





HNSH-BA 79

ILE-D 29.16  
ILE-D

Status  
Minitron  
Near TD  
Near Arr  
Far Arr  
Far TD

APS-BA 26.73  
APS-BA 22  
APH-AC 22  
MNTR-F 4185

24.28  
24.20  
24.08  
23.98

NPLC-B 22.78  
NPLC-B 79  
NPH-B 82

Status 21.56

DTA-A 20.34  
ECH-KE

HLDT-A 19.12  
GSR-Z 1846  
HLDC-AA 11  
HLDV-A 10  
HLDS-B 10  
HLDP-B 10  
HEH-G 11  
HEH-H 12

LS 13.17  
SS 13.05  
Caliper 13.00

DIT-E 12.23  
DIC-EB 438  
MIH-ZA  
DIS-HB 442

SP 5.86  
Deep Ind 5.61  
Aux Meas SFL 4.69  
Med Ind 4.54  
Status 2.71

AH-TAP 2.71  
AH-TAP  
DF Tension HV 0.00  
TOOL ZERO

MAXIMUM STRING DIAMETER 3.88 IN  
MEASUREMENTS RELATIVE TO TOOL ZERO  
ALL LENGTHS IN METERS

## Input DLIS Files

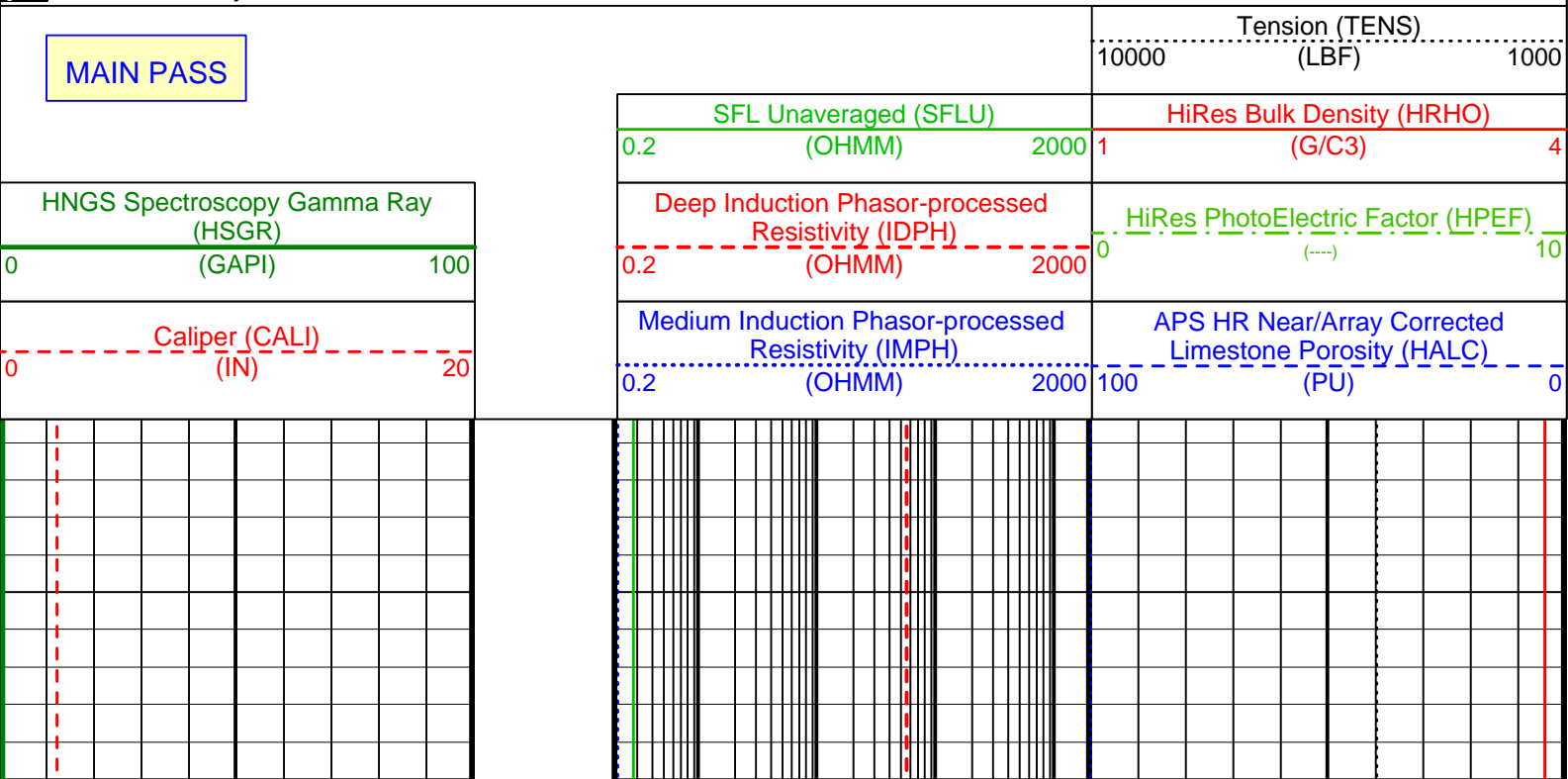
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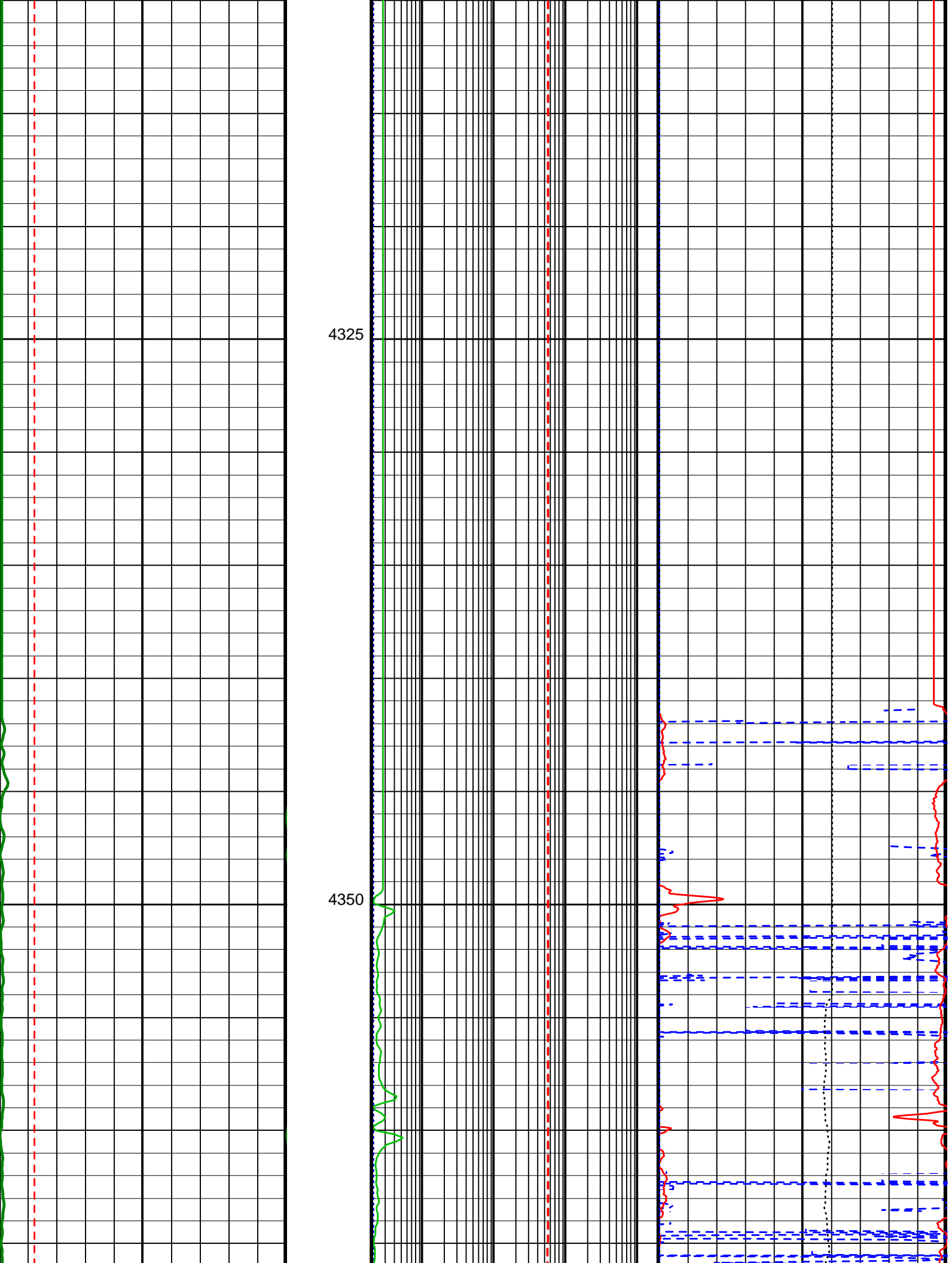
## OP System Version: 10C0-306 MCM

