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# **Bison IV Operating, LLC**

## **PLUG & ABANDON POST JOB REPORT**

**ROTH #11-7 05-123-14673**  
**S:7 T:7N R:59W Weld CO**

CallSheet #: 88997  
Proposal #: 72211

## Job Details & Summary

### Geometry

| Type      | Function | OD (in) | ID (in) | Weight (lb/ft) | Top (ft) | Bottom (ft) | Excess (%) |
|-----------|----------|---------|---------|----------------|----------|-------------|------------|
| Casing    | Outer    | 8.625   | 8.097   | 24             | 0        | 259         | 0          |
| Open Hole | Outer    |         | 7.875   |                | 570      | 889         | 0          |
| Casing    | Outer    | 4.5     | 4.052   | 10.5           | 889      | 6950        | 0          |
| Tubing    | Inner    | 2.875   | 2.441   | 6.4            | 0        | 5705        | 0          |

### Equipment / People

| Unit Type            | Unit    |
|----------------------|---------|
| Cement Trailer Float | CTF-341 |
| Cement Pump Float    | CPF-074 |
| Cement Utility Float | CUF-163 |
| Cement Trailer Float | CTF-202 |

### Timing

| Event           | Date/Time        |
|-----------------|------------------|
| ERTS            | 10/20/2023 00:00 |
| Call Out        | 10/18/2023 18:45 |
| Depart Facility | 10/18/2023 21:30 |
| On Location     | 10/18/2023 23:00 |
| Rig Up Iron     | 10/18/2023 23:45 |
| Job Started     | 10/19/2023 01:17 |
| Job Completed   | 10/19/2023 21:55 |
| Rig Down Iron   | 10/19/2023 22:10 |
| Depart Location | 10/19/2023 23:30 |

### General Job Information

| Metrics                 | Value       |
|-------------------------|-------------|
| Well Fluid Density      | 8.33 lb/gal |
| Well Fluid Type         | WBM         |
| Calculated Displacement | 21 bbls     |
| Actual Displacement     | 21 bbls     |
| Total Spacer to Surface | 0 bbls      |
| Total CMT to Surface    | 3 bbls      |
| Well Topped Out         | Yes         |
| Top Out Volume          | 3 bbls      |

### Job Details

| Metrics                        | Value       |
|--------------------------------|-------------|
| Flare Prior to Job             | No          |
| Flare Prior to Job             | 0 units     |
| Flare During Job               | No          |
| Flare During Job               | 0 units     |
| Flare at End of Job            | No          |
| Flare at End of Job            | 0 units     |
| Well Full Prior to Job         | Yes         |
| Well Fluid Density Into Well   | 8.33 lb/gal |
| Well Fluid Density Out of Well | 8.33 lb/gal |

### Job Details (cont.)

| Metrics          | Value   |
|------------------|---------|
| BHCT             | 174 °F  |
| BHST             | 210 °F  |
| Initial ISIP     | 670 psi |
| Final ISIP       | 400 psi |
| Sks in Formation | 60 sks  |
| Injection #1     | 1.5 bpm |
| Injection #1     | 670 psi |
| Injection #2     | 2.5 bpm |
| Injection #2     | 400 psi |

### Water Analysis

| Metrics          | Value            | Recommended |
|------------------|------------------|-------------|
| Water Source     | Upright Rig Tank |             |
| Temperature      | 66 °F            | 50-80 °F    |
| pH Level         | 8                | 5.5-8.5     |
| Chlorides        | 0 mg/L           | 0-3000 mg/L |
| Total Alkalinity | 180              | 0-1000      |
| Total Hardness   | 125 mg/L         | 0-500 mg/L  |
| Carbonates       | 140 mg/L         | 0-100 mg/L  |
| Sulfates         | <200 mg/L        | 0-1500 mg/L |
| Potassium        | 450 mg/L         | 0-3000 mg/L |
| Iron             | 0 mg/L           | 0-300 mg/L  |

### Circulation

|                                     |
|-------------------------------------|
| <b>Lost Circulation Experienced</b> |
| No                                  |

