

# HALLIBURTON

iCem<sup>®</sup> Service

## **PETROSTAR SERVICES**

Ft. Lupton District, Colorado

### **For: Aaron Smith**

Date: Wednesday, October 16, 2019

### **Edward Hemple**

Weld, Wattenberg

Case 1

Job Date: Wednesday, October 16, 2019

Sincerely,

**Jamar Horton**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the cement job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

**Approximately XX bbls of cement were returned to surface.**

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

**Halliburton Fort Lupton**

### 1.2 Squeeze Job Information

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|   |  | Units   | Description |
|---|--|---------|-------------|
| 1 | Was the well full prior to cementing?  | Y/N     |             |
| 2 | Injection Rate #1 & Pressure           | psi/bpm |             |
| 3 | Injection Rate #2 & Pressure           | psi/bpm |             |
| 4 | Injection Rate #3 & Pressure           | psi/bpm |             |
| 5 | Initial ISIP                           | psi     |             |
| 6 | Density of fluid used for Initial ISIP | lb/gal  |             |
| 7 | Final ISIP                             | psi     |             |
| 8 | Density of displacement fluid          | lb/gal  |             |

### 1.3 Plug Job Information

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|   |   | Units    | Description |
|---|---|----------|-------------|
| 1 | Density of well fluid exiting well prior to job     | lb/gal   |             |
| 2 | Density of well fluid entering well prior to job    | lb/gal   |             |
| 3 | Was the well full prior to cementing?               | Y/N      |             |
| 4 | How many joints of workstring pulled wet?           | # Joints |             |
| 5 | Depth of workstring for circulation after the plug? | ft       |             |
| 6 | Calculated Plug Height (workstring out)             | ft       |             |

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

| Type  | Seq. No. | Activity                                 | Graph Label                              | Date       | Time     | Source | PS Pump Press<br><i>(psi)</i> | DH Density<br><i>(ppg)</i> | Comb Pump Rate<br><i>(bbl/min)</i> | Pump Stg Tot<br><i>(bbl)</i> | Comments  |
|-------|----------|--|--|------------|----------|--------|-------------------------------|----------------------------|------------------------------------|------------------------------|---|
| Event | 1        | Depart from Service Center or Other Site | Depart from Service Center or Other Site | 10/16/2019 | 05:00:00 | USER   |                               |                            |                                    |                              | Journey Management meeting held prior to departure. journey called into dispatch and approved.  |
| Event | 2        | Arrive at Location from Service Center   | Arrive at Location from Service Center   | 10/16/2019 | 10:30:00 | USER   |                               |                            |                                    |                              | With all Equipment and materials. Hazard hunt performed before spotting in equipment. discussed numbers and job procedures with customer.                 |
| Event | 3        | Comment                                  | Comment                                  | 10/16/2019 | 10:35:00 | USER   |                               |                            |                                    |                              | 1.5" Coil Tubing @ 2400', Csg 4 1/2" 11.6# perfs @ 2500' and 2200' 9" OH, CICR @ 2400'. Estimated TOC 2000'.<br>Water test: PH 7, Chloride less than 300. |
| Event | 4        | Pre-Rig Up Safety Meeting                | Pre-Rig Up Safety Meeting                | 10/16/2019 | 10:40:00 | USER   |                               |                            |                                    |                              | JSA with all essential personnel to discuss the hazards of rigging up .   |
| Event | 5        | Rig-Up Completed                         | Rig-Up Completed                         | 10/16/2019 | 11:30:00 | USER   |                               |                            |                                    |                              | Safely with no injuries.  |
| Event | 6        | Pre-Job Safety Meeting                   | Pre-Job Safety Meeting                   | 10/16/2019 | 11:40:00 | USER   |                               |                            |                                    |                              | JSA with all essential personnel to discuss the job procedures and the hazards of the job.  |
| Event | 7        | Start Job                                | Start Job                                | 10/16/2019 | 12:11:10 | COM4   | -2.00                         | 7.87                       | 0.00                               | 6.60                         | Start recording data.   |

|       |    |  |  |            |          |      |         |       |      |       |  |
|-------|----|--|--|------------|----------|------|---------|-------|------|-------|--|
| Event | 8  | Test Lines                                       | Test Lines                                       | 10/16/2019 | 12:14:27 | COM4 | 51.00   | 8.09  | 0.00 | 10.30 | To 3000psi.  |
| Event | 9  | Pump Spacer 1                                    | Pump Spacer 1                                    | 10/16/2019 | 12:37:17 | COM4 | 94.00   | 8.13  | 0.00 | 10.40 | 10bbls of mud flush.   |
| Event | 10 | Pump Spacer 2                                    | Pump Spacer 2                                    | 10/16/2019 | 12:43:29 | COM4 | 2227.00 | 7.91  | 2.00 | 0.00  | 20bbls of fresh water.   |
| Event | 11 | Pump Cement                                      | Pump Cement                                      | 10/16/2019 | 12:53:20 | COM4 | 1994.00 | 7.97  | 2.00 | 20.00 | 150sk 37bbls 14.5ppg 1.39yd 6.78gal/sk verified with pressurized scales.                       |
| Event | 12 | Pump Displacement                                | Pump Displacement                                | 10/16/2019 | 13:21:18 | COM4 | 1803.00 | 14.01 | 1.50 | 0.00  | 4.5bbls of fresh water.  |
| Event | 13 | End Job  | End Job  | 10/16/2019 | 13:24:37 | COM4 | 50.00   | 8.22  | 0.00 | 4.80  | Stop recording data.   |
| Event | 14 | Pre-Rig Down Safety Meeting                      | Pre-Rig Down Safety Meeting                      | 10/16/2019 | 13:50:00 | USER |         |       |      |       | JSA with all essential personnel to discuss the hazards of rigging down.                       |
| Event | 15 | Rig-Down Completed                               | Rig-Down Completed                               | 10/16/2019 | 14:25:00 | USER |         |       |      |       | Safely with no injuries.   |
| Event | 16 | Depart Location for Service Center or Other Site | Depart Location for Service Center or Other Site | 10/16/2019 | 14:30:00 | USER |         |       |      |       | Journey Management meeting held prior to departure. journey called into dispatch and approved. |
| Event | 17 | Comment  | Comment  | 10/16/2019 | 14:35:00 | USER |         |       |      |       | "" .....Thank You for choosing Halliburton.....""  |

## 3.0 Attachments

### 3.1 Case 1-Custom Results.png



