



# RADIAL CEMENT BOND LOG

## GAMMA RAY

### CCL

Company KERR-McGEE OIL & GAS ONSHORE LP  
Well WARDELL 11-20  
Field WATTENBERG  
County WELD  
State COLORADO

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Location: SHL: 1305' FSL & 1336' FWL SE/SW  
LAT: 40.20730 LONG:-104.69200  
API # : 05-123-25888  
Other Services  
SEC 20 TWP 3N RGE 65W  
Permanent Datum GL Elevation 4907'  
Log Measured From KB 16'  
Drilling Measured From KB Elevation K.B. 4923'  
D.F. 4922'  
G.L. 4907'

Date 7-11-2014

Run Number ONE  
Depth Driller 7554'  
Depth Logger 1800'  
Bottom Logged Interval 1800'  
Top Log Interval SURFACE  
Open Hole Size 7 7/8  
Type Fluid WATER  
Density / Viscosity 1.0  
Max. Recorded Temp. 104 DEG F  
Estimated Cement Top 628'  
Time Well Ready N/A  
Time Logger on Bottom N/A  
Equipment Number 5432  
Location GREELEY, CO  
Recorded By Chris Baum  
Witnessed By Mark Vandagriff

Borehole Record  
Run Number Bit From To Size Weight From To  
ONE  
TWO

Casing Record  
Surface String Size 8 5/8 Wgt/Ft 24# Top 0 Bottom 775'  
Prot. String  
Production String 4 1/2 11.6# 0 7554'  
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.

