

Rig: **ISDL 453** State: **Victoria**

Rig: ISDL 453 Field: Tuna Location: Bass Strait Well: WTN W38A Company: Esso Australia Ltd.	VISION Density Neutron 1:200 True Vertical Depth Recorded Mode Log												
	Location	Total depth:				1730 m		Elevation	K.B.		Top Drive		
		Spud date:				17-May-02			G.L.		-60.26 m		
		Runs:				2 To 2			D.F.		34.69 m		
		Permanent datum:				Mean Sea Level				Elev.:		60.26 m	
		Log measured from:				Drill Floor				34.69m above Perm. datum			
	Depth reference:				Driller's Pipe Tally								
API serial no.			x=5771796.08m (North) y=621531.7m (East)				Longitude			Latitude			
							E 148° 23' 16.169 S			38° 11' 36.515			
Depth logged:			740 m To 1716 m			Mag decl: 13.16°			Other services:				
Date logged:			19-May-02To 21-May-02			Mag dip: -68.7°			Directional Drilling				
Bore hole record						Casing record							
Hole size		from		to		Size		Density		from		to	
8 1/2		726.8 m		1730 m		20		84 ppf		0 m		166.8 m	
						10 3/4		47 ppf		0 m		726.8 m	
Mud record						Borehole deviation record							
Type		from		to		Min		Max		from		to	
KCL/PHPA/GYLCOL		760 m		1730 m		35.0°		41.5°		760 m		1730	
Surface equipment						Software record				IDEAL services from Anadrill			
Unit		OLU-FB-924		IDEAL Wis		ID6_1C_10r							
Depth system		PDA		SPM		ID6_1C_10r							
				LWD		See toolsketch							
				MWD		See toolsketch							

# Bit Run Summary

[illegible]

Type	KQL/PHPA/GLYCOL									
Mud weight	ppg	10.5								
Solids	%vol	9.8								
Chlorides	mg/l	48,500								
Rm	Ohmm @ degC	0.1243@21								
Rmf	Ohmm @ degC	0.0966@21								
Rmc	Ohmms @ degC	0.1631@21								
Potassium	%vol	6.9								
<b>Environmental data</b>										
<b>GR</b>										
Mud weight	ppg	10.5								
Bit size	in	8.5								
<b>Resistivity</b>										
<b>Neutron porosity</b>										
Hole Size	in	8.5								
Mud weight	ppg	10.5								
Temperature	degC	60								
Mud salinity	mg/l	80,000								
Formation salinity										
Recording rate 1	SEC	10 s								
Recording rate 2	SEC	10 s								
Filtering GR										
Filtering density		3 pt								
Filtering Neutron		3 pt								
Company representative	J. Booker	B. Davies								
Anadrill personnel	J. Chong	J. Walta	L. Bon							

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OTHER SERVICES FOR RUN2 Directional Surveys	OTHER SERVICES FOR RUN	OTHER SERVICES FOR RUN
REMARKS: RUN NUMBER 2 8-1/2in Hole Section was logged from 740 m to 1730 m MD.  Depth is referenced to the Driller's pipe tally.  All data presented is from tool memory.  GR is corrected for mud weight and bit size. RAB6 Resistivity is corrected for the bit size, mud resistivity and borehole temperature.  Bottom quadrant density is presented. Neutron porosity is calculated with limestone matrix and is corrected for the bit size, borehome salinity, temperature and mud hydrogen index (from mud weight, temperature and pressure)  Mud type is water based KCl/PHPA/GLYCOL. Barite is present in the mud.  RAB6C Downhole Software 6C-V6.1 ADN6C Downhole Software 6.2B08	REMARKS: RUN NUMBER	REMARKS: RUN NUMBER

EQUIPMENT DESCRIPTION

RUN2

RUN

RUN

DOWNHOLE EQ

31.32

6 3/4 in. ADN6\* Neutron  
ADSE 289 Neutron  
8 1/4 in. Stab Density  
NSR-M A161 Density  
GSR-J A2125 UltraSo  
Soft: 6.2B08 R-O P



29.34  
29.19  
28.32  
28.22  
27.84  
27.08

6 3/4 in. PowerPulse\*  
MDC Z408  
MDI 626BC  
MEC 612BB  
Soft: 6.100C00 D&I



25.07  
20.91

6 3/4 in. GVR6\*  
S/N 136  
Soft: 6C-V61  
Shallo  
Medium  
Deep  
Ring R  
R-O p  
GR



16.74  
15.27  
15.15  
14.97  
14.80  
14.66  
14.44

Cross Over S/N 9916



13.68

NM Pony Collar



13.07

S/N 6649

NM Pony Collar



9.29

S/N H956

PowerPak\* Mud Motor



7.88

A675XP S/N 3604

1.15 deg bend



Bit-PDC

Geo-Diamond Model: S75HPX

MAXIMUM STRING DI

ALL LENGTHS I

0.00<sup>0.18</sup>

## True Vertical Depth Log

IDEAL Version: ID6\_1C\_10

IDF

RAB	id6_1c_10	MWD_10	id6_1c_10
ADN	id6_1c_10		

Format: W38A RM Density Neutron

Vertical Scale: 1:200

Graphics File Created: 22-May-2002 23:27

## Parameters

DLIS Name	Description	Value	
ALPHA_COMPUTE_DEN_ADN	Perform Density Enhanced Vertical Resolution process ?	NO	
AVE_ADN	ADN/Array Channels: perform averaging(RM) :	YES	
BHT_RM	Bottom Hole Temperature (RM)	140.0	degF
BSAL_RM	Mud Salinity (RM)	80.000	ppk
BS_RM	Bit Size (RM)	8.500	in
CHI_RM	Caliper High Limit from BS(RM) for Neutron BH Corr	2.000	in
CLO_RM	Caliper Low Limit from BS(RM) for Neutron BH Corr	0.000	in
COEF_M	User Defined FEXP in Clean Sand	1.650	
C_WS	Overpressure correction to Sw and M	1.000	
DEVI	Average angle of the hole (RM)	35.210	deg
DO	Depth Offset	0.0	m
DTMUD	Delta-T for Mud	190.3	us/m
DYN_IMG_COMPUTE_ADN	Generate Dynamic Normalized Image?	NO	
ENVCOR	Neutron Quadrant Processing: Environmental Correction?	YES	
EVRL	EVR Process averaging level (RM)	49	
FEXP	Formation Factor Exponent(RM)	2.000	
FNUM	Formation Factor Enumerator(RM)	1.000	
FPHI_RM	Formation Factor Porosity Source (RM)	XPLOT	
GCSE	Caliper for Neutron BH Corr	BS	
IMAGE_MAX_SOA	Image SOA (Quadrant) Right Scale	2.500	in
IMAGE_MAX_SPEF	Image PEF(Segment) Right Scale	6.000	
IMAGE_MAX_SRHOB	Image RHOB(Segment) Right Scale	2.650	g/cm3
IMAGE_MIN_SOA	Image SOA (Quadrant) Left Scale	0.000	in
IMAGE_MIN_SPEF	Image PEF(Segment) Left Scale	2.000	
IMAGE_MIN_SRHOB	Image RHOB(Segment) Left Scale	2.050	g/cm3
LITHO_TYPE_ADN	Lithology (RM)	LIME	
MST_RM	Mud Sample temperature (RM)	70.700	degF
MW_RM	Mud Weight (RM)	10.500	lbm/gal
OBMF_RM	Oil Based Mud	NO	
RHOF_RM	Mud Filtrate Density (RM)	1.000	g/cm3
RHOM_RM	Matrix density (RM)	2.710	g/cm3
RMS_RM	Resistivity of Mud Sample (RM)	0.124	ohm.m
RWA_COMP_MOD	Rwa computation model	BASIC	
RWA_DEN_INPUT	Rwa Density Input	RHOB	
RWA_FORM_MOD	Rwa computation formation model	CLASTIC	
RWA_RES_INPUT	Rwa computation resistivity input	RT	

RWA_FORM_MOD	Rwa computation formation model	CLASTIC	
RWA_RES_INPUT	Rwa computation resistivity input	RT	
RWS_RM	Resistivity of Connate Water (RM)	1.000	ohm.m
SHT_RM	Surface Hole Temperature (RM)	68.000	degF
SSIZ_ADN	ADN:Stabilizer Size (RM)	8.250	in
STOH	ADN Density Top of Hole Sector (Left Boundary):	SECTOR_0	
TD_RM	Total Measured Depth (RM)	1730.0	m
TRPM_RM	Average Tool rotational Speed (RM)	20.000	c/min
TWS_RM	Temperature of Connate Water (RM)	75.000	degF
USMIN_RM	ADN:Minimum ultra-sonic standoff (RM)	0.300	in
VERS_ADN	ADN downhole software	6.200	
VF_ILLI	Fraction of illite in shales	0.500	
VF_KAOL	Fraction of kaolinite in shales	0.500	
VF_MONT	Fraction of montmorillonite in shales	0.000	
WSDI	Window Size of Dynamic Normalization Image	4.572	m
XPDM_RM	Cross plot density proosity multiplier	0.675	
XPNM_RM	Cross plot neutron proosity multiplier	0.325	

# PIP SUMMARY

⊢ Neutron Samples

Density Samples

⊢ Gamma Ray Samples

Rate of Penetration, Averaged over Last  
5ft (ROP5\_RM)

200 (M/HR) 0

RAB Gamma Ray (GR\_RAB)  
0 (GAPI) 200

Density Time After Bit (TAB\_DEN)  
0 (HR) 10

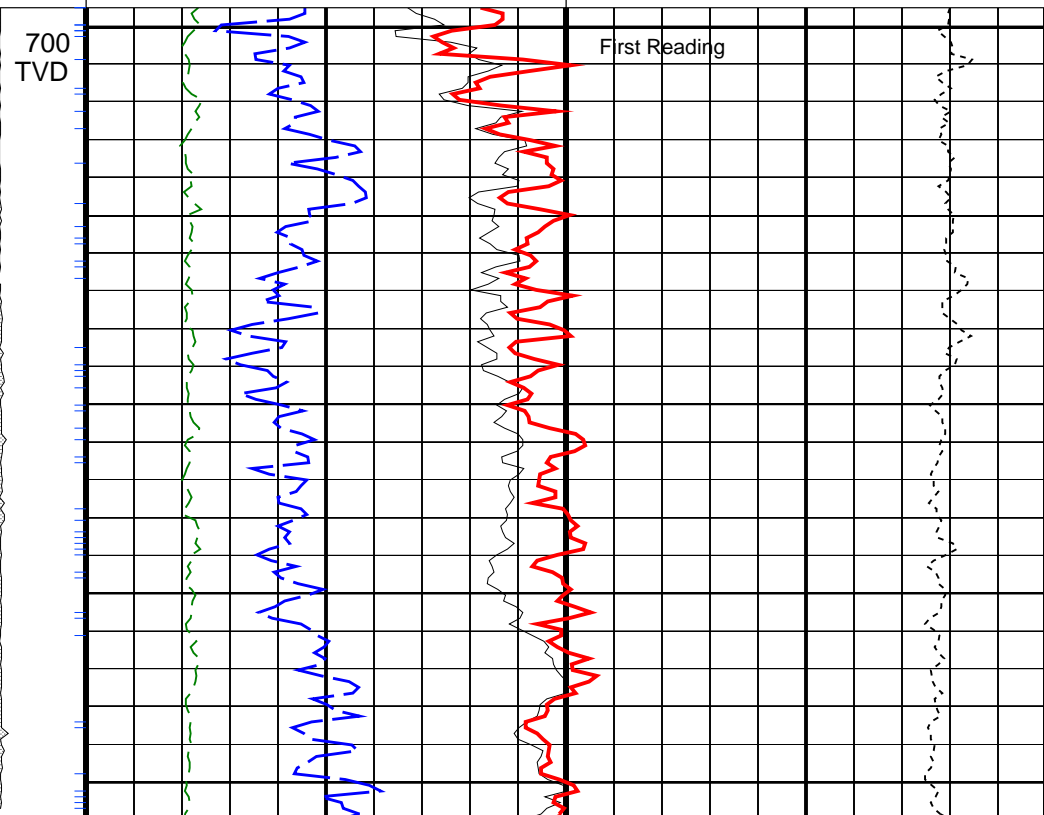
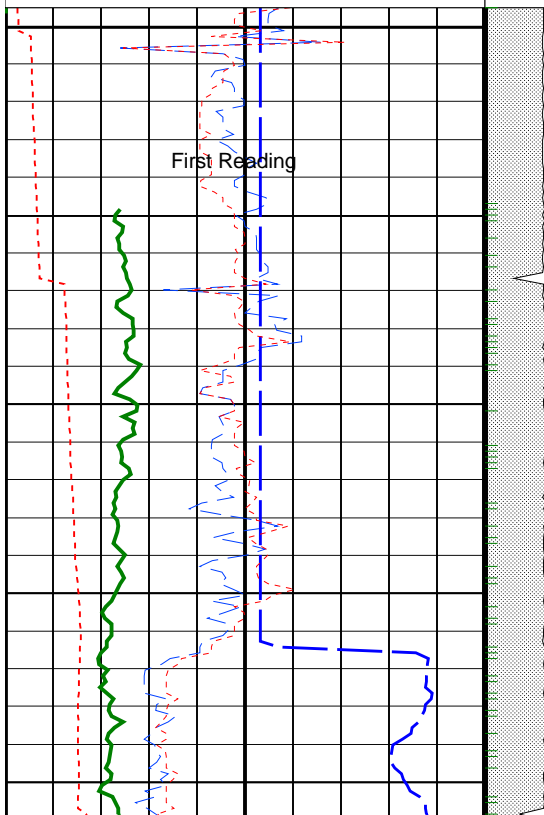
Vertical Hole Diameter (VERD)  
6 (IN) 16

