

**RADIAL BOND LOG
GAMMA RAY
VDL,CCL**

Company	ANTERO RESOURCES CORPORATION	
Well	GROUNDS 3H	
Field	MARCELLUS	
County	TYLER	
State	WV	
Company	ANTERO RESOURCES CORPORATION	
Well	GROUNDS 3H	
Field	MARCELLUS	
County	TYLER	
State	WV	
Location:	API #: 47095025920000	
	AFE A08786	
Permanent Datum	SEC	TWP
Log Measured From	GL	RGE
Drilling Measured From		Elevation
		Other Services

Date	9-6-19						
Run Number	1						
Depth Driller	17968'						
Depth Logger	5879'						
Bottom Logged Interval	8879'						
Top Log Interval	SURFACE						
Open Hole Size	N/A						
Type Fluid	WATER						
Density / Viscosity	N/A						
Max. Recorded Temp.	132.2 DEG						
Estimated Cement Top	5122'						
Time Well Ready	N/A						
Time Logger on Bottom	13:00						
Equipment Number	624874						
Location	BRIDGEPORT						
Recorded By	P DAVIDSON						
Witnessed By	R RIVERA						
Borehole Record							
Run Number	Bit	From	To	Size	Weight	From	To
				13 3/8	54.5	633'	0
				9 5/8	36	2874'	0
				5 1/2	23	17968'	0
Casing Record							

<<< 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

**MARKER JOINT @6037'-6054'
LOG TD 6879'
CEMENT TOP @ 5122'
LOG RAN UNDER 1500 PSI**

THANK YOU FOR CHOOSING KLX ENERGY

RECEIVED
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APR 20 2020
WV Department of
Environmental Protection

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Office of Oil and Gas
APR 08 2020
WV Department of
Environmental Protection

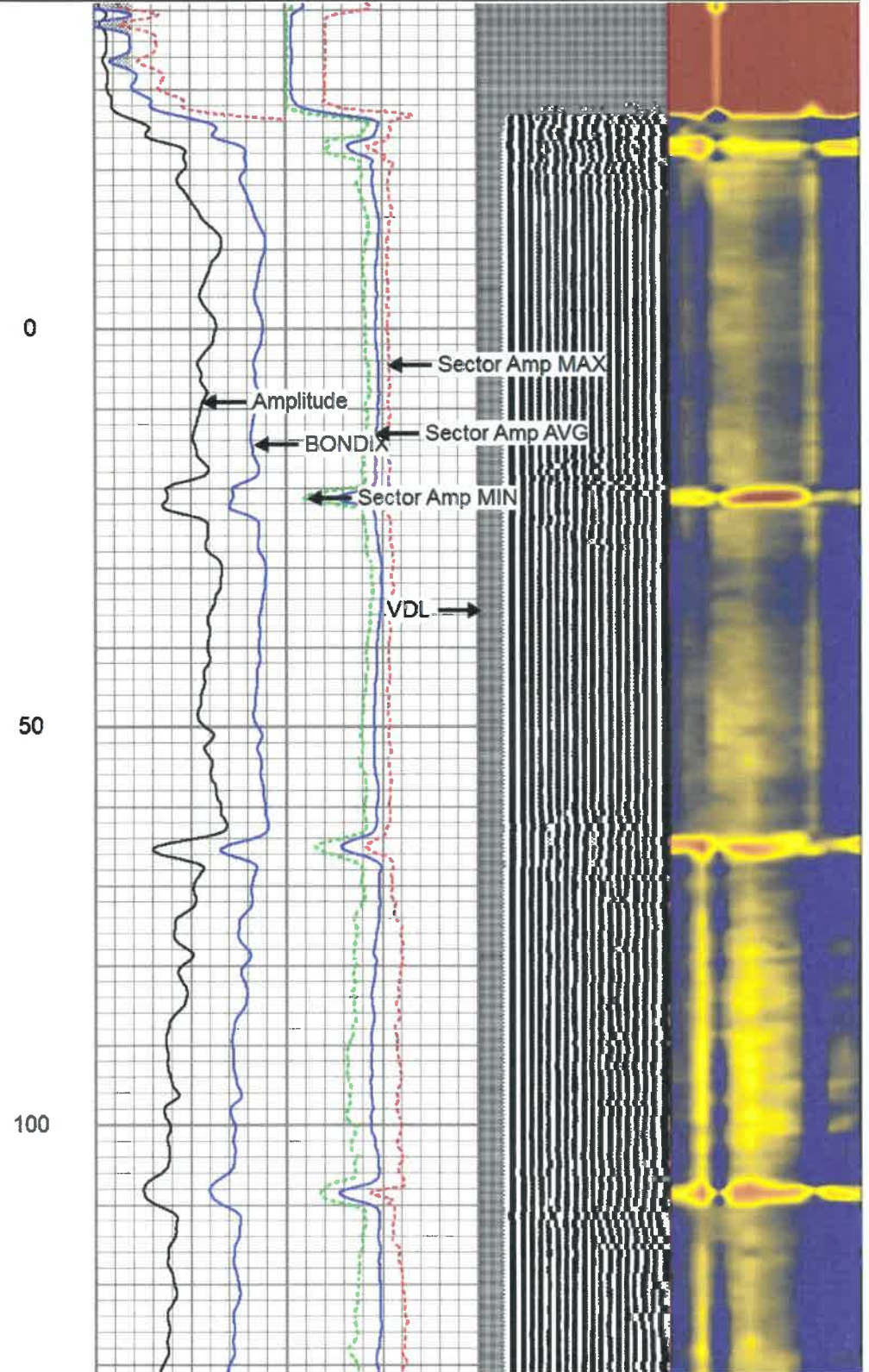
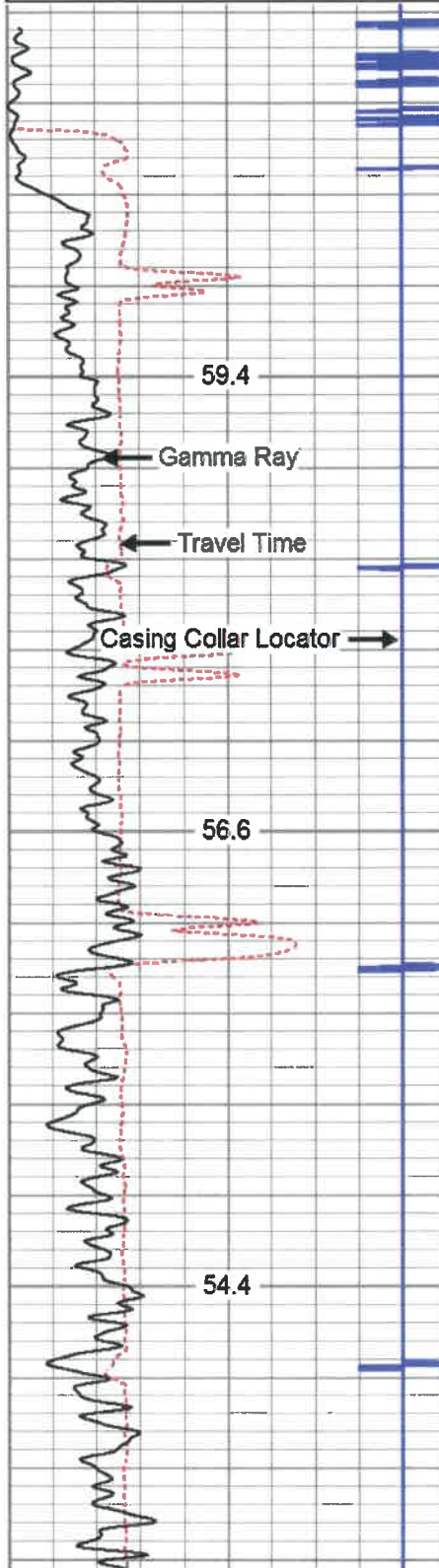


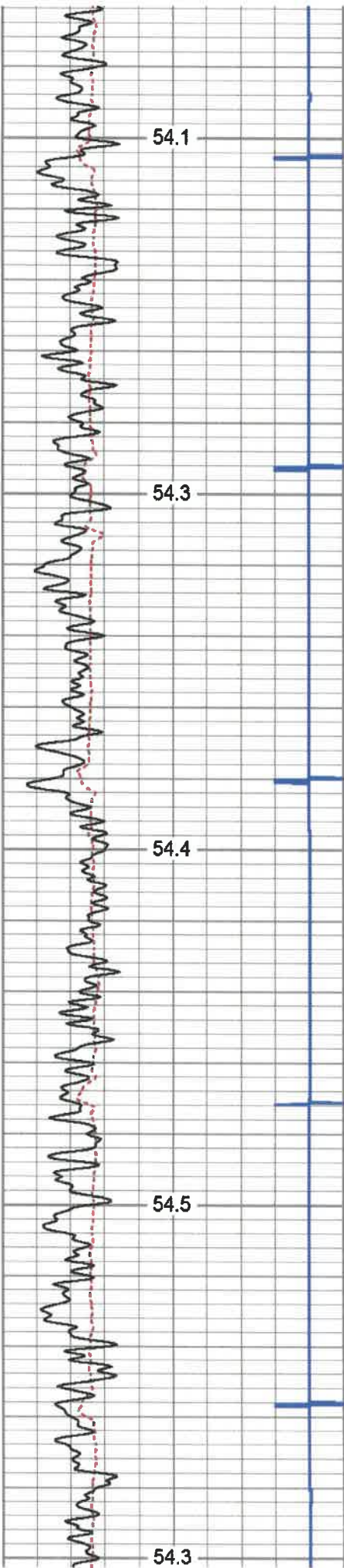
MAIN PASS 1500PSI

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 Dataset Pathname KLX6
 Presentation Format antero
 Dataset Creation Sun Sep 15 19:44:10 2019
 Charted by Depth in Feet scaled 1:240

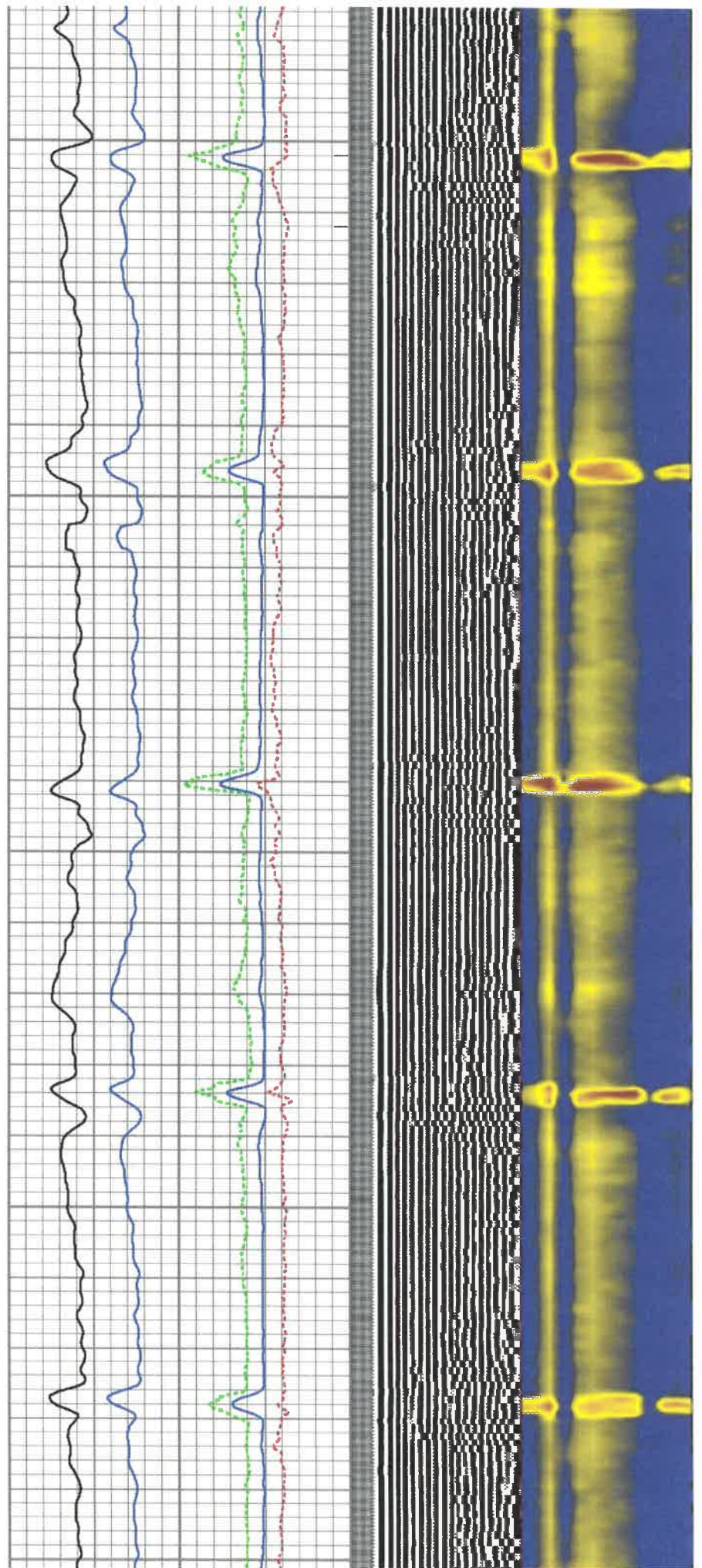
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9	Casing Collar	-1
0	Gamma Ray (GAPI)	180
180	GR (GAPI)	360
TEMP (degF)		

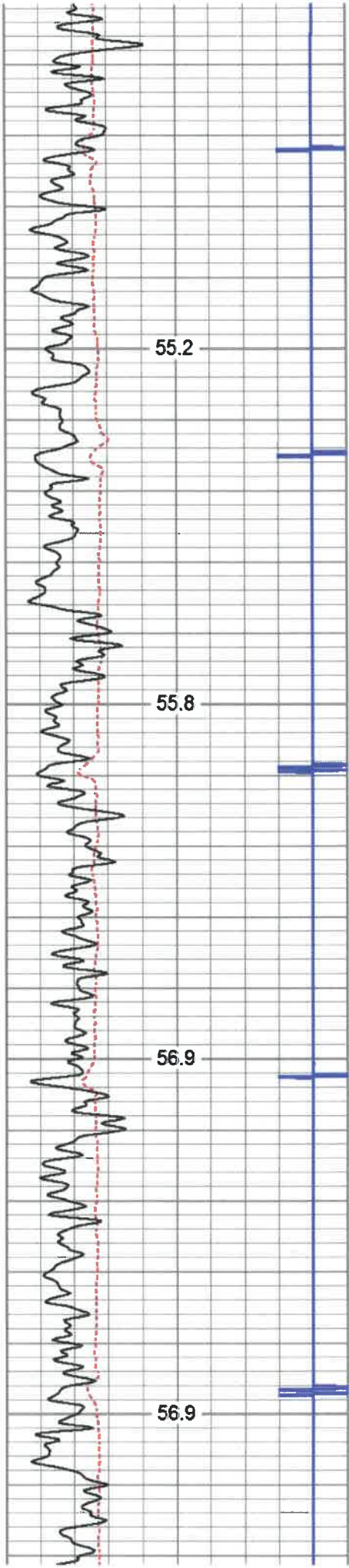
Amplitude		Sector Amp AVG	VDL	1 Sector Map 12
0	(mV) 100	Sector Amp MAX	200 (usec) 1200	
Amp X5		Sector Amp MIN		
0	(mV) 20			
1	BONDIX	0		