DITE	10C0-306	HLDTA	10C0-306
DTAA	10C0-306	NPLC-BA	OP10-KP1
APS-BA	OP10-KP1	HNGS-BA	OP10-KP1
DTCH	10C0-306		

### PIP SUMMARY

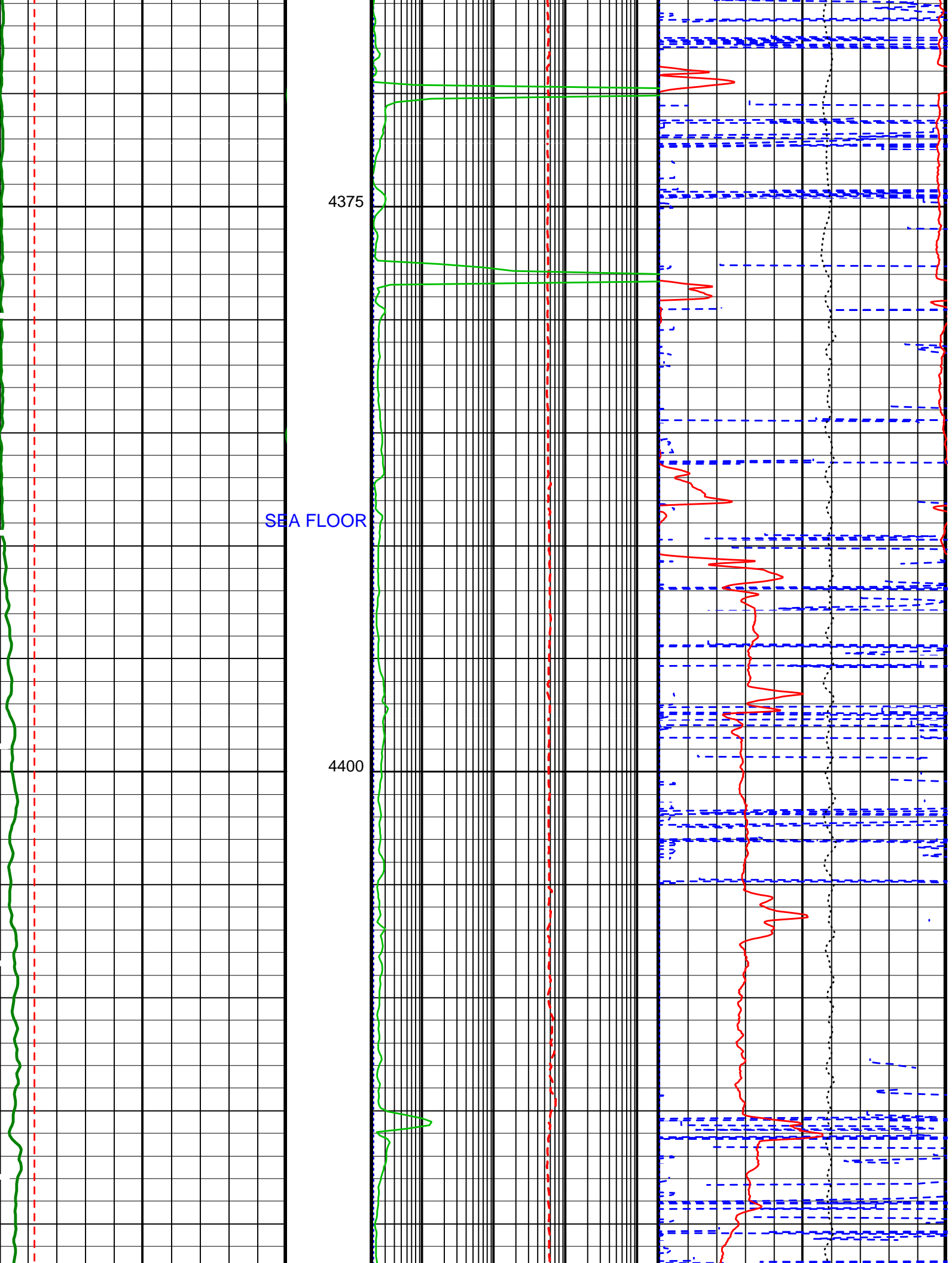
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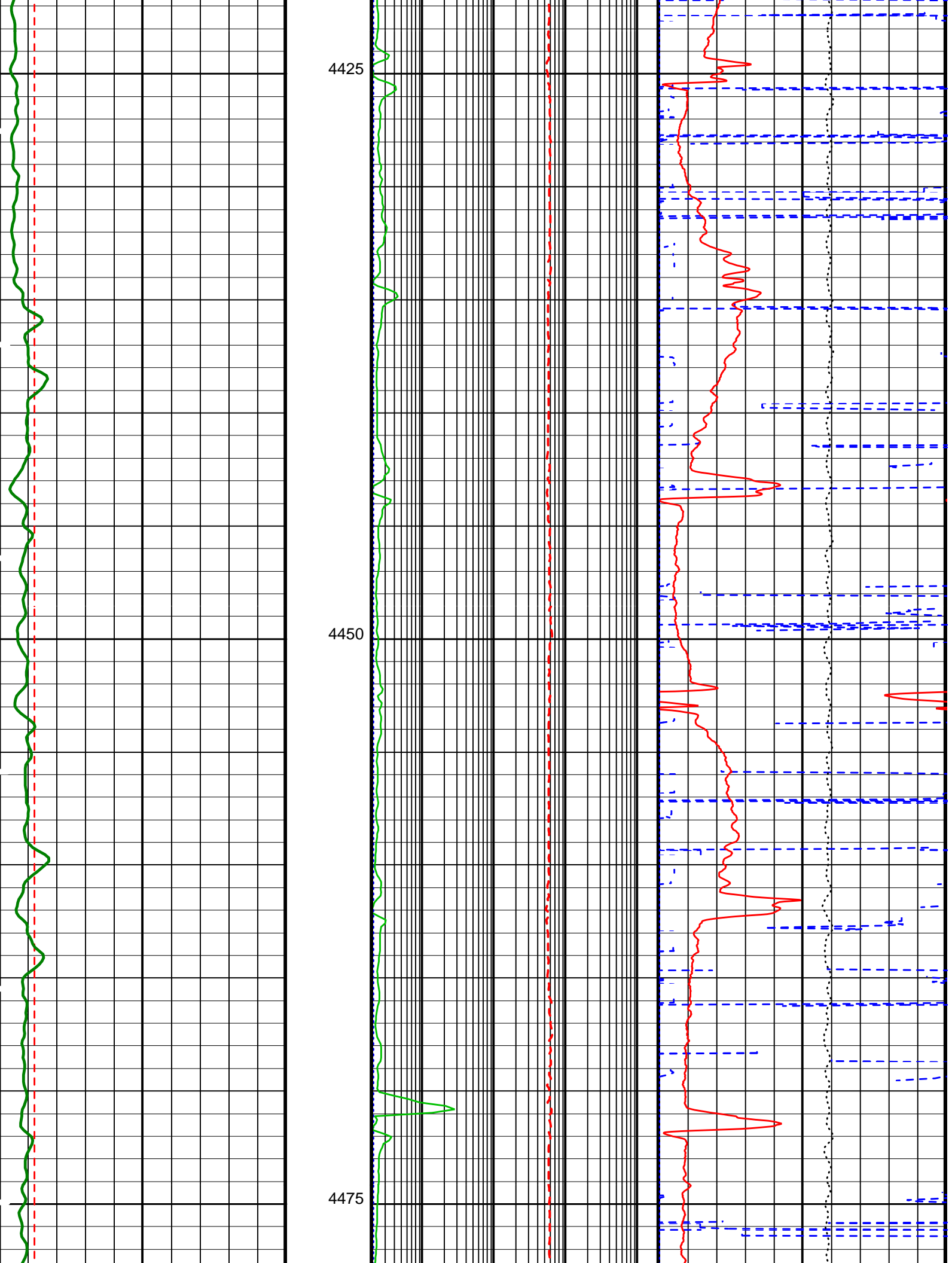


