

Potassium	%	n/a									
Environmental data											
GR											
Mud weight	ppg	10.5									
Bit size	in.	8.5									
Resistivity											
Neutron porosity											
Hole Size	in.	8.5									
Mud weight	ppg	10.5									
Temperature	°C	88.0									
Mud salinity	ppk	64.4									
Formation salinity		n/a									
Recording rate 1	SEC	5 (ADN, SON)									
Recording rate 2	SEC	6 (ARC)									
Filtering GR		3 pts									
Filtering density		3 pts									
Filtering Neutron		3 pts									
Company representative	D. Bareswill	R. Spence	M. Calicutt								
Schlumberger D&M Personnel	M. Y. Tan	A. Kohli	M. Lu	C. Soper	M. How						

<div>DISCLAIMER</div> <div>THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.</div>		
OTHER SERVICES FOR RUN 1 Directional Drilling Directional Surveys Annular Pressure & Temperature Shock & Vibrations	OTHER SERVICES FOR RUN	OTHER SERVICES FOR RUN
REMARKS: RUN NUMBER 1 Depth is referenced to Driller's Depth. Gamma ray is corrected for mud weight, tool size and bit size. Resistivity is borehole compensated and environmentally corrected. Neutron porosity is corrected for the effects of borehole size (bit size), temperature, mud salinity, and mud hydrogen index (a factor of mud weight, mud temperature and pressure). Neutron porosity is calculated using a limestone matrix density of 2.71 g/cm3. POOH due to reaching TD of FTA A4c.	REMARKS: RUN NUMBER	REMARKS: RUN NUMBER

EQUIPMENT DESCRIPTION		
RUN 1	RUN	RUN

DOWNHOLE EQUIPMENT

6-3/4" adnVISION* Neutron F 35.47 37.30
DHS: V8.3A02 Neutron N 35.31
Blade OD: 8-1/4" Density S 34.36
S/N: AD41 Density L 34.27
UltraSonic 33.88
R-O Port 33.12



6-3/4" sonicVISION* 31.10
DHS: V6.6b04
S/N: 649
Delta-T 27.83
R-O port 27.43



8-3/8" ILS 23.64
S/N: S31746-1



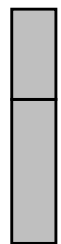
6-3/4" TeleScope* 22.75
MDC: FA27
MEC: 373
MDI: 1565
MVC: 282
D&I 18.39
MVC 17.74



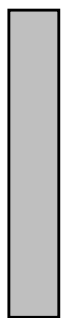
8-3/8" ILS 14.73
S/N: OSS0701135B
T5 11.38
T3 11.07



6-3/4" arcVISION* 13.72
DHS: V9.3b13
S/N: 1191
T1 10.77
Gamma Ray 10.41
Receiver 10.36
T2 10.11
T4 9.80
ARC APRS 9.65



6-3/4" PowerDrive Xceed* 7.88
S/N: 109



8-1/2" Reed-Hycalog PDC Bit 0.00 0.22
S/N: 214576



Maximum string diameter 8-1/2 in.
All lengths in Meters

Variable Name	Variable Description	Run Name & Value
Run Number		1
General Information		
BHT_RM	Bottom Hole Temperature (RM)	88.000000
BSAL_RM	Mud Salinity (RM)	64.402878
BS_RM	Bit Size (RM)	8.500000
COEF_M	User Defined FEXP in Clean Sand	1.650000
C_WS	Overpressure correction to Sw and M	1.000000
FEXP	Formation Factor Exponent (RM)	2.000000
FNUM	Formation Factor Enumerator (RM)	1.000000
FPHI_RM	Formation Factor Porosity Source (RM)	XPLOT
MST_RM	Mud Sample temperature (RM)	75.000000
MW_RM	Mud Weight (RM)	10.500000
OBMF_RM	Oil Based Mud (RM)	YES
RHOF_RM	Mud Filtrate Density (RM)	1.000000
RHOM_RM	Matrix density (RM)	2.710000
RMS_RM	Resistivity of Mud Sample (RM)	1000.000000
RWA_COMP_M	Rwa computation model	BASIC
RWA_DEN_AD	Rwa Density Input ADN	ROBB
RWA_DEN_CD	Rwa Density Input CDN	RHOB
RWA_DEN_IN	Rwa Density Input	ROBE
RWA_FORM_M	Rwa computation formation model	CLASTIC
RWA_RES_IN	Rwa computation resistivity input	P34H
RWS_RM	Resistivity of Connate Water (RM)	1.000000
SHT_RM	Surface Hole Temperature (RM)	10.000000
TD_RM	Total Measured Depth (RM)	3314.000000
TWS_RM	Temperature of Connate Water (RM)	75.000000
VF_ILLI	Fraction of illite in shales	0.500000
VF_KAOL	Fraction of kaolinite in shales	0.500000
VF_MONT	Fraction of montmorillonite in shales	0.000000
XPDM_RM	Cross plot density porosity multiplier	0.675000
XPNM_RM	Cross plot neutron porosity multiplier	0.325000
ARC		
LWD_RM/STATION_FILE/	PARAMETERStation Time-frame file name	Station
A12A	ARC Air Cal Attenuation From T1 at 2 MHz	8.454470
A14A	ARC Air Cal Attenuation From T1 at 400 KHz	8.428760
A22A	ARC Air Cal Attenuation From T2 at 2 MHz	6.487210
A24A	ARC Air Cal Attenuation From T2 at 400 KHz	6.520190
A32A	ARC Air Cal Attenuation From T3 at 2 MHz	5.081830
A34A	ARC Air Cal Attenuation From T3 at 400 KHz	5.049050
A42A	ARC Air Cal Attenuation From T4 at 2 MHz	4.393750
A44A	ARC Air Cal Attenuation From T4 at 400 KHz	4.421190
A52A	ARC Air Cal Attenuation From T5 at 2 MHz	3.633010
A54A	ARC Air Cal Attenuation From T5 at 400 KHz	3.610840
ABNT	Abnormal Transmitter Indicator	No_Tx_Failed
ADHS	ARC Down Hole Software Version	No_Tx_Failed
ANISO_COMP	Anisotropy Computation Option	YES
APICG	ARC5 Gamma Ray Gain Factor	1.070470
APIG	ARC Gamma Ray API Gain Factor	-1.000000
ATMP_ARC	ARC Select Temperature Channel	Annulus_Temp
ATRN	ARC Tool Run Number	1
ATSN	ARC Tool Serial Number	Annulus_Temp
AZMF	Formation DIP Azimuth	0.000000
BH_COMPUTE	Borehole Inversion Computation Option	YES
CALG	ARC Gamma Ray Cal Gain Factor	1.070470
CALI_SLCT	ARC Caliper Selection	BITSIZE
CDPTH_ARC	Process Start Depth	100.000000
DIELEC_COM	Dielectric Computation Option	YES
DIPF	Formation DIP Angle	0.000000
ERRCT	Percentage Error Cutoff	4.500000
GRSH	GR Shale (Invasion Computation Cutoff)	1000.000000
HIGH_BLEND	High Resistivity Threshold for Blending	2.000000
INCLIN_B0	ARC Bias Constant (mg)	0.000000
INCLIN_B1	ARC Bias First-order Coefficient (mg/degC)	0.000000
INCLIN_B2	ARC Bias Secod-order Coeeficient (mg/degC)	0.000000
INCLIN_B3	ARC Bias Third-order Coeeficient (mg/degC)	0.000000
INCLIN_C0	ARC Current Scale Factor Constant (mA/g)	1.000000
INCLIN_C1	ARC Scale First-order Coeeficient (mA/g/degC)	0.000000
INCLIN_C2	ARC Scale Second-order Coeeficient (mA/g/degC)	0.000000
INCLIN_C3	ARC Scale Third-order Coeeficient (mA/g/degC)	0.000000
INVAS_COMP	Invasion Computation Option	YES
JSD_ARC	ARC Acquisition start date	YES
KPER	Potassium Concentration (RM)	0.000000
LOW_BLEND	Low Resistivity Threshold for Blending	1.000000
MSWS	ARC Wizard Model Switch Window	5.000000
MULTIEFFEC	Multi Effect Option	YES
P12A	ARC Air Cal Phase-Shift From T1 at 2 MHz	1.806140
P14A	ARC Air Cal Phase-Shift From T1 at 400 KHz	-0.319793
P22A	ARC Air Cal Phase-Shift From T2 at 2 MHz	-1.722540
P24A	ARC Air Cal Phase-Shift From T2 at 400 KHz	0.224298
P32A	ARC Air Cal Phase-Shift From T3 at 2 MHz	1.739660
P34A	ARC Air Cal Phase-Shift From T3 at 400 KHz	-0.287066
P42A	ARC Air Cal Phase-Shift From T4 at 2 MHz	-1.763690
P44A	ARC Air Cal Phase-Shift From T4 at 400 KHz	0.206005
P52A	ARC Air Cal Phase-Shift From T5 at 2 MHz	1.719260
P54A	ARC Air Cal Phase-Shift From T5 at 400 KHz	-0.300926
POFFSET_AR	ARC: Pressure Offset	0.000000
PRTD	Preferred Resistivity Log for Rt Display while Multi-Effects	P34B
PSOF_ADJ_T	ARC: User Input Phase offset	0.000000

RESTIK	ARC resistivity tick source	Phase
SHIG	ARC High Shock Risk Level	0.500000
SHT_RM	Ground Level Temperature (Mud-Line When Offshore) (RM)	50.000000
SMED	ARC Medium Shock Risk Level	0.330000
SMIN	ARC Minimum Shock Risk Level	0.160000
SUPD	ARC Real Time Shock Update Rate	30.000000
TCODE_ARC	ARC Tool File Code	30.000000
TSIZ_ARC	ARC Tool Size	6.750000
UNIFORM_CO	Uniform Rock Option	YES
VERS_ARC	ARC Down hole software version Number	9.300000
WRK	Way to Report Potassium Concentration (RM)	K_by_Wgt_%

ISONIC

FP_SD	First Sample delay	400.00
STC_CF	Center frequency of Filter	13.00
STC_BW	Bandwidth (kHz)	Default
STC_RWI	Receiver waveform ignored	None
PM_TOFF	Tool Time offset from surface system	0.00
DT_COH	Delta-T Coherence Cutoff Value	0.70
PPC_PF	Porosity Formula	Raymer-Hunt
PPC_PS	Sonic Porosity Source	DTRA
PPC_MDT	Matrix Delta-T	47.60
PPC_FDT	Fluid Delta-T	189.00

ADN

ADN_CHASSI	ADN Chassis Type String	ADN
ADN_COLLAR	ADN Collar Type String	ADN
ADN_STAB_S	ADN Stabilizer Type String	IBS
ALPHA_COMP	Perform Density Enhanced Vertical Resolution process ?	YES
ALPHA_COMP	Perform Neutron Enhanced Vertical Resolution process ?	YES
AVE_ADN	ADN/Array Channels: perform averaging(RM) :	YES
A_DHS	ADN Down Hole Software Version String	YES
CHI_RM	Caliper High limit from BS (RM)	3.000000
CLO_RM	Caliper Low limit from BS (RM)	0.000000
DEVI	Well Section Deviation	41.450001
DTIK_SEL	ADN: Density Tick Channel Name	LSAZ
DTMUD	Delta-T for Mud	209.160004
DYN_IMG_CO	Generate Dynamic Normalized Image?	YES
ECC_CORR_A	Perform Eccentering Correction for TNPH?	YES
ENVCOR	Neutron Quadrant Processing: Environmental Correction?	YES
EVRL	EVR Process averaging number of samples (RM)	49
FCD	Future Casing (Outer) Diameter	0.000000
GCSE	Generalized Caliper Selection	BS
HPS	ADSE-EB (High Pressure Inconel Chassis)?	NO
IBS	Intergal Blade Stabilizer Collar?	YES
IDQT	Image Derived Quality Threshold	1.000000
IHVS	Integrated Hole Volume Start Value(RM)	0.000000
IMAGE_MAX	Image SOA (Quadrant) Right Scale	2.500000
IMAGE_MAX	Image PEF(Segment) Right Scale	6.000000
IMAGE_MAX	Image RHOB(Segment) Right Scale	2.650000
IMAGE_MIN	Image SOA (Quadrant) Left Scale	0.000000
IMAGE_MIN	Image PEF(Segment) Left Scale	2.000000
IMAGE_MIN	Image RHOB(Segment) Left Scale	2.050000
JSD_ADN	ADN Acquisition start date	11-Jul-2007
LITHO_TYPE	Lithology (RM)	LIME
N1FTU_6_RM	ADN: Neutron Bank 1 Far Tubes used :	1-2-3
N2FTU_6_RM	ADN: Neutron Bank 2 Far Tubes used :	1-2-3
NNTU_RM	ADN Neutron Near Banks Used	1-2
NTIK_SEL	ADN: Neutron Tick Channel Name	FR11
SOCNL	Standoff Distance of the CNL Tool	1.000000
SSIZ_ADN	ADN Stabilizer Size	8.250000
STOH	ADN Density Top of Hole Sector (Left Boundary):	SECTOR_0
TRPM_RM	Average Tool Rotational Speed	20.000000
USMIN_RM	ADN:Minimum Ultrasonic standoff (RM)	0.180000
USWF_RM	ADN:Process Ultrasonic Waveform?	YES
VERS_ADN	ADN Downhole Software Version	8.300000
WSDI	Window Size of Dynamic Normalization Image	15.000000