150
200
250
300
350



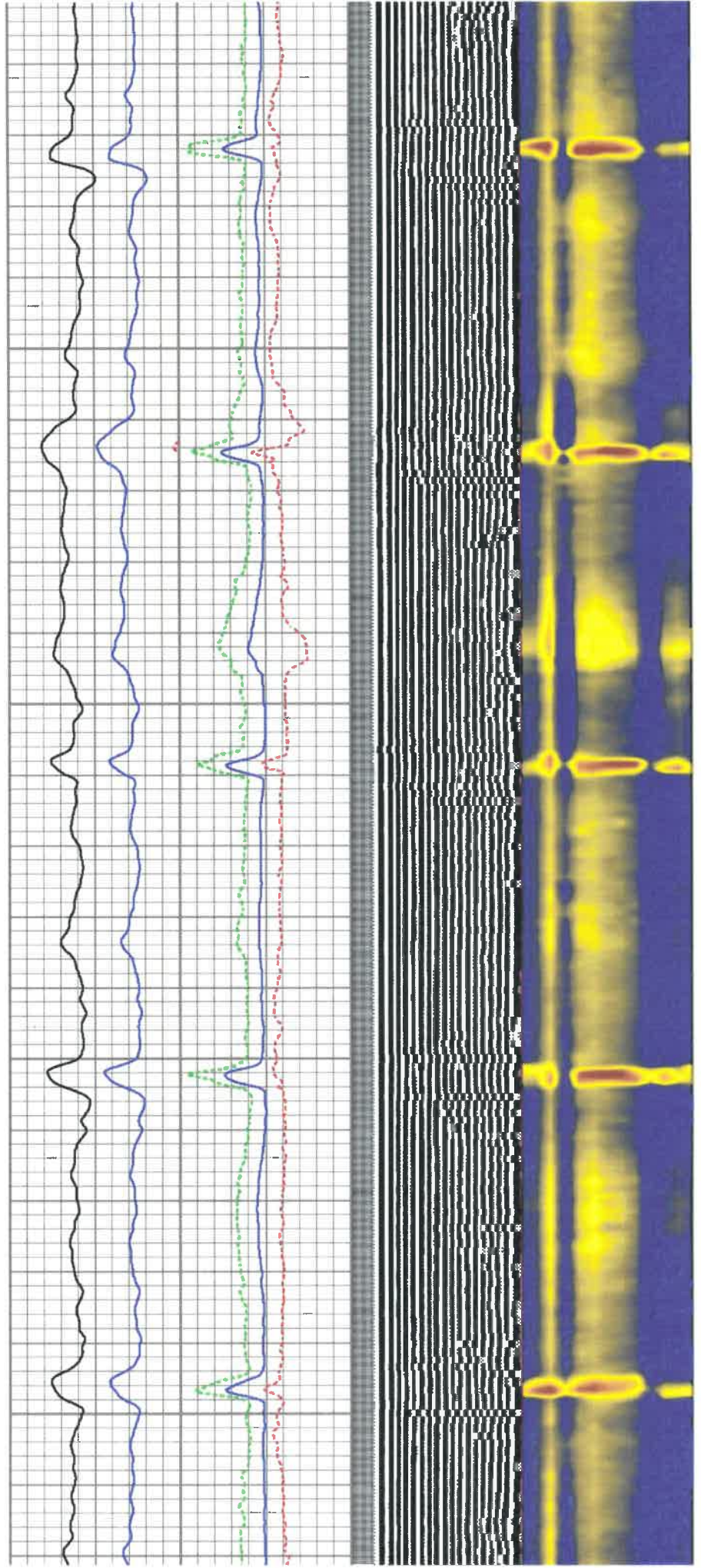


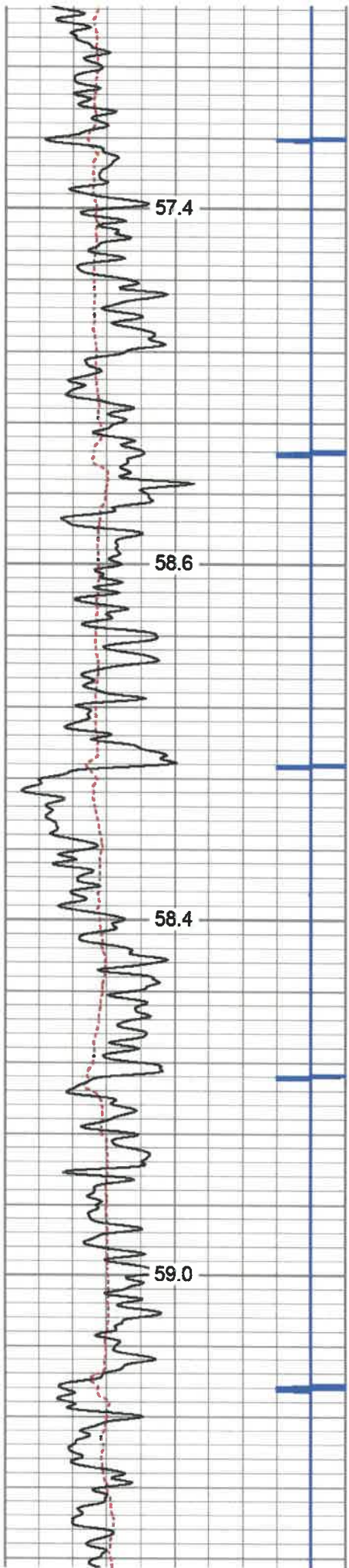
400

450

500

550



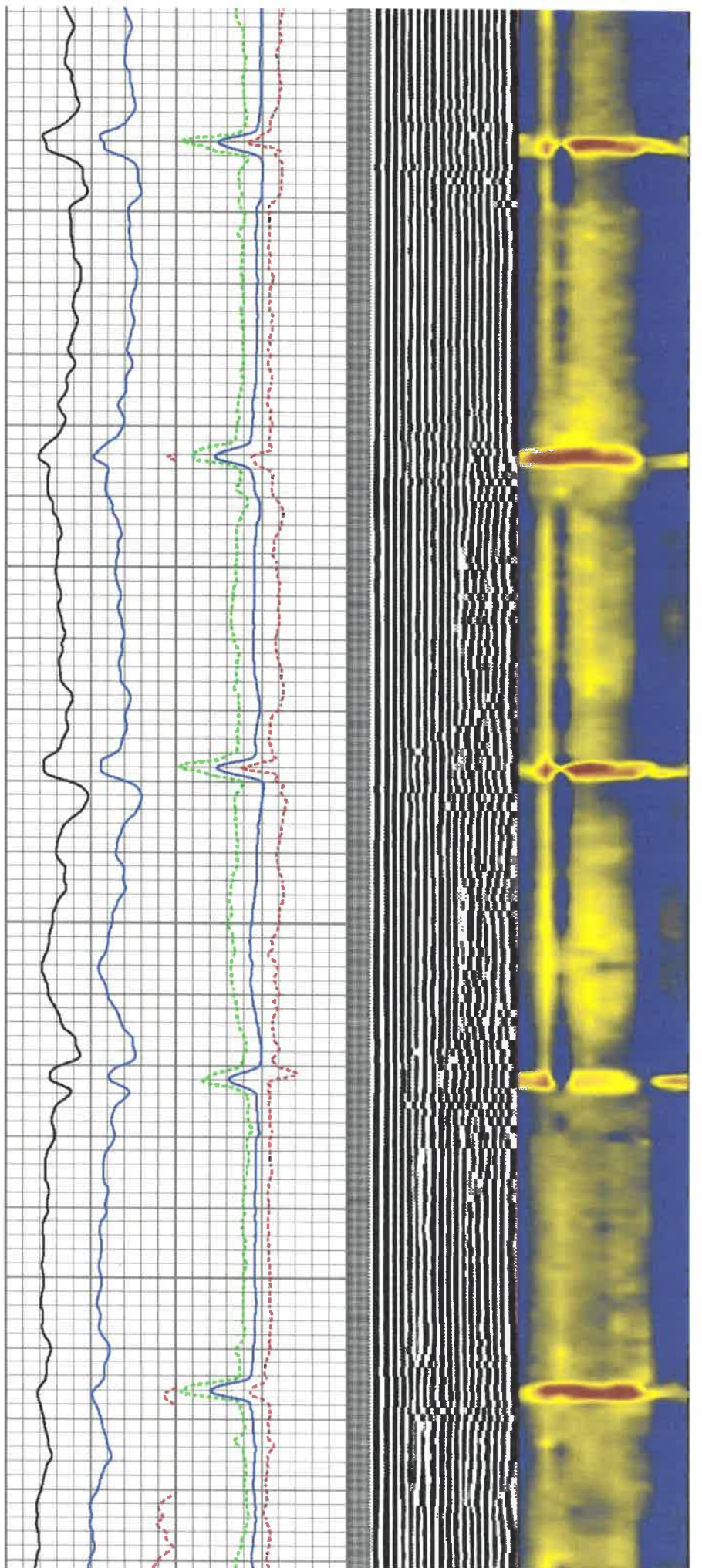


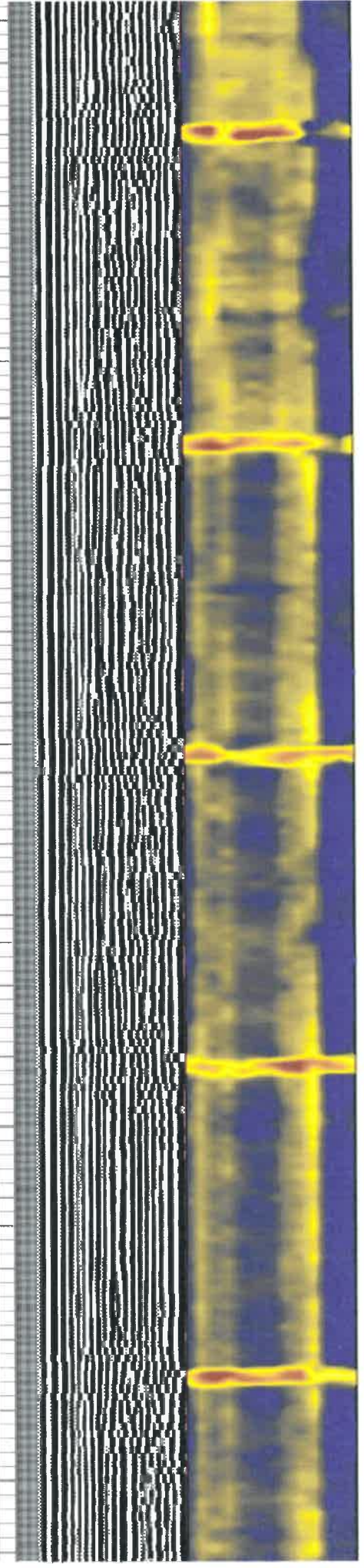
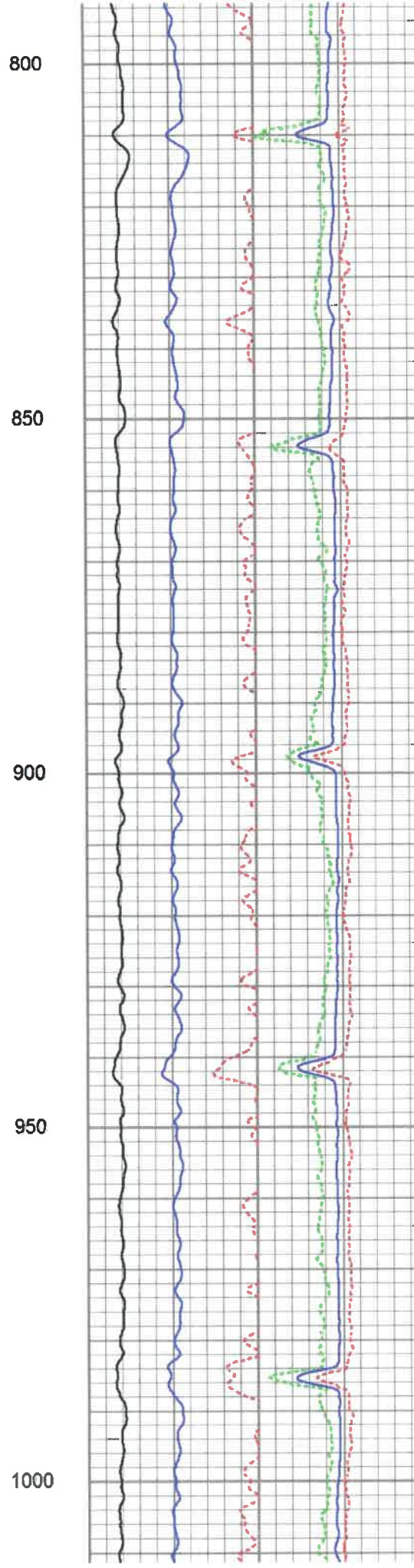
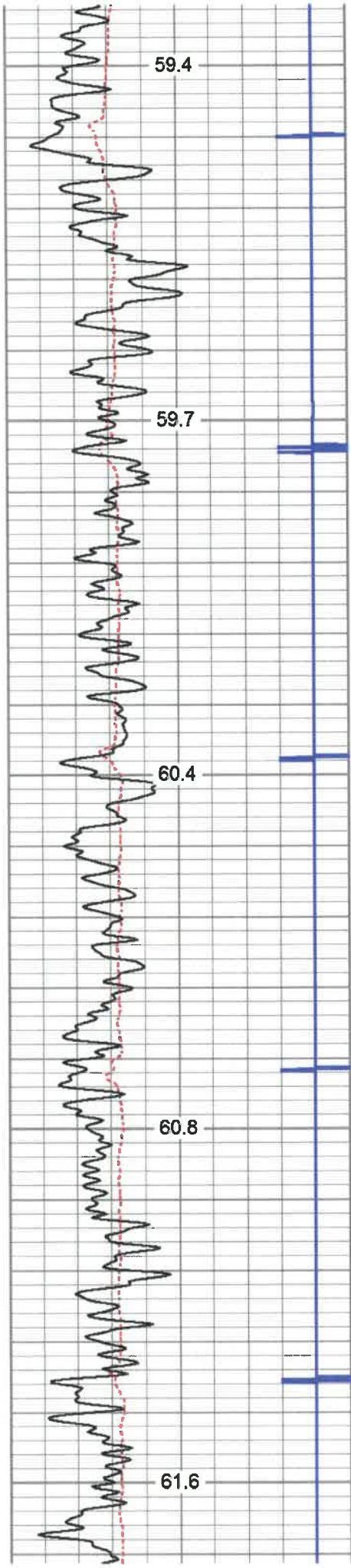
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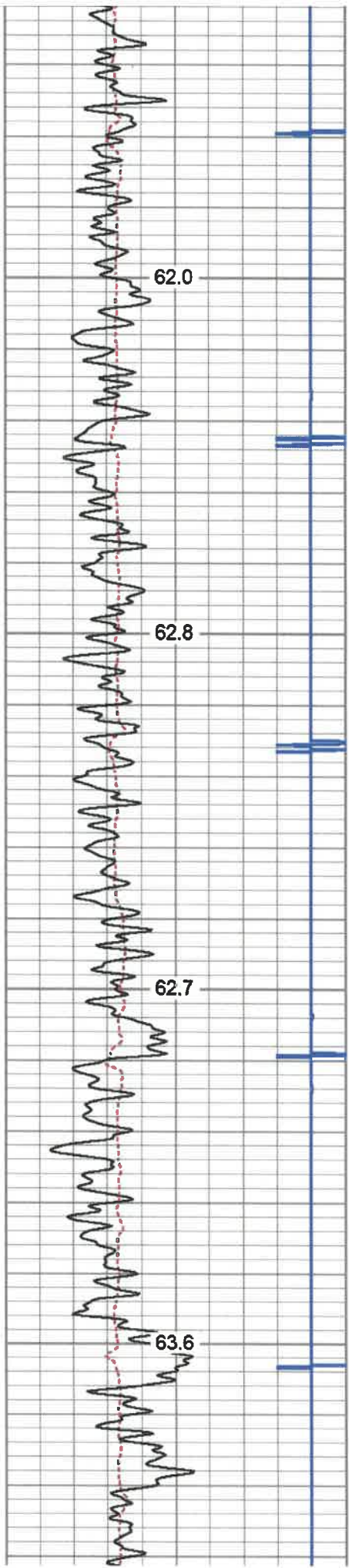
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700

750





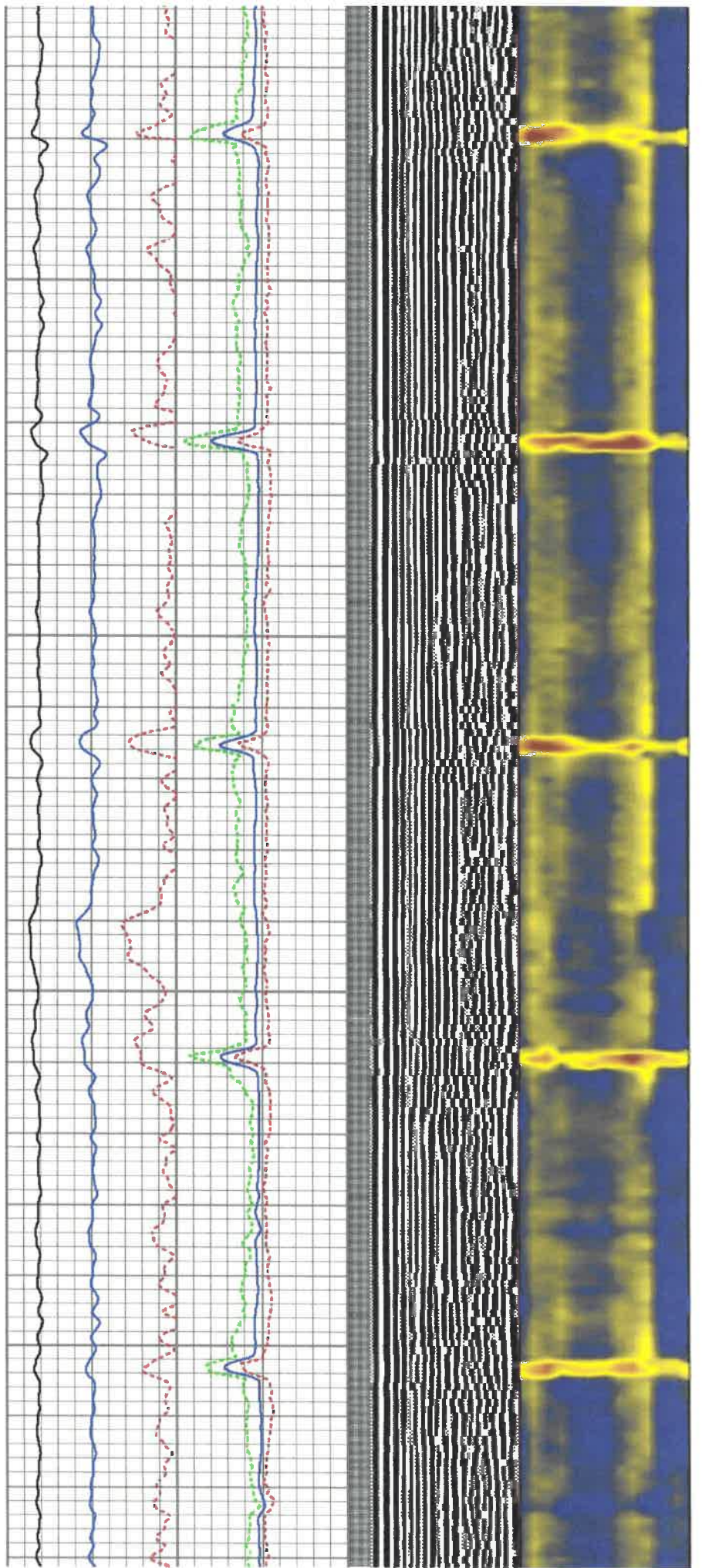


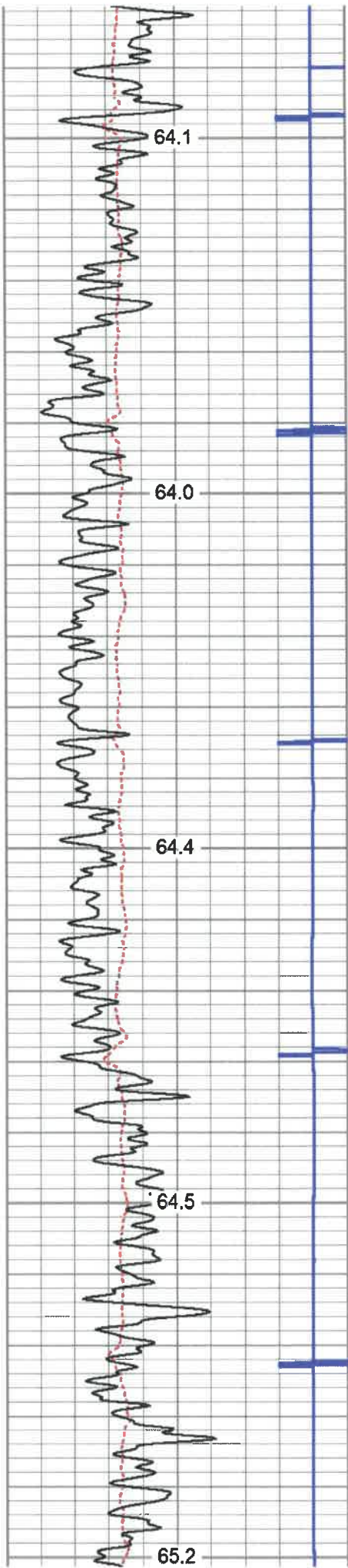
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1100

1150

1200





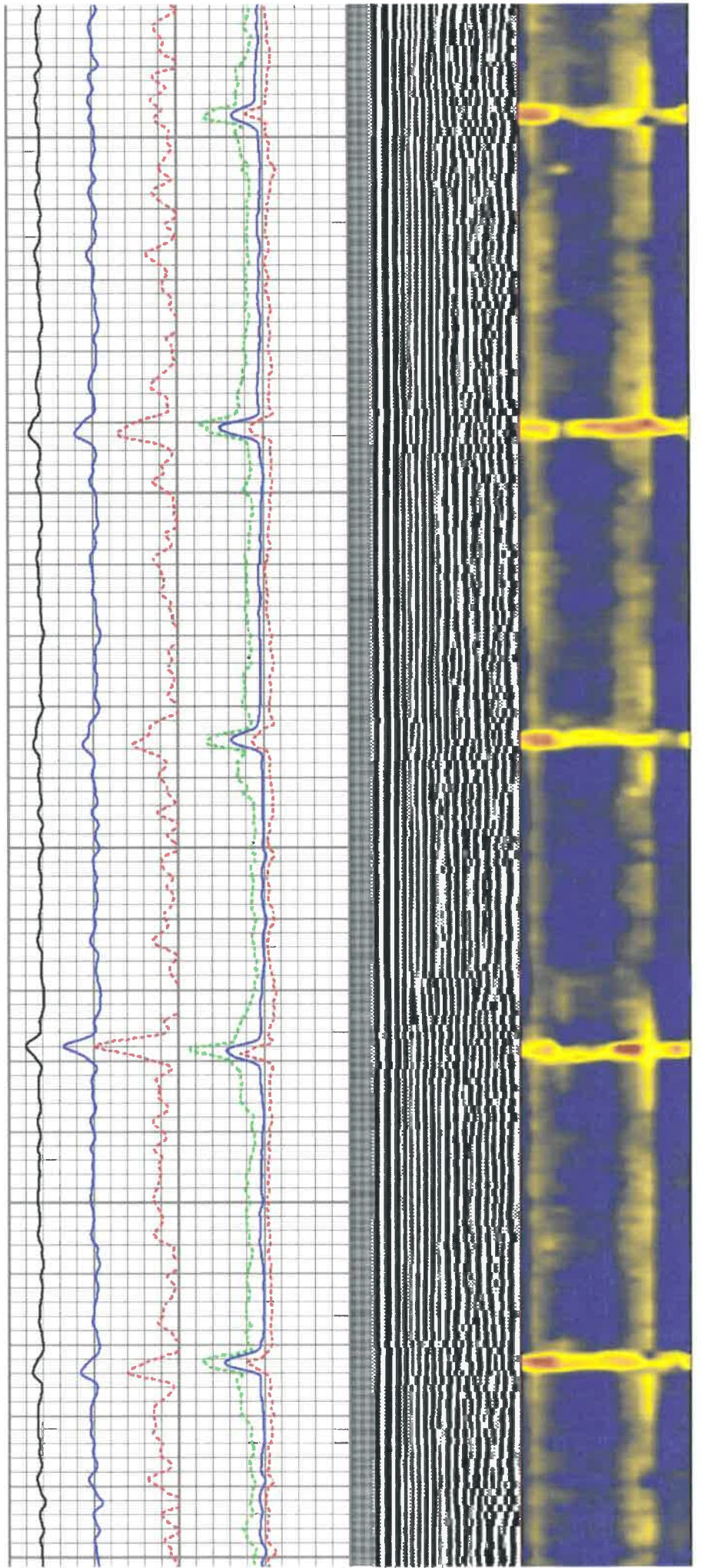
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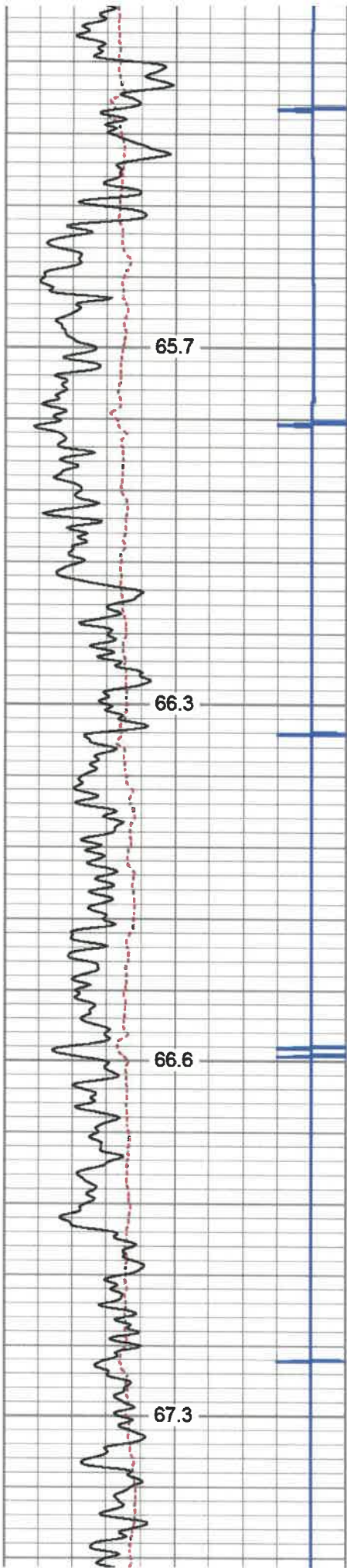
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1350

1400

1450



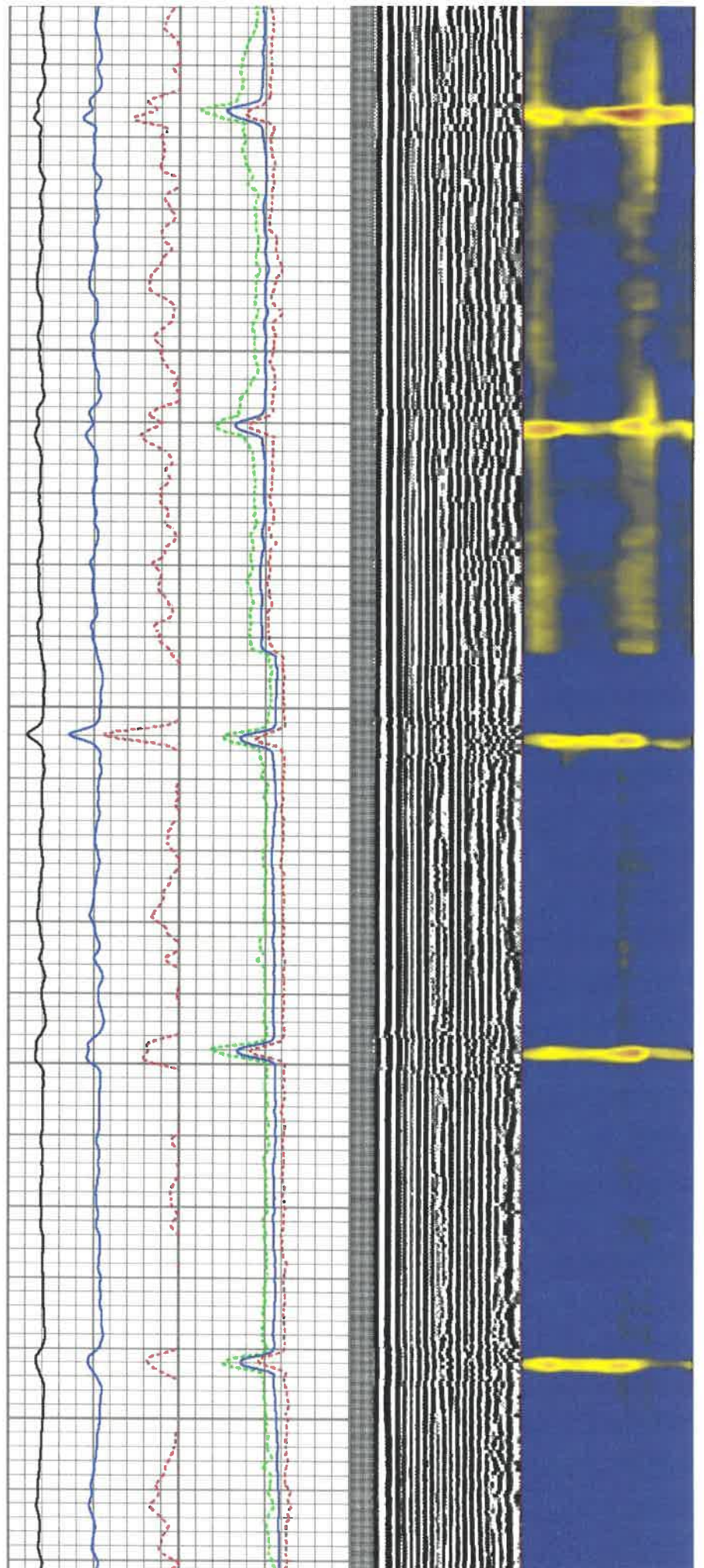


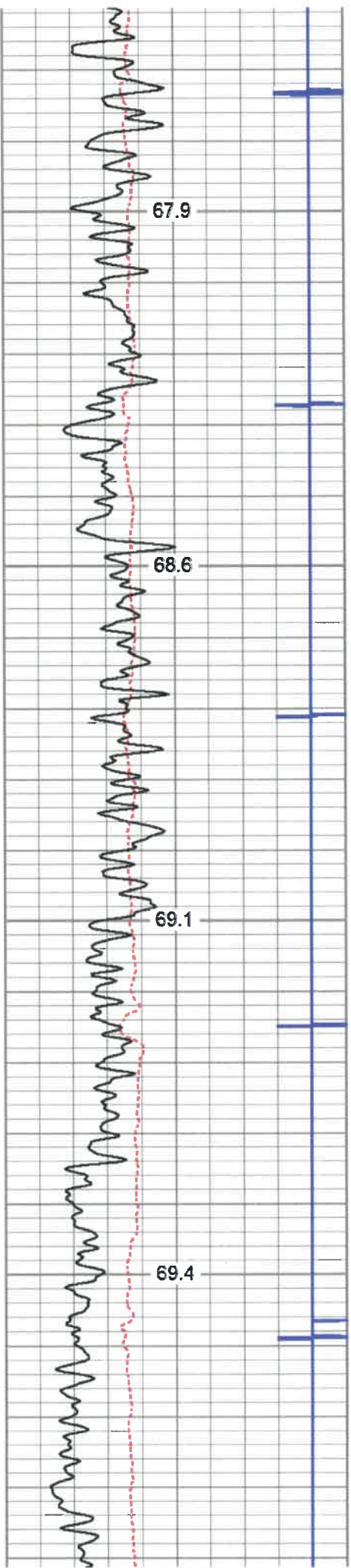
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1550

