Black Warrior Wireline Corporation

CEMENT BOND LOG
GR-CCL-VDL
SECTOR

Company	ANTERO RESOURCES
Well	NORCROSS A-16
Field	MAMM CREEK
County	GARFIELD
State	COLO

Company ANTERO RESOURCES
Well NORCROSS A-16
Field MAMM CREEK
County GARFIELD State COLO

Location: API # : 045-15166-00
SURFACE: 1364' FSL & 1424' FWL
BOTTOMHOLE: 945' FSL & 1860' FWL
SEC 13 TWP 6S RGE 93W

Other Services

Permanent Datum	GROUND LEVEL	Elevation	5497'
Log Measured From	KELLY BUSHING		
Drilling Measured From	KELLY BUSHING 16'		

Elevation
K.B. 5513'
D.F.
G.L. 5497'

Date	28-MARCH-2008		
Run Number	ONE		
Depth Driller	8764'		
Depth Logger	8648'		
Bottom Logged Interval	8644'		
Top Log Interval	SURFACE		
Open Hole Size	7.75		
Type Fluid	WATER		
Density / Viscosity	8.4		
Max. Recorded Temp.	106'		
Estimated Cement Top	700'		
Time Well Ready	ROA		
Time Logger on Bottom	08:00		
Equipment Number	6419		
Location	GRAND JUNCTION		
Recorded By	DONALD MUNDELL		
Witnessed By			

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"		SURFACE	1006'
Prot. String				
Production String	5.5"	17#	SURFACE	8764'
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

THANK YOU FOR USING BLACK WARRIOR WIRELINE
NO LOG TO CORRELATE TO
SHORT JOINTS 4900-4919',8223-8241'