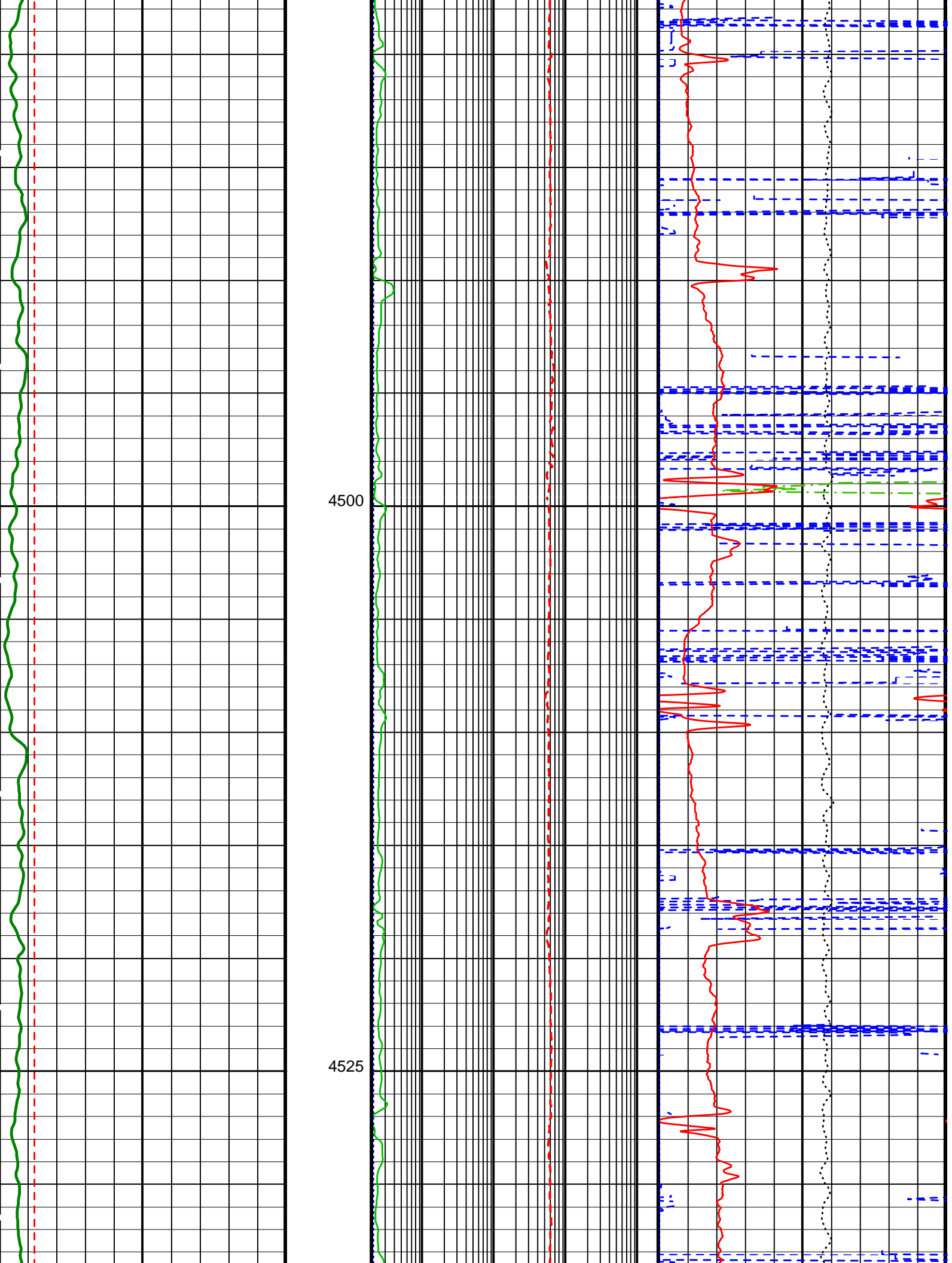


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