | Yes | 10 sec SGS | 10.00 |
| Circulation Time (min) | 60 | 10 min SGS | 18.00 |
| Circulation Rate (bpm) | 3.33 | 30 min SGS | 35.00 |
| Circulation Volume (bbls) | 200 | Flare Prior to/during the Cement Job | No |
| Lost Circulation Prior to Cement Job | Yes | Gas Present | No |
| Mud Density In (ppg) | 9.0 | Gas Units | 0 |
| Mud Density Out (ppg) | N/A | | |
| PV Mud In | 8.00 | | |
| PV Mud Out | - | | |
| YP Mud In | 9.00 | | |
| YP Mud Out | - | | |

TEMPERATURE

| | | | |
|----------------------------|------|--------------------------------|----|
| Ambient Temperature (°F) | 52 | Slurry Cement Temperature (°F) | 73 |
| Mix Water Temperature (°F) | 73.4 | Flow Line Temperature (°F) | - |

BJ FLUID DETAILS

| Fluid Type | Fluid Name | Density (ppg) | Yield (Cu Ft/sk) | H2O Req. (gals/sk) | Vol (sk) | Vol (Cu Ft) | Vol (bbls) |
|----------------------------|-----------------|---------------|------------------|--------------------|----------|-------------|------------|
| Spacer / Pre Flush / Flush | Water | 8.3300 | | | | | 20.0000 |
| Spacer / Pre Flush / Flush | Water | 8.3300 | | | | | 20.0000 |
| Spacer / Pre Flush / Flush | Sodium Silicate | 10.0000 | | | | | 20.0000 |
| Lead Slurry | S100-12 | 12.0000 | 2.5329 | 14.89 | 704 | 1,774.0000 | 315.9000 |
| Tail Slurry | S100-12 | 12.5000 | 2.2282 | 12.62 | 162 | 358.0000 | 63.7000 |
| Top-Out / Scavenger Slurry | S100-12 | 12.5000 | 2.2282 | 12.62 | 70 | 155.974 | 27.7790 |
| Displacement Final | Displacement | 8.3300 | | | | 0.0000 | 190.2000 |

Cementing Treatment



| Fluid Type | Fluid Name | Component | Concentration | UOM |
|----------------------------|-----------------|---|---------------|--------|
| Spacer / Pre Flush / Flush | Sodium Silicate | SILICATE, SODIUM, A-3L | 21.00 | GPB |
| Lead Slurry | S100-12 | CEMENT, ASTM TYPE III | 100.00 | PCT |
| Lead Slurry | S100-12 | CEMENT EXTENDER, GYPSUM, A-10 | 5.00 | BWOB |
| Lead Slurry | S100-12 | ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS | 2.00 | LBS/SK |
| Lead Slurry | S100-12 | CEMENT EXTENDER, SODIUM METASILICATE | 2.00 | LBS/SK |
| Lead Slurry | S100-12 | IntegraSeal CELLO | 0.13 | LBS/SK |
| Lead Slurry | S100-12 | FP-25, Dry Foam Preventer (BJS Only) | 0.30 | BWOB |
| Tail Slurry | S100-12 | CEMENT, ASTM TYPE III | 100.00 | PCT |
| Tail Slurry | S100-12 | IntegraSeal CELLO | 0.13 | LBS/SK |
| Tail Slurry | S100-12 | CEMENT EXTENDER, GYPSUM, A-10 | 5.00 | BWOB |
| Tail Slurry | S100-12 | CEMENT EXTENDER, SODIUM METASILICATE | 2.00 | LBS/SK |
| Tail Slurry | S100-12 | ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS | 2.00 | LBS/SK |
| Tail Slurry | S100-12 | FP-25, Dry Foam Preventer (BJS Only) | 0.30 | BWOB |
| Top-Out / Scavenger Slurry | S100-12 | CEMENT, ASTM TYPE III | 100.00 | PCT |
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| Top-Out / Scavenger Slurry | S100-12 | CEMENT EXTENDER, SODIUM METASILICATE | 2.00 | LBS/SK |
| Top-Out / Scavenger Slurry | S100-12 | CEMENT EXTENDER, GYPSUM, A-10 | 5.00 | BWOB |

