

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

United States of America, COLORADO

For: Kris

Date: Wednesday, June 05, 2019

Extraction Surface Livingston S19-25-2C

CARTEL 15

Sincerely,

Thomas Haas and Crew

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the cement 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 81 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

The Road to Excellence Starts with Safety

| | | | | | | | | | | | |
|--|-------------------|-------------------------------|--------------------------|---|--------------------------|-----------------------------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------------|
| Sold To #: 369404 | | Ship To #: 3883646 | | Quote #: | | Sales Order #: 0905750060 | | | | | |
| Customer: EXTRACTION OIL & GAS - | | | | Customer Rep: | | | | | | | |
| Well Name: LIVINGSTON | | | Well #: S19-25-2C | | | API/UWI #: 05-014-20753-00 | | | | | |
| Field: WATTENBERG | | City (SAP): BROOMFIELD | | County/Parish: BROOMFIELD | | State: COLORADO | | | | | |
| Legal Description: NW SE-7-1S-68W-2332FSL-1510FEL | | | | | | | | | | | |
| Contractor: | | | | Rig/Platform Name/Num: CARTEL 15 | | | | | | | |
| Job BOM: 7521 7521 | | | | | | | | | | | |
| Well Type: HORIZONTAL OIL | | | | | | | | | | | |
| Sales Person: HALAMERICA\HX38199 | | | | Srv Supervisor: Thomas Haas | | | | | | | |
| Job | | | | | | | | | | | |
| | | | | | | | | | | | |
| Formation Name | | | | | | | | | | | |
| Formation Depth (MD) | | Top | | Bottom | | | | | | | |
| Form Type | | | | | BHST | | | | | | |
| Job depth MD | | 1622ft | | | Job Depth TVD | | | | | | |
| 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 | 0 | 9.625 | 8.921 | 36 | | | 0 | 1622 | | 0 | |
| Open Hole Section | | | 13.5 | | | | 95 | 1624 | 0 | 0 | |
| | | | | | | | | | | | |
| Tools and Accessories | | | | | | | | | | | |
| Type | Size in | Qty | Make | Depth ft | | Type | Size in | Qty | Make | | |
| Guide Shoe | 9.625 | | | | | Top Plug | 9.625 | | HES | | |
| Float Shoe | 9.625 | | | | | Bottom Plug | 9.625 | | HES | | |
| Float Collar | 9.625 | | | | | SSR plug set | 9.625 | | HES | | |
| Insert Float | 9.625 | | | | | Plug Container | 9.625 | | 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 ft3/sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal |
| 1 | Red Dye Spacer | Red Dye Spacer | | | 0 | bbl | 8.33 | | | | |

| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft3/sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal |
|----------------------------|---------------|--|-----|---------|---------------------------|--------------------------------|------------------|-----------------|---------------------------|
| 2 | SwiftCem | SWIFTCEM (TM) SYSTEM | 600 | sack | 13.5 | 1.74 | | 5 | 9.2 |
| 9.20 Gal | | FRESH WATER | | | | | | | |
| | | | | | | | | | |
| Fluid # | Stage Type | Fluid Name | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft3/sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal |
| 3 | Fresh Water | Fresh Water | 0 | bbl | 8.33 | | | | |
| | | | | | | | | | |
| Cement Left In Pipe | Amount | 42 ft | | | Reason | | | Shoe Joint | |
| Mix Water: | pH ## | Mix Water Chloride:## ppm | | | | Mix Water Temperature:## °F °C | | | |
| Cement Temperature: | ## °F °C | Plug Displaced by:## lb/gal kg/m3 XXXX | | | | Disp. Temperature:## °F °C | | | |
| Plug Bumped? | Yes/No | Bump Pressure:#### psi MPa | | | | Floats Held?Yes/No | | | |
| Cement Returns: | ## bbl m3 | Returns Density:## lb/gal kg/m3 | | | | Returns Temperature:## °F °C | | | |
| Comment | | | | | | | | | |