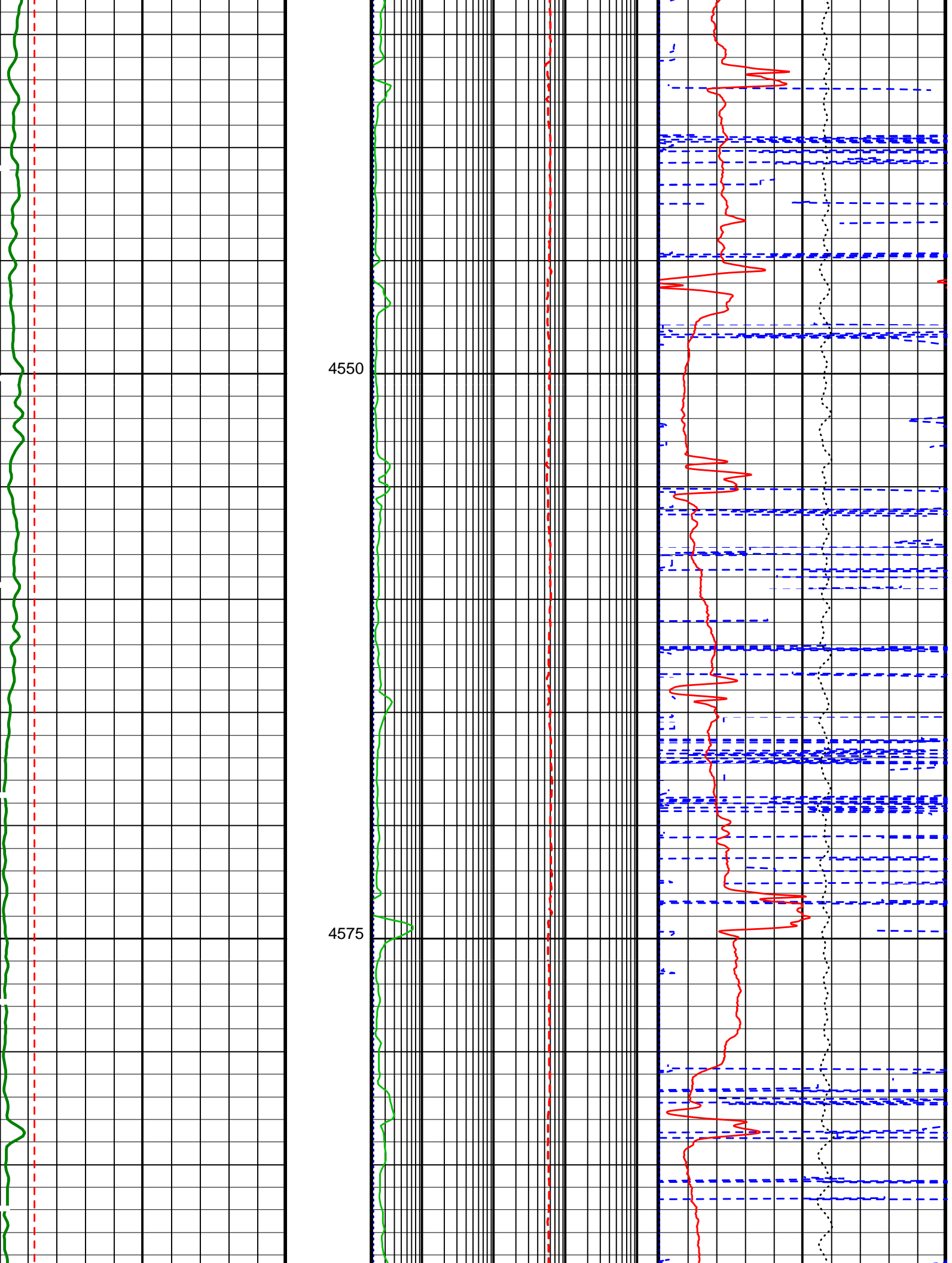
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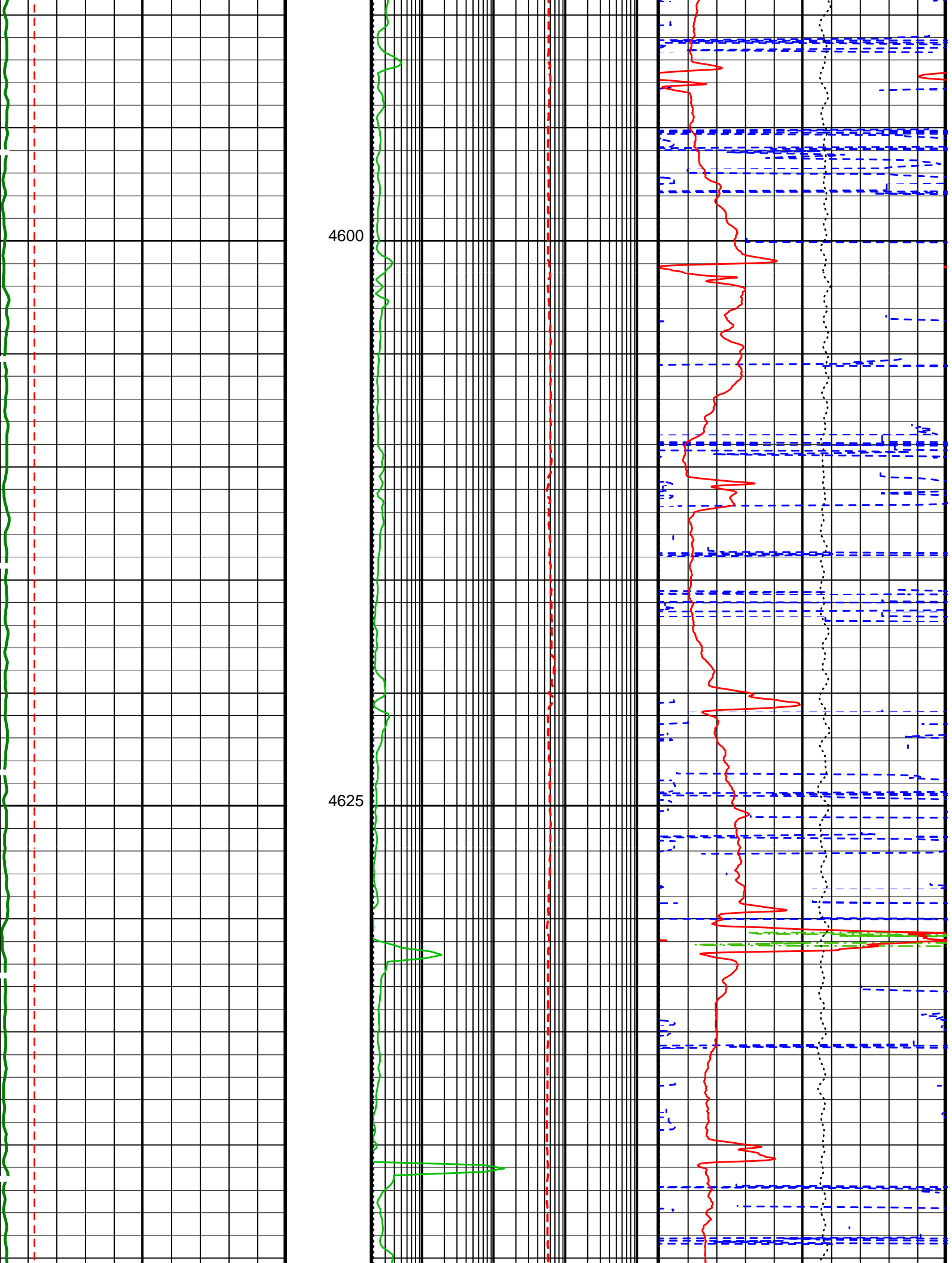