Schlumberger Drilling & Measurements

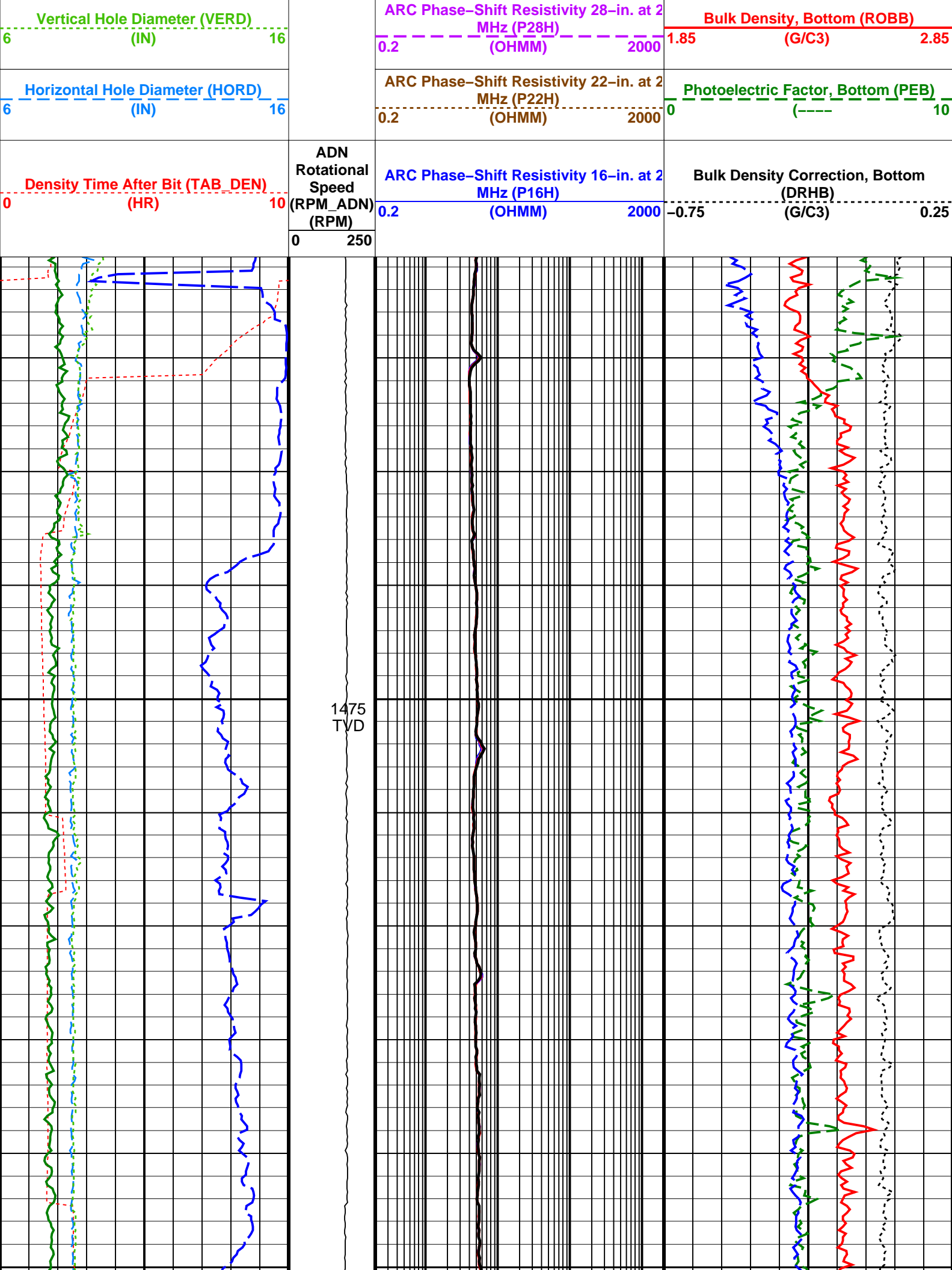
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True Vertical Depth Log

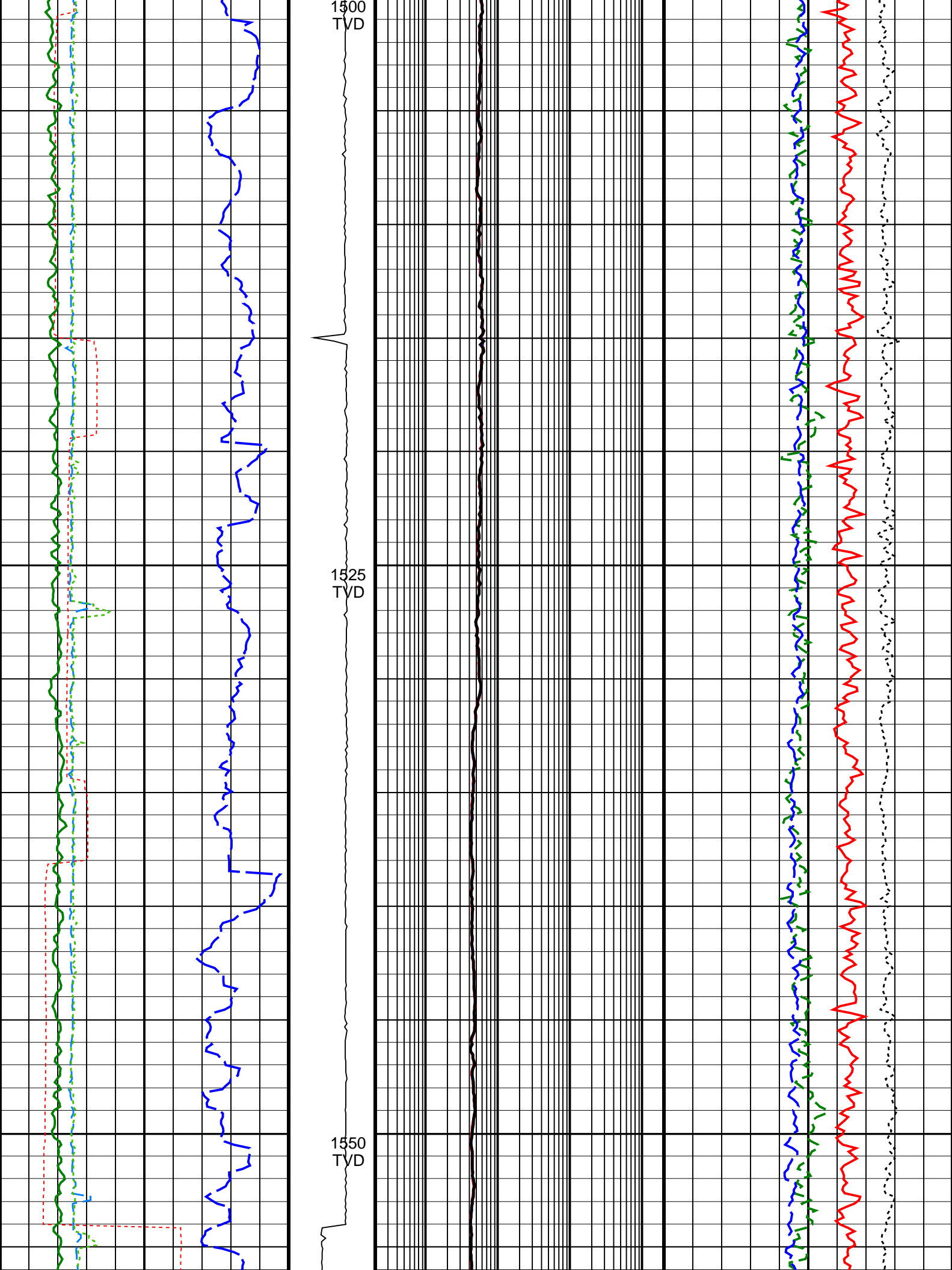
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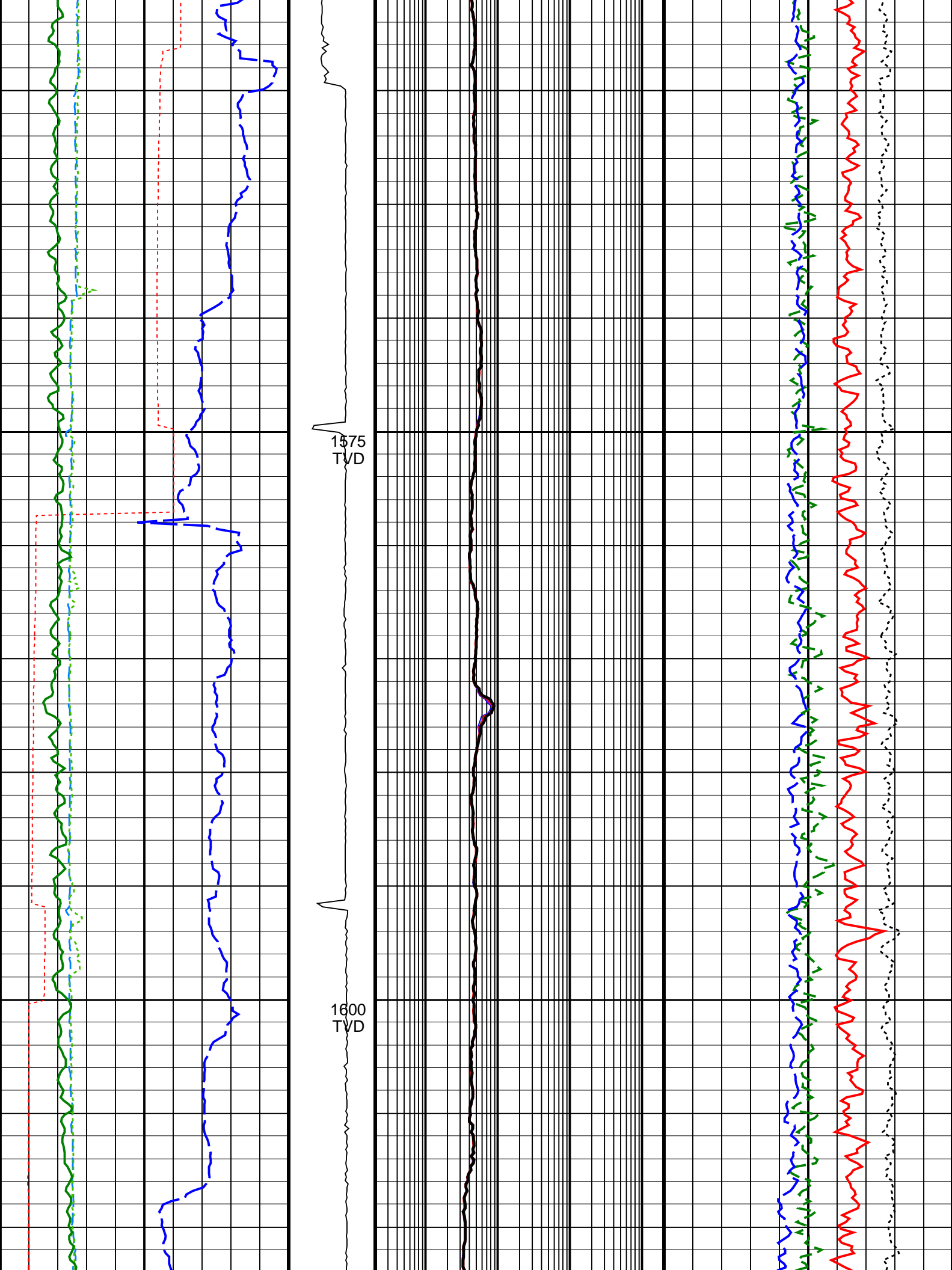
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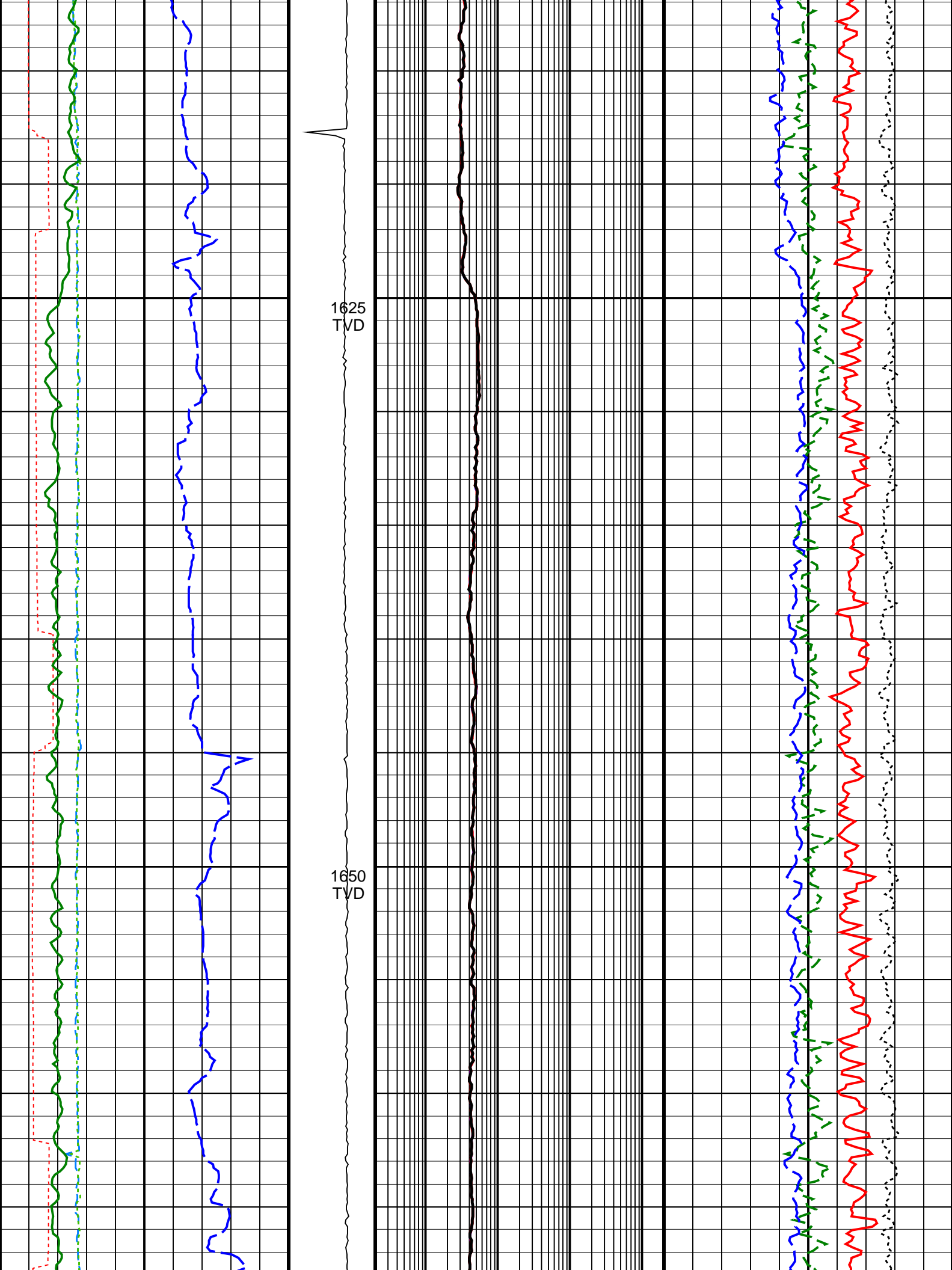
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Rate of Penetration, Averaged over Last 5ft (ROP5_RM)		ARC Phase-Shift Resistivity 40-in. at 2 MHz (P40H)			
200	(M/HR)	0		0.2	(OHMM) 2000
ARC Gamma Ray (GR_ARC)		ARC Phase-Shift Resistivity 34-in. at 2 MHz (P34H)		Thermal Neutron Porosity (TNPH)	
0	(GAPI)	200		0.2	(OHMM) 2000
				45	(PU) -15