1600

1650



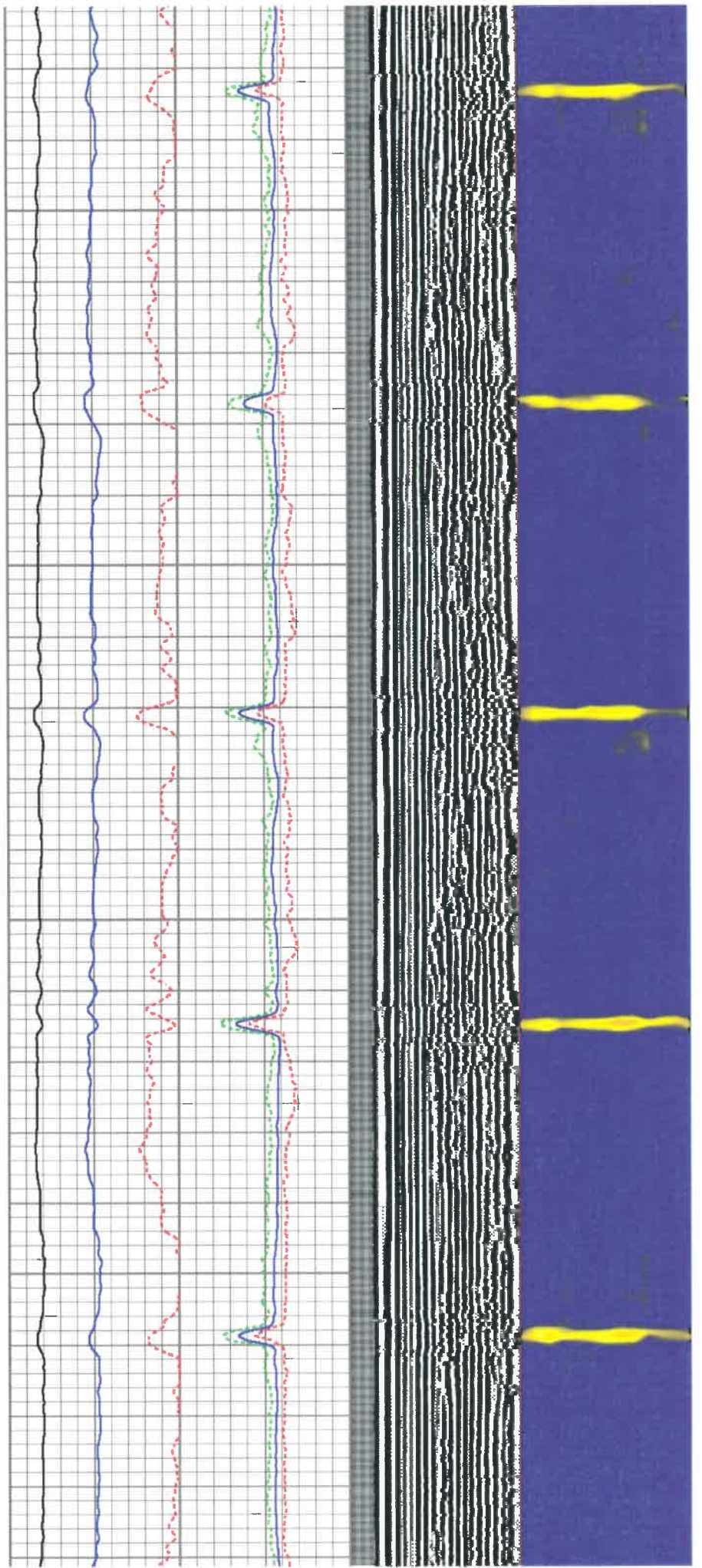


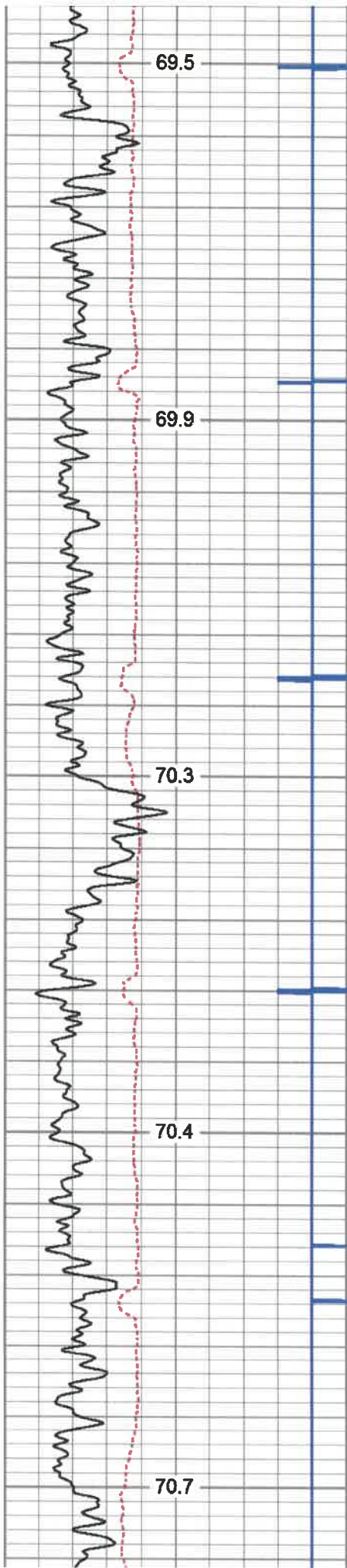
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1750

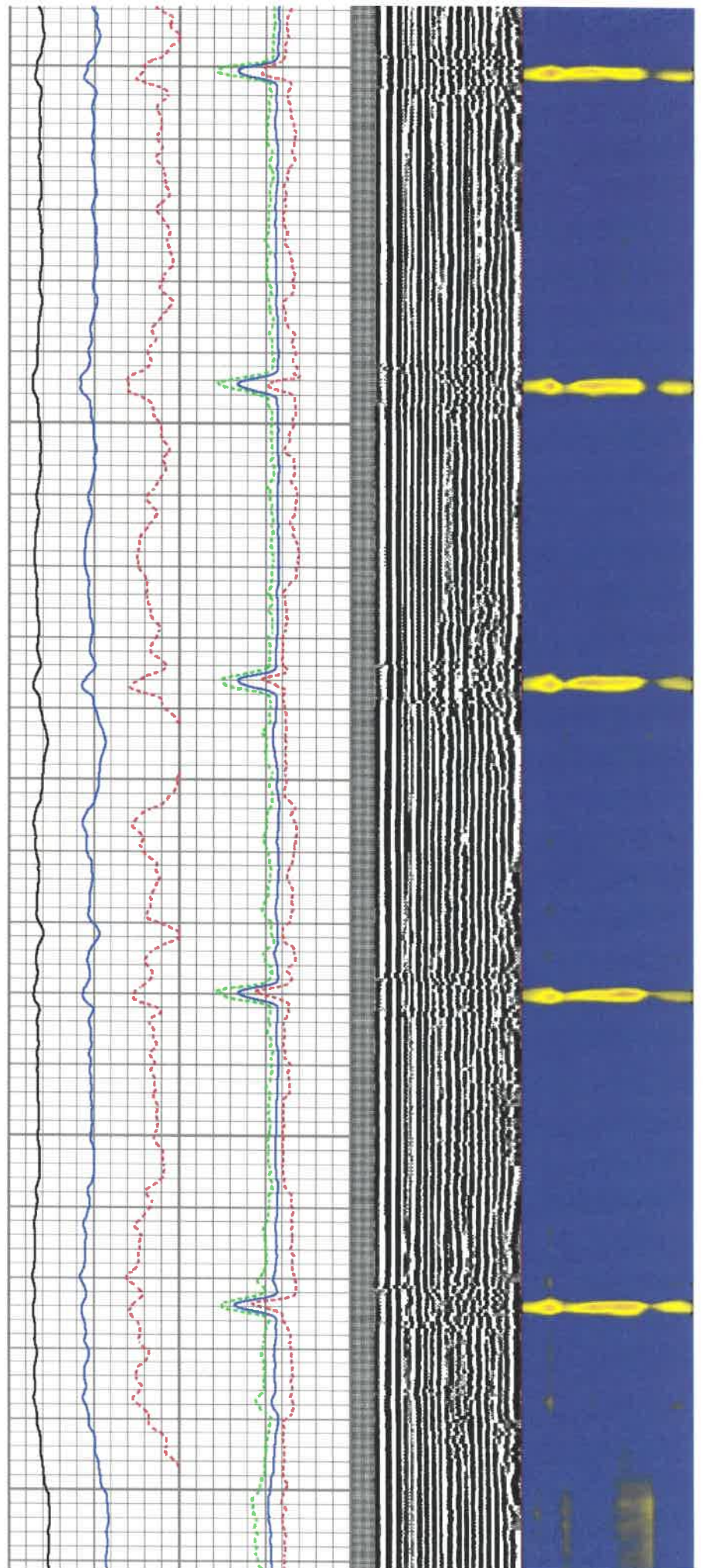
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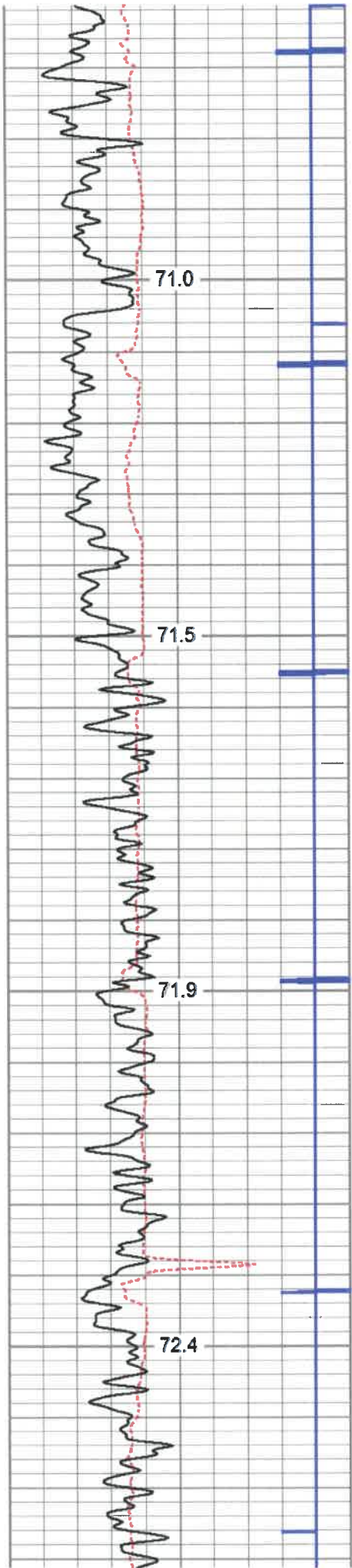
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1900
1950
2000
2050
2100



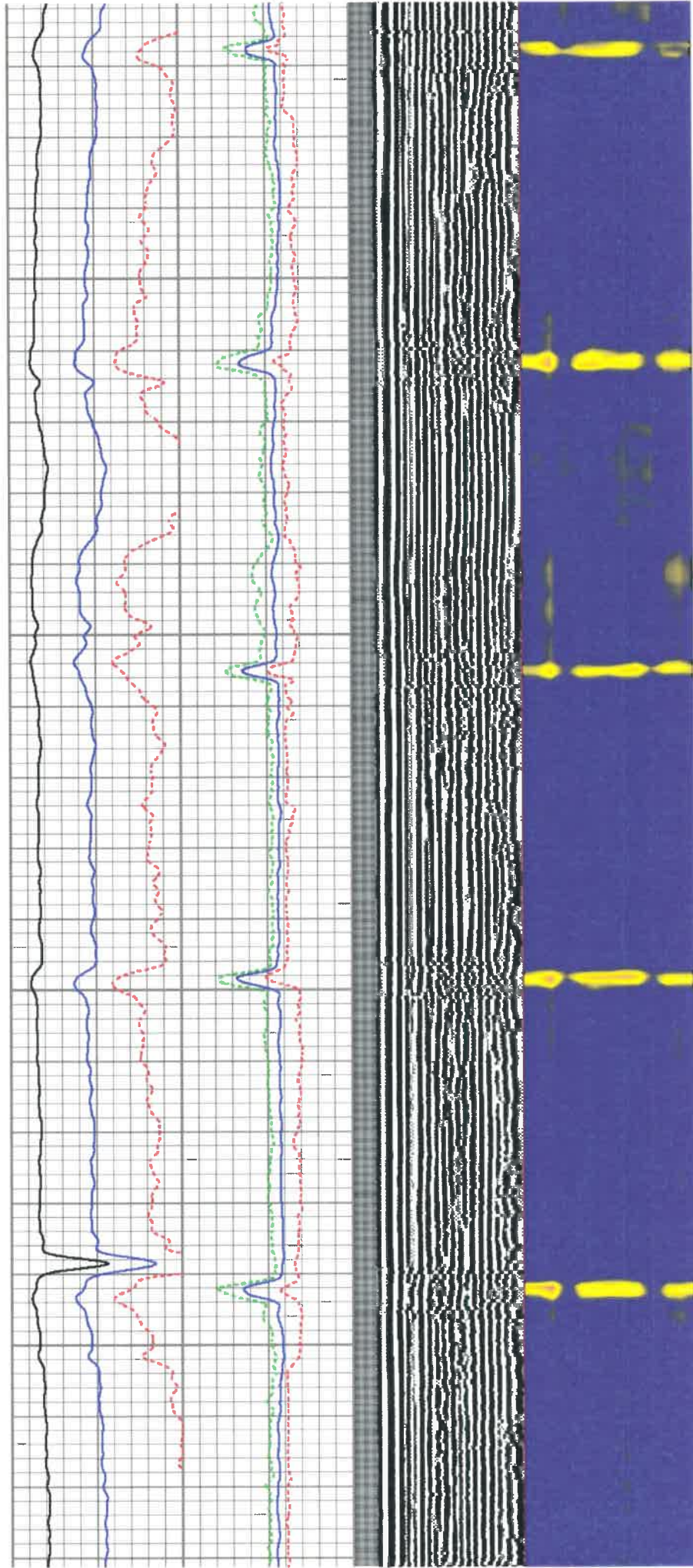


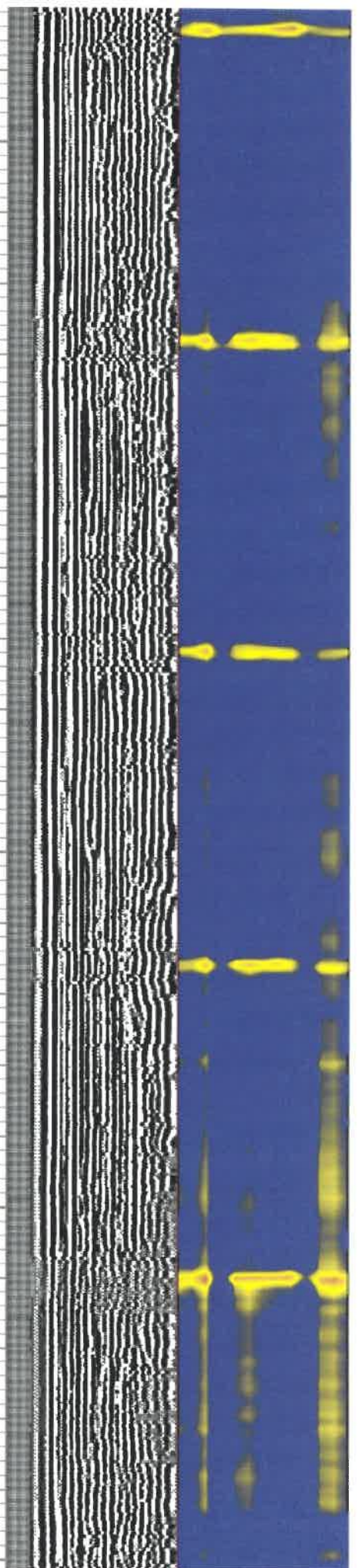
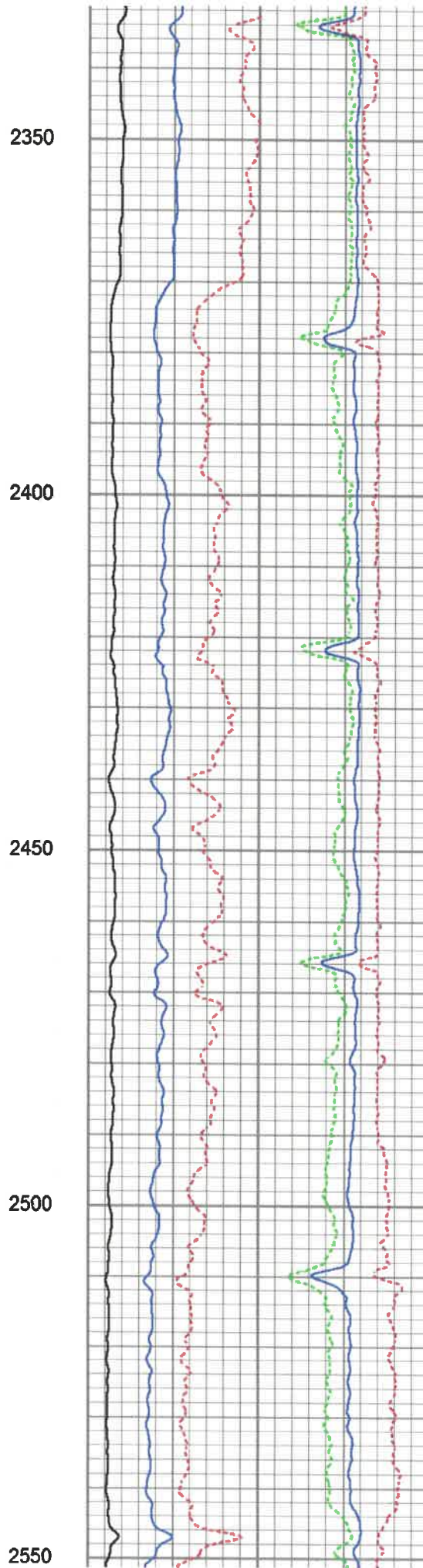
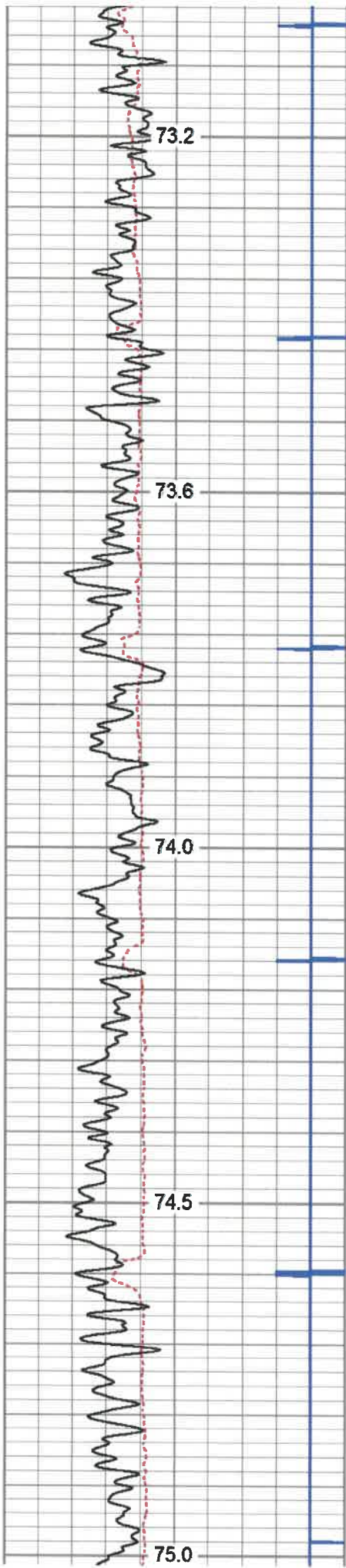
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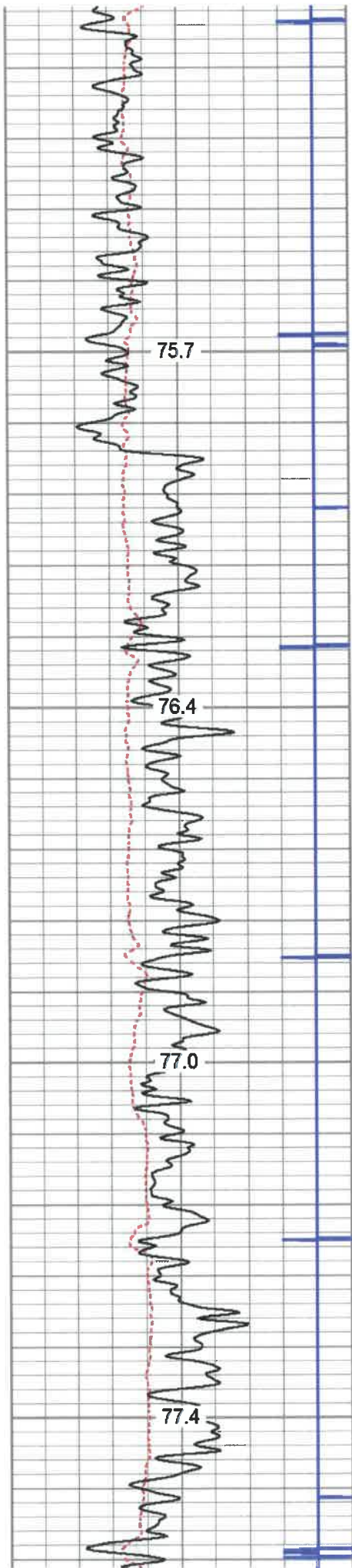
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2250

2300





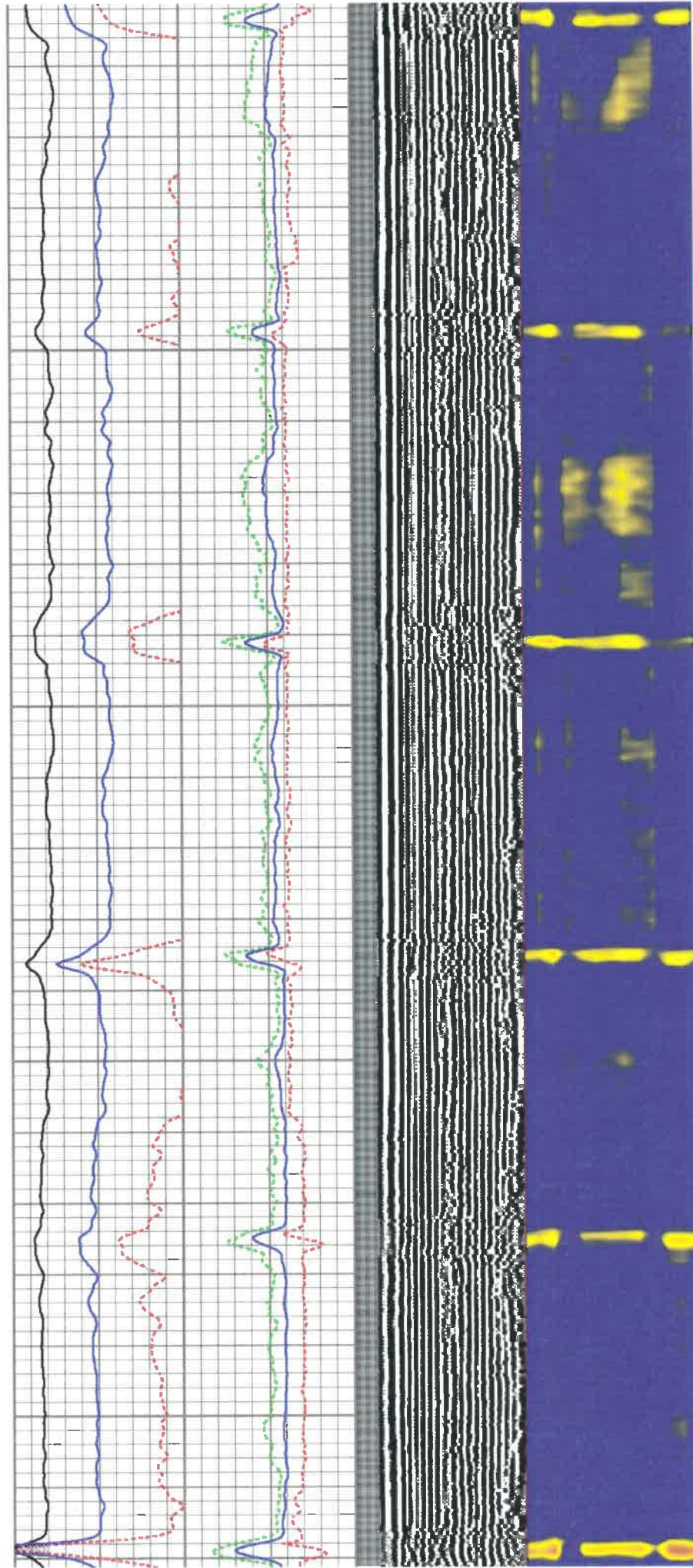


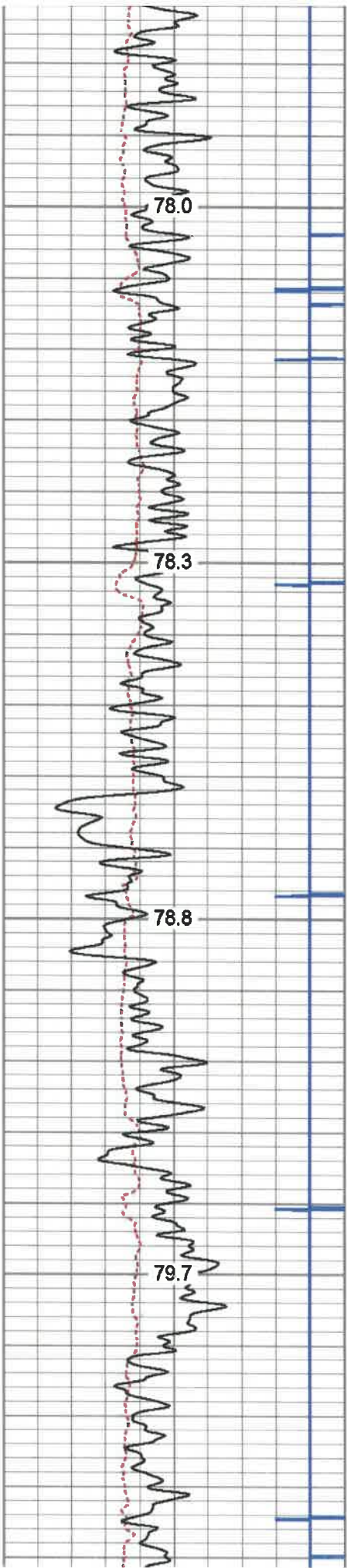
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2650

