J-W WIRELINE COMPANY

# CEMENT BOND
# GAMMA RAY
# COLLAR CORRELATION LOG

| | | | |
|---|---|---|---|
| Company | NOBLE ENERGY INC. | | |
| Well | BASHOR PC AA 09-14 | | |
| Field | WATTENBERG | | |
| County | WELD | State | COLORADO |
| Location: | API # : 05-123-32508-00<br>660' FSL & 1980' FWL<br>SE SW<br>SEC. 9 TWP. 6N RGE. 63W | Other Services | NONE |
| | SEC TWP RGE | | |
| Permanent Datum | GROUND LEVEL | Elevation | 4686 |
| Log Measured From | KELLY BUSHING | Elevation | K.B. 4700 |
| Drilling Measured From | KELLY BUSHING | | D.F. 4699<br>G.L. 4686 |

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| Well | BASHOR PC AA 09-14 |
| Field | WATTENBERG |
| County | WELD |
| State | COLORADO |

| | | | |
|---|---|---|---|
| Date | 28-FEBUARY-2011 | | |
| Run Number | ONE | | |
| Depth Driller | 6945 | | |
| Depth Logger | 6843 | | |
| Bottom Logged Interval | 6836 | | |
| Top Log Interval | 1210 | | |
| Open Hole Size | 7 7/8 | | |
| Type Fluid | WATER | | |
| Density / Viscosity | -- | | |
| Max. Recorded Temp. | 235 | | |
| Estimated Cement Top | 1360 | | |
| Time Well Ready | -- | | |
| Time Logger on Bottom | -- | | |
| Equipment Number | 2405/YELLOW | | |
| Location | BRIGHTON | | |
| Recorded By | HAYES | | |
| Witnessed By | MR.MITCH TRIMBLE | | |

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

| Casing Record | Size | Wgt/Ft | Top | Bottom |
|---|---|---|---|---|
| Surface String | 8 5/8 | 24# | SURFACE | 562 |
| Prot. String | | | | |
| Production String | 4.5 | 11.6# | SURFACE | 6929 |
| Liner | | | | |

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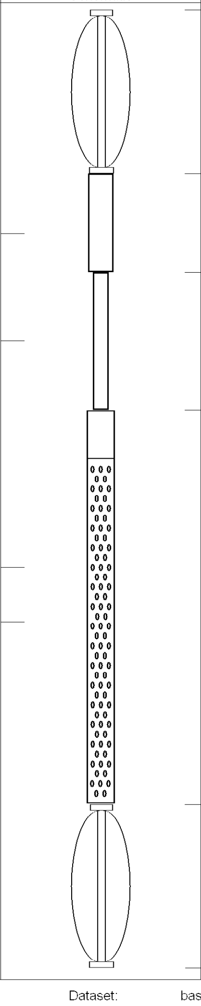
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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 CORRELATED TO DS, NG LOG
DATED 23-FEBUARY-2011