### Job Execution Information

| Fluid | Product      | Function          | Density (lb/gal) | Yield (ft <sup>3</sup> /sk) | Water Rq. (gal/sk) | Water Rq. (gal/bbl) | Volume (sk) | Volume (bbl) | Designed Top (ft) |
|-------|--------------|-------------------|------------------|-----------------------------|--------------------|---------------------|-------------|--------------|-------------------|
| 1     | FW Flush     | Flush             | 8.34             |                             |                    | 42.00               |             | 20.00        | 0                 |
| 2     | Squeeze      | Squeeze           | 15.80            | 1.15                        | 4.97               |                     | 70.00       | 14.33        | 5575              |
| 3     | Displacement | Displacement      | 8.34             |                             |                    | 42.00               |             | 16.00        | 0                 |
| 4     | Flush Ahead  | Flush             | 8.34             |                             |                    | 42.00               |             | 20.00        | 0                 |
| 5     | Squeeze-2    | Squeeze           | 15.80            | 1.15                        | 4.97               |                     | 80.00       | 16.37        | 1323              |
| 6     | Displacement | Displacement      | 8.34             |                             |                    | 42.00               |             | 4.00         | 0                 |
| 7     | FW Flush     | Flush             | 8.34             |                             |                    | 42.00               |             | 20.00        | 0                 |
| 8     | Plug(889')   | Plug              | 15.80            | 1.16                        | 5.01               |                     | 100.00      | 20.74        | 530               |
| 9     | Displacement | Displacement      | 8.34             |                             |                    | 42.00               |             | 3.00         | 0                 |
| 10    | FW Flush     | Flush             | 8.34             |                             |                    | 42.00               |             | 20.00        | 0                 |
| 11    | Plug(570')   | Plug              | 15.80            | 1.16                        | 5.01               |                     | 250.00      | 51.85        | 0                 |
| 12    | Displacement | DisplacementFinal | 8.34             |                             |                    | 42.00               |             | 1.00         | 0                 |

### Job Fluid Details

| Fluid | Type    | Fluid      | Product | Function    | Conc.  | Uom   |
|-------|---------|------------|---------|-------------|--------|-------|
| 2     | Squeeze | Squeeze    | CLASS G | Cement      | 100.00 | %     |
| 2     | Squeeze | Squeeze    | FL-24   | FluidLoss   | 0.40   | %BWOB |
| 5     | Squeeze | Squeeze-2  | CLASS G | Cement      | 100.00 | %     |
| 5     | Squeeze | Squeeze-2  | FL-24   | FluidLoss   | 0.40   | %BWOB |
| 8     | Plug    | Plug(889') | CLASS G | Cement      | 100.00 | %     |
| 8     | Plug    | Plug(889') | A-7P    | Accelerator | 2.00   | %BWOB |
| 11    | Plug    | Plug(570') | CLASS G | Cement      | 100.00 | %     |
| 11    | Plug    | Plug(570') | A-7P    | Accelerator | 2.00   | %BWOB |