2700

2750



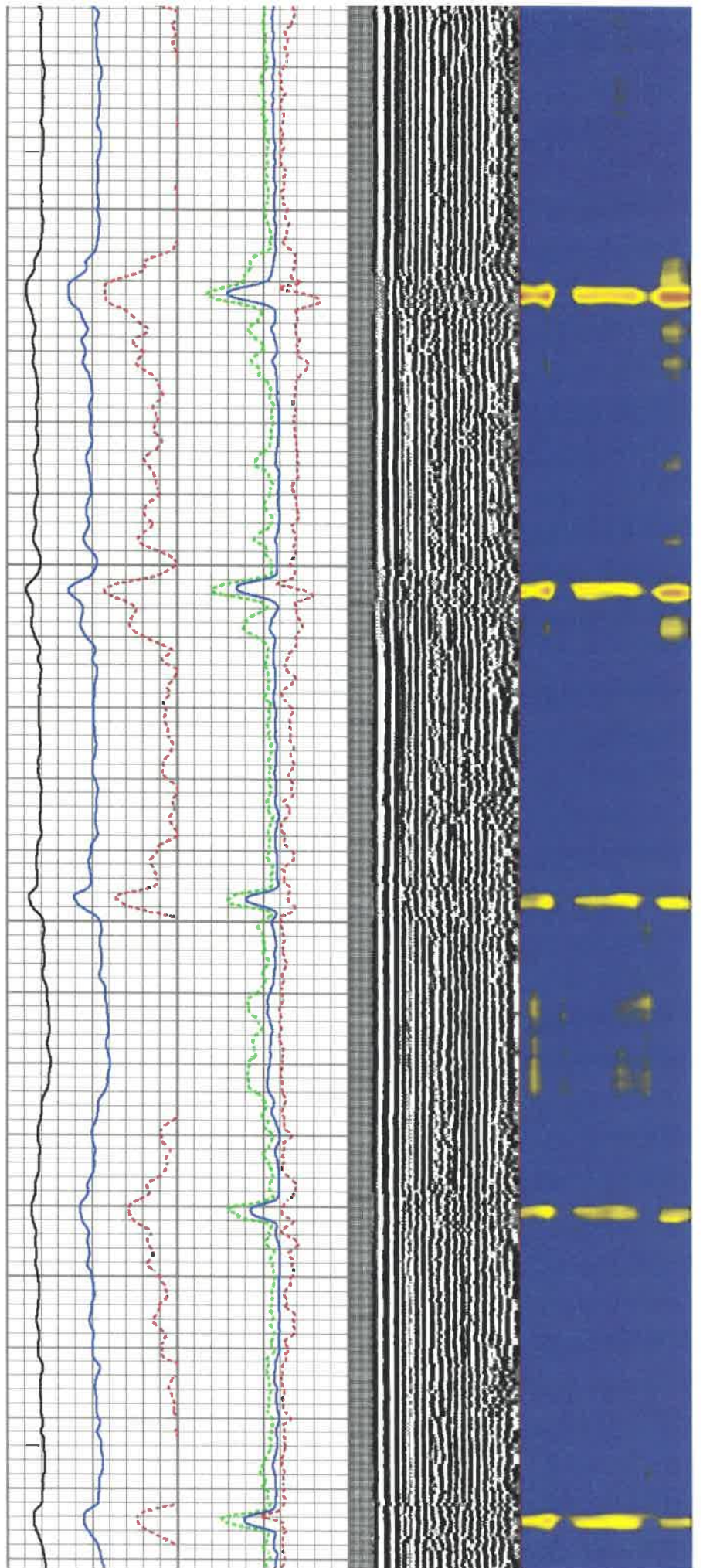


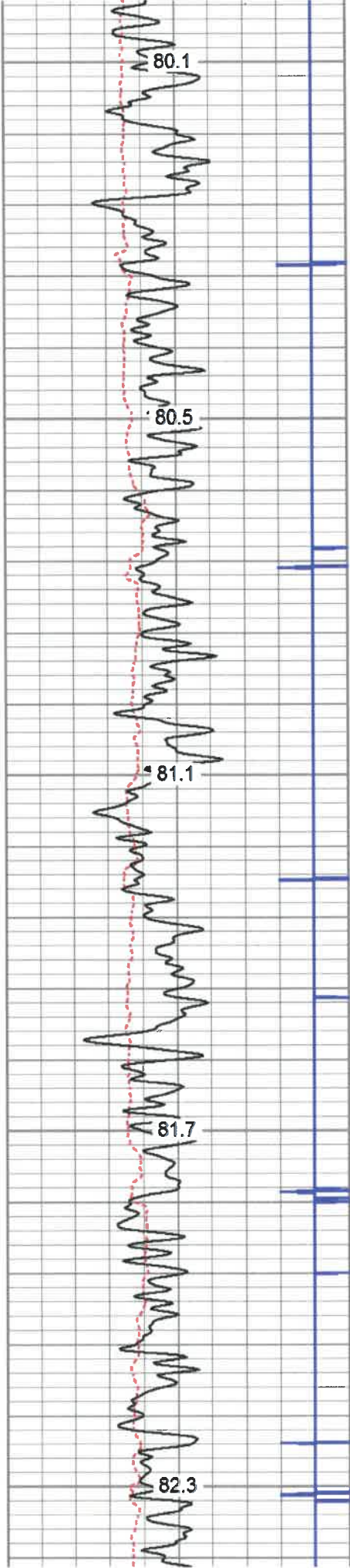
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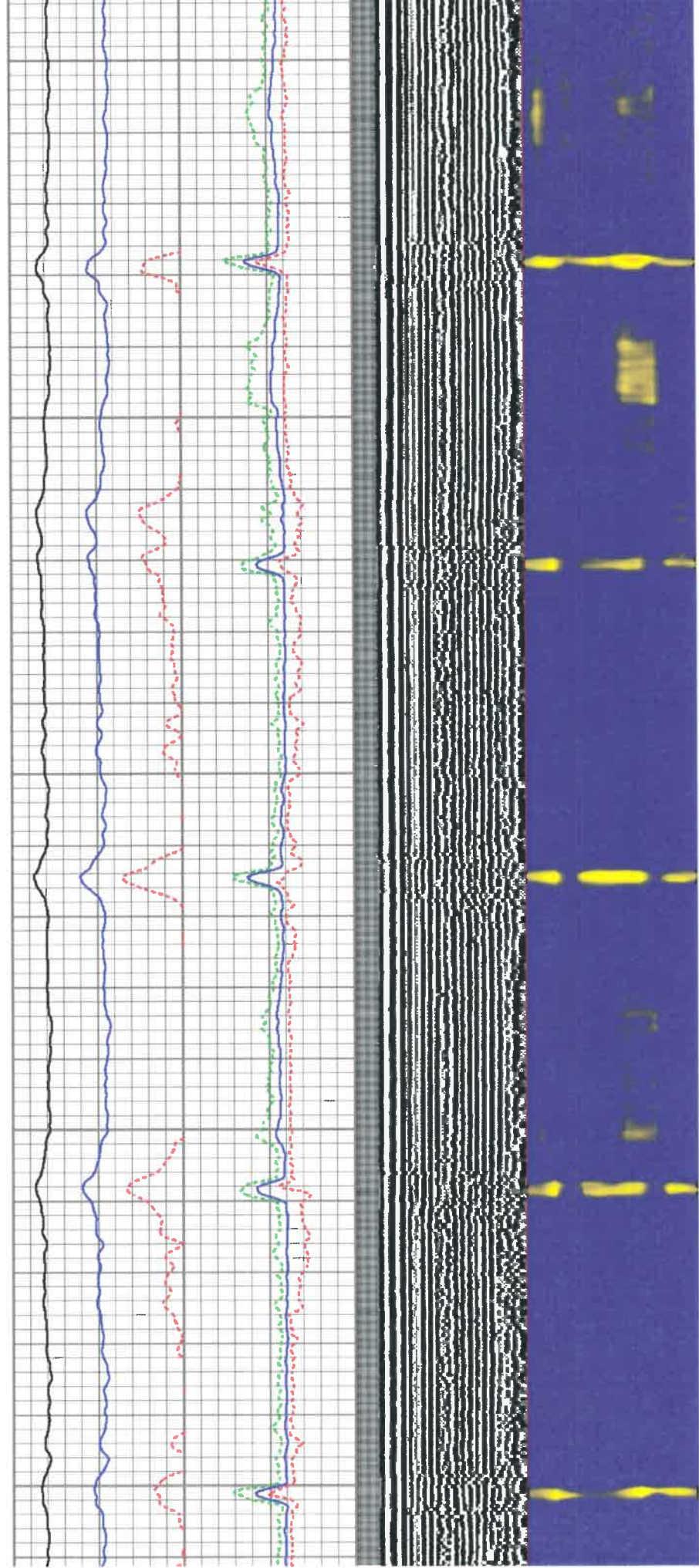
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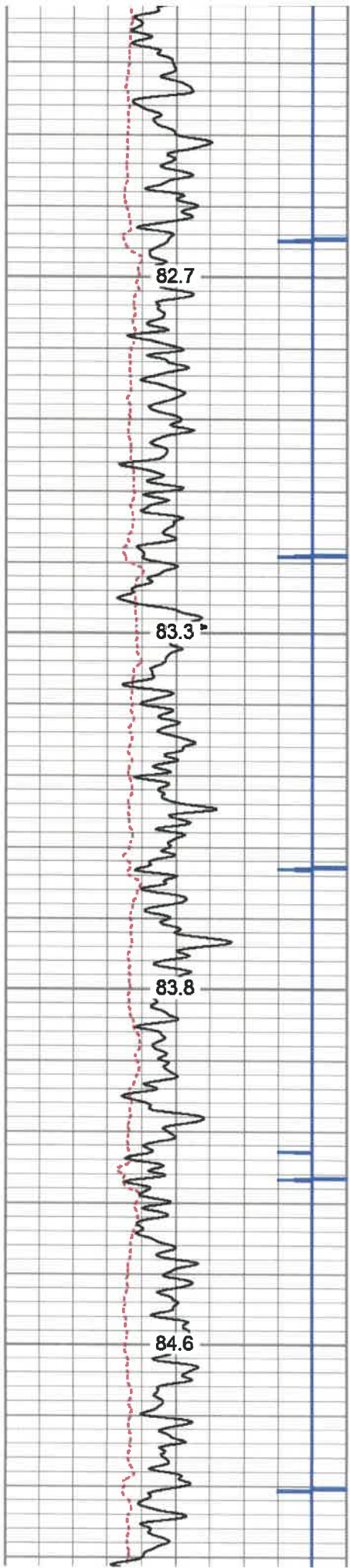
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3000
3050
3100
3150
3200



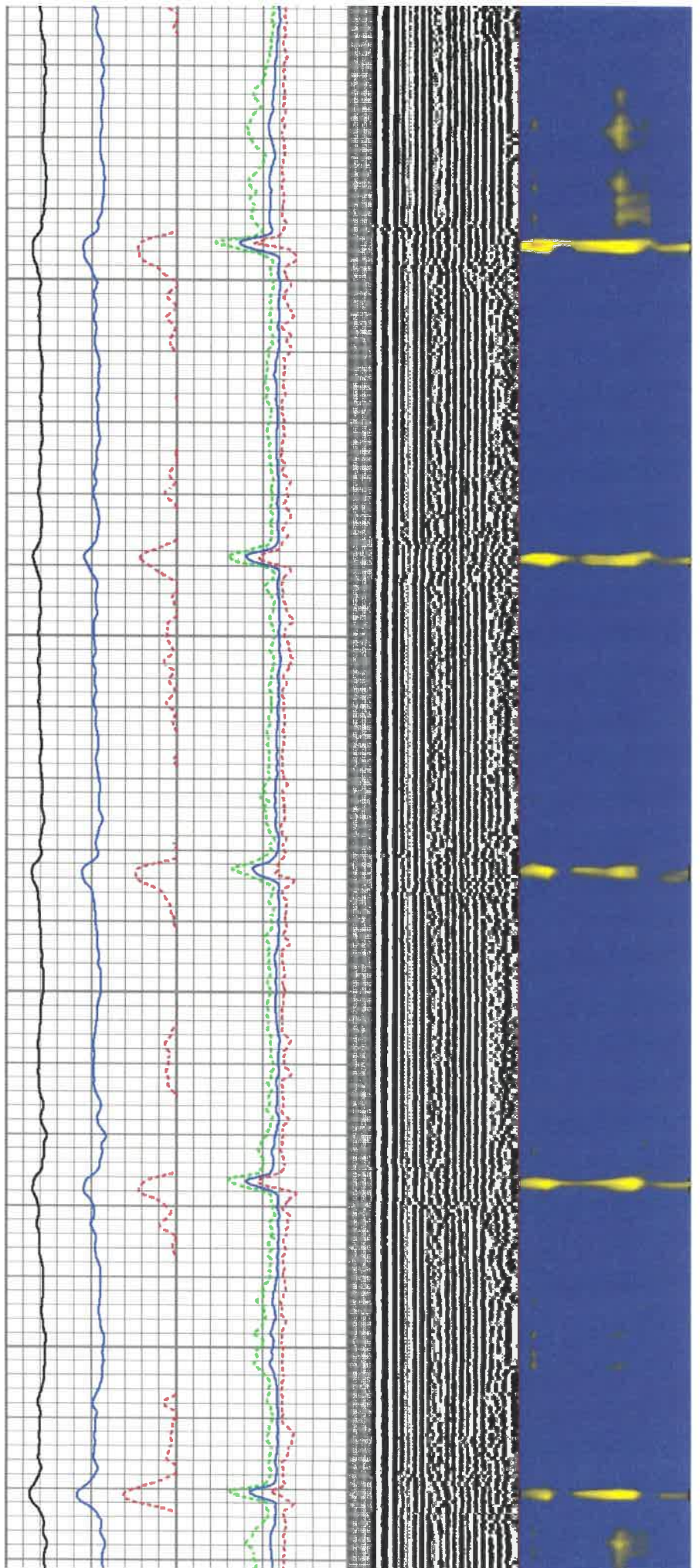


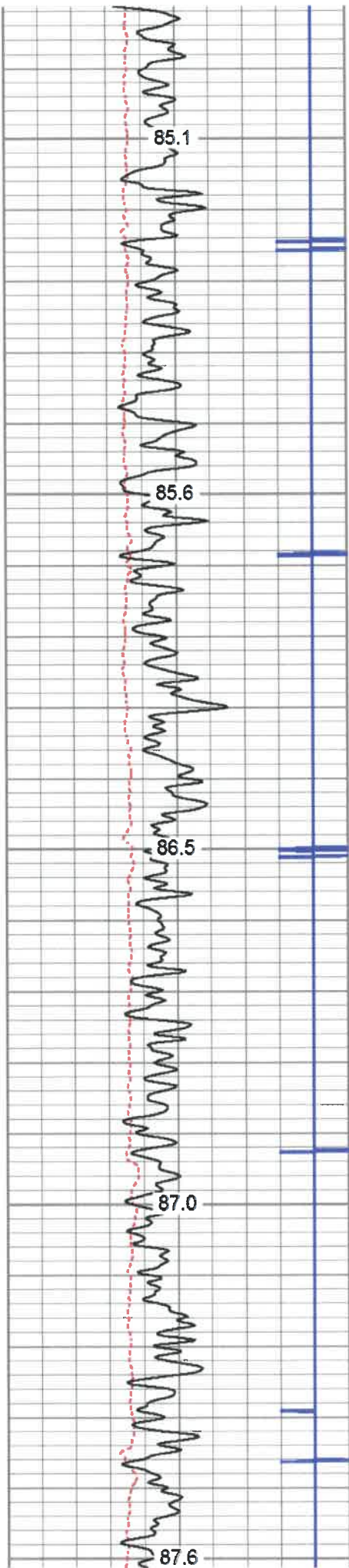
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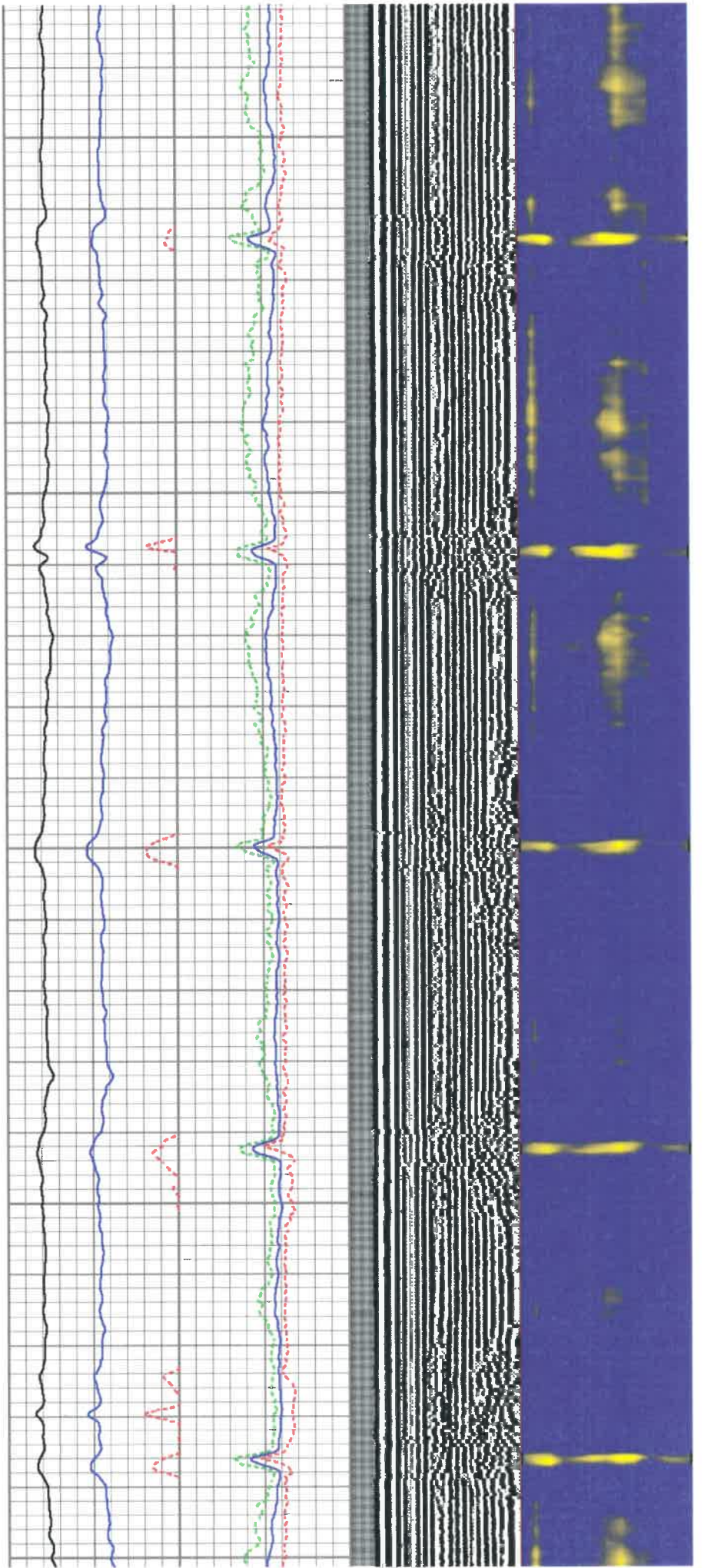
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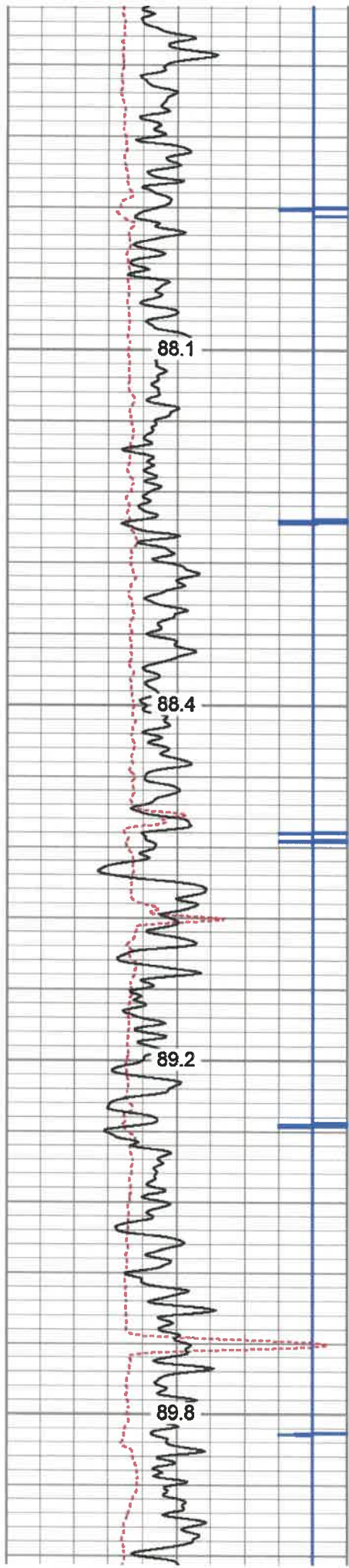
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3450
3500
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3600
3650