2.0 Real-Time Job Summary

2.1 Job Event Log

| Type | Seq. No. | Activity | Graph Label | Date | Time | Source | DH Density (ppg) | Comb Pump Rate (bbl/min) | DS Pump Press (psi) | Pump Stg Tot (bbl) | Comments |
|-------|----------|---------------------------|---------------------------|----------|----------|--------|---------------------|-----------------------------|------------------------|-----------------------|---|
| Event | 1 | Call Out | Call Out | 6/4/2019 | 10:00:00 | USER | | | | | CREW CALLED OUT AT 12:00 5/27/2018, REQUESTED ON LOCATION 17:00 5/27/2018. CREW PICKED UP CEMENT, 100 LBS SUGAR, AND PLUG CONTAINER FROM FORT LUPTON, CO. BULK 660: 110989685/11633846 Bulk 660: 1127125/11764052 PUMP ELITE: 11897034/11645460 |
| Event | 2 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 6/4/2019 | 12:15:00 | USER | | | | | DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW |
| Event | 3 | Crew Leave Yard | Crew Leave Yard | 6/4/2019 | 12:30:00 | USER | | | | | STARTED JOURNEY MANAGEMENT. |
| Event | 4 | Arrive At Loc | Arrive At Loc | 6/4/2019 | 13:30:00 | USER | | | | | END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 36# 9.625" J-55 @ 1627', 16" CONDUCTOR @ 95', 42' SHOE JOINT, 13.5" OPEN HOLE, 8.6 PPG WELL FLUID, FRESH WATER DISPLACEMENT. |
| Event | 5 | Pre-Rig Up Safety Meeting | Pre-Rig Up Safety Meeting | 6/4/2019 | 20:00:00 | USER | | | | | HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH |

| | | | | | | | | | | | LOCATION, RIG UP AND WEATHER. |
|-------|----|------------------------|------------------------|----------|----------|------|-------|------|-------|-------|---|
| Event | 6 | Rig-Up Equipment | Rig-Up Equipment | 6/4/2019 | 20:10:00 | USER | | | | | CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB. |
| Event | 7 | Pre-Job Safety Meeting | Pre-Job Safety Meeting | 6/4/2019 | 23:30:00 | USER | 0.00 | 0.00 | -8.00 | 0.00 | MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS. |
| Event | 8 | Start Job | Start Job | 6/5/2019 | 00:33:01 | COM4 | 9.35 | 0.00 | -2.00 | 0.00 | START JOB DATA RECORDING. |
| Event | 9 | Test Lines | Test Lines | 6/5/2019 | 00:35:23 | COM4 | 8.45 | 0.00 | 22.00 | 2.30 | AFTER FAILED PRESSURE TEST, GOING THROUGH THR FRACK VALVES AND GREASING THE LOTORQ VALVES WE AHD A SUFFECIENT PRESSURE TEST, PRESSURE TESTED IRON TO 3500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1250 PSI, 5TH GEAR STALL OUT @2200 PSI. |
| Event | 10 | Pump Spacer 1 | Pump Spacer 1 | 6/5/2019 | 02:04:58 | COM4 | 8.45 | 0.00 | 17.00 | 0.00 | PUMP 10 BBL OF FRESH WATER FOLLOWED 10 BBL FRESH WATER WITH RED DYE. |
| Event | 11 | Pump Cement | Pump Cement | 6/5/2019 | 02:12:25 | COM4 | 12.46 | 2.30 | 49.00 | 28.20 | PUMP 600 SKS OF SWIFTCEN @ 13.5 LB/GAL, 1.74 YIELD, 9.2 GAL/SK, 186 BBLs, TOL @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES. |

