



**Segmented Radial Cement Bond
W/Gamma Ray, CCL
Log**

Company Antero Resources Corporation		Country USA	
Well DANIELS 1H	Company Antero Resources Corporation		
Field Marcellus	Well DANIELS 1H	Country USA	
County TYLER	Field Marcellus	Country USA	
State WV	County TYLER	Country USA	
Location: WV		API #: 47095025660000	Other Services API A06293
Permanent Datum	SEC	TWP	RGE
Log Measured From	Ground Level		
Drilling Measured From	Elevation		
			K.B. D.F. G.L.
Date	17-DEC-2019		
Run Number	ONE		
Depth Driller	14898'		
Depth Logger	6380'		
Bottom Logged Interval	6380'		
Top Log Interval	Surface		
Open Hole Size	8.25"		
Type Fluid	F/W		
Density / Viscosity	NA		
Max. Recorded Temp.	134 DEG		
Estimated Cement Top	3046'		
Time Well Ready	N/A		
Time Logger on Bottom	N/A		
Equipment Number	214182		
Location	Bridgeport, WV		
Recorded By	P DAVIDSON		
Witnessed By	B ETCHER		
Borehole Record		Tubing Record	
Run Number	Bit	From	To
ONE	24"		
TWO	17.5"		
THREE	12.25"		
FOUR	8.25"		
Casing Record	Size	Wgt/Ft	Top
Surface String	13.375"	54.5	Surface
Prot. String	9.625"	40	Surface
Production String	5.5"	20	Surface
Liner			Bottom
			14898'

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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

Zero @ R.K.B. 30'
Marker Joint 5158'-5168'
Log TD 6380'
Cement Top @ 3046'
Log Ran Under 1500 PSI

RECEIVED
 Office of Oil and Gas
 SEP 24 2020
 WV Department of
 Environmental Protection

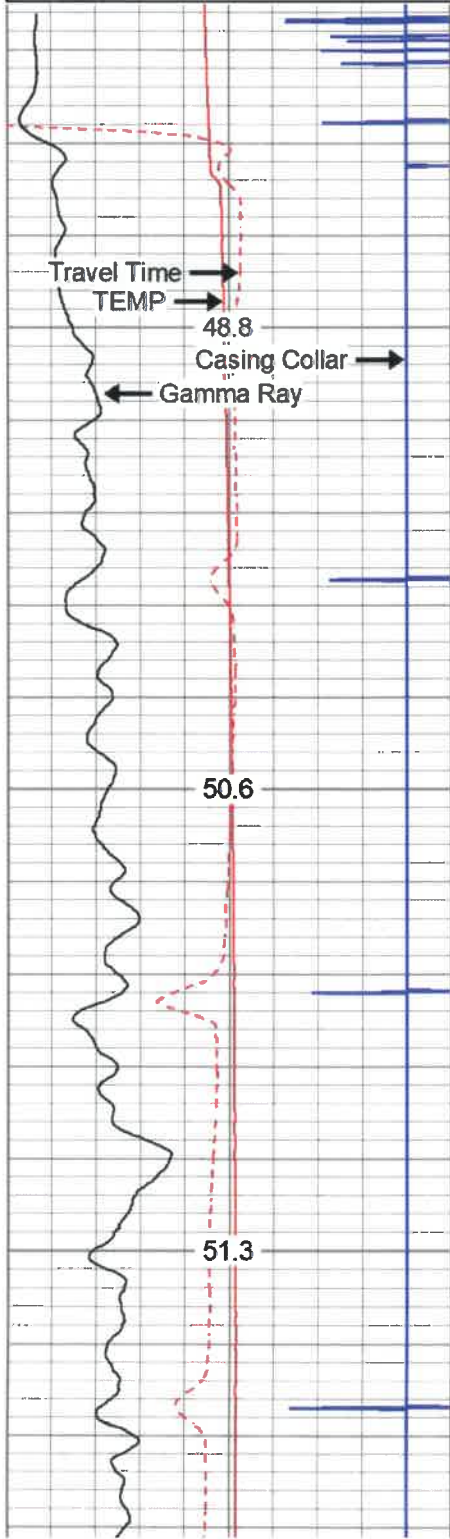
Database File ant_dan1h.db
 Dataset Pathname pass6.1
 Presentation Format antero
 Dataset Creation Tue Dec 17 10:59:52 2019
 Charted by Depth in Feet scaled 1:240

280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray	180
0	TEMP (degF)	100
180	GR	360

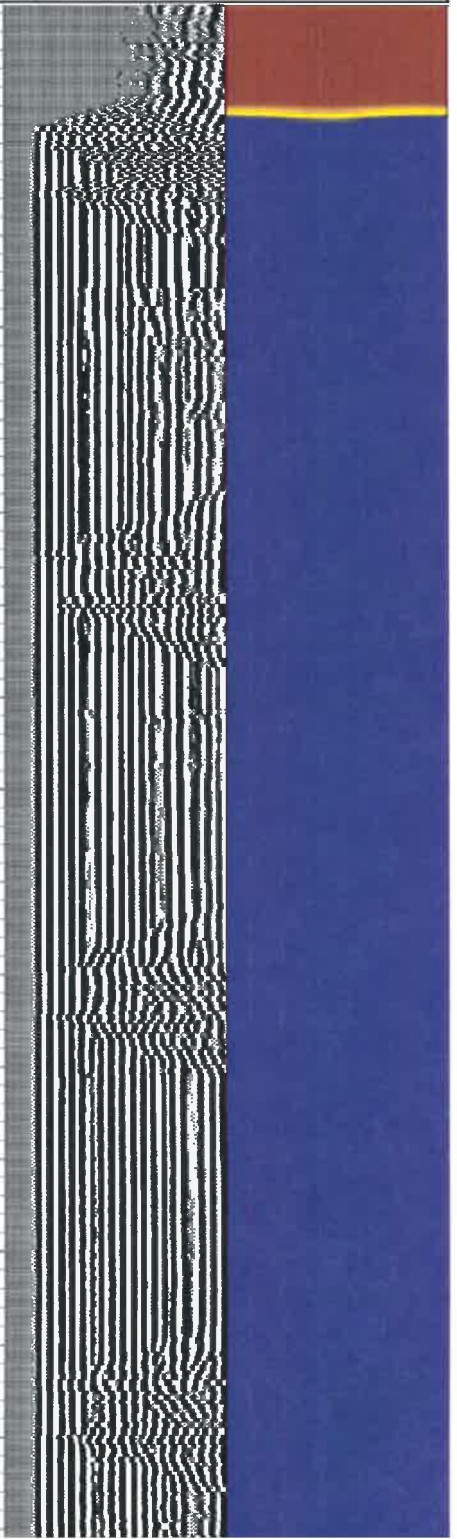
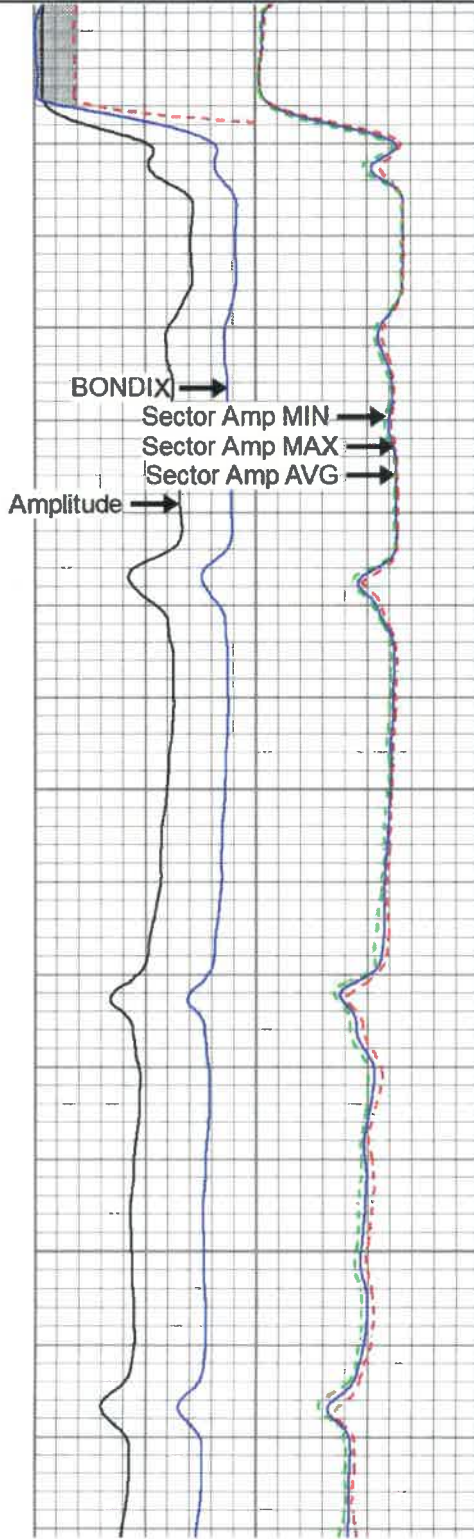
TEMP
(degF)

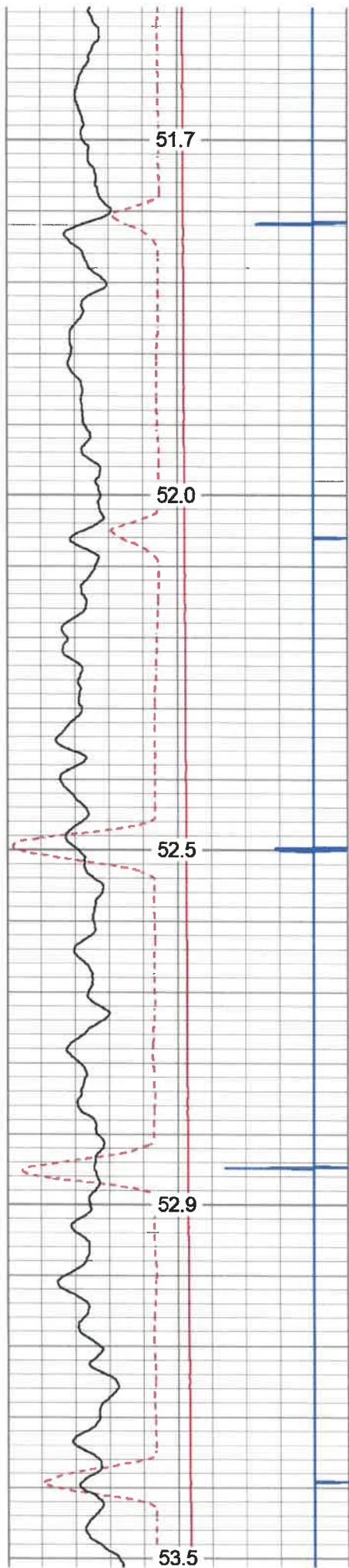
Amplitude		Sector Amp AVG
0	(mV)	100
Amp X5		Sector Amp MAX
0	(mV)	20
1	BONDIX	0

VDL	1	Sector Map	12
(usec)	200		1200



50
100
150





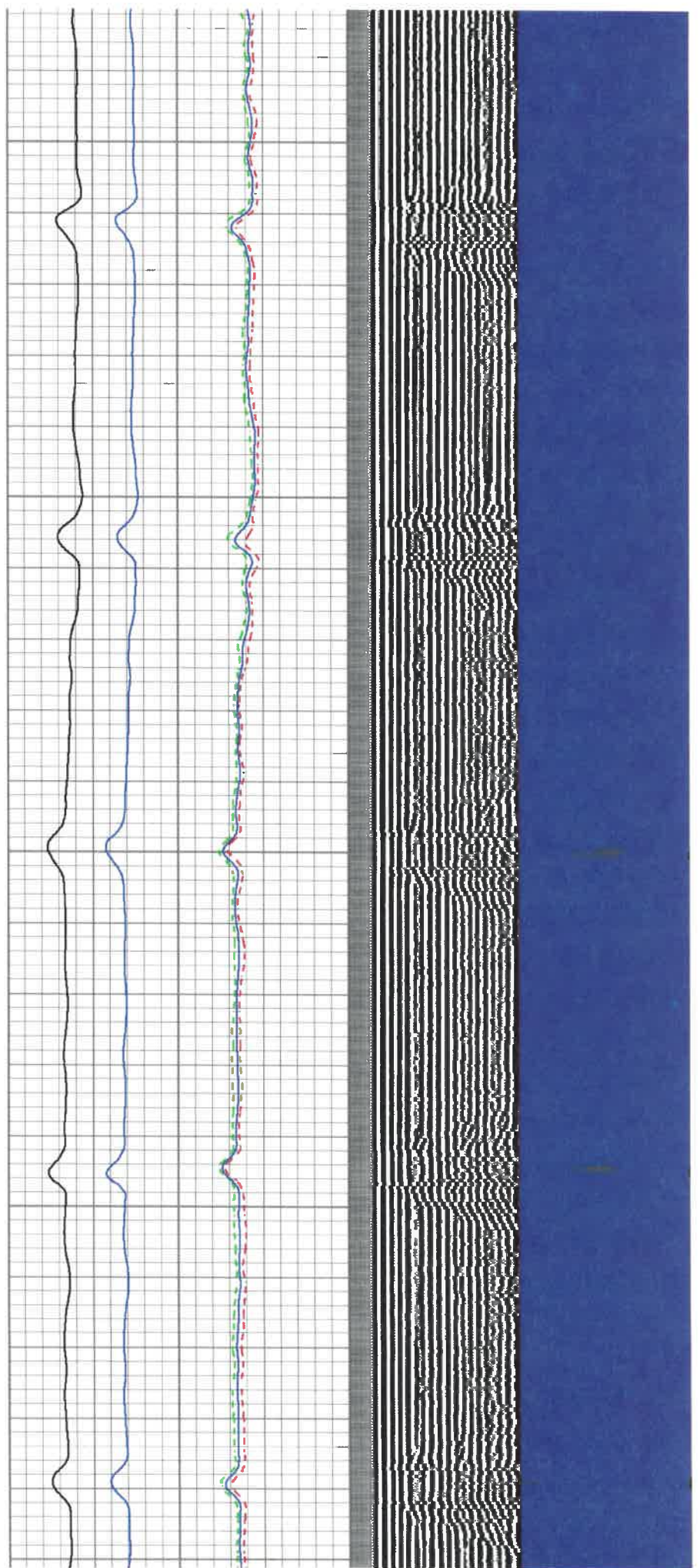
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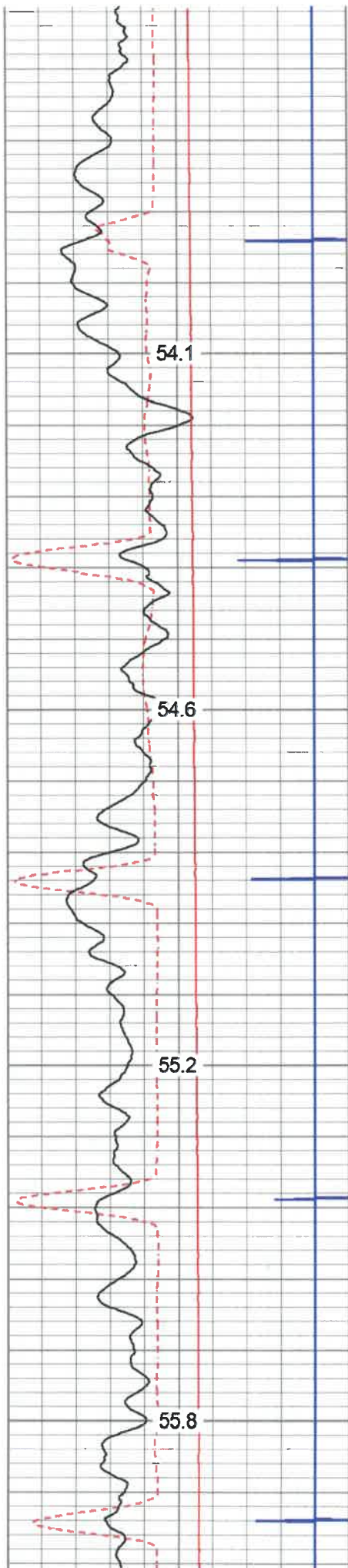
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300