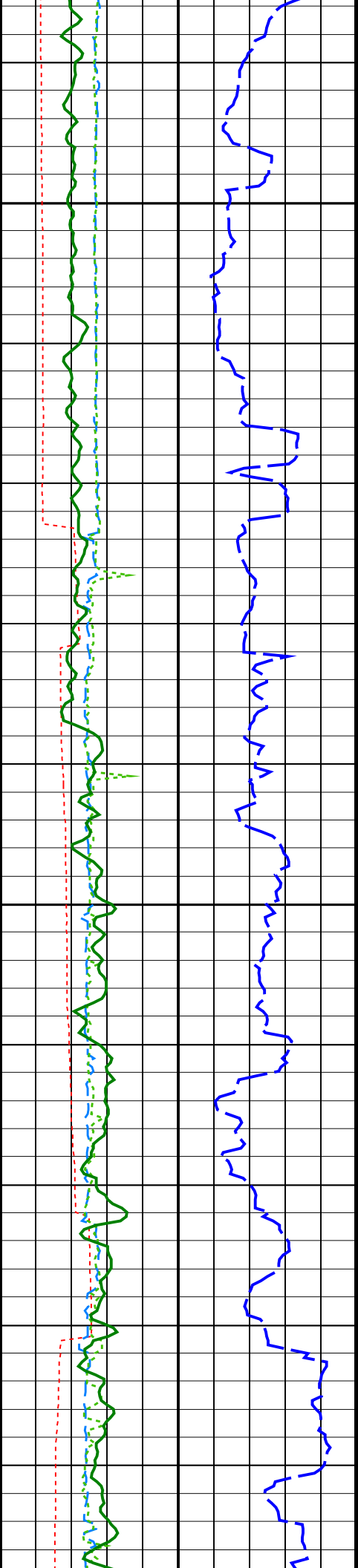


1475
TVD



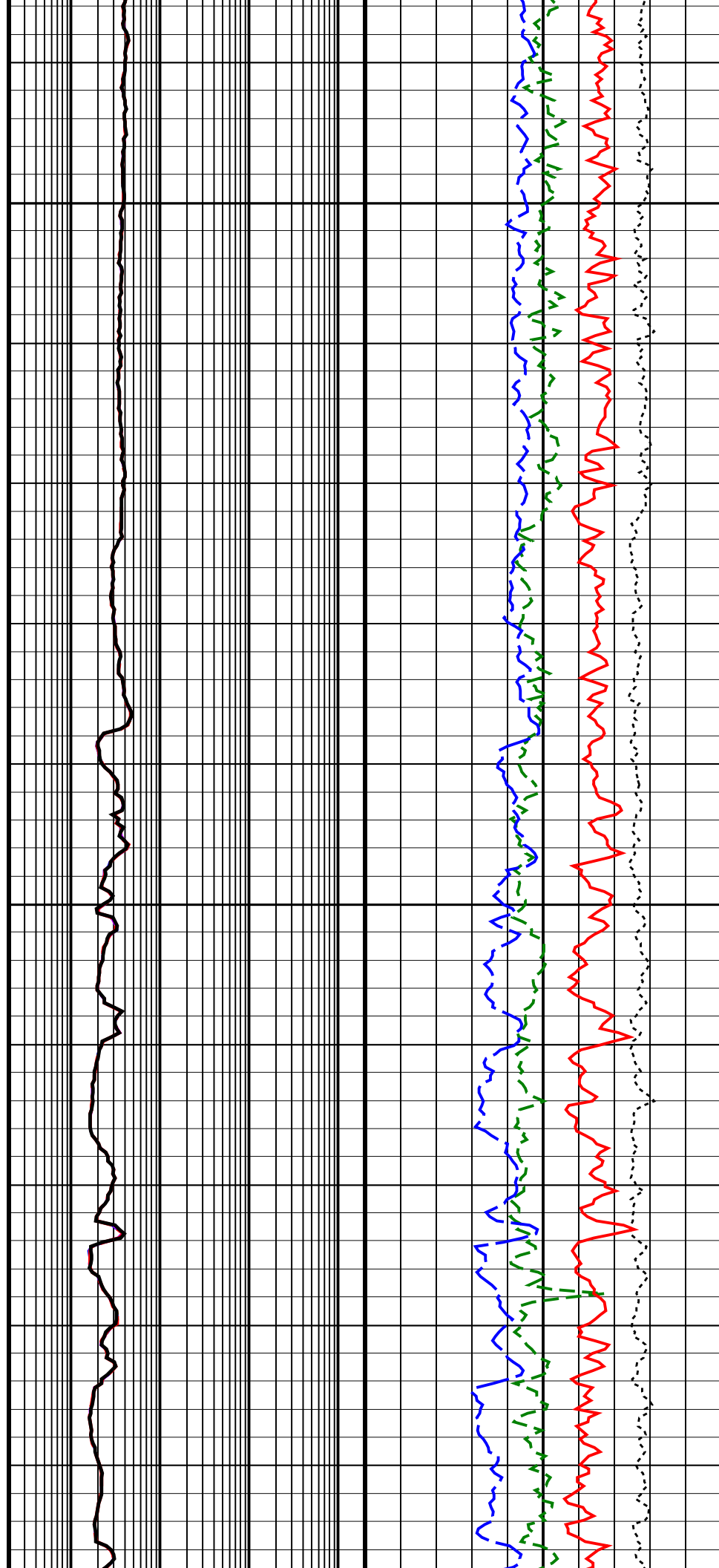


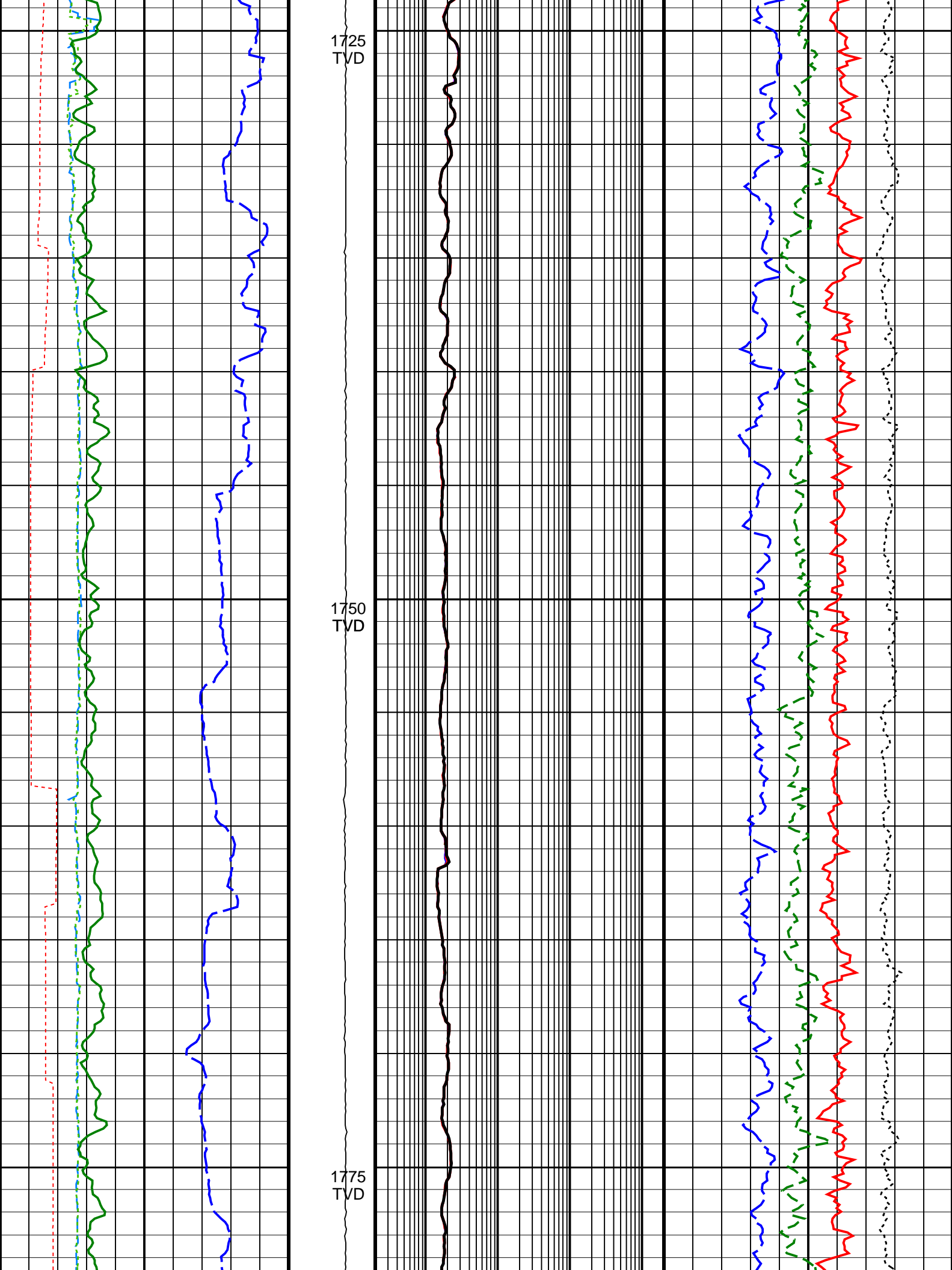


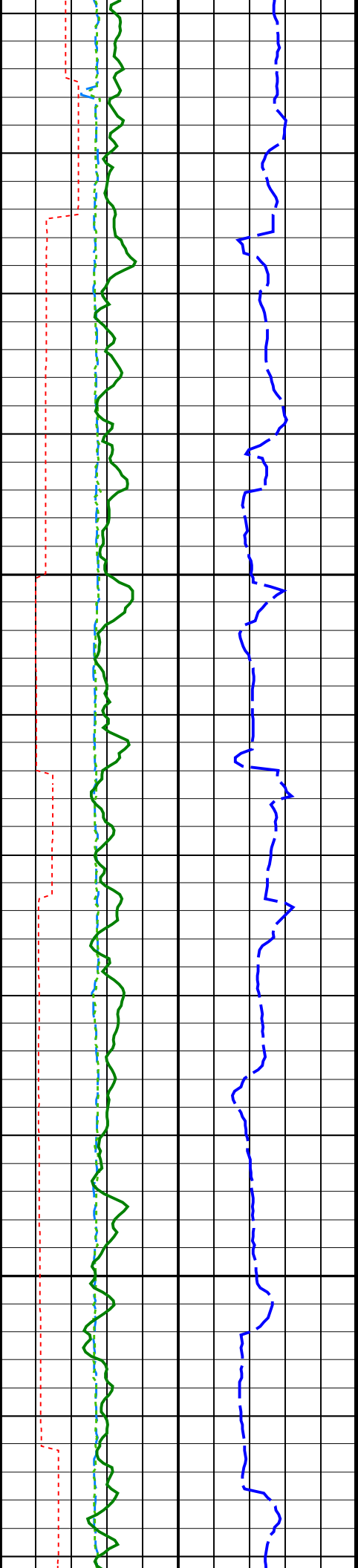


1675
TVD

1700
TVD

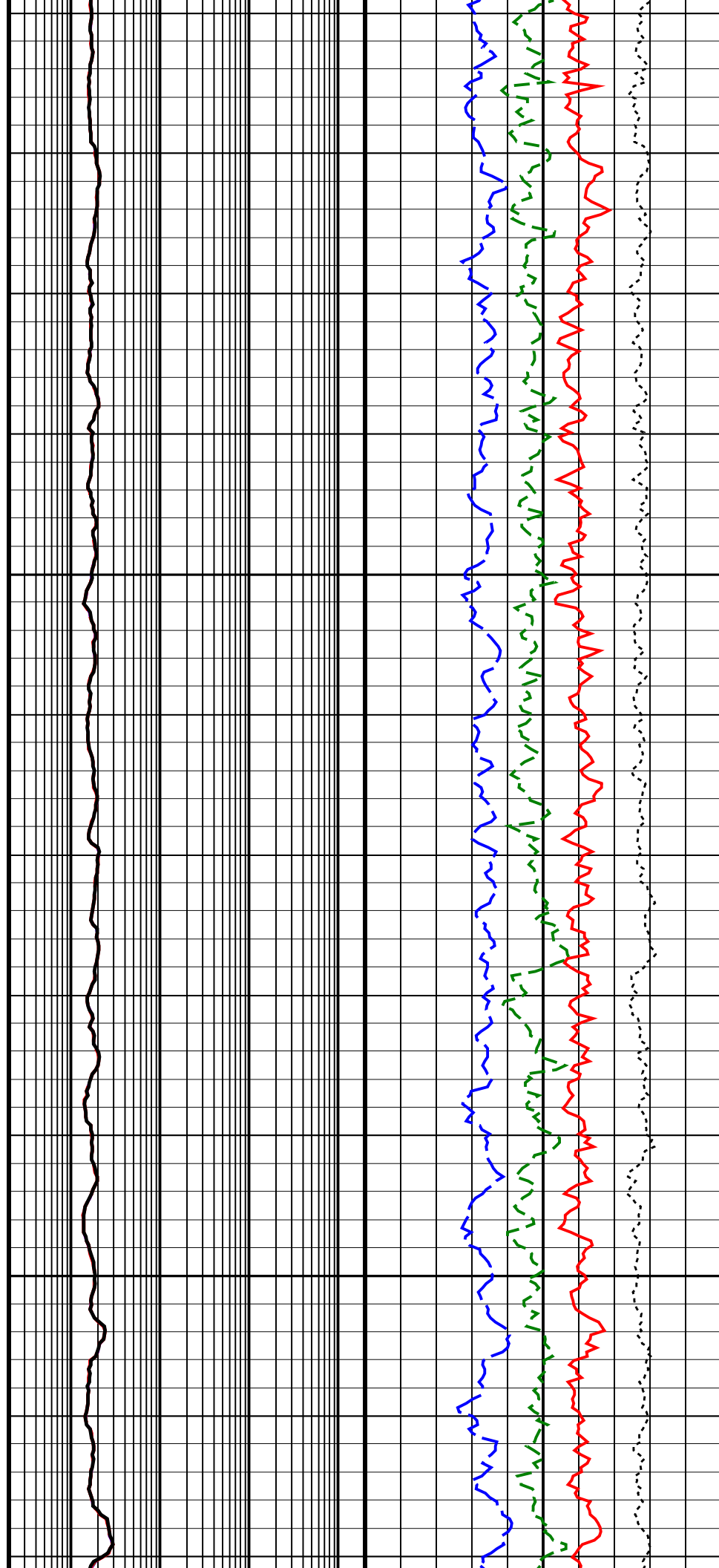


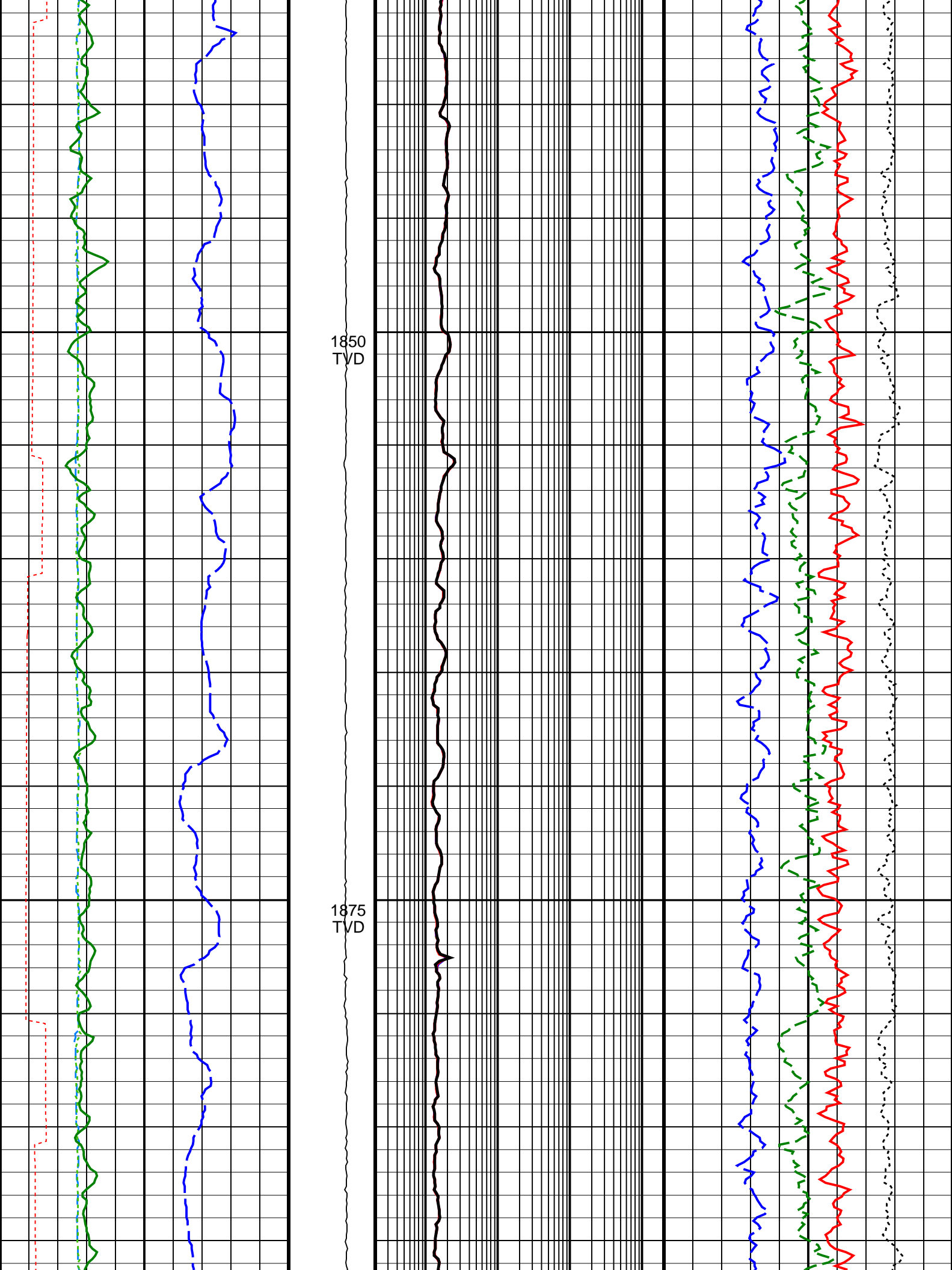


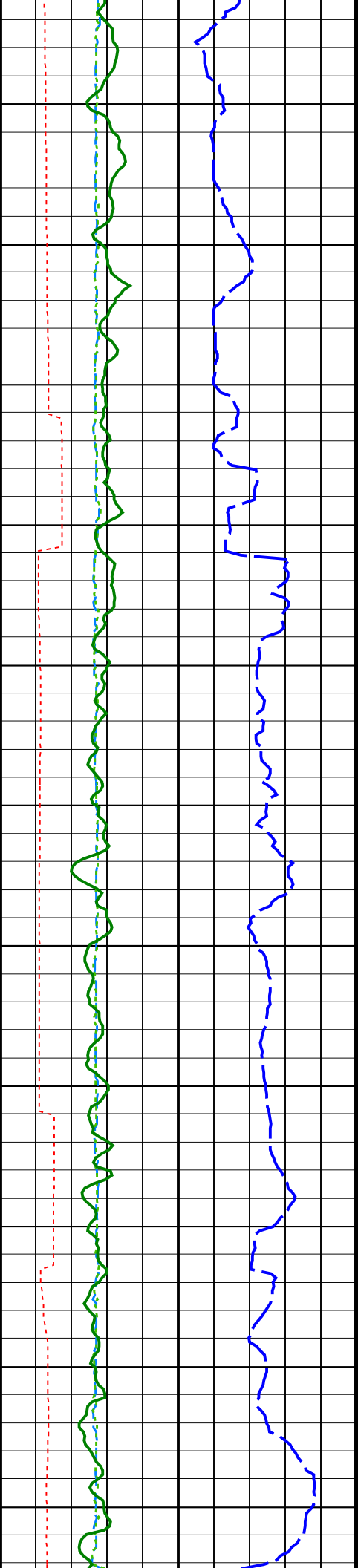


1800
TVD

1825
TVD

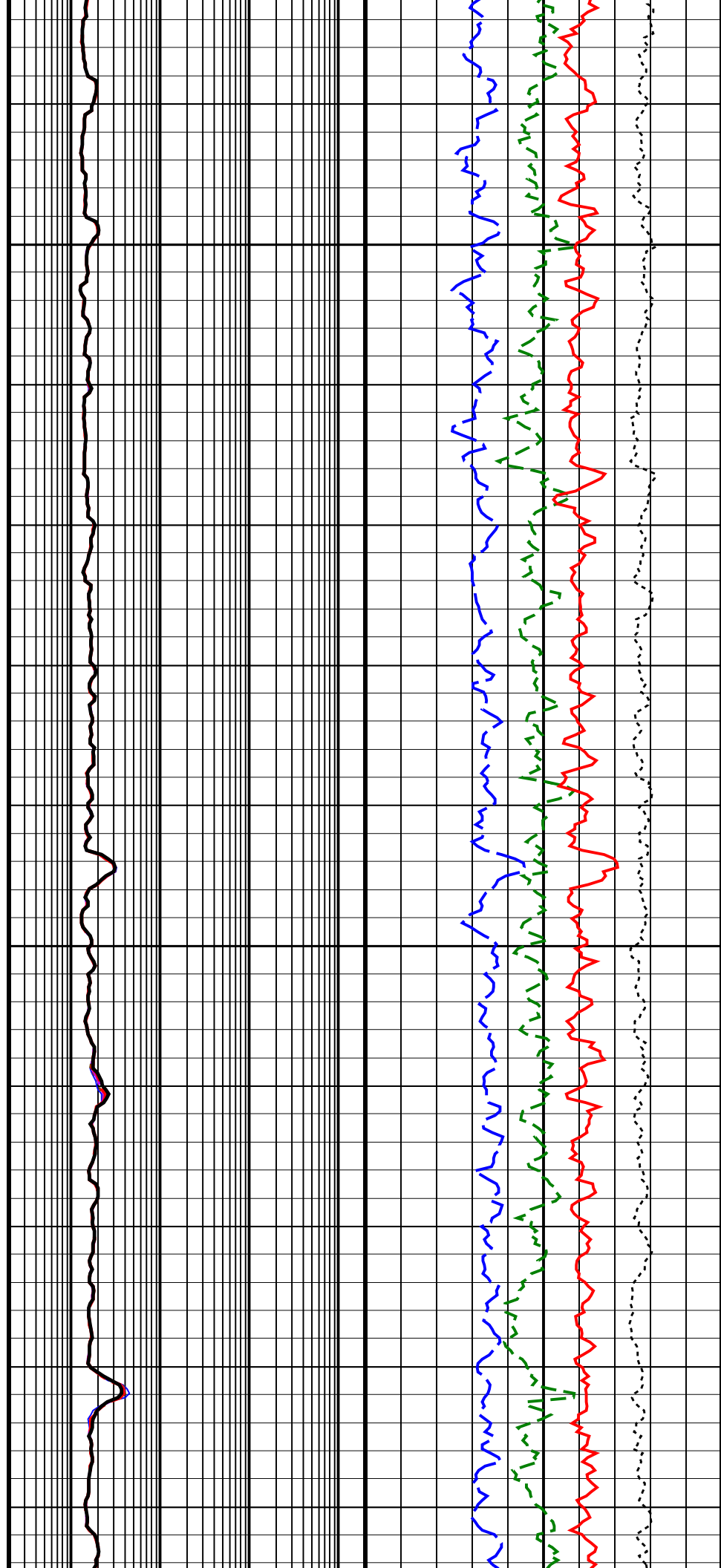


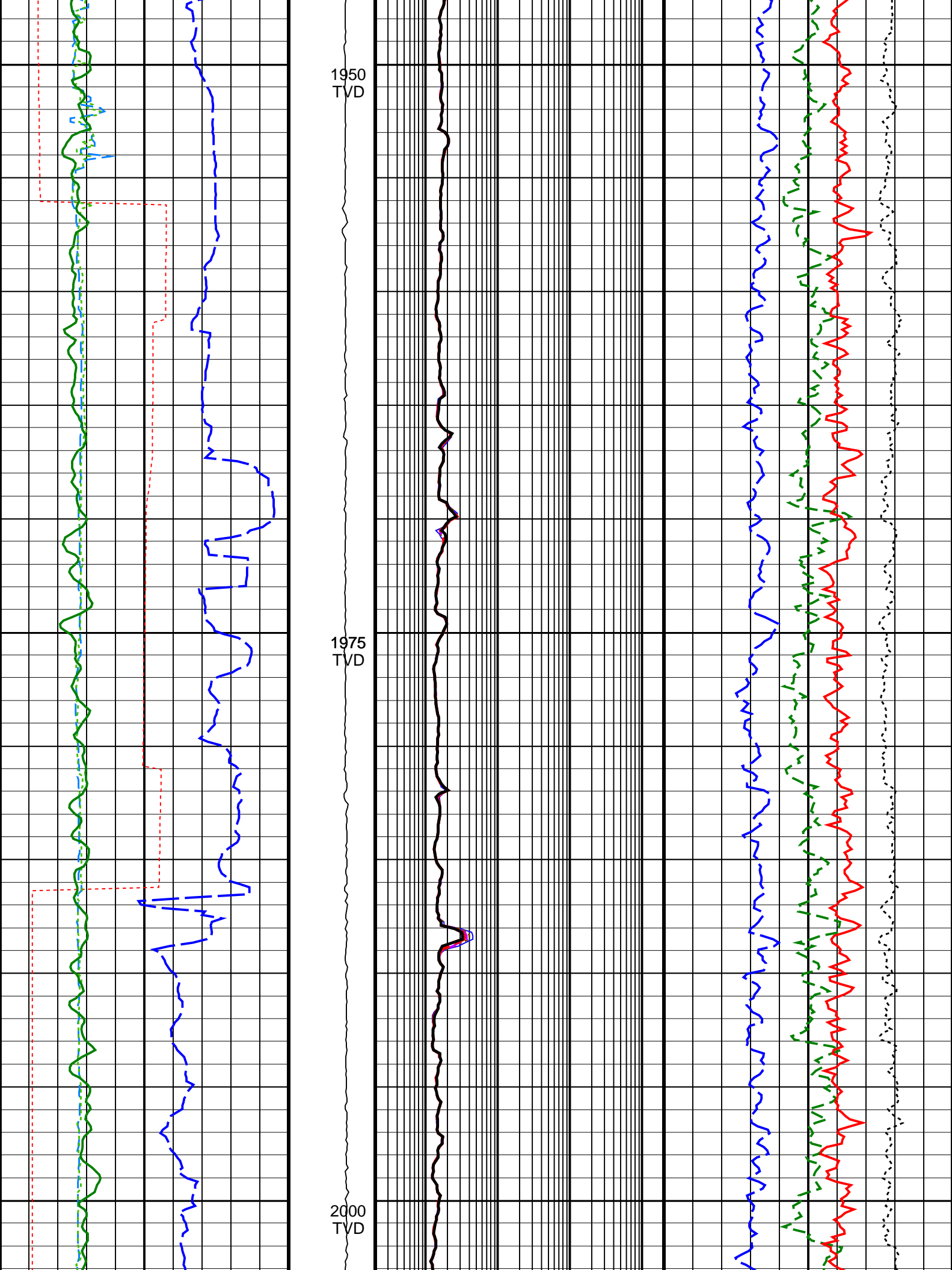


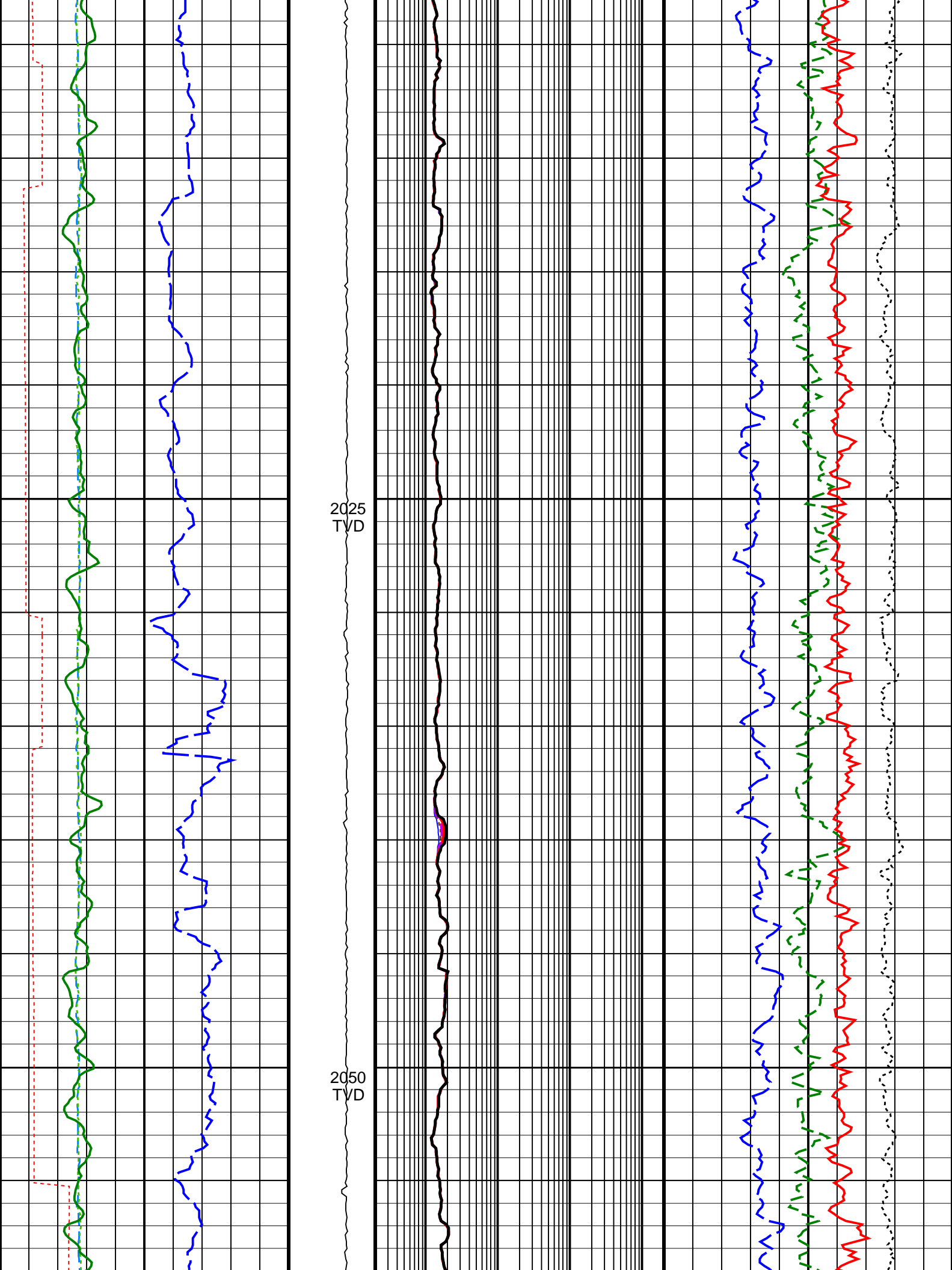


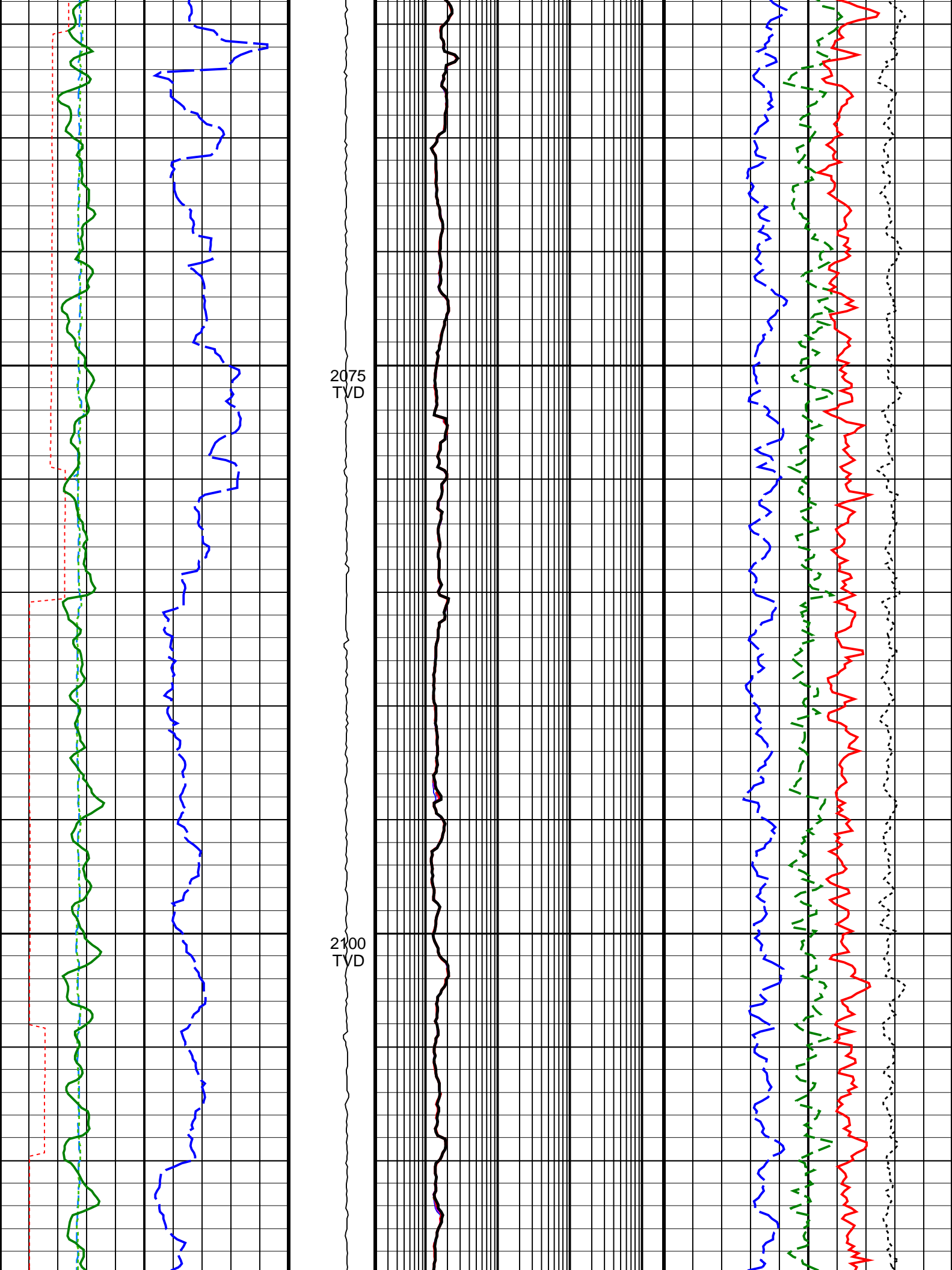
1900
TVD

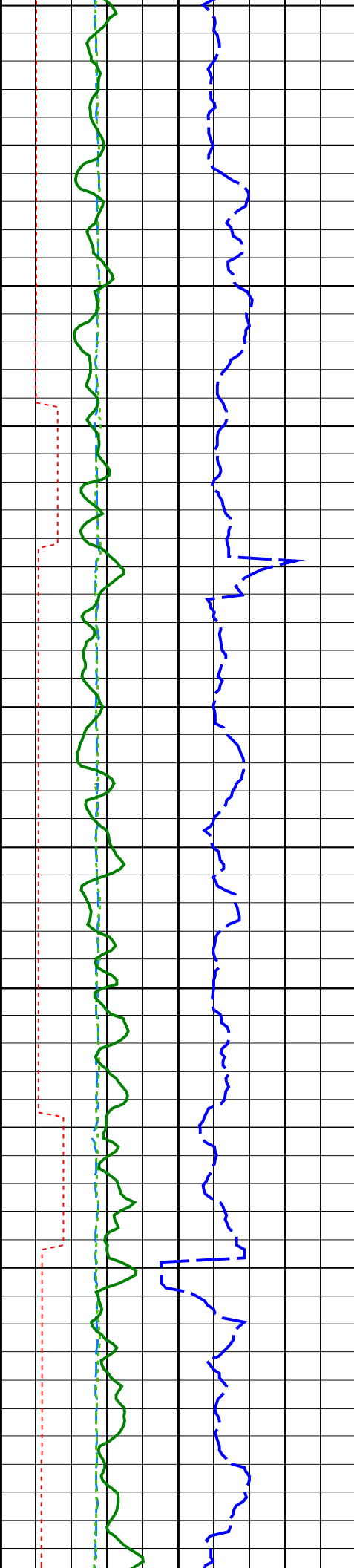
1925
TVD





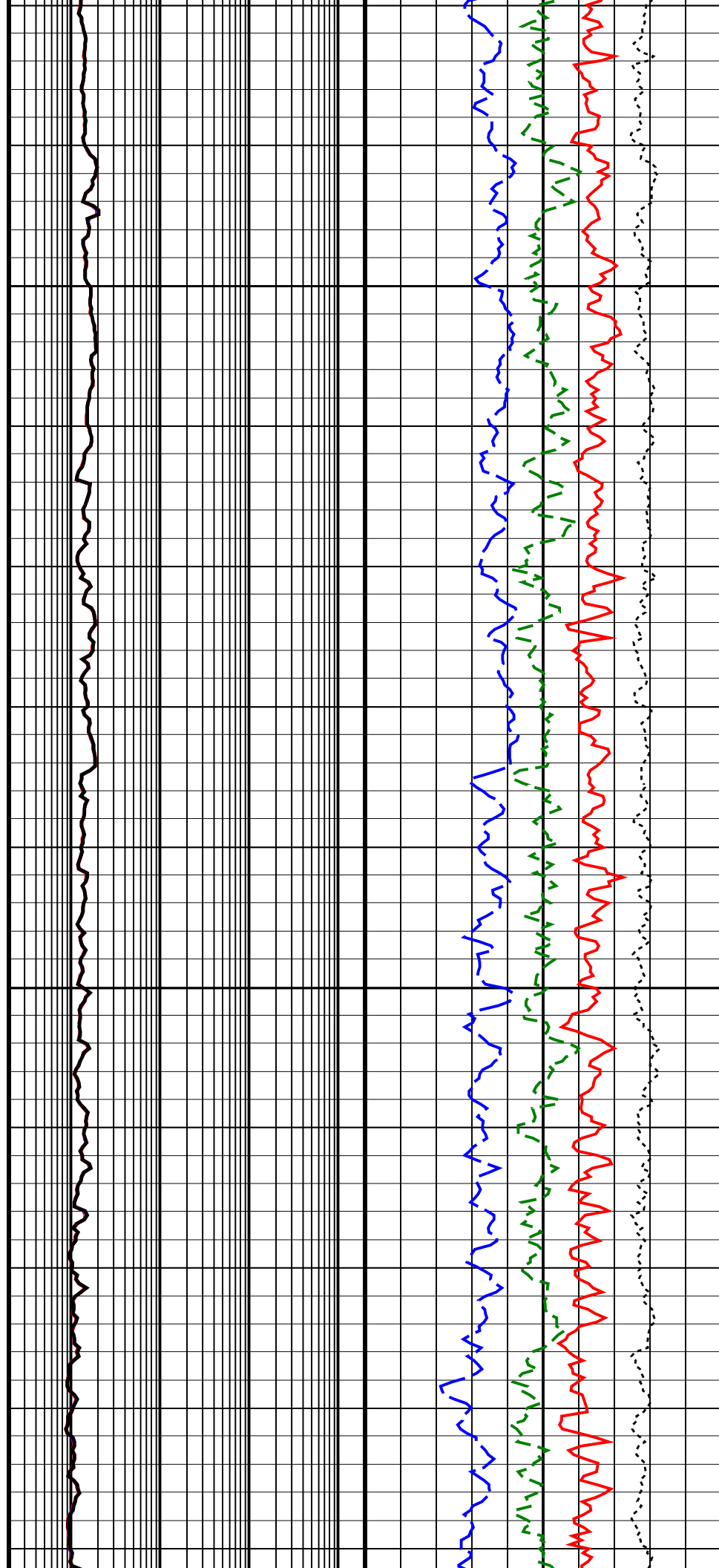


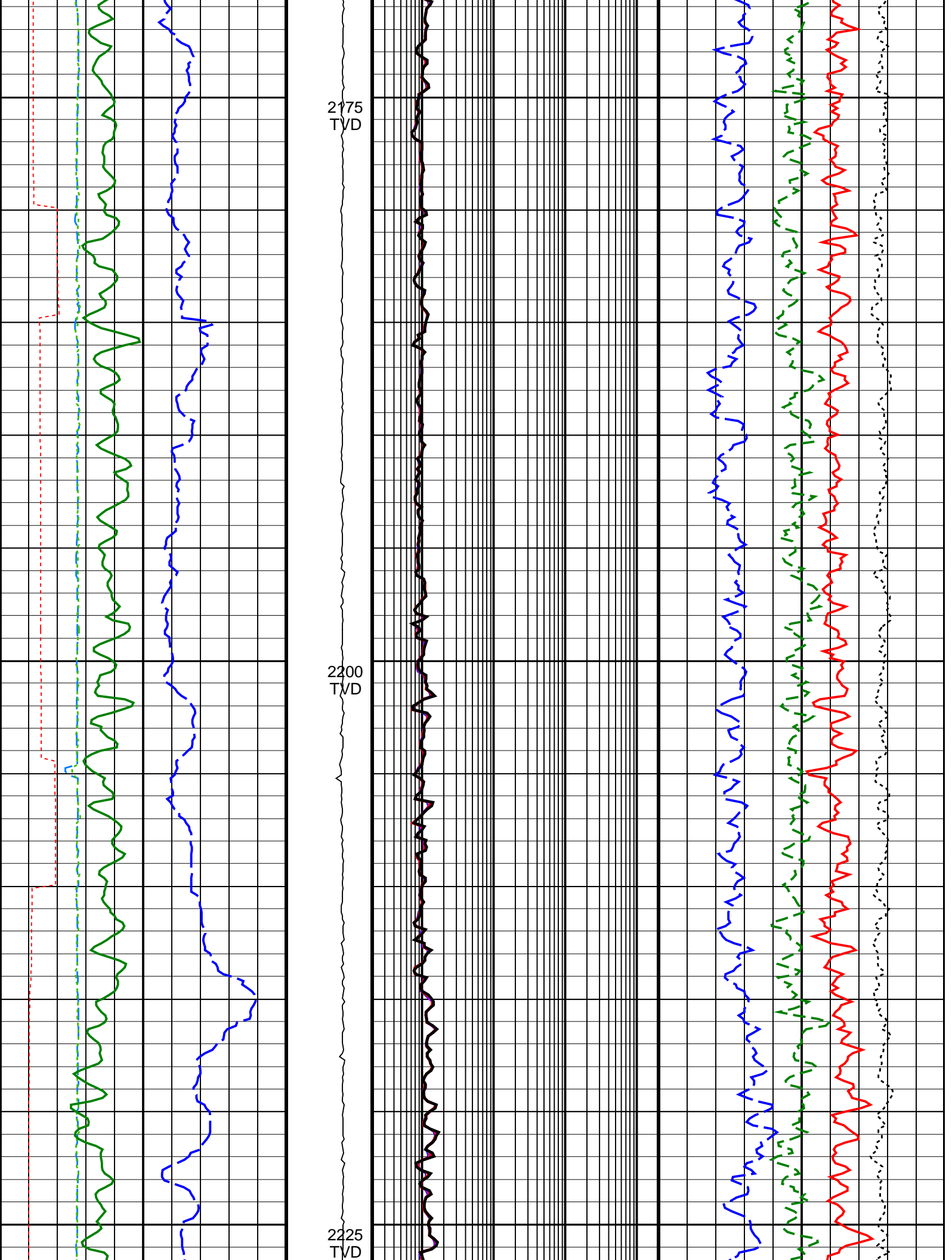


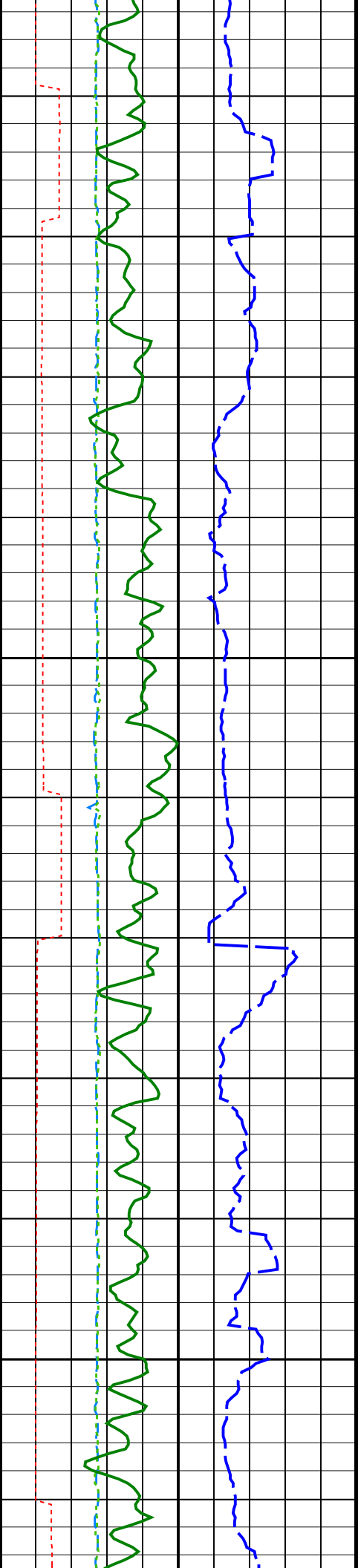


2125
TVD

2150
TVD

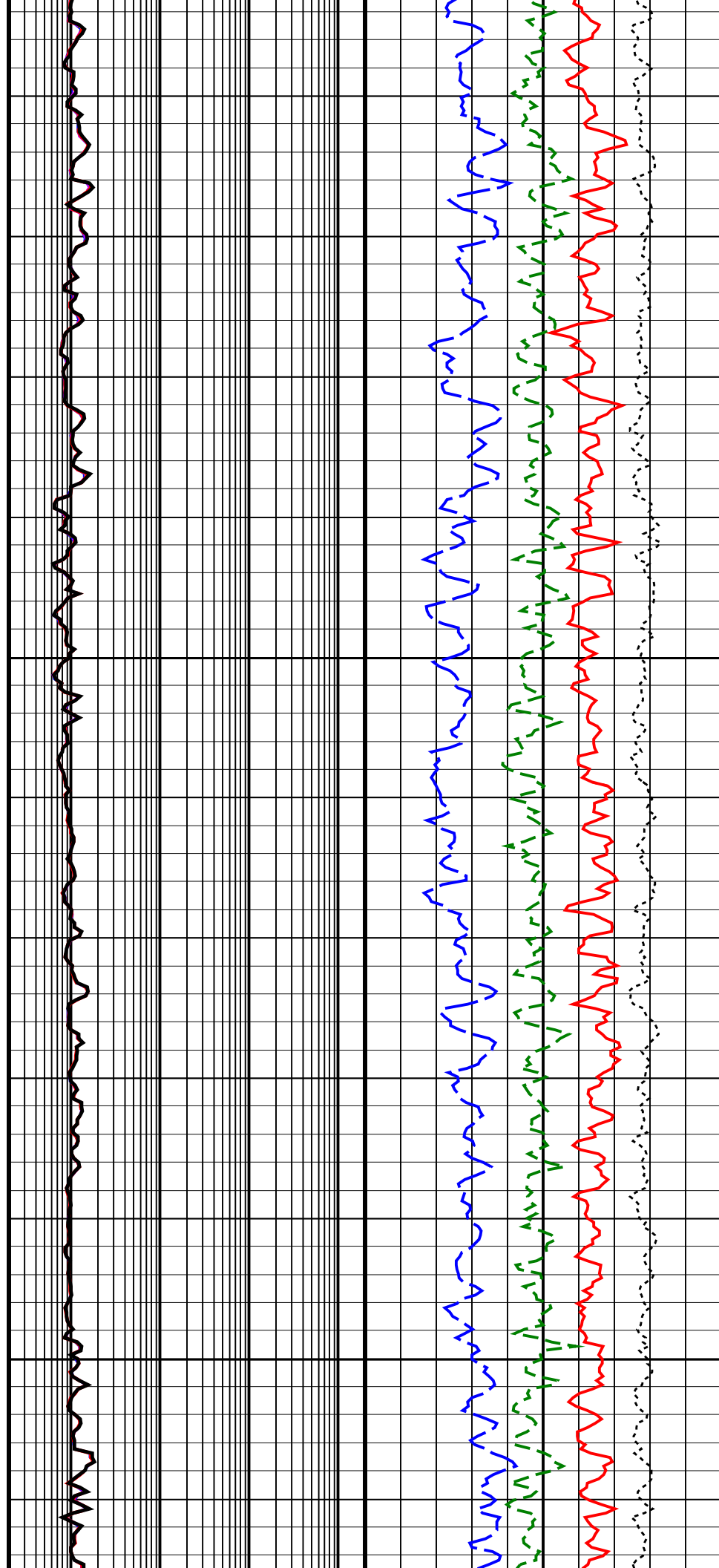


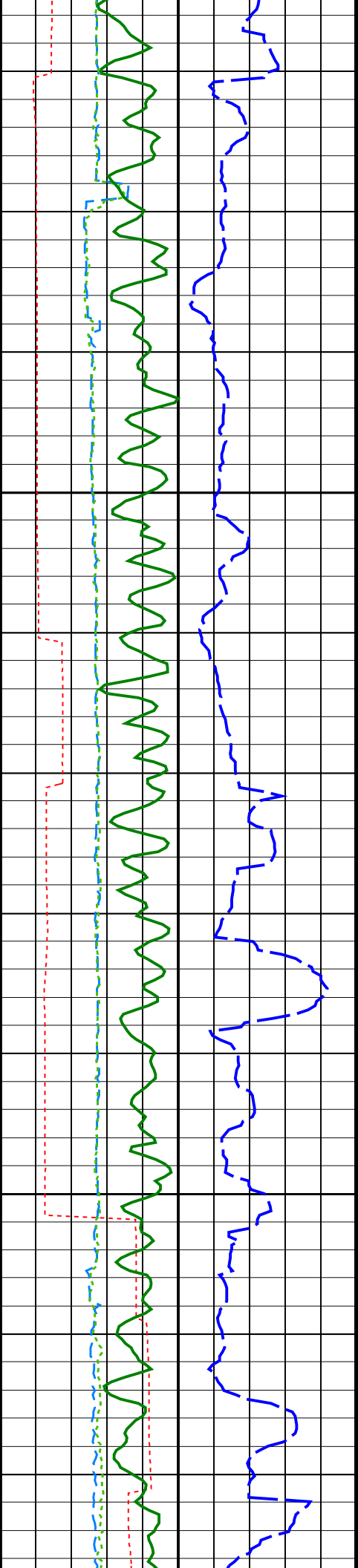




2250
TVD

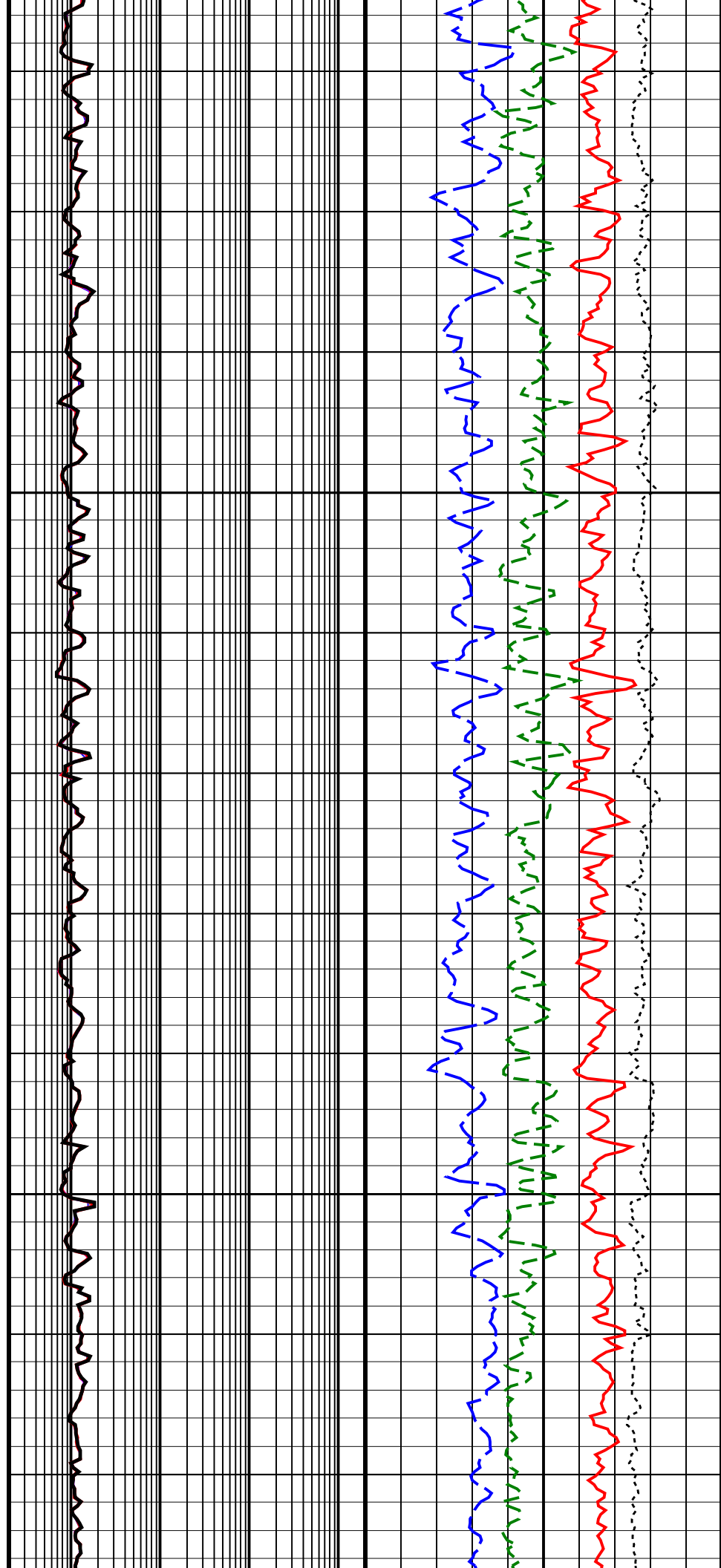
2275
TVD

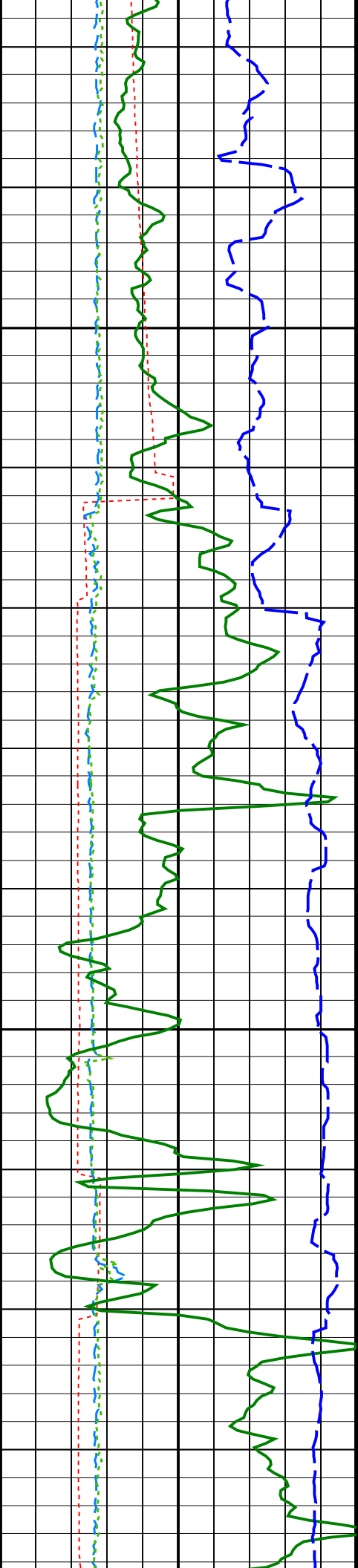




2300
TVD

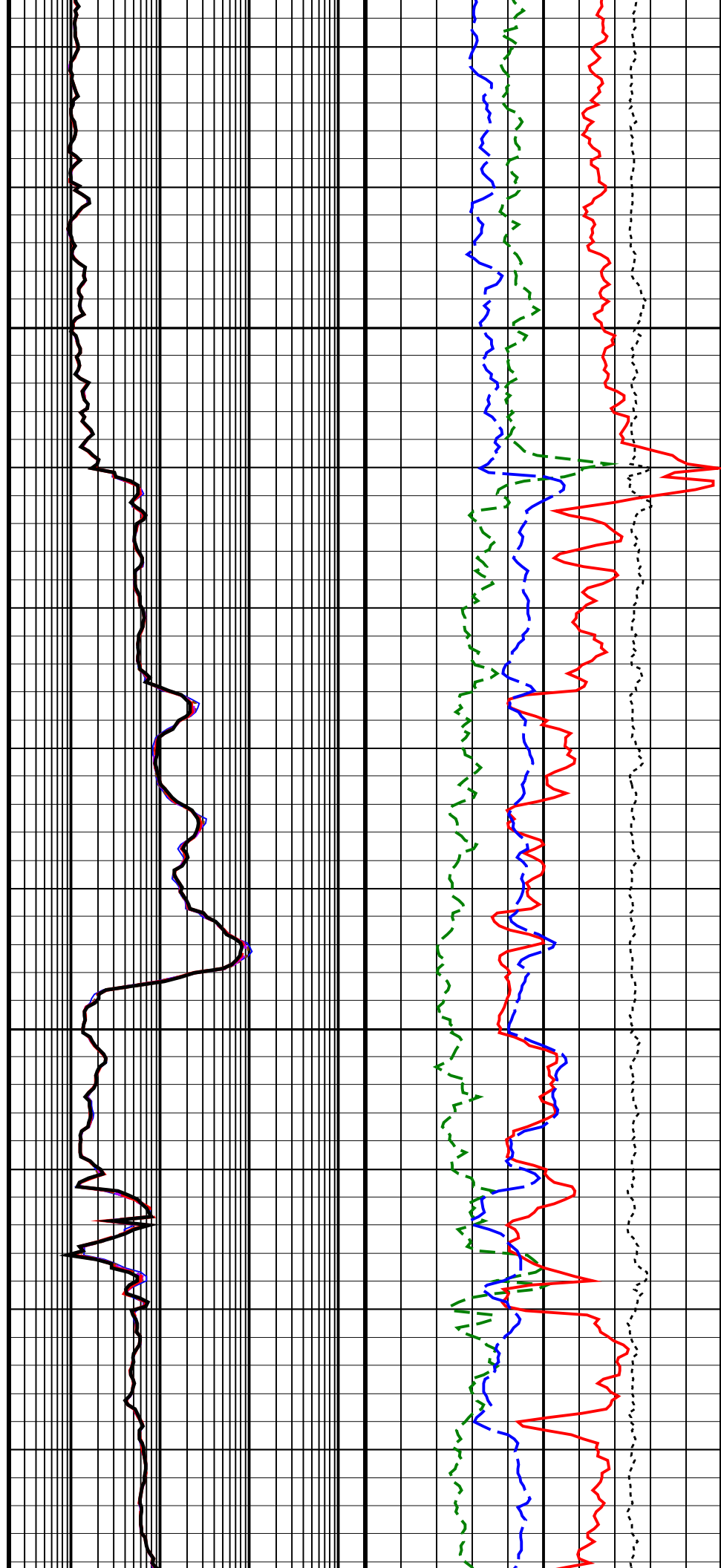
2325
TVD

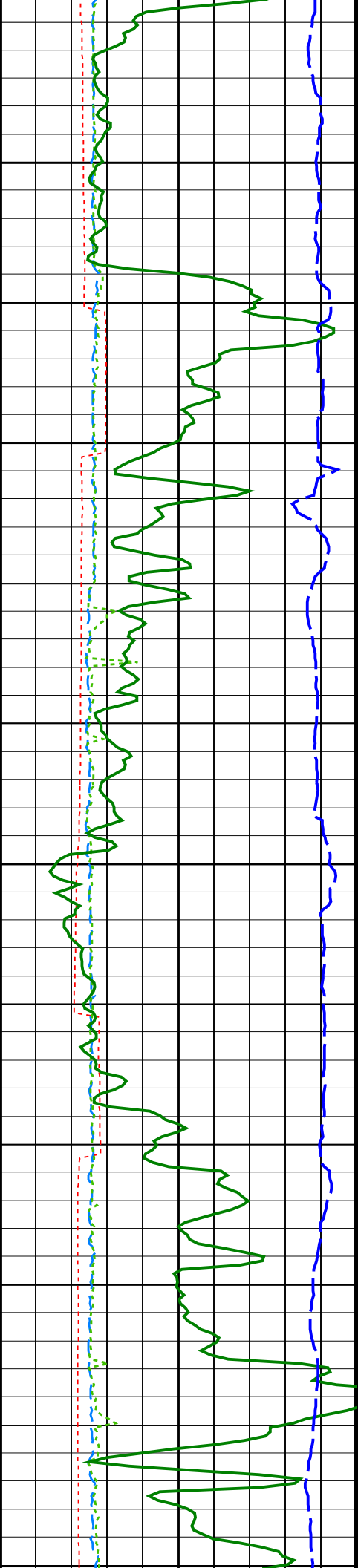




2350
TVD

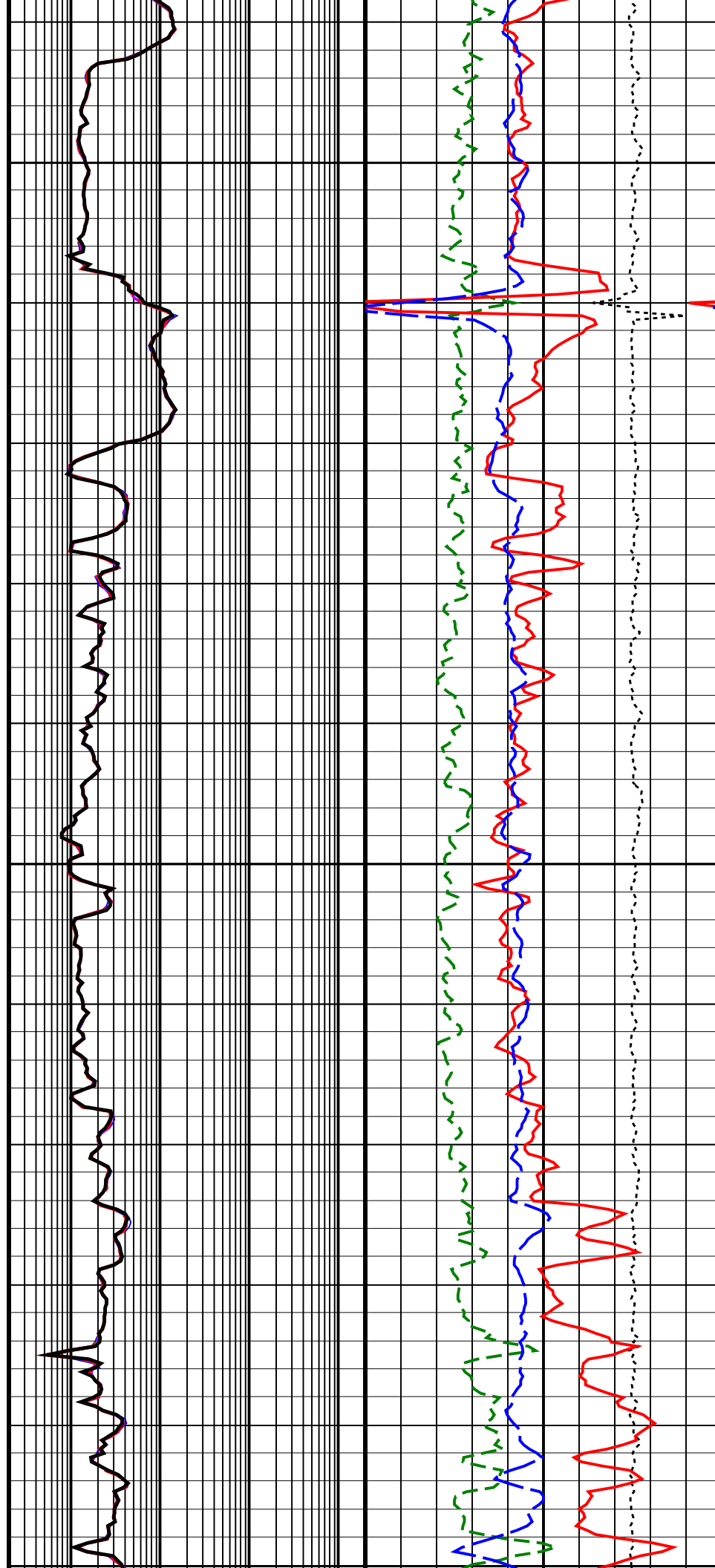
2375
TVD

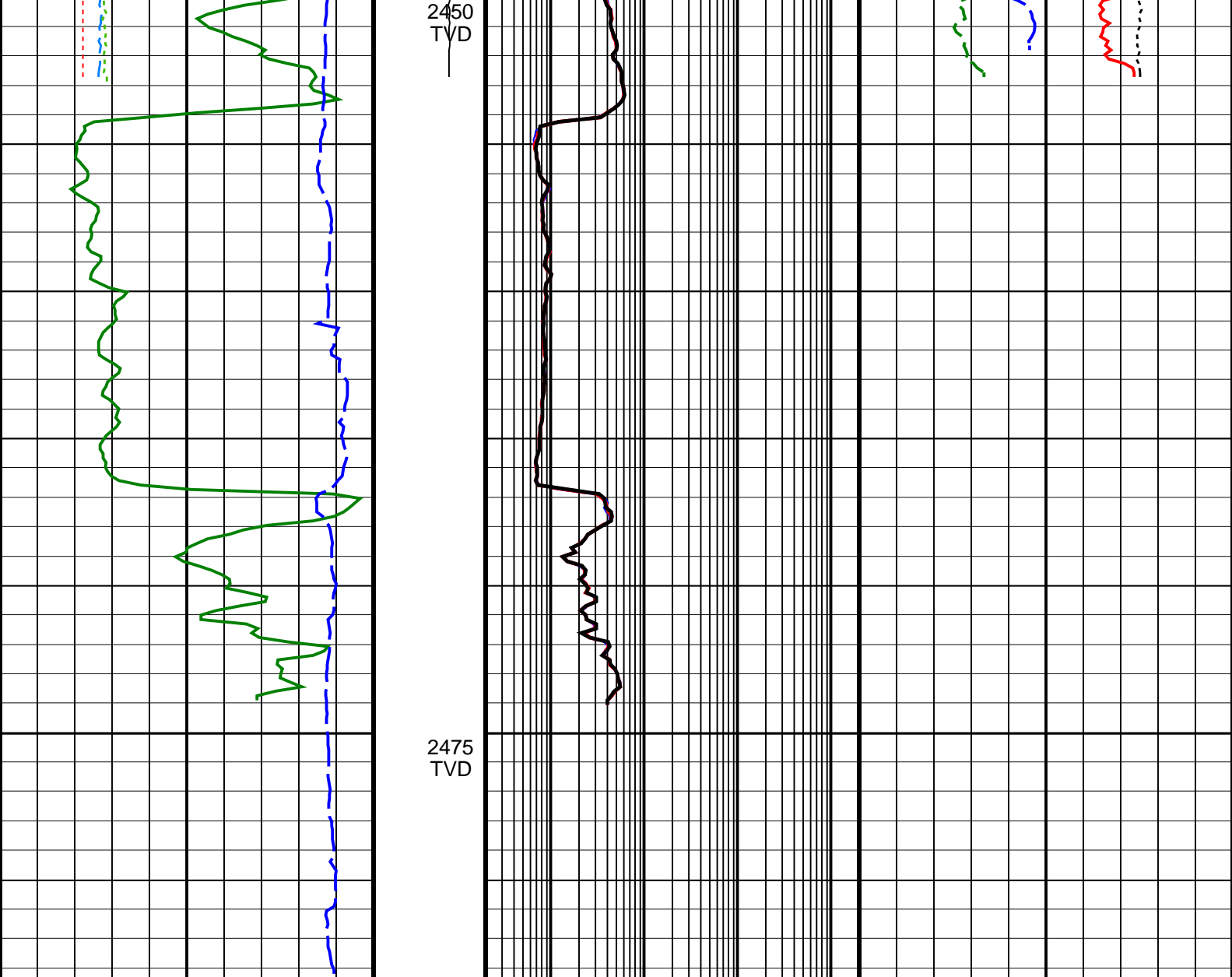




2400
TVD

2425
TVD













<div>Density Time After Bit (TAB_DEN) (HR)</div> <div>010</div>	<div>ADN Rotational Speed (RPM_ADN) (RPM)</div> <div>0250</div>	<div>ARC Phase-Shift Resistivity 16-in. at 2 MHz (P16H)</div> <div>0.22000</div> <div>(OHMM)</div>	<div>Bulk Density Correction, Bottom (DRHB) (G/C3)</div> <div>-0.750.25</div>