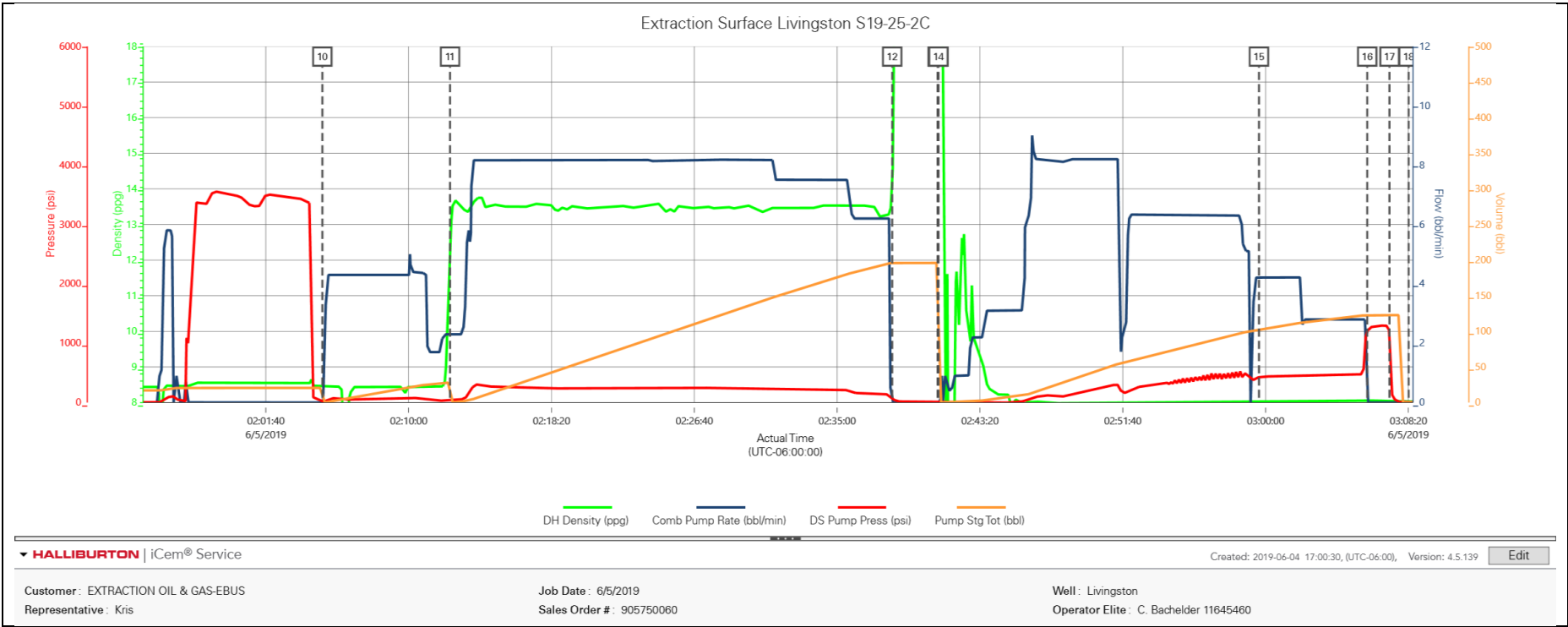
| | | | | | | | | | | | |
|-------|----|-----------------------------|-----------------------------|----------|----------|------|-------|------|---------|--------|---|
| Event | 12 | Shutdown | Shutdown | 6/5/2019 | 02:38:13 | COM4 | 14.07 | 0.00 | 70.00 | 196.00 | SHUTDOWN TO DROP TOP PLUG. |
| Event | 13 | Drop Top Plug | Drop Top Plug | 6/5/2019 | 02:40:52 | COM4 | 22.50 | 0.00 | 8.00 | 196.00 | PLUG LEFT PLUG CONTAINER, VERIFIED BY COMPANY MAN. |
| Event | 14 | Pump Displacement | Pump Displacement | 6/5/2019 | 02:40:55 | COM4 | 22.45 | 0.00 | 8.00 | 196.00 | BEGIN CALCULATED DISPLACEMENT OF 123 BBL FRESH WATER. |
| Event | 15 | Cement Returns to Surface | Cement Returns to Surface | 6/5/2019 | 02:59:37 | USER | 8.02 | 4.20 | 428.00 | 101.70 | CEMENT RETURNED TO SURFACE 81 BBL INTO DISPLACEMENT, 42 BBL OF CEMENT TO SURFACE. |
| Event | 16 | Bump Plug | Bump Plug | 6/5/2019 | 03:05:56 | COM4 | 8.06 | 0.00 | 1205.00 | 122.80 | PLUG PUMPED AT CALCULATED DISPLACEMENT, FINAL CIRCULATING PRESSURE OF 700 PSI. |
| Event | 17 | Check Floats | Check Floats | 6/5/2019 | 03:07:14 | USER | 8.05 | 0.00 | 1063.00 | 122.80 | RELEASED PRESSURE BACK TO THE TRUCK, FLOATS HELD, RECIEVED 1 BBL BACK. |
| Event | 18 | End Job | End Job | 6/5/2019 | 03:08:21 | COM4 | 8.02 | 0.00 | 2.00 | 0.00 | END JOB DATA RECORDING. |
| Event | 19 | Pre-Rig Down Safety Meeting | Pre-Rig Down Safety Meeting | 6/5/2019 | 03:15:00 | USER | 8.03 | 7.10 | 146.00 | 12.20 | DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES. |
| Event | 20 | Rig-Down Completed | Rig-Down Completed | 6/5/2019 | 03:40:00 | USER | | | | | ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL. |
| Event | 21 | Pre-Convoy Safety Meeting | Pre-Convoy Safety Meeting | 6/5/2019 | 03:45:00 | USER | | | | | DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW. |