LOG SPLIT FOR CORRELATION PURPOSES

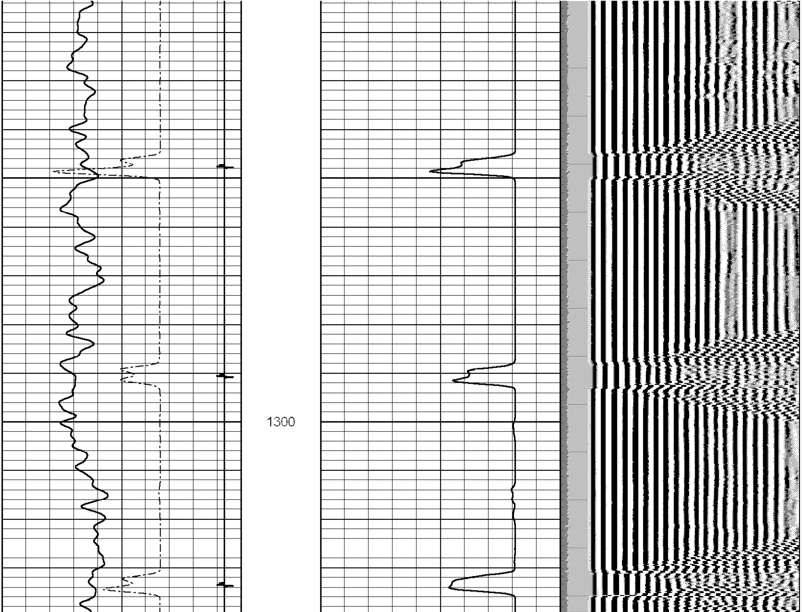


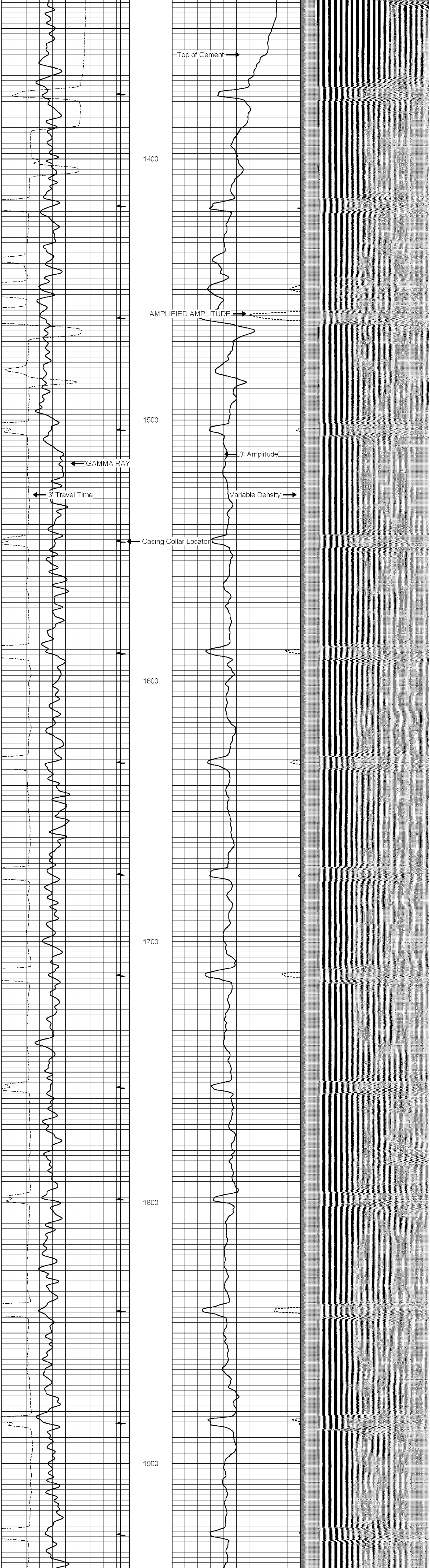
| Sensor | Offset (ft) | Description | Len (ft) | OD (in) | Wt (lb) |
|---|---|---|---|---|---|
| | | CENT-A (1) | 3.00 | 1.69 | 10.00 |
| CCL | 13.46 | CCL-TEKCO (TEK101) | 1.81 | 2.75 | 10.00 |
| GR | 11.49 | GR-s_t001 (t001) | 2.52 | 1.69 | 30.00 |
| WVF5 | 7.34 | | | | |
| WVF3 | 6.34 | CBL-3_5 (001) | 7.23 | 2.44 | 127.00 |
| | | CENT-B (2) | 3.00 | 1.69 | 10.00 |