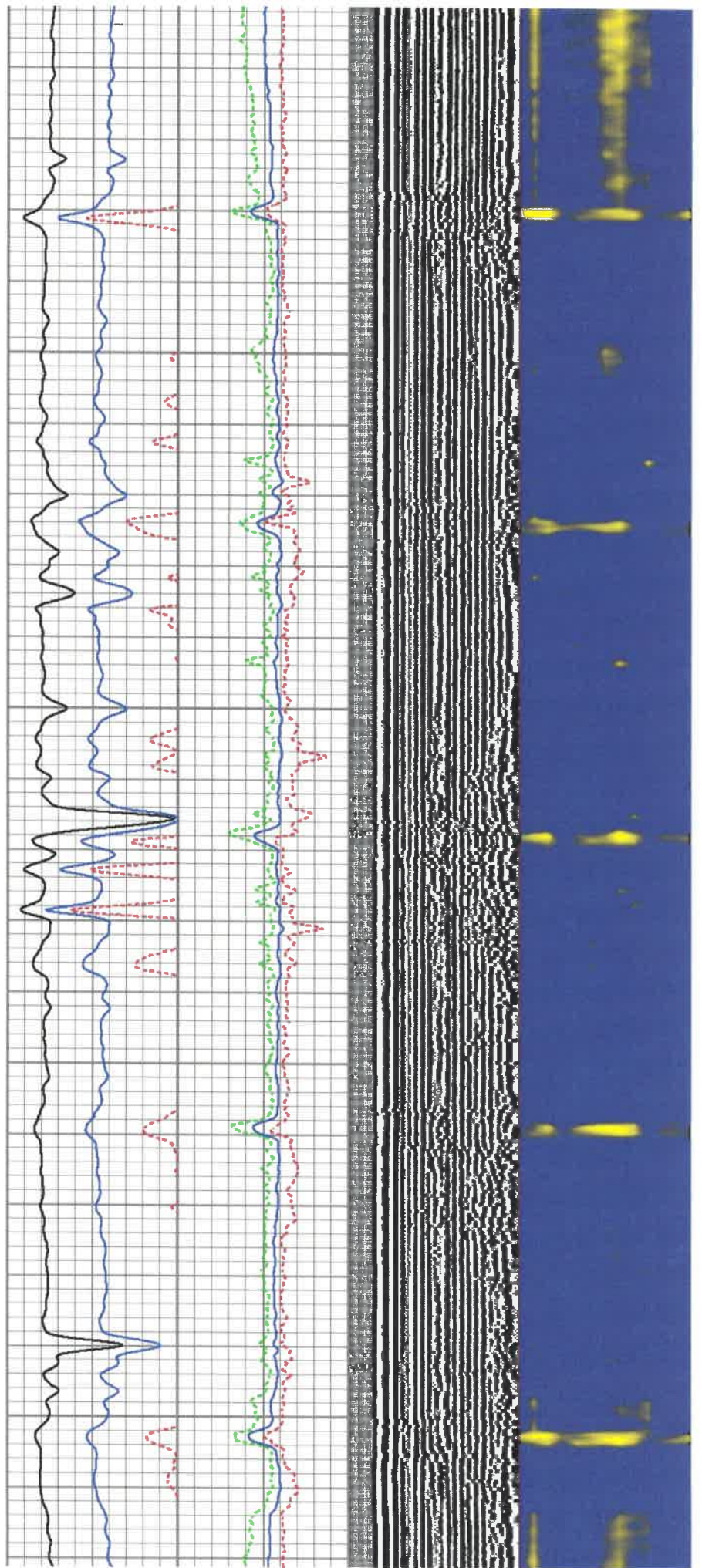


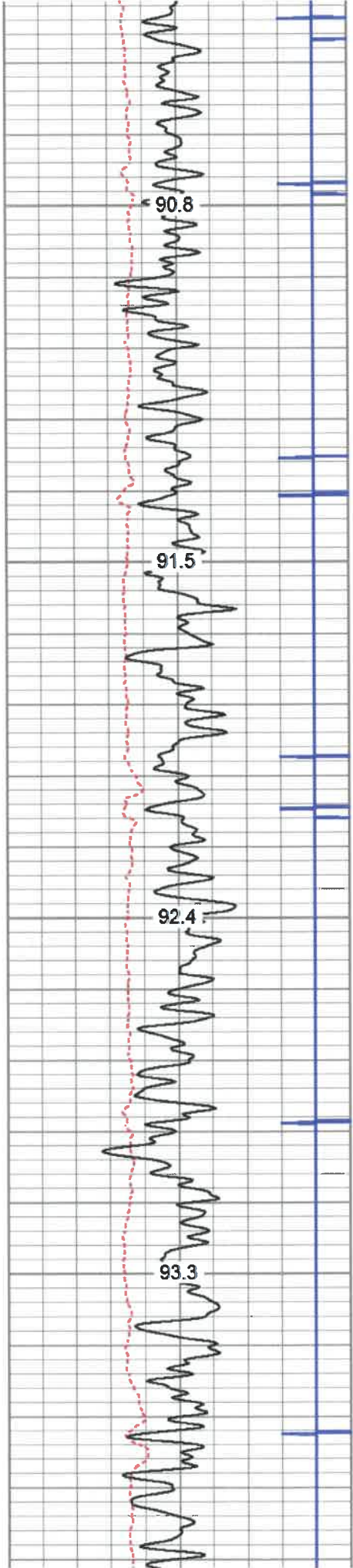
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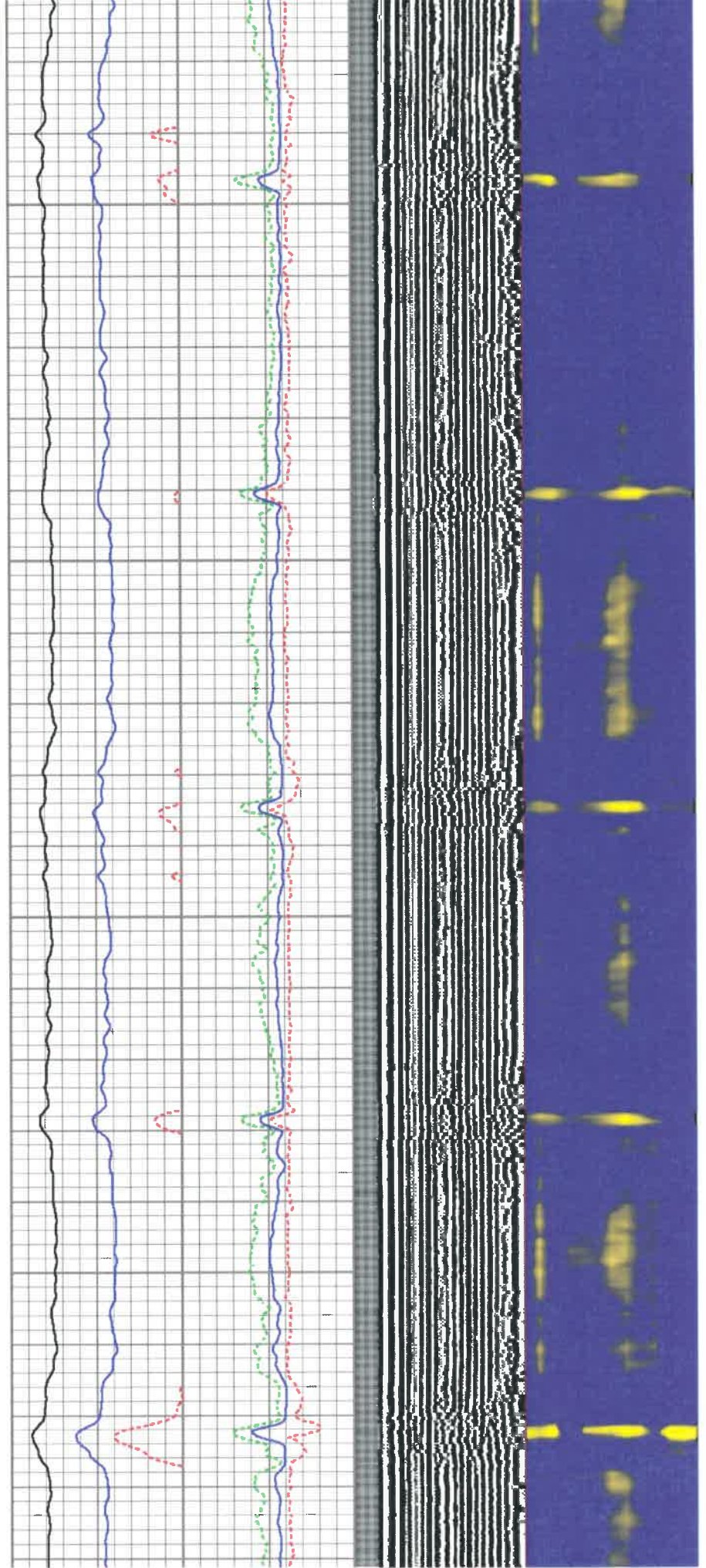
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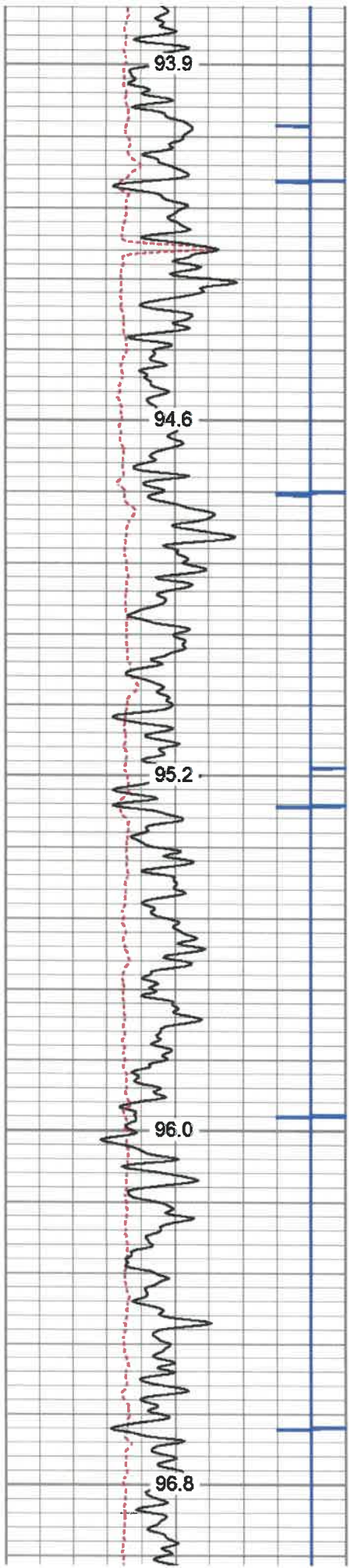
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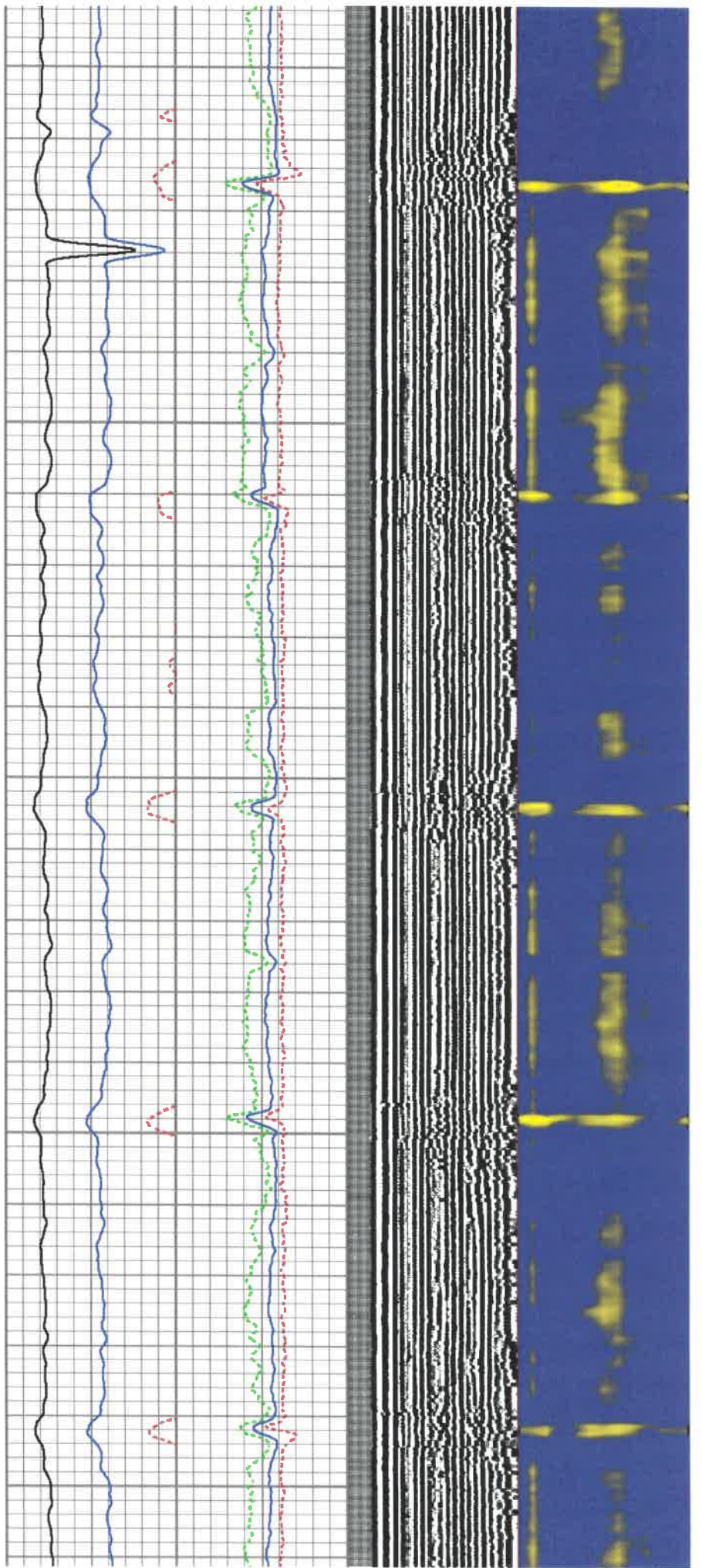


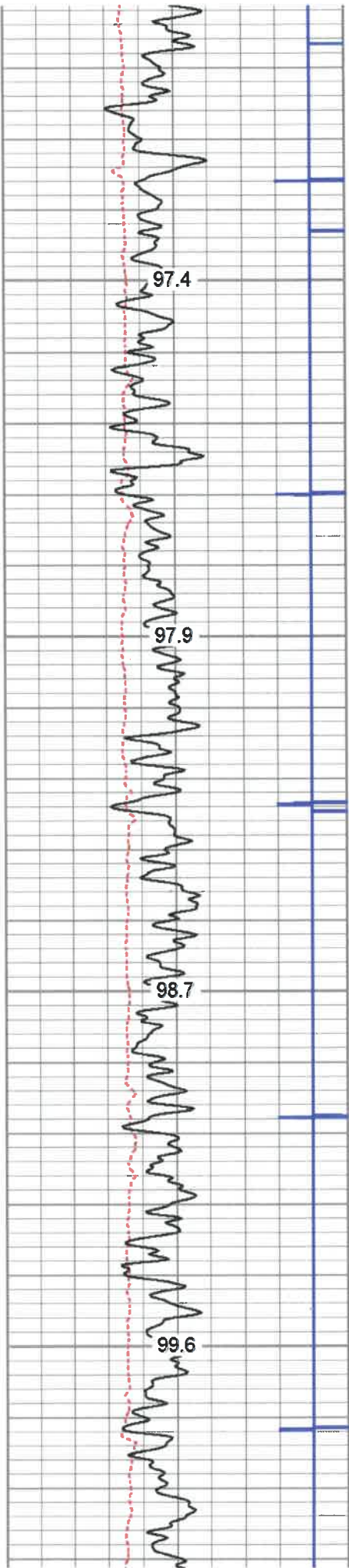
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3950
4000
4050





4100
4150
4200
4250
4300



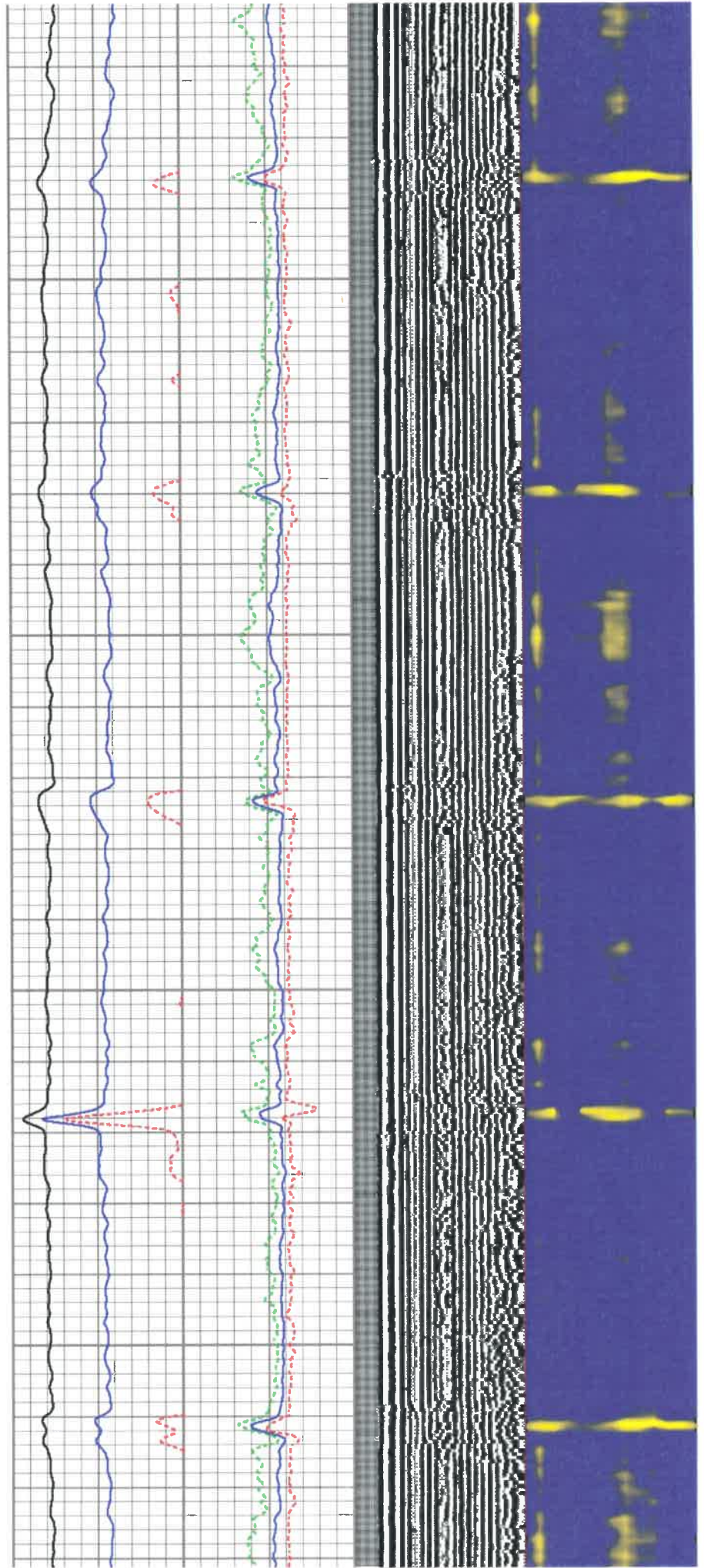


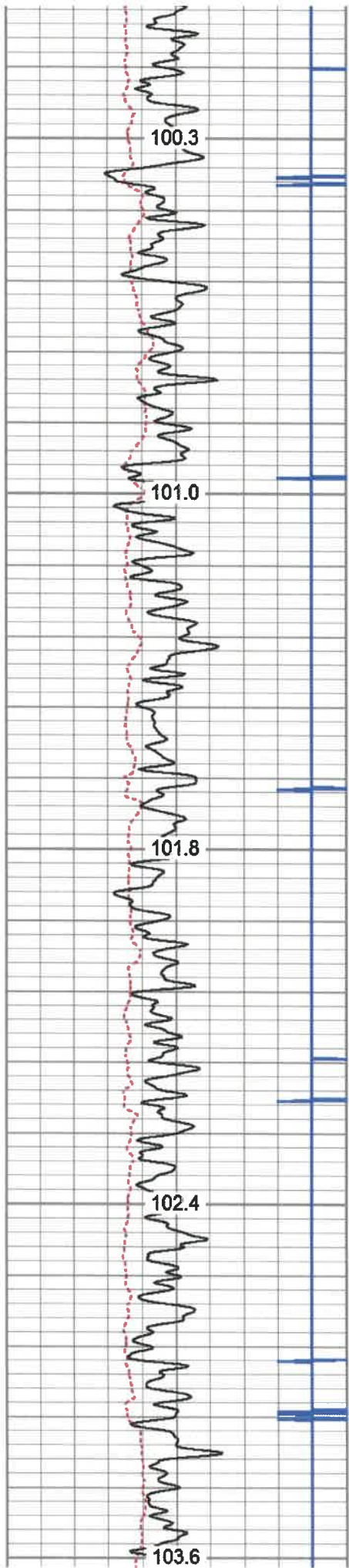
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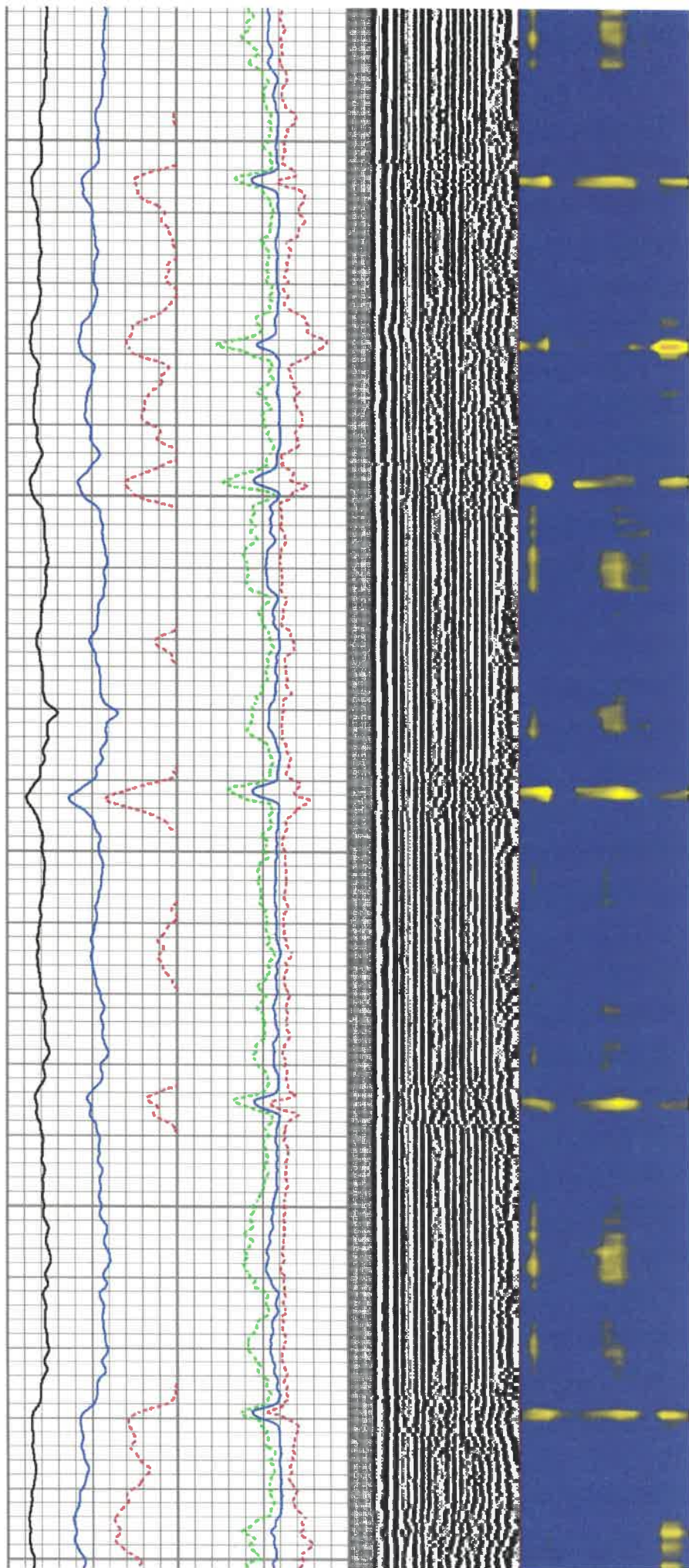
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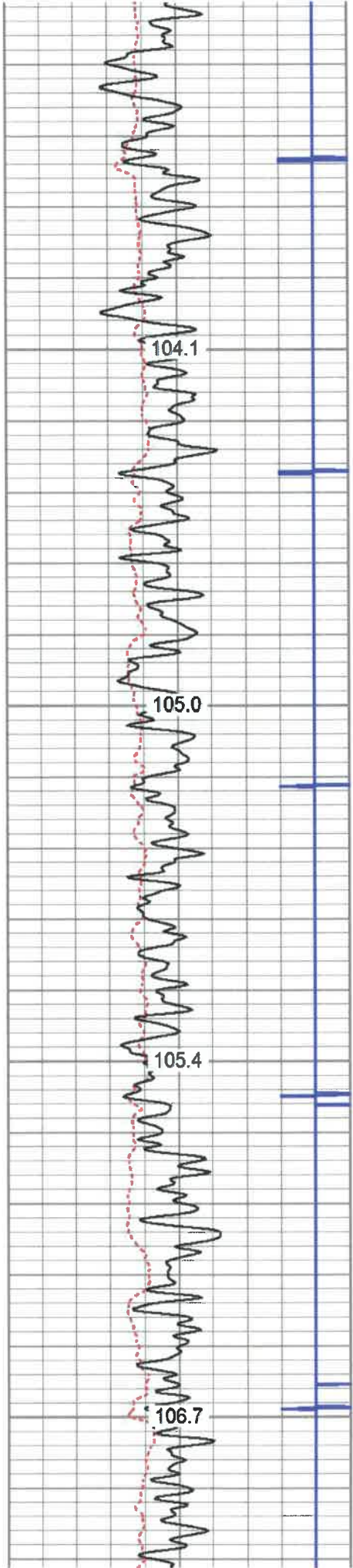
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4600
4650
4700
4750