BWWC
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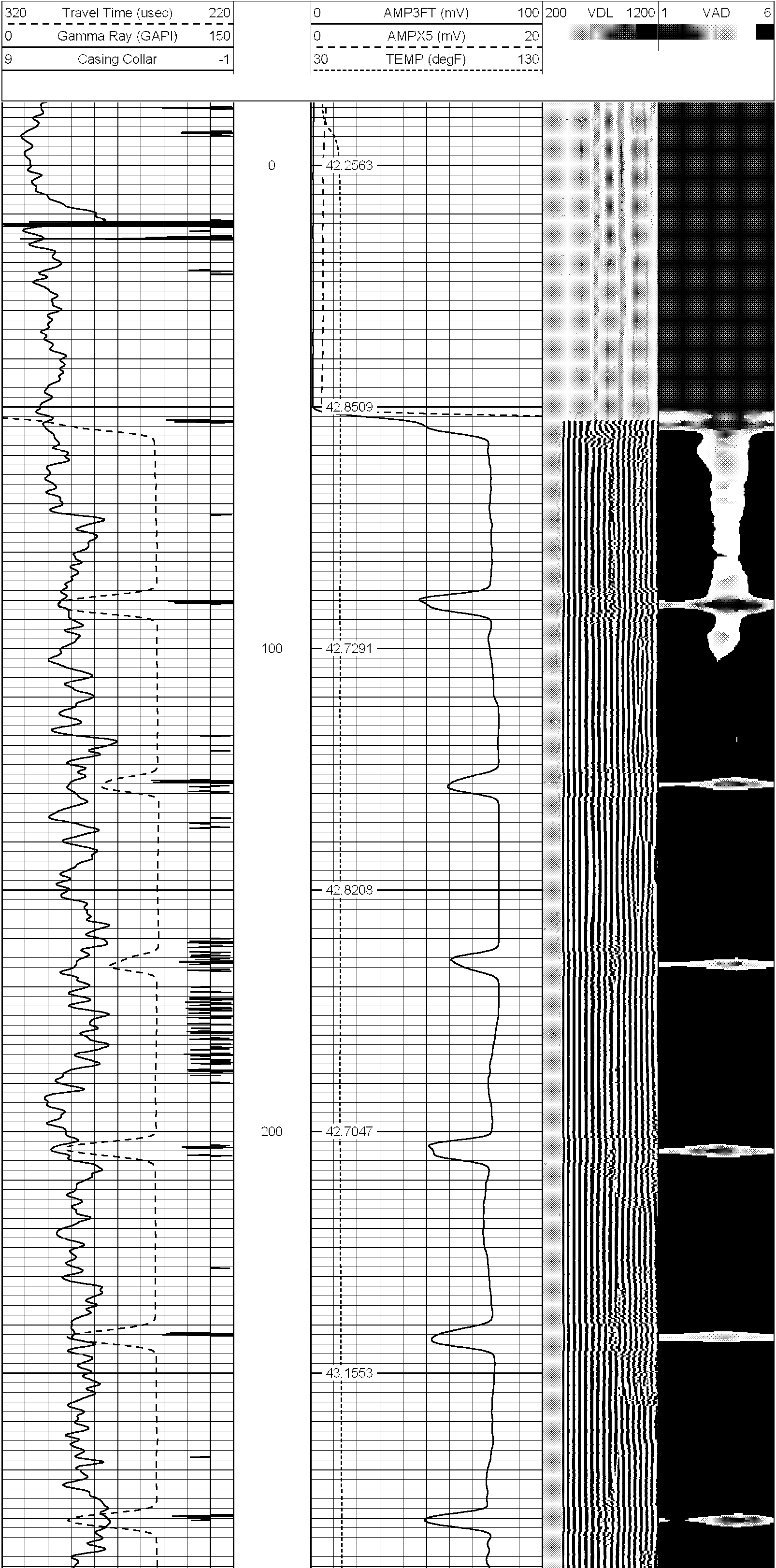
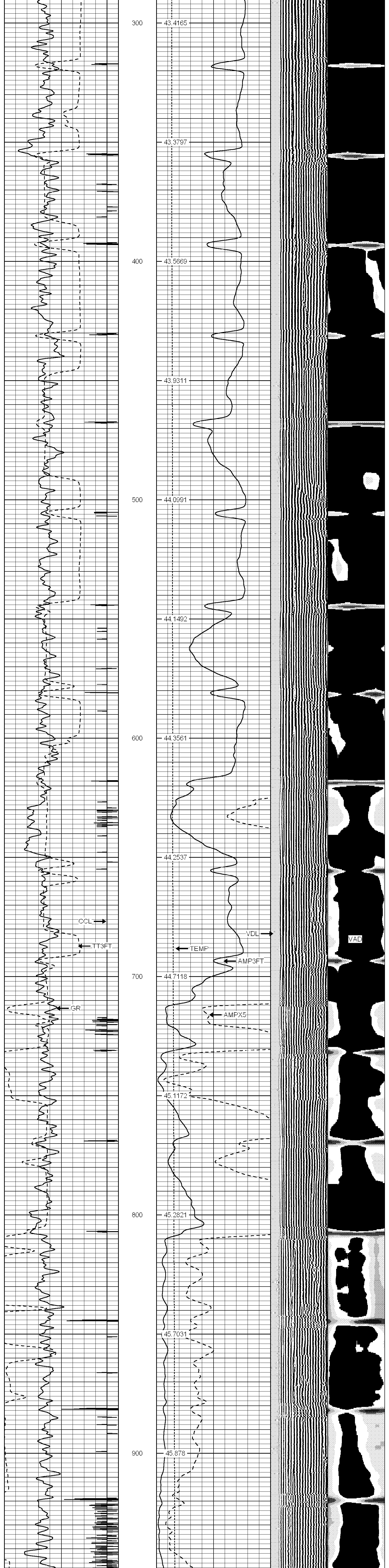
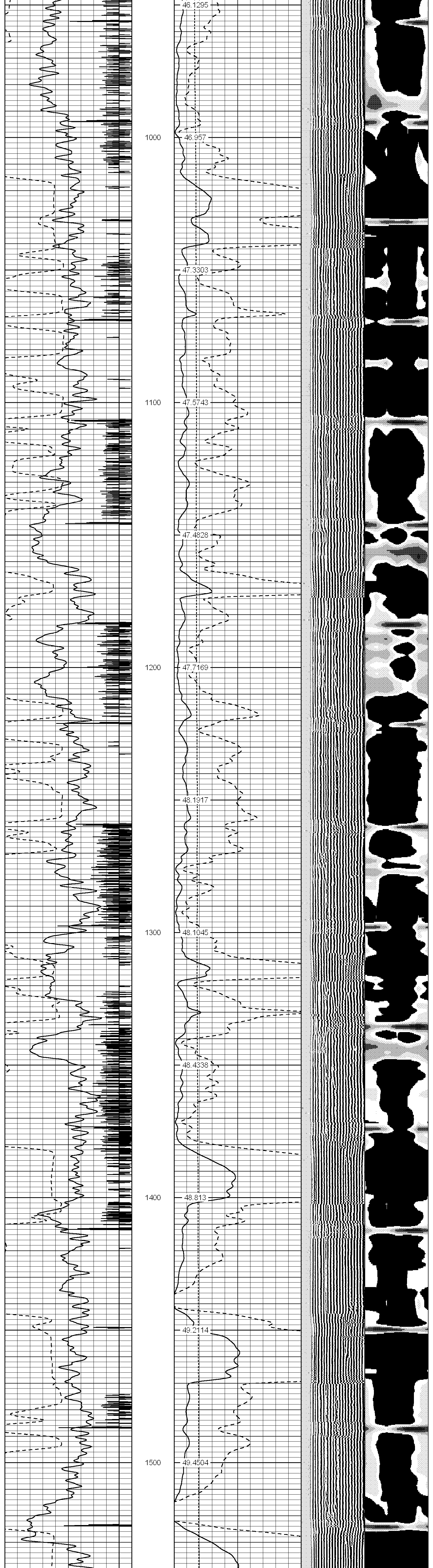
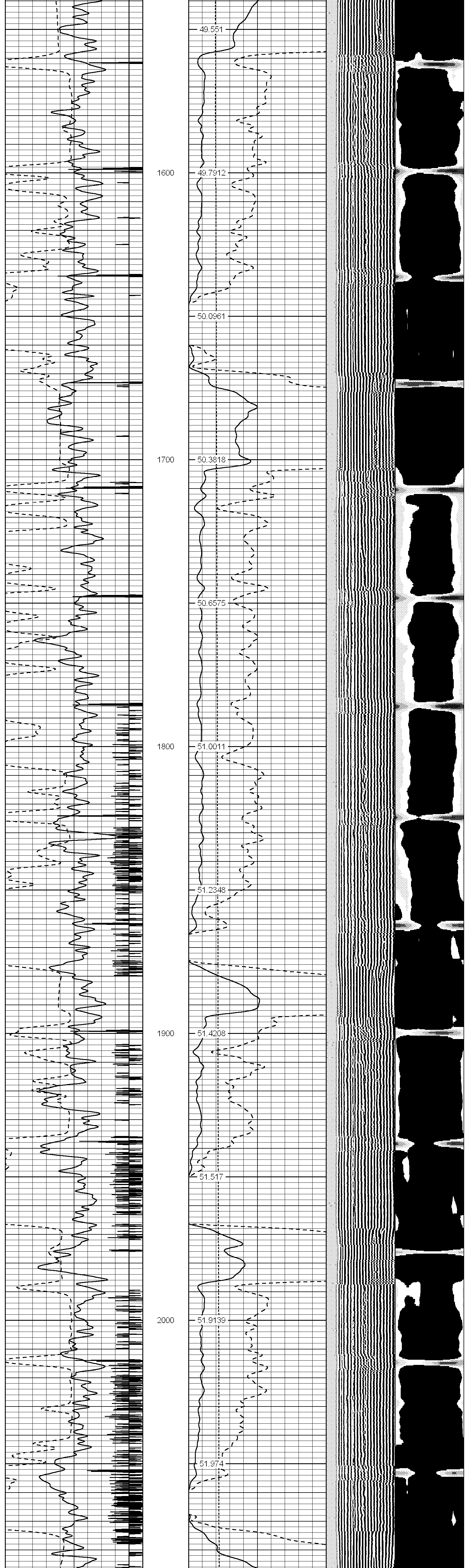
MAIN PASS 5"=100'

