**RELIANCE** OILFIELD SERVICES

# Radial Cement Bond
# Gamma Ray
# Casing Collar Log

Company TEP Rocky Mountain LLC
Well Strait Bottom Ranch SG 22-22
Field Grand Valley
County Garfield
State Colorado

| | | | |
|---|---|---|---|
| Company | TEP Rocky Mountain LLC | | |
| Well | Strait Bottom Ranch SG 22-22 | | |
| Field | Grand Valley | | |
| County | Garfield | State | Colorado |
| Location: | API # : 05-045-24007 | | Other Services<br>--- |
| | SEC 22 TWP 7S RGE 96W | | Elevation |
| Permanent Datum | Ground Level | Elevation 5665' | K.B. 5689' |
| Log Measured From | Kelly Bushing | 24 FT | D.F. 5688' |
| Drilling Measured From | Kelly Bushing | | G.L. 5665' |

| | | | |
|---|---|---|---|
| Date | 02-APR-2020 | | |
| Run Number | One | | |
| Depth Driller | 6310 FT | | |
| Depth Logger | 6228 FT | | |
| Bottom Logged Interval | 6216 FT | | |
| Top Log Interval | Surface | | |
| Open Hole Size | 8.750" | | |
| Type Fluid | Fresh Water | | |
| Density / Viscosity | 8.34 lb/gal | | |
| Max. Recorded Temp. | 186°F | | |
| Estimated Cement Top | See Log | | |
| Time Well Ready | ROA | | |
| Time Logger on Bottom | 19:27 | | |
| Equipment Number | HD-0359 | | |
| Location | Grand Junction, CO | | |
| Recorded By | A. Ellsworth | | |
| Witnessed By | --- | | |

| Borehole Record | | | | Tubing Record | | | |
|---|---|---|---|---|---|---|---|
| Run Number | Bit | From | To | Size | Weight | From | To |
| | | | | | | | |
| | | | | | | | |

| Casing Record | Size (in) | Wgt (lbs/Ft) | Grade | Top | Bottom |
|---|---|---|---|---|---|
| Surface Casing | 9 5/8 | 32.3 | H-40 | Surface | 1002 FT |
| Intermediate #1 | 4 1/2 | 11.6 | P-110 | Surface | 6267 FT |
| Intermediate #2 | | | | | |
| Liner | | | | | |

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

## Comments

Log ran as per customer request
Depth referenced to Kelly Bushing at 24 FT
Marker Joint logged from 3734 - 3756 FT
Log ran with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!!

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## Main Pass

Recorded With 0 PSI Surface Induced Pressure

| | |
|---|---|
| Database File | tep\tep_strait bottom ranch sg 22-22_rbl_04-02-20\processed_tep_strait bottom ranch sg 22-22_rbl_04-02- |
| Dataset Pathname | main.2 |
| Presentation Format | ros_radii_tep |
| Dataset Creation | Sat Apr 04 12:53:09 2020 |
| Charted by | Depth in Feet scaled 1:240 |

| Gamma Ray | 3' Amplitude | 5' Variable Density Log | Sector Map | Average Amplitude |
|---|---|---|---|---|
| 0 (GAPI) 200 | 0 (mV) 100 | 200 (usec) 1200 | | 0 150 |
| Line Speed | 3' Amplitude x 5 | | | Mimimum Amplitude |
| -150 (ft/min) 150 | 0 (mV) 20 | | | 0 150 |
| Line Tension | 3' Travel Time | | | Maximum Amplitude |
| 0 (lb) 2000 | 300 (usec) 200 | | | 0 150 |
| Differential Temperature | | | | |
| -2 (degF) 2 | | | | |
| Temperature | | | | |
| 0 (degF) 20 | | | | |
| *Casing Collar Locator* | | | | |

| Gamma Ray | 3' Amplitude | 5' Variable Density Log | Sector Map | Average Amplitude |
|---|---|---|---|---|
| 0 (GAPI) 200 | 0 (mV) 100 | 200 (usec) 1200 | | 0 150 |
| Line Speed | 3' Amplitude x 5 | | | Mimimum Amplitude |
| -150 (ft/min) 150 | 0 (mV) 20 | | | 0 150 |
| Line Tension | 3' Travel Time | | | Maximum Amplitude |
| 0 (lb) 2000 | 300 (usec) 200 | | | 0 150 |
| Differential Temperature | | | | |
| -2 (degF) 2 | | | | |
| Temperature | | | | |
| 0 (degF) 20 | | | | |
| *Casing Collar Locator* | | | | |

