

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Saturday, March 18, 2017

TC AIMS 3-9-11 SURFACE

Job Date: Tuesday, February 21, 2017

Sincerely,

Julia Nichols

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **TC Aims 3-9-11 cement Surface** casing 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 29 barrels 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 [Ft. Lupton]



Cementing Job Summary

The Road to Excellence Starts with Safety

| | | | |
|---|---------------------|--------------------------------------|---------------------------|
| Sold To #: 369404 | Ship To #: 3762925 | Quote #: | Sales Order #: 0903545639 |
| Customer: EXTRACTION OIL & GAS | | Customer Rep: Larry Siegel | |
| Well Name: TC AIMS | Well #: 3-9-11 | API/UWI #: 05-123-43746-00 | |
| Field: WATTENBERG | City (SAP): GREELEY | County/Parish: WELD | State: COLORADO |
| Legal Description: SE NE-8-5N-86W-2590FNL-1192FEL | | | |
| Contractor: PATTERSON-UTI ENERGY | | Rig/Platform Name/Num: PATTERSON 341 | |
| Job BOM: 7521 | | | |
| Well Type: HORIZONTAL OIL | | | |
| Sales Person: HALAMERICA/HX38199 | | Srcv Supervisor: Bradley Hinkle | |

Job

| | | | |
|------------------------|-------------------|---------------|--------|
| Formation Name | | | |
| Formation Depth (MD) | Top | | Bottom |
| Form Type | BHST | | |
| Job depth MD | 1586ft | Job Depth TVD | 1586ft |
| Water Depth | Wk Ht Above Floor | | |
| Perforation Depth (MD) | From | | To |

Well Data

| Description | New / Used | Size in | ID in | Weight lbm/ft | Thread | Grade | Top MD ft | Bottom MD ft | Top TVD ft | Bottom TVD ft |
|-------------------|------------|---------|-------|---------------|--------|-------|-----------|--------------|------------|---------------|
| Casing | | 9.625 | 8.921 | 35 | | | 0 | 1586 | | 1586 |
| Open Hole Section | | | 13.5 | | | | 0 | 1626 | | 1626 |

Tools and Accessories

| Type | Size in | Qty | Make | Depth ft | Type | Size in | Cty | Make |
|--------------|---------|-----|------|----------|----------------|---------|-----|------|
| Guide Shoe | 9.625 | | | 1586 | Top Plug | 9.625 | 1 | HES |
| Float Shoe | 9.625 | 1 | | | Bottom Plug | 9.625 | | HES |
| Float Collar | 9.625 | 1 | | 1544 | SSR plug set | 9.625 | | HES |
| Insert Float | 9.625 | | | | Plug Container | 9.625 | 1 | HES |
| Stage Tool | 9.625 | | | | Centralizers | 9.625 | | HES |

Fluid Data

Stage/Plug #: 1

| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft ³ /sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal |
|---------|------------|---------------|-----|---------|------------------------|-----------------------------|---------------|--------------|---------------------|
| 1 | Spacer | Red Dye Water | 10 | bbl | 8.34 | | | 4 | |

| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft ³ /sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal |
|---------|----------------|----------------------|-----|---------|------------------------|-----------------------------|---------------|--------------|---------------------|
| 2 | Primary Cement | SWIFTCEM (TM) SYSTEM | 550 | sack | 13.5 | 1.74 | | 7df | 9.2 |

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Cementing Job Summary

| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft ³ /sack | Mix Fluid Gal | Rate bbl/mi n | Total Mix Fluid Gal | |
|--|--------------|--|---------------|---------|--|--------------------------------|-------------------|---------------------|---------------------------|--|
| 3 | Displacement | Fresh Water | 119 | bbl | 8.34 | | | 8 | | |
| Cement Left In Pipe | | Amount 42 ft | Reason | | | | Shoe Joint | | | |
| Mix Water: pH 6.5 | | Mix Water Chloride: 0 ppm | | | Mix Water Temperature: 59 °F °C | | | | | |
| Cement Temperature: 68 °F | | Plug Displaced by: ## lb/gal kg/m ³ XXXX | | | Disp. Temperature: ## °F °C | | | | | |
| Plug Bumped? Yes | | Bump Pressure: 540 psi | | | Floats Held? Yes | | | | | |
| Cement Returns: 29 bbl m ³ | | Returns Density: ## lb/gal kg/m ³ | | | Returns Temperature: ## °F °C | | | | | |
| Comment 29 bbls cement to surface. | | | | | | | | | | |