## Job Logs

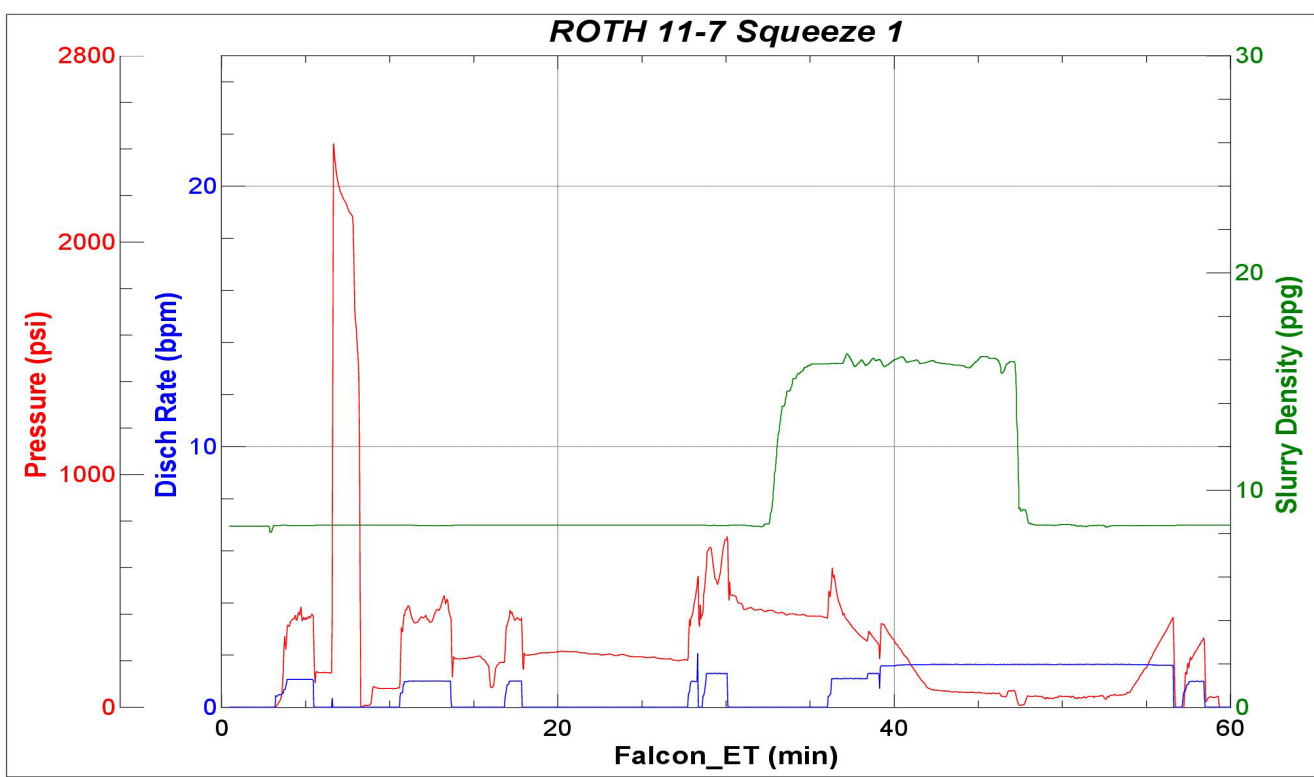
| Line | Event                 | Date (MM/DD/YY) | Time (HH:MM) | Density (lb/gal) | Pump Rate (bpm) | Pump Volume (bbls) | Pipe Pressure (psi) | Comment   |
|------|-----------------------|-----------------|--------------|------------------|-----------------|--------------------|---------------------|---|
| 1    | Call Out              | 10/18/2023      | 18:45        |                  |                 |                    |                     | Customer requested crew for 00:00 10/19/23  |
| 2    | Depart Shop           | 10/18/2023      | 21:30        |                  |                 |                    |                     | Crew has journey mangment and departs shop  |
| 3    | Arrive On Location    | 10/18/2023      | 23:00        |                  |                 |                    |                     | Crew arrives on location and meet with customer   |
| 4    | Safety Meeting        | 10/18/2023      | 23:30        |                  |                 |                    |                     | ACC has safety meeting over rigging up iron and hoses   |
| 5    | Rig Up Iron           | 10/18/2023      | 23:45        |                  |                 |                    |                     | ACC rigs up iron  |
| 6    | Safety Meeting        | 10/19/2023      | 01:05        |                  |                 |                    |                     | Safety meeting with ACC, rig crew and company man over job and hazards  |
| 7    | Fill Lines            | 10/19/2023      | 01:17        | 8.33             | 1               | 3                  | 376                 | Pump 3 bbls ahead   |
| 8    | Pressure Test Lines   | 10/19/2023      | 01:20        | 8.33             | 0.5             | 0.5                | 2300                | Pressure test to 2500 PSI   |
| 9    | Pump Injection Test   | 10/19/2023      | 01:24        | 8.33             | 1               | 2                  | 475                 | Pump 2 bbls at 1 bpm PSI at 475 PSI   |
| 10   | Shutdown              | 10/19/2023      | 01:28        |                  |                 |                    |                     | Shut down got flow to tanks. Company man made called, perms located above retainer from previous PA, got the approval to pump 1st squeeze from OSR                                |
| 11   | Pump Injection Test   | 10/19/2023      | 01:31        | 8.33             | 1.5             | 6                  | 455                 | Pump 6 bbls at 1.5 bpm at 455 PSI   |
| 12   | Pump Cement           | 10/19/2023      | 01:51        | 15.8             | 1.5             | 14.3               | 360                 | Pump 14.3 bbls of Neat G 15.8 PPG with FL-24, retainer set at 5705' inside 4.5" casing pumping through 2 3/8" tubing. Pumping 60 sks below retainer and 10 sks on top of retainer |
| 13   | Pump Displacement     | 10/19/2023      | 02:02        | 8.33             | 1.5             | 19.5               | 476                 | Pump 19.5 bbls of displacement  |