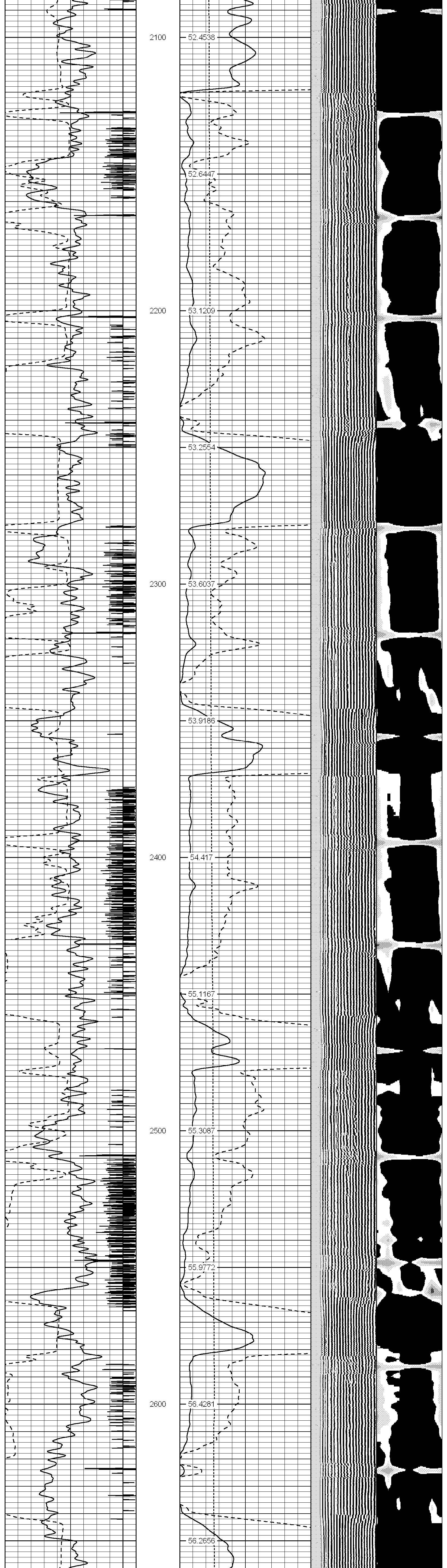
Database File:	1antero.db
Dataset Pathname:	pass5
Presentation Format:	1scbtvad
Dataset Creation:	Fri Mar 28 08:06:44 2008 by Log Std Casedhole 06040
Charted by:	Depth in Feet scaled 1:240

