# HALLIBURTON

# CEMENT BOND LOG
GR-CCL

| | |
|---|---|
| Company | URSA OPERATING COMPANY |
| Well | Monument Ridge B 24A-08-07-95 |
| Field | Parachute |
| County | Garfield State CO |

| | | | |
|---|---|---|---|
| Company | URSA OPERATING COMPANY | | |
| Well | Monument Ridge B 24A-08-07-95 | | |
| Field | Parachute | | |
| County | Garfield | State | CO |
| API No.: | 05-045-22895-0000 | Serv #: | 903138798 |
| Location: | SHL: 924' FSL & 166' FEL | Other Services | JB/RMTi |
| | Sec: 8 Twp: 7S Rge: 95 W | | |

| | | | |
|---|---|---|---|
| Permanent Datum | Ground Level | Elevation | 5701.8' |
| Log Measured From | KB , 17 Ft. above perm. datum | Elevation | K.B. 5718.8'<br>D.F. 5718.8'<br>G.L. 5701.8' |
| Drilling Measured From | KB | | |
| Date @ Time Logged | 24-FEB-2016 | Type Fluid in Hole | Water |
| Run No. | One | Density of Fluid | 8.4 PPG |
| Depth - Driller | 8080' | Fluid Level | Full |
| Depth - Logger | 7884' | Cement Top Est. Logged | n/a |
| Bottom - Logged Interval | 7871' | Equipment / Location | RS / 10971690 |
| Top - Log Interval | 1850' | Recorded by | Pedro Gonzalez Baqueiro |
| Max. Recorded Temp. | n/a | Witnessed by | Luke Grieger |

| CEMENTING DATA | Surface String | Protection String | Production String | Liner |
|---|---|---|---|---|
| Date / Time Cemented | | | | |
| Primary / Squeeze | | | | |
| Expected Compressive Strength | psi@ hrs | psi@ hrs | psi@ hrs | psi@ hrs |
| Cement Volume | | | | |
| Cement Type / Weight | / | / | / | / |
| Formulation | | | | |
| Mud Type / Mud Wgt. | / | / | / | / |

| Borehole Record | | | Casing & Tubing Record | | | |
|---|---|---|---|---|---|---|
| Run Number | Bit | From | To | Size | Weight | From | To |
| One | 24 | surface | 60' | 16" | 75# | surface | 60' |
| Two | 12.25" | surface | 1700' | 8.625" | 32# | surface | 1700' |
| Three | 7.875" | surface | 8080' | 4.5" | 11.6# | surface | 8080' |

<<< Fold Here >>>

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

HES Cement Bond Log First Run in to the hole
Log correlated by KB 17'
Log Interval Percustomer Request
Log Ran in combo with RMTi tool

**THANK YOU FOR CHOOSING HALLIBURTON ENERGY ROCKSPRING WY**

HALLIBURTON

## MAIN PASS

5"=100'

| | |
|---|---|
| Database File | monument ridge 24a-08-07-95.db |
| Dataset Pathname | main |
| Presentation Format | cbl_main |
| Dataset Creation | Wed Feb 24 18:43:27 2016 |
| Charted by | Depth in Feet scaled 1:240 |

| 400 TRAVEL TIME (usec) 200 | LTEN | 0 AMP AMPLITUDE (mV) 10 | 200 MSG 1060 |
|---|---|---|---|
| -6500 CCL 650 | 0 (lb 2200 | 0 AMPLITUDE (mV) 100 | |
| 0 Gamma Ray (GAPI) 150 | | | |

**HALLIBURTON**

## MAIN PASS

5"=100'