<div>Horizontal Hole Diameter (HORD) (IN)</div> <div>616</div>		<div>ARC Phase-Shift Resistivity 22-in. at 2 MHz (P22H)</div> <div>0.22000</div> <div>(OHMM)</div>	<div>Photoelectric Factor, Bottom (PEB) (-----)</div> <div>010</div>
<div>Vertical Hole Diameter (VERD) (IN)</div> <div>616</div>		<div>ARC Phase-Shift Resistivity 28-in. at 2 MHz (P28H)</div> <div>0.22000</div> <div>(OHMM)</div>	<div>Bulk Density, Bottom (ROBB) (G/C3)</div> <div>1.852.85</div>
<div>ARC Gamma Ray (GR_ARC) (GAPI)</div> <div>0200</div>		<div>ARC Phase-Shift Resistivity 34-in. at 2 MHz (P34H)</div> <div>0.22000</div> <div>(OHMM)</div>	<div>Thermal Neutron Porosity (TNPH) (PU)</div> <div>45-15</div>
<div>Rate of Penetration, Averaged over Last 5ft (ROP5_RM) (M/HR)</div> <div>2000</div>		<div>ARC Phase-Shift Resistivity 40-in. at 2 MHz (P40H)</div> <div>0.22000</div> <div>(OHMM)</div>	





6.75-in. Azimuthal Density Neutron / Equipment Identification



Primary Equipment:
Tool Name and Serial Number
Collar Type and Serial Number
Chassis Type and Serial Number
Stabilizer Type and Serial Number
Neutron Logging Source
Density Logging Source
Stabilizer Size
Calibration Status

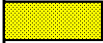



















ADN6 – CA 437
ADDC – AA
ADSE – EA
IBS AD41
NSR – M 181
GSR – J/Z 2152
8.25 – in.
Valid

Master: 5-Jun-2007 22:52									
6.75-in. Azimuthal Density Neutron Calibration									