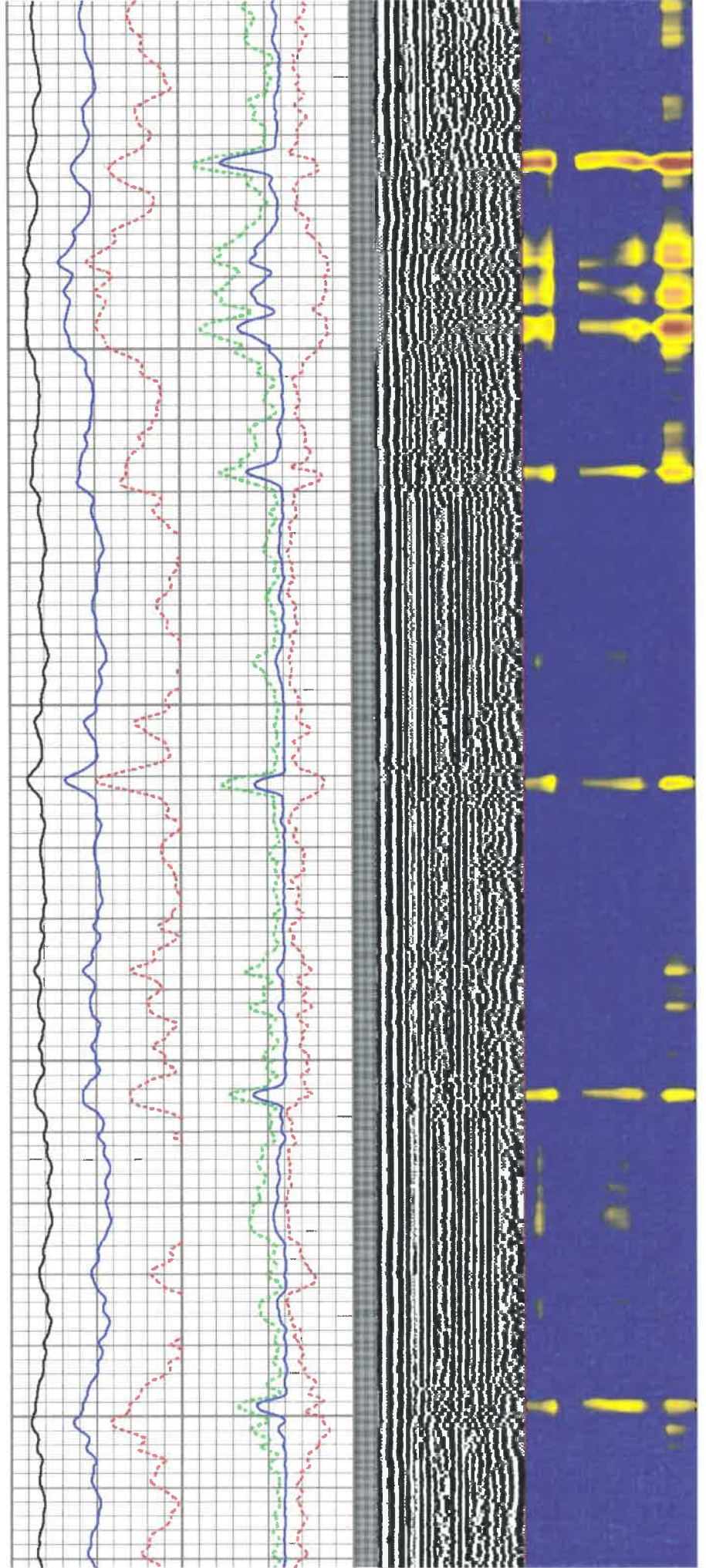


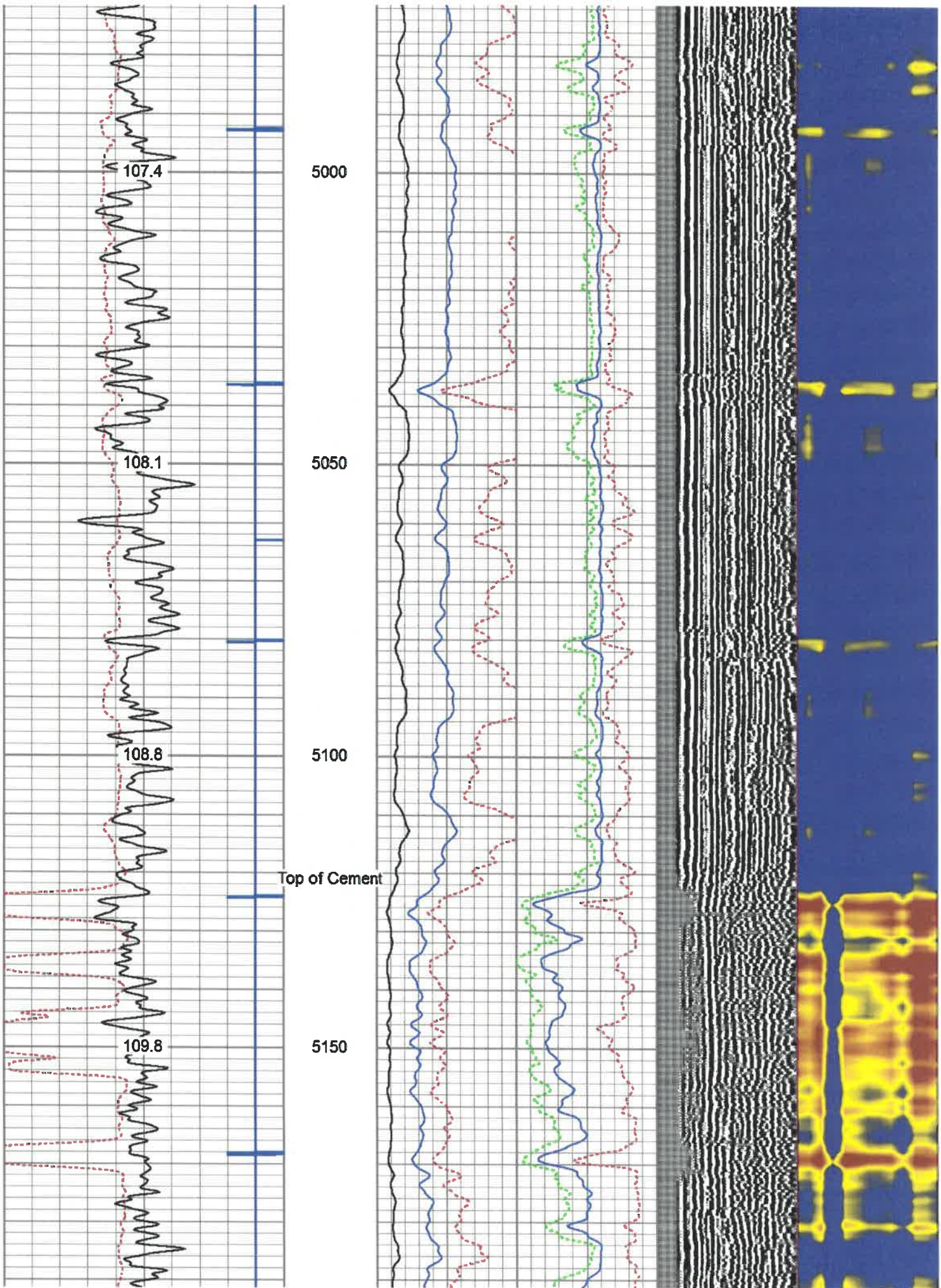
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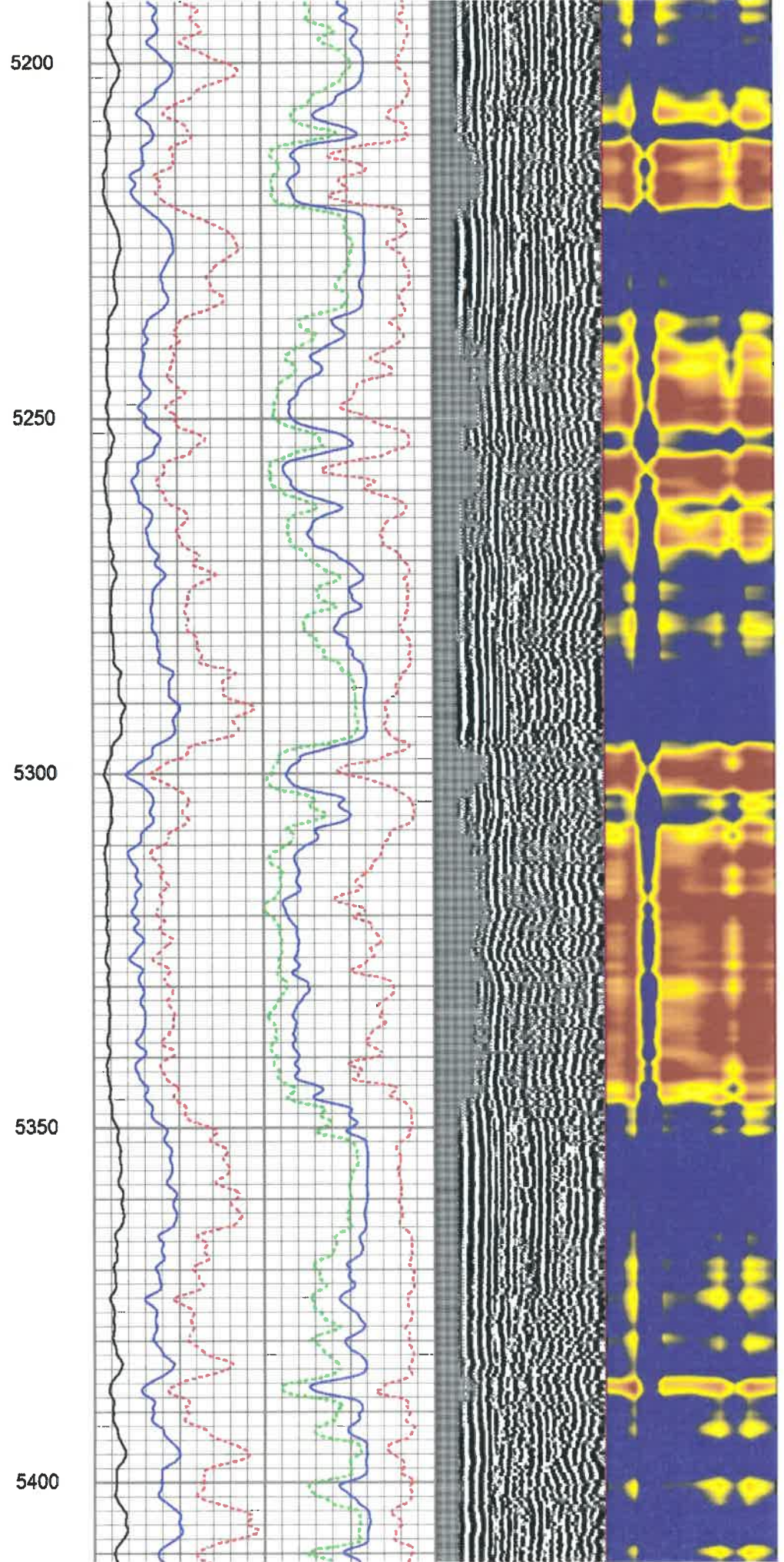
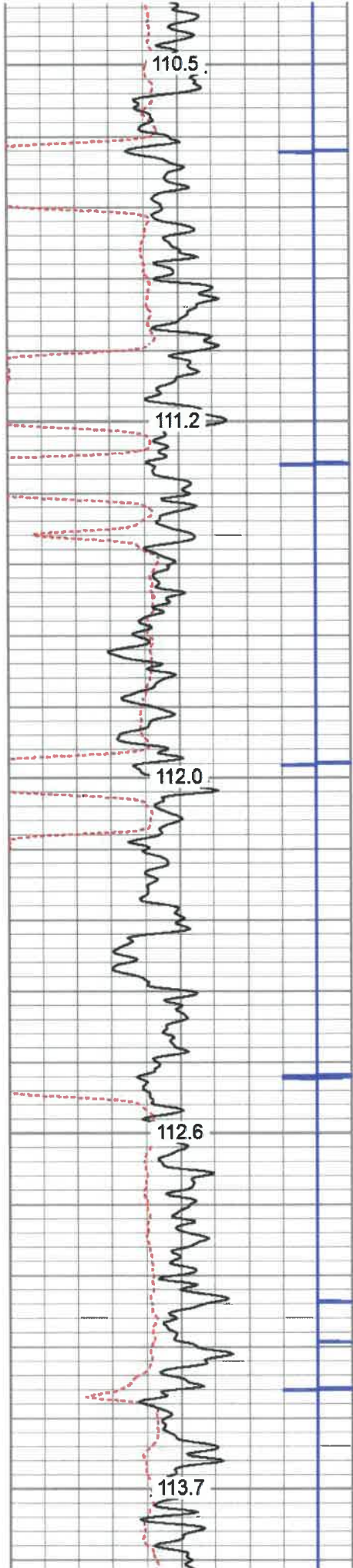
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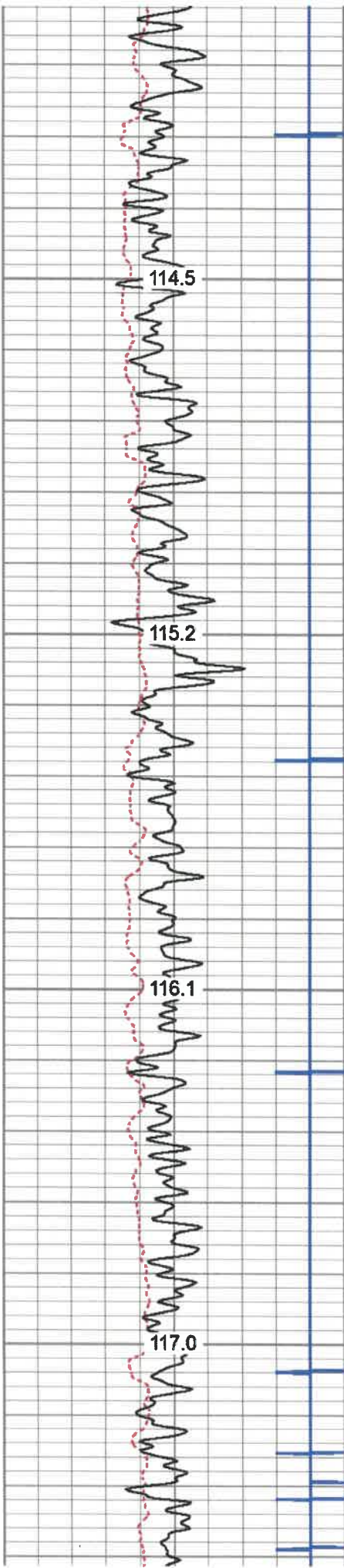
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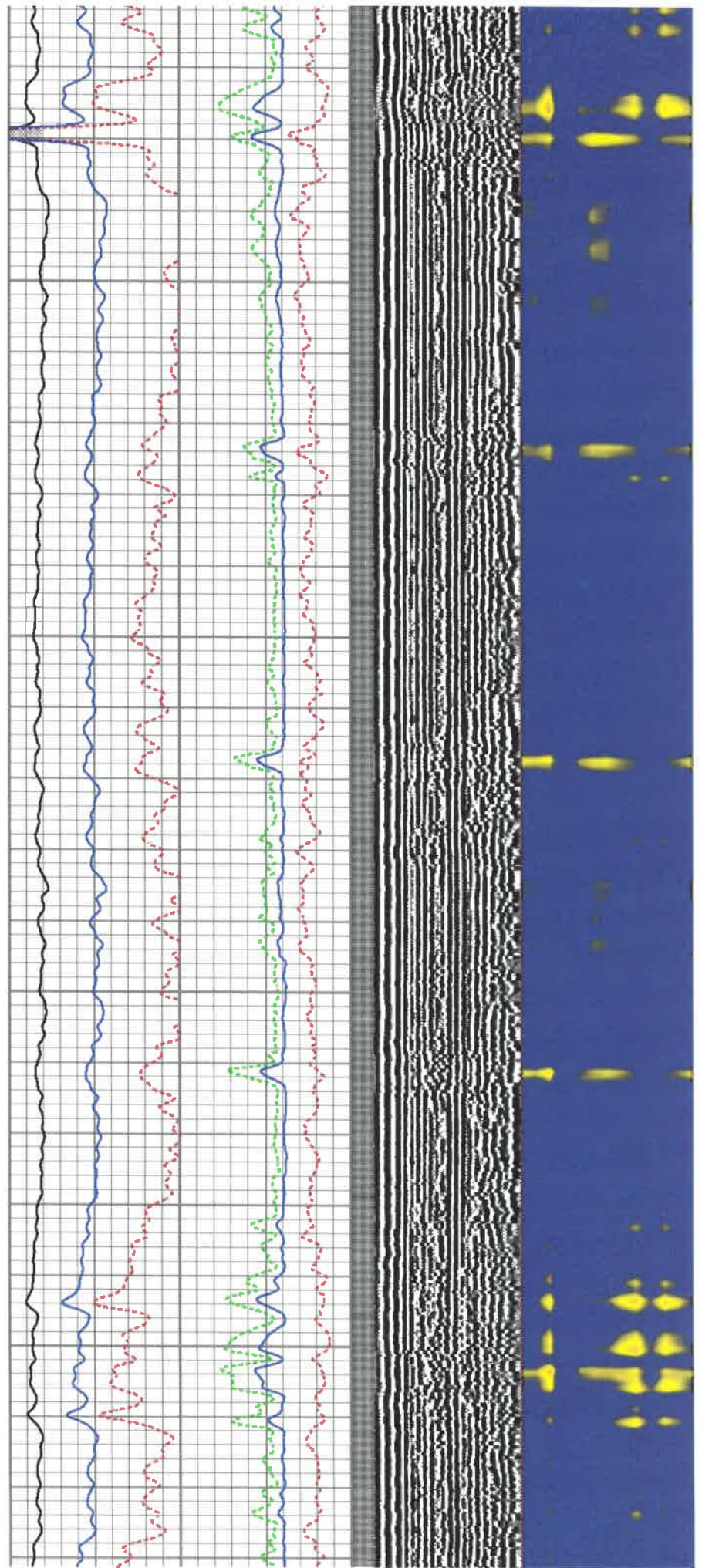