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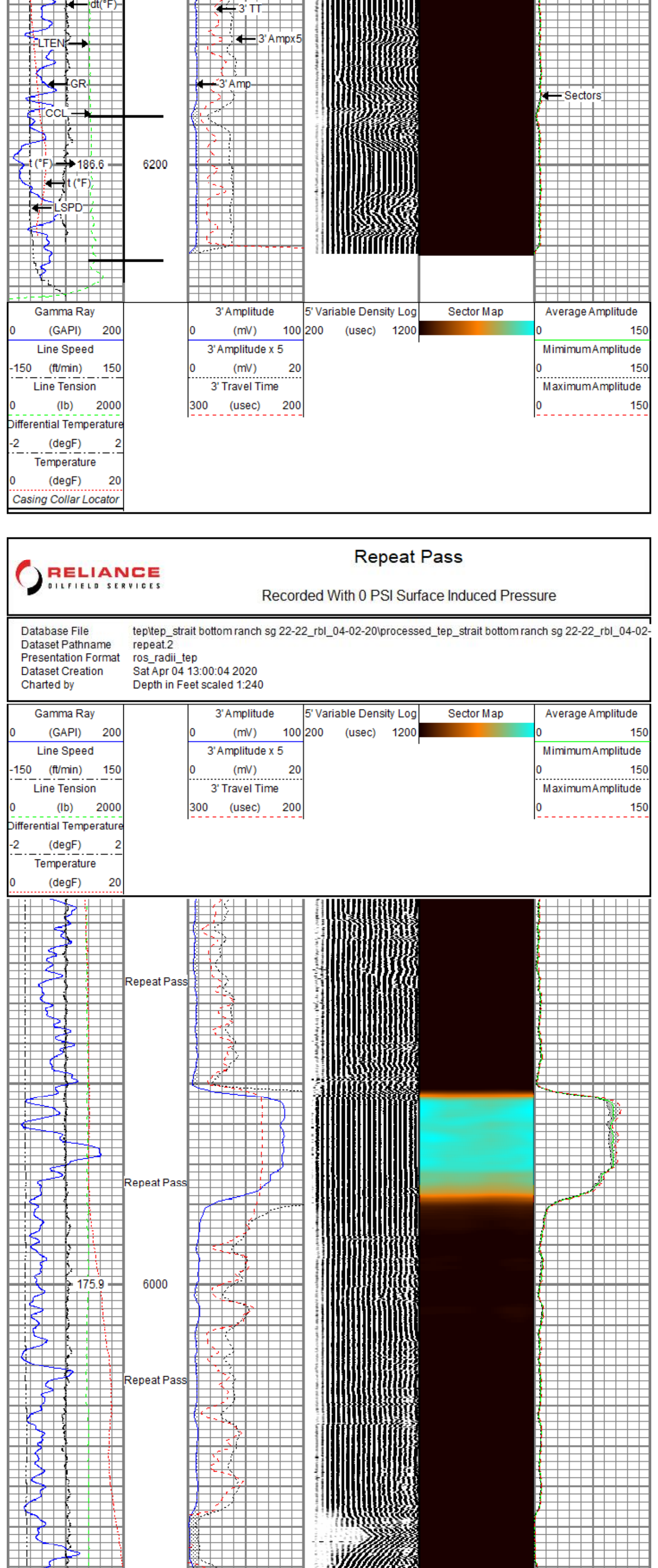
## Repeat Pass