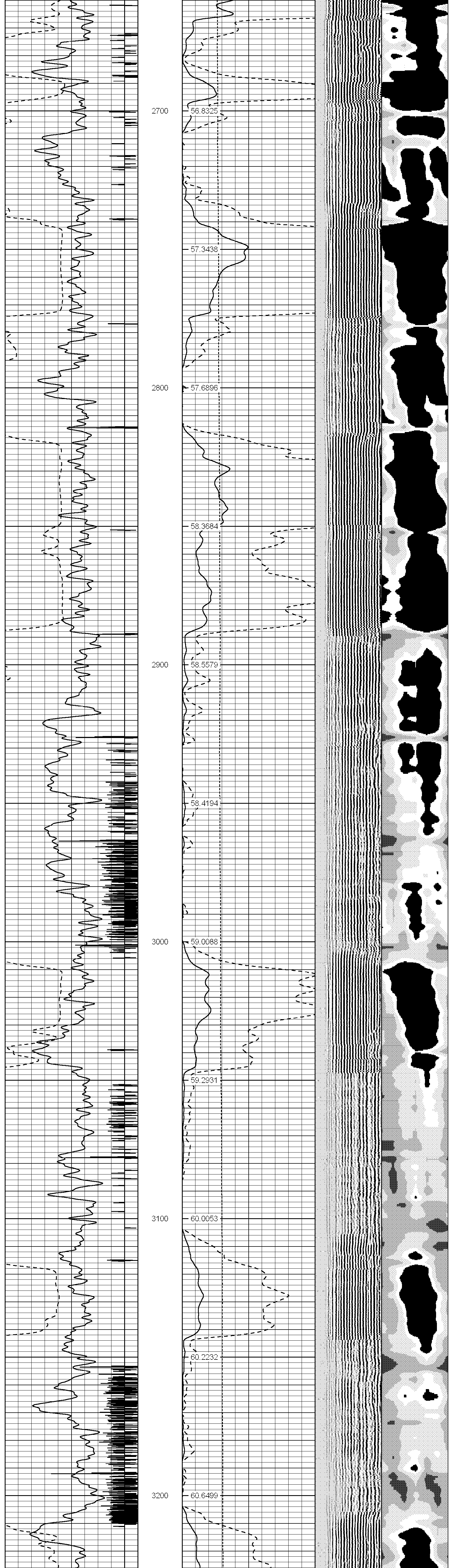


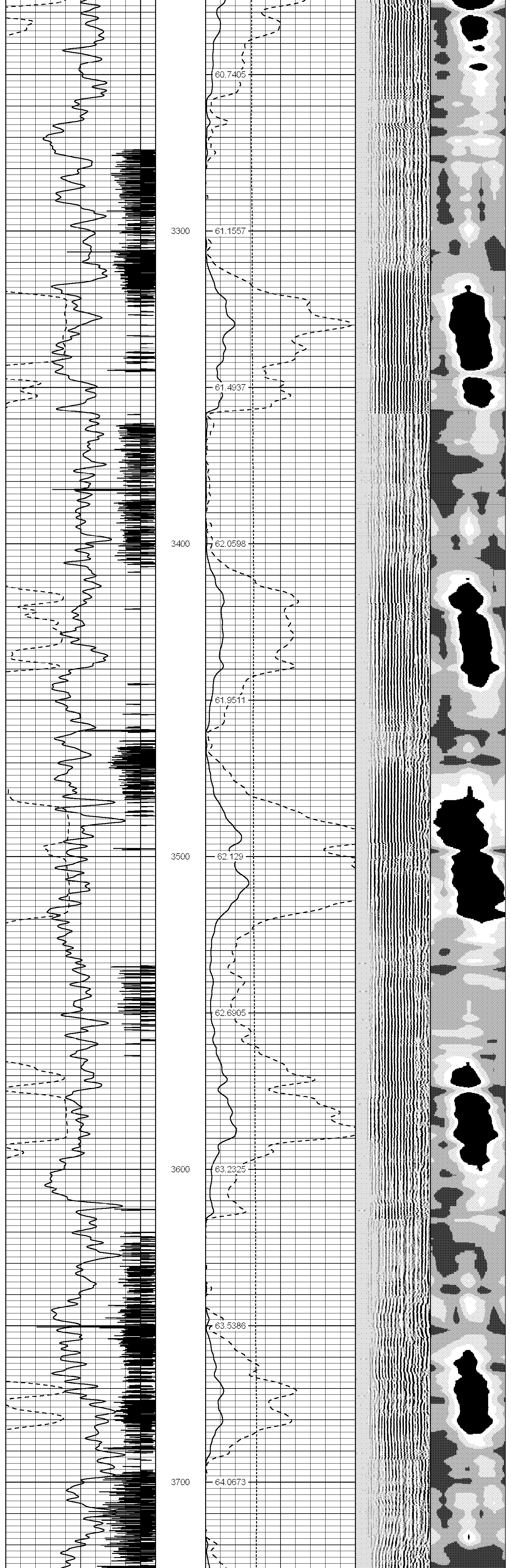


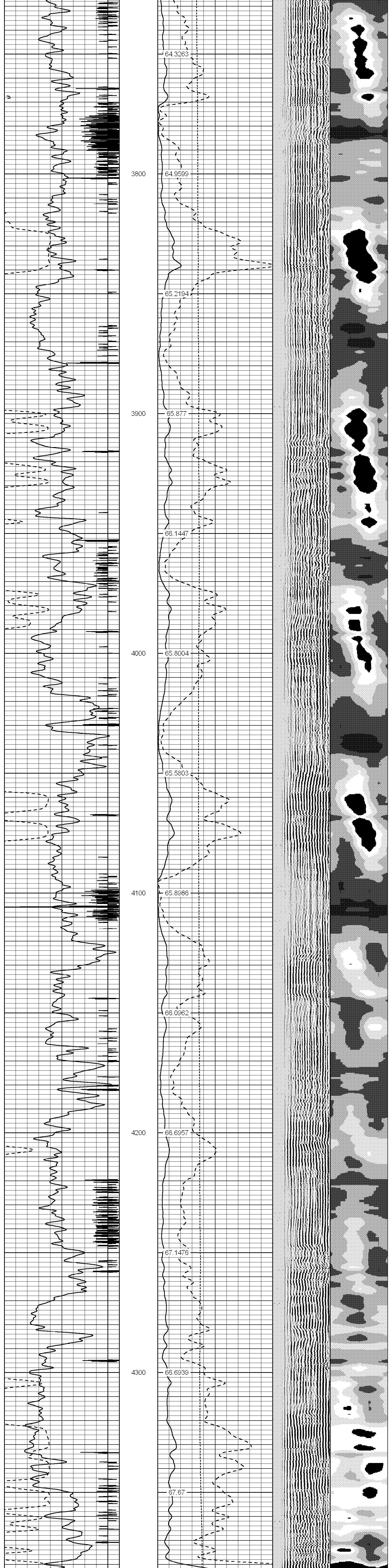








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3900
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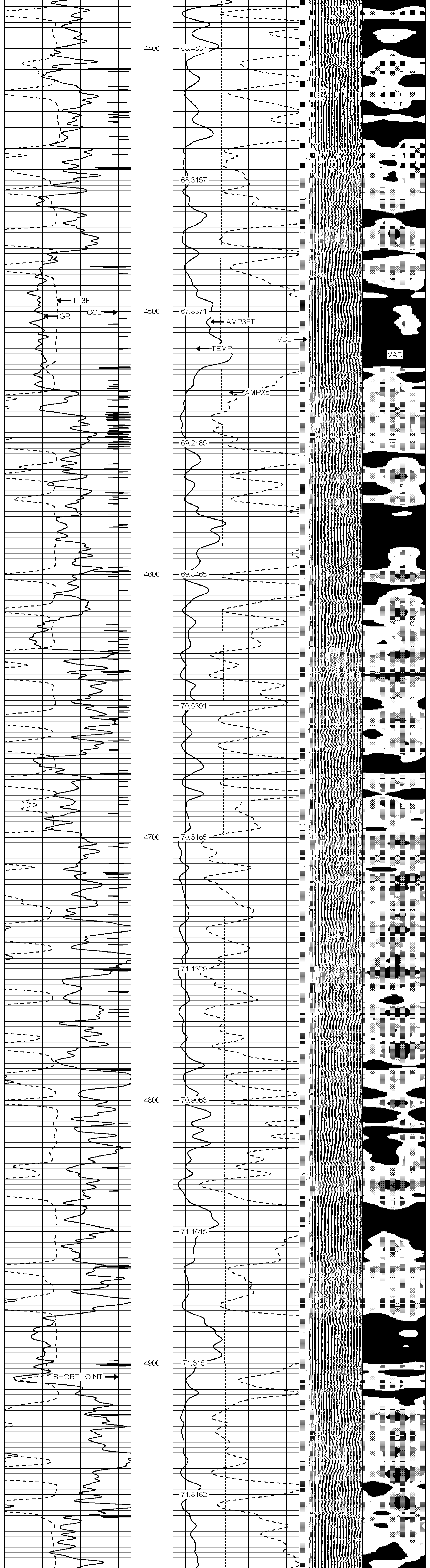
66.6939