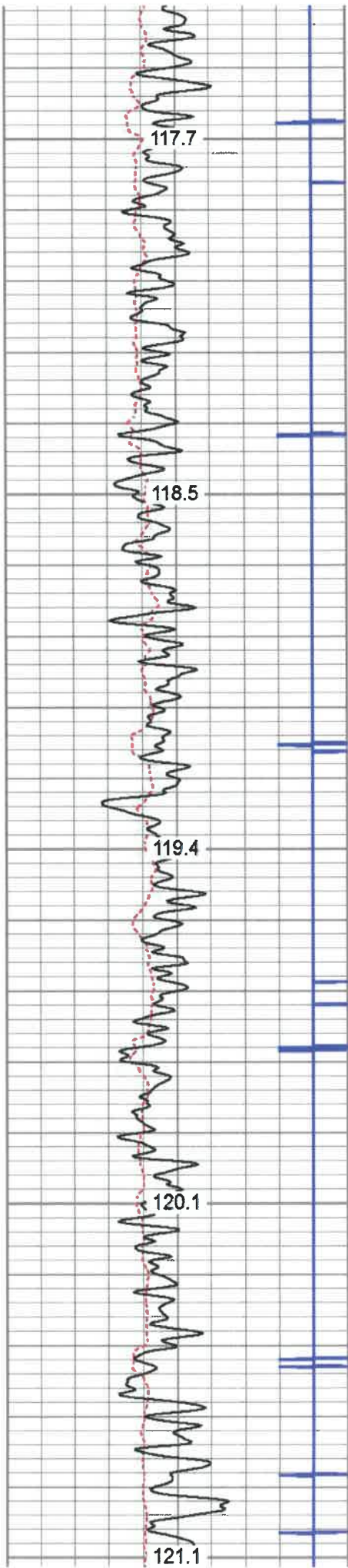
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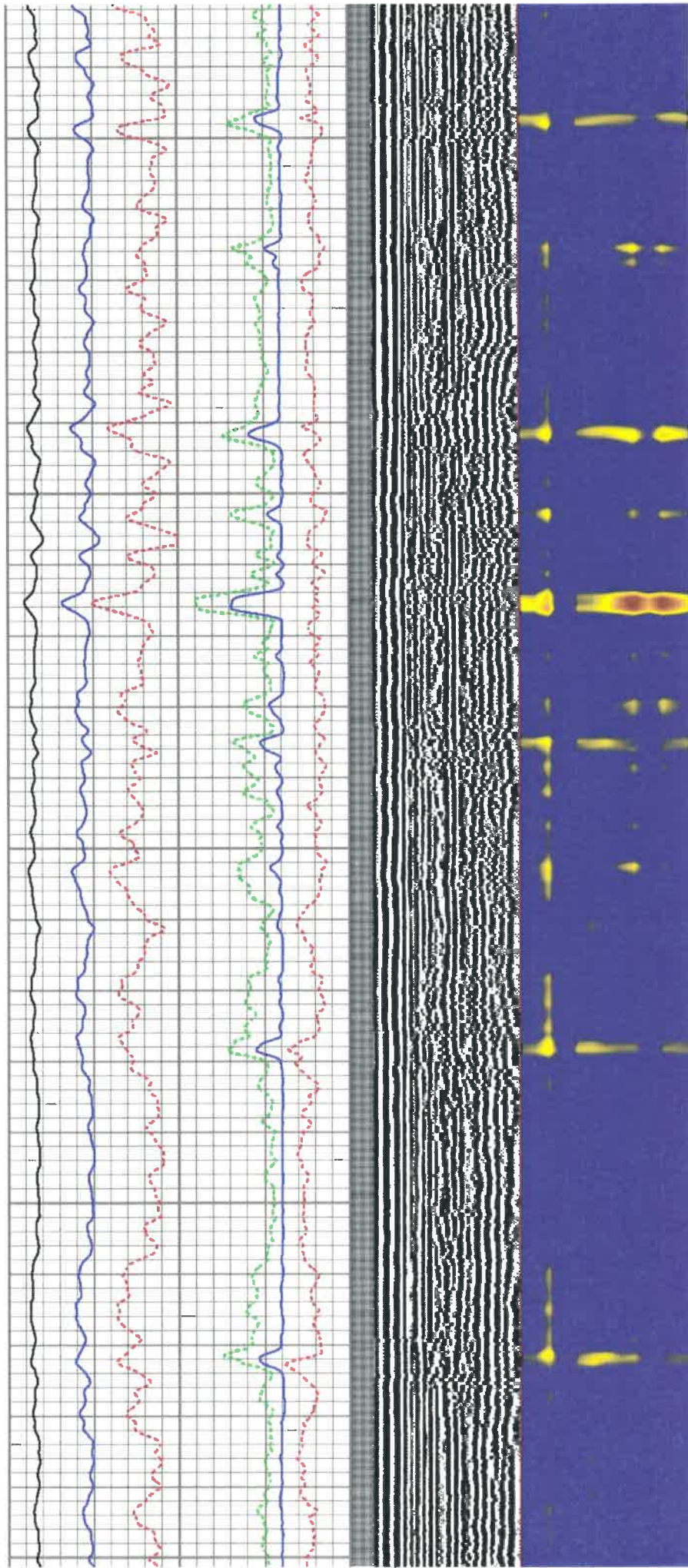
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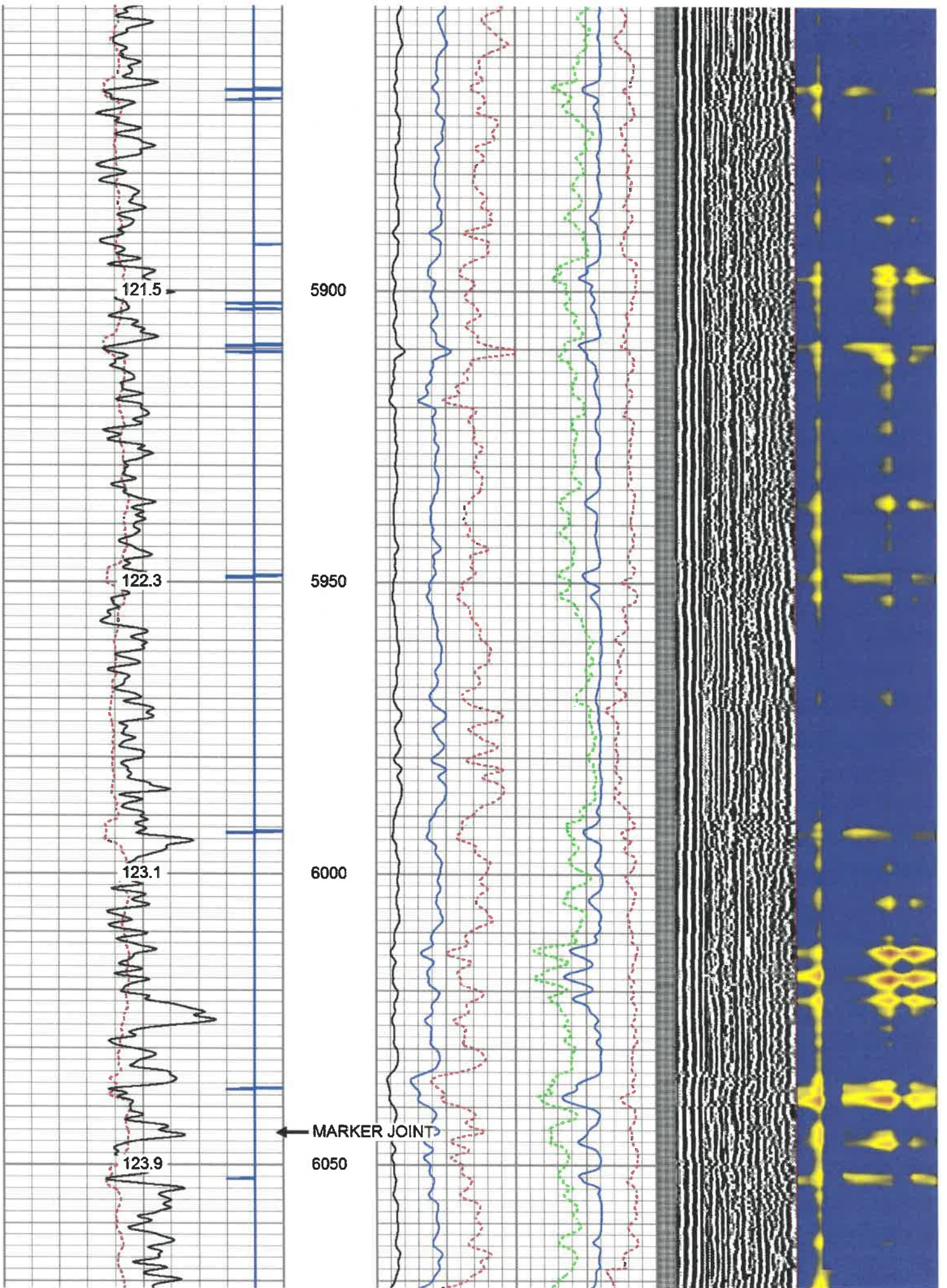
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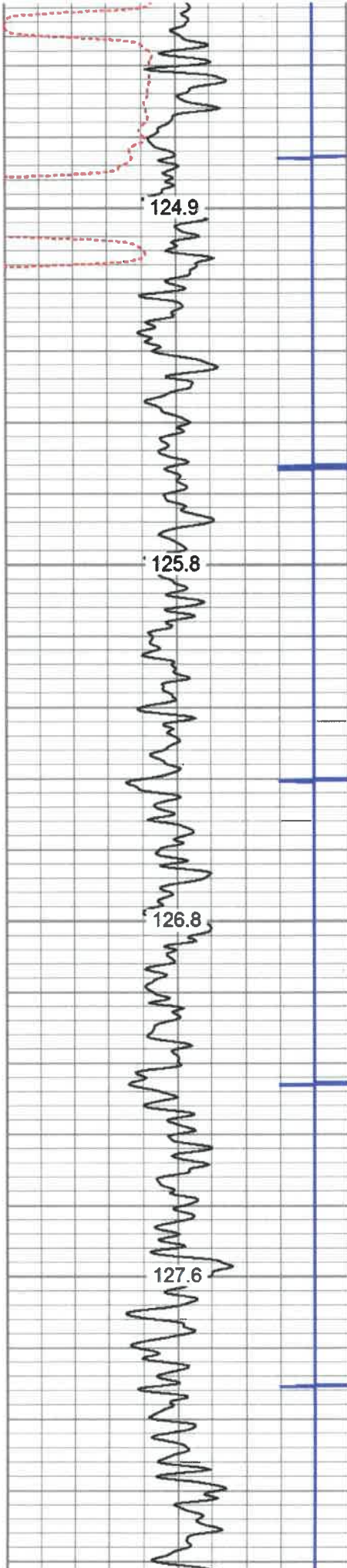
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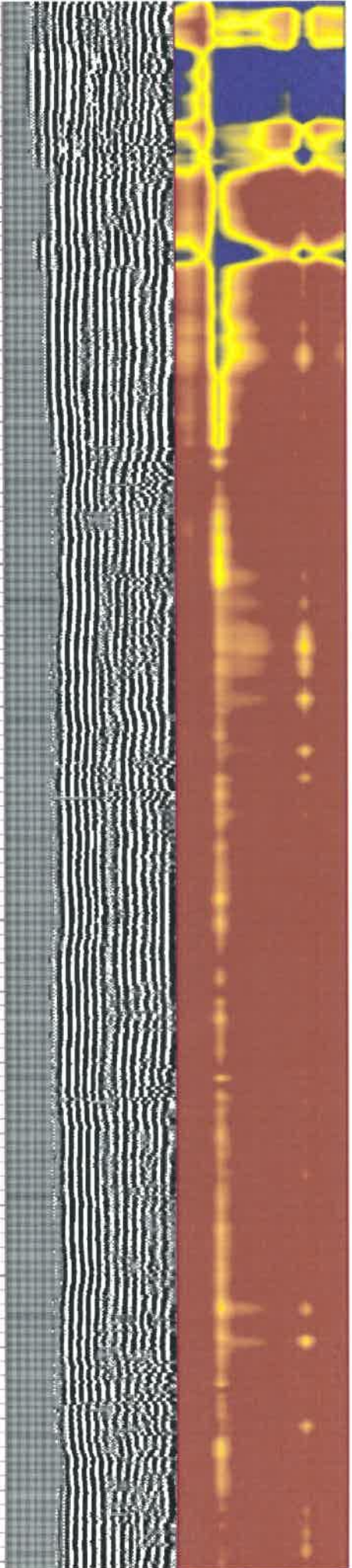
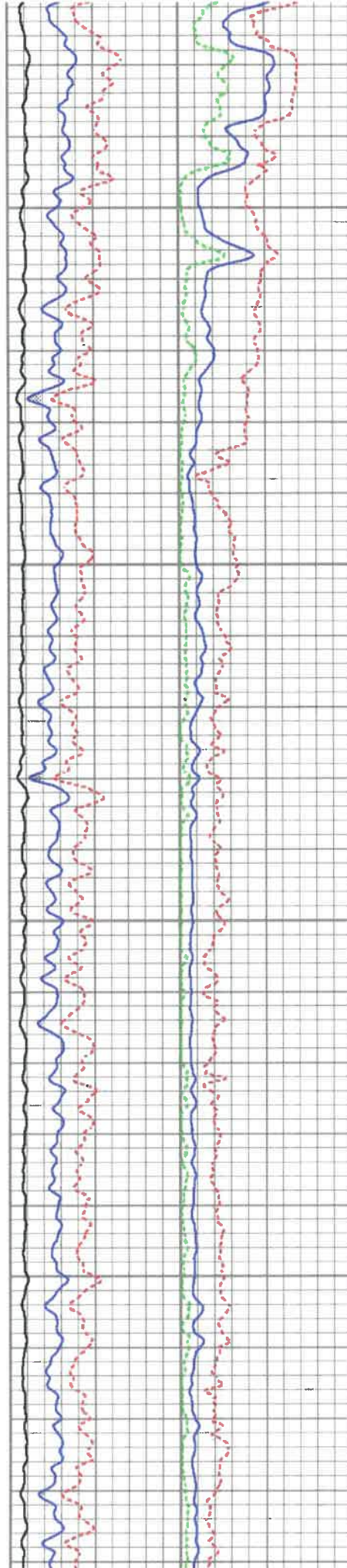
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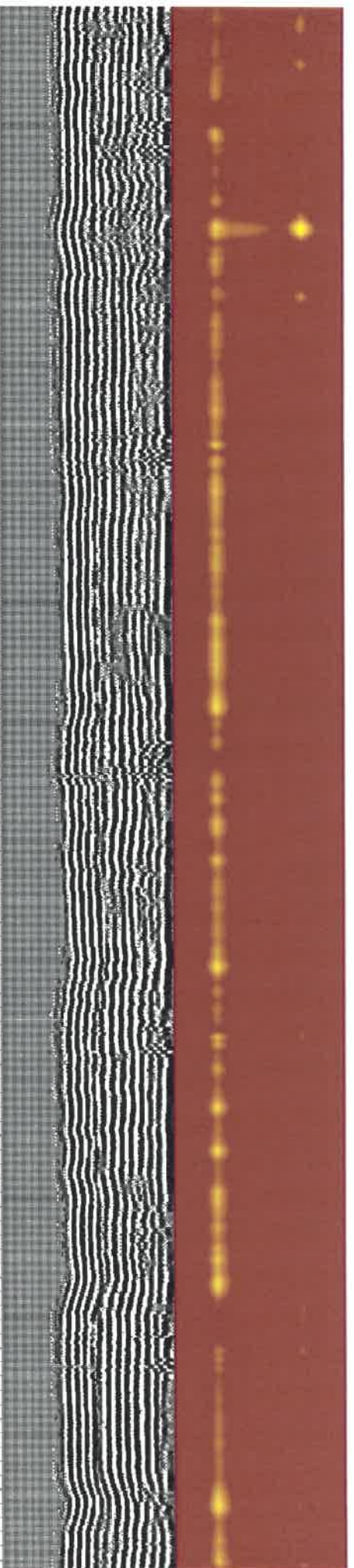
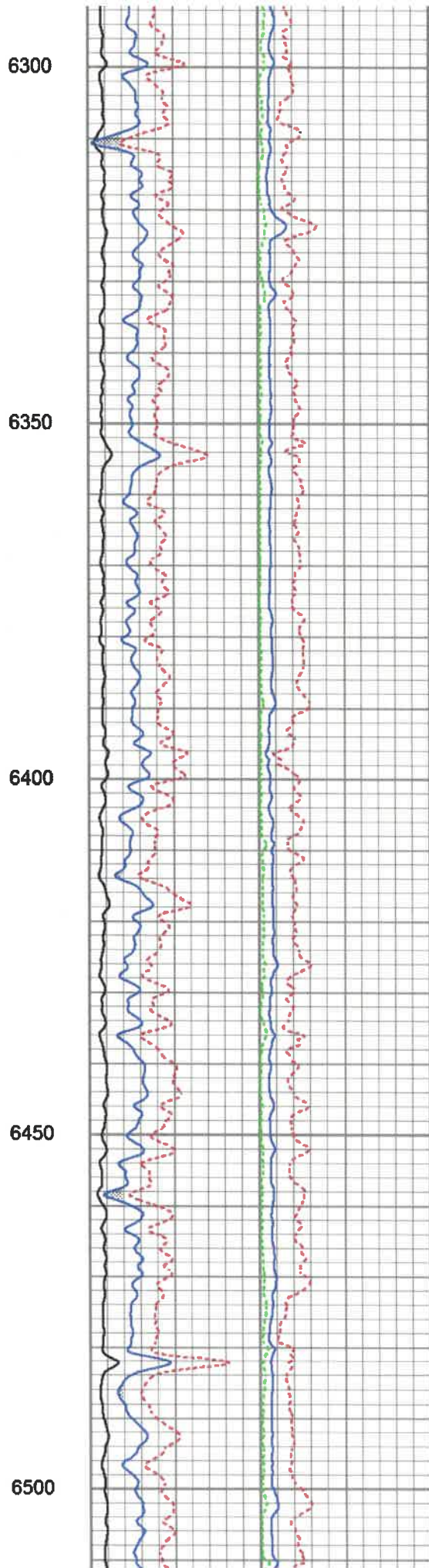
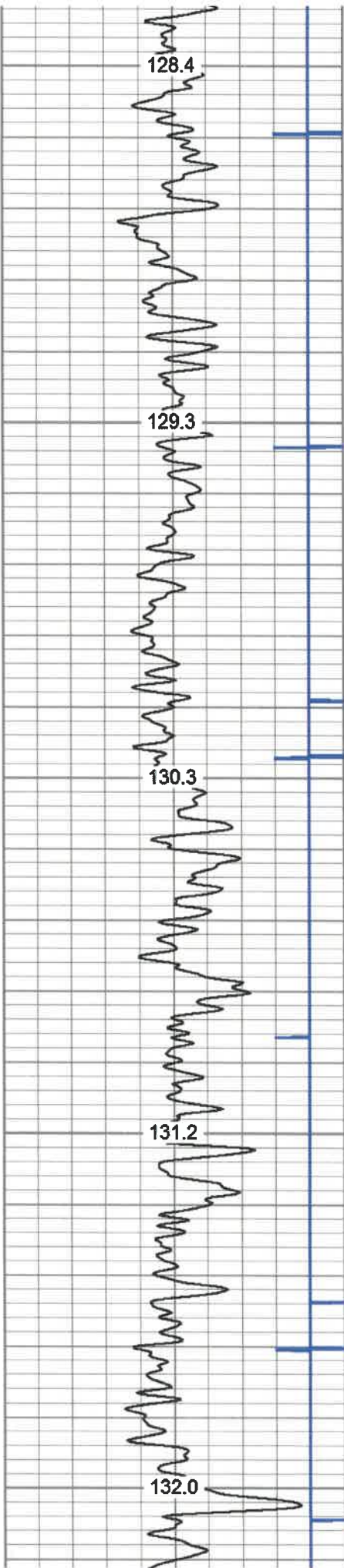


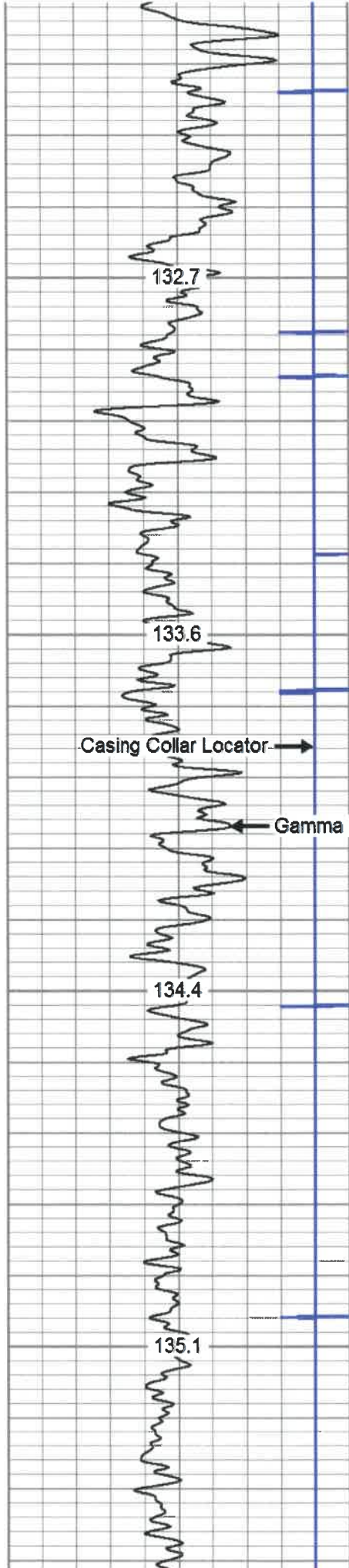




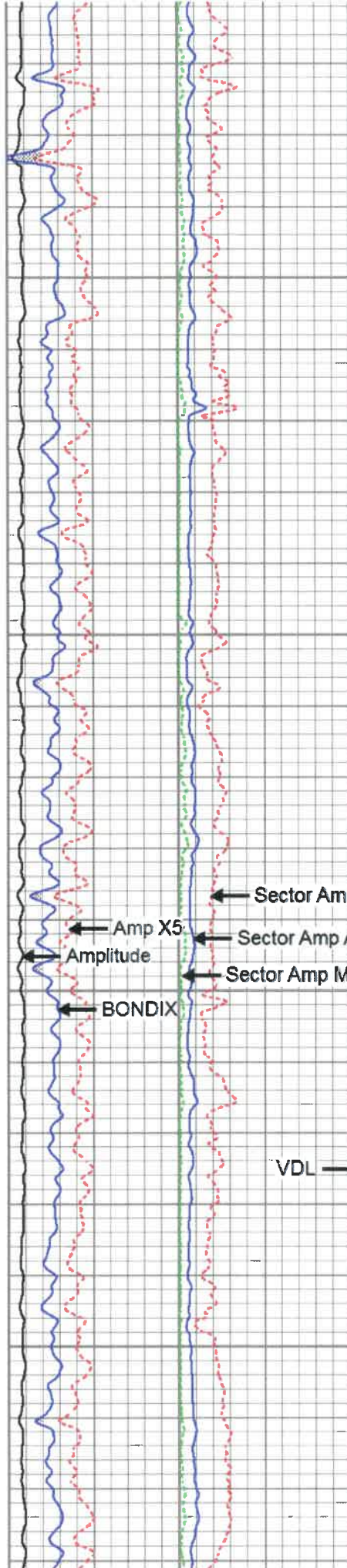
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6150
6200
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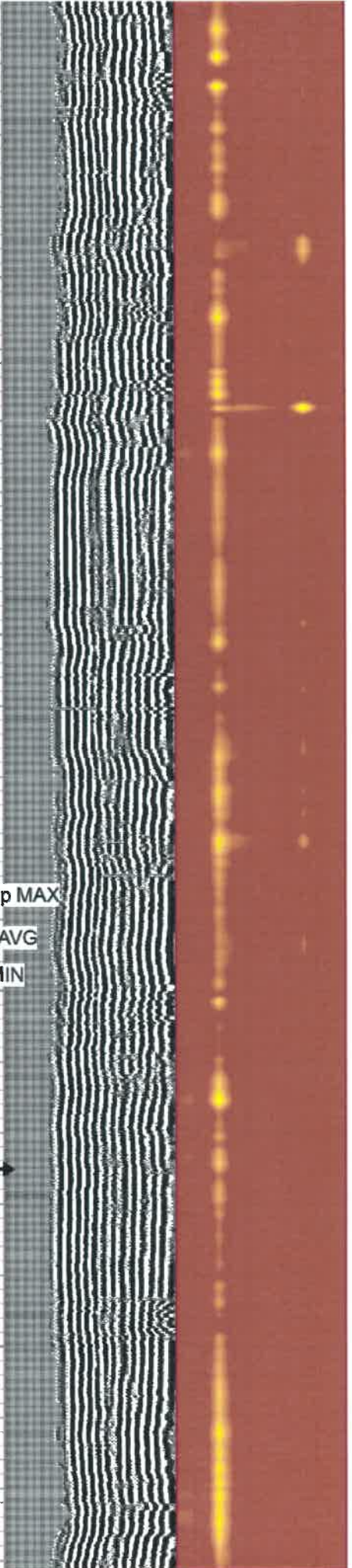