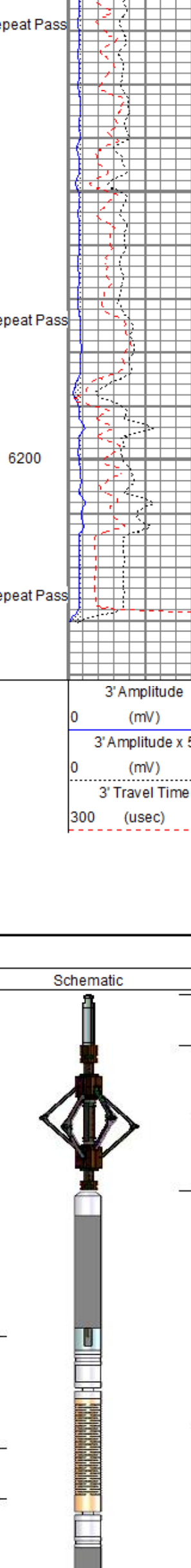
Recorded With 0 PSI Surface Induced Pressure

Database File tep\tep_strait bottom ranch sg 22-22_rbl_04-02-20\processed_tep_strait bottom ranch sg 22-22_rbl_04-02-
Dataset Pathname repeat.2
Presentation Format ros_radii_tep
Dataset Creation Sat Apr 04 13:00:04 2020
Charted by Depth in Feet scaled 1:240

| Gamma Ray | 3' Amplitude | 5' Variable Density Log | Sector Map | Average Amplitude |
|---|---|---|---|---|
| 0 (GAPI) 200 | 0 (mV) 100 | 200 (usec) 1200 | | 0 150 |
| Line Speed | 3' Amplitude x 5 | | | Mimimum Amplitude |
| -150 (ft/min) 150 | 0 (mV) 20 | | | 0 150 |
| Line Tension | 3' Travel Time | | | Maximum Amplitude |
| 0 (lb) 2000 | 300 (usec) 200 | | | 0 150 |
| Differential Temperature | | | | |
| -2 (degF) 2 | | | | |
| Temperature | | | | |
| 0 (degF) 20 | | | | |



| Gamma Ray | 3' Amplitude | 5' Variable Density Log | Sector Map | Average Amplitude |
|---|---|---|---|---|
| 0 (GAPI) 200 | 0 (mV) 100 | 200 (usec) 1200 | | 0 150 |
| Line Speed | 3' Amplitude x 5 | | | Mimimum Amplitude |
| -150 (ft/min) 150 | 0 (mV) 20 | | | 0 150 |
| Line Tension | 3' Travel Time | | | Maximum Amplitude |
| 0 (lb) 2000 | 300 (usec) 200 | | | 0 150 |
| Differential Temperature | | | | |
| -2 (degF) 2 | | | | |
| Temperature | | | | |
| 0 (degF) 20 | | | | |

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb |
|---|---|---|---|---|---|---|
| | |  | Titan CHD-14375 GO<br>Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck | 1.03 | 1.44 | 3.60 |
| | | | BTA-MUD<br>BTA 2-3/4" Roller 6 Arm Centralizer with Reversible Ends | 2.92 | 2.72 | 25.00 |
| TEMP<br>WVFS8<br>WVFS7<br>WVFS6<br>WVFS5<br>WVFS4<br>WVFS3<br>WVFS2<br>WVFS1<br>WVFCAL<br>WVF3FT<br>WVF5FT | 14.16<br>11.93<br>11.93<br>11.93<br>11.93<br>11.93<br>11.93<br>11.93<br>11.93<br>11.93<br>11.93<br>10.93 | | Probe Radii-2750 RBT (FW0712-020)<br>Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub | 9.39 | 2.75 | 105.00 |
| | | | BTA-MUD<br>BTA 2-3/4" Roller 6 Arm Centralizer with Reversible Ends | 2.92 | 2.72 | 25.00 |
| CCL$2<br>CCL$1<br>GR | 3.88<br>3.88<br>2.63 | | Probe GR-CCL-2750 GOB (FW1211-081)<br>Probe 2-3/4" rev.2 Digital Scintillation Gamma Ray/CCL Combined with GO Bottom | 4.51 | 2.75 | 55.00 |
| LOCTIM<br>UTCTIM | 0.00<br>0.00 | | GO BN-14375<br>GO 1-7/16" Bull Nose with Go Box Top | 0.25 | 1.44 | 1.00 |