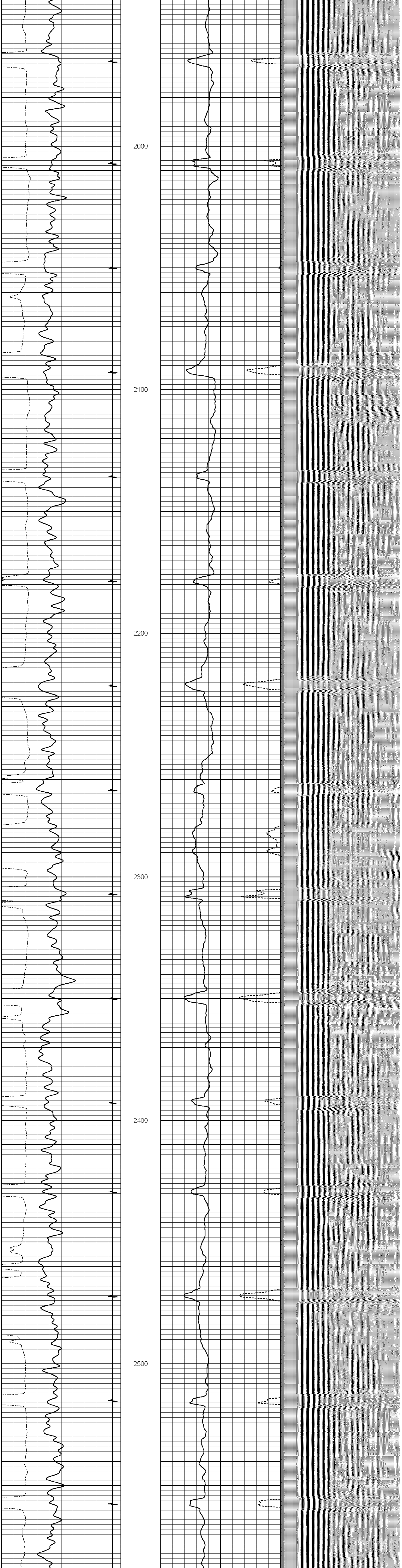
Dataset: bashor pc aa 09-14.db: field/well/run1/pass3
Total Length: 17.56 ft
Total Weight: 187.00 lb
O.D. 2.75 in

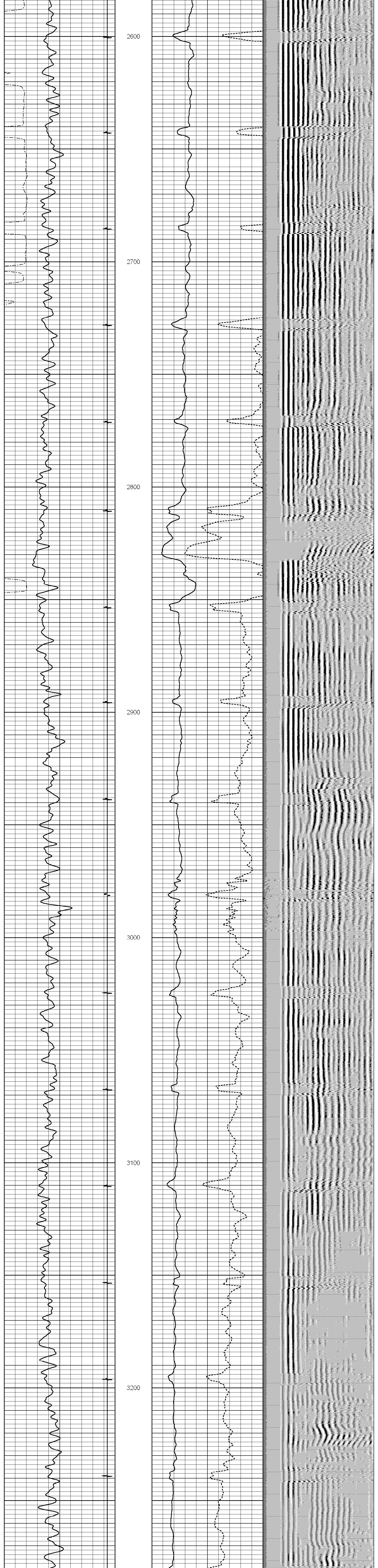
Database File: bashor pc aa 09-14.db
Dataset Pathname: pass3
Presentation Format: cblx
Dataset Creation: Mon Feb 28 10:37:29 2011 by Log Std Casedhole 10121
Charted by: Depth in Feet scaled 1:240