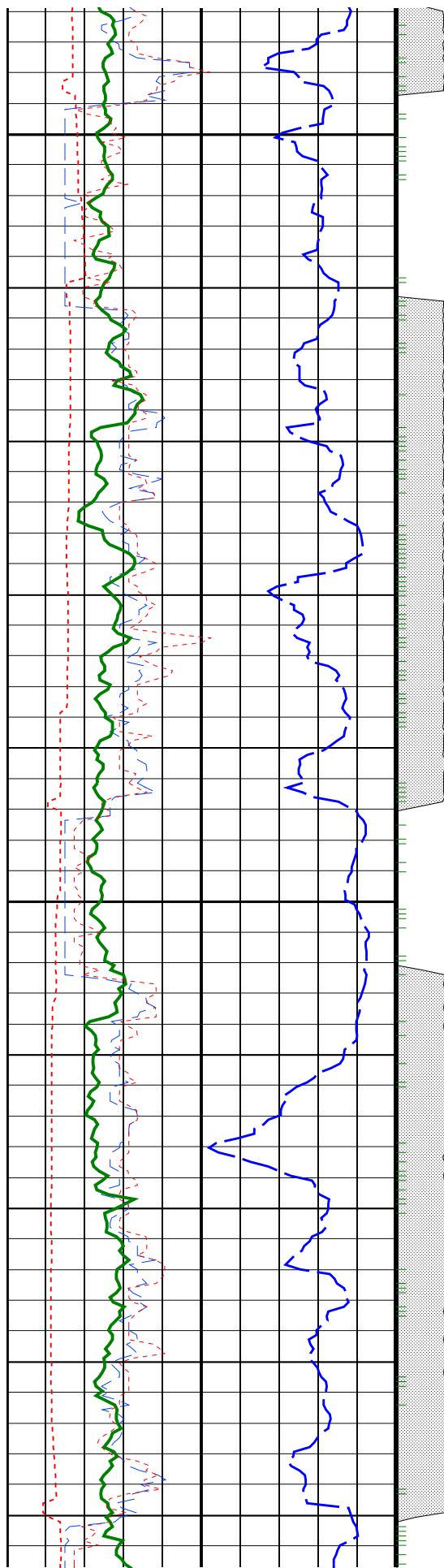
Horizontal Hole Diameter (HORD)  
6 (IN) 16

ADN  
Rotational  
Speed  
(RPM\_ADN)  
(RPM)  
0 200

Photoelectric Factor, Bottom (PEB)  
0 (----) 20

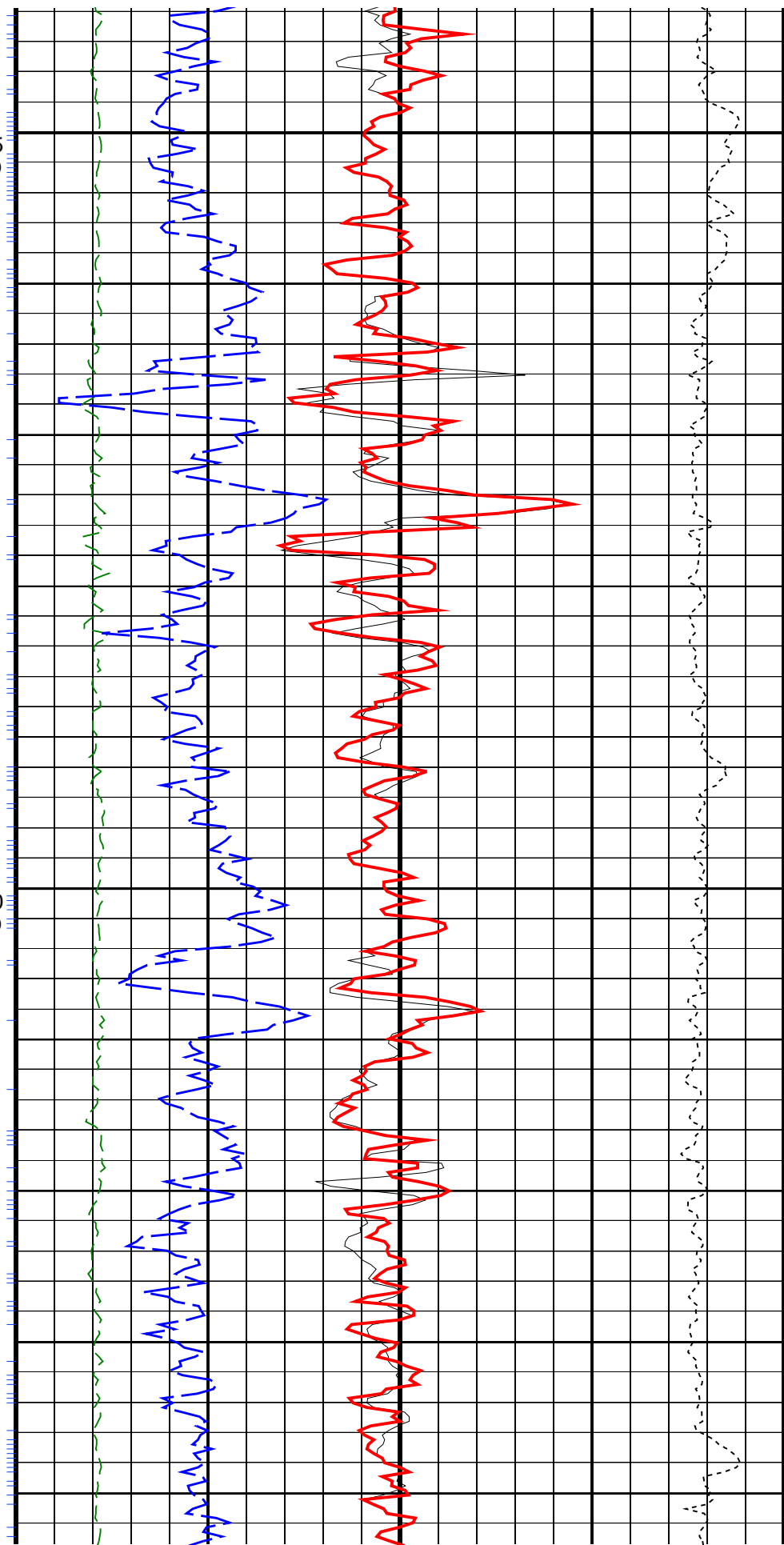
Bulk Density Correction, Bottom  
(DRHB)  
(G/C3)  
-0.75 0.25

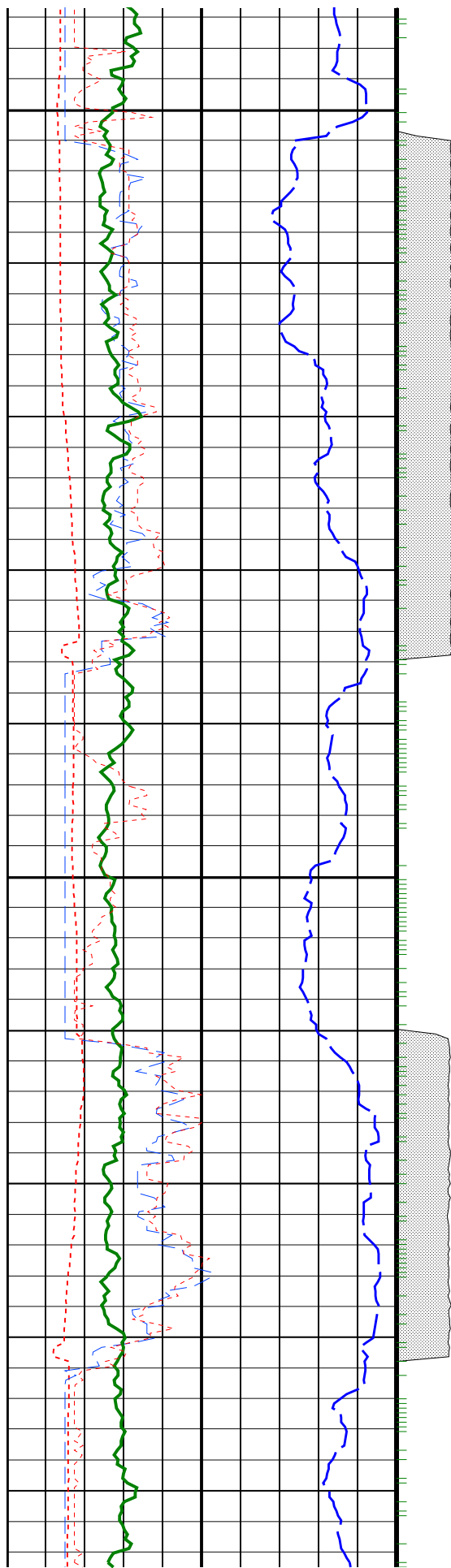




725  
TVD

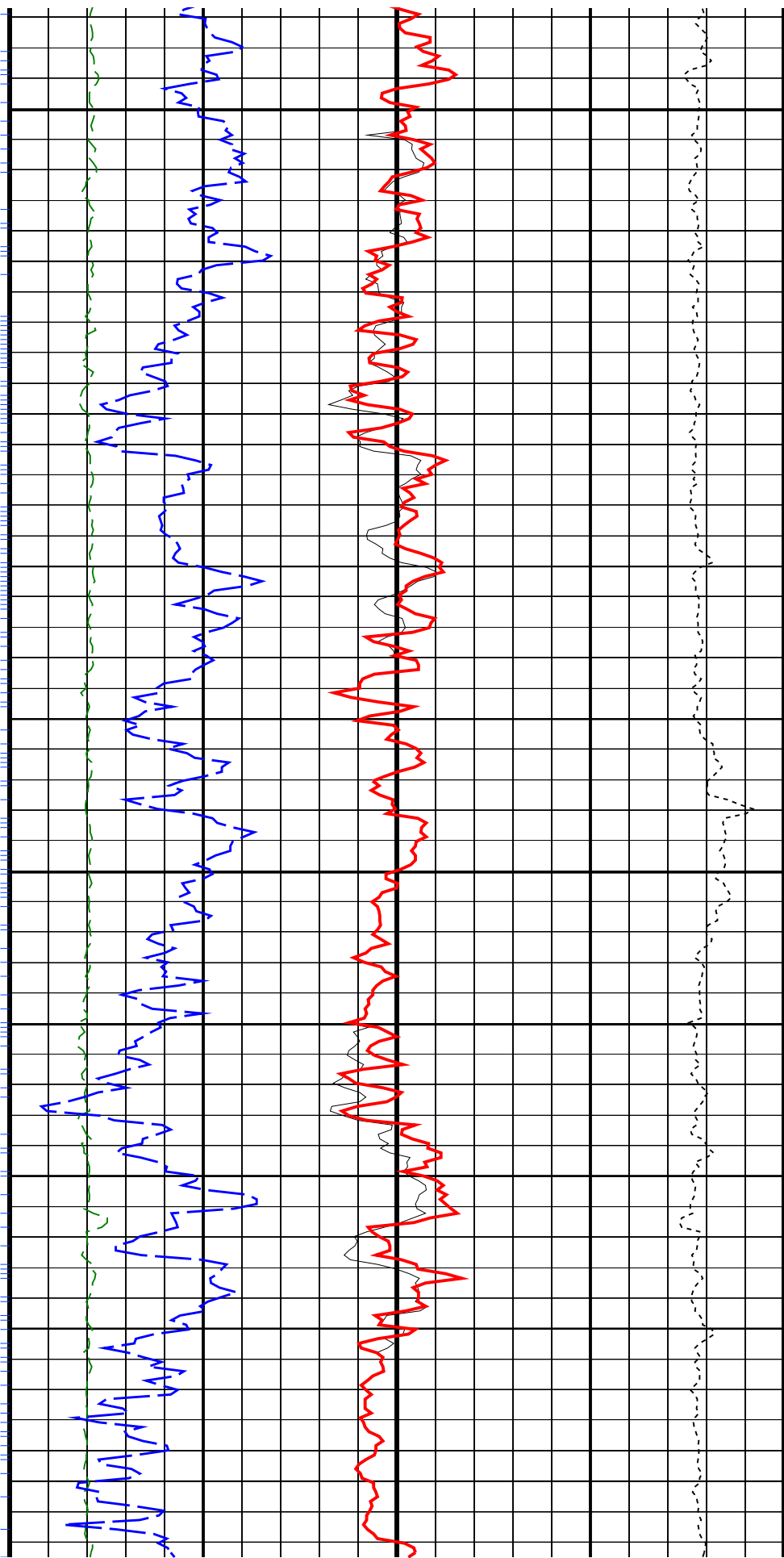
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TVD