| 14   | Shut Down             | 10/19/2023      | 02:10        |                  |                 |                    |                     | Shut down pumping   |
| 15   | Sting Out Of Retainer | 10/19/2023      | 02:11        |                  |                 |                    |                     | Rig pulls out of stinger  |
| 16   | Pump Displacement     | 10/19/2023      | 02:11        | 8.33             | 1               | 1                  | 400                 | Pump 1 bbls of displacement leaving 10 sks of cement on top of retainer pressured up to 400 PSI and shut down TOC with pipe out 5575'   |
| 17   | Shut Down             | 10/19/2023      | 02:12        |                  |                 |                    |                     | Shut down pumping, rig down floor   |
| 18   | POOH                  | 10/19/2023      | 02:15        |                  |                 |                    |                     | Rig pulling 105 stands to 1582' for 2nd squeeze   |
| 19   | Fill Lines            | 10/19/2023      | 06:02        | 8.33             | 1               | 3                  | 50                  | Fill pumps and lines  |
| 20   | Pressure Test Lines   | 10/19/2023      | 06:04        | 8.33             | 0.5             | 0.5                | 3300                | Pressure Test To 2500 PSI   |
| 21   | Pump Injection Test   | 10/19/2023      | 06:07        | 8.33             | 2               | 6                  | 250                 | Pump injection test at 2bpm 250 PSI'  |
| 22   | Pump Cement           | 10/19/2023      | 06:11        | 15.8             | 2               | 12.28              | 250                 | Pump 16.4 bbls of cement at 15.8" retainer set at 1582', pumping 60 sks of cement below and 20 Sks On top. TOC with pipe out 1323'  |
| 23   | Shut Down             | 10/19/2023      | 06:24        |                  |                 |                    |                     | Shut down pumping after pumping 12.5 bbls of cement   |
| 24   | Sting Out             | 10/19/2023      | 06:24        |                  |                 |                    |                     | Sting out of retainer   |
| 25   | Pump Cement           | 10/19/2023      | 06:27        | 15.8             | 2               | 4                  | 138                 | Pump 20 sks of cement on top  |
| 26   | Pump Displacement     | 10/19/2023      | 06:29        | 8.33             | 2               | 3                  | 65                  | Pump 3 bbls of displacement   |
| 27   | Shut Down             | 10/19/2023      | 06:32        |                  |                 |                    |                     | Shut down pumping, balanced out   |
| 28   | Rig POOH              | 10/19/2023      | 06:45        |                  |                 |                    |                     | Rig POOH, lays floor down pulling out 4.5" casing patch   |
| 29   | Fill Lines            | 10/19/2023      | 14:56        | 8.33             |                 |                    |                     | Pump 3 bbls ahead to fill pumps and lines   |