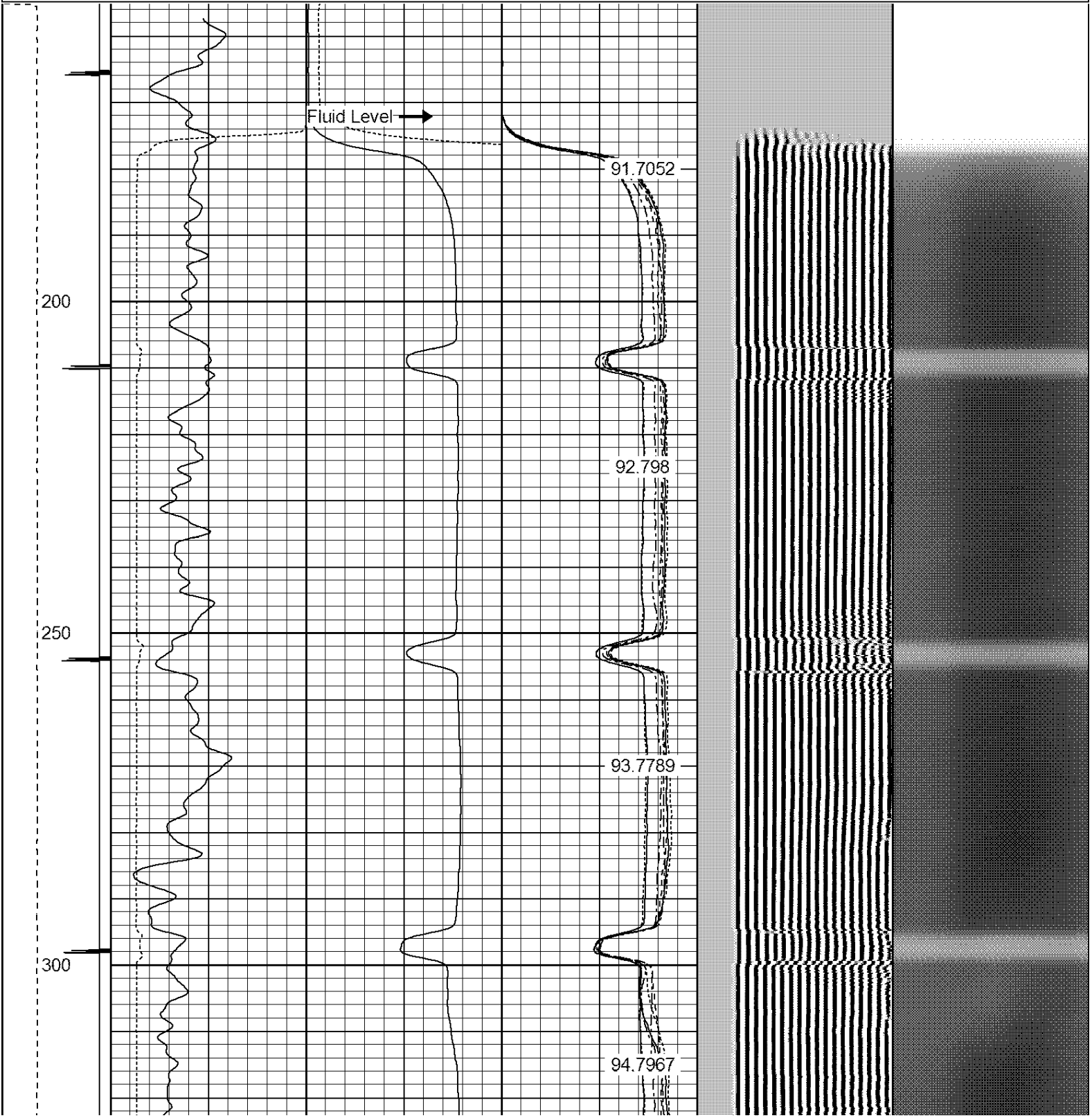
### Comments

NOT CORRELATED  
RAN LOG TO VERIFY CEMENT  
THANK YOU FOR USING WARRIOR ENERGY SERVICES!!!!

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
CENT	19.08					

			PTS275	2.83	2.75	
HEADVOLT	16.25					
RBT	16.25					
IntTemp	14.83					
WVF3FT	11.58		RBT-Probe (Base)	8.92	2.75	90.00
WVFCAL	11.58		Probe Radii Bond Tool with Digital Telemetry			
WVFS1	11.58					
WVFS2	11.58					
WVFS3	11.58					
WVFS4	11.58					
WVFS5	11.58					
WVFS6	11.58					
WVFS7	11.58					
WVFS8	11.58					
WVF5FT	10.58					
CNLSC	6.00		CNT-Probe_B (275)	3.00	2.75	40.00
CNSSC	5.17		6 bow centralizer			
GR	4.33					
CCL	3.64					
			GR-Probe (275)	4.33	2.75	30.00
			Probe 2.75"			
GR	0.90					
Dataset: wardell 11-20.db: field/well/run1/pass2 Total Length: 19.08 ft Total Weight: 160.00 lb O.D. 2.75 in						

Dataset Creation: Fri Jul 11 07:16:35 2014 by Log 7.0 B1																	
Charted by: Depth in Feet scaled 1:240																	
-9	CCL	1	200	TT (usec)	800	0	AMP (mV)	100	0	AMPS1	100	200	VDL	1200	1	Cement Map	8
LSPD			0	GR (cps)	200	0	AMPx5 (mV)	20	0	AMPS2	100				1	100	
(ft/min)			200	GR (cps)	400				0	AMPS4	100						
0	250								0	AMPS5	100						
									0	AMPS6	100						
									0	AMPS7	100						
									0	AMPS8	100						
											IntTemp						
											(degF)						