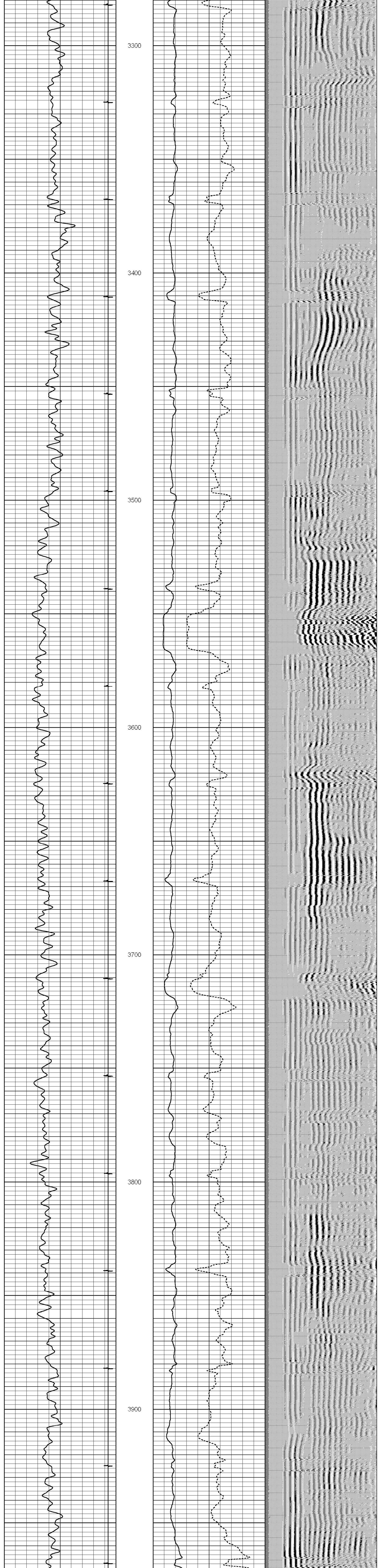
| | | |
|---|---|---|
| 0 GAMMA RAY (GAPI) 200 | 0 AMPLITUDE (mV) 100 | 200 Variable Density 1200 |
| 10 CCL -0.75 | 0 AMPLIFIED AMPLITUDE (mV) 30 | |
| 300 TT3 (usec) 200 | | |