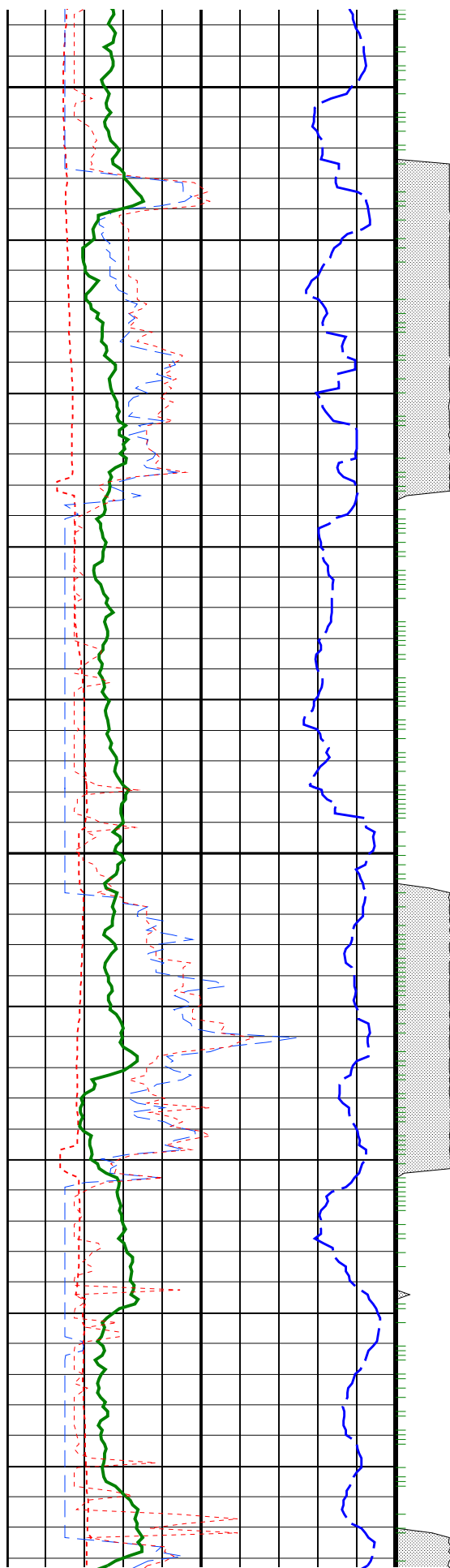




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TVD

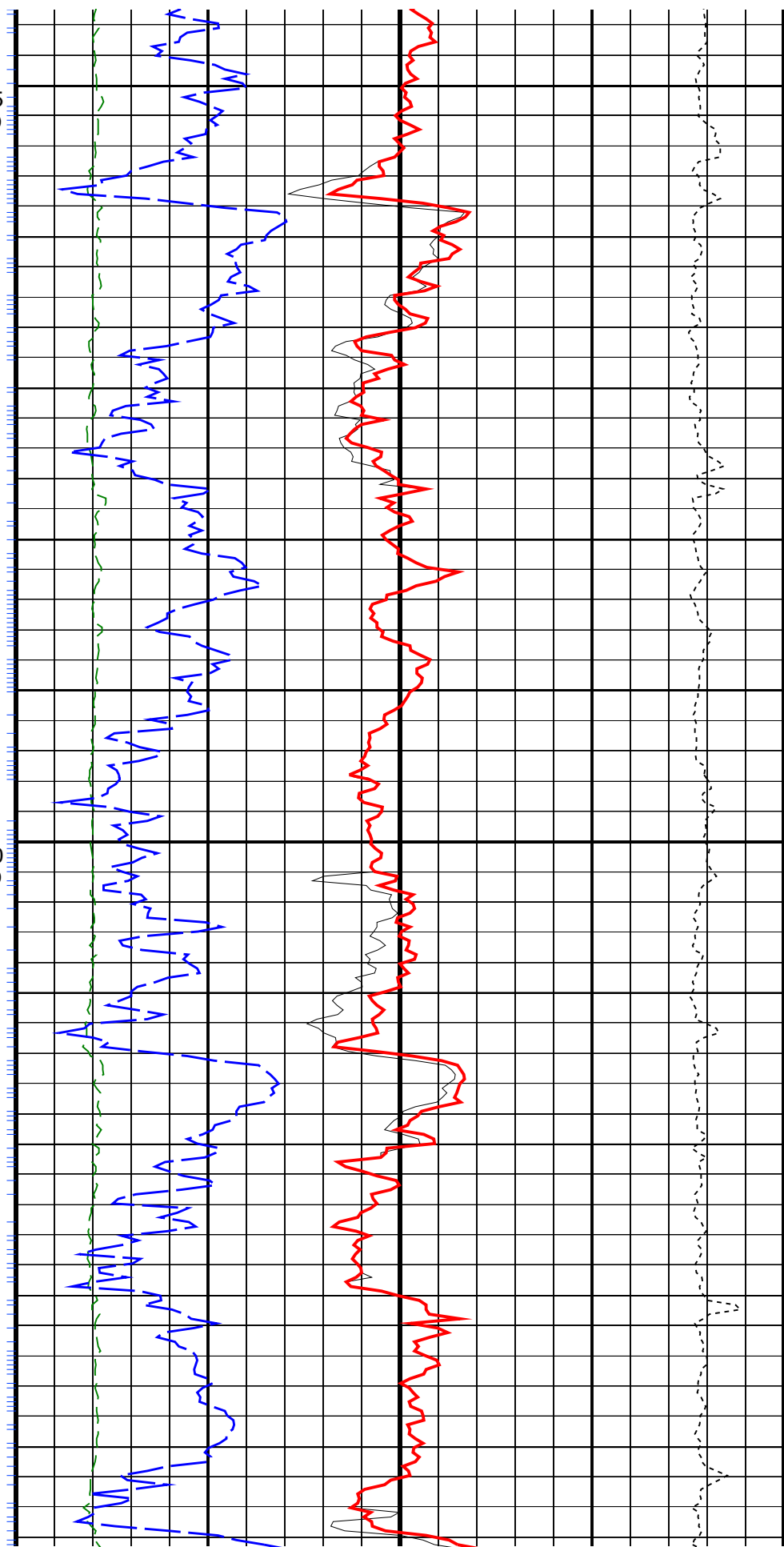
800  
TVD



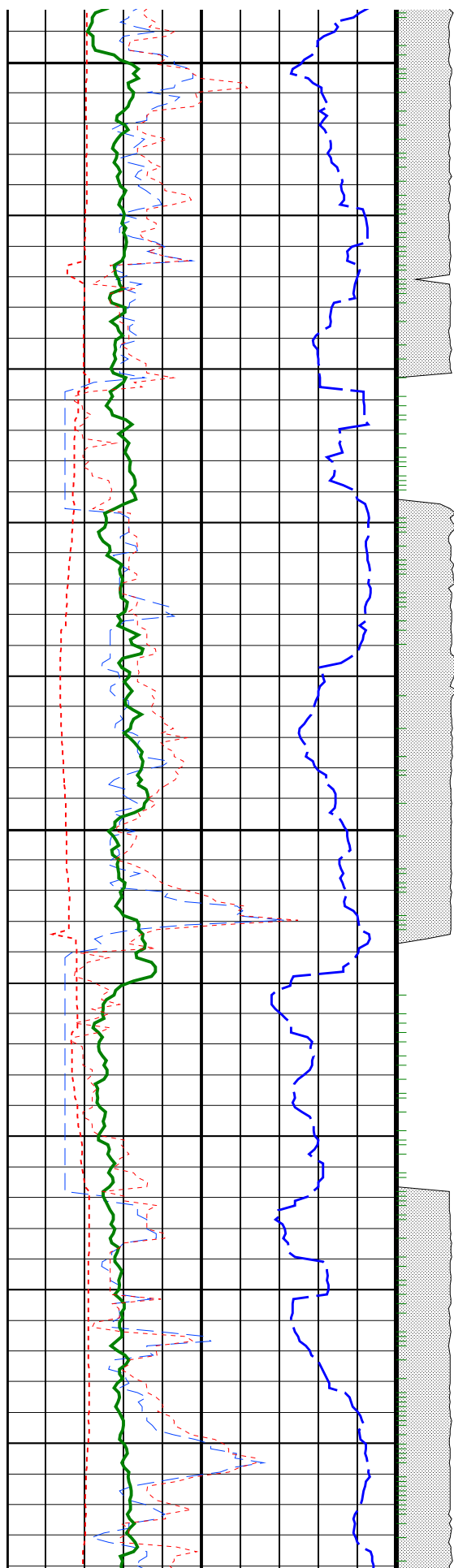


825  
TVD

850  
TVD

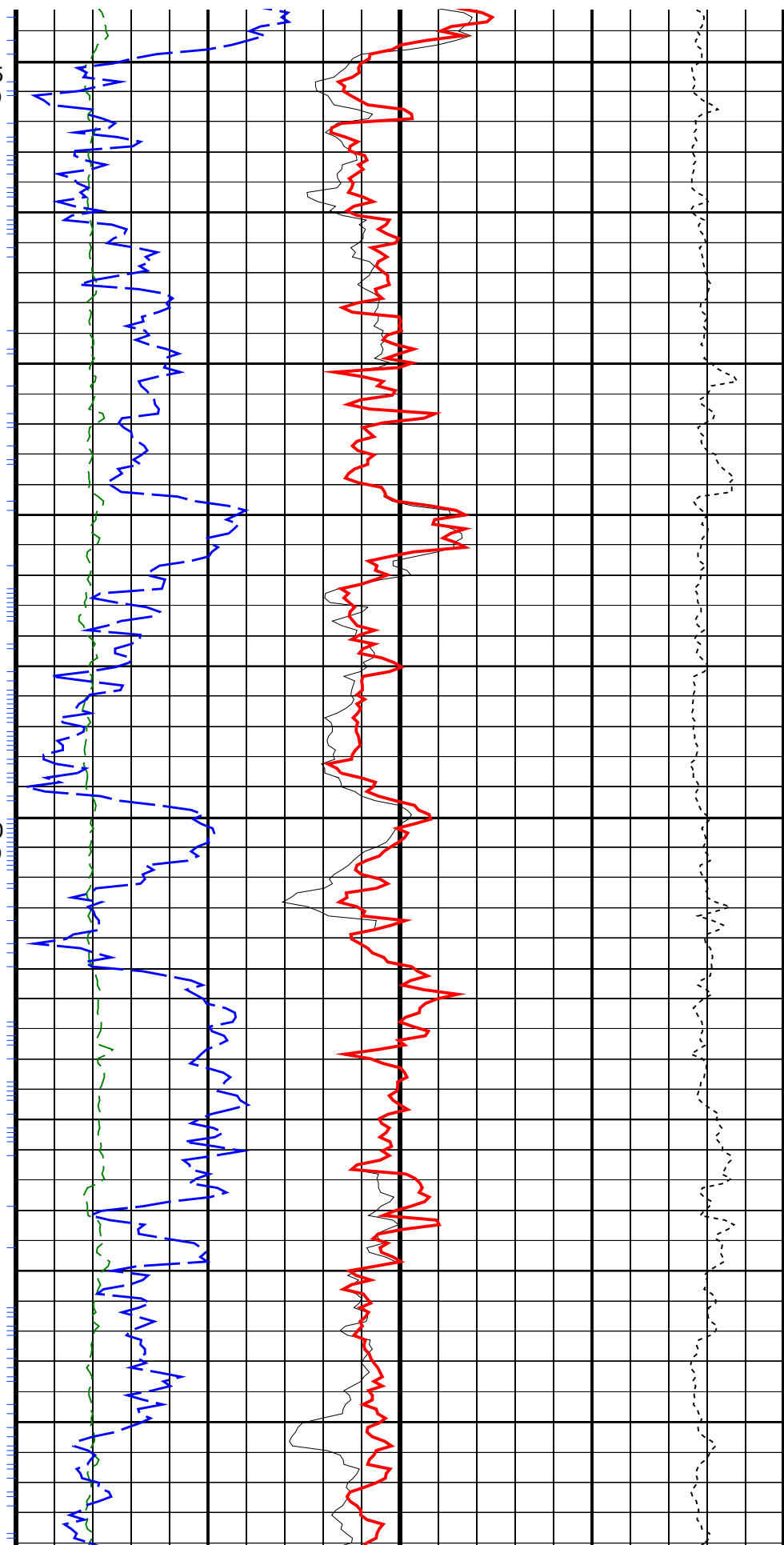