350

400

450

500

95.8224

96.9247

98.0439

99.1813

100.525

550

600

650

700

750

101.887

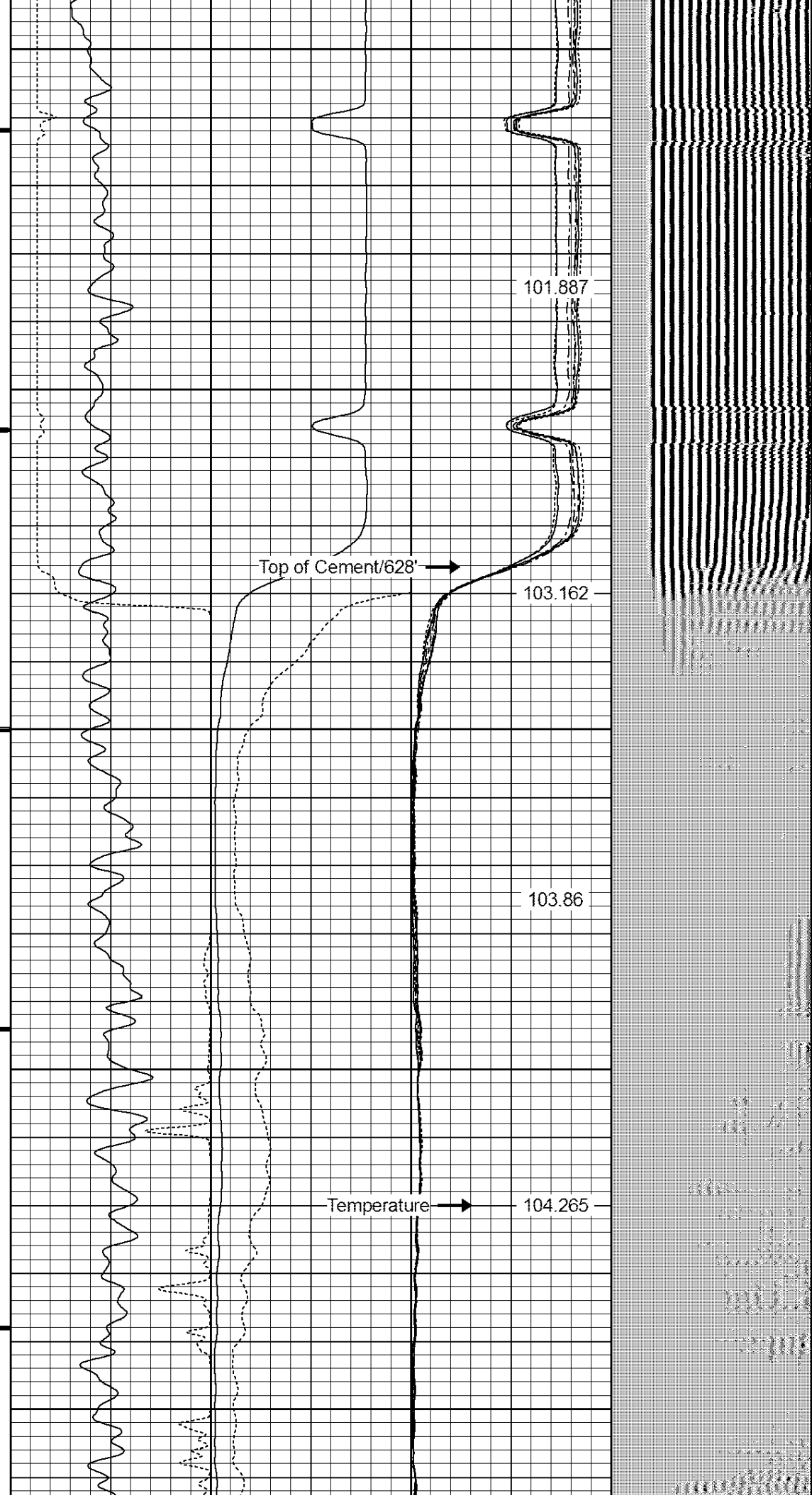
103.162

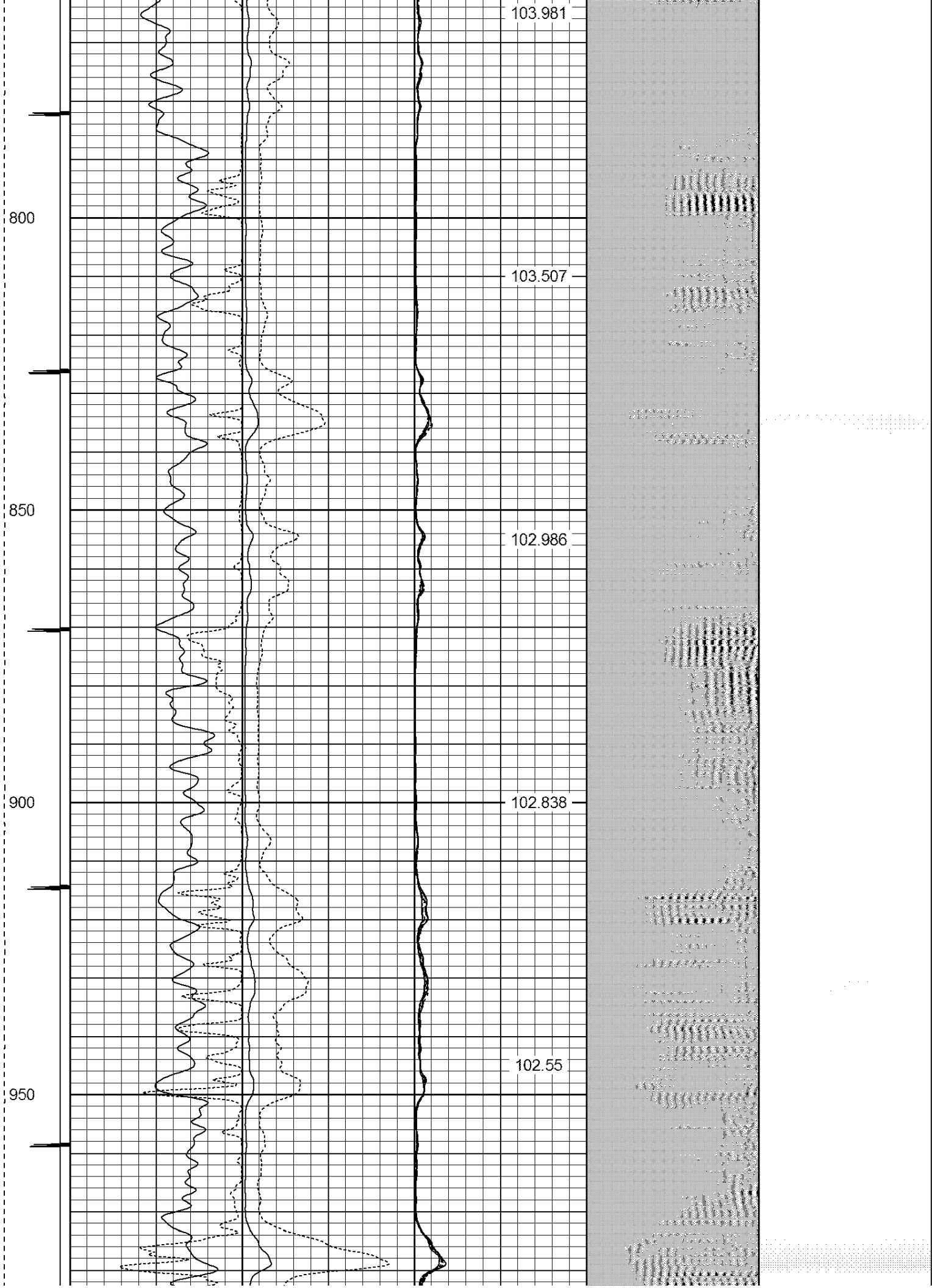
103.86

104.265

Top of Cement/628'