Cementing Treatment



TREATMENT SUMMARY

| Time | Fluid | Rate (bpm) | Fluid Vol. (bbls) | Pipe Pressure (psi) | Comments |
|-------|-----------------|------------|-------------------|---------------------|----------|
| 13:07 | Water | 5.00 | 20.00 | 79.00 | |
| 13:23 | Sodium Silicate | 5.00 | 20.00 | 105.00 | |
| 13:28 | Water | 5.00 | 20.00 | 98.00 | |
| 13:39 | S100-12 Lead | 5.00 | 315.90 | 104.00 | |
| 14:35 | S100-12 Tail | 5.00 | 63.70 | 75.00 | |
| 14:57 | Displacement | 8.00 | 192.76 | 129.00 | |
| 19:51 | S100-12 Top Out | 4.00 | 27.78 | 26.00 | |

| | Min | Max | Avg |
|----------------|------|------|--------|
| Pressure (psi) | 0.00 | 402 | 156.00 |
| Rate (bpm) | 4.00 | 8.00 | 4.57 |

DISPLACEMENT AND END OF JOB SUMMARY

| | | | |
|---------------------------------------|--------|------------------------------------|--------|
| Displaced By | BJ | Amount of Cement Returned/Reversed | 0 |
| Calculated Displacement Volume (bbls) | 192.76 | Method Used to Verify Returns | Visual |
| Actual Displacement Volume (bbls) | 192 | Amount of Spacer to Surface | 0 |
| Did Float Hold? | Yes | Pressure Left on Casing (psi) | 0 |
| Bump Plug | Yes | Amount Bled Back After Job | 0.75 |
| Bump Plug Pressure (psi) | 305 | Total Volume Pumped (bbls) | 675.00 |
| Were Returns Planned at Surface | Yes | Top Out Cement Spotted | Yes |
| Cement returns During Job | No | Lost Circulation During Cement Job | No |

CEMENT PLUG

| | | | |
|------------------------|----|-------------------|----|
| Bottom of Cement Plug? | No | Wiper Balls Used? | No |
| Wiper Ball Quantity | - | Plug Catcher | No |
| Number of Plugs | 1 | | |