Density: Magnesium Block									
Phase	LS window 3 – Mg CPS			Value	Phase	SS window 1 – Mg CPS			Value
Master				1260	Master				3103
	250.0 (Minimum)	4125 (Nominal)	8000 (Maximum)			700.0 (Minimum)	9350 (Nominal)	18000 (Maximum)	
Phase	SS window 3 – Mg CPS			Value	Phase	SS window 3 – Mg CPS			Value
Master				7772	Master				7772
	2500 (Minimum)	23750 (Nominal)	45000 (Maximum)			2500 (Minimum)	23750 (Nominal)	45000 (Maximum)	

Master: 5-Jun-2007 22:52									
6.75-in. Azimuthal Density Neutron Calibration									
Density: Aluminum Block									
Phase	LS window 3 – Al CPS			Value	Phase	SS window 1 – Al CPS			Value
Master				190.0	Master				1596
	50.00 (Minimum)	725.0 (Nominal)	1400 (Maximum)			500.0 (Minimum)	4250 (Nominal)	8000 (Maximum)	
Phase	SS window 3 – Al CPS			Value	Phase	SS window 3 – Al CPS			Value
Master				4930	Master				4930
	1500 (Minimum)	15750 (Nominal)	30000 (Maximum)			1500 (Minimum)	15750 (Nominal)	30000 (Maximum)	

Master: 5-Jun-2007 22:52									
6.75-in. Azimuthal Density Neutron Calibration									
Density: Background									
Phase	LS window 3 – Background CPS			Value	Phase	SS window 1 – Background CPS			Value
Master				46.17	Master				130.4
	15.00 (Minimum)	82.50 (Nominal)	150.0 (Maximum)			40.00 (Minimum)	220.0 (Nominal)	400.0 (Maximum)	
Phase	SS window 3 – Background CPS			Value	Phase	SS window 3 – Background CPS			Value
Master				560.4	Master				560.4