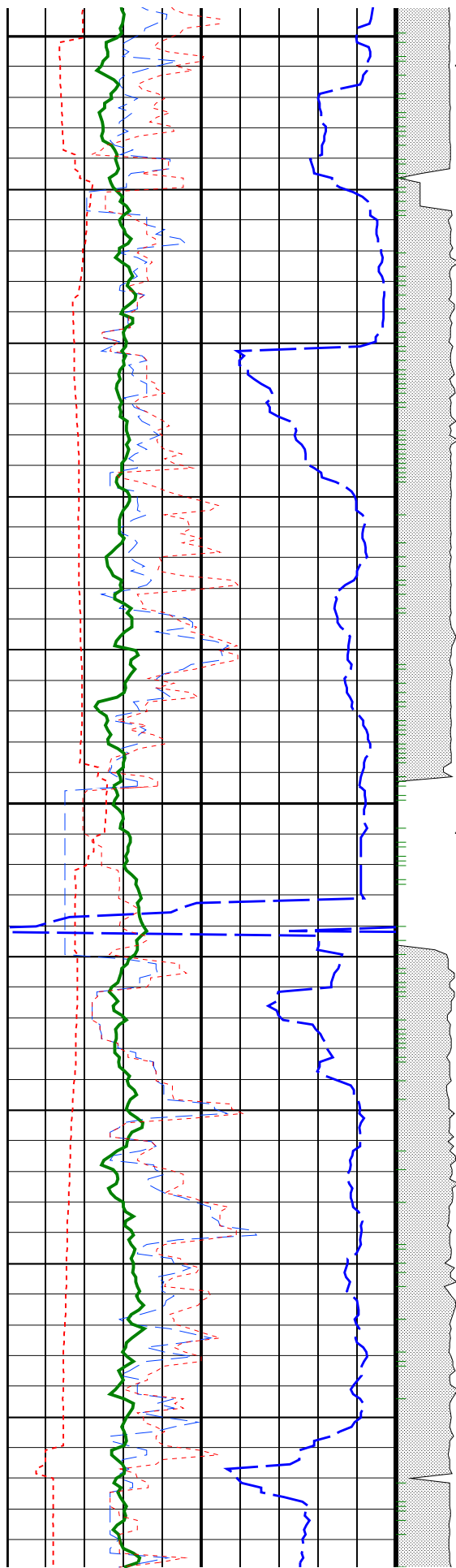




875  
TVD

900  
TVD

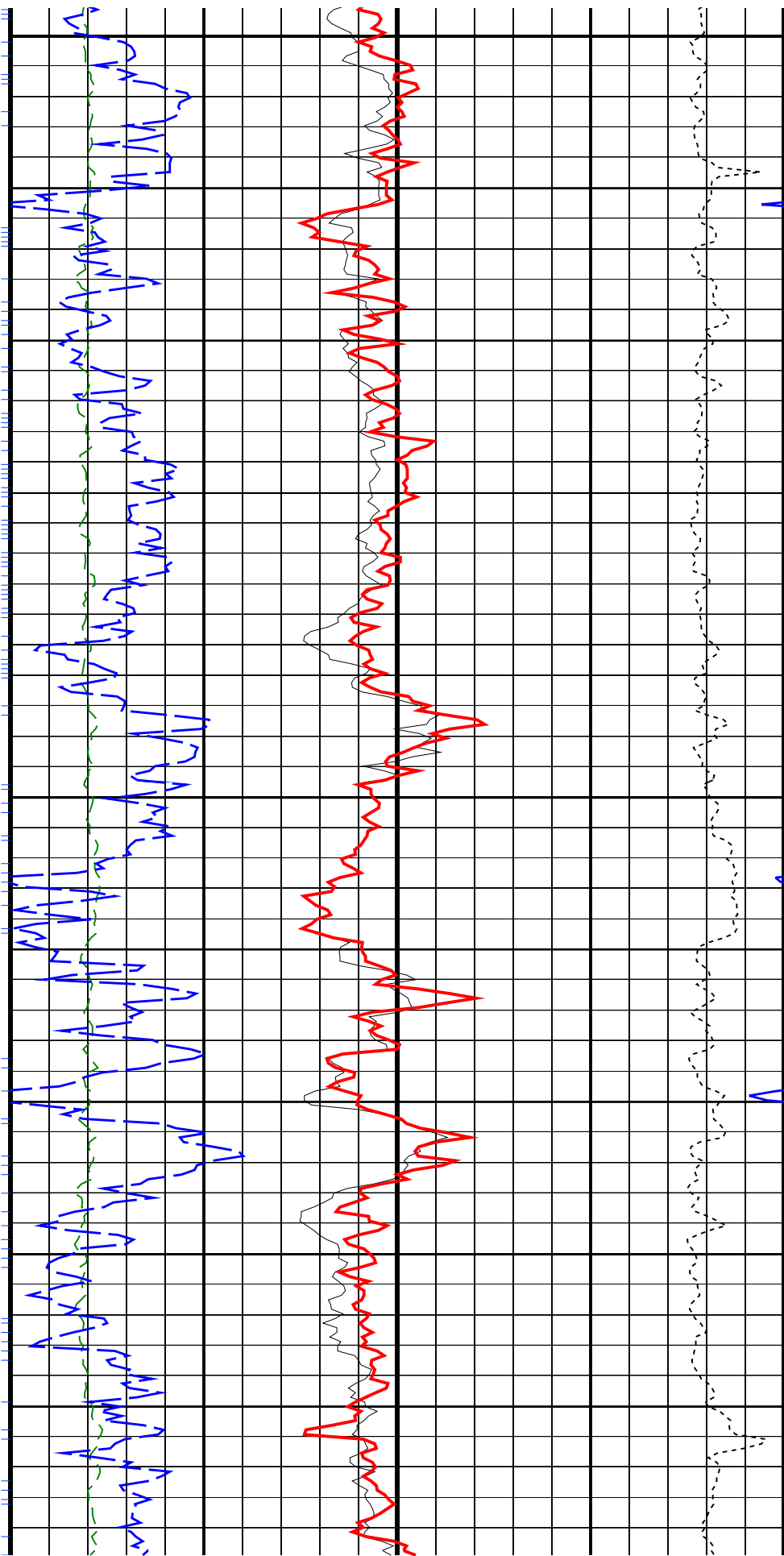


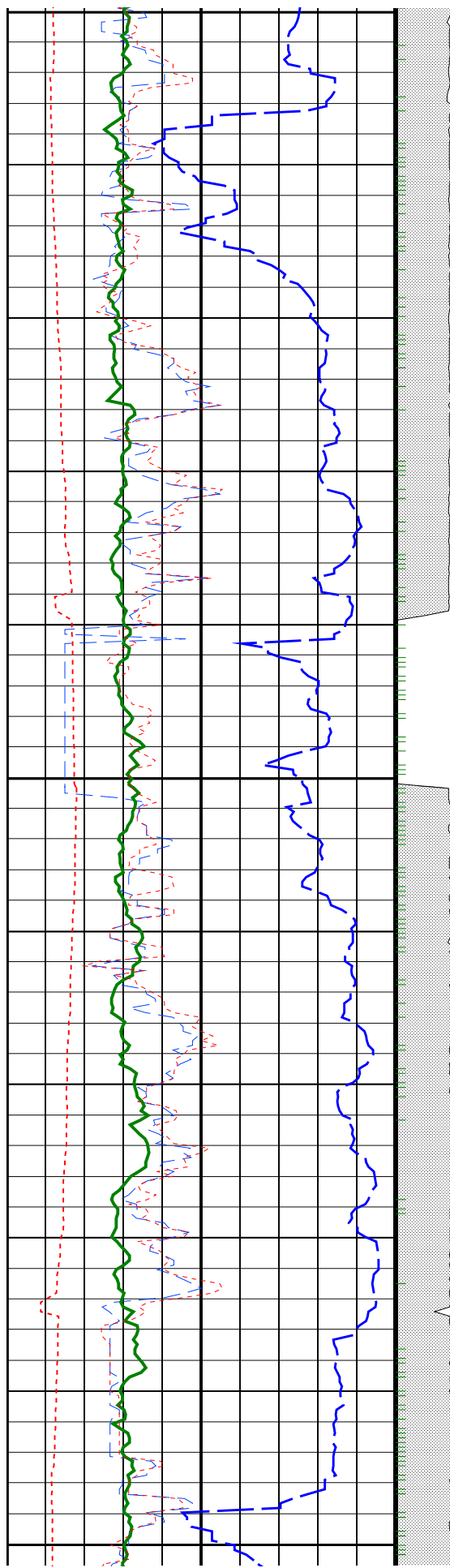


925  
TVD

950  
TVD

975

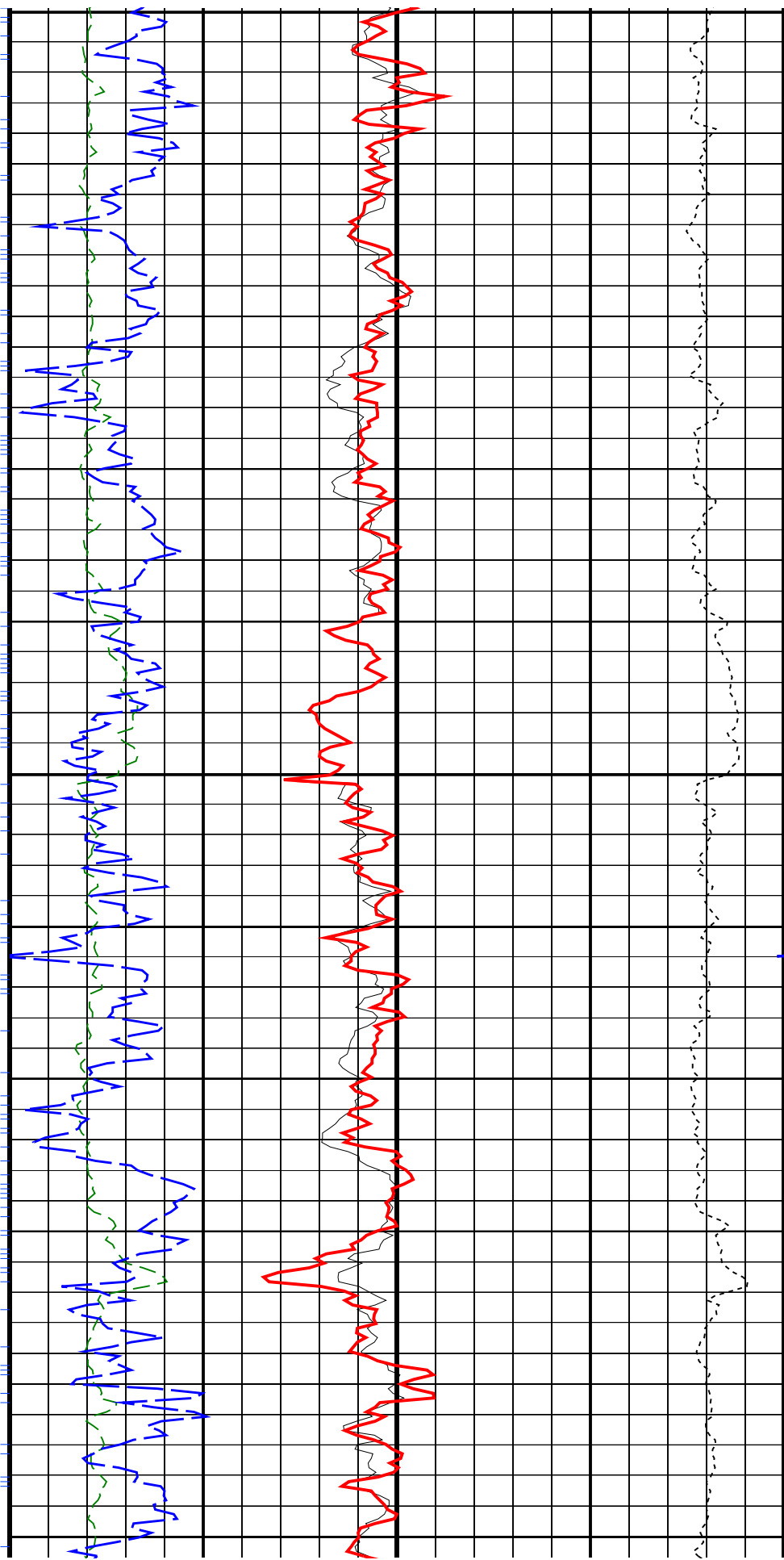


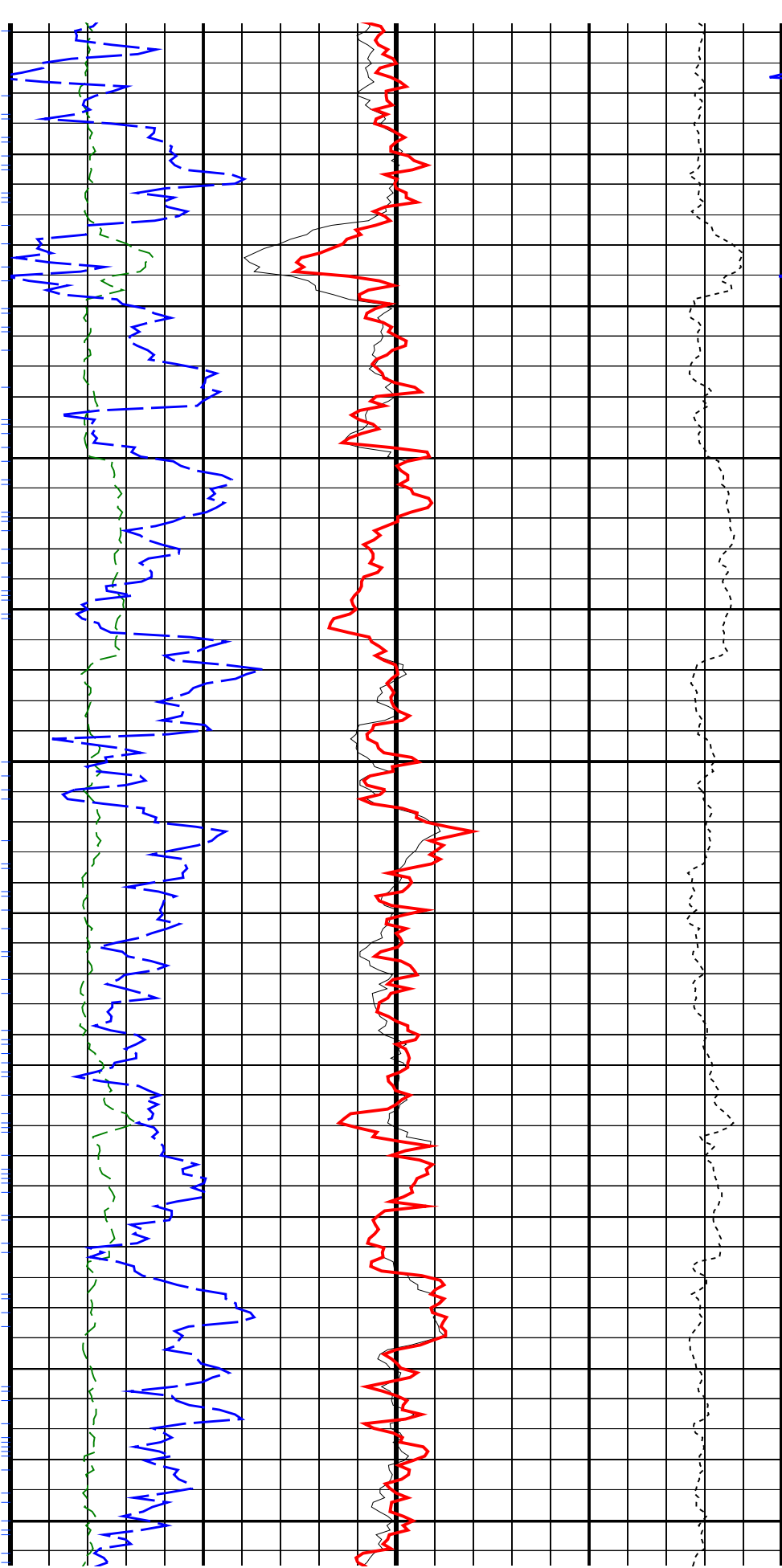
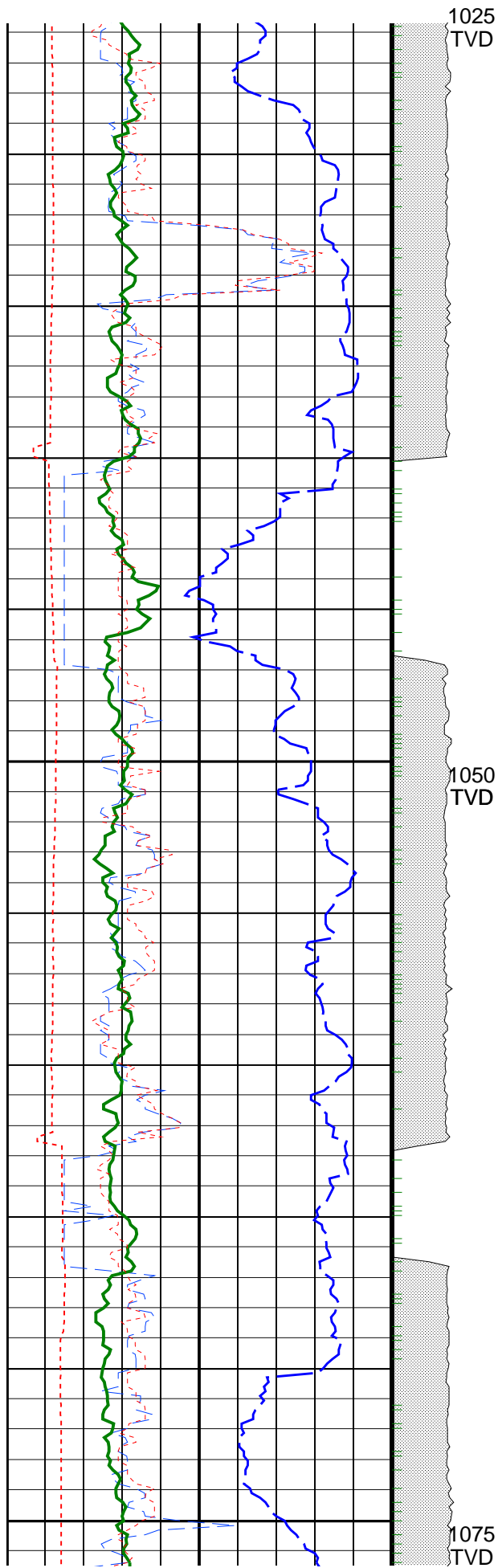