67.67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CCL
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VDL
TEMP
VAD
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4600
69.8465
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4900
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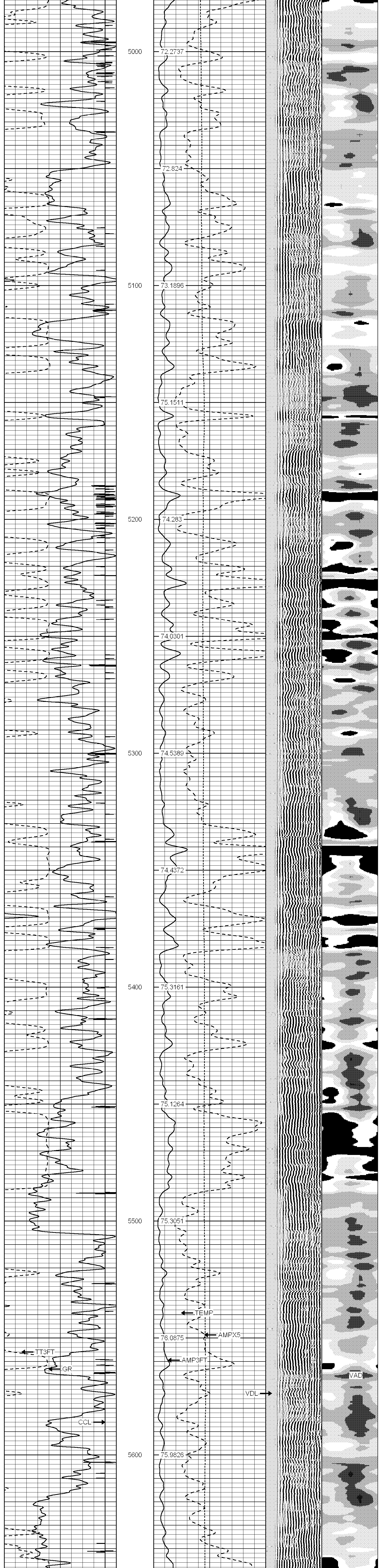
SHORT JOINT