	150.0 (Minimum)	825.0 (Nominal)	1500 (Maximum)			150.0 (Minimum)	825.0 (Nominal)	1500 (Maximum)	

Master: 5-Jun-2007 22:52									
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				1.040	Master				1.135
	1.024 (Minimum)	1.039 (Nominal)	1.054 (Maximum)			1.096 (Minimum)	1.126 (Nominal)	1.156 (Maximum)	

Master: 5-Jun-2007 22:52									
6.75-in. Azimuthal Density Neutron Calibration									
Neutron: 3-Point Calibration									
Phase	Far 1 tube 1 Air Point Measure CPS			Value	Phase	Far 1 tube 1 Rod Point Measure CPS			Value
Master				22.54	Master				5.441
	13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)			3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	
Phase	Far 1 tube 2 Air Point Measure CPS			Value	Phase	Far 1 tube 2 Rod Point Measure CPS			Value
Master				23.65	Master				5.587
	13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)			3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	
Phase	Far 1 tube 3 Air Point Measure CPS			Value	Phase	Far 1 tube 3 Rod Point Measure CPS			Value
Master				23.24	Master				5.623
	13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)			3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	
Phase	Far 2 tube 1 Air Point Measure CPS			Value	Phase	Far 2 tube 1 Rod Point Measure CPS			Value
Master				22.73	Master				5.656
	13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)			3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	
Phase	Far 2 tube 2 Air Point Measure CPS			Value	Phase	Far 2 tube 2 Rod Point Measure CPS			Value
Master				24.00	Master				5.803
	13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)			3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	
Phase	Far 1 tube 1 H2O Point Measure CPS			Value	Phase	Far 1 tube 1 H2O Point Measure CPS			Value
Master				2.677	Master				2.677
	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)			1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)	
Phase	Far 1 tube 2 H2O Point Measure CPS			Value	Phase	Far 1 tube 2 H2O Point Measure CPS			Value
Master				2.757	Master				2.757
	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)			1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)	
Phase	Far 1 tube 3 H2O Point Measure CPS			Value	Phase	Far 1 tube 3 H2O Point Measure CPS			Value
Master				2.714	Master				2.714
	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)			1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)	
Phase	Far 2 tube 1 H2O Point Measure CPS			Value	Phase	Far 2 tube 1 H2O Point Measure CPS			Value
Master				2.671	Master				2.671
	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)			1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)	
Phase	Far 2 tube 2 H2O Point Measure CPS			Value	Phase	Far 2 tube 2 H2O Point Measure CPS			Value
Master				2.779	Master				2.779
	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)			1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)	