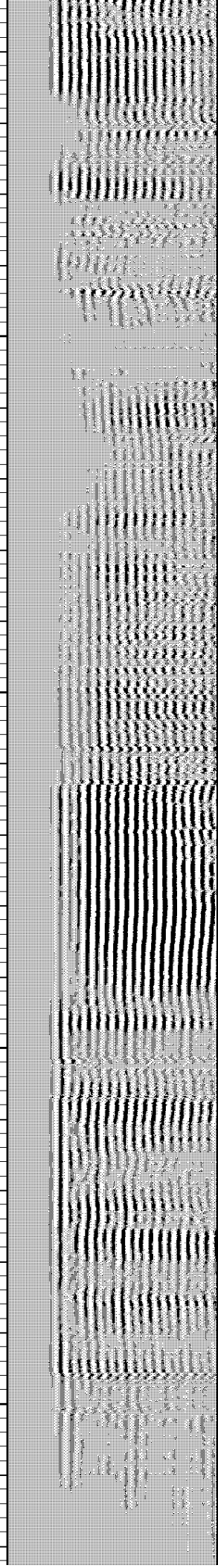
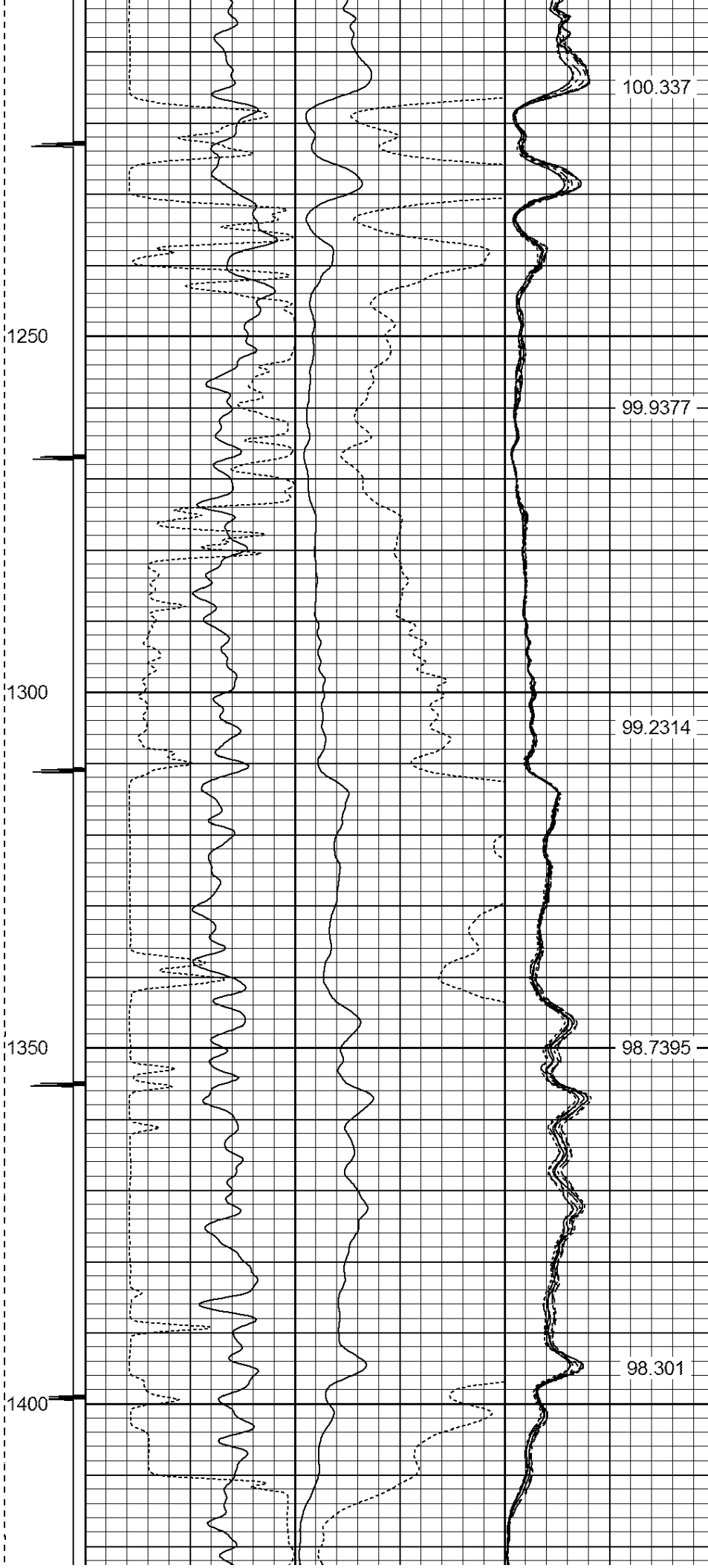
Temperature