Customer Name CAERUS
Well Name PUCKETT 15B-23
Job Type SURFACE

District Rifle
Supervisor ANDREW LINN
Engineer Gage Putnam



| Seq No. | Start Date/Time | Category | Event | Equipment | Event ID | Density (lb/gal) | Pump Rate (bpm) | Pump Vol (bbls) | Pipe Pressure (psi) | Comments |
|---------|------------------|-------------------------------------|------------------------|-----------|----------|------------------|-----------------|-----------------|---------------------|---|
| 1 | 10/29/2017 6:00 | Mobilization | Callout | | 1 | | | | | ON LOCATION TIME OF 12:00 |
| 2 | 10/29/2017 7:45 | | STEACS | | | | | | | PRE CONVOY SAFETY MEETING |
| 3 | 10/29/2017 8:30 | | DEPART RIFLE YARD | | | | | | | DEPART FROM RIFLE YARD FOR H&P 330 |
| 4 | 10/29/2017 10:30 | | ARRIVE ON LOCATION | | 48 | | | | | ARRIVE ON LOCATION. RIG WAS ON BOTTOM WITH CASING WAITING TO LAND CASING |
| 5 | 10/29/2017 10:45 | | AAR | | | | | | | AFTER ACTION REVIEW FOR THE JOURNEY |
| 6 | 10/29/2017 11:00 | | SITE ASSESSMENT | | | | | | | SITE ASSESSMENT |
| 7 | 10/29/2017 11:30 | | STEACS | | | | | | | PRE RIG UP SAFETY MEETING |
| 8 | 10/29/2017 11:45 | | RIG UP | | 50 | | | | | SPOT IN EQUIPMENT AND RIG UP |
| 9 | 10/29/2017 12:15 | | STEACS | | | | | | | PRE JOB SAFETY MEETING WITH RIG CREW, COMPANY MAN, AND ALL BJ CEMENT CREW. |
| 10 | 10/29/2017 12:30 | | RIG UP | | 50 | | | | | STAB PLUG CONTAINER, LOAD PLUG CONTAINER, AND HOOK UP LINES. |
| 11 | 10/29/2017 13:07 | | FILL LINE | | | 8.33 | 2 | 5 | 51 | FILL LINES WITH 5 BBLs OF FRESH WATER |
| 12 | 10/29/2017 13:11 | | PRESSURE TEST | | 54 | | | | | PRESSURE TEST TO 4400 PSI PRESSURE HELD |
| 13 | 10/29/2017 13:15 | | SPACER | | | 8.33 | 5 | 20 | 79 | FINISHED PUMPING THE LAST 15 BBLs OF FRESH WATER. |
| 14 | 10/29/2017 13:23 | | SPACETR | | | 10 | 5 | 20 | 105 | 20 BBLs OF SODIUM SILICATE |
| 15 | 10/29/2017 13:28 | | SPACER | | | 8.33 | 5 | 20 | 98 | 20 BBLs OF FRESH WATER |
| 16 | 10/29/2017 13:39 | | LEAD CEMENT | | | 12 | 5 | 50 | 104 | LEAD CEMENT 704 SKS 12 PPG 2.53 FT3/SK 14.89 GAL/SK FOR A TOTAL OF 317.23 BBLs OF LEAD, REQUIRING 249.58 BBLs OF FRESH WATER. WEIGHT VERIFIED BY MUD SCALES. |
| 17 | 10/29/2017 13:49 | | LEAD CEMENT | | | 12 | 5 | 100 | 100 | LEAD CEMENT |
| 18 | 10/29/2017 13:57 | | LEAD CEMENT | | | 12 | 5 | 150 | 103 | LEAD CEMENT |
| 19 | 10/29/2017 14:04 | | LEAD CEMENT | | | 12 | 5 | 200 | 98 | LEAD CEMENT |
| 20 | 10/29/2017 14:17 | | LEAD CEMENT | | | 12 | 5 | 250 | 102 | LEAD CEMENT |
| 21 | 10/29/2017 14:27 | | LEAD CEMENT | | | 12 | 5 | 300 | 99 | LEAD CEMENT |
| 22 | 10/29/2017 14:31 | | LEAD CEMENT | | | 12 | 5 | 317.1 | 107 | FINISHED PUMPING LEAD CEMENT WITH 317.1 BBLs AWAY |
| 23 | 10/29/2017 14:35 | | TAIL CEMENT | | | 12.5 | 4 | 30 | 75 | TAIL CEMENT 162 SKS 12.5 PPG 2.23 FT3/SK 12.62 GAL/SK FOR A TOTAL OF 64.23 BBLs OF TAIL, REQUIRING 48.68 BBLs OF FRESH WATER. WEIGHT VERIFIED BY MUD SCALES. |
| 24 | 10/29/2017 14:41 | | TAIL CEMENT | | | 12.5 | 4 | 50 | 72 | TAIL CEMENT |
| 25 | 10/29/2017 14:42 | | TAIL CEMENT | | | 12.5 | 4 | 57 | 68 | TAIL CEMENT |
| 26 | 10/29/2017 14:44 | | SHUT DOWN | | | | | | | SHUT DOWN |
| 27 | 10/29/2017 14:45 | | DROP TOP PLUG | | 63 | 8.33 | 5 | 10 | 60 | DROP TOP PLUG VERIFIED BY COMPANY MAN |
| 28 | 10/29/2017 14:57 | | DISPLACEMENT | | | 8.33 | 8 | 50 | 129 | WASHED UP ON TOP OF THE PLUG WITH 2 BBLs OF TAIL CEMENT |
| 29 | 10/29/2017 15:03 | | DISPLACEMENT | | | 8.33 | 8 | 100 | 213 | DISPLACEMENT |