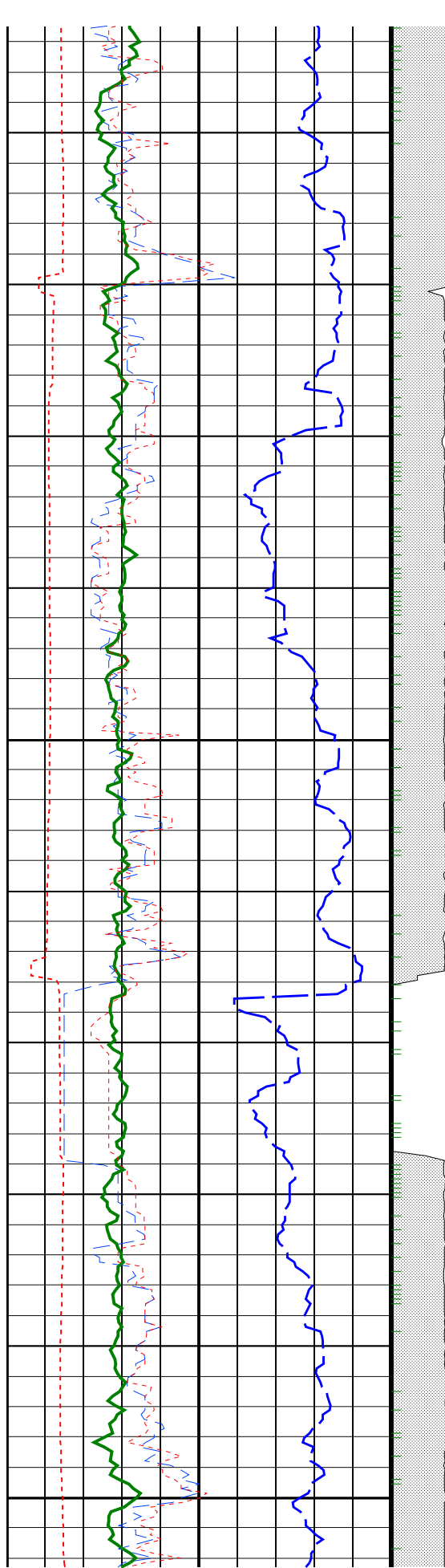
975  
TVD

1000  
TVD

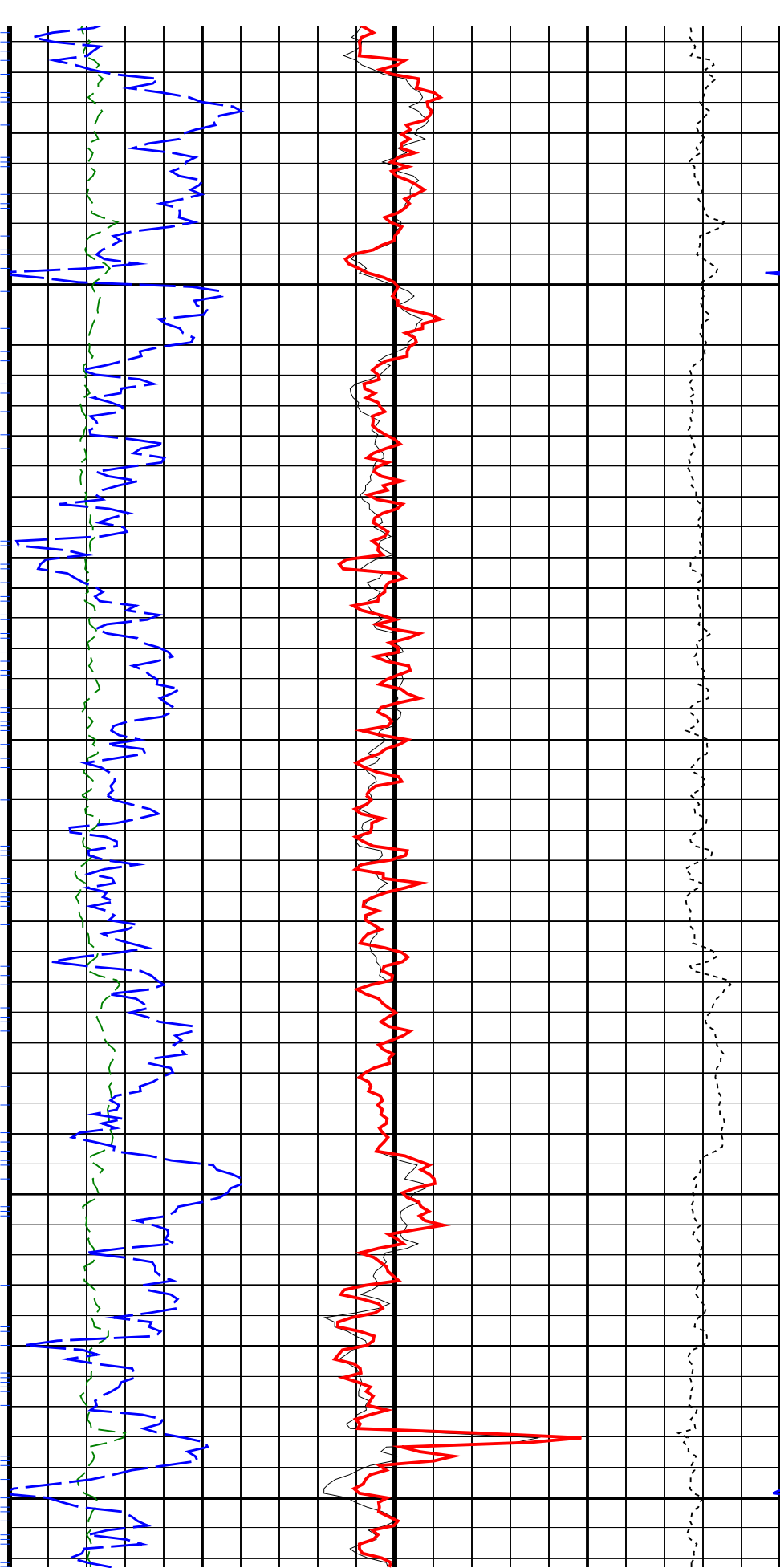
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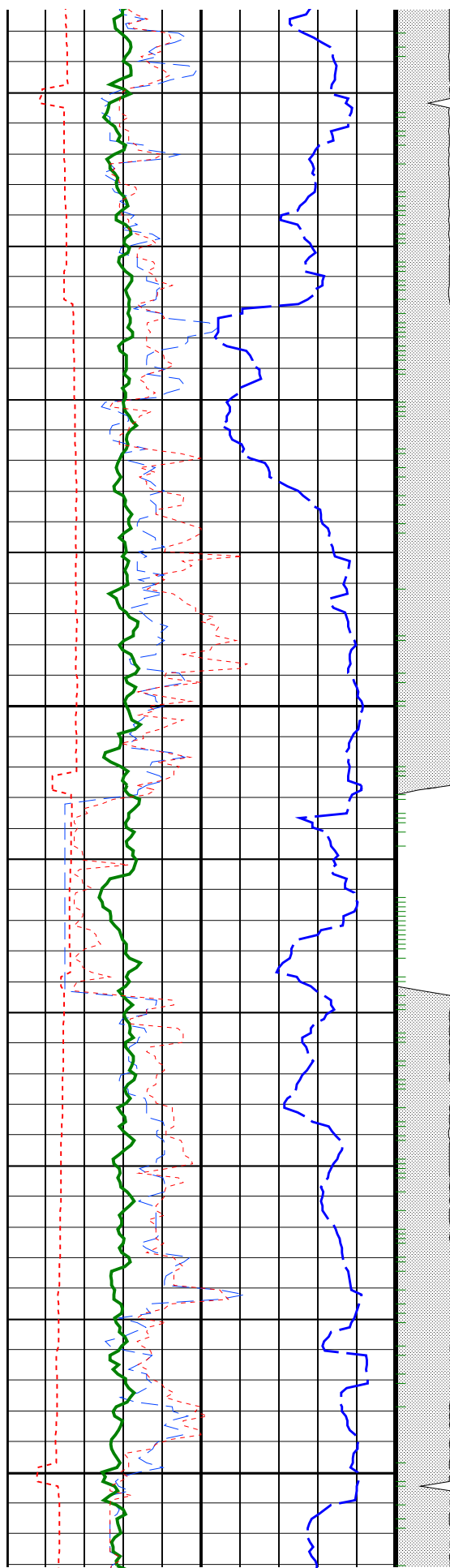