2.0 Real-Time Job Summary

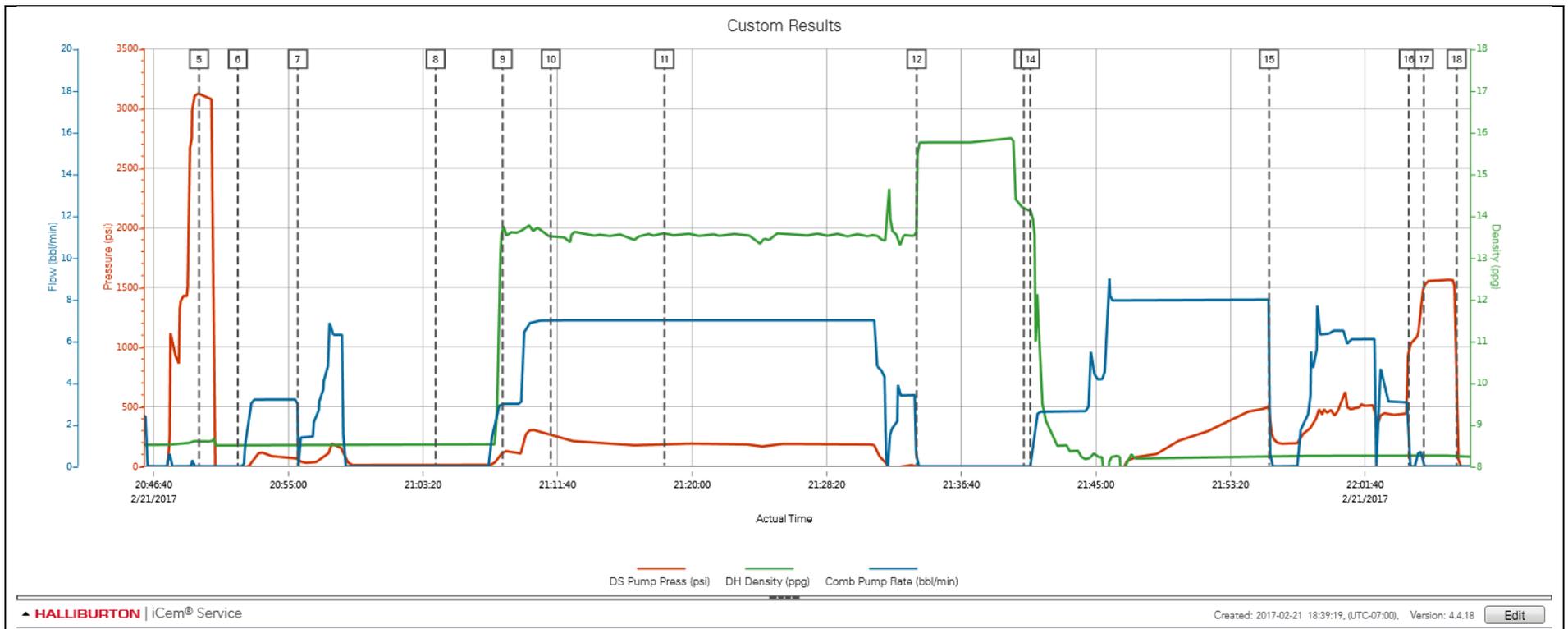
2.1 Job Event Log

| Type | Seq. No. | Activity | Graph Label | Date | Time | Source | DH Density <i>(ppg)</i> | Comb Pump Rate <i>(bbl/min)</i> | DS Pump Press <i>(psi)</i> | Comments |
|-------|----------|--|--|-----------|----------|--------|----------------------------|------------------------------------|-------------------------------|---|
| Event | 1 | Call Out | Call Out | 2/21/2017 | 11:30:00 | USER | | | | Called crew for an on location time of 1730. Crew was Luke Kosakewich, Brad Hinkle, Todd Porter, Thomas McDiffit, Anuar Almanzan. |
| Event | 2 | Depart Shop for Location | Depart Shop for Location | 2/21/2017 | 16:50:00 | USER | | | | Pre-journey safety meeting. |
| Event | 3 | Arrive at Location from Service Center | Arrive at Location from Service Center | 2/21/2017 | 17:40:00 | USER | | | | Sign in, held site assessment and pre rig-up safety meeting. |
| Event | 4 | Start Job | Start Job | 2/21/2017 | 20:43:43 | COM5 | | | | |
| Event | 5 | Test Lines | Test Lines | 2/21/2017 | 20:49:28 | COM5 | 8.60 | 0.00 | 3126.00 | Pumped 3 bbl. ahead to fill lines. Pressure tested lines to 3000 psi. with a 500 psi electronic kickout test. |
| Event | 6 | Pump Spacer 1 | Pump Spacer 1 | 2/21/2017 | 20:51:52 | COM5 | 8.52 | 0.00 | -10.00 | Pumped 10 bbl. fresh water spacer. |
| Event | 7 | Pump Spacer 2 | Pump Spacer 2 | 2/21/2017 | 20:55:35 | COM5 | 8.52 | 0.70 | 63.00 | Pumped 10bbl. fresh water spacer with red dye. |
| Event | 8 | Check Weight | Check weight | 2/21/2017 | 21:04:07 | COM5 | 8.51 | 0.00 | 12.00 | Cement weighed at 13.53 verified by pressurized scale. |
| Event | 9 | Pump Cement | Pump Cement | 2/21/2017 | 21:08:16 | COM5 | 13.71 | 3.00 | 122.00 | Pumped 170 bbl. (550 sks) of Swiftcem mixed at 13.5 ppg. Density verified by pressurized scales. |