71.8182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CCL
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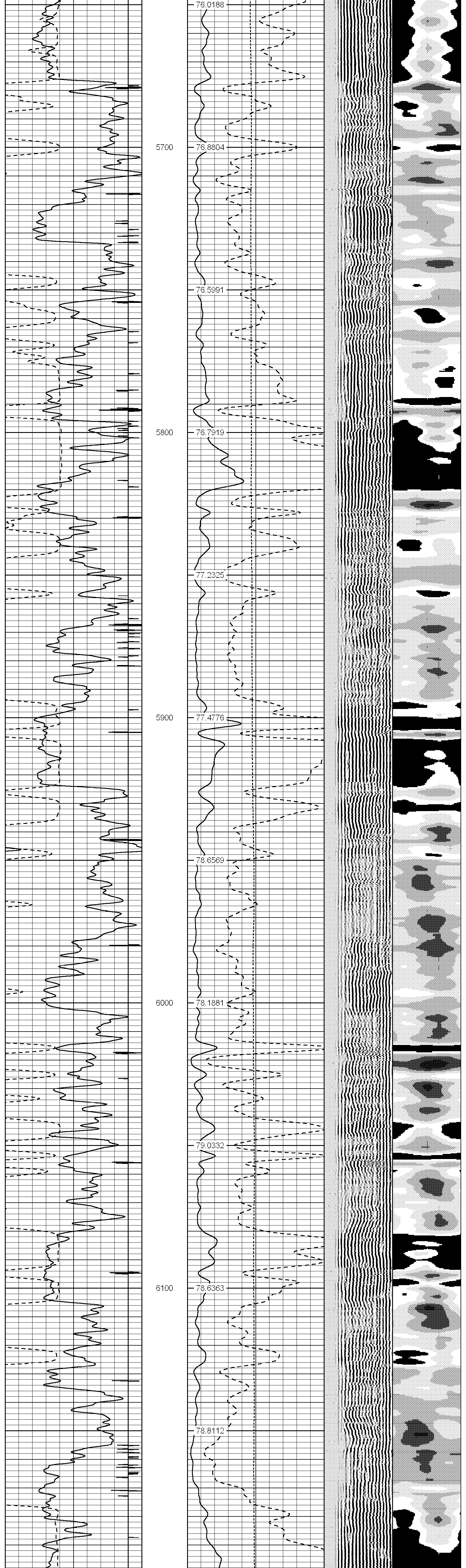
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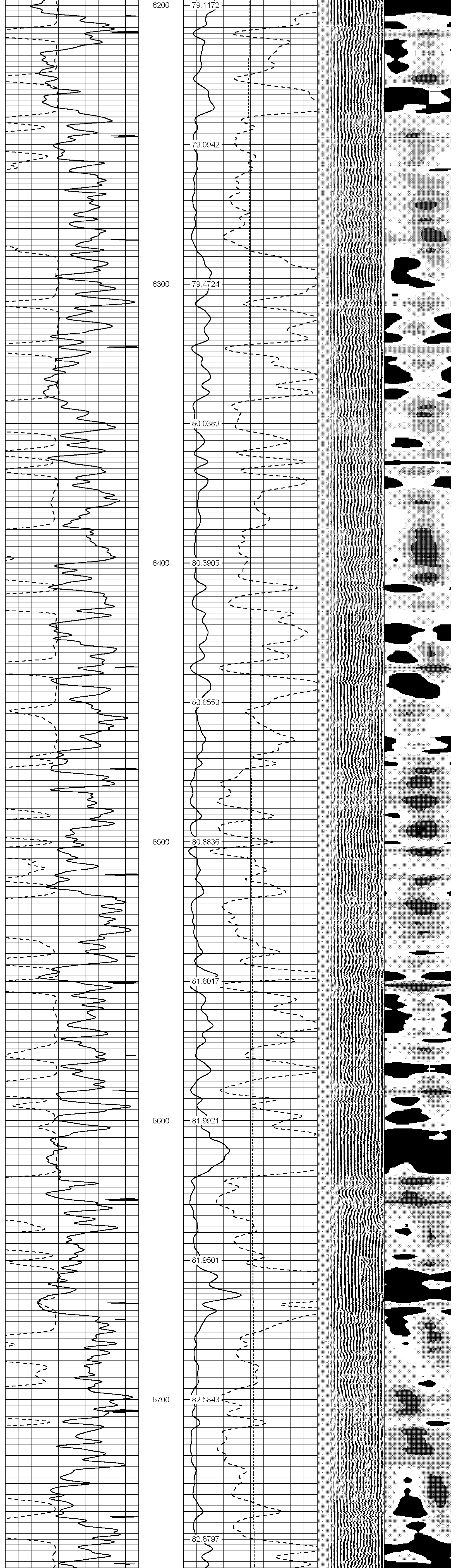
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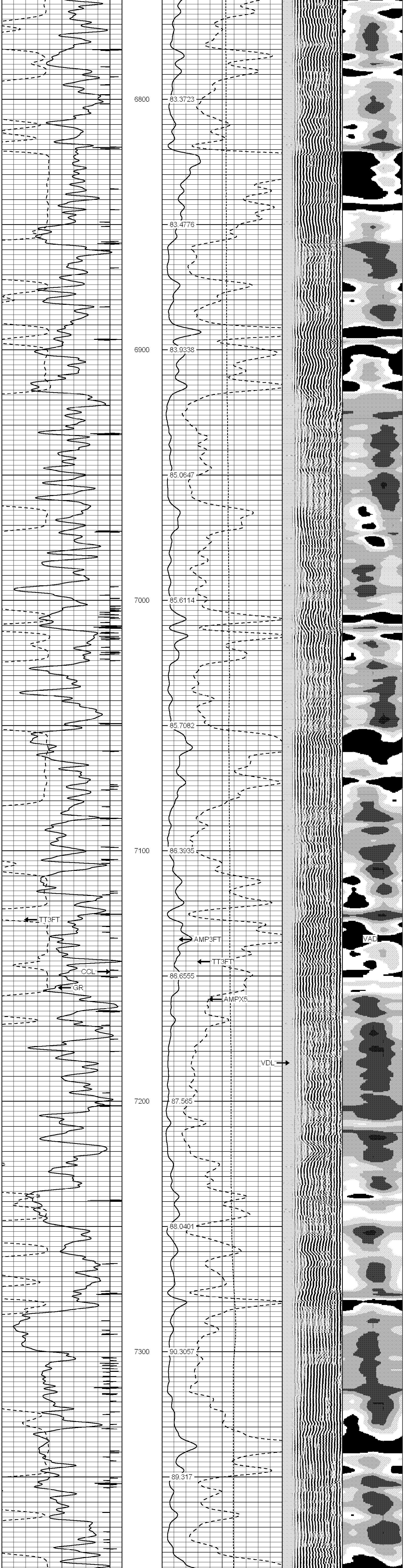