350

400



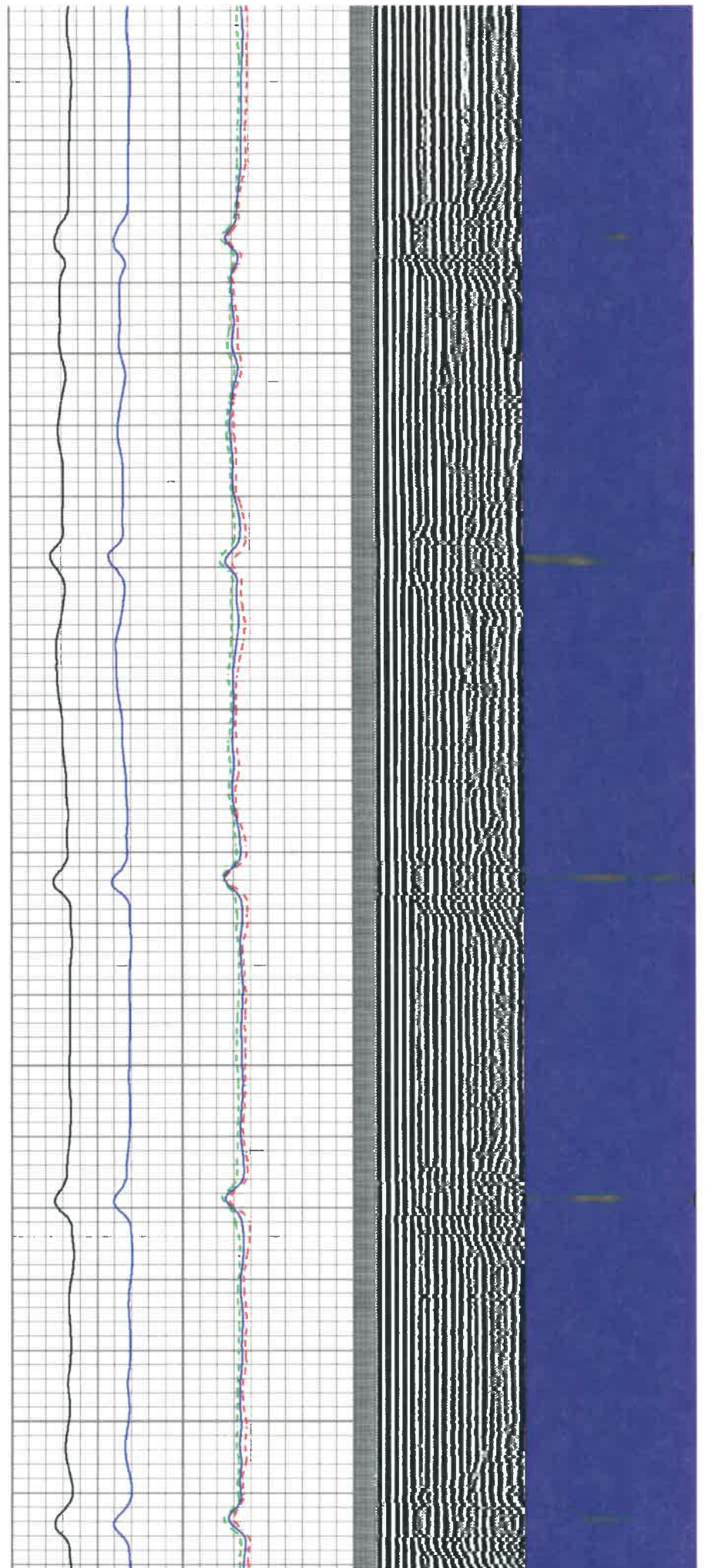


450

500

550

600



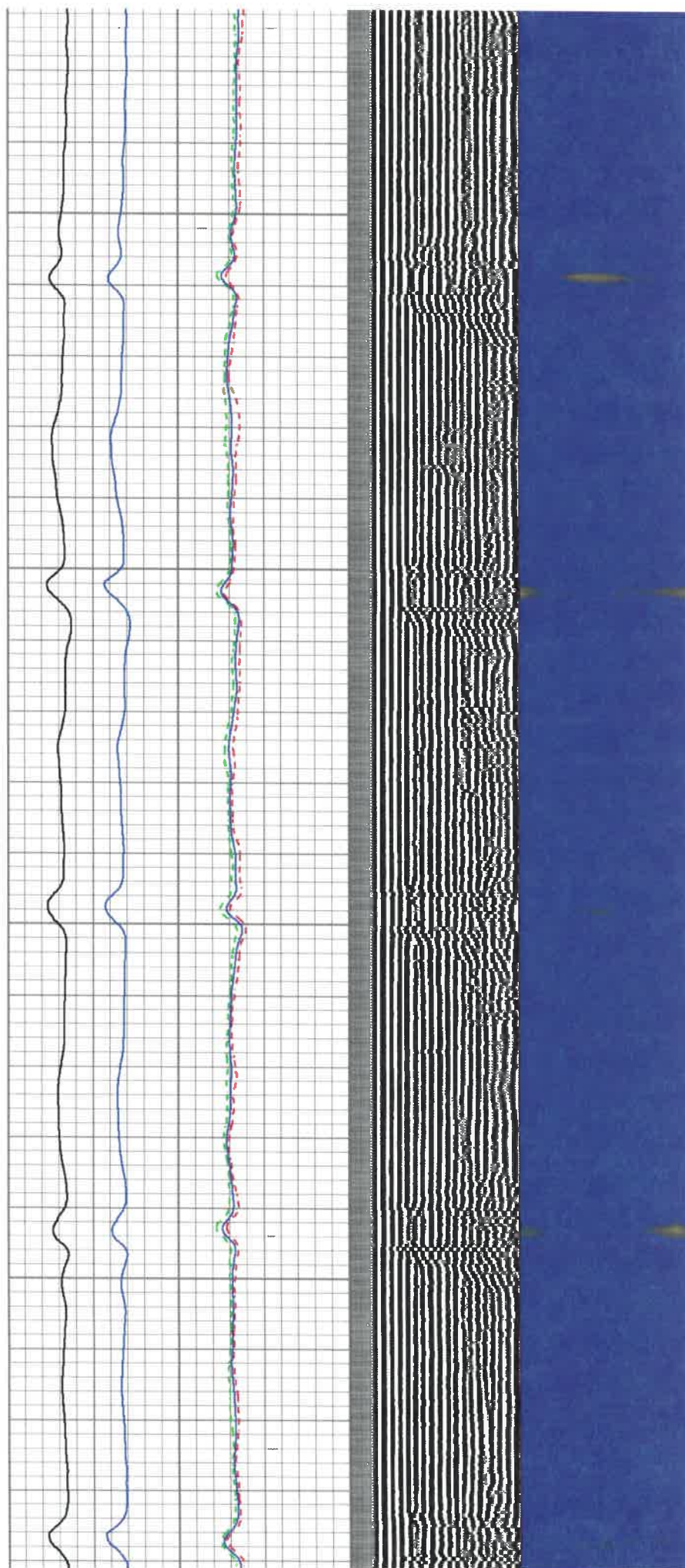


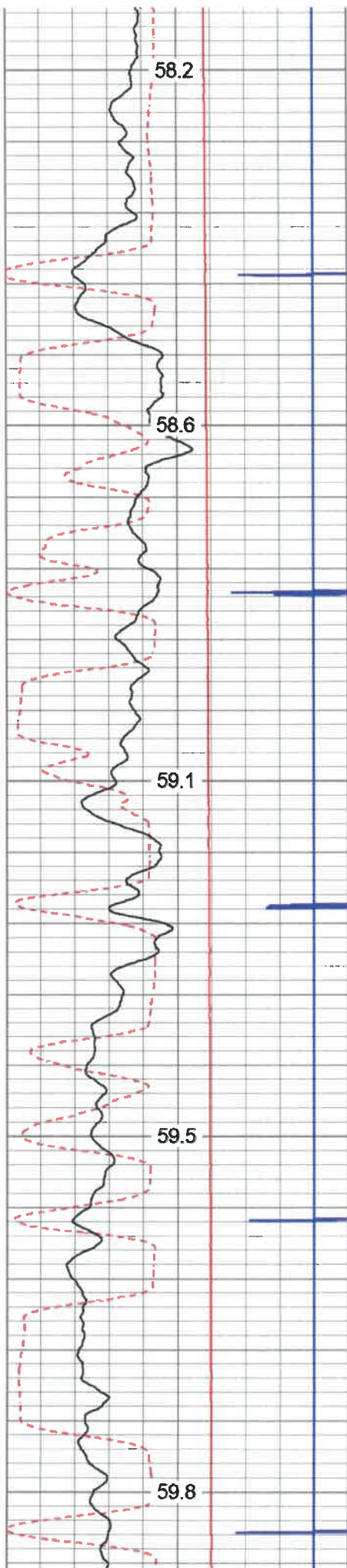
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700

750

800





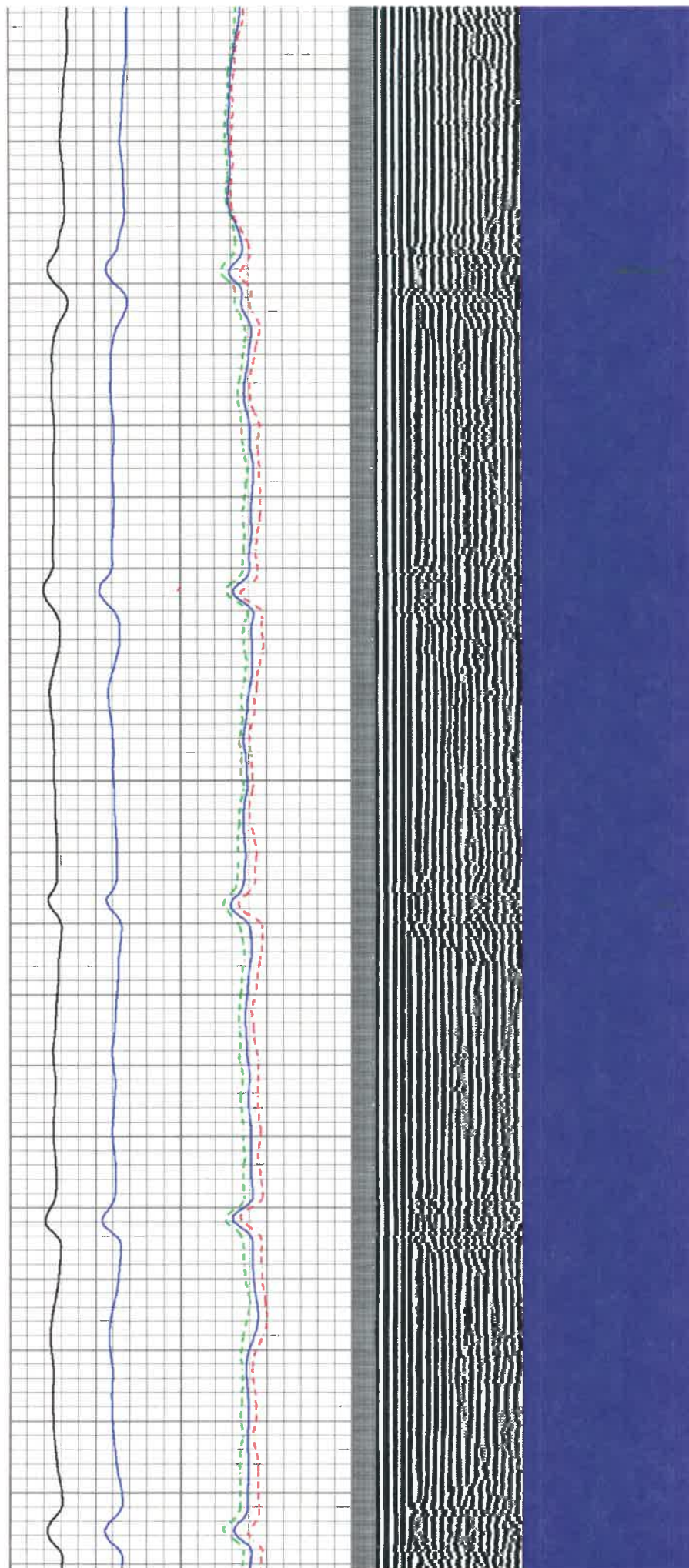
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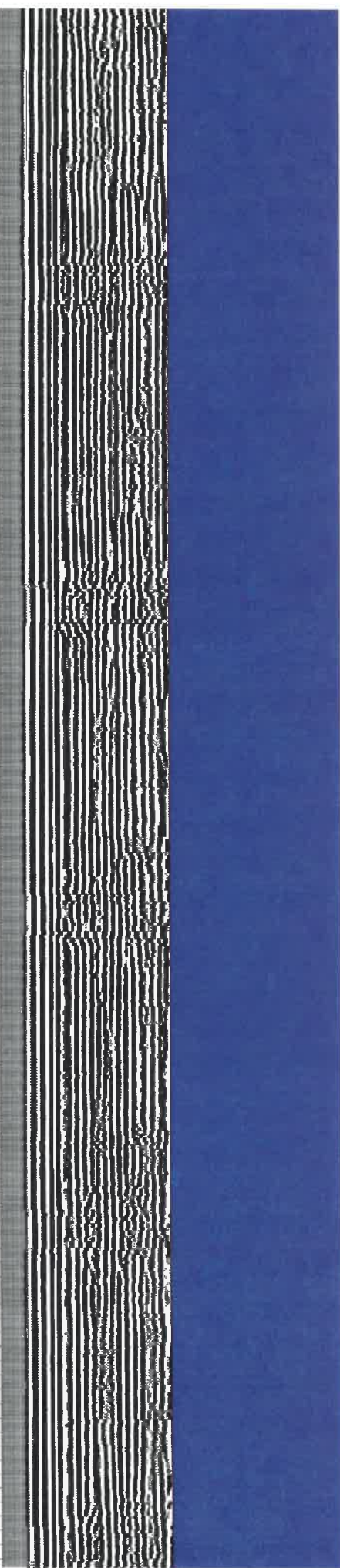
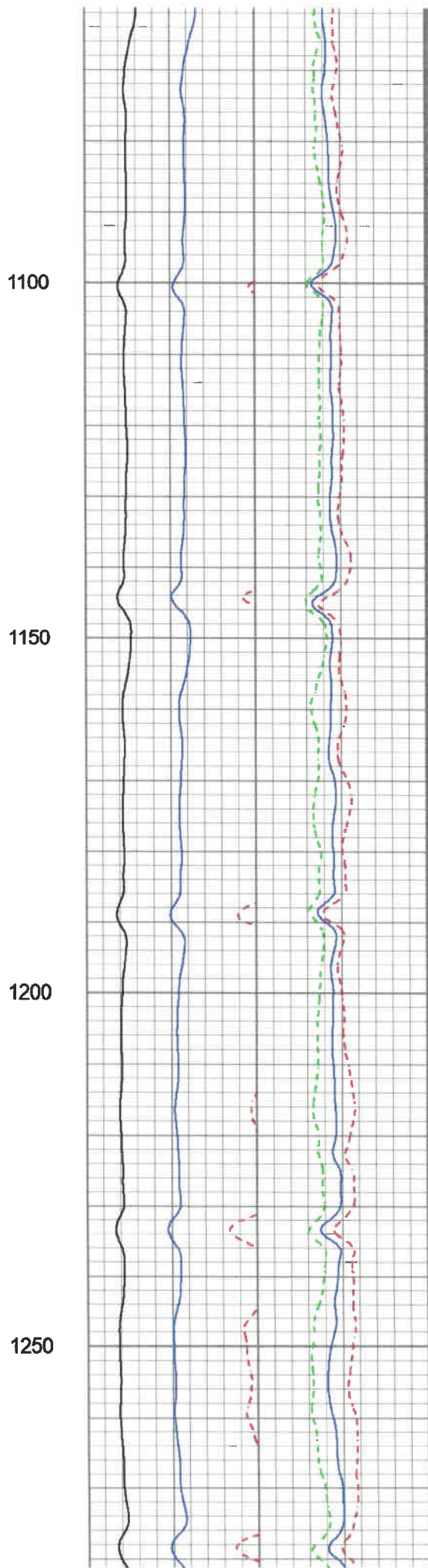
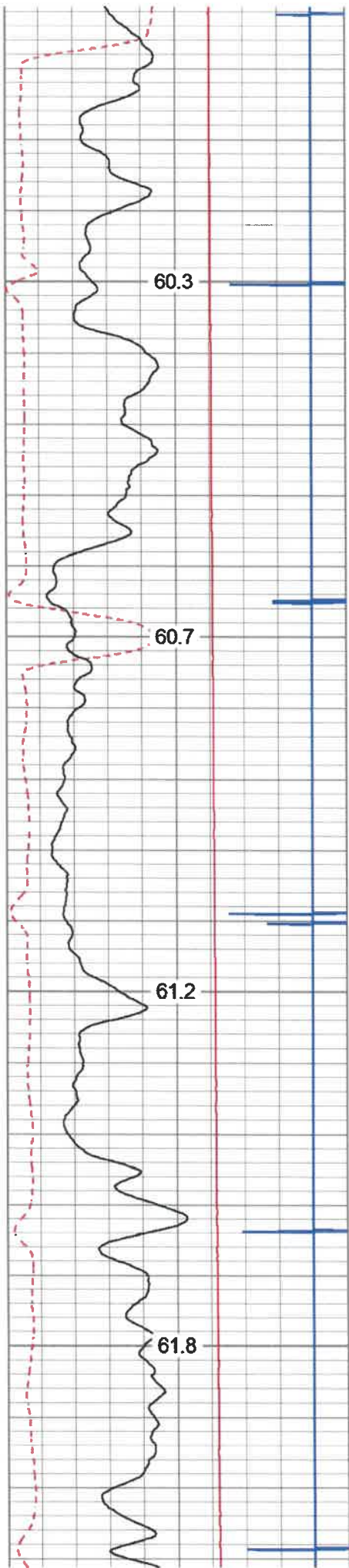
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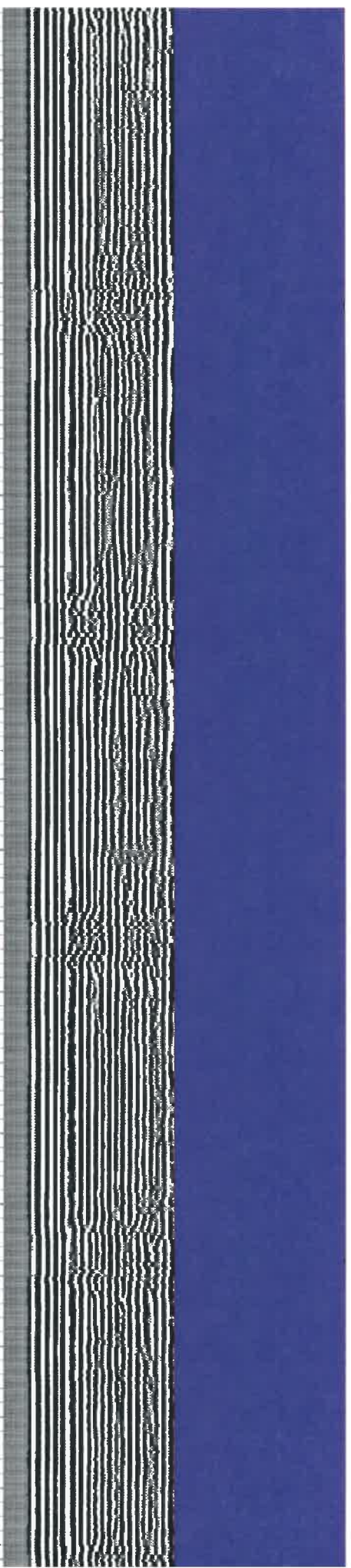
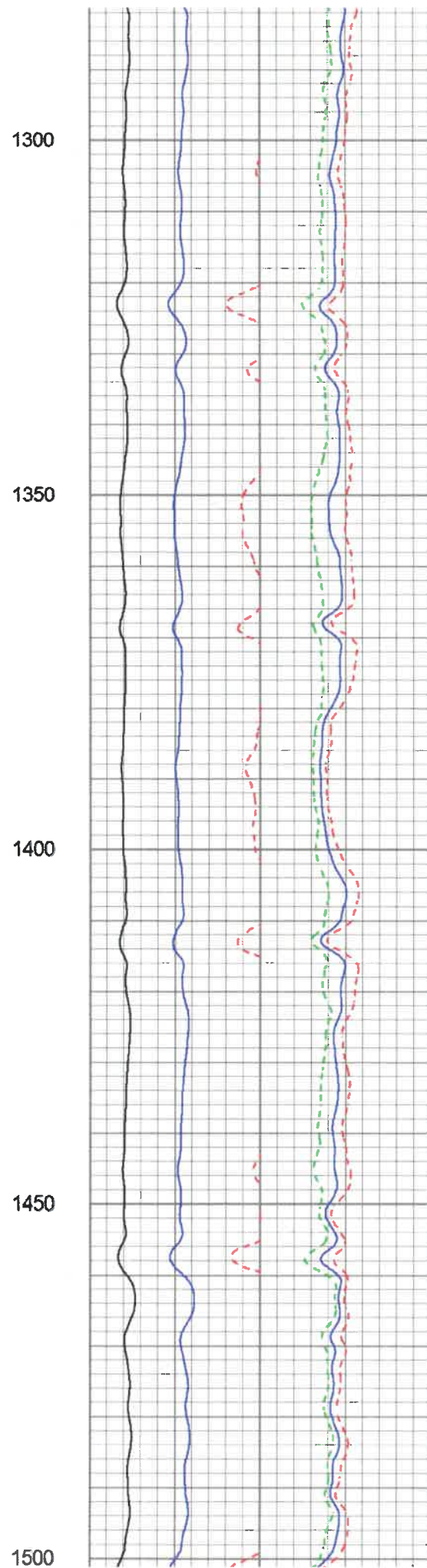
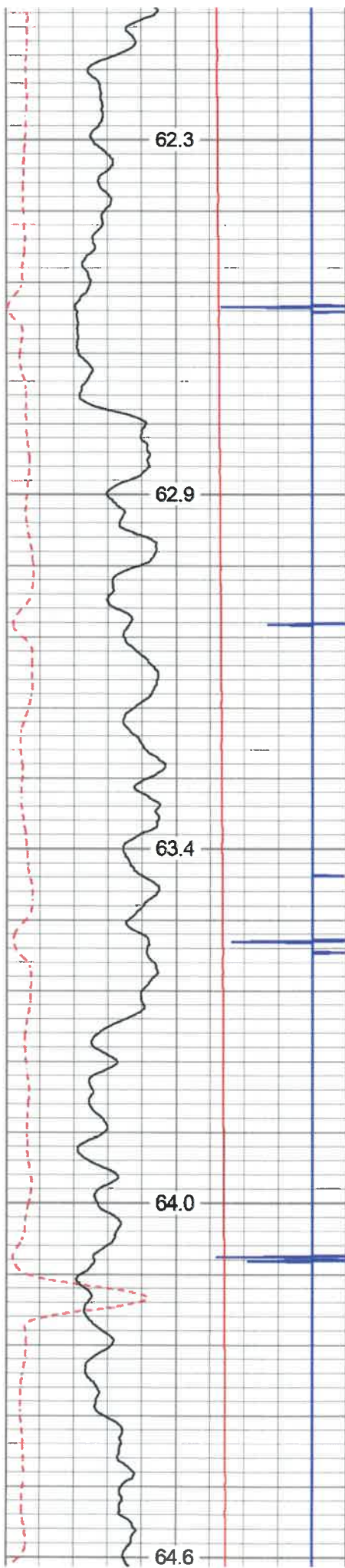
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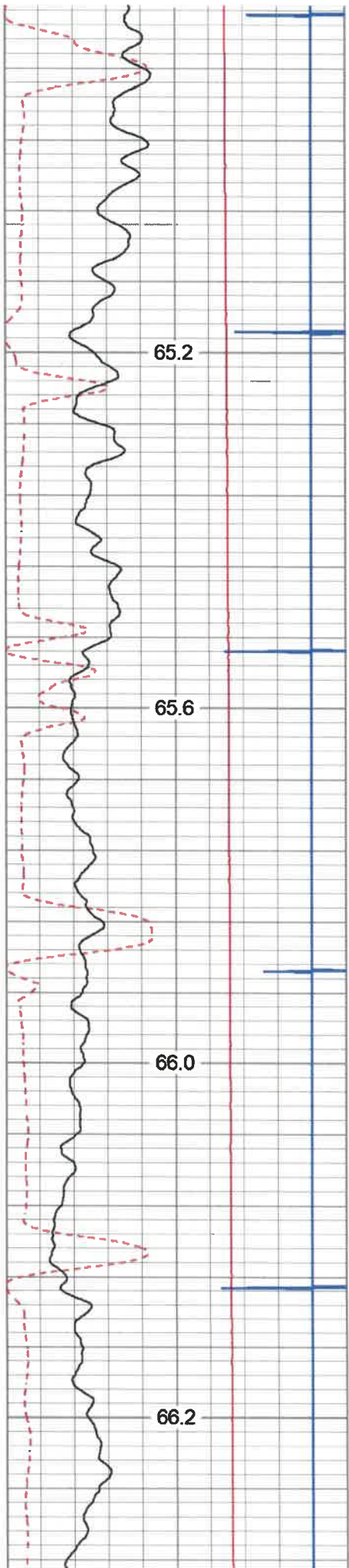
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1050