| Event | 10 | Check Weight | Check weight | 2/21/2017 | 21:11:15 | COM5 | 13.50 | 7.00 | 271.00 | Cement weighed at 13.45 verified by pressurized scale. |
| Event | 11 | Check Weight | Check weight | 2/21/2017 | 21:18:17 | COM5 | 13.59 | 7.00 | 191.00 | Cement weighed at 13.5 verified by pressurized scale. |
| Event | 12 | Shutdown | Shutdown | 2/21/2017 | 21:33:54 | COM5 | 13.86 | 0.00 | -9.00 | |
| Event | 13 | Drop Top Plug | Drop Top Plug | 2/21/2017 | 21:40:32 | COM5 | 14.18 | 0.00 | -57.00 | Dropped top plug by breaking off the cap on the plug container and shoving the top plug into the casing. |
| Event | 14 | Pump Displacement | Pump Displacement | 2/21/2017 | 21:40:56 | COM5 | 14.11 | 0.00 | -57.00 | Pumped 119 bbl. of water. Good returns throughout. 29 bbls cement to surface. |
| Event | 15 | Shutdown | Shutdown | 2/21/2017 | 21:55:43 | USER | 8.23 | 8.00 | 491.00 | Cellar pump lost prime. Shutdown so cellar wouldn't overflow while rig hands re-primed pumps. |

| | | | | | | | | | | |
|-------|----|--|--|-----------|----------|------|------|------|---------|--|
| Event | 16 | Bump Plug | Bump Plug | 2/21/2017 | 22:04:22 | COM5 | 8.26 | 0.00 | 973.00 | Bump plug at 540 PSI and increased to 1100 PSI. Held until it leveled out. |
| Event | 17 | Pressure Up Well | Pressure Up Well | 2/21/2017 | 22:05:18 | COM5 | 8.26 | 0.00 | 1503.00 | Increase pressure to 1500 PSI for a casing test. |
| Event | 18 | Check Floats | Check Floats | 2/21/2017 | 22:07:20 | USER | 8.26 | 0.00 | 393.00 | Floats held. Half bbl back. |
| Event | 19 | Pre-Rig Down Safety Meeting | Pre-Rig Down Safety Meeting | 2/21/2017 | 22:37:21 | USER | | | | Pre rig-down safety meeting. |
| Event | 20 | Depart Location for Service Center or Other Site | Depart Location for Service Center or Other Site | 2/21/2017 | 22:37:42 | USER | | | | Pre-journey safety meeting. |

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