---

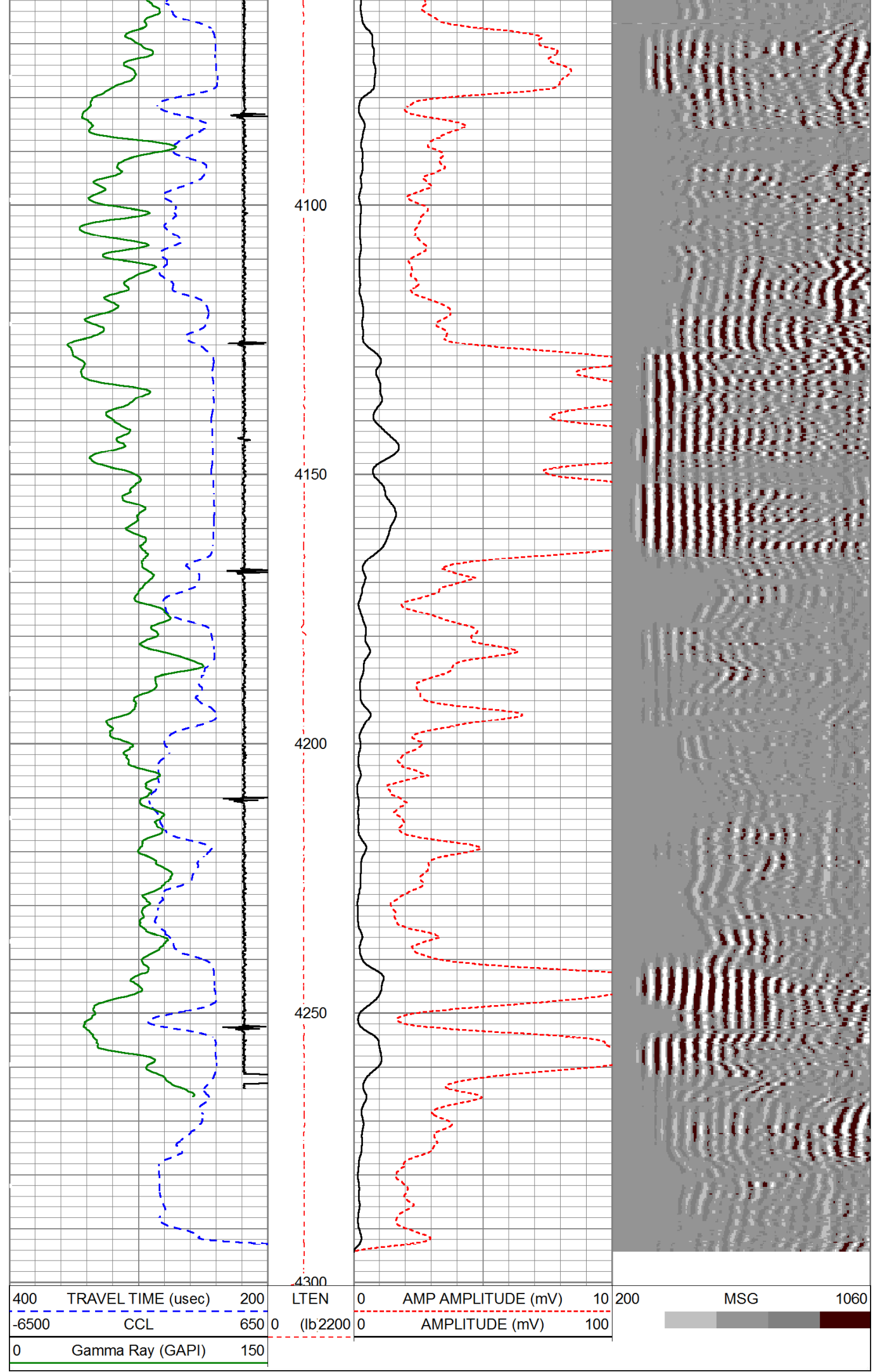
**HALLIBURTON**

## REPEAT PASS

5"=100'

| | |
|---|---|
| Database File | monument ridge 24a-08-07-95.db |
| Dataset Pathname | repeat |
| Presentation Format | cbl_main |
| Dataset Creation | Wed Feb 24 18:11:18 2016 |
| Charted by | Depth in Feet scaled 1:240 |

| 400 TRAVEL TIME (usec) 200 | LTEN | 0 AMP AMPLITUDE (mV) 10 | 200 MSG 1060 |
|---|---|---|---|
| -6500 CCL 650 | 0 (lb 2200 | 0 AMPLITUDE (mV) 100 | |
| 0 Gamma Ray (GAPI) 150 | | | |



| 400 TRAVEL TIME (usec) 200 | LTEN | 0 AMP AMPLITUDE (mV) 10 | 200 MSG 1060 |
|---|---|---|---|
| -6500 CCL 650 | 0 (lb 2200 | 0 AMPLITUDE (mV) 100 | |
| 0 Gamma Ray (GAPI) 150 | | | |

**HALLIBURTON**

## REPEAT PASS

5"=100'

---

## Calibration Report

| | |
|---|---|
| Database File | monument ridge 24a-08-07-95.db |
| Dataset Pathname | main |
| Dataset Creation | Wed Feb 24 18:43:27 2016 |