| | | | | | | |
|-------|----|---------------------|---------------------|----------|----------|------|
| Event | 22 | Crew Leave Location | Crew Leave Location | 6/5/2019 | 04:00:00 | USER |
|-------|----|---------------------|---------------------|----------|----------|------|

THANK YOU FOR USING
HALLIBURTON - THOMAS
HAAS AND CREW.

3.0 Attachments

3.1 Extraction Surface Livingston S19-25-2C-Custom Results.png



3.2 Extraction Surface Livingston S19-25-2C-Custom Results (1).png

| Extraction Surface Livingston S19-25-2C | | | | | | |
|---|-------------------------------|------------------|--------------------------|---------------------|--------------------|--|
| Description | Actual Time (UTC-06:00:00) | DH Density (ppg) | Comb Pump Rate (bbl/min) | DS Pump Press (psi) | Pump Stg Tot (bbl) | |
| 10 Pump Spacer 1 | 02:04:58 | 8.45 | 0.00 | 17.00 | 0.00 | |
| 11 Pump Cement | 02:12:25 | 12.46 | 2.30 | 49.00 | 28.20 | |
| 12 Shutdown | 02:38:13 | 14.07 | 0.00 | 70.00 | 196.00 | |
| 13 Drop Top Plug | 02:40:52 | 22.50 | 0.00 | 8.00 | 196.00 | |
| 14 Pump Displacement | 02:40:55 | 22.45 | 0.00 | 8.00 | 196.00 | |
| 15 Cement Returns to Surface | 02:59:37 | 8.02 | 4.20 | 428.00 | 101.70 | |
| 16 Bump Plug | 03:05:56 | 8.06 | 0.00 | 1205.00 | 122.80 | |
| 17 Check Floats | 03:07:14 | 8.05 | 0.00 | 1063.00 | 122.80 | |
| 18 End Job | 03:08:21 | 8.02 | 0.00 | 2.00 | 0.00 | |

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Customer: EXTRACTION OIL & GAS-EBUS
 Representative: Kris

Job Date: 6/5/2019
 Sales Order #: 905750060

Well: Livingston
 Operator Elite: C. Bachelder 11645460