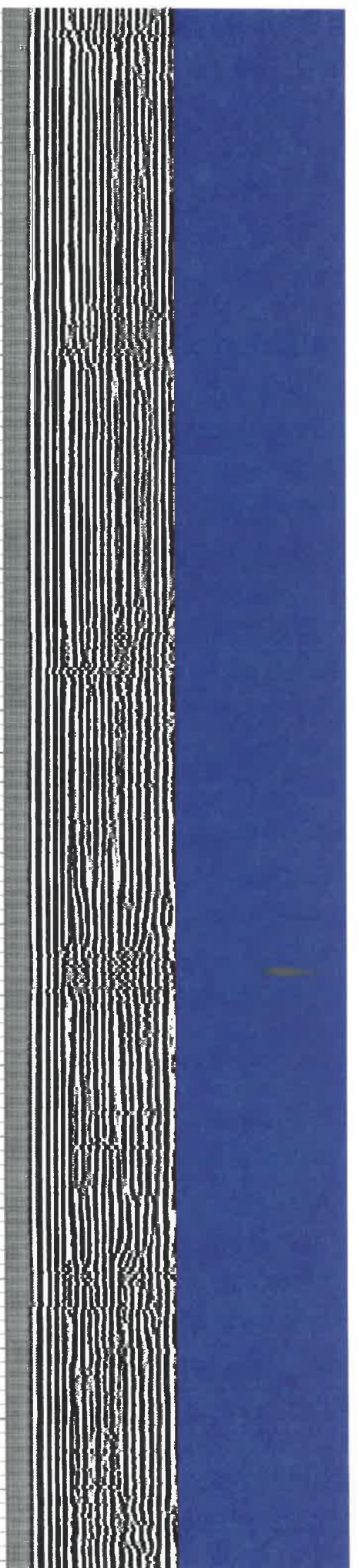
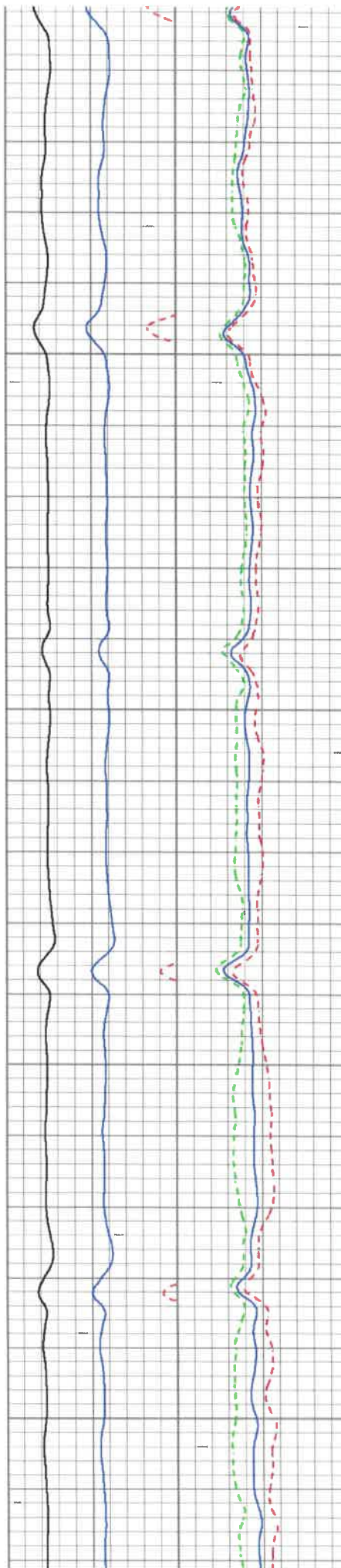


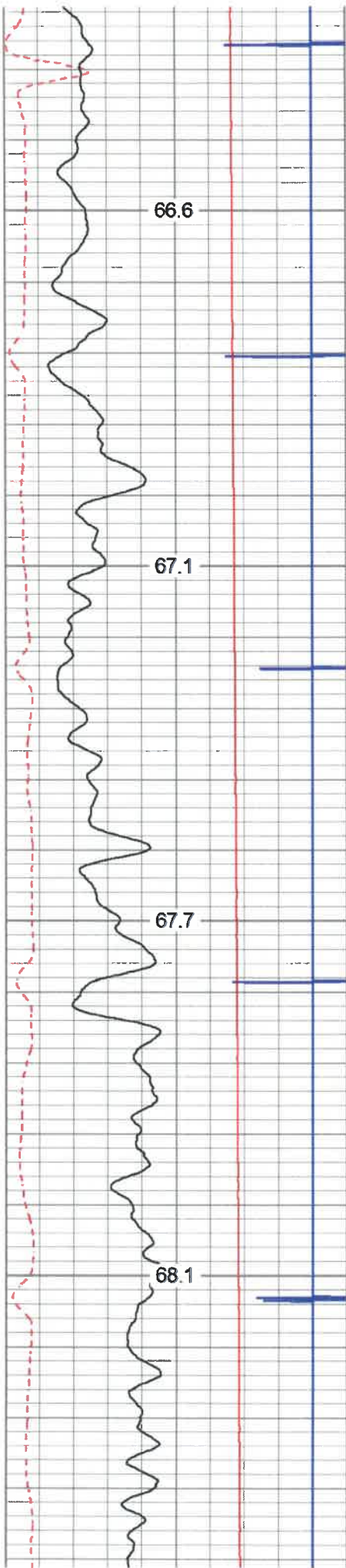
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1600

1650

1700



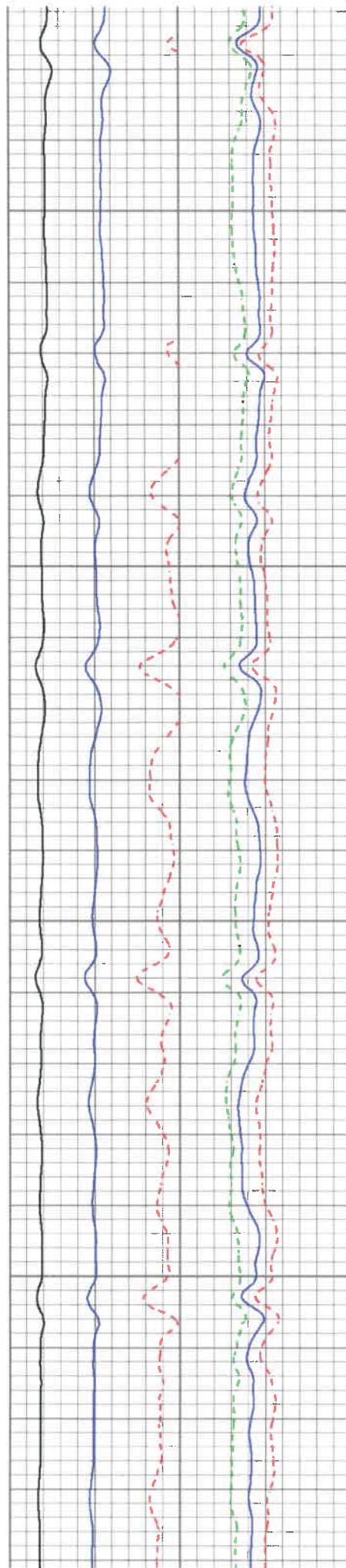


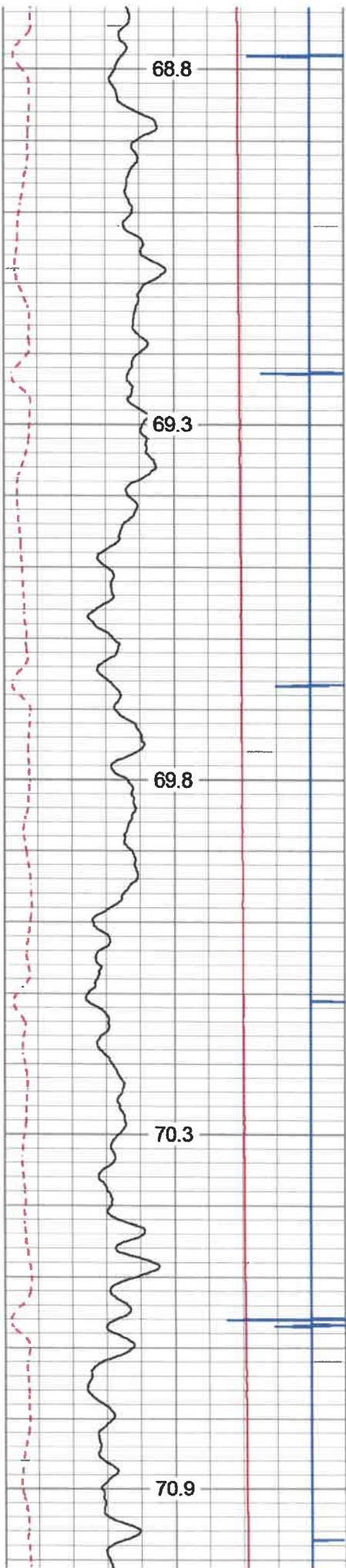
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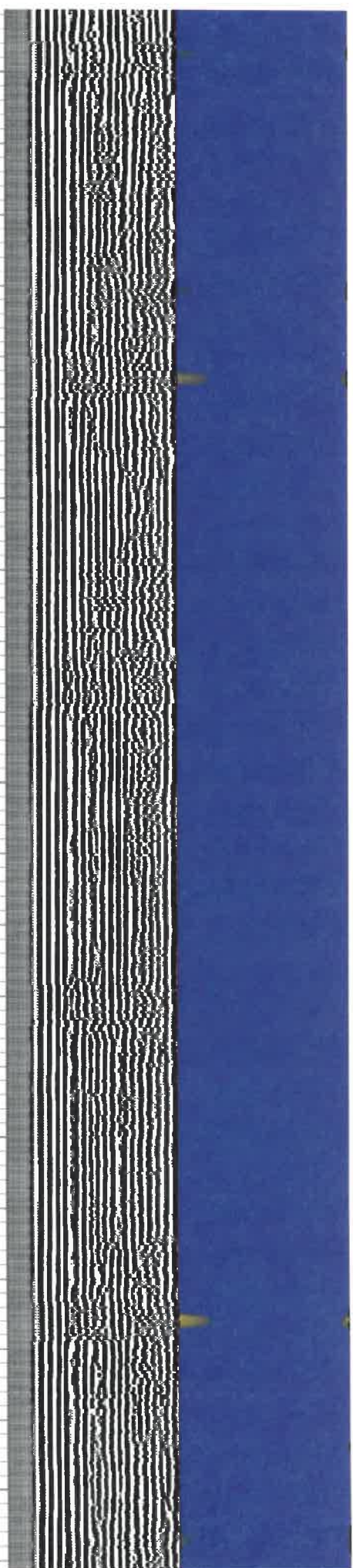
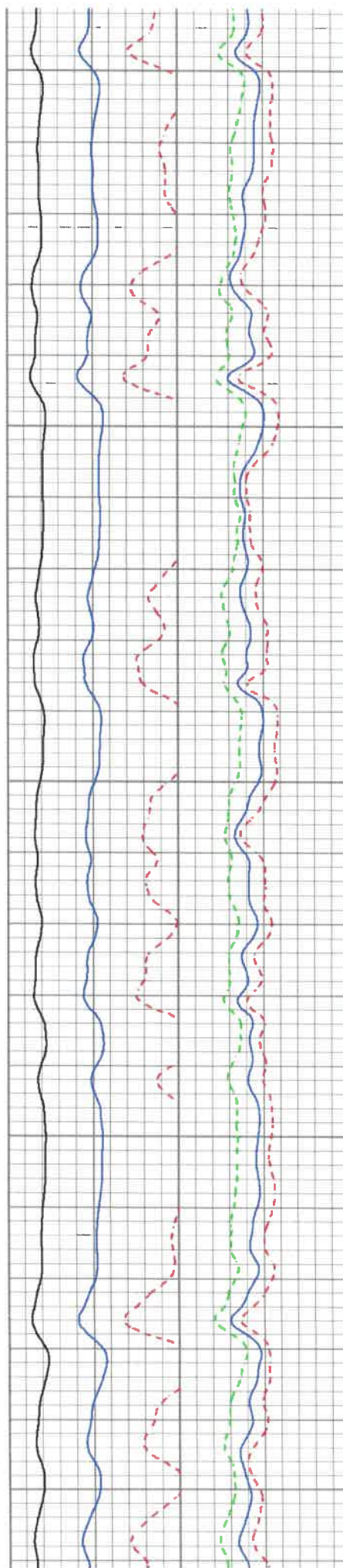
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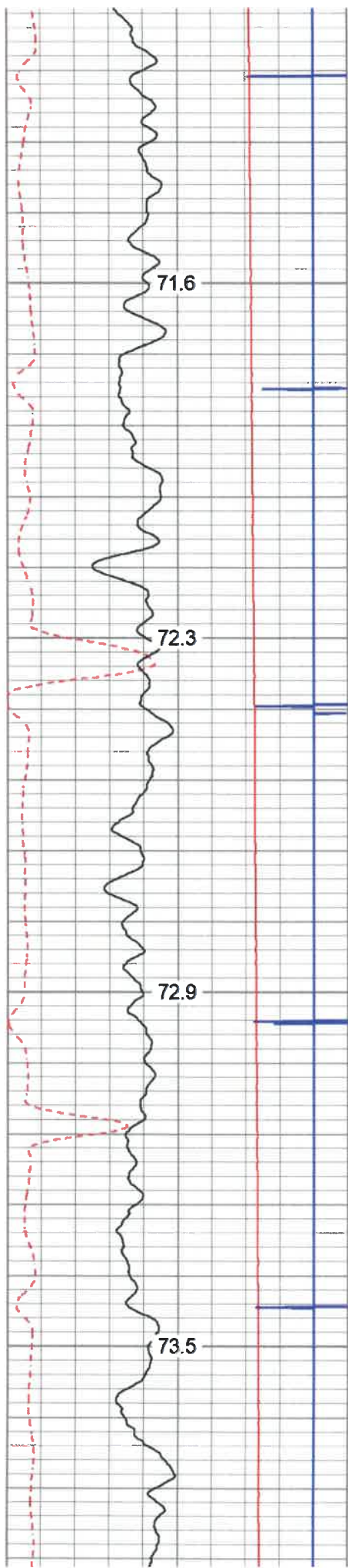
1900





1950
2000
2050
2100
2150



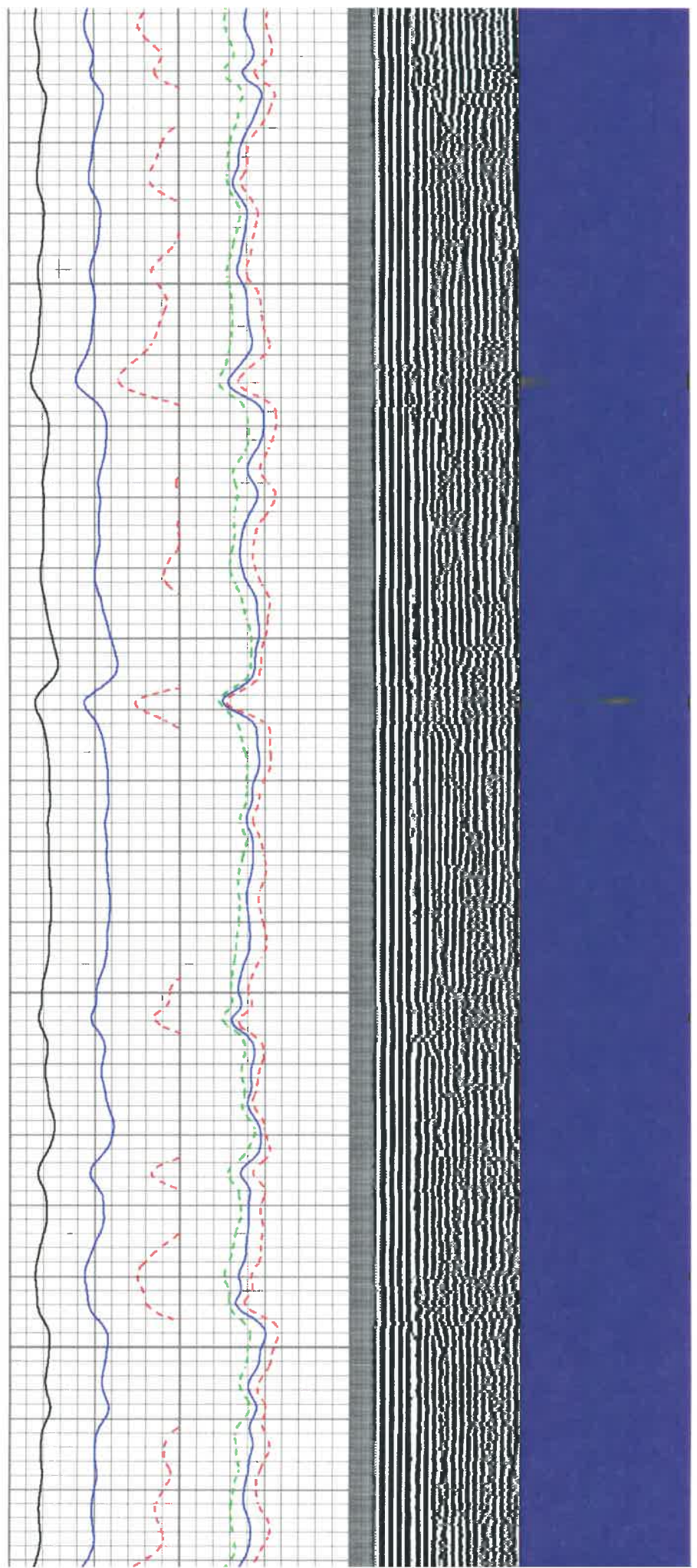


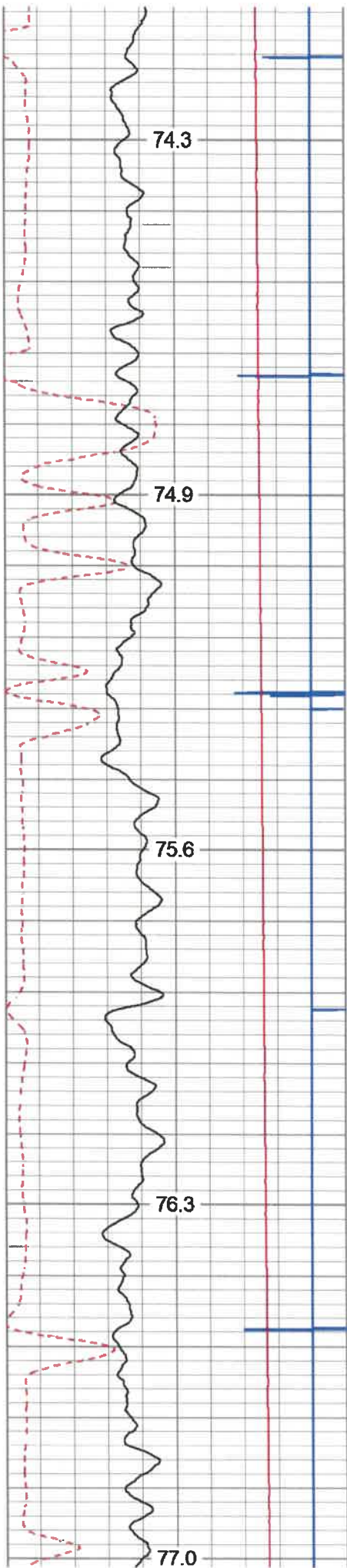
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2250