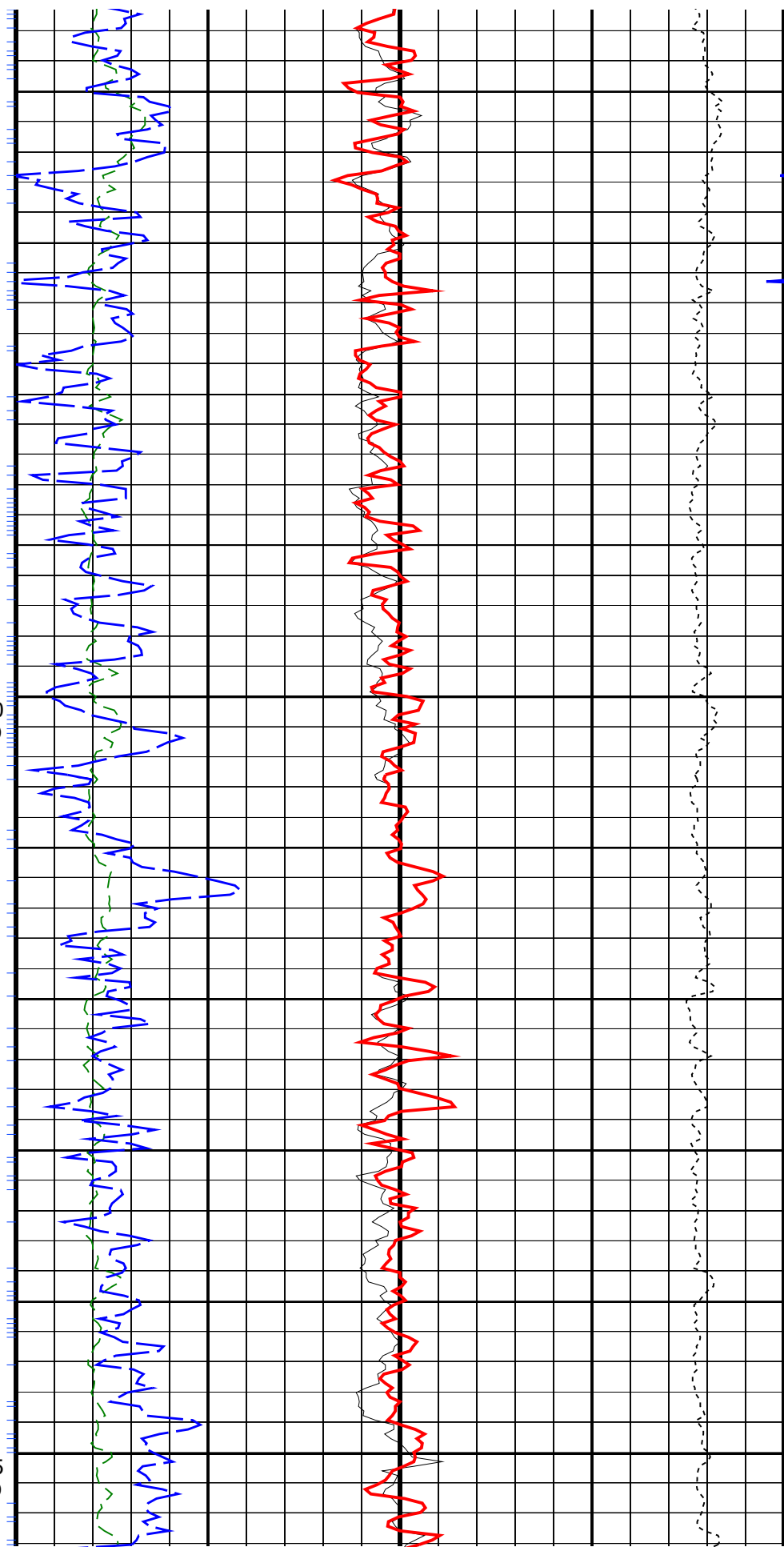
TVD  
1100  
TVD  
1125  
TVD

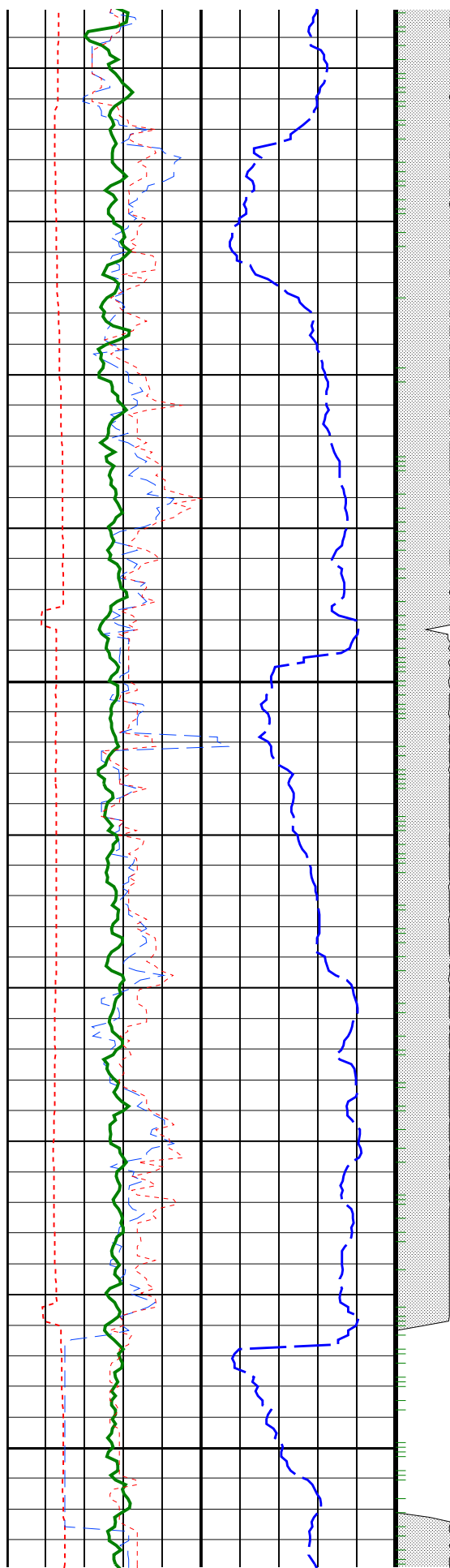




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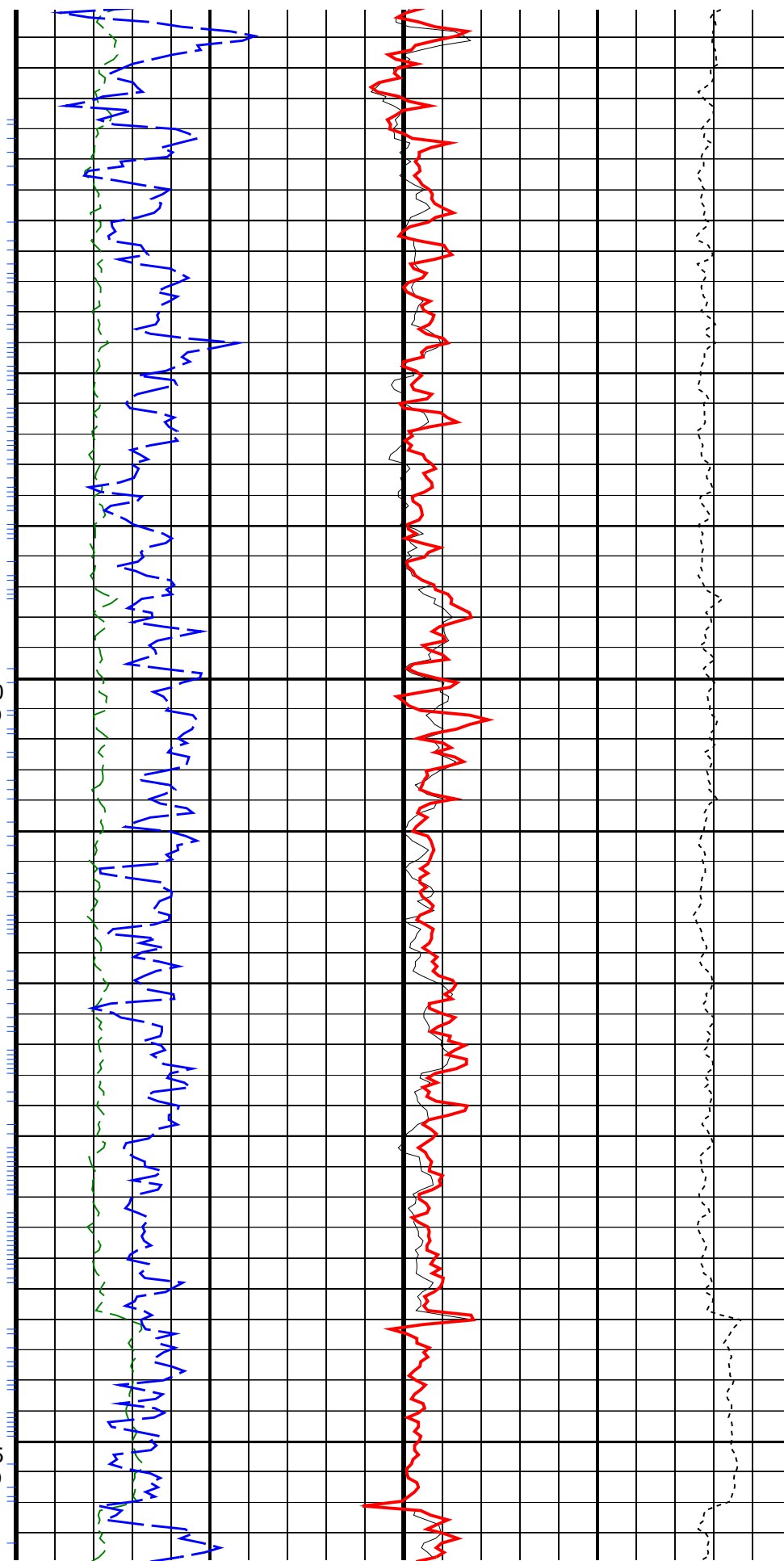
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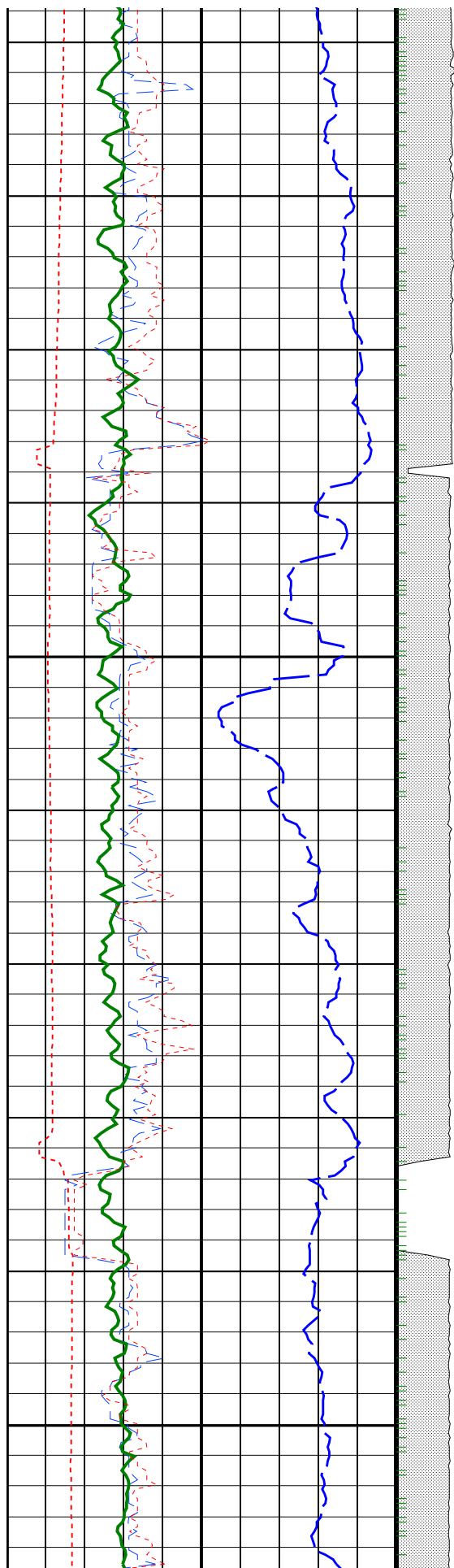