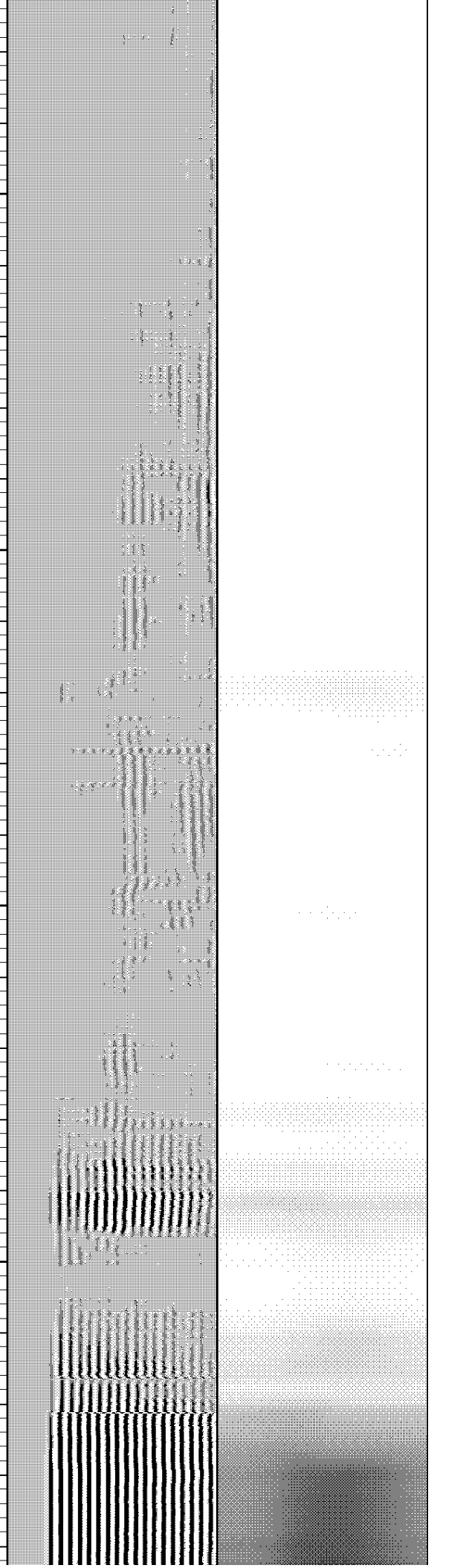
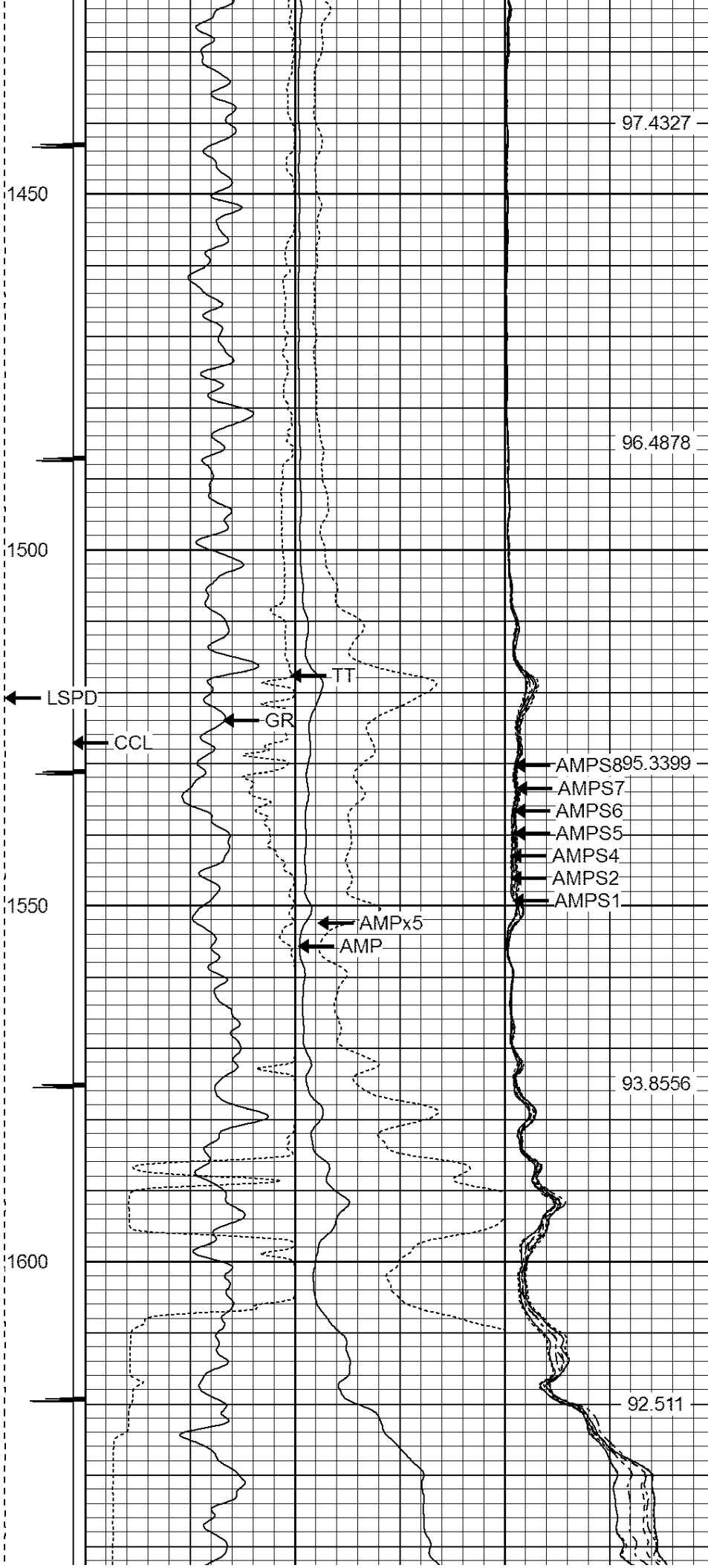