2300

2350





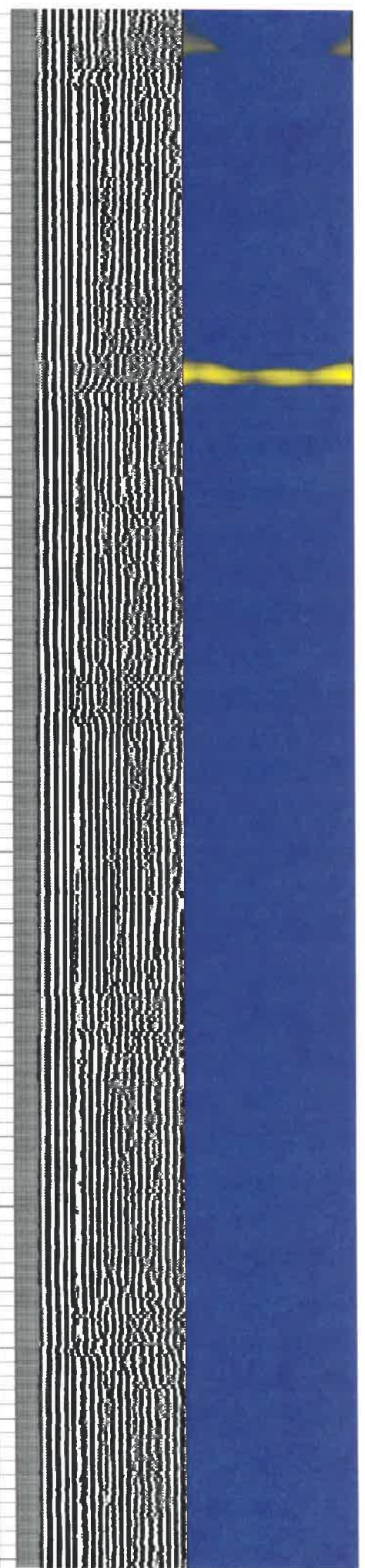
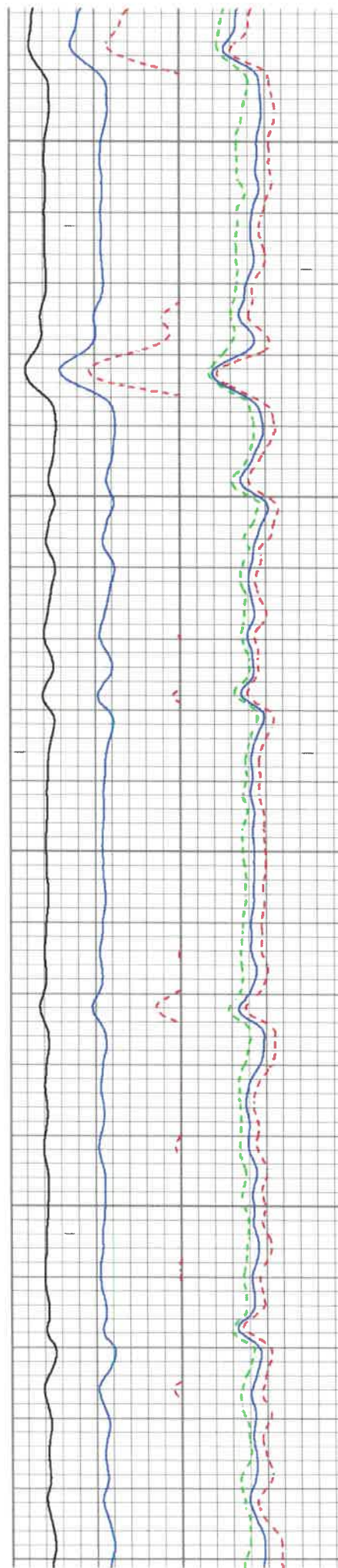
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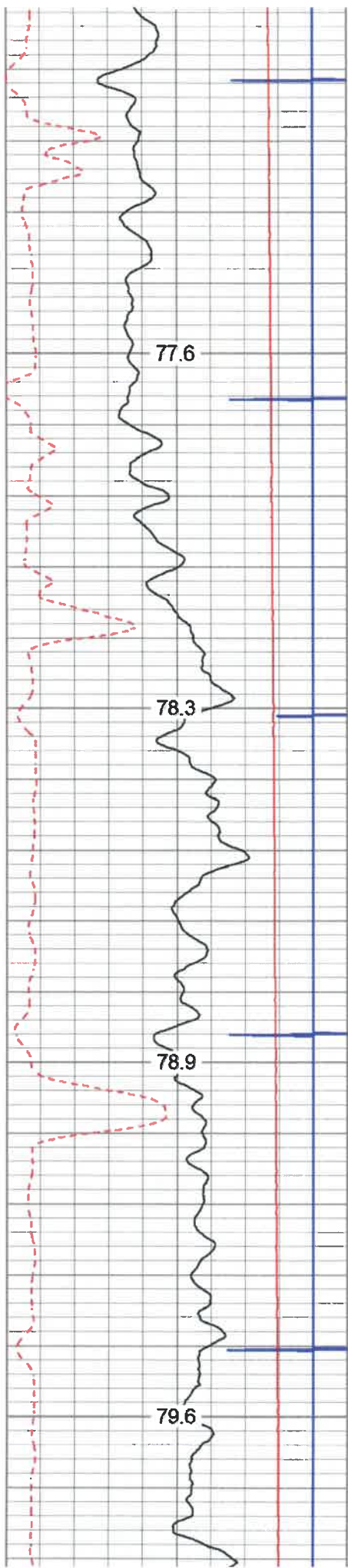
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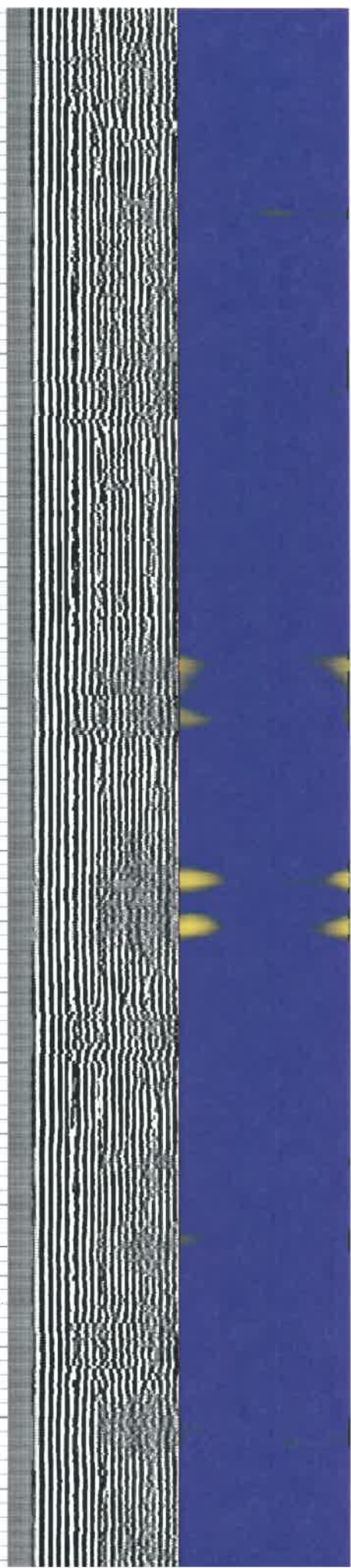
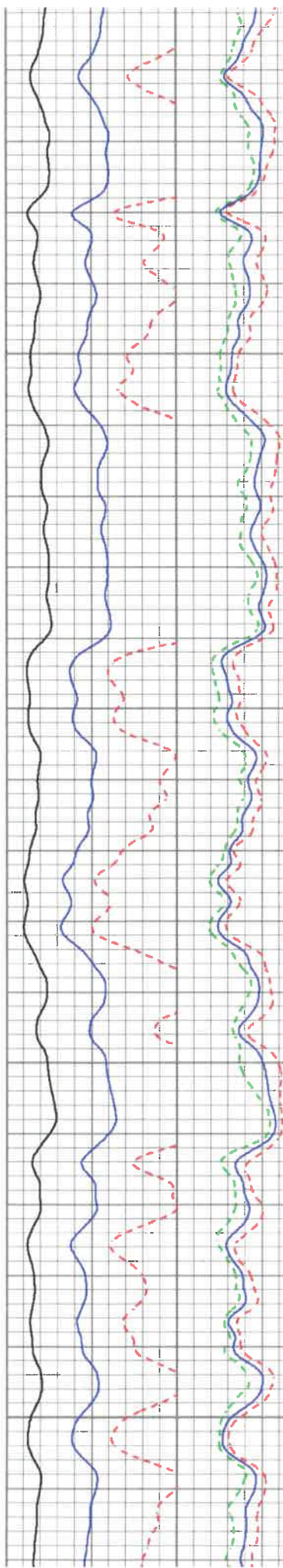
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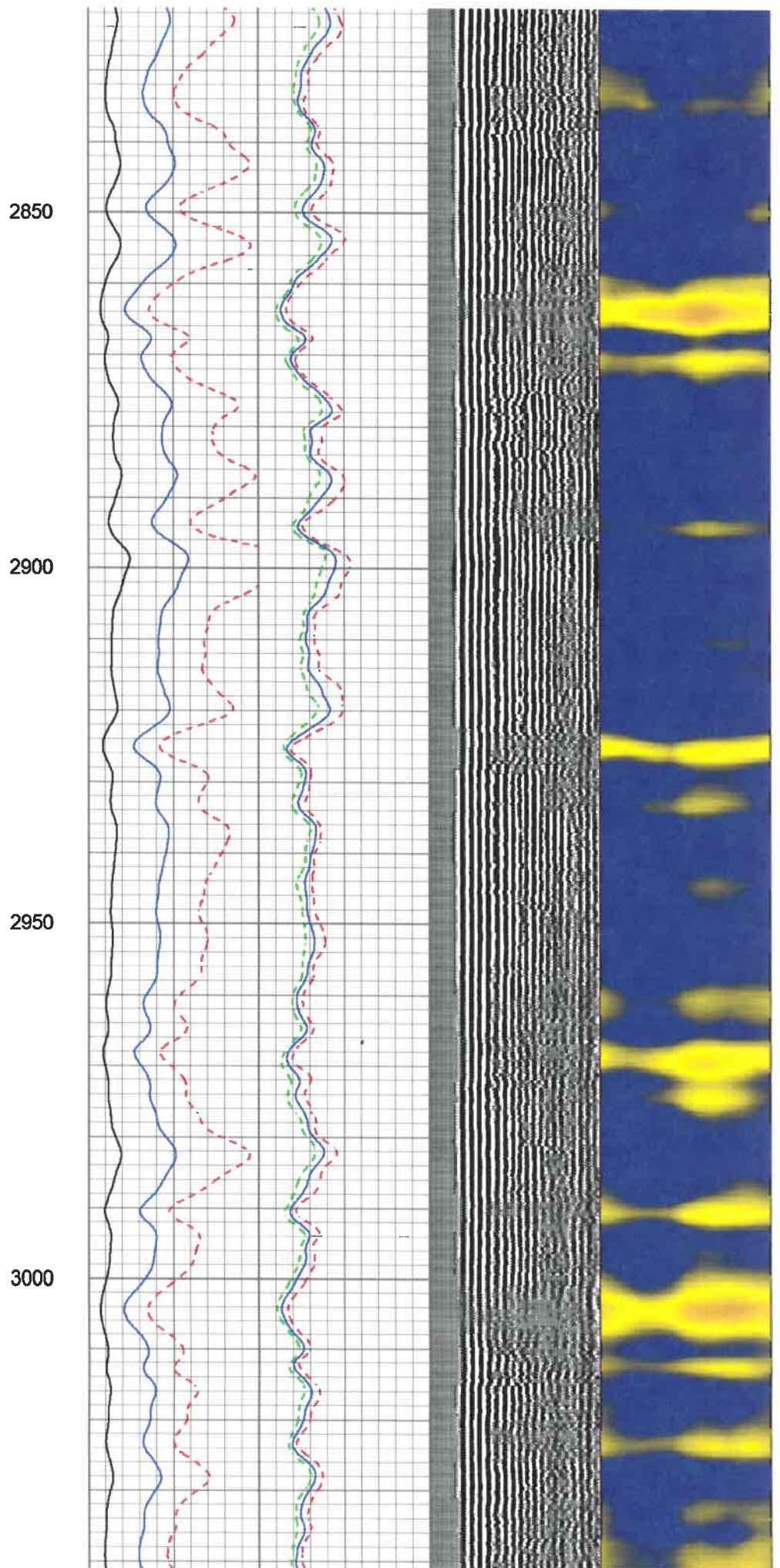
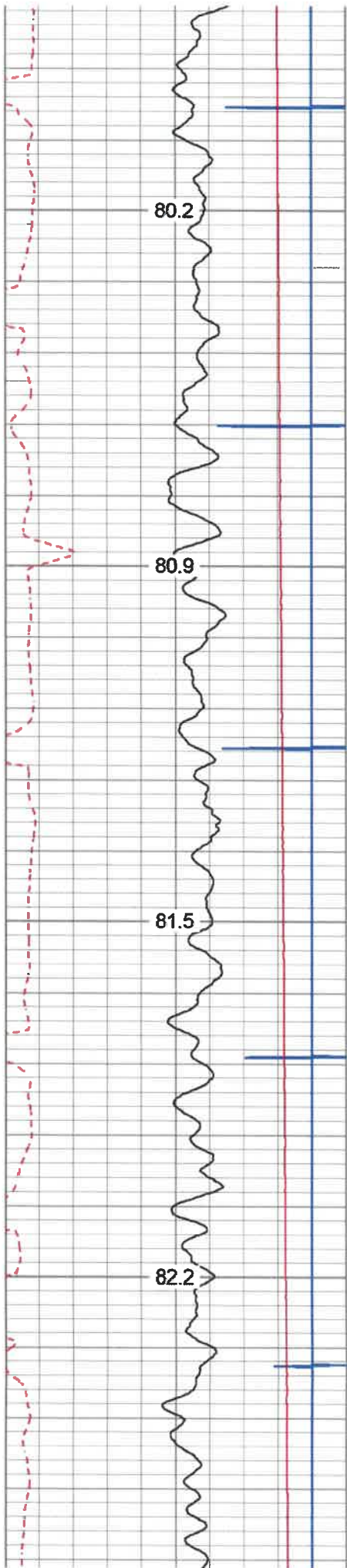
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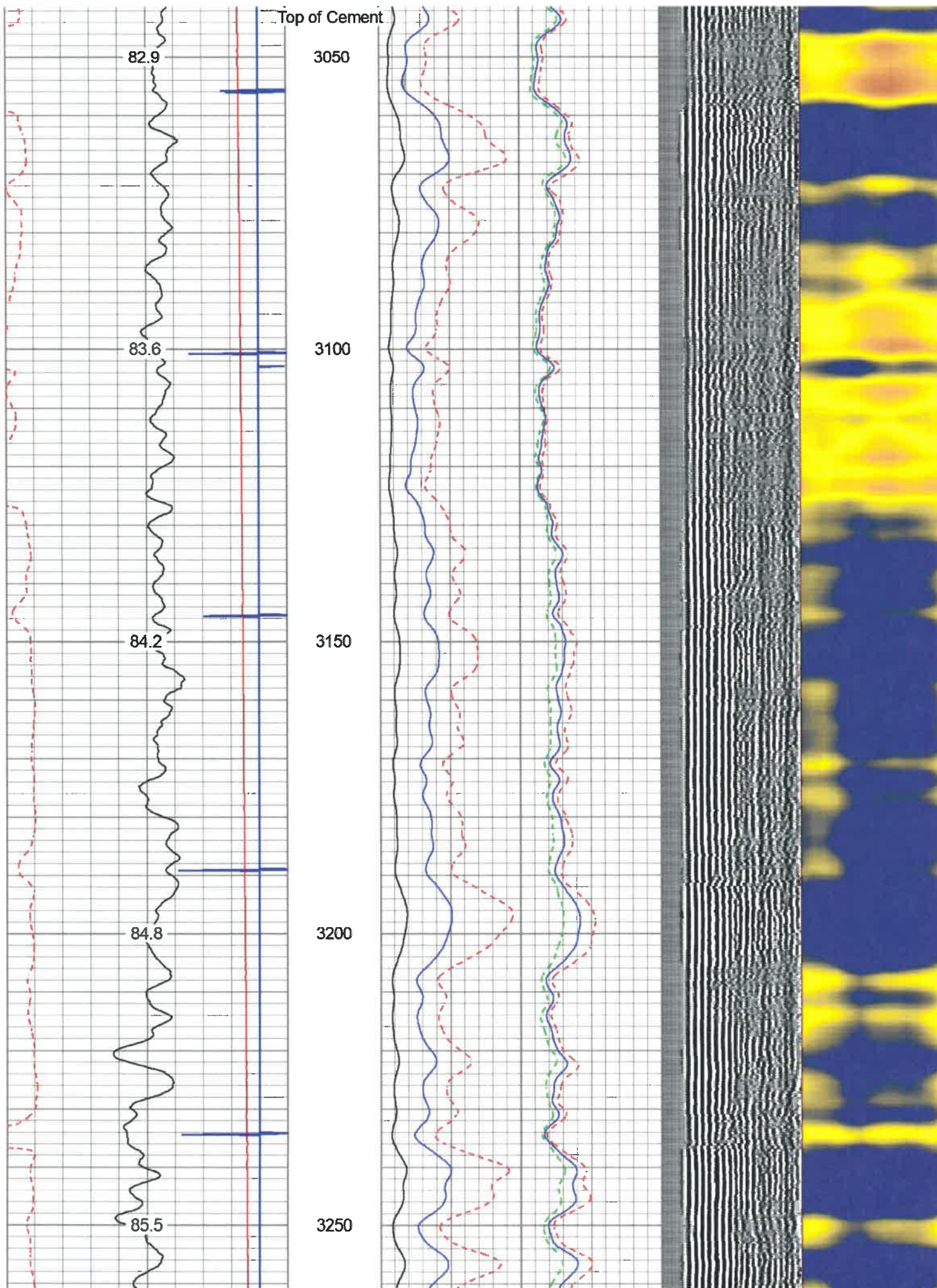


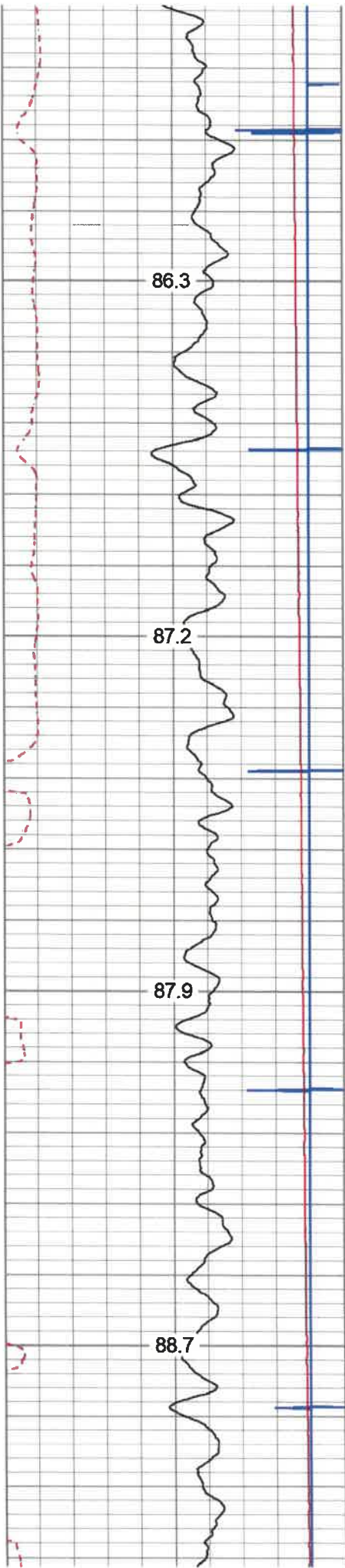


2650
2700
2750
2800







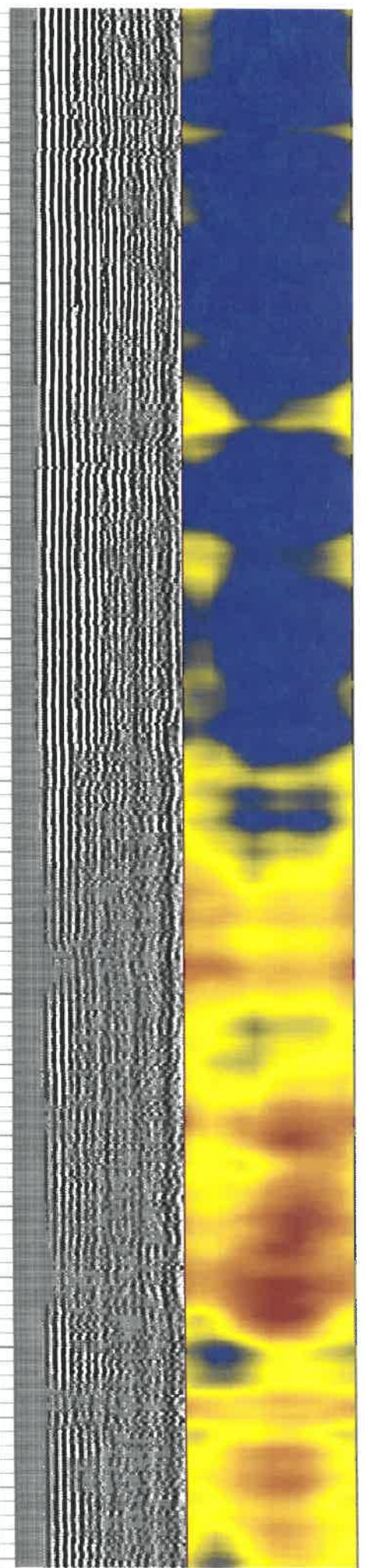
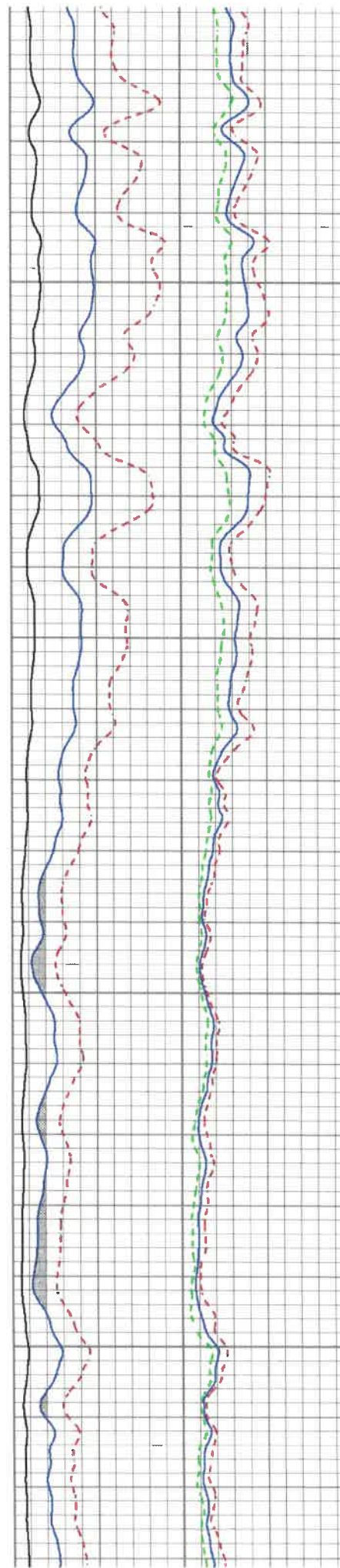


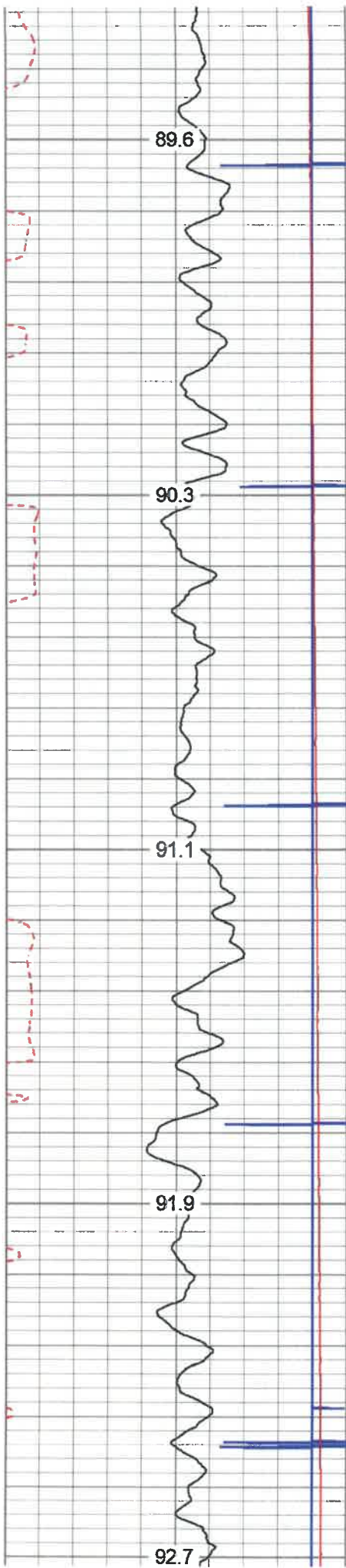
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3350