| Line | Event               | Date (MM/DD/YY) | Time (HH:MM) | Density (lb/gal) | Pump Rate (bpm) | Pump Volume (bbls) | Pipe Pressure (psi) | Comment   |
|------|---------------------|-----------------|--------------|------------------|-----------------|--------------------|---------------------|---|
| 30   | Pressure Test Lines | 10/19/2023      | 14:58        | 8.33             | 3               | 3                  | 45                  | Pressure test to 2500 PSI   |
| 31   | Pump Flush Ahead    | 10/19/2023      | 15:01        | 8.33             | 3               | 30                 | 3300                | Pump 30 bbls of fresh water ahead   |
| 32   | Pump Cement         | 10/19/2023      | 15:31        | 15.8             | 3               | 20.6               | 200                 | Pump 20.6 bbls of 15.8 cement ( 100 Sks, 1.16 Yield, 5.01 gals/Sks, 2% CC BWOB) TOC with pipe out 530'                        |
| 33   | Pump Displacement   | 10/19/2023      | 15:38        | 8.33             | 3               | 1.5                | 100                 | Pump 1.5 bbls of displacement pressure up to 100 PSI and shut down  |
| 34   | Shut Down           | 10/19/2023      | 15:39        |                  |                 |                    |                     | Shut down pumping   |
| 35   | Rig Down Iron       | 10/19/2023      | 15:42        |                  |                 |                    |                     | Rig down floor  |
| 36   | Rig POOH            | 10/19/2023      | 15:43        |                  |                 |                    |                     | Rig pulls 5 stands back   |
| 37   | Waiting To Tag      | 10/19/2023      | 15:45        |                  |                 |                    |                     | Waiting 4 hours to tag plug   |
| 38   | Tag Cement          | 10/19/2023      | 20:10        |                  |                 |                    |                     | Tagged cement at 530'   |
| 39   | Fill Lines          | 10/19/2023      | 20:39        | 8.33             | 5               | 50                 | 100                 | Pump 5 bbls ahead to establish circulation  |
| 40   | Pressure Test Lines | 10/19/2023      | 20:44        | 8.33             | 0.5             | 0.5                | 2400                | Pressure test to 2500 PSI   |
| 41   | Pump Cement         | 10/19/2023      | 20:50        | 15.8             | 3               | 42                 | 100                 | Pump total of 42 bbls of 15.8 PPG cement 2% BWOB CC ( 203 Sks, 1.16 Yield, 5.01 Yield) Pump surface plug from 530' to surface |
| 42   | Cement to Surface   | 10/19/2023      | 21:06        | 15.8             | 3               | 39                 | 100                 | 39 bbls into displacement got cement to surface, shut down rig down iron and rig breaks down well head to top off             |
| 43   | Top off             | 10/19/2023      | 21:50        | 15.8             | 0.5             | 3                  | 45                  | Pump 3 bbls to top off well pump total of 42 bbls of cement got 3 bbls of cement to surface                                   |
| 44   | Shut Down           | 10/19/2023      | 21:55        |                  |                 |                    |                     | Shut down pumping   |
| 45   | Safety Meeting      | 10/19/2023      | 22:05        |                  |                 |                    |                     | ACC has safety meeting over rigging down iron and hoses   |
| 46   | Rig Down Iron       | 10/19/2023      | 22:10        |                  |                 |                    |                     | ACC rigs down iron and hoses  |
| 47   | Depart Location     | 10/19/2023      | 23:30        |                  |                 |                    |                     | ACC has journey mangement and departs from location   |