| 30 | 10/29/2017 15:07 | | DISPLACEMENT | | | 8.33 | 6 | 130 | 254 | DISPLACEMENT |
| 31 | 10/29/2017 15:15 | | DISPLACEMENT | | | 8.33 | 4 | 175 | 301 | DISPLACEMENT |
| 32 | 10/29/2017 15:18 | | DISPLACEMENT | | | 8.33 | 2 | 182 | 300 | DISPLACEMENT |
| 33 | 10/29/2017 15:19 | | LAND PLUG | | 67 | | 2 | 192 | 307 | LANDED THE PLUG AT 192 BBLs AWAY AT 307 PSI |
| 34 | 10/29/2017 15:20 | | CASING TEST | | | | | | 1024 | CASING TEST OF 1024 PSI FOR 5 MINUTES |
| 35 | 10/29/2017 15:26 | | CHECK FLOATS | | 68 | | | | | FLOATS HELD 0.75 BBL BACK TO THE TRUCK |
| 36 | | | RIG DOWN/ UP | | | | | | | BREAK OFF OF PLUG CONTAINER AND HOOK UP TO PARASITE STRING |
| 37 | 10/29/2017 15:48 | | PUMP ON PARASITE STING | | | 8.33 | 1 | | 26 | PUMPED FRESH WATER WITH 50 LBS OF SUGAR IN IT. |
| 38 | 10/29/2017 15:53 | BREAK CIRCULATION ON PARASITE STING | | | | 8.33 | 1 | 6 | 105 | TOOK 105 PSI TO BREAK CIRCULATION ON PARASITE STING WITH 6 BBLs AWAY |
| 39 | 10/29/2017 16:02 | | WASH PUMPS AND LINES | | | | | | | WASH PUMPS AND LINES INTO THE CELLAR |
| 40 | 10/29/2017 16:20 | | AAR | | | | | | | AFTER ACTION REVIEW FOR THE PRIMARY JOB |
| 41 | 10/29/2017 16:30 | | WAIT TO TOP OUT | | | | | | | WAIT FOR RIG CREW TO DO B.O.P. TEST |
| 42 | 10/29/2017 19:15 | | STEACS | | | | | | | PRE TOP OUT SAFETY MEETING |
| 43 | 10/29/2017 19:30 | | RIG UP | | 50 | | | | | RIG UP TO TOP OUT |
| 44 | 10/29/2017 19:51 | | SPACER | | | | | | | 2 BBLs OF WATER WITH 200 LBS OF CALCIUM CHLORIDE |
| 45 | 10/29/2017 19:53 | | SPACER | | | | | | | 350 GALS OF SODIUM SILICATE |
| 46 | 10/29/2017 19:58 | | TOP OUT | | | | | | | TOP OUT CEMENT 70 SKS 12.5 PPG 2.23 FT3/SK 12.62 GAL/SK FOR A TOTAL OF 27.80 BBLs OF TOP OUT, REQUIRING 21.03 BBLs OF FRESH WATER. WEIGHT VERIFIED BY MUD SCALES. |
| 47 | 10/29/2017 20:09 | | CEMENT TO SURFACE | | | | | | | CEMENT TO SURFACE |
| 48 | 10/29/2017 20:12 | PUMP CEMENT ON LAST PARASITE STING | | | | | | | | PUMPED 2 BBLs OF TOP OUT DOWN THE LAST PARASITE STING |
| 49 | 10/29/2017 20:18 | | TOP OUT | | | | | | | TOPPED OUT AGAIN |
| 50 | 10/29/2017 20:20 | | CEMENT TO SURFACE | | | | | | | CEMENT TO SURFACE |
| 51 | 10/29/2017 20:25 | | STEACS | | | | | | | PRE RIG DOWN SAFETY MEETING |
| 52 | 10/29/2017 20:30 | | WASH PUMPS AND LINES | | | | | | | WASH PUMPS AND LINES INTO THE CELLAR |
| 53 | 10/29/2017 20:44 | | RIG DOWN | | | | | | | RIG DOWN ALL EQUIPMENT. CURTAIN SIDE TAKEN TO H&P 329 AND LEFT ON THE MOUNTAIN. |
| 54 | 10/29/2017 20:44 | | BLOW DOWN | | | | | | | BLOW DOWN SILO 11 INTO SILO 25 AND UNLOAD TOP OUT INTO SILO 25 |
| 55 | 10/29/2017 21:20 | | AAR | | | | | | | AFTER ACTION REVIEW |
| 56 | 10/29/2017 21:30 | | STEACS | | | | | | | PRE CONVOY SAFETY MEETING |

Customer Name CAERUS
Well Name PUCKETT 15B-23
Job Type SURFACE

District Rifle
Supervisor ANDREW LINN
Engineer Gage Putnam



| Seq No. | Start Date/Time | Category | Event | Equipment | Event ID | Density (lb/gal) | Pump Rate (bpm) | Pump Vol (bbls) | Pipe Pressure (psi) | Comments |
|---------|------------------|----------|----------------|-----------|----------|---------------------|--------------------|--------------------|------------------------|---|
| 57 | 10/29/2017 21:40 | | LEAVE LOCATION | | 74 | | | | | THANK YOU FOR USING BJ SERVICES, ANDREW LINN AND CREW |
| 58 | 10/29/2017 23:30 | | ARRIVE AT YARD | | | | | | | ARRIVE AT RIFLE YARD |
| 59 | 10/29/2017 23:45 | | AAR | | | | | | | AFTER ACTION REVIEW |



PUCKETT 15B-23 SURFACE