3400

3450





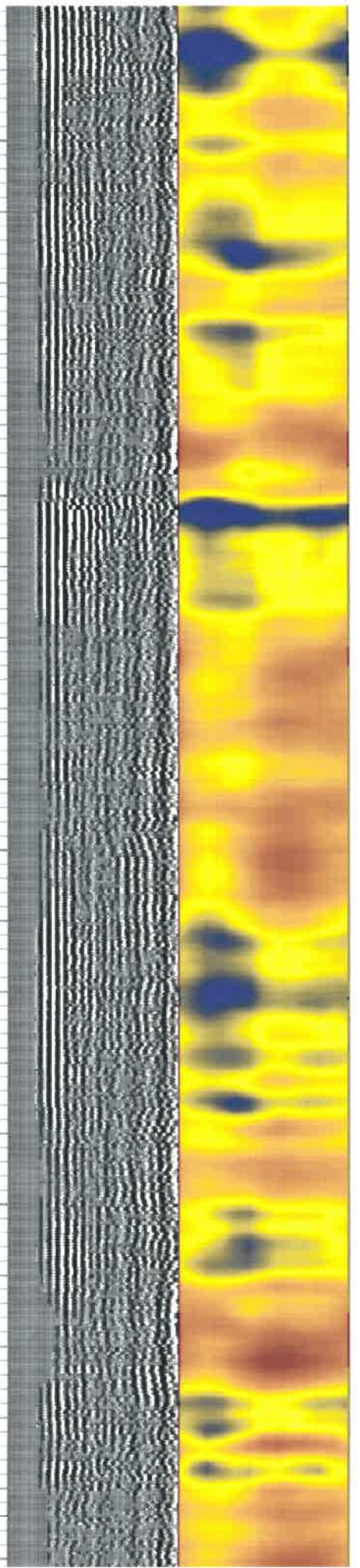
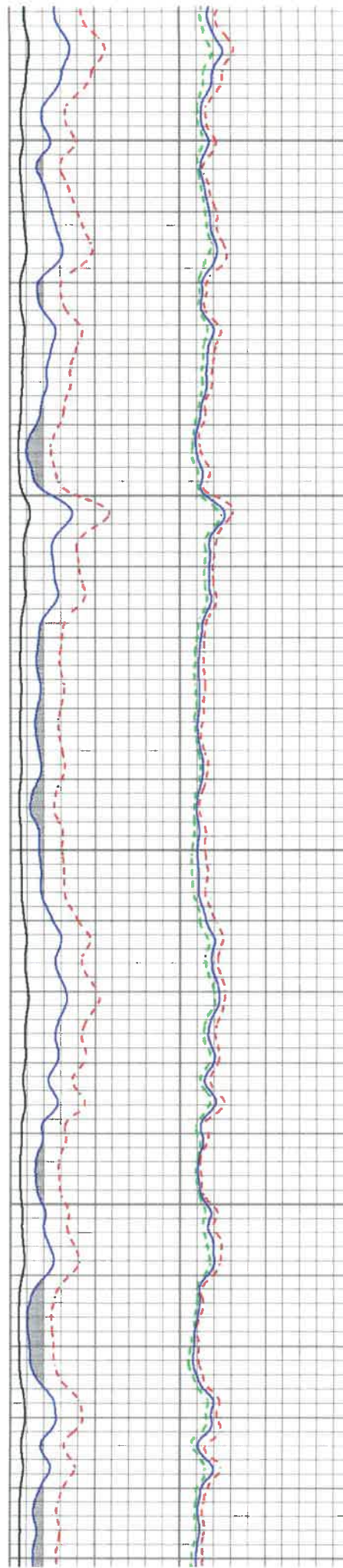
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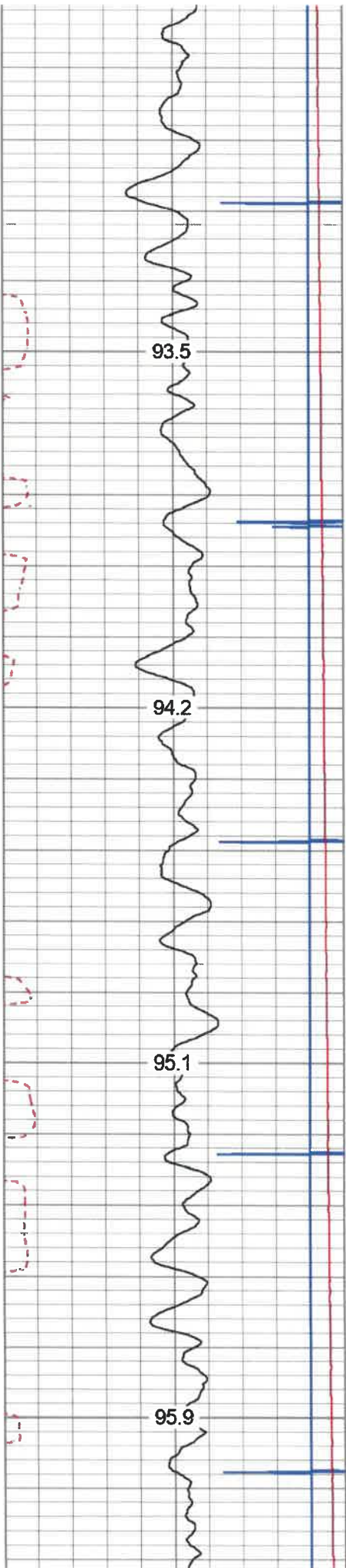
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3600

3650

3700



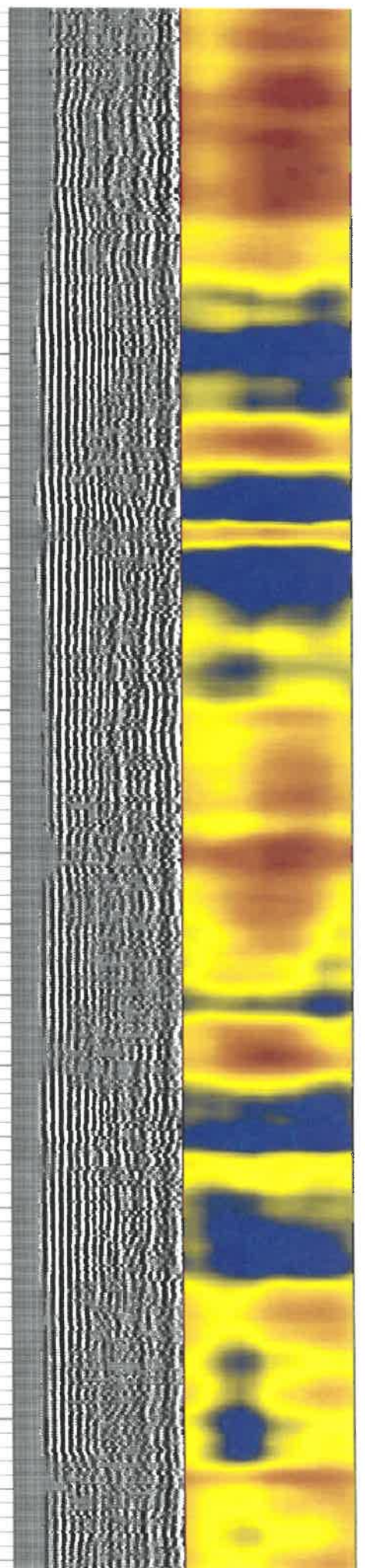
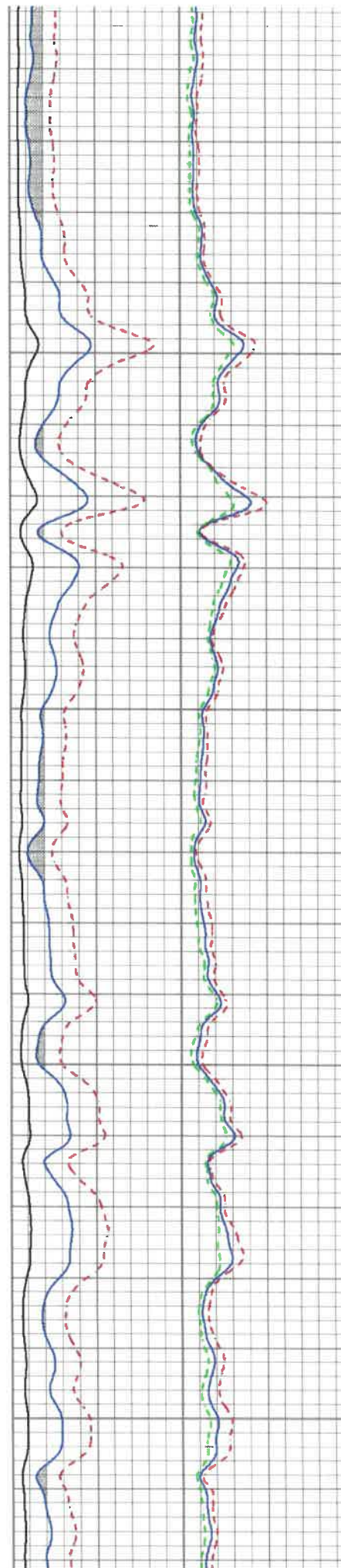


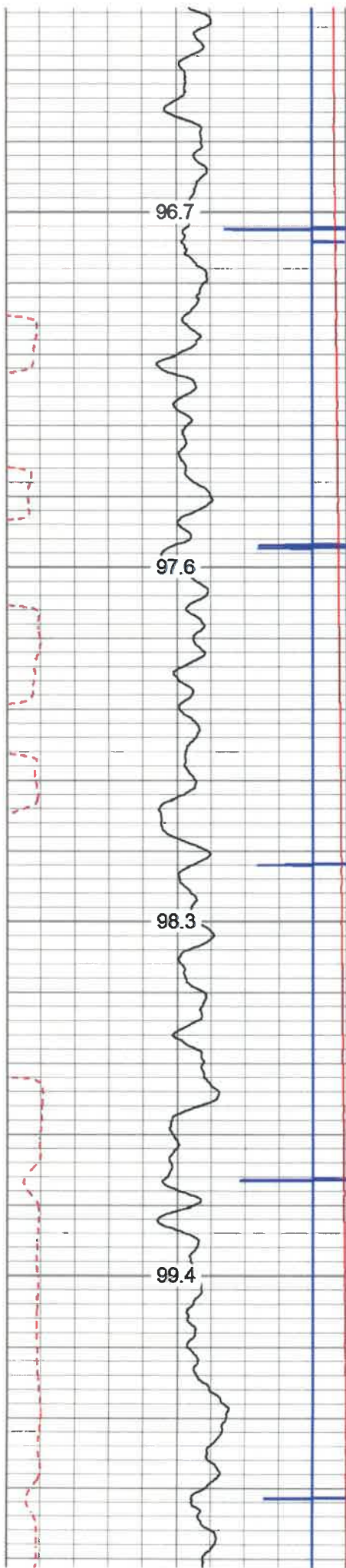
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3800

3850

3900



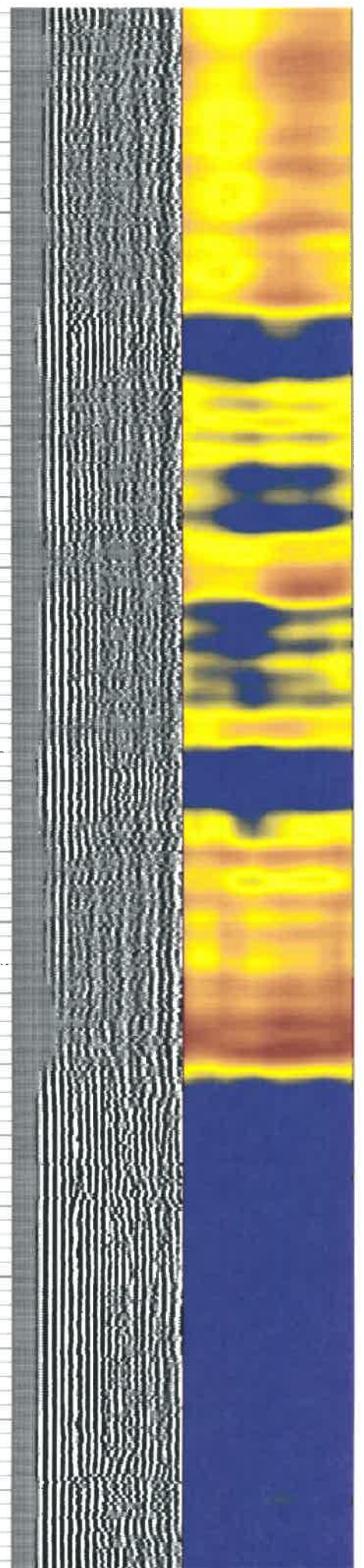
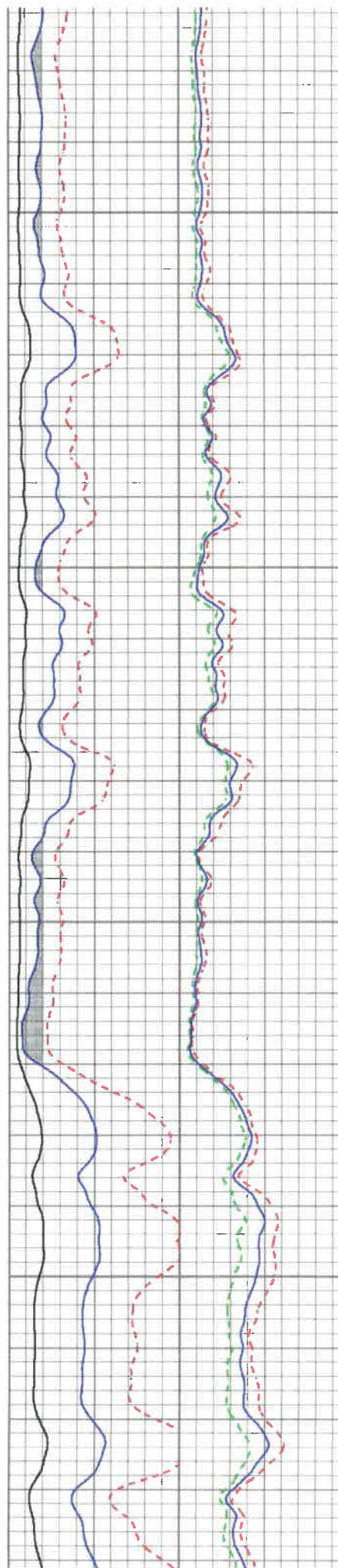


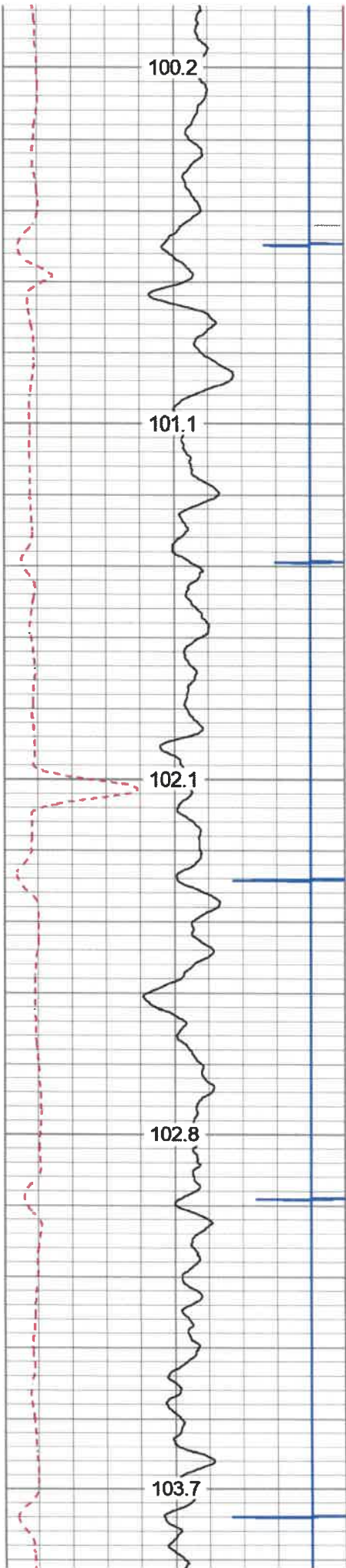
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4000

4050

4100





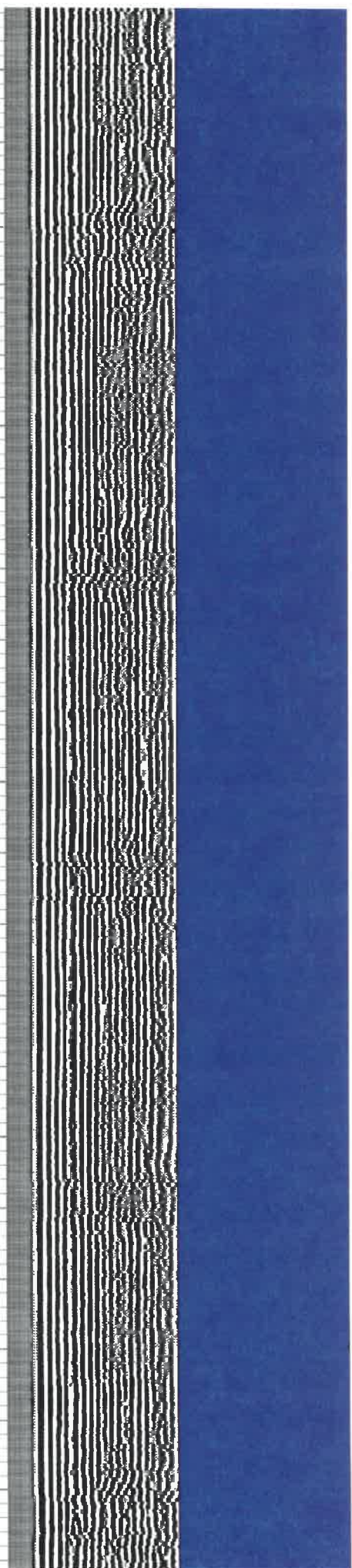
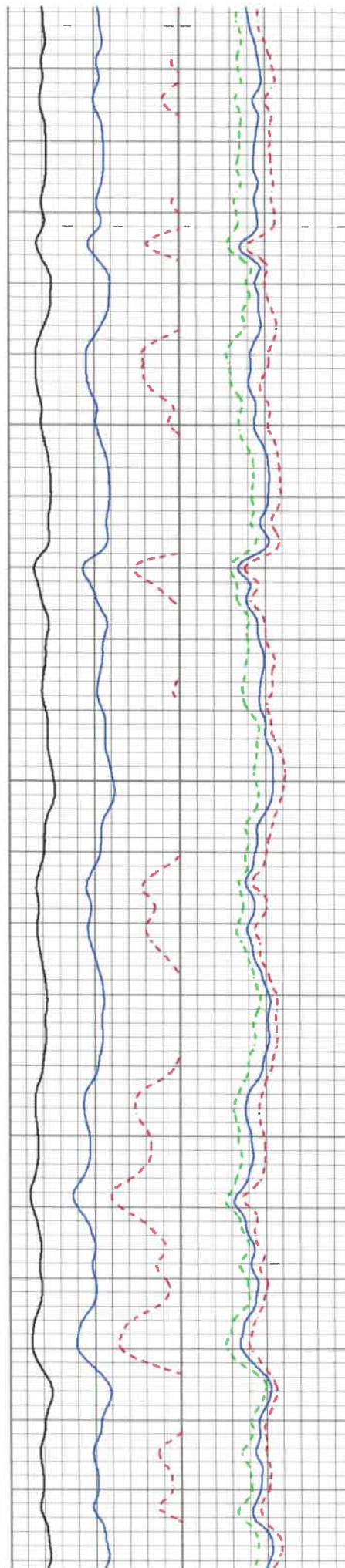
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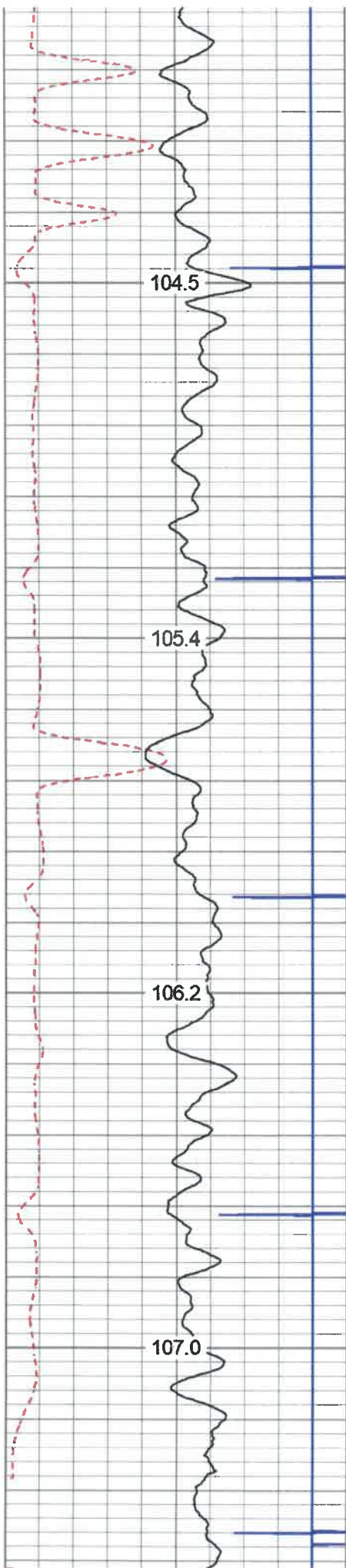
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4250