# Pump Diagrams

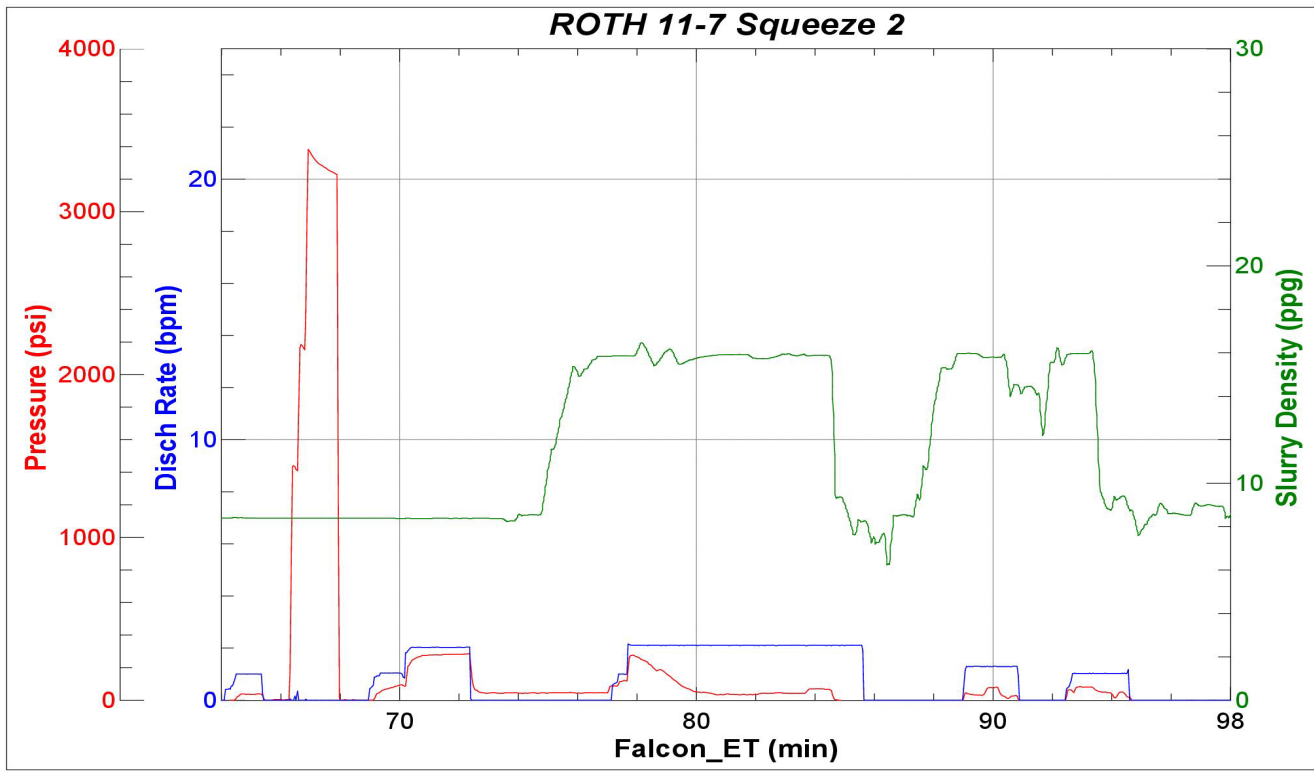


JobMaster Program Version 5.01C1  
 Job Number: 88997  
 Customer: BISON  
 Well Name: ROTH 11-7





JobMaster Program Version 5.01C1  
 Job Number: 88997  
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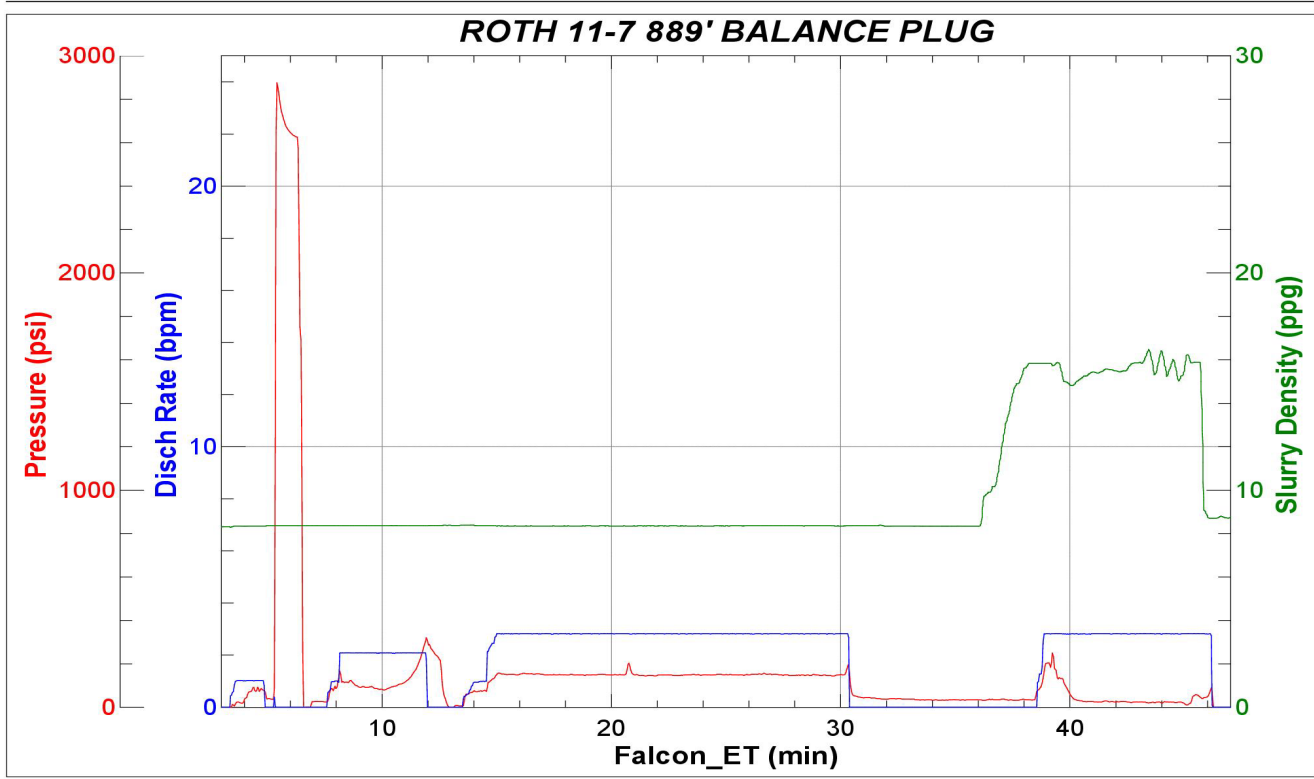