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AMP3FT
TT3FT
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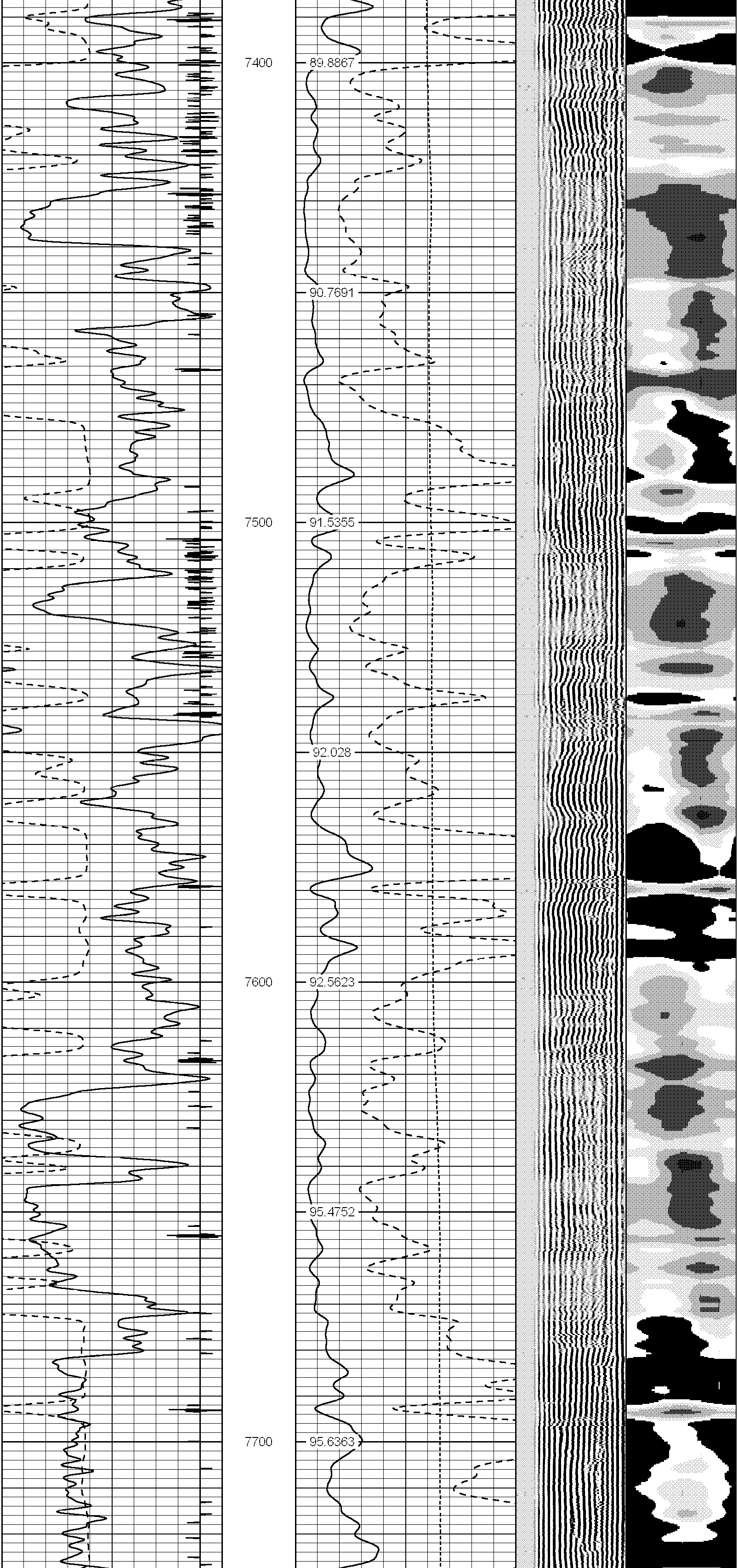
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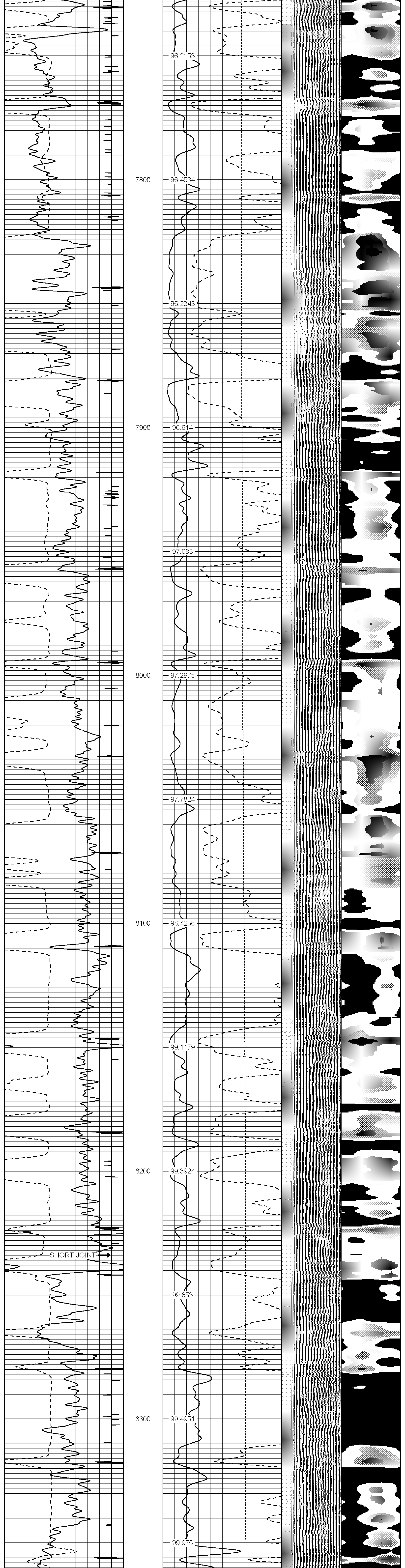
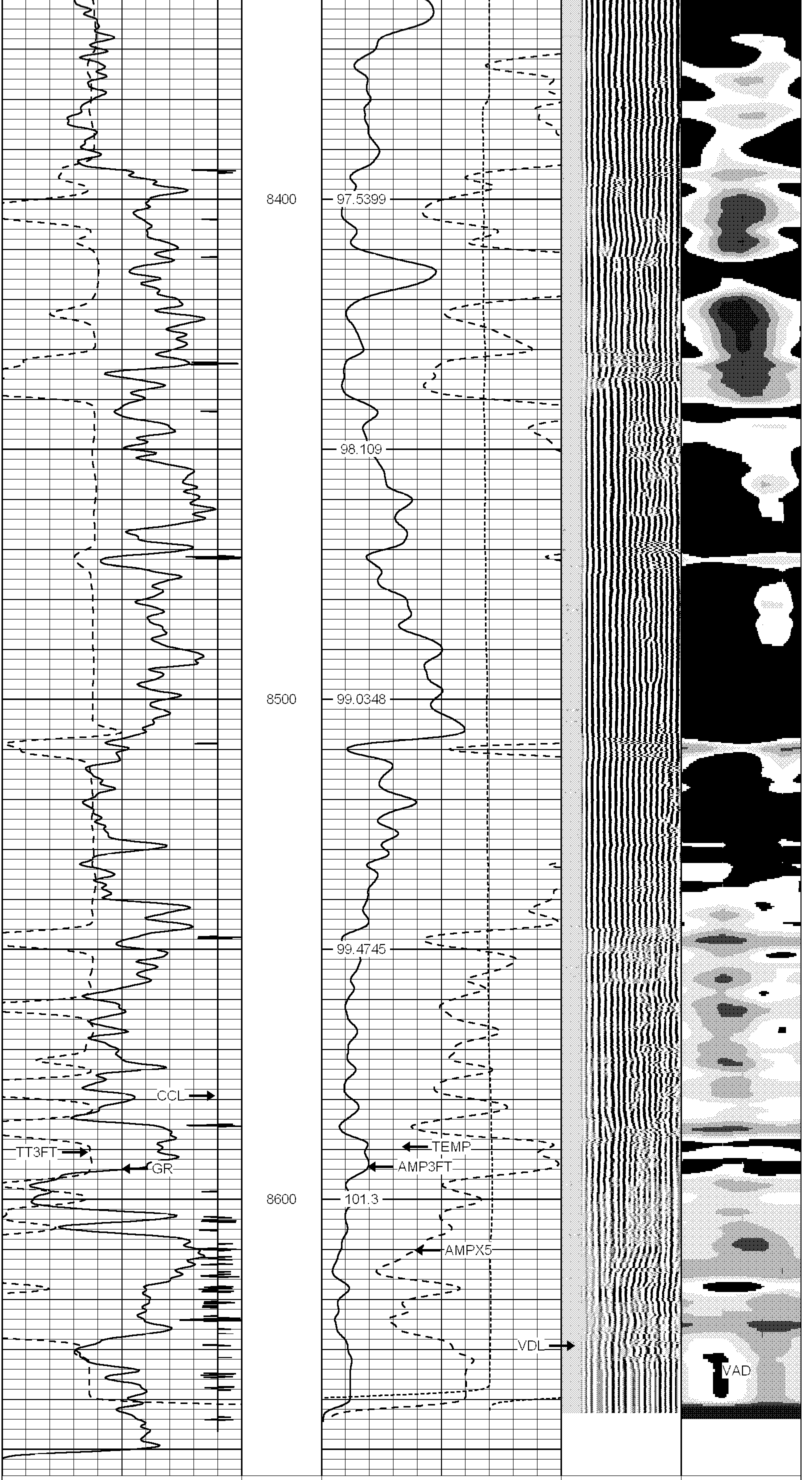