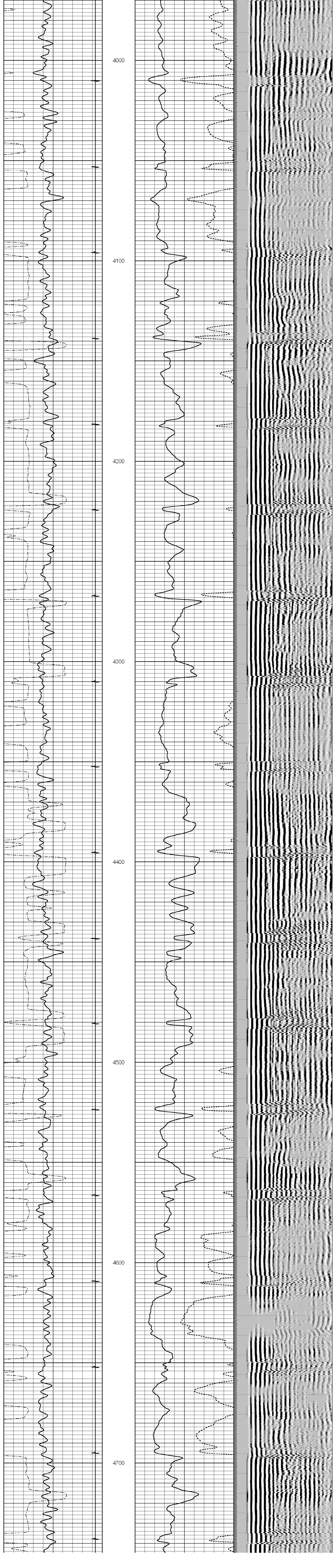


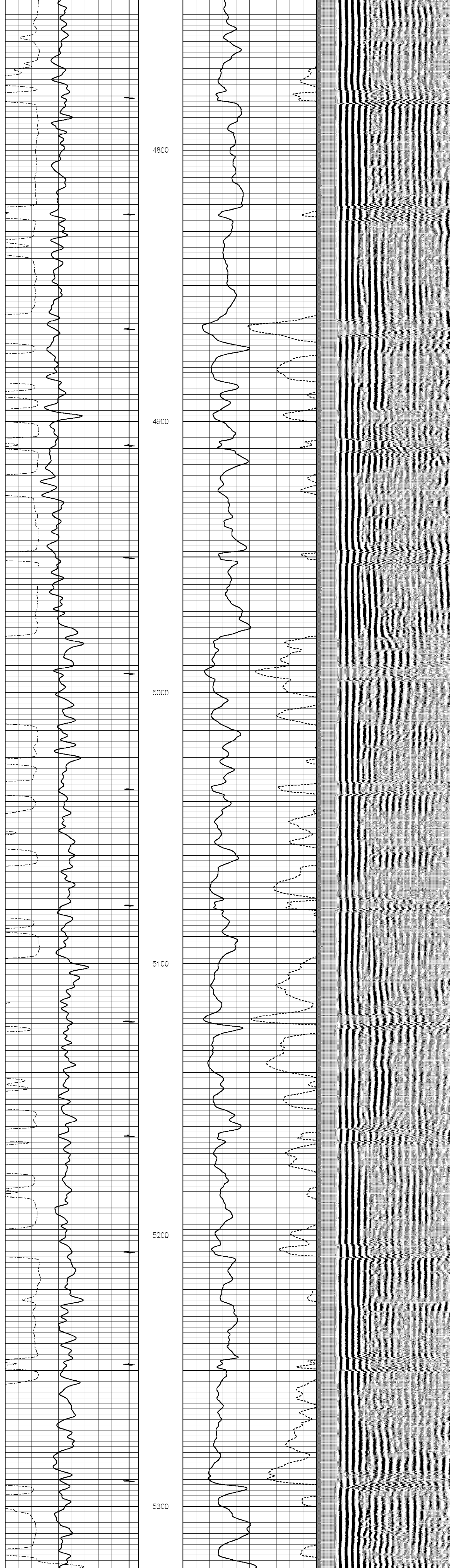


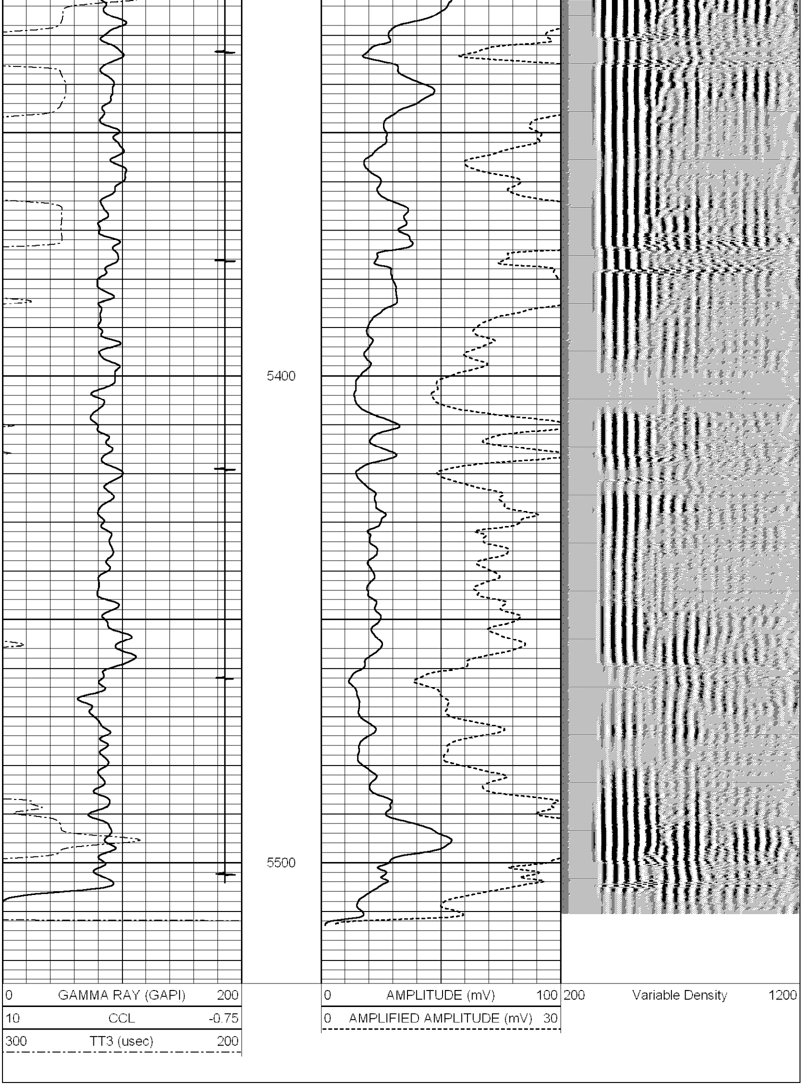




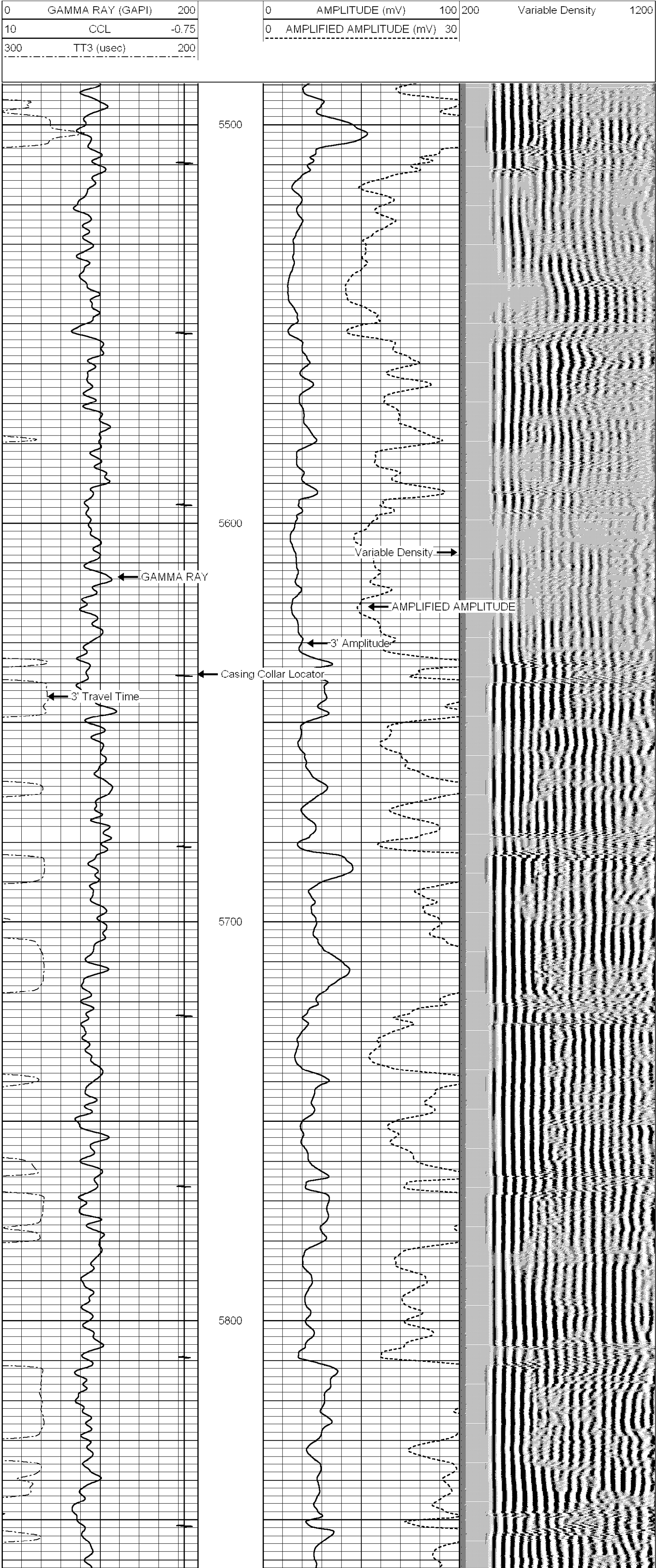


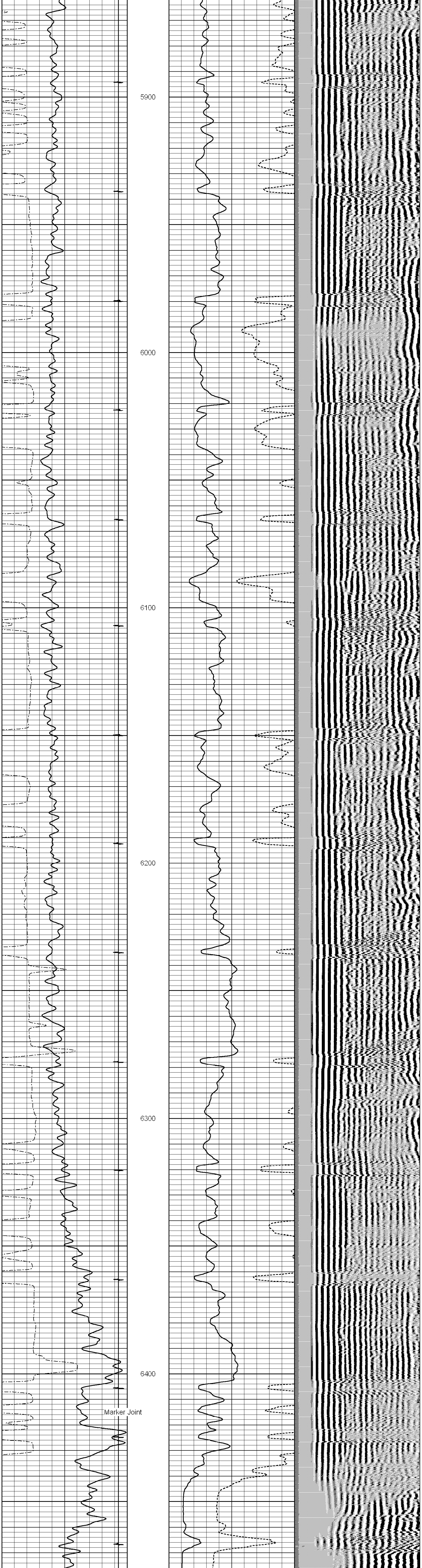


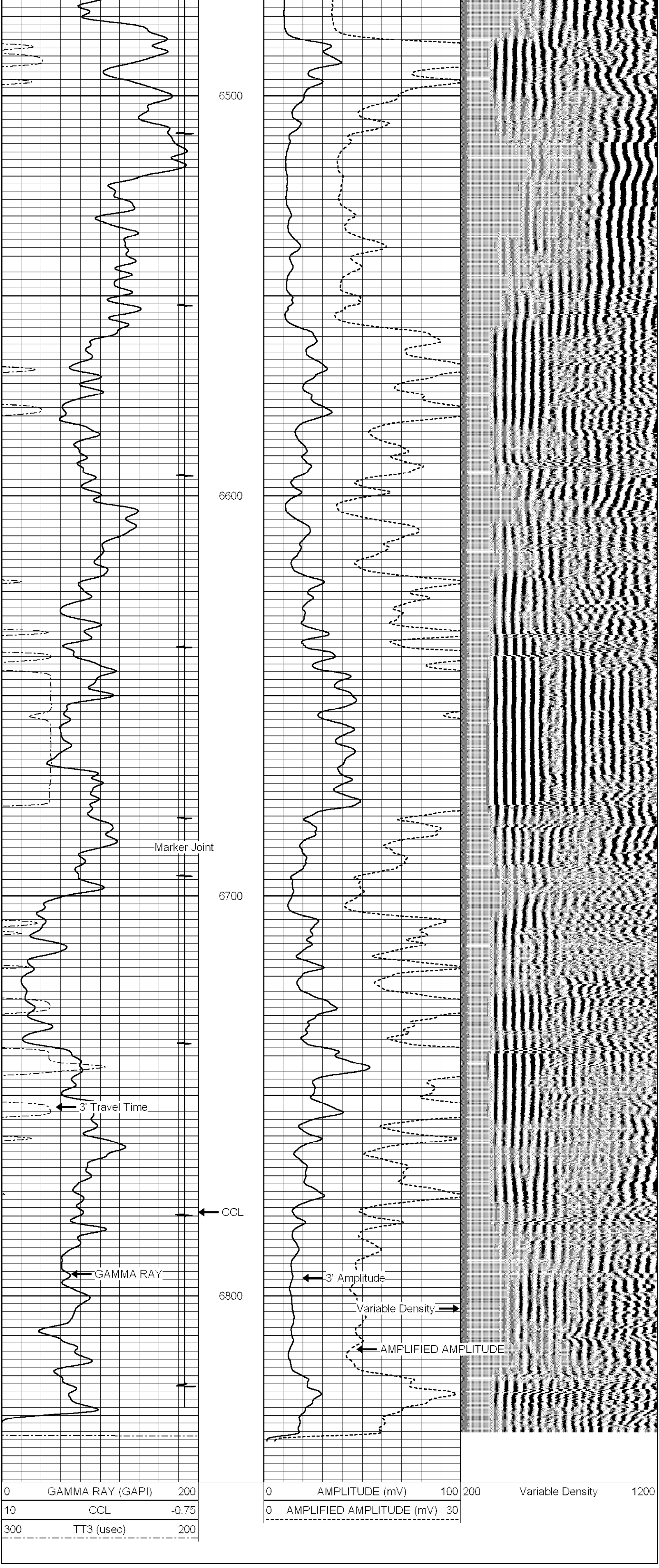




| | |
|---|---|
| Database File: | bashor pc aa 09-14.db |
| Dataset Pathname: | pass2 |
| Presentation Format: | cblx |