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TVD

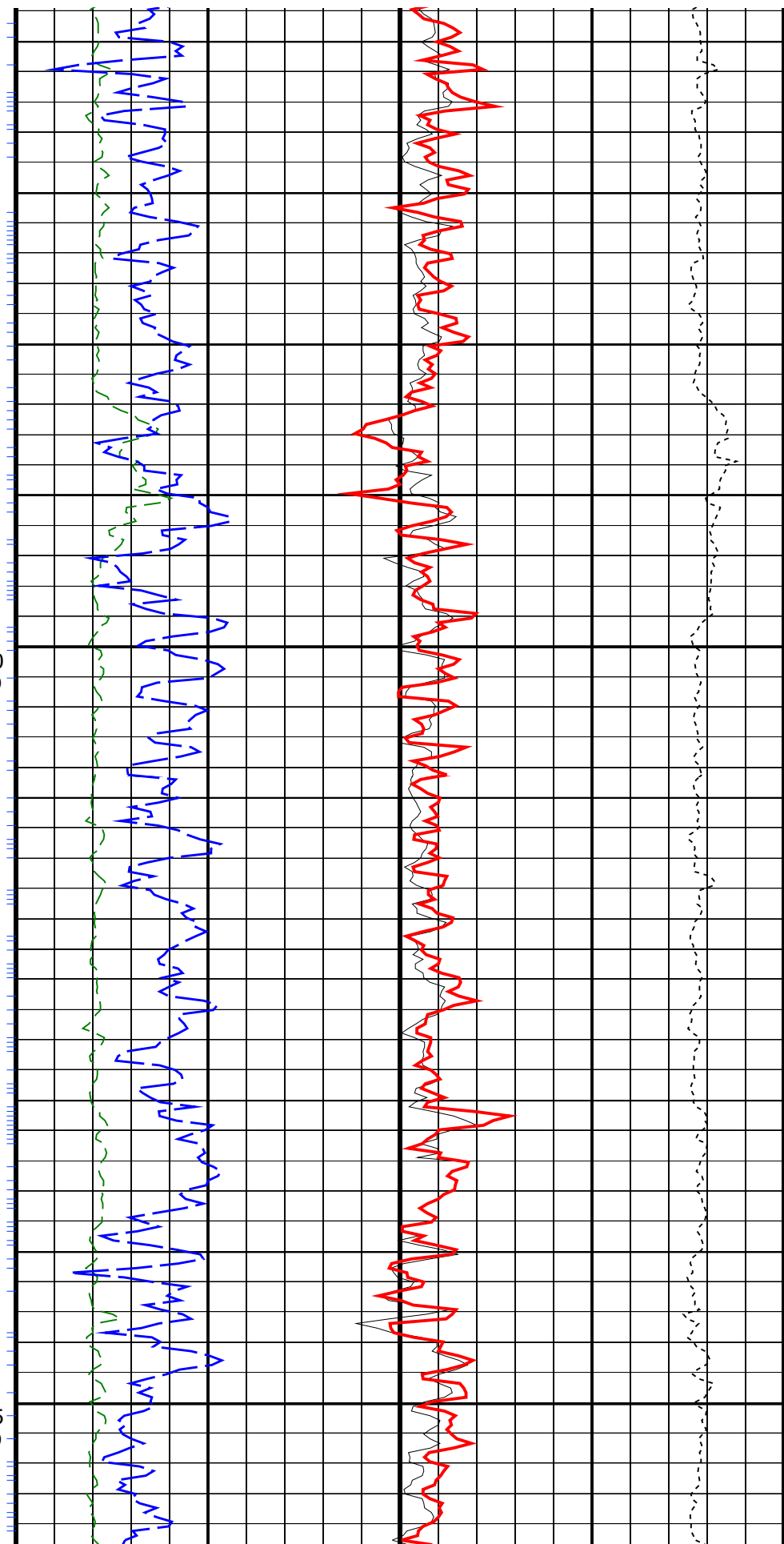
1225  
TVD



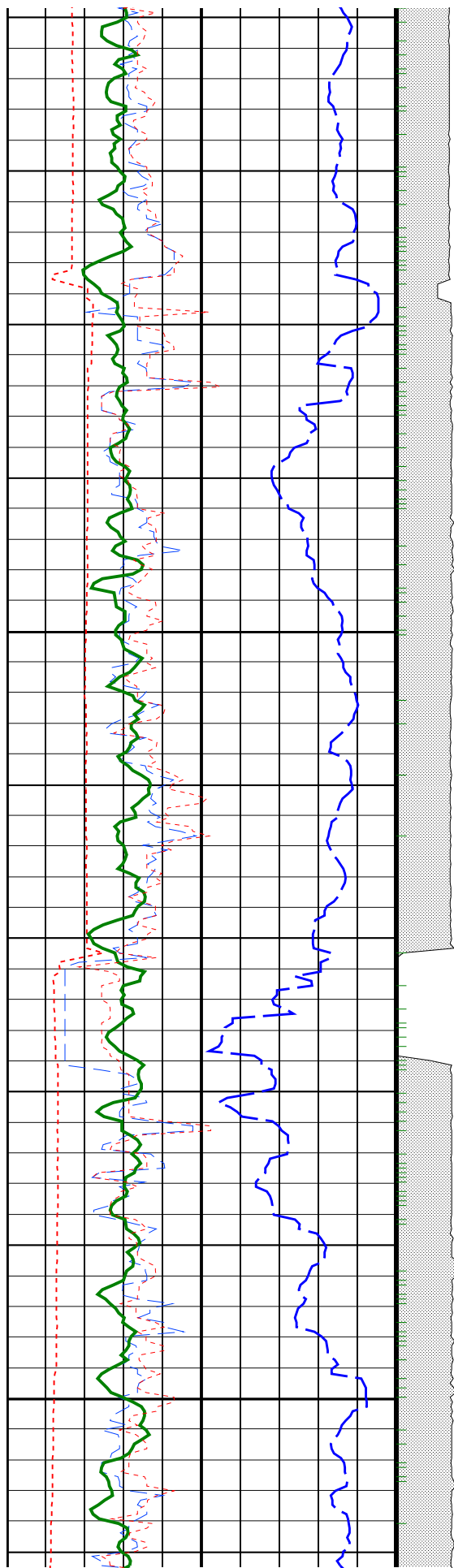


1250  
TVD

1275  
TVD

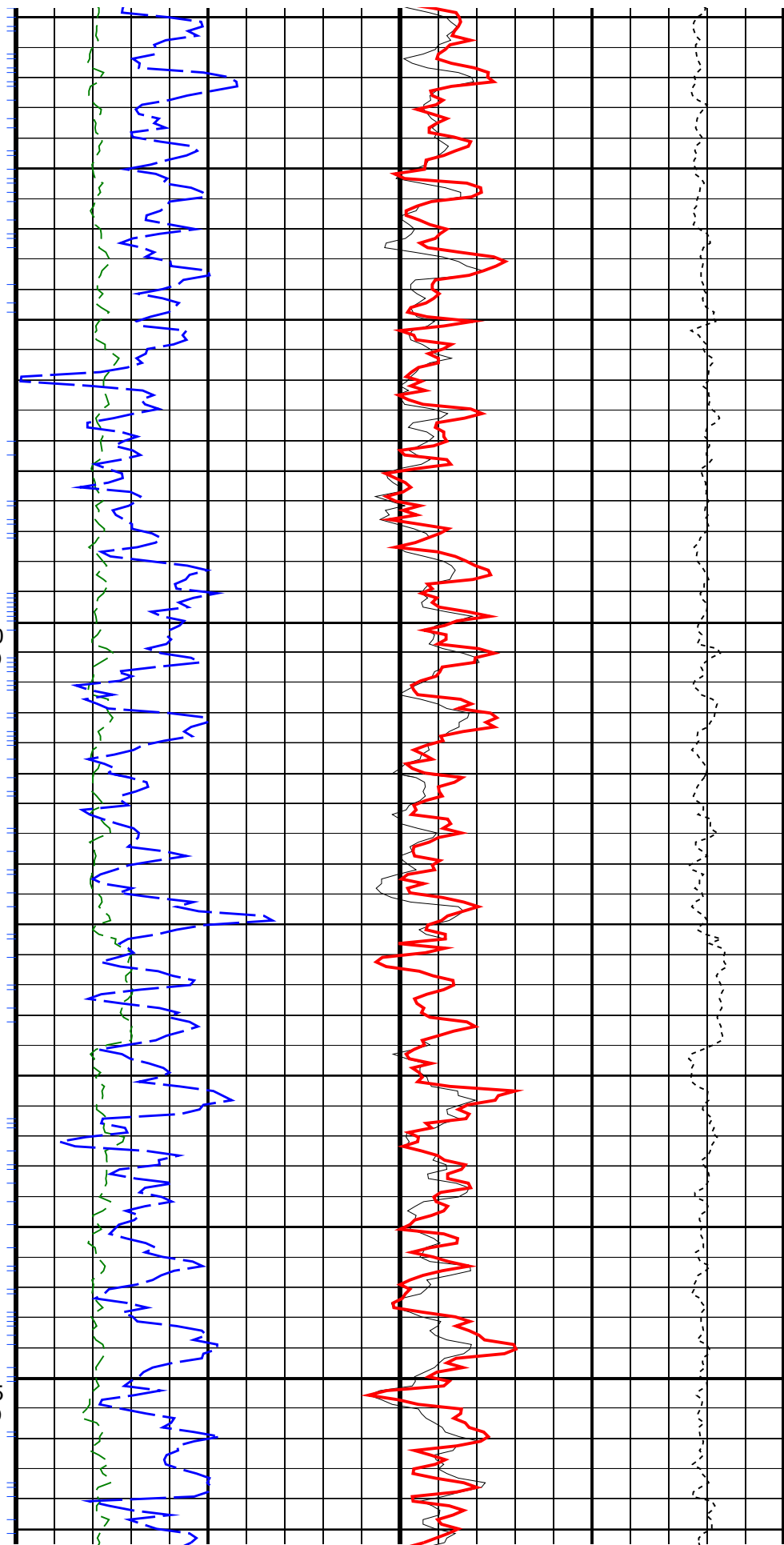


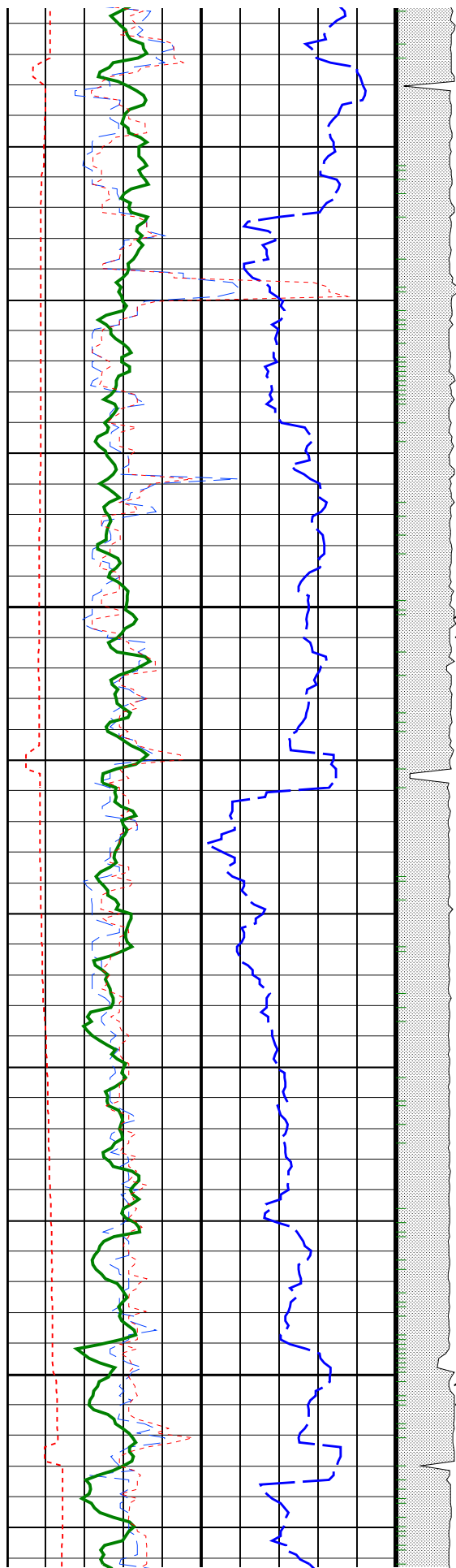




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TVD

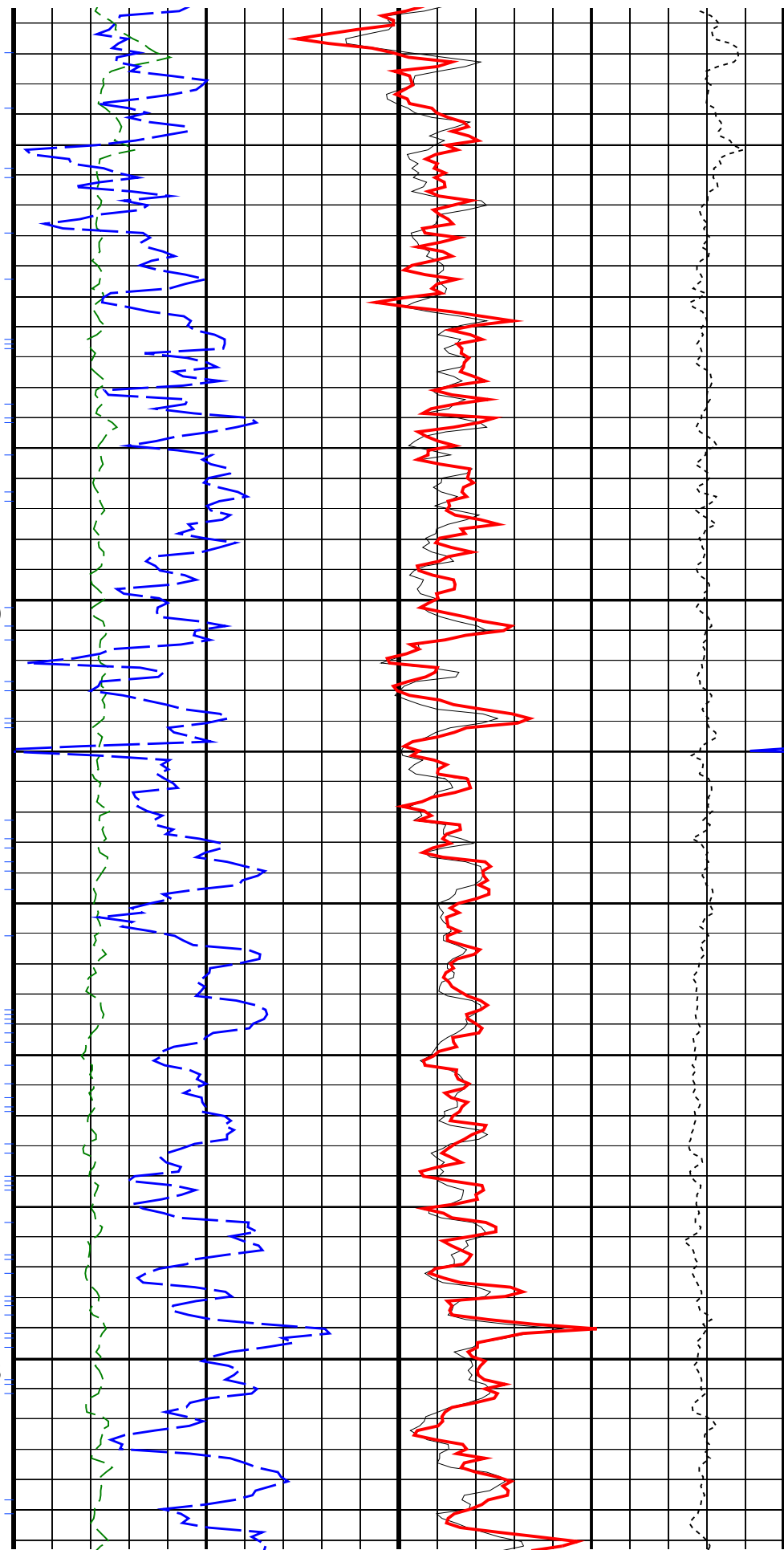
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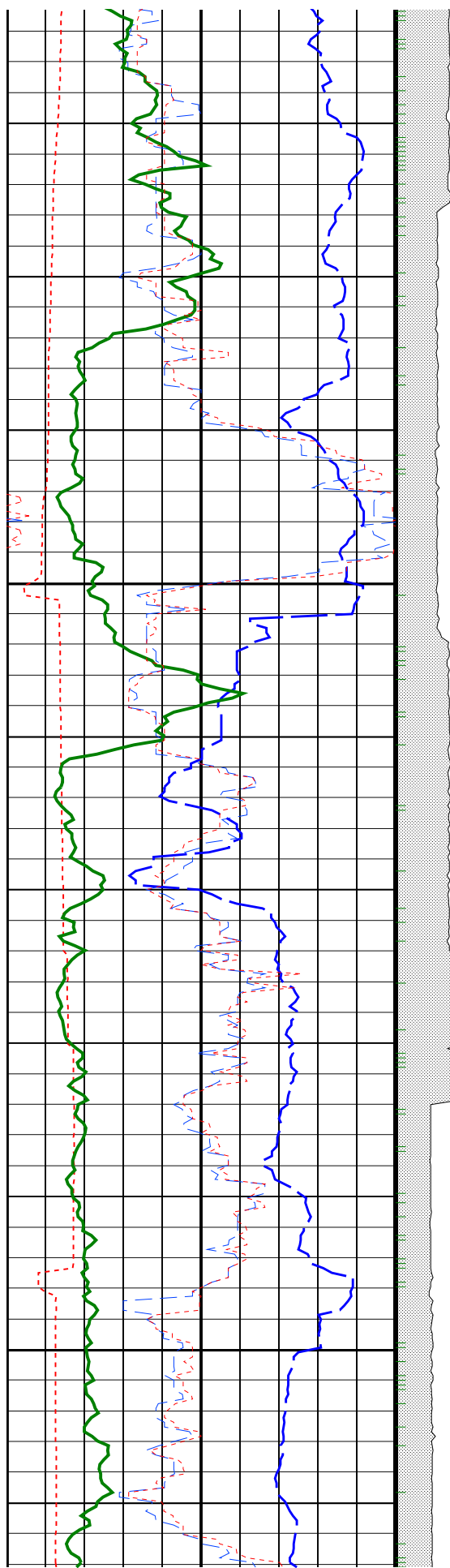