### Cement Bond Log Shop Calibration Report

| | |
|---|---|
| Serial-Model: | 11836468-A |
| Calibration Performed: | Wed Feb 24 13:26:46 2016 |

#### Free Pipe Calibration

| | Measured | Units |
|---|---|---|
| TT | 245.5 | usec |
| Amplitude | 658.4 | mV |
| Log Base Line | 19.3 | mV |

Calibration References and Gain

| Name | Value | Units |
|---|---|---|
| Pipe O.D. | 4.500 | in |
| Pipe Weight | 11.6 | lb/ft |
| Pipe Ref. Amp. | 81.2 | mV |
| Amp. Gain | 0.124 | |

### Reservoir Monitor Tool I Calibration Report

| | |
|---|---|
| Serial-Model: | 12270693-A |
| Shop Calibration Performed: | Fri Feb 12 14:31:42 2016 |

Carbon/Oxygen Mode

Stabilization

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| GENV | 93.00 | 80.00 | 13.00 | +/-15.00 | V |
| ITCR2 | 3235 | 3250 | -15 | +/-250 | cps |

Near Detector

| | Channel | Expected Value | Amplitude | FWHM | Tol. |
|---|---|---|---|---|---|
| H | 60 | 60 +/-2 | 0.0267 | 5.38 | <6.00 |
| Fe | 206 | 206 +/-2 | 0.0959 | ----- | ----- |
| NGAIN = 0.997 | NZOFF = 0.2 | | | | |

Far Detector

| | Channel | Expected Value | Amplitude | FWHM | Tol. |
|---|---|---|---|---|---|
| H | 60 | 60 +/-2 | 0.0342 | 6.01 | <6.50 |
| Fe | 209 | 208 +/-2 | 0.0911 | ----- | ----- |
| FGAIN = 0.991 | FZOFF = 0.6 | | | | |

Flask Temperature 55.3 degF

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| COIR2 | 0.45 | 0.45 | -0.00 | +/-0.02 | |
| LIRI2 | 1.36 | 1.36 | 0.00 | +/-0.05 | |
| TCCR2 | 5189 | 5000 | 189 | +/-1000 | cps |
| ITCR2 | 3213 | 3200 | 13 | +/-250 | cps |

Sigma Mode

Stabilization

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| GENV | 93.00 | 80.00 | 13.00 | +/-15.00 | V |
| FCAP | 9709 | 10000 | -291 | +/-500 | cps |

Horizontal Water Tank

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| N/F Normalizer | 1.00 | 0.95 | 0.05 | | |
| N/F Inel Norm | 0.65 | 0.61 | 0.04 | | |
| RNF | 1.00 | 1.07 | -0.07 | +/-0.12 | |
| RINC | 1.54 | 1.64 | -0.10 | +/-0.18 | |
| SGFN | 24.10 | 24.00 | 0.10 | +/-0.50 | cu |
| SGFF | 22.94 | 22.85 | 0.09 | +/-0.50 | cu |
| FSIN | 23109 | 24000 | -891 | +/-2000 | cps |
| FCAP | 9760 | 10000 | -240 | +/-1000 | cps |
| NFTR | 0.80 | | | <5.00 | |
| FFTR | 0.87 | | | <5.00 | |
| NBKG | 180 | | | <500 | cps |
| FBKG | 96 | | | <500 | cps |
| RTN | 0.39 | 0.40 | -0.01 | +/-0.10 | usec |
| RTF | 0.41 | 0.40 | 0.01 | +/-0.10 | usec |

#### Calibration Software Modules

| | |
|---|---|
| HRMTI Module | 2015.5.4.0 |
| RMTI Module | 2015.5.15.1 |

#### Log Data Acquisition Software Modules

| | |
|---|---|
| HRMTI Module | 2015.5.4.0 |
| RMTI Module | 2015.5.15.1 |

### Gamma Ray Calibration Report

Type / Serial: 002 / 11527445

SHOP CALIBRATION Fri Feb 12 13:43:57 2016

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 24.6 | | | | cps |
| Calibrator | 314.1 | | | | cps |
| | | 1.4958 | | | GAPI/cps |