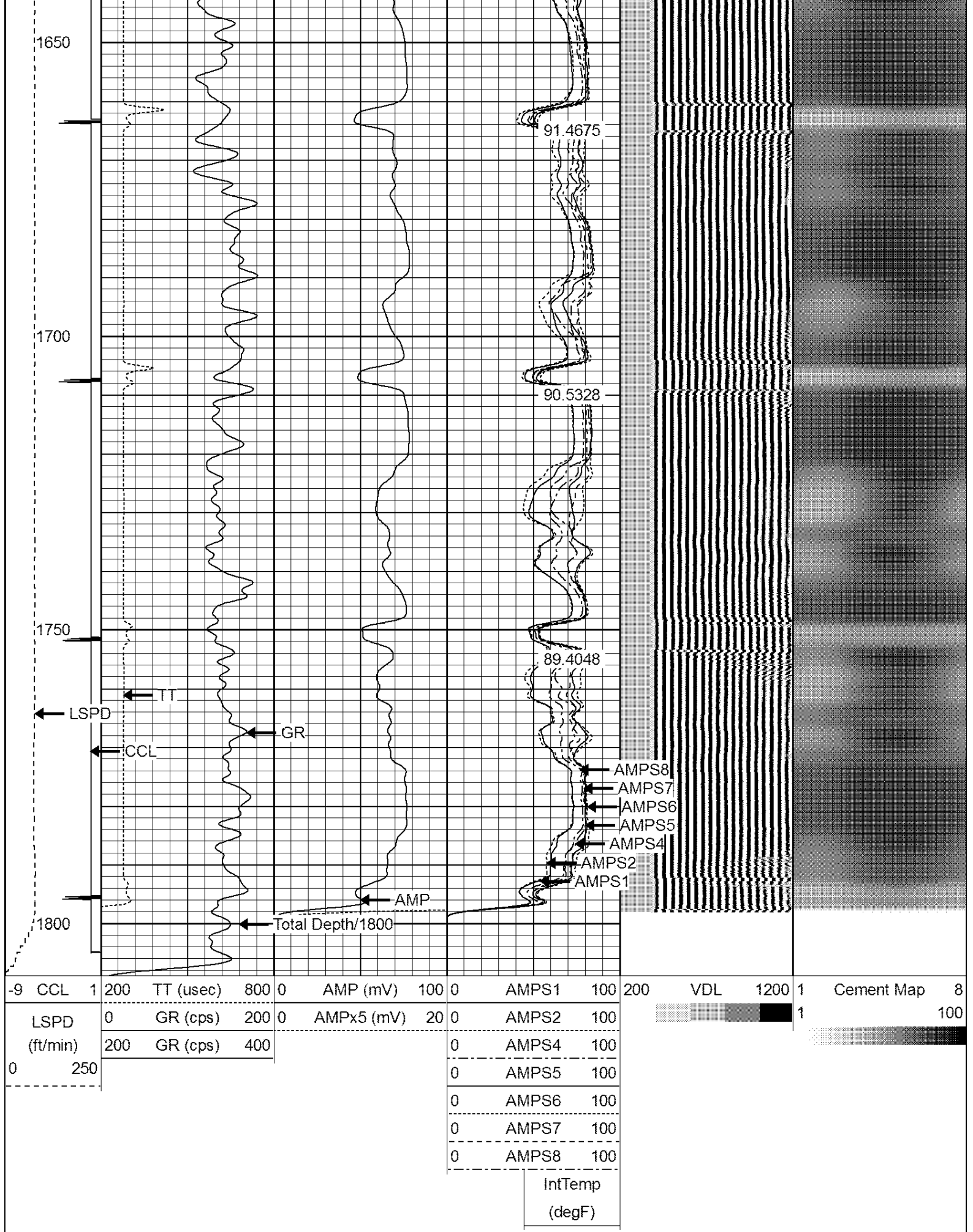


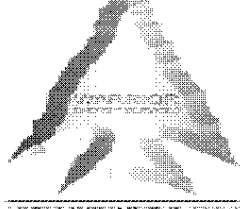












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