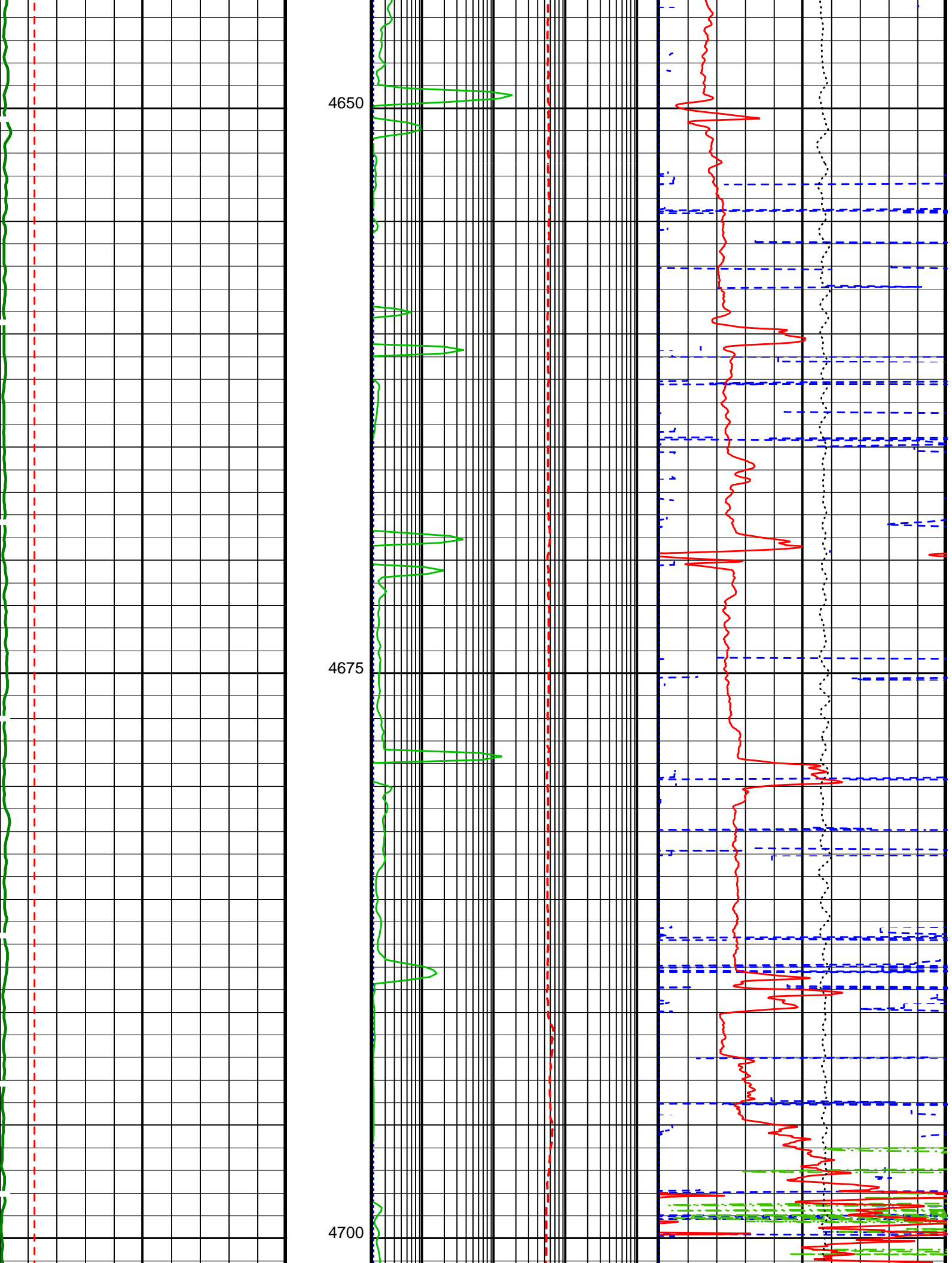


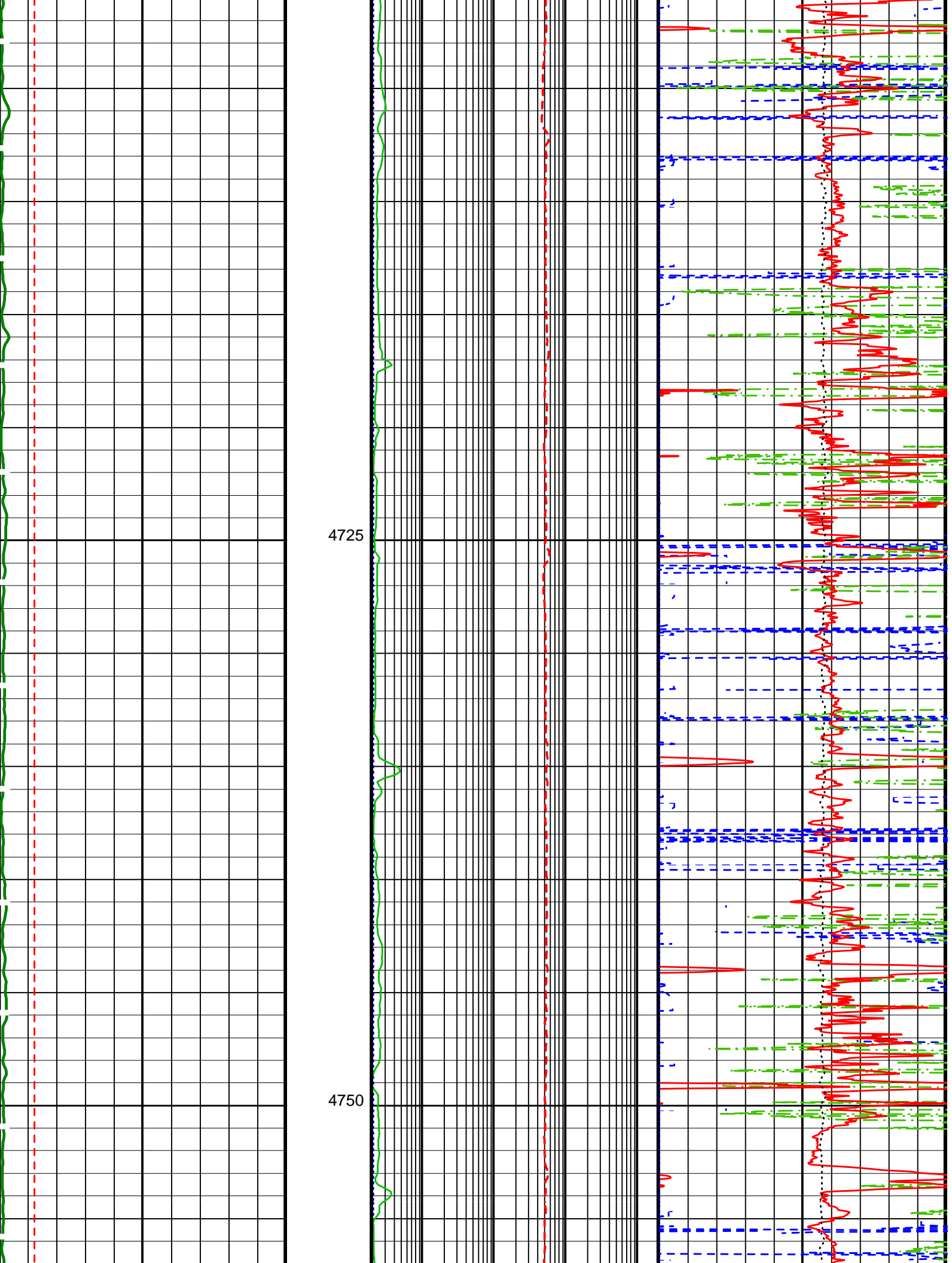