PRIMARY VERIFICATION

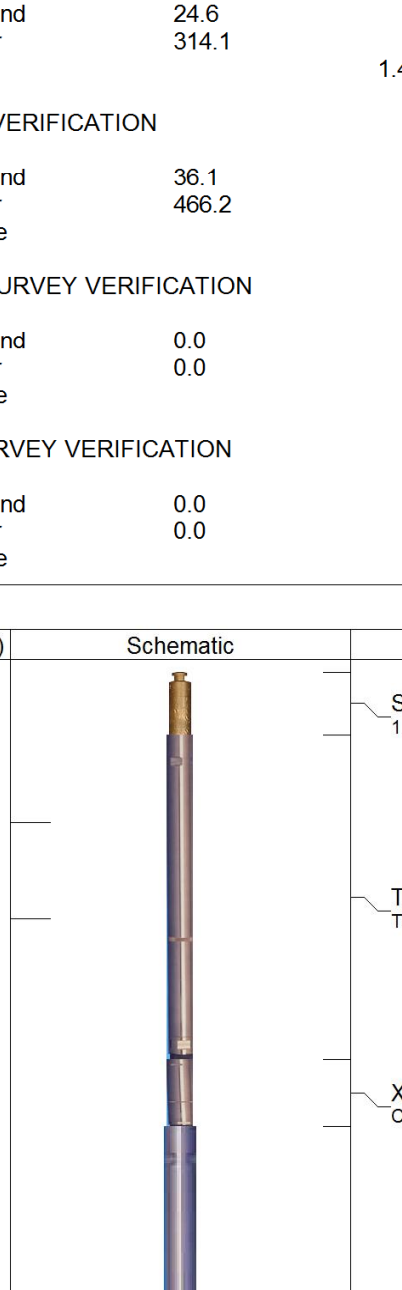
| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 36.1 | | | | cps |
| Calibrator | 466.2 | | | | cps |
| Difference | | | | 430.1 | GAPI |

BEFORE SURVEY VERIFICATION

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 0.0 | | | | cps |
| Calibrator | 0.0 | | | | cps |
| Difference | | | | 0.0 | GAPI |

AFTER SURVEY VERIFICATION

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 0.0 | | | | cps |
| Calibrator | 0.0 | | | | cps |
| Difference | | | | 0.0 | GAPI |



| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb |
|---|---|---|---|---|---|---|
| | | | STNDCH-STND_CH<br>1.4375 IN CABLE HEAD | 1.50 | 1.44 | 1.00 |
| CCL | 35.82 | | | | | |
| GR | 33.56 | | TTTCU-002 (11527445)<br>Through Tubing Telemetry Cartridge - Ultrawire | 7.65 | 1.69 | 30.00 |
| | | | XHU-003 (11983708)<br>Crossover Halliburton 1553 to Ultrawire | 1.58 | 1.69 | 7.00 |
| RmtTFGT | 22.91 | | | | | |
| RmtTNGT | 22.41 | | RMTI-A (12270693)<br>Halliburton RMTI Tool | 14.00 | 2.13 | 77.00 |
| RmtFP5V | 14.66 | | X-OVER-GoxSondex<br>Go Box x Sondex Pin CrossOver | 0.27 | 1.69 | 1.00 |
| RmtNFwvMcsPl | 14.66 | | | | | |
| RmtCommFWa | 14.66 | | CENT-CASTM-CENT<br>CAST M INLINE CENTRALIZER | 2.16 | 3.13 | 25.00 |
| Temp | 9.57 | | | | | |
| TT3FT | 7.32 | | HCBLM-A (11836468)<br>Halliburton HCBLM Tool | 9.38 | 2.75 | 116.00 |
| AMP3FT | 7.32 | | | | | |
| WVF5FT | 6.36 | | | | | |
| | | | CENT-CASTM-CENT<br>CAST M INLINE CENTRALIZER | 2.16 | 3.13 | 25.00 |
| WVF3FT | 2.84 | | AUH-001 (11072111)<br>Adaptor Ultrawire/Halliburton | 0.38 | 1.69 | 3.00 |
| LLMTEN | 0.00 | | BUL-001 (000001)<br>Bullnose | 0.30 | 1.69 | 1.50 |

| | |
|---|---|
| Dataset: | monument ridge 24a-08-07-95.db: field/well/run1/main |
| Total length: | 39.39 ft |
| Total weight: | 286.50 lb |
| O.D.: | 3.13 in |

| | | | |
|---|---|---|---|
| Company | URSA OPERATING COMPANY | | |
| Well | Monument Ridge B 24A-08-07-95 | | |
| Field | Parachute | | |
| County | Garfield | State | CO |

**HALLIBURTON**

CEMENT BOND LOG
GR-CCL