320 Travel Time (usec) 220	0 AMP3FT (mV) 100	200 VDL 1200	1 VAD 6
0 Gamma Ray (GAPI) 150	0 AMPX5 (mV) 20		
9 Casing Collar -1	30 TEMP (degF) 130		

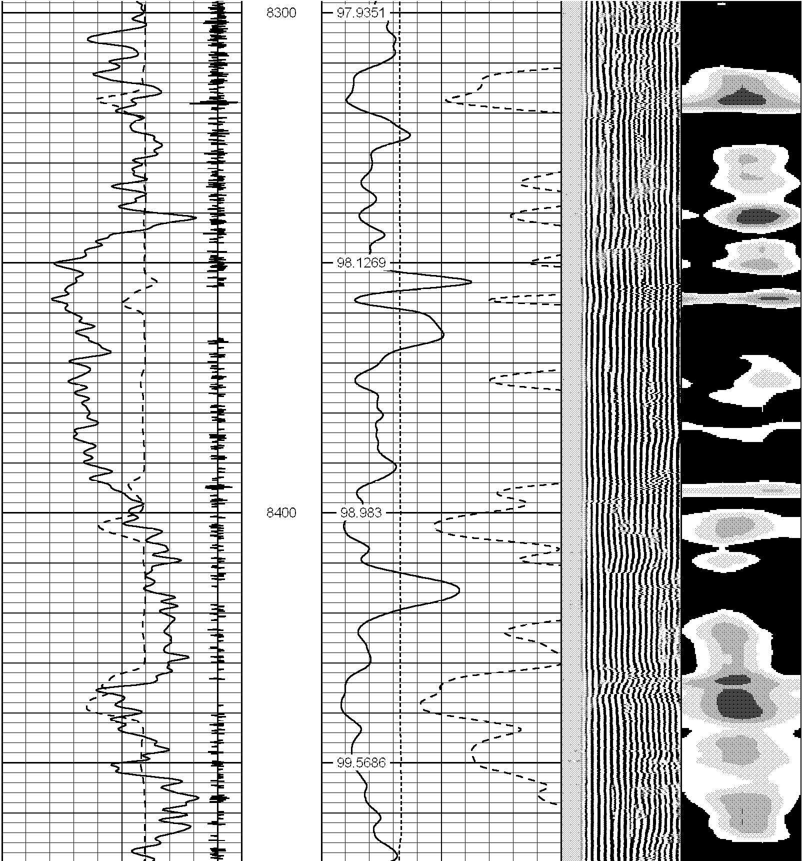
BWWC

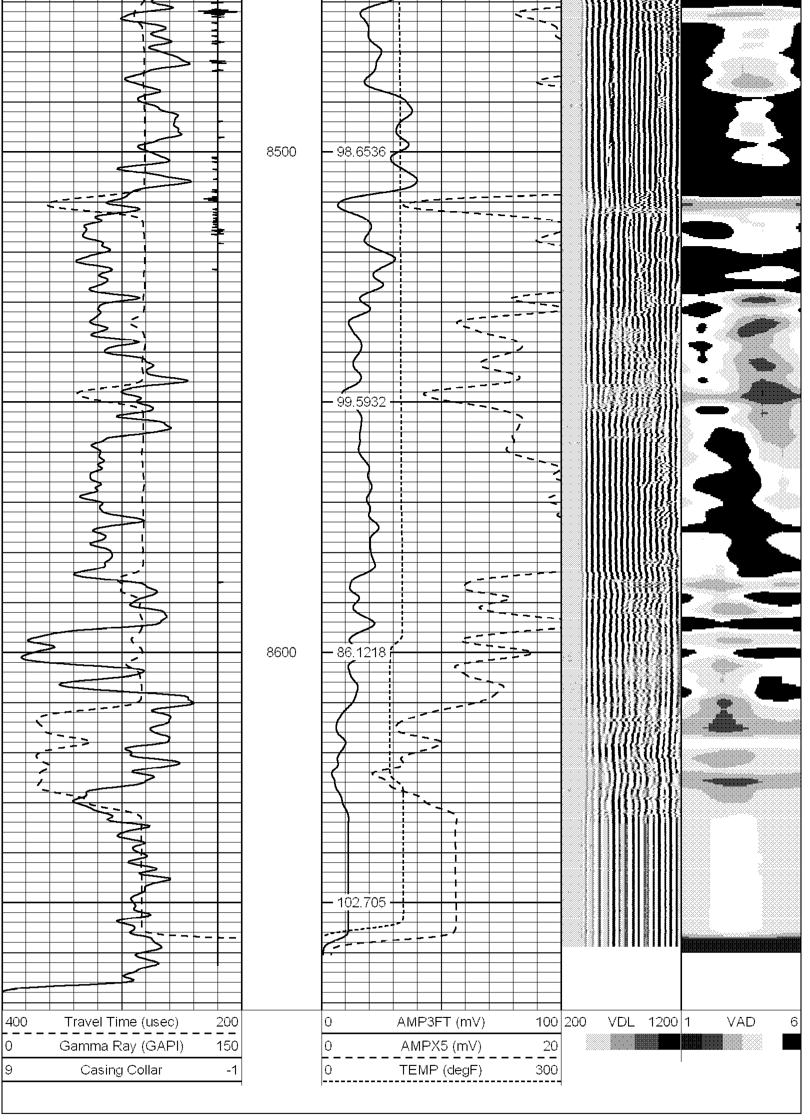
Black Warrior Wireline Corporation

REPEAT SECTION

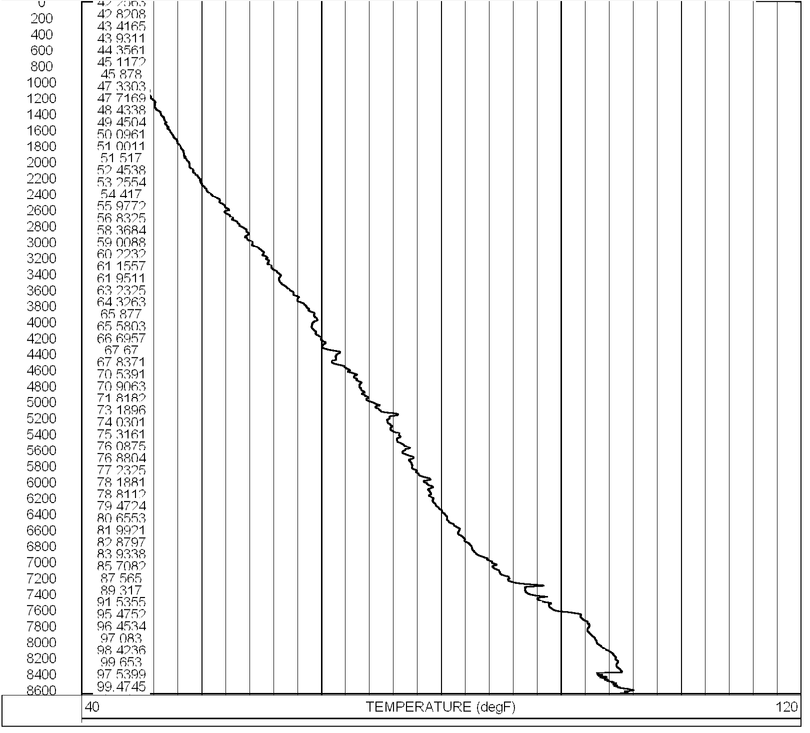
Database File: 1antero.db
Dataset Pathname: pass4
Presentation Format: 1scbtvad
Dataset Creation: Fri Mar 28 07:55:09 2008 by Log Std Casedhole 06040
Charted by: Depth in Feet scaled 1:240

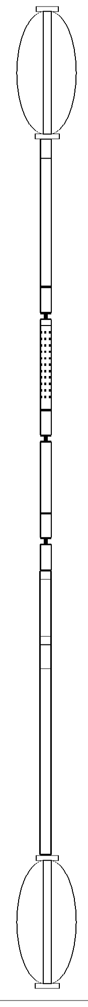
400 Travel Time (usec) 200	0 AMP3FT (mV) 100	200 VDL 1200	1 VAD 6
0 Gamma Ray (GAPI) 150	0 AMPX5 (mV) 20		
9 Casing Collar -1	0 TEMP (degF) 300		





Database File: 1antero.db
Dataset Pathname: pass5.1
Presentation Format: temp
Dataset Creation: Fri Mar 28 11:00:35 2008 by Calc Std Casedhole 06040
Charted by: Depth in Feet scaled 1:15000



Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			LTEC-1.68 LTEC Six Arm	3.00	1.69	15.00
TEMP	15.92					
WVFS1	14.50		SCBLTEKSLIM-T169Temp (T169t_001) 1 11/16 Sector with Temp	9.75	1.69	53.00
WVFS2	14.50					
WVFS3	14.50					
WVFS4	14.50					
WVFS5	14.50					
WVFS6	14.50					
WVF3FT	13.75					
WVFCAL	13.75					
WVF5FT	12.75					
WVFTEMP	9.42					
CCL	8.75		CCL-Titan340 (340-001) Titan 1 11/16" Logging CCL	1.67	1.69	7.00
			GR-Titan340 (340-001) Titan 1 11/16" Gamma Ray Scint	4.75	1.69	20.00
GR	4.43					
			LTEC-1.68 LTEC Six Arm	3.00	1.69	15.00

Dataset: 1antero.db: field/well/run1/pass5.1
Total Length: 22.17 ft
Total Weight: 110.00 lb
O.D. 1.69 in