4300

4350



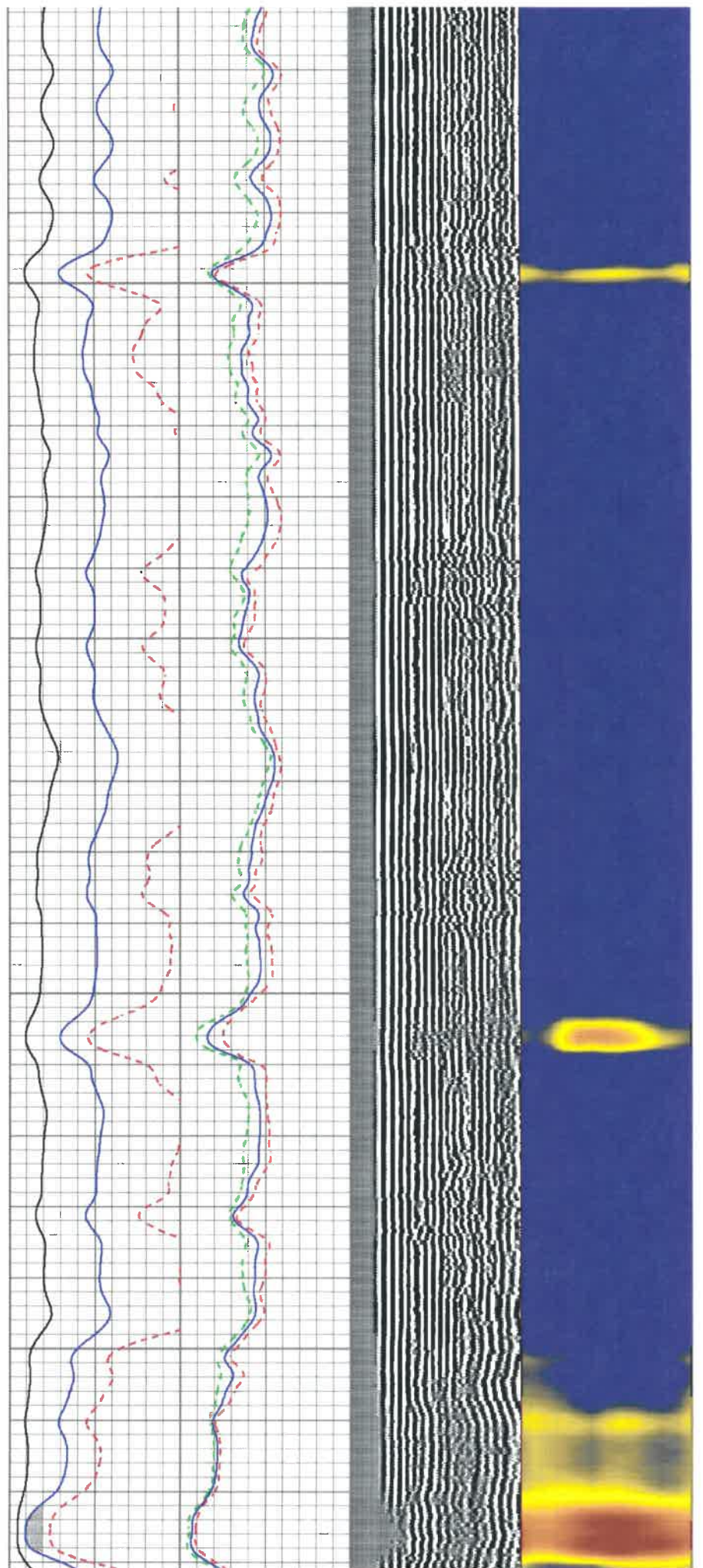


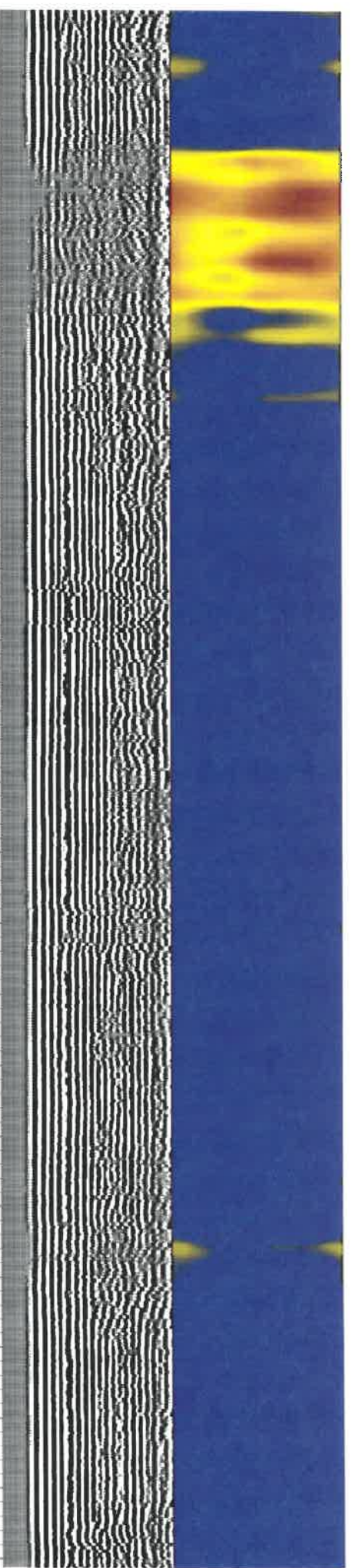
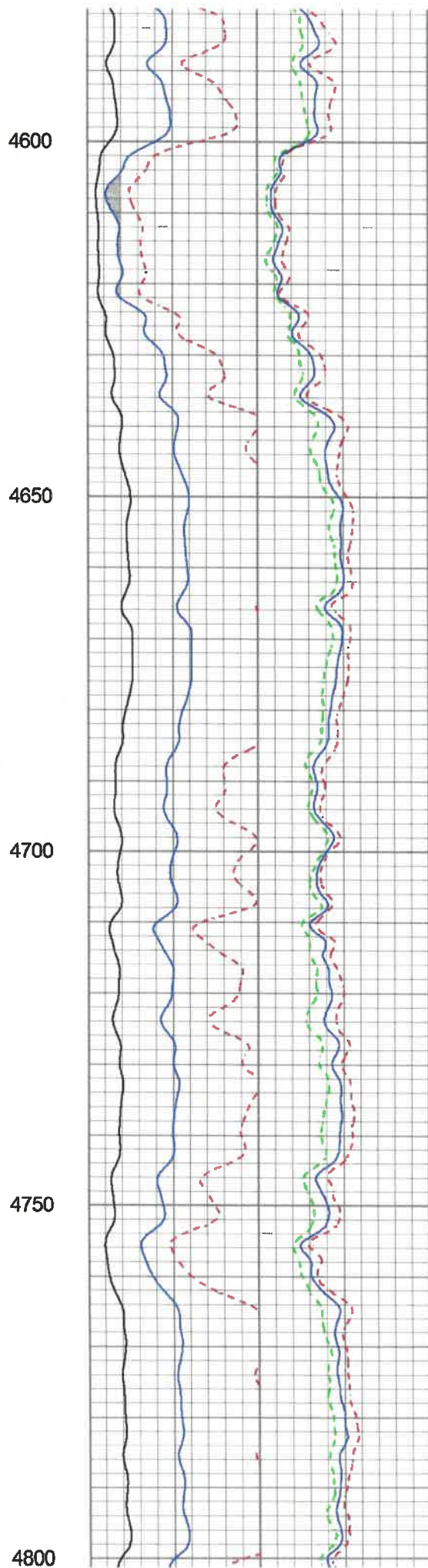
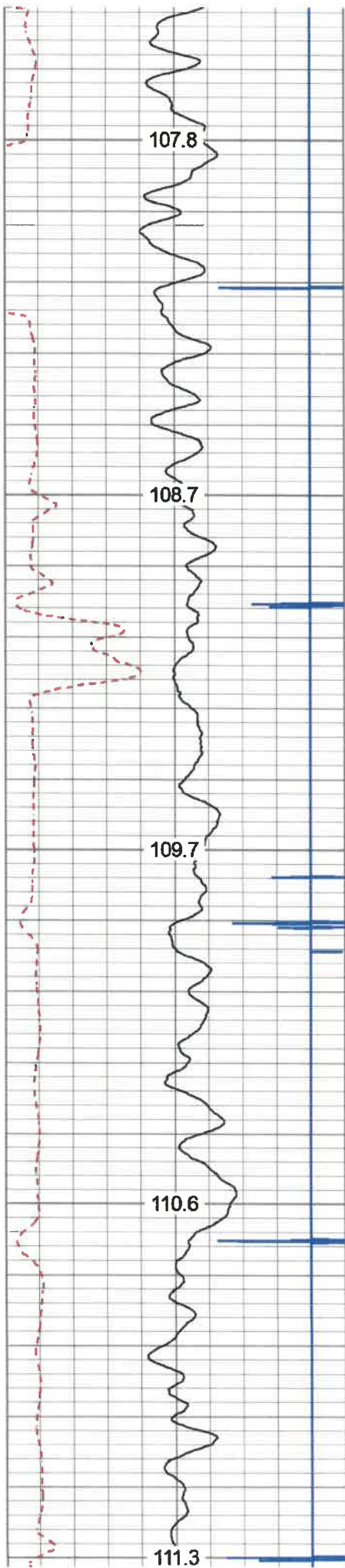
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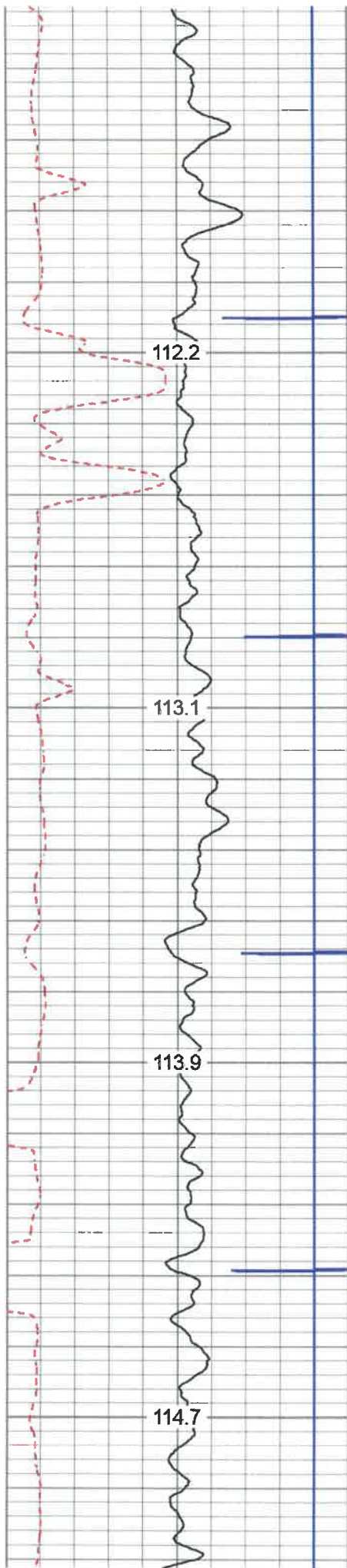
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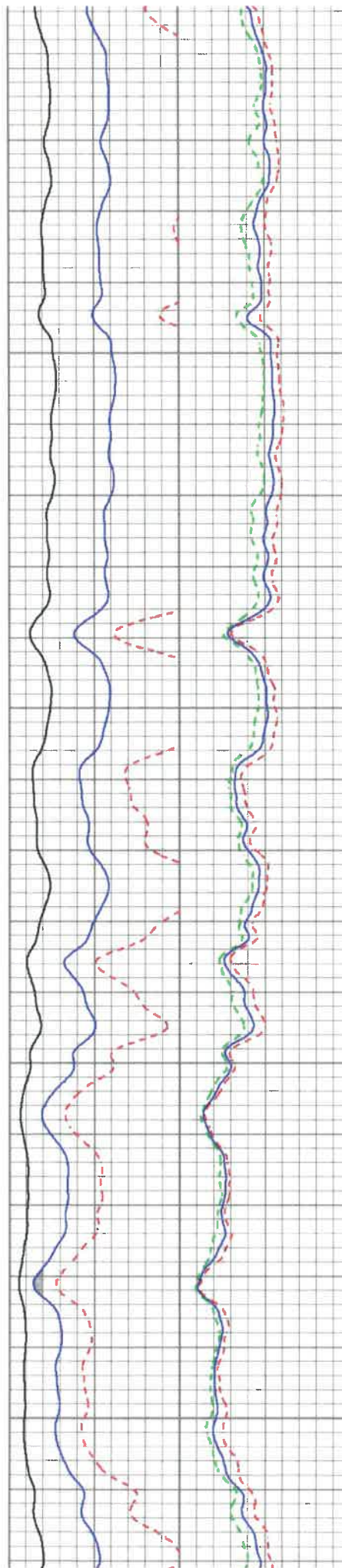


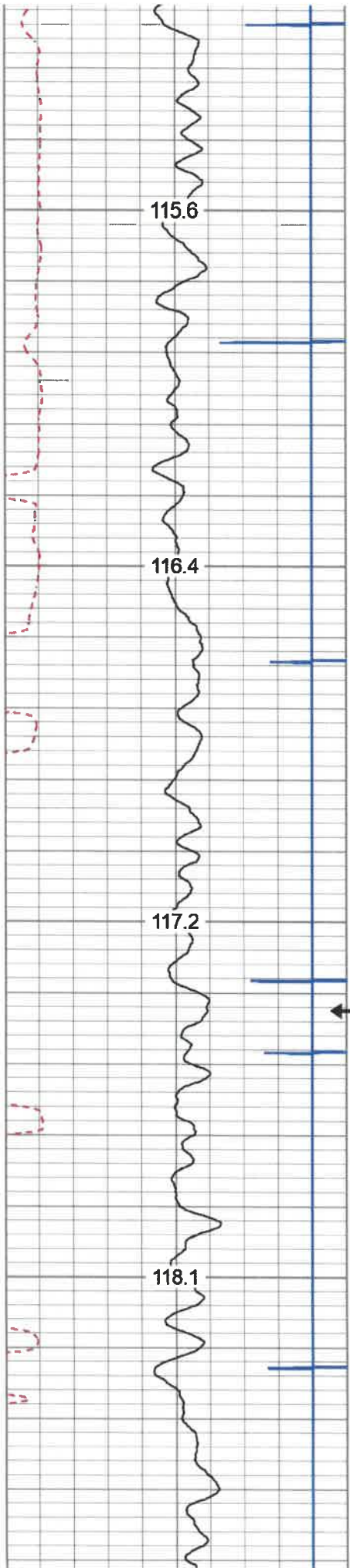
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4900

4950

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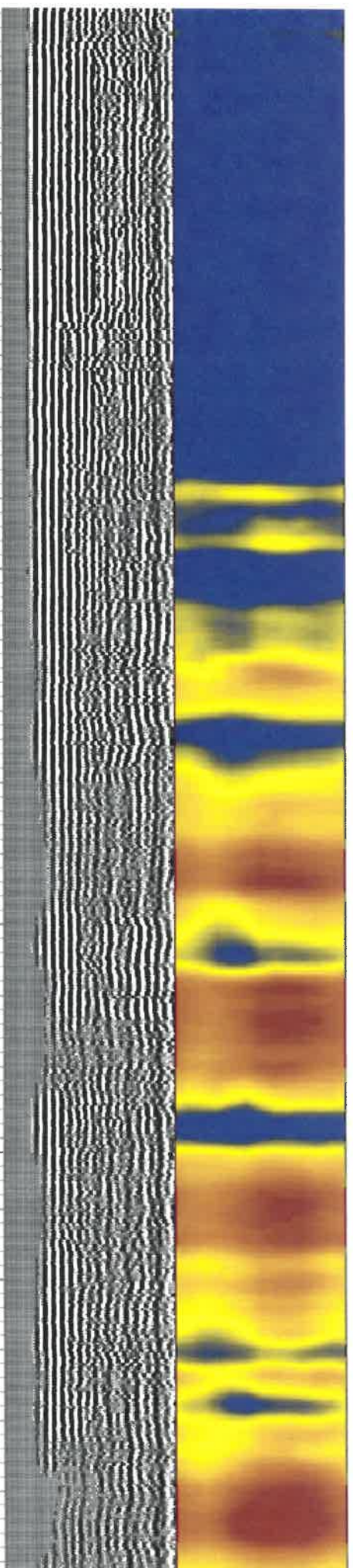
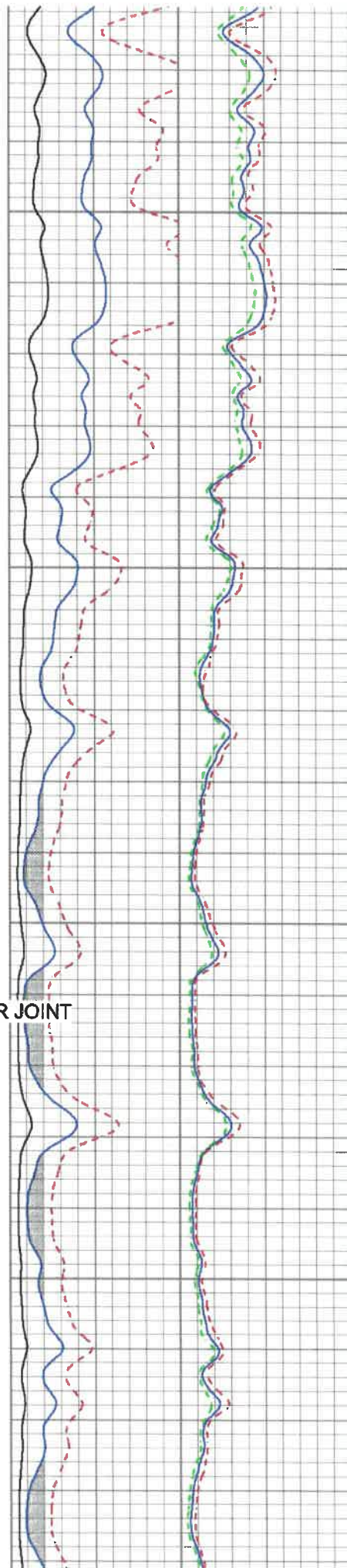
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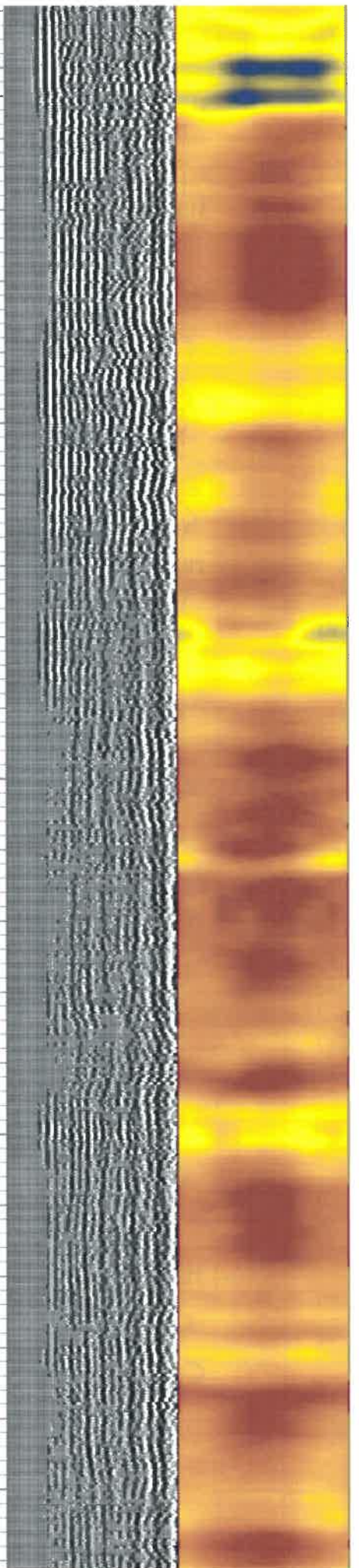
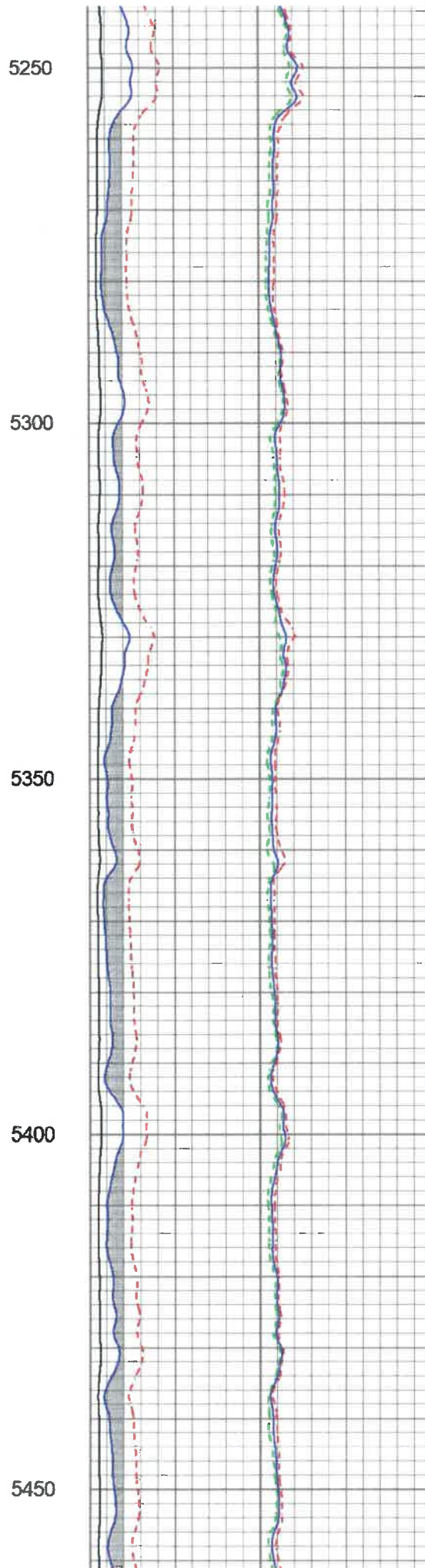
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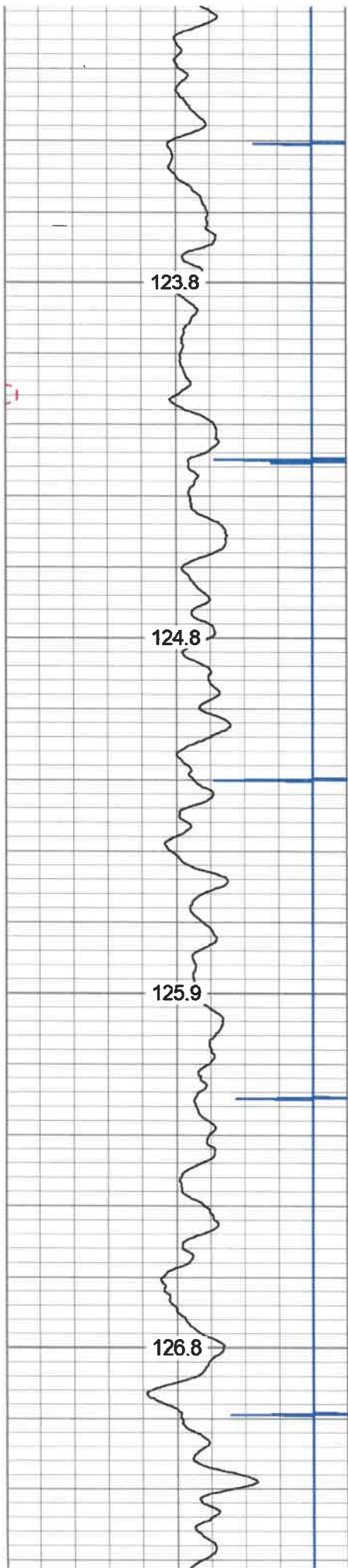
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← MARKER JOINT