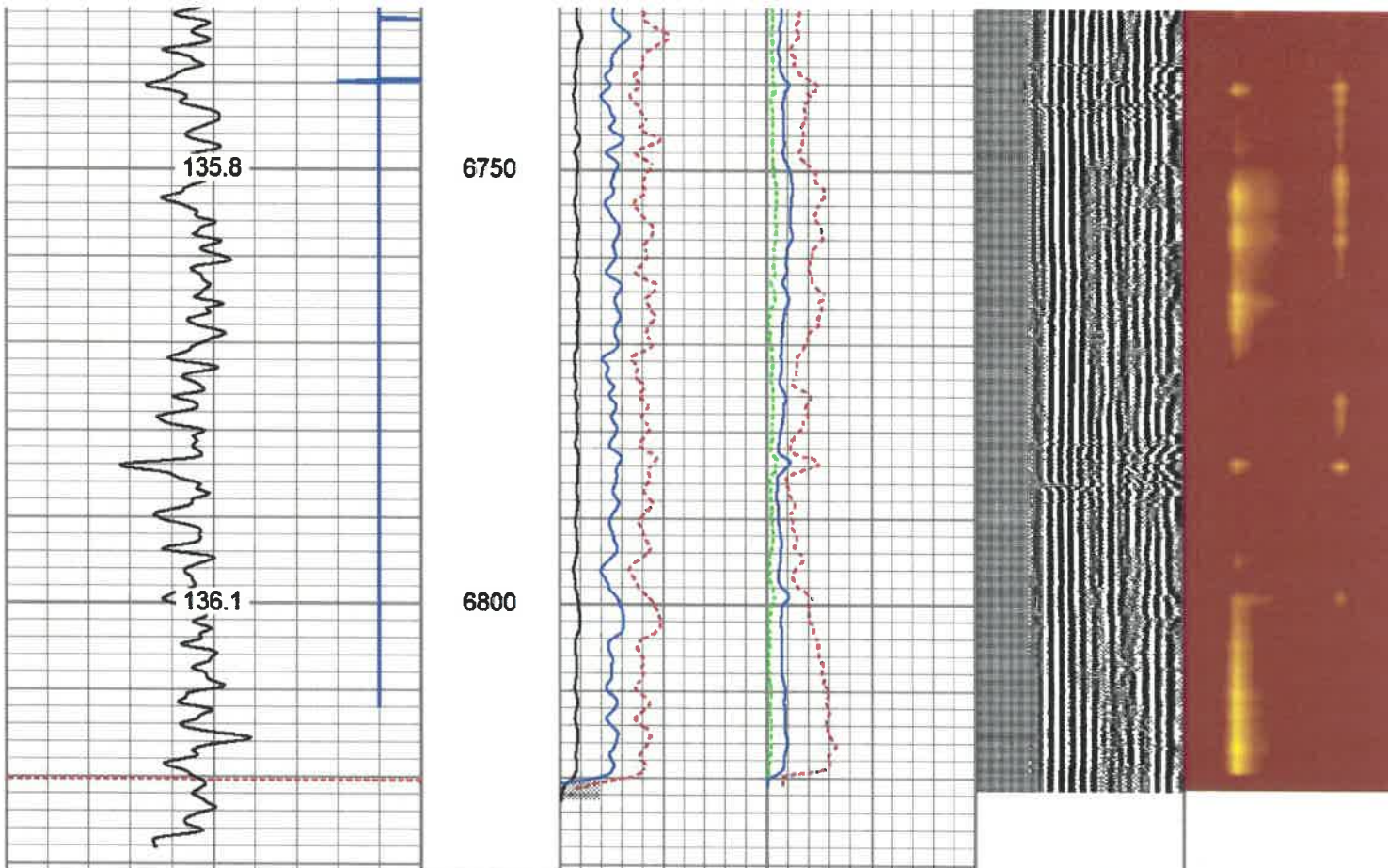


6550
6600
6650
6700



VDL →





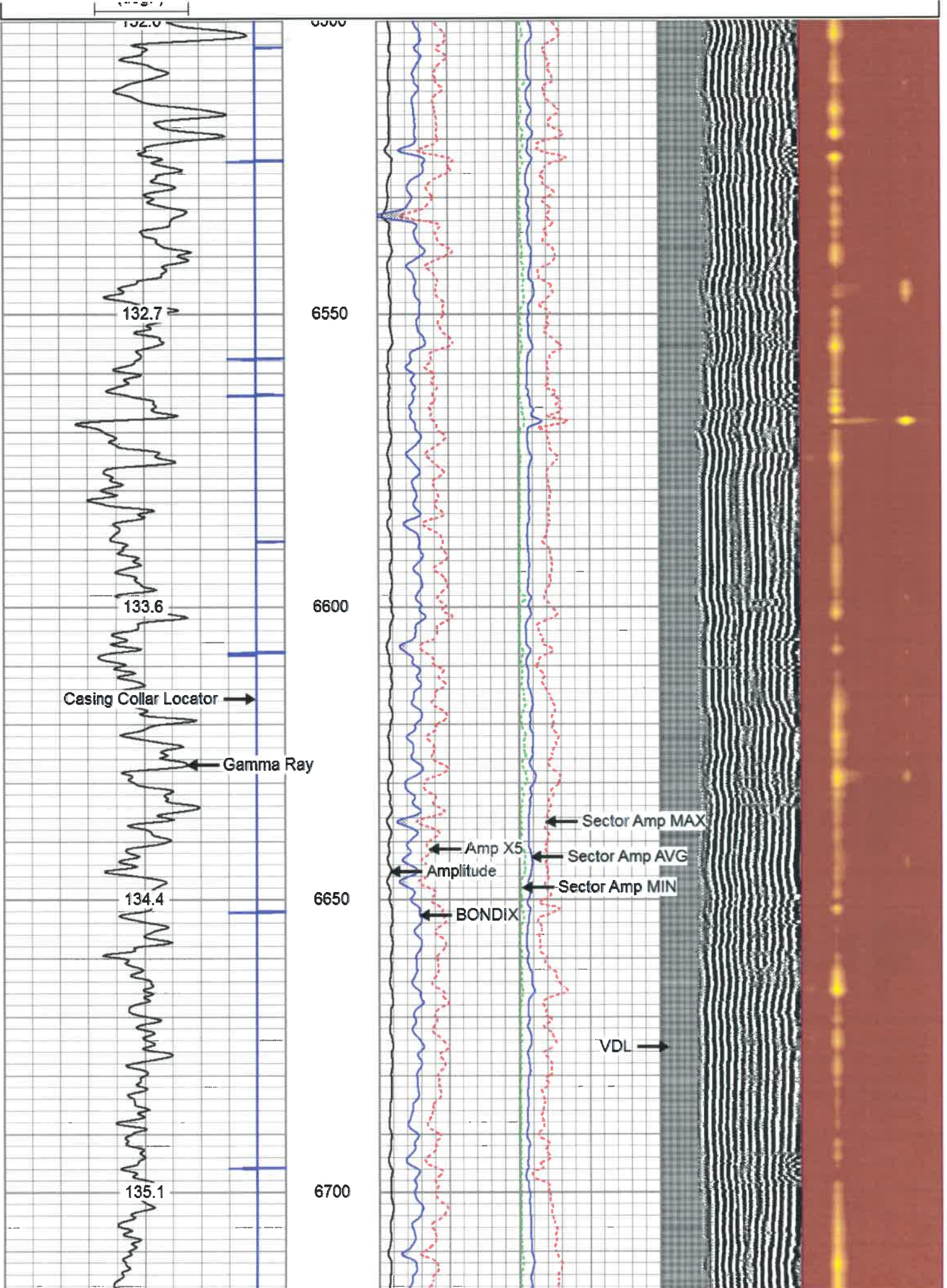
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9	Casing Collar	-1	0 (mV) 100	Sector Amp MAX	200 (usec) 1200		
0	Gamma Ray (GAPI)	180	Amp X5	Sector Amp MIN			
180	GR (GAPI)	360	0 (mV) 20				
TEMP							
(degF)							
		1 BONDIX 0					

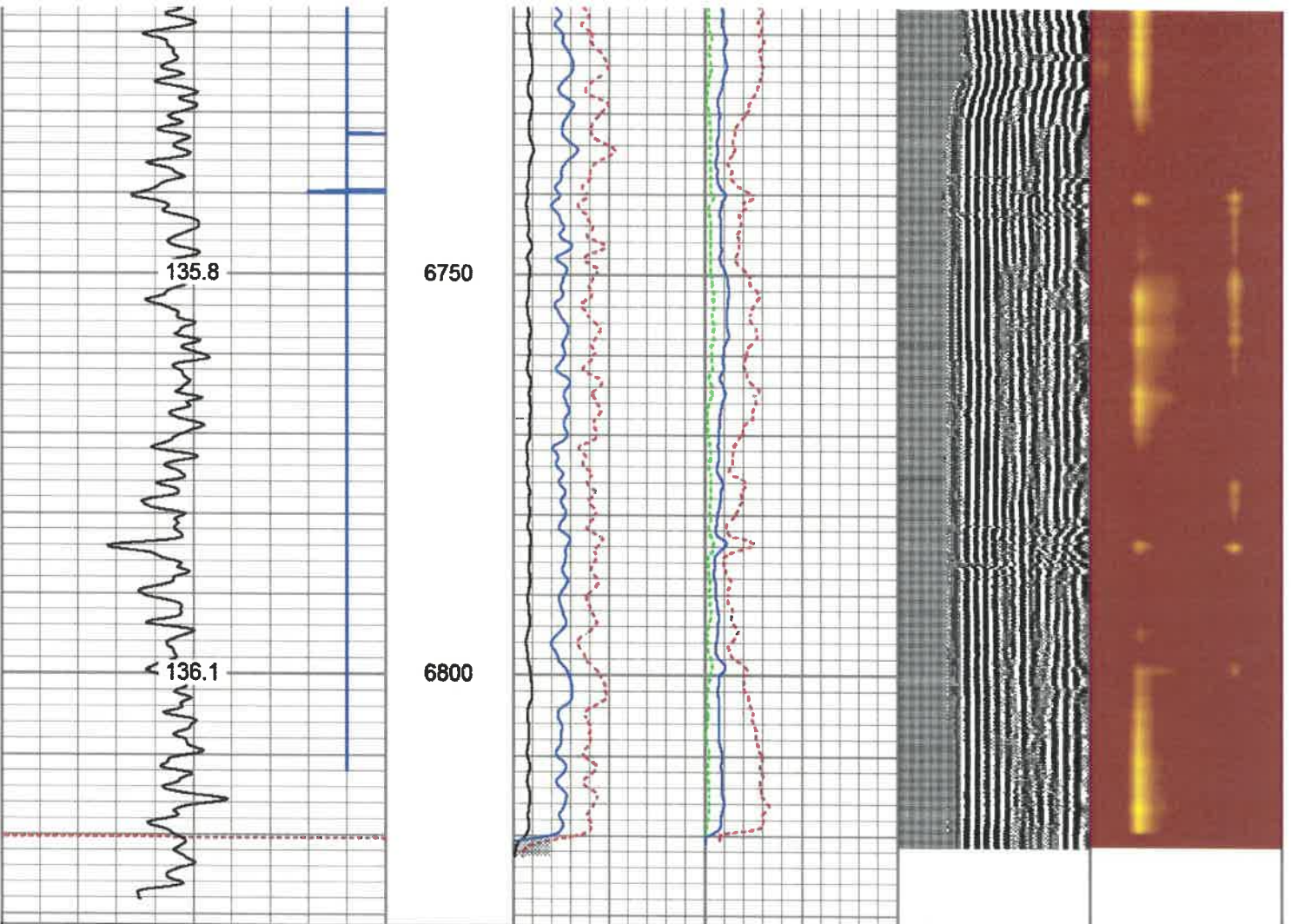
MAIN PASS 1500PSI

REPEAT PASS

Database File testpd.db
 Dataset Pathname KLX6
 Presentation Format antero
 Dataset Creation Sun Sep 15 20:01:33 2019
 Charted by Depth in Feet scaled 1:240

280	Travel Time (usec)	180	Amplitude	Sector Amp AVG	VDL	1	Sector Map 12
9	Casing Collar	-1	0 (mV) 100	Sector Amp MAX	200 (usec) 1200		
0	Gamma Ray (GAPI)	180	Amp X5	Sector Amp MIN			
180	GR (GAPI)	360	0 (mV) 20				
TEMP							
(degF)							
		1 BONDIX 0					





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

0	Amplitude (mV)	100
0	Amp X5 (mV)	20
1	BONDIX	0

1	Sector Map	12
200	VDL (uSec)	1200



REPEAT PASS

RECEIVED
Office of Oil and Gas

APR 20 2020

Log Variables

Database C:\ProgramData\Warrior\Data\grounds3hrec.db
Dataset field/well/run1/pass4/_vars_

WV Department of Environmental Protection

Top - Bottom

BHTEMP_Src TEMP	BOREID in 7.875	BOTTEMP degF 100	CASEOD in 5.5	CASETHCK in 0	CASEWGHT lb/ft 23	MAXAMPL mV 71.9
MINAMPL mV 3.5	MINATTN db/ft 0.8	PERFS No	PPT uSec 219	SRFTEMP degF 0	TDEPTH 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 grounds3hrec.db
 Dataset Pathname KLX6
 Dataset Creation Sun Sep 15 19:44:10 2019

Gamma Ray Calibration Report

Serial Number: 0111
 Tool Model: Tek-Co 2 3/4
 Performed: Fri Aug 02 20:12:43 2019

 Calibrator Value: 1.0 GAPI

 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

 Sensitivity: 0.5000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: pd111
 Tool Model: Tek12

 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 69.992 ft

Master Calibration, performed (Derived):

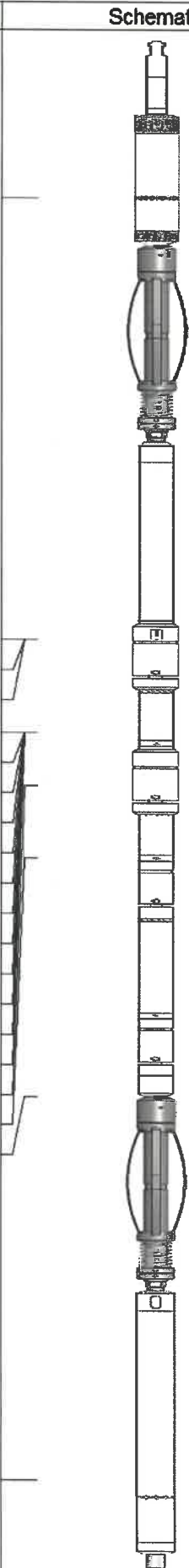
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.140	0.207	3.500	71.921	468.000	1.000
CAL	0.000	0.183				
5'	-0.007	0.352	0.000	71.921	200.358	1.374
SUM						
S1	0.000	1.857	0.000	100.000	53.838	-0.000
S2	0.000	1.958	0.000	100.000	51.075	-0.001
S3	0.000	1.703	0.000	100.000	58.737	-0.001
S4	-0.325	1.790	0.000	100.000	57.282	30.000
S5	0.000	1.916	0.000	100.000	52.202	-0.002
S6	0.000	1.927	0.000	100.000	51.895	-0.001
S7	0.000	1.858	0.000	100.000	53.825	-0.001
S8	-0.012	1.856	0.000	100.000	53.526	0.657
S9	-0.016	1.886	0.000	100.000	52.578	0.858
S10	-0.026	1.858	0.000	100.000	53.066	11.380
S11	0.000	1.833	0.000	100.000	54.563	-0.000
S12	0.000	1.884	0.000	100.000	53.086	-0.000

Temperature Calibration Report

Serial Number: pd111
 Tool Model: Tek12
 Performed: Tue Sep 10 17:59:48 2019

	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)	
			Titan-1.4375 1 7/16 Titan Type II Cable Head	1.03	1.44	5.00	
CCL	19.20		GCL-312tekco (101) 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	13.04						
WVFSYNC	13.04						
WVFCAL	13.04						
WVFS12	11.75						
WVFS11	11.75						
WVFS10	11.75			SCBL-Tek12 (pd111) Tekco 400 Deg F 12 Sector RIB with Temp	9.13	3.25	135.00
WVFS9	11.75						
WVFS8	11.75						
WVFS7	11.75						
WVFS6	11.75						
WVFS5	11.75						
WVFS4	11.75						
WVFS3	11.75						
WVFS2	11.75						
WVFS1	11.75						
WVF3FT	11.00						
WVF5FT	10.00						
WVFTEMP	6.67		Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00	
			GR-Tek-Co 2 3/4 (0111) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00	
GR	1.31						
			Titan-1.4375_Cap	0.27	1.44	1.00	

Dataset:	grounds3hrec.db: field/well/run1/KLX6
Total length:	21.37 ft
Total weight:	256.00 lb
O.D.:	3.25 in



Company	ANTERO RESOURCES CORPORATION		
Well	GROUNDS 3H		
Field	MARCELLUS		
County	TYLER		
State	WV	Country	USA

9,295' to Top Hole

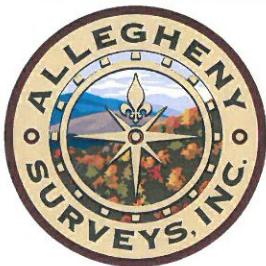
2,816' to Bottom Hole

TOP Hole LATITUDE 39 - 27 - 30
BTM Hole LATITUDE 39 - 25 - 00

9,068' to Bottom Hole

14,318' to Top Hole

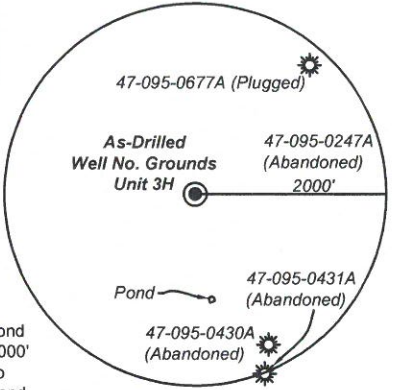
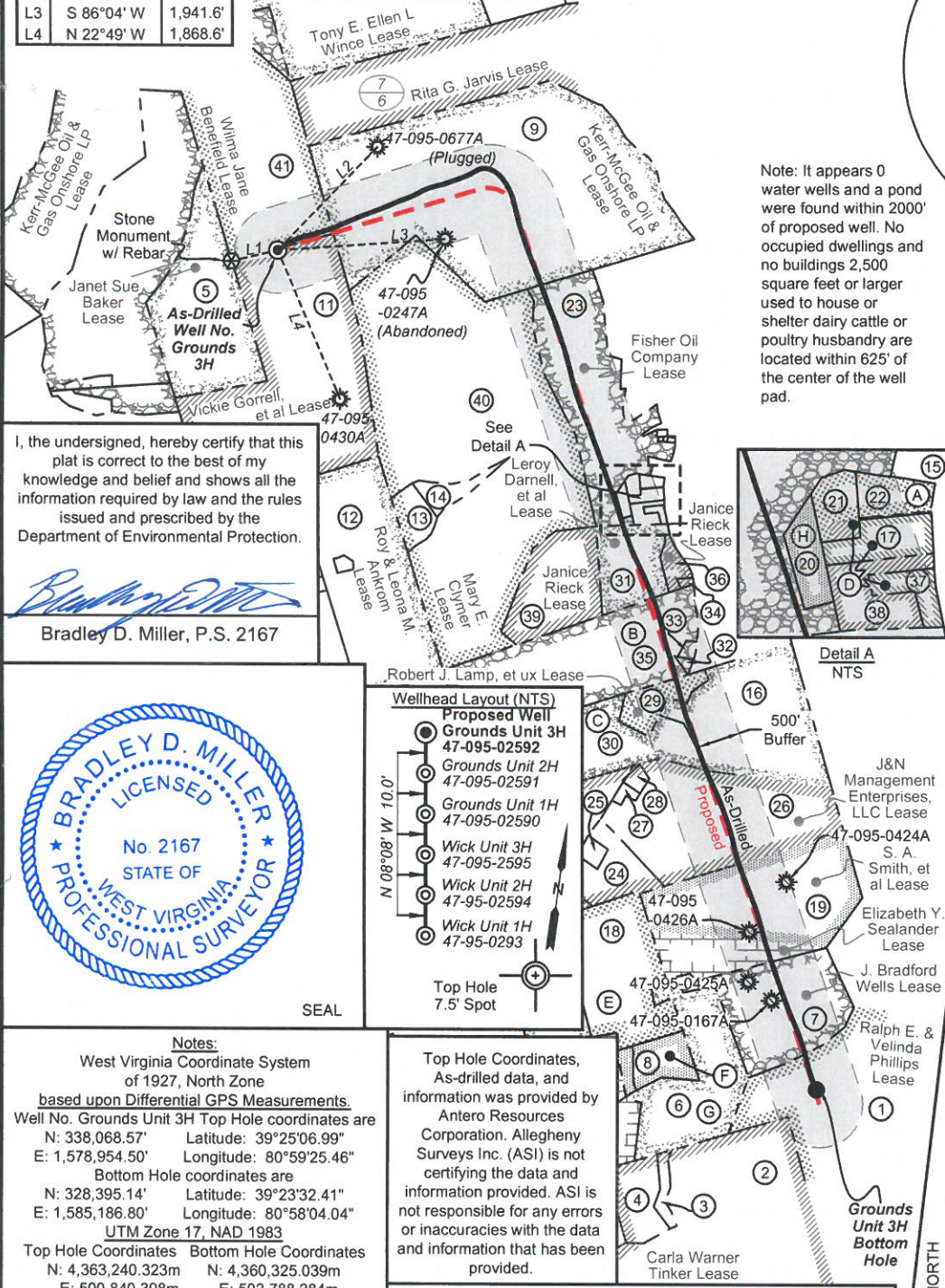
**Antero Resources
Well No. Grounds
Unit 3H
As-Drilled**
Antero Resources Corporation



Legend

- Proposed gas well
- Monument, as noted
- Existing Well, as noted
- Digitized Well, as noted
- Creek or Drain
- Surface boundary (approx.)
- Interior surface tracts (approx.)

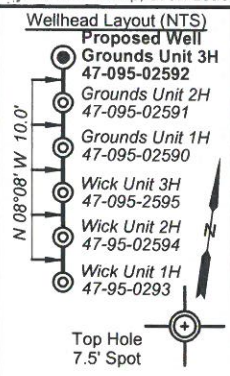
	Bearing	Dist.
L1	N 76°46' E	549.2'
L2	S 44°01' W	1,661.5'
L3	S 86°04' W	1,941.6'
L4	N 22°49' W	1,868.6'



Note: It appears 0 water wells and a pond were found within 2000' of proposed well. No occupied dwellings and no buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.

I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller
Bradley D. Miller, P.S. 2167



ID	TM/Par	Owner	Bk/Pg	Acres
41	7/5	Coastal Forest Resources Co.	352/148	6.60
40	7/16	Seven Spirits Farms, LLC	381/67	175.11
39	7/27	Darnell (Life)	260/657	23.49
38	8A/12	Ryan	325/224	1.21
37	8A/12.3	Leasure	WB 43/148	0.77
36	8/40	Darnell (Life)	260/657	3.05
35	8/42	Brisendine	353/369	49.03

ID	TM/Par	Owner	Bk/Pg	Acres
34	8/41	Dunham	352/628	0.35
33	8/43	Dawson (Life)	365/198	0.67
32	8/43.1	Lamp	365/203	0.55
31	8/47	Darnell, et ux	260/657	16.50
30	8/46	Snider	376/614	49.03
29	8/48	Lamp	344/384	12.16
28	11/4.3	Forrester	386/291	1.35
27	11/5.1	Forrester	255/713	0.85
26	11/5	Forrester	285/111	67.57
25	11/4.2	Forrester, et al	445/300	1.67
24	11/4	Forrester	285/111	7.37
23	8/38	Gray	321/430	68.42
22	8A/10	Wick Methodist Church	--- / ---	0.78
21	8A/9	Wicks Cemetery	--- / ---	1.00
20	8A/ p/o9	Trustees	157/402	1.00
19	11/6	LeMasters	294/151	62.00
18	11/2	Grim, et al	333/675	35.00
17	8A/12.4	Kile	391/29	1.23
16	8/45	Snyder	376/614	40.51
15	18A/10.1	Wick Methodist Church	156/65	0.03
14	7/26.1	Glover	347/492	4.36
13	7/26	Freeland	348/231	5.64
12	7/20	Ankrom	357/397	62.25
11	7/15	Gorrell	321/360	242.50
10	10/14	Hendrickson	261/272	38.50
9	7/10	Fritsimmons	336/764	161.63
8	11/28	Kasper	309/500	8.21
7	11/26	Waide (Life)	WB32/383	41.06
6	11/27	Yeater, et al	379/609	32.25
5	7/14	Smith	121/11	50.00
4	11/31	Kronau, et al	481/185	11.07
3	11/32.1	Kronau, et al	481/185	2.22
2	11/32	Hall	338/287	153.11
1	11/25	Hamilton	352/524	71.79

Notes:
West Virginia Coordinate System of 1927, North Zone
based upon Differential GPS Measurements.
Well No. Grounds Unit 3H Top Hole coordinates are
N: 338,068.57' Latitude: 39°25'06.99"
E: 1,578,954.50' Longitude: 80°59'25.46"
Bottom Hole coordinates are
N: 328,395.14' Latitude: 39°23'32.41"
E: 1,585,186.80' Longitude: 80°58'04.04"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,363,240.323m N: 4,360,325.039m
E: 500,840.398m E: 502,788.284m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Top Hole Coordinates, As-drilled data, and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

Leases	
A Wick United Methodist Church	E Patricia G. Mason
B DWG Oil & Gas Acquisitions, LLC	F Ann W. Clutter
C Ottis F. Wilcox	G Kevin Andrew Yeater
D The Fisher Oil Company	H Trustees of Wick Cemetery

FILE NO: 50-54-M-17
DRAWING NO: Grounds 3H Well Plat
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: February 28 20 20
OPERATOR'S WELL NO. Grounds Unit 3H
API WELL NO
47 - 095 - 02592
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: As-Built 1045' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
DISTRICT: Meade J&N Management Enterprises, LLC; Ralph E. & Velinda Phillips; J. Bradford Wells; Elizabeth Y. Sealander; S.A. Smith, et al; COUNTY: Tyler
SURFACE OWNER: Elizabeth Gorrell Ottis F. Wilcox; Robert J. & Cindy G. Lamp; DWG Oil & Gas Acquisitions, LLC; Leroy Darnell; Fisher Oil Company; Trustees of the Wick Cemetery; ACREAGE: 242.5
ROYALTY OWNER: Kerr-McGee Oil & Gas Onshore LP; Wilma Jane Benefield; Vickie Gorell, et al LEASE NO: ACREAGE: 234.74

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 17,988' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313