Dataset: processed_tep_strait bottom ranch sg 22-22_rbl_04-02-20.db: field/well/run1/main.2
Total length: 21.02 ft
Total weight: 214.60 lb
O.D.: 2.75 in

### Calibration Report

Database File c:\programdata\warrior\data\tep\tep_strait bottom ranch sg 22-22_rbl_04-02-20\processed_tep_strait bottom
Dataset Pathname main.2
Dataset Creation Sat Apr 04 12:53:09 2020

### Gamma Ray Calibration Report

Serial Number: FW1211-081
Tool Model: 2750 GOB
Performed: Mon Oct 01 11:32:39 2018

Calibrator Value: 637.0 GAPI

Background Reading: 112.4 cps
Calibrator Reading: 1008.7 cps

Sensitivity: 0.7107 GAPI/cps

### Segmented Cement Bond Log Calibration Report

Serial Number: FW0712-020
Tool Model: 2750 RBT

Calibration Casing Diameter: 4.500 in
Calibration Depth: 207.426 ft

Master Calibration, performed (Derived):

| | Raw (v) | | Calibrated (mv) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | -0.002 | 0.857 | 0.800 | 81.196 | 93.560 | 1.031 |
| CAL | -0.006 | 0.759 | | | | |
| 5' | 0.003 | 0.666 | 0.800 | 81.196 | 121.254 | 0.386 |
| SUM | | | | | | |
| S1 | 0.003 | 0.841 | 0.000 | 100.000 | 119.262 | -0.320 |
| S2 | 0.000 | 0.919 | 0.000 | 100.000 | 108.876 | -0.047 |
| S3 | -0.001 | 1.024 | 0.000 | 100.000 | 97.479 | 0.143 |
| S4 | -0.001 | 1.058 | 0.000 | 100.000 | 94.447 | 0.076 |
| S5 | 0.009 | 1.055 | 0.000 | 100.000 | 95.551 | -0.834 |
| S6 | 0.008 | 1.023 | 0.000 | 100.000 | 98.579 | -0.837 |
| S7 | 0.000 | 0.934 | 0.000 | 100.000 | 107.134 | -0.035 |
| S8 | -0.001 | 0.865 | 0.000 | 100.000 | 115.425 | 0.108 |

Air Zero Calibration, performed Thu Apr 02 14:23:24 2020:

| | Raw (v) | Calibrated (v) | Results |
|---|---|---|---|
| | Zero | Zero | Offset |
| 3' | 0.000 | 0.000 | 0.000 |
| 5' | 0.000 | 0.000 | 0.000 |
| SUM | | | |
| S1 | 0.000 | 0.000 | 0.000 |
| S2 | 0.000 | 0.000 | 0.000 |
| S3 | 0.000 | 0.000 | 0.000 |
| S4 | 0.000 | 0.000 | 0.000 |
| S5 | 0.000 | 0.000 | 0.000 |
| S6 | 0.000 | 0.000 | 0.000 |
| S7 | 0.000 | 0.000 | 0.000 |
| S8 | 0.000 | 0.000 | 0.000 |

### Temperature Calibration Report

Serial Number: FW0712-020
Tool Model: 2750 RBT
Performed: Mon Oct 01 11:32:14 2018

| | Reference | Reading |
|---|---|---|
| Low Reference: | 100.00 degF | 109.43 degF |
| High Reference: | 350.00 degF | 405.87 degF |

Gain: 0.84
Offset: 7.72
Delta Spacing 1

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| | |
|---|---|
| Company | TEP Rocky Mountain LLC |
| Well | Strait Bottom Ranch SG 22-22 |
| Field | Grand Valley |
| County | Garfield |
| State | Colorado |