5200





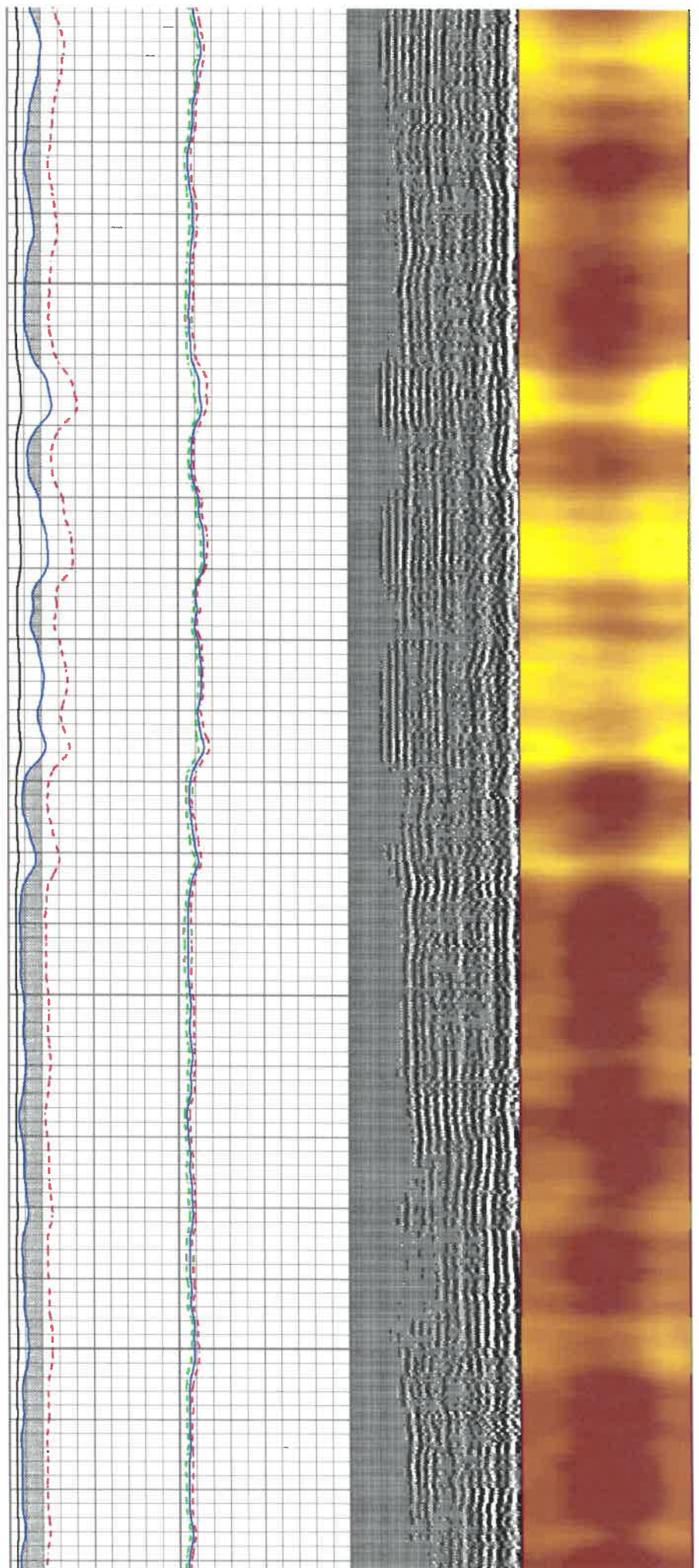


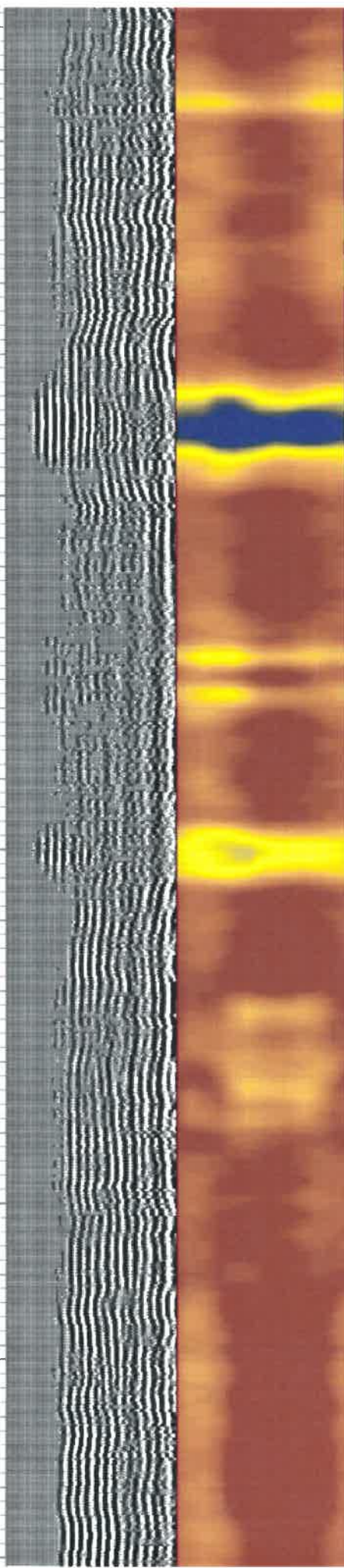
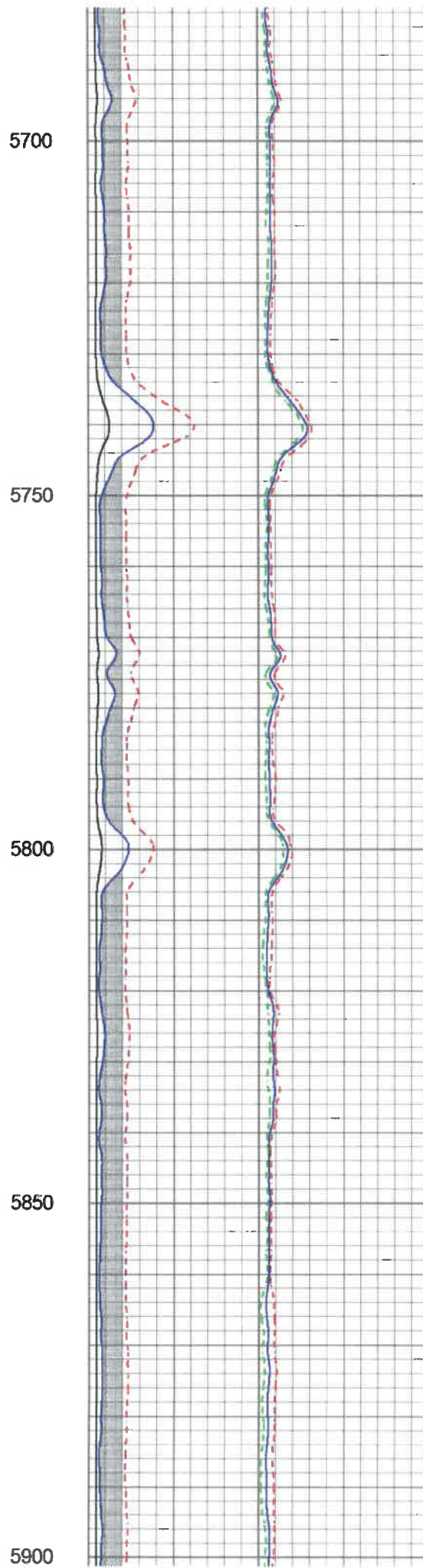
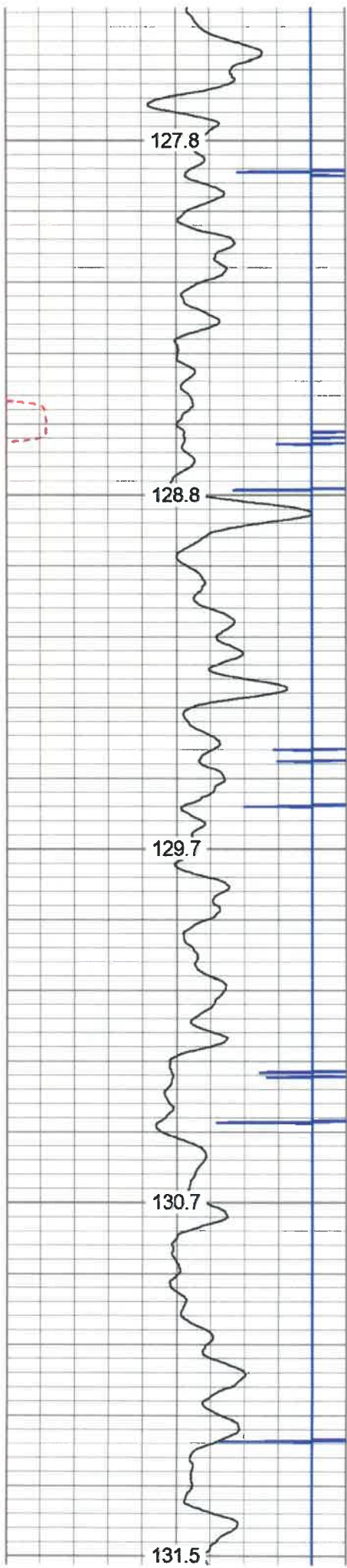
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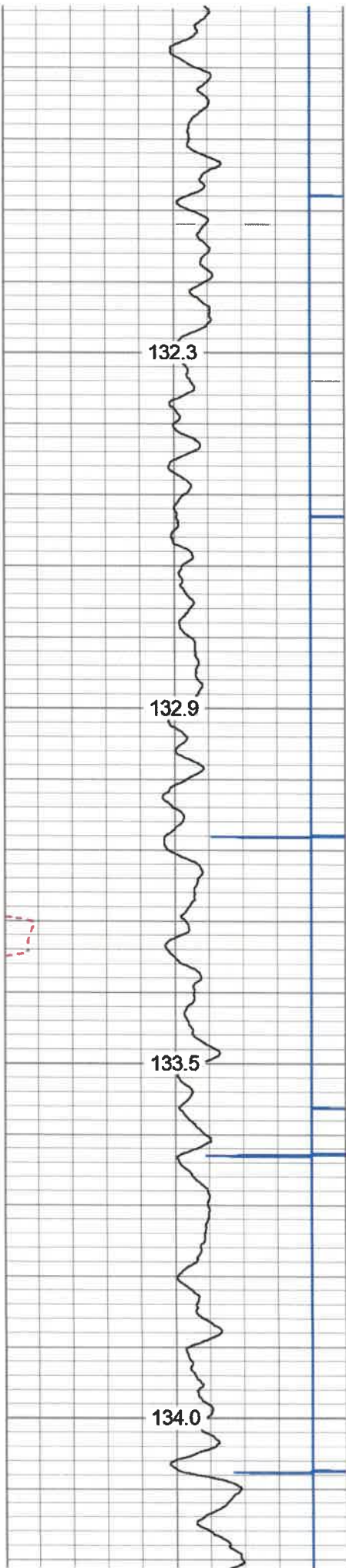
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5600

5650





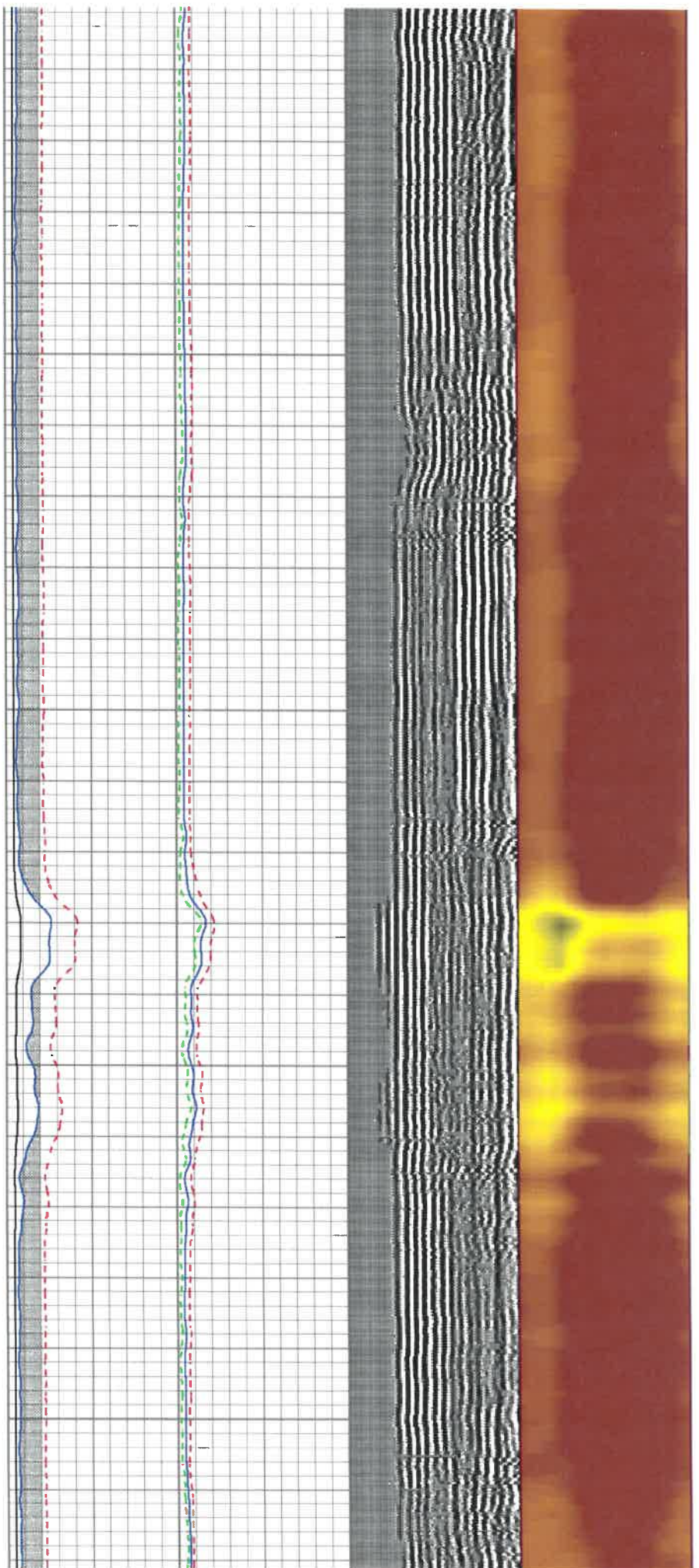


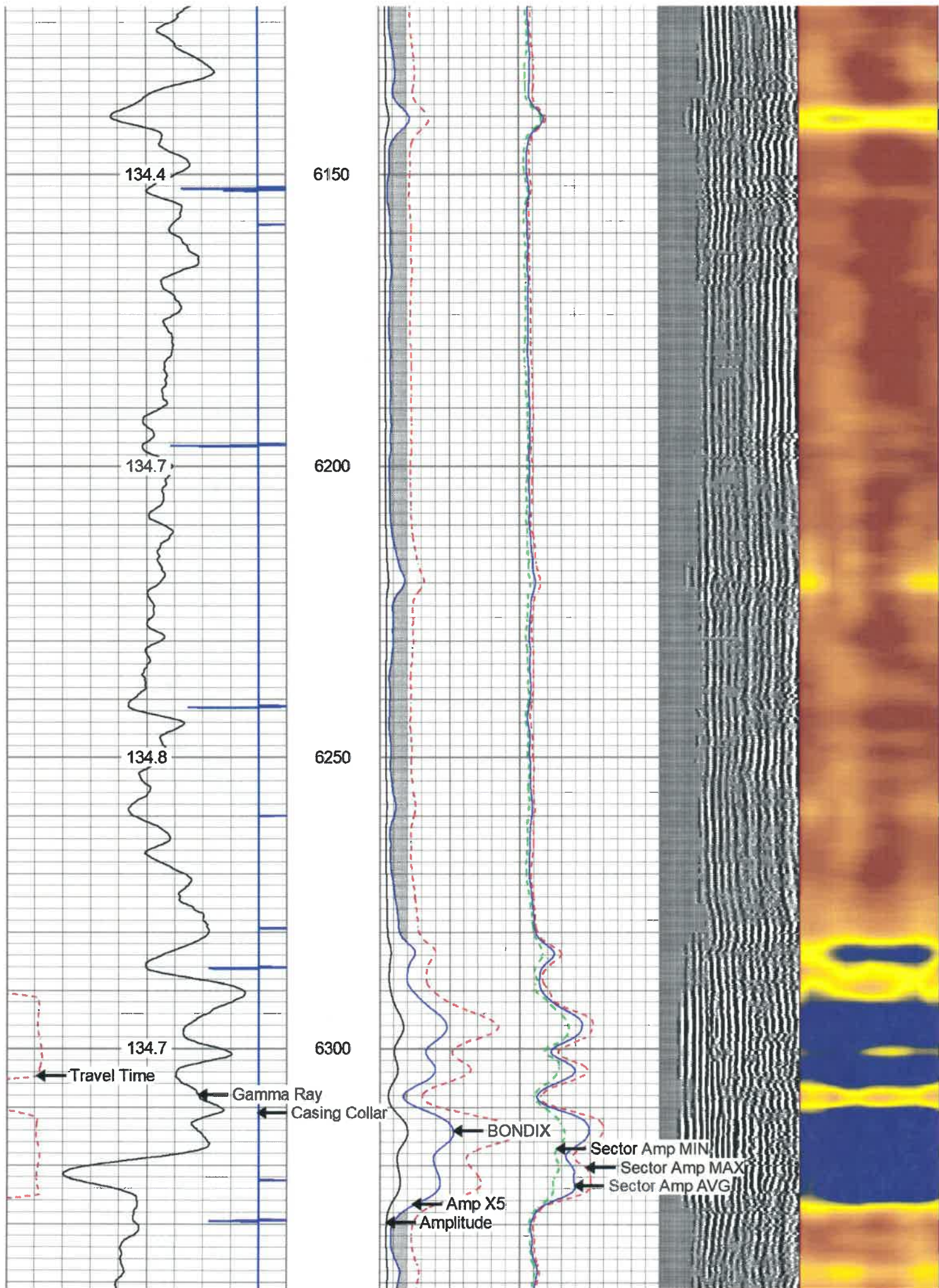
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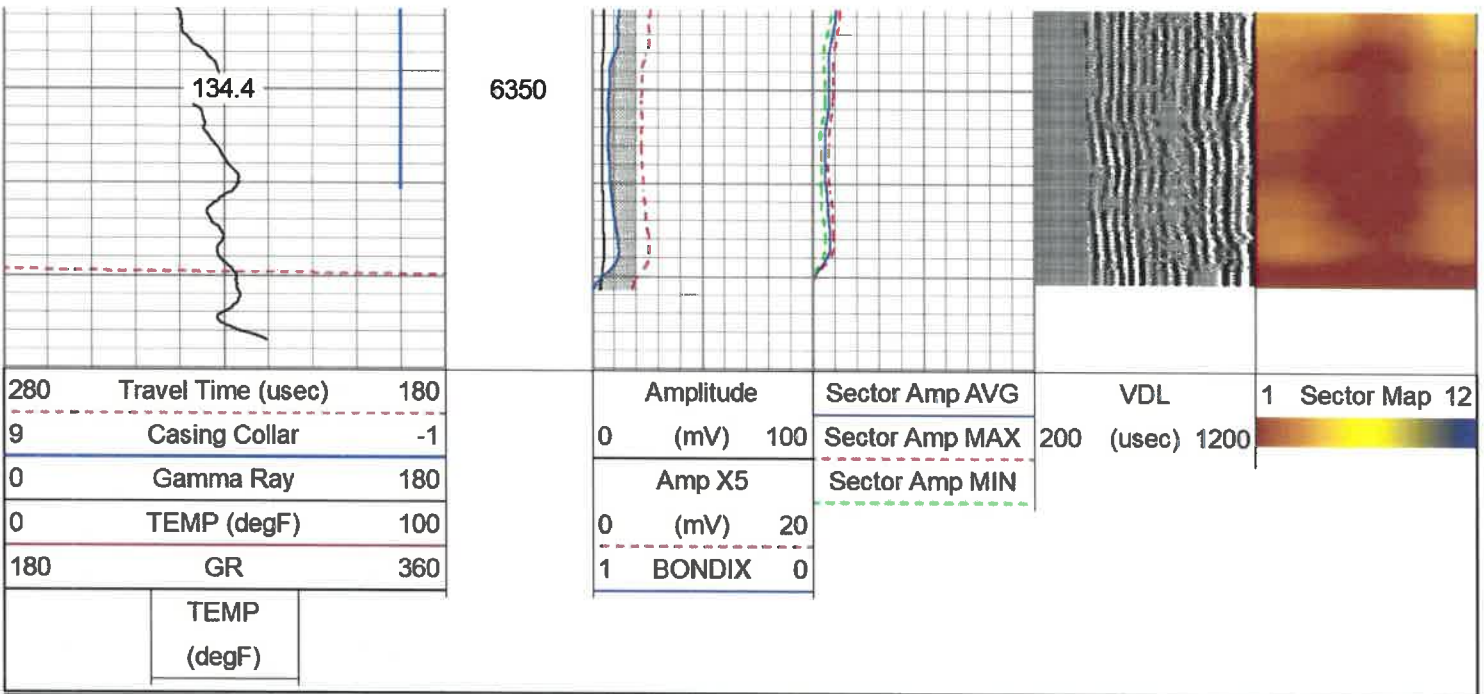
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6050