| Dataset Creation: | Mon Feb 28 10:17:57 2011 by Log Std Casedhole 10121 |
| Charted by: | Depth in Feet scaled 1:240 |







## Calibration Report

| | |
|---|---|
| Database File: | bashor pc aa 09-14.db |
| Dataset Pathname: | pass3 |
| Dataset Creation: | Mon Feb 28 10:37:29 2011 by Log Std Casedhole 10121 |

## Cement Bond Log Calibration Report

| | | | |
|---|---|---|---|
| Serial Number: | 001 | | |
| Tool Model: | 3_5 | | |
| Performed: | Mon Feb 28 10:03:46 2011 | | |
| Depth: | 1157.93 | ft | |
| Casing Diameter: | 4.5 | in | |
| | 3' Spacing | 5' Spacing | |
| Signal Zero: | 3 | 3 | mV |
| Calibrated Amplitude: | 81.1961 | 81.1961 | mV |
| Reading at Signal Zero: | 0.04 | 0 | V |
| Reading in Free Pipe: | 2.5 | 2.04138 | V |
| Gain: | 31.787 | 38.3055 | |
| Offset: | 1.72852 | 3 | |

## Gamma Ray Calibration Report

| | | |
|---|---|---|
| Serial Number: | t001 | |
| Tool Model: | s_t001 | |
| Performed: | Sun Jun 13 13:33:21 1993 | |
| Calibrator Value: | 1.0 | GAPI |
| Background Reading: | 0.0 | cps |
| Calibrator Reading: | 1.0 | cps |
| Sensitivity: | 1.0000 | GAPI/cps |