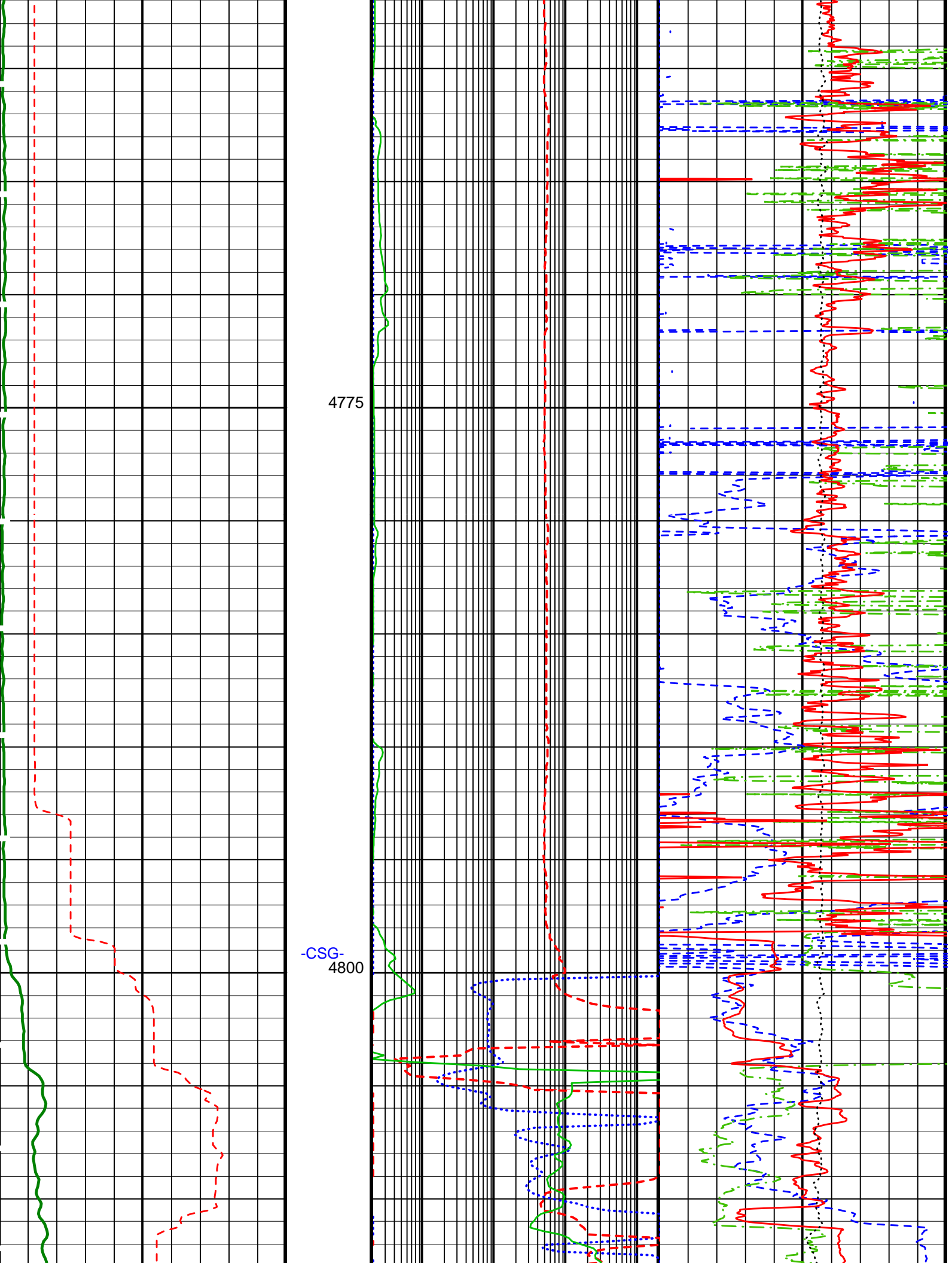