6100





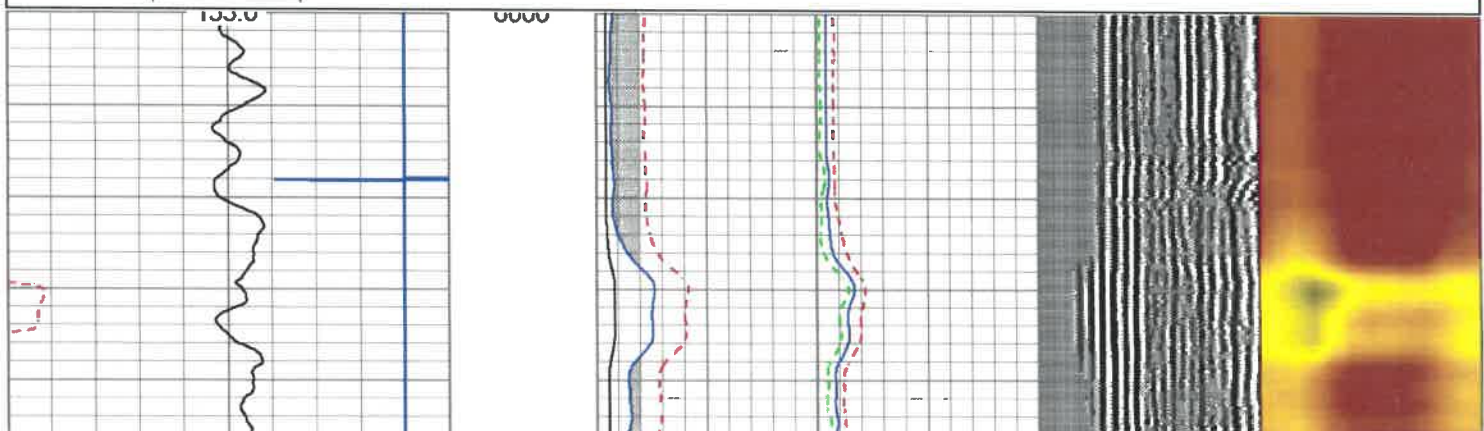
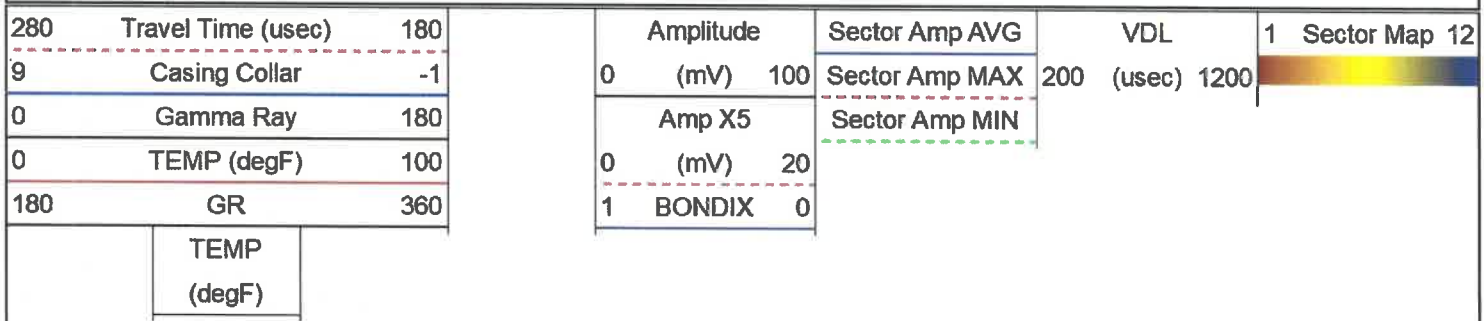


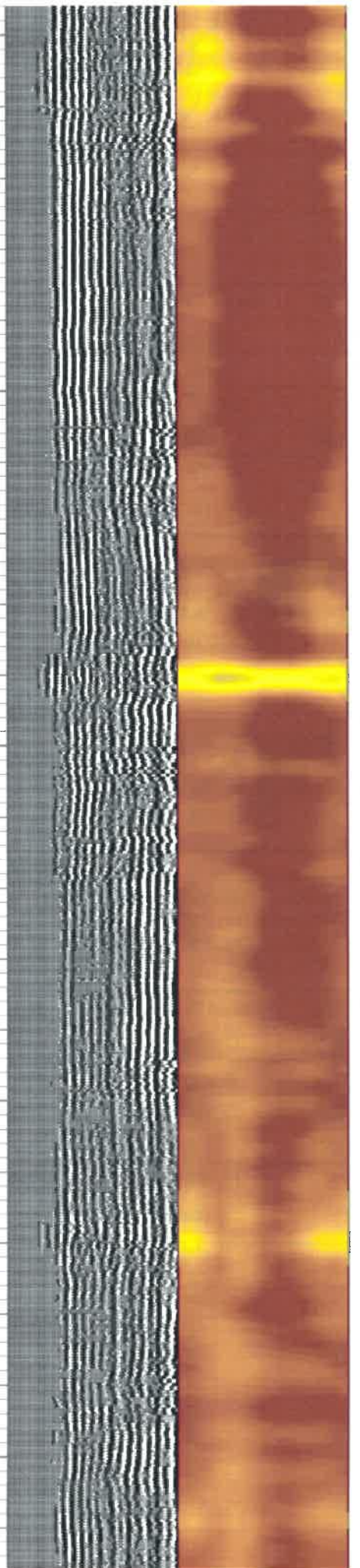
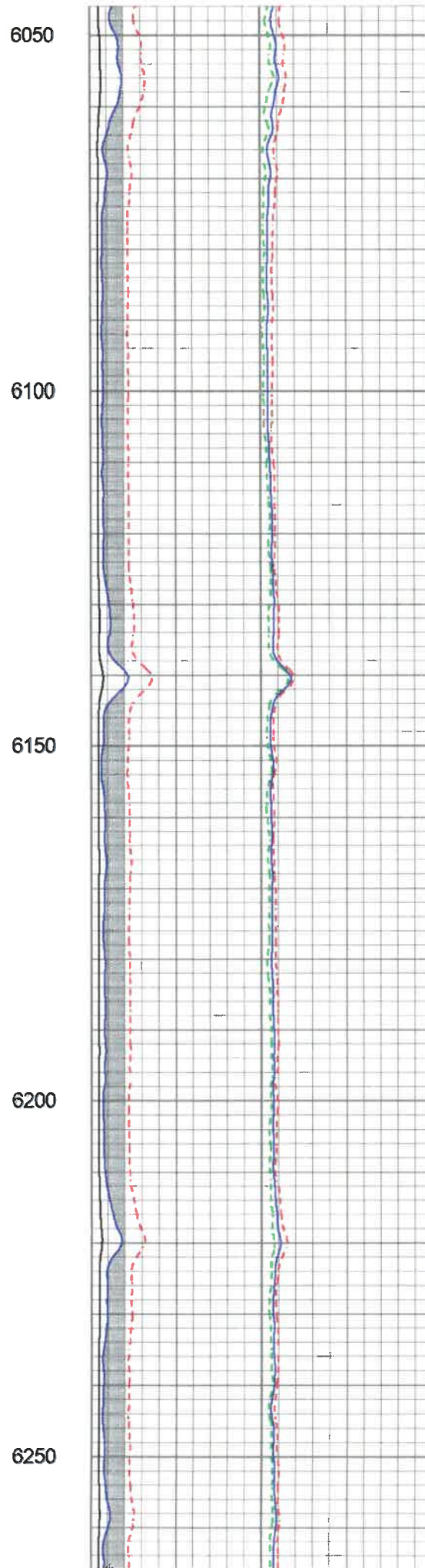
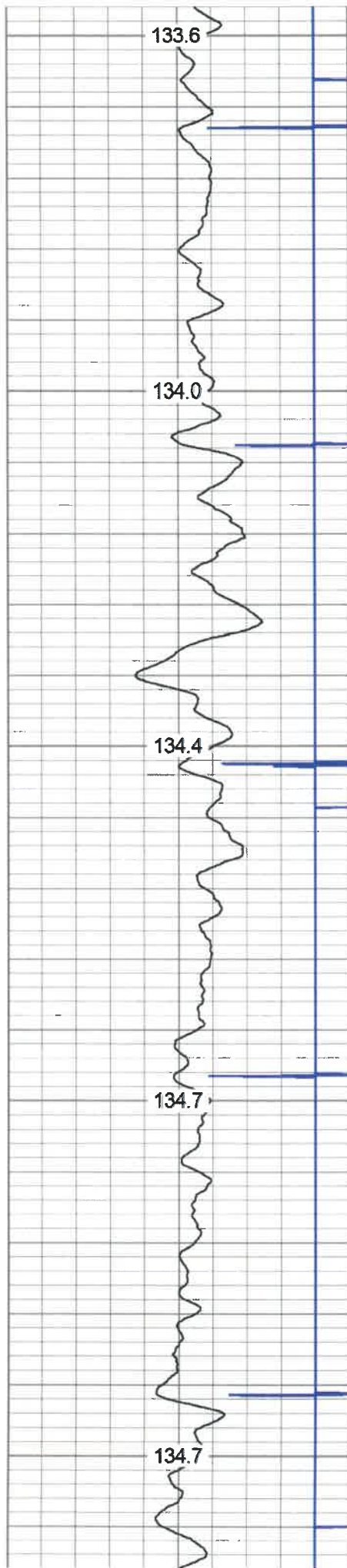
1500 PSI PRESSURE PASS

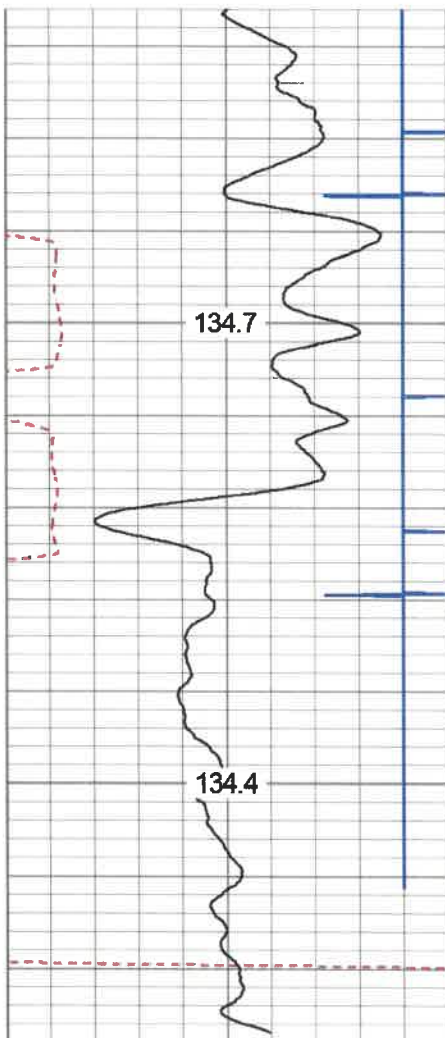


REPEAT PASS

Database File ant_dan1h.db
 Dataset Pathname REPEAT
 Presentation Format antero
 Dataset Creation Tue Dec 17 18:25:41 2019
 Charted by Depth in Feet scaled 1:240

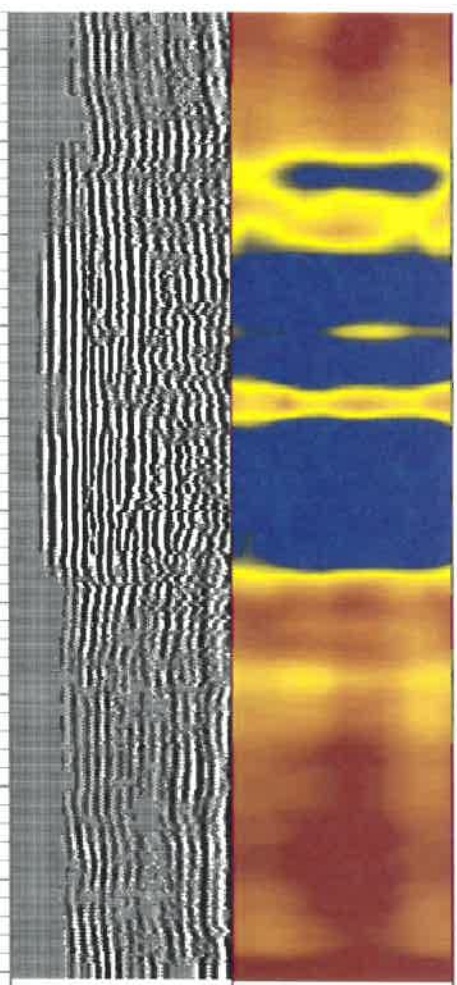
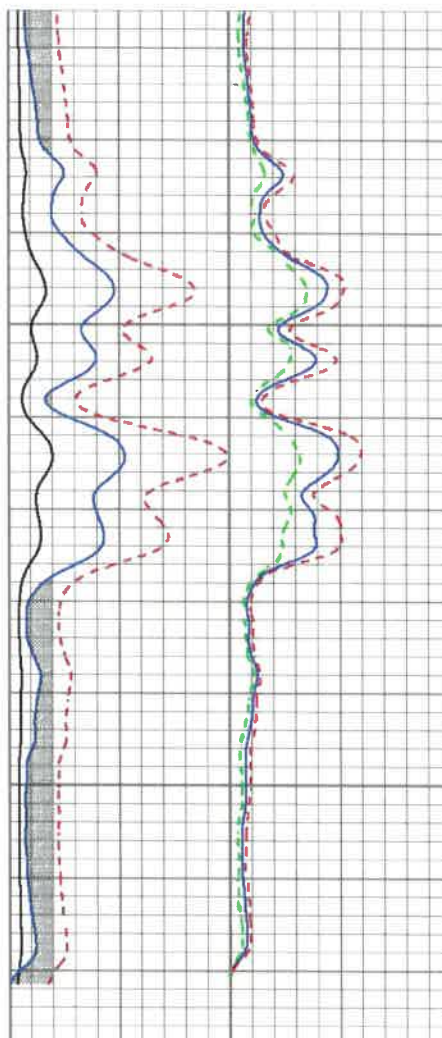






6300

6350



280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray	180
0	TEMP (degF)	100
180	GR	360

TEMP
(degF)

Amplitude	Sector Amp AVG
0 (mV) 100	Sector Amp MAX
Amp X5	Sector Amp MIN
0 (mV) 20	
1 BONDIX 0	

VDL	1	Sector Map	12
200 (usec) 1200			



REPEAT PASS

Log Variables

DatabaseC:\ProgramData\Warrior\Data\ant_dan1h.db
Dataset field/well/run1/pass6.1/_vars_

Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 8.25	degF 100	in 5.5	in 0	lb/ft 20	mV 71.9	mV 3.5
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft 0.8	No	usec 219	degF 0	ft 0			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
 BOREID : Borehole I.D.
 BOTTEMP : Bottom Hole Temperature
 CASEOD : Casing O.D.
 CASETHCK : Casing Thickness
 CASEWGHT : Casing Weight
 MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude
 MINATTN : Minimum Attenuation
 PERFS : Perforation Flag
 PPT : Predicted Pipe Time
 SRFTEMP : Surface Temperature
 TDEPTH : Total Depth

Calibration Report

Database File ant_dan1h.db
 Dataset Pathname pass6.1
 Dataset Creation Tue Dec 17 10:59:52 2019

Gamma Ray Calibration Report

Serial Number: IPSNO-03
 Tool Model: Tek-Co 2 3/4
 Performed: Tue Nov 12 16:11:18 2019

Calibrator Value: 1.0

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.5000 /cps

Segmented Cement Bond Log Calibration Report

Serial Number: IOL40-03_5_5
 Tool Model: Tek12

Calibration Casing Diameter: 5.500 in
 Calibration Depth: 76.317 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	1.378	3.500	71.921	49.675	3.480
CAL	0.022	0.412				
5'	-0.006	1.441	3.500	71.921	47.304	3.777
SUM						
S1	0.004	2.325	0.000	100.000	43.090	-0.169
S2	0.004	2.321	0.000	100.000	43.160	-0.175
S3	0.004	2.356	0.000	100.000	42.523	-0.183
S4	0.004	2.346	0.000	100.000	42.694	-0.178
S5	0.004	2.313	0.000	100.000	43.293	-0.155
S6	0.003	2.317	0.000	100.000	43.224	-0.137
S7	0.003	2.274	0.000	100.000	44.022	-0.119
S8	0.002	2.289	0.000	100.000	43.730	-0.107
S9	0.003	2.360	0.000	100.000	42.414	-0.109
S10	0.003	2.381	0.000	100.000	42.047	-0.123
S11	0.004	2.351	0.000	100.000	42.597	-0.152
S12	0.004	2.324	0.000	100.000	43.097	-0.171

Temperature Calibration Report

Serial Number: IOL40-03_5_5
 Tool Model: Tek12
 Performed: Fri Oct 20 09:51:21 2017


Reference Reading

Low Reference: 0.00 degF 0.00 usec
 High Reference: 1.00 degF 1.00 usec

 Gain: 0.33
 Offset: 0.00
 Delta Spacing 2

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
CCL	18.93		CCL-312tekco (IO8X3-01) Tekco 3 1/8" 450 Deg. "F" SmCo Logging CCL	1.82	3.12	25.00	
			Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00	
TEMP	12.77						
WVFS12	11.48						
WVFS11	11.48						
WVFS10	11.48			SCBL-Tek12 (IOL40-03_5_5) Tekco 400 Deg F 12 Sector RIB with Temp	9.13	3.25	135.00
WVFS9	11.48						
WVFS8	11.48						
WVFS7	11.48						
WVFS6	11.48						
WVFS5	11.48						
WVFS4	11.48						
WVFS3	11.48						
WVFS2	11.48						
WVFS1	11.48						
WVFCAL	10.73						
WVF3FT	10.73						
WVF5FT	9.73						
WVFSYNC	6.40						
WVFTEMP	6.40		Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00	
			GR-Tek-Co 2 3/4 (IPSNO-03) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00	

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 Environmental Protection

GR	1.04					
		Dataset:	ant_dan1h.db: field/well/run1/pass6.1			
		Total length:	20.07 ft			
		Total weight:	250.00 lb			
		O.D.:	3.25 in			

	Company	Antero Resources Corporation	
	Well	DANIELS 1H	
	Field	Marcellus	
	County	TYLER	
	State	WV	Country