BJ Services

Job Start: Thursday, October 19, 2023



JobMaster Program Version 5.01C1  
 Job Number: 88997  
 Customer: BISON  
 Well Name: ROTH 11-7

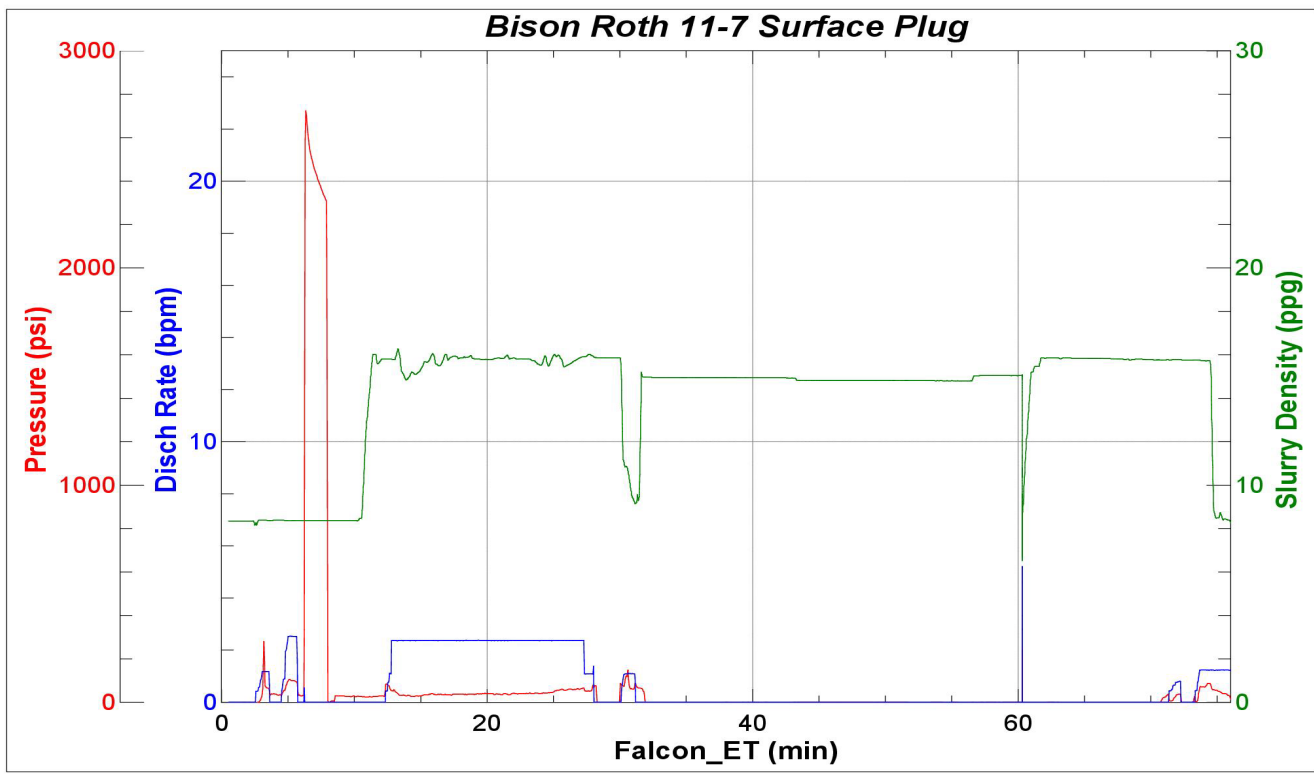


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