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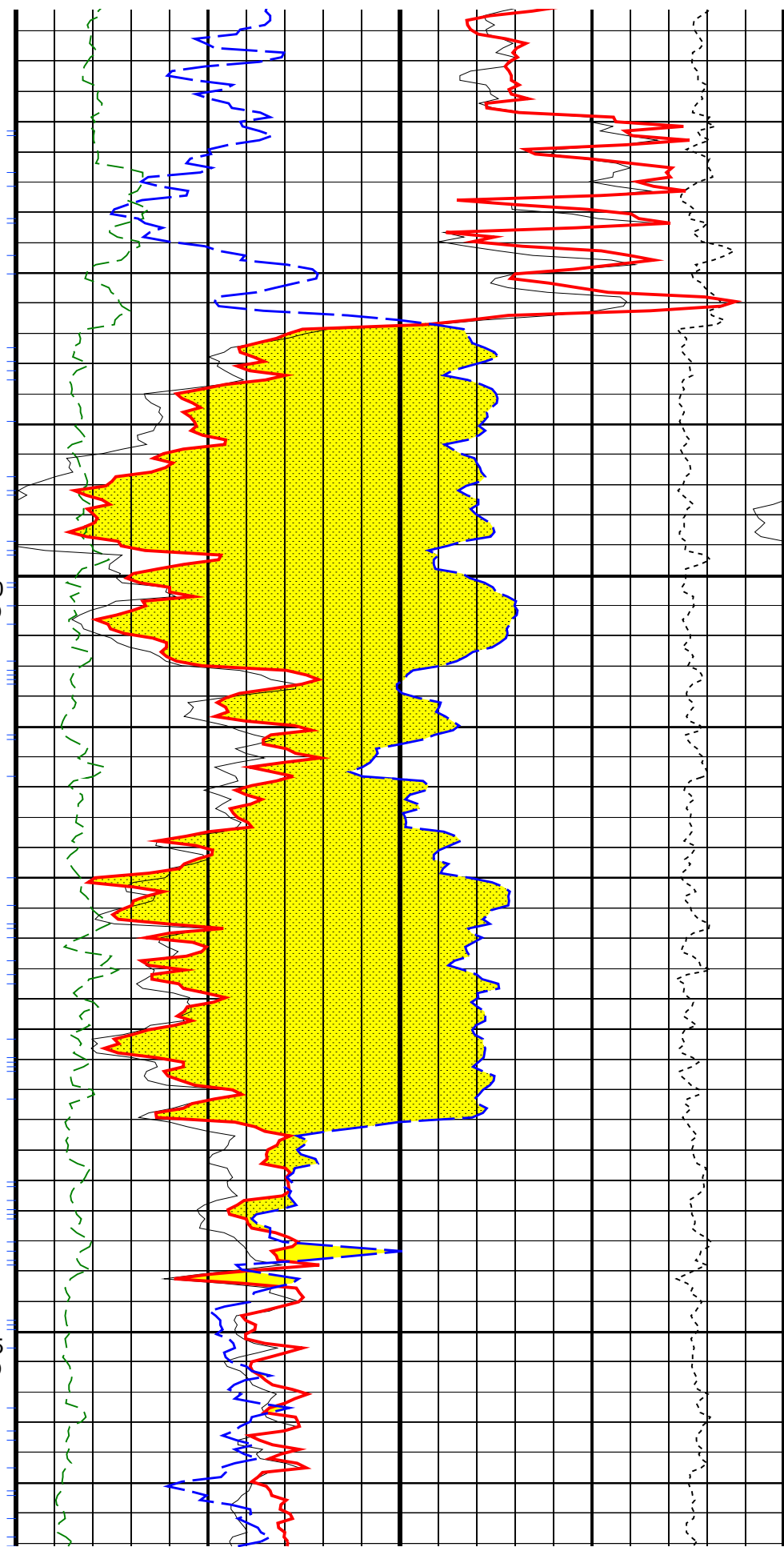
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TVD

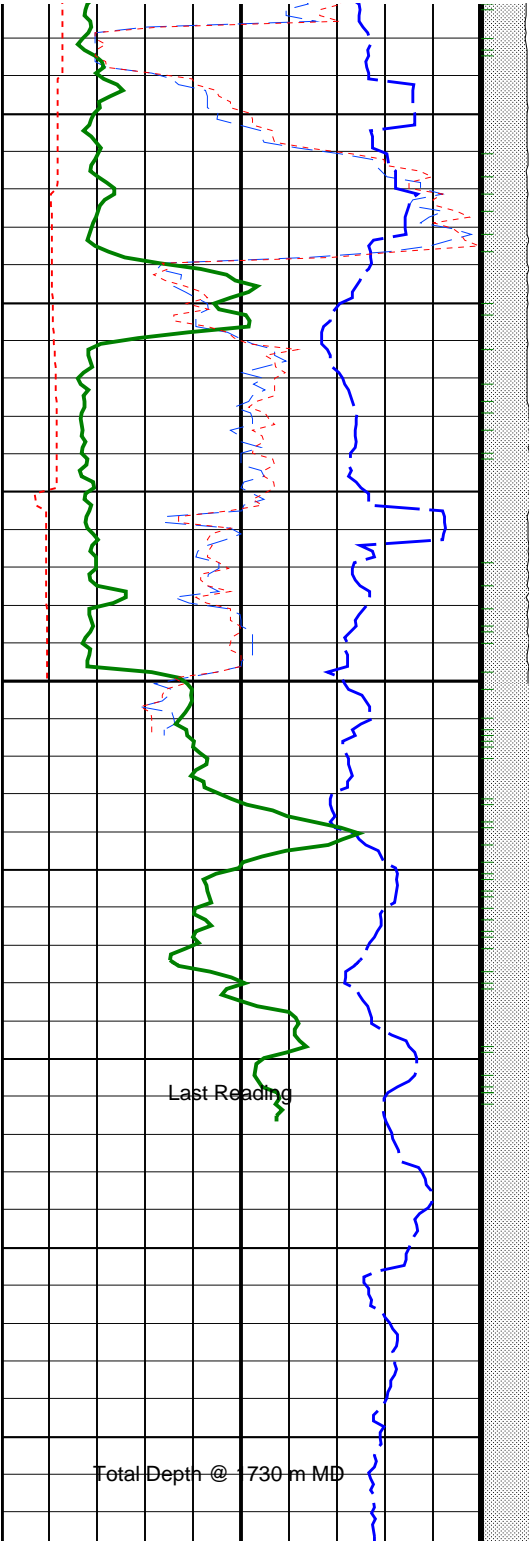




1400  
TVD

1425  
TVD





1450  
TVD

Last Reading

Total Depth @ 730 m MD

<div>Horizontal Hole Diameter (HORD) (IN)</div>		
6	16	
<div>Vertical Hole Diameter (VERD) (IN)</div>		
6	16	
<div>Density Time After Bit (TAB_DEN) (HR)</div>		
0	10	
RAB Gamma Ray (GR_RAB)		

ADN Rotational Speed (RPM_ADN) (RPM)
0200

<div>Photoelectric Factor, Bottom (PEB) (----</div>		
0	20	

<div>Bulk Density Correction, Bottom (DRHB) (G/C3)</div>		
-0.75	0.25	

<div>Bulk Density (RHOB) (G/C3)</div>		
1.85	2.85	
<div>Thermal Neutron Porosity (TNPH) (PU)</div>		
45	-15	
Bulk Density, Bottom (ROBB)		

RAB Gamma Ray (GR_RAB)		
0	(GAPI)	200
Rate of Penetration, Averaged over Last 5ft (ROP5_RM)		
200	(M/HR)	0

Bulk Density, Bottom (ROBB)		
1.85	(G/C3)	2.85
Gas Area From ROBB to TNPH		




PIP SUMMARY		
+ Neutron Samples		Density Samples
+ Gamma Ray Samples		

IDEAL Version: ID6_1C_10			
IDF			
RAB	id6_1c_10	MWD_10	id6_1c_10
ADN	id6_1c_10		
True Vertical Depth Log			

6.75-in. Azimuthal Density Neutron / Equipment Identification			
Primary Equipment:			
Tool Name and Serial Number		ADN6 – CA	289
Neutron Logging Source		NSR – M	161
Density Logging Source		GSR – J/Z	2125
Stabilizer Size		8.25 – in.	
Calibration Status		Good	

Master: 5–MAY–2002 12:34														
6.75–in. Azimuthal Density Neutron Calibration														
Density: Magnesium Block														
Phase	LS window 3 – Mg CPS			Value	Phase	SS window 1 – Mg CPS			Value	Phase	SS window 3 – Mg CPS			Value
Master				1304	Master				3005	Master				7415
	250.0	4125	8000			700.0	9350	18000			2500	23750	45000	
	(Minimum)	(Nominal)	(Maximum)			(Minimum)	(Nominal)	(Maximum)			(Minimum)	(Nominal)	(Maximum)	

Master: 5–MAY–2002 12:34											
6.75–in. Azimuthal Density Neutron Calibration											
Density: Aluminum Block											
Phase	LS window 3 – Al CPS		Value	Phase	SS window 1 – Al CPS		Value	Phase	SS window 3 – Al CPS		Value
Master			201.7	Master			1593	Master			4761
	50.00	725.0	1400		500.0	4250	8000		1500	15750	30000
	(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)

Master: 5–MAY–2002 12:34											
6.75–in. Azimuthal Density Neutron Calibration											
Density: Background											
Phase	LS window 3 – Background CPS		Value	Phase	SS window 1 – Background CPS		Value	Phase	SS window 3 – Background CPS		Value
Master			52.44	Master			125.1	Master			546.0
	15.00 (Minimum)	82.50 (Nominal)	150.0 (Maximum)		40.00 (Minimum)	220.0 (Nominal)	400.0 (Maximum)		150.0 (Minimum)	825.0 (Nominal)	1500 (Maximum)







Master: 5–MAY–2002 12:34							
6.75–in. Azimuthal Density Neutron Calibration							
Density: Water Block Check							
Phase	Long spacing water density G/C3		Value	Phase	Short spacing water density G/C3		Value
Master			1.035	Master			1.136
	1.011 (Minimum)	1.026 (Nominal)	1.041 (Maximum)		1.093 (Minimum)	1.118 (Nominal)	1.143 (Maximum)

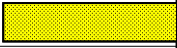
Master: 5-MAY-2002 12:34											
6.75-in. Azimuthal Density Neutron Calibration											
Neutron: Water Tank											
Phase	Far 1 tube 1 gain				Value	Phase	Far 1 tube 1 offset CPS				Value
Master					1.123	Master					-0.8040
	0.9000 (Minimum)	1.100 (Nominal)	1.300 (Maximum)				-1.200 (Minimum)	-0.9000 (Nominal)	-0.6000 (Maximum)		
Phase	Far 1 tube 2 gain				Value	Phase	Far 1 tube 2 offset CPS				Value
Master					1.054	Master					-0.9360
	0.9000 (Minimum)	1.100 (Nominal)	1.300 (Maximum)				-1.200 (Minimum)	-0.9000 (Nominal)	-0.6000 (Maximum)		
Phase	Far 1 tube 3 gain				Value	Phase	Far 1 tube 3 offset CPS				Value
Master					1.093	Master					-0.6810
	0.9000 (Minimum)	1.100 (Nominal)	1.300 (Maximum)				-1.200 (Minimum)	-0.9000 (Nominal)	-0.6000 (Maximum)		
Phase	Far 2 tube 1 gain				Value	Phase	Far 2 tube 1 offset CPS				Value
Master					1.114	Master					-0.7390
	0.9000 (Minimum)	1.100 (Nominal)	1.300 (Maximum)				-1.200 (Minimum)	-0.9000 (Nominal)	-0.6000 (Maximum)		
Phase	Far 2 tube 2 gain				Value	Phase	Far 2 tube 2 offset CPS				Value
Master					0.9960	Master					-0.9070
	0.9000 (Minimum)	1.100 (Nominal)	1.300 (Maximum)				-1.200 (Minimum)	-0.9000 (Nominal)	-0.6000 (Maximum)		
Phase	Far 2 tube 3 gain				Value	Phase	Far 2 tube 3 offset CPS				Value
Master					1.117	Master					-0.7540
	0.9000 (Minimum)	1.100 (Nominal)	1.300 (Maximum)				-1.200 (Minimum)	-0.9000 (Nominal)	-0.6000 (Maximum)		
Phase	Near 1 tube 1 gain				Value						
Master					1.091						
	0.9000 (Minimum)	1.100 (Nominal)	1.300 (Maximum)								
Phase	Near 2 tube 1 gain				Value						
Master					1.070						
	0.9000 (Minimum)	1.100 (Nominal)	1.300 (Maximum)								

6.75-in. Resistivity At-the-Bit / Equipment Identification											
Primary Equipment:											
Tool Name and Serial Number						RAB6 – CA			136		
Calibration Status						Good					

Master: 1-MAY-2002 20:48											
6.75-in. Resistivity At-the-Bit Calibration											
Resistivity: Fixture											
Phase	Ring/T1 factor				Value	Phase	Ring/T2 factor				Value
Master					0.9800	Master					0.9890
	0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)				0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)		
Phase	M0/T2 factor				Value	Phase	M2/T1 factor				Value
Master					0.9990	Master					0.9960
	0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)				0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)		
Phase	M2/T2 factor				Value	Phase	M2/T2 factor				Value
Master					1.001	Master					1.001
	0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)				0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)		

Phase	BTN shallow/T1 factor	Value	Phase	BTN shallow/T2 factor	Value	Phase	BTN medium/T1 factor	Value
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(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)					
Phase	BTN shallow/T1 factor		Value	Phase	BTN shallow/T2 factor		Value	Phase	BTN medium/T1 factor		Value
Master			1.014	Master			1.020	Master			1.017
0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)		0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)		0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)	
Phase	BTN medium/T2 factor		Value	Phase	BTN deep/T1 factor		Value	Phase	BTN deep/T2 factor		Value
Master			1.024	Master			1.014	Master			1.020
0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)		0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)		0.9750 (Minimum)	1.000 (Nominal)	1.025 (Maximum)	

Master: 1-MAY-2002 20:48											
6.75-in. Resistivity At-the-Bit Calibration											
Gamma Ray: Blanket											
Phase	Gamma ray factor									Value	
Master										0.9060	
	0.7500 (Minimum)				1.000 (Nominal)					1.250 (Maximum)	

Company:

Esso Australia Ltd.

Well:

WTN W38A

Field:

Tuna

Rig:

ISDL 453

State:

Victoria

IDEAL
 services from
 Anadrill

VISION Density Neutron  
 1:200 True Vertical Depth  
 Recorded Mode Log

Schlumberger