Phase	Far 2 tube 3 Air Point Measure	CPS	Value	Phase	Far 2 tube 3 Rod Point Measure	CPS	Value	Phase	Far 2 tube 3 H2O Point Measure	CPS	Value
Master			22.27	Master			5.432	Master			2.612
	13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)		3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)		1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Near 1 tube 1 Air Point Measure	CPS	Value	Phase	Near 1 tube 1 Rod Point Measure	CPS	Value	Phase	Near 1 tube 1 H2O Point Measure	CPS	Value
Master			556.2	Master			876.7	Master			379.2
	345.0 (Minimum)	487.5 (Nominal)	595.0 (Maximum)		535.0 (Minimum)	768.8 (Nominal)	925.0 (Maximum)		230.0 (Minimum)	343.7 (Nominal)	430.0 (Maximum)
Phase	Near 2 tube 1 Air Point Measure	CPS	Value	Phase	Near 2 tube 1 Rod Point Measure	CPS	Value	Phase	Near 2 tube 1 H2O Point Measure	CPS	Value
Master			558.1	Master			871.4	Master			378.3
	345.0 (Minimum)	487.5 (Nominal)	595.0 (Maximum)		535.0 (Minimum)	768.8 (Nominal)	925.0 (Maximum)		230.0 (Minimum)	343.7 (Nominal)	430.0 (Maximum)


Master: 5–Jun–2007 22:52											
6.75–in. Azimuthal Density Neutron Calibration											
Neutron: Water Block Check											
Phase		Far Neutron water porosity PU								Value	
Master										92.72	
		90.00 (Minimum) 100.0 (Nominal) 125.0 (Maximum)									

6.75–in. Array Resistivity Compensated / Equipment Identification											
Primary Equipment:											
Tool Name and Serial Number				ARC6 – BA				1708			
ARC675 Calibration Status				Valid							

Master: 7–May–2007 12:04											
6.75–in. Array Resistivity Compensated Calibration											
Resistivity: Air											
Phase	Phase–Shift T1		Value	Phase	Phase–Shift T2		Value	Phase	Phase–Shift T3		Value
Master			1.806	Master			–1.723	Master			1.740
	–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)
Phase	Phase–Shift T4		Value	Phase	Phase–Shift T5		Value	Phase	Phase–Shift T1 at 400KHz		Value
Master			–1.764	Master			1.719	Master			–0.3198
	–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)
Phase	Phase–Shift T2 at 400KHz		Value	Phase	Phase–Shift T3 at 400KHz		Value	Phase	Phase–Shift T4 at 400KHz		Value
Master			0.2243	Master			–0.2871	Master			0.2060
	–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)		–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)
Phase	Phase–Shift T5 at 400KHz		Value								
Master			–0.3009								
	–3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)								

Master: 7–May–2007 12:04											
6.75–in. Array Resistivity Compensated Calibration											
Resistivity: Air											
Phase	Attenuation T1		Value	Phase	Attenuation T2		Value	Phase	Attenuation T3		Value
Master			8.454	Master			6.487	Master			5.082
	6.500 (Minimum)	8.500 (Nominal)	10.50 (Maximum)		4.500 (Minimum)	6.500 (Nominal)	8.500 (Maximum)		2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)
Phase	Attenuation T4		Value	Phase	Attenuation T5		Value	Phase	Attenuation T1 at 400KHz		Value
Master			4.394	Master			3.633	Master			8.429
	2.600 (Minimum)	4.600 (Nominal)	6.600 (Maximum)		1.600 (Minimum)	3.600 (Nominal)	5.600 (Maximum)		6.500 (Minimum)	8.500 (Nominal)	10.50 (Maximum)

T2 at 400KHz			T3 at 400KHz			T4 at 400KHz		
Phase	Attenuation T2 at 400KHz	Value	Phase	Attenuation T3 at 400KHz	Value	Phase	Attenuation T4 at 400KHz	Value
Master		6.520	Master		5.049	Master		4.421
	4.500 (Minimum)	6.500 (Nominal)	8.500 (Maximum)		2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)	
Phase	Attenuation T5 at 400KHz							
Master		3.611						
	1.600 (Minimum)	3.600 (Nominal)	5.600 (Maximum)					

Master: 7-May-2007 10:29								
6.75-in. Array Resistivity Compensated Calibration								
Gamma Ray: Blanket								
Phase	Gamma ray factor (equals Calibration Gain multiplied by API Gain Factor) CPS						Value	
Master							5.138	
	2.780 (Minimum)		4.800 (Nominal)		6.000 (Maximum)			

SCHLUMBERGER

Survey report 15-Jul-2007 19:28:05 Page 1 of 3

Client..... ESSO Australia Pty Ltd
Field..... Fortescue

Well..... FTA A4c
API number.....
Engineer..... MYT/AK/ML

Spud date..... 09-Jul-07
Last survey date..... 15-Jul-07
Total accepted surveys.... 46
MD of first survey..... 2070.00 m
MD of last survey..... 3314.00 m

RIG:..... ISDL 175
STATE:..... Victoria

----- Survey calculation methods-----
Method for positions..... Minimum curvature
Method for DLS..... Mason & Taylor

----- Geomagnetic data -----
Magnetic model..... BGGM version 2007
Magnetic date..... 09-Jul-2007
Magnetic field strength... 1199.52 HCNT
Magnetic dec (+E/W-)..... 13.21 degrees
Magnetic dip..... -68.86 degrees

----- Depth reference -----
Permanent datum..... Mean Sea Level
Depth reference..... Driller's Depth
GL above permanent..... -69.00 m
KB above permanent..... Top Drive
DF above permanent..... 42.50 m

----- MWD survey Reference Criteria -----
Reference G..... 1000.04 mGal
Reference H..... 1199.52 HCNT
Reference Dip..... -68.86 degrees
Tolerance of G..... (+/-) 2.50 mGal
Tolerance of H..... (+/-) 6.00 HCNT
Tolerance of Dip..... (+/-) 0.45 degrees

----- Vertical section origin-----
Latitude (+N/S-)..... 0.32 m
Departure (+E/W-)..... 6.39 m

----- Corrections -----
Magnetic dec (+E/W-)..... 13.21 degrees
Grid convergence (+E/W-).. -0.79 degrees
Total az corr (+E/W-)..... 14.00 degrees
(Total az corr = magnetic dec - grid conv)
Survey Correction Type ...:
I=Sag Corrected Inclination
M=Schlumberger Magnetic Correction
S=Shell Magnetic Correction
F=Failed Axis Correction
R=Magnetic Resonance Tool Correction
D=Dmag Magnetic Correction

----- Platform reference point-----
Latitude (+N/S-).....
Departure (+E/W-).....

Azimuth from Vsect Origin to target: 80.33 degrees

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SCHLUMBERGER Survey Report

15-Jul-2007 19:28:05 Page 2 of 3

Seq #	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/100f)	Srvy tool type	Tool Corr (deg)
1	2070.00	60.46	69.02	0.00	1455.44	1215.21	440.78	1164.06	1244.72	69.26	0.00	TIP	None
2	2075.22	60.74	68.64	5.22	1458.00	1219.66	442.42	1168.30	1249.27	69.26	2.53	PUP	None
3	2104.04	57.41	70.90	28.82	1472.81	1243.96	450.98	1191.49	1273.98	69.27	4.07	PUP	None
4	2132.38	52.95	73.86	28.34	1488.99	1266.99	458.03	1213.65	1297.20	69.32	5.46	PUP	None
5	2160.80	50.00	75.47	28.42	1506.69	1289.11	463.92	1235.09	1319.34	69.41	3.44	PUP	None
6	2189.09	47.83	78.49	28.29	1525.29	1310.39	468.73	1255.85	1340.48	69.53	3.39	PUP	None
7	2217.82	46.12	81.05	28.73	1544.89	1331.39	472.47	1276.52	1361.15	69.69	2.69	PUP	None
8	2246.55	44.28	83.19	28.73	1565.14	1351.76	475.27	1296.71	1381.06	69.87	2.53	PUP	None
9	2275.38	42.35	84.89	28.83	1586.11	1371.50	477.32	1316.38	1400.24	70.07	2.38	PUP	None
10	2303.78	40.31	86.91	28.40	1607.44	1390.16	478.67	1335.08	1418.30	70.28	2.62	PUP	None
11	2332.03	38.31	88.99	28.25	1629.29	1407.90	479.32	1352.96	1435.36	70.49	2.58	PUP	None
12	2360.24	36.01	91.52	28.21	1651.78	1424.68	479.25	1370.00	1451.40	70.72	2.98	PUP	None
13	2388.62	33.42	94.08	28.38	1675.10	1440.46	478.48	1386.14	1466.39	70.96	3.19	PUP	None
14	2417.82	31.95	98.61	29.20	1699.68	1455.61	476.75	1401.80	1480.65	71.22	2.98	PUP	None
15	2446.19	32.67	103.27	28.37	1723.66	1469.79	473.86	1416.68	1493.83	71.51	2.78	PUP	None
16	2474.01	32.66	109.44	27.82	1747.09	1483.27	469.64	1431.07	1506.16	71.83	3.65	PUP	None
17	2502.20	32.12	111.79	28.19	1770.90	1496.31	464.33	1445.20	1517.96	72.19	1.48	PUP	None
18	2530.84	32.51	112.70	28.64	1795.10	1509.30	458.53	1459.37	1529.71	72.56	0.66	PUP	None
19	2560.27	30.91	113.14	29.43	1820.14	1522.34	452.51	1473.62	1541.53	72.93	1.67	PUP	None

19	2580.27	30.31	113.14	27.44	1820.14	1522.34	432.31	1473.02	1541.53	72.33	1.07	PUP	None
20	2587.96	30.34	113.08	27.69	1843.96	1534.19	446.97	1486.59	1552.33	73.27	0.63	PUP	None
21	2616.18	28.63	112.81	28.22	1868.53	1545.89	441.56	1499.38	1563.05	73.59	1.85	PUP	None
22	2644.36	27.26	112.58	28.18	1893.42	1557.05	436.46	1511.56	1573.32	73.89	1.49	PUP	None
23	2673.59	27.96	112.94	29.23	1919.32	1568.48	431.22	1524.05	1583.89	74.20	0.75	PUP	None
24	2701.68	27.66	114.31	28.09	1944.17	1579.43	425.97	1536.06	1594.03	74.50	0.77	PUP	None
25	2730.47	27.94	114.54	28.79	1969.64	1590.55	420.42	1548.29	1604.35	74.81	0.32	PUP	None
26	2758.02	27.99	116.31	27.55	1993.97	1601.12	414.87	1559.95	1614.18	75.11	0.92	PUP	None
27	2786.20	27.96	116.83	28.18	2018.86	1611.78	408.96	1571.78	1624.11	75.42	0.27	PUP	None
28	2814.56	28.63	116.45	28.36	2043.83	1622.62	402.93	1583.79	1634.24	75.73	0.75	PUP	None
29	2842.84	28.02	116.43	28.28	2068.72	1633.46	396.96	1595.81	1644.44	76.03	0.66	PUP	None
30	2870.59	28.39	115.85	27.75	2093.18	1644.09	391.18	1607.58	1654.49	76.32	0.51	PUP	None
[(c)2007 IDEAL ID12_0C_11]													
SCHLUMBERGER Survey Report				15-Jul-2007 19:28:05				Page		3 of 3			
===	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Seq	Measured	Incl	Azimuth	Course	TVD	Vertical	Displ	Displ	Total	At	DLS	Srvy	Tool
#	depth	angle	angle	length	depth	section	+N/S-	+E/W-	displ	Azim	(deg/	tool	Corr
-	(m)	(deg)	(deg)	(m)	(m)	(m)	(m)	(m)	(m)	(deg)	100f)	type	(deg)
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
31	2898.01	27.75	115.66	27.42	2117.37	1654.61	385.57	1619.20	1664.47	76.61	0.72	PUP	None
32	2926.40	28.41	115.58	28.39	2142.42	1665.51	379.79	1631.25	1674.88	76.89	0.71	PUP	None
33	2955.11	28.90	115.68	28.71	2167.61	1676.75	373.84	1643.66	1685.64	77.19	0.52	PUP	None
34	2983.52	28.14	114.45	28.41	2192.58	1687.90	368.09	1655.95	1696.37	77.47	1.03	PUP	None
35	3011.74	28.49	114.59	28.22	2217.42	1698.97	362.53	1668.13	1707.07	77.74	0.38	PUP	None
36	3040.18	28.03	115.28	28.44	2242.47	1710.05	356.86	1680.34	1717.81	78.01	0.60	PUP	None
37	3069.23	28.34	115.61	29.05	2268.07	1721.28	350.96	1692.73	1728.73	78.29	0.36	PUP	None
38	3097.40	27.85	113.97	28.17	2292.93	1732.21	345.40	1704.77	1739.41	78.55	0.99	PUP	None
39	3125.64	28.02	114.12	28.24	2317.87	1743.22	340.01	1716.85	1750.19	78.80	0.20	PUP	None
40	3154.09	27.97	114.63	28.45	2343.00	1754.28	334.50	1729.01	1761.07	79.05	0.26	PUP	None
41	3182.78	28.67	115.11	28.69	2368.25	1765.49	328.77	1741.36	1772.13	79.31	0.78	PUP	None
42	3211.72	28.19	115.42	28.94	2393.70	1776.79	322.89	1753.82	1783.30	79.57	0.53	PUP	None
43	3239.94	28.28	114.88	28.22	2418.56	1787.75	317.22	1765.91	1794.17	79.82	0.29	PUP	None
44	3268.27	28.12	115.16	28.33	2443.53	1798.76	311.56	1778.04	1805.13	80.06	0.22	PUP	None
45	3294.80	28.05	115.59	26.53	2466.94	1808.98	306.21	1789.32	1815.33	80.29	0.25	PUP	None
46	3314.00	28.00	115.89	19.20	2483.89	1816.33	302.29	1797.45	1822.69	80.45	0.24	Projection to TD	
[(c)2007 IDEAL ID12_0C_11]													

Company:

Well:

Field:

Rig:

State:

ESSO Australia Pty Ltd

FTA A4c

Fortescue

ISDL 175

Victoria

Schlumberger

8.5 in. Section

VISION Service

1:200 True Vertical Depth

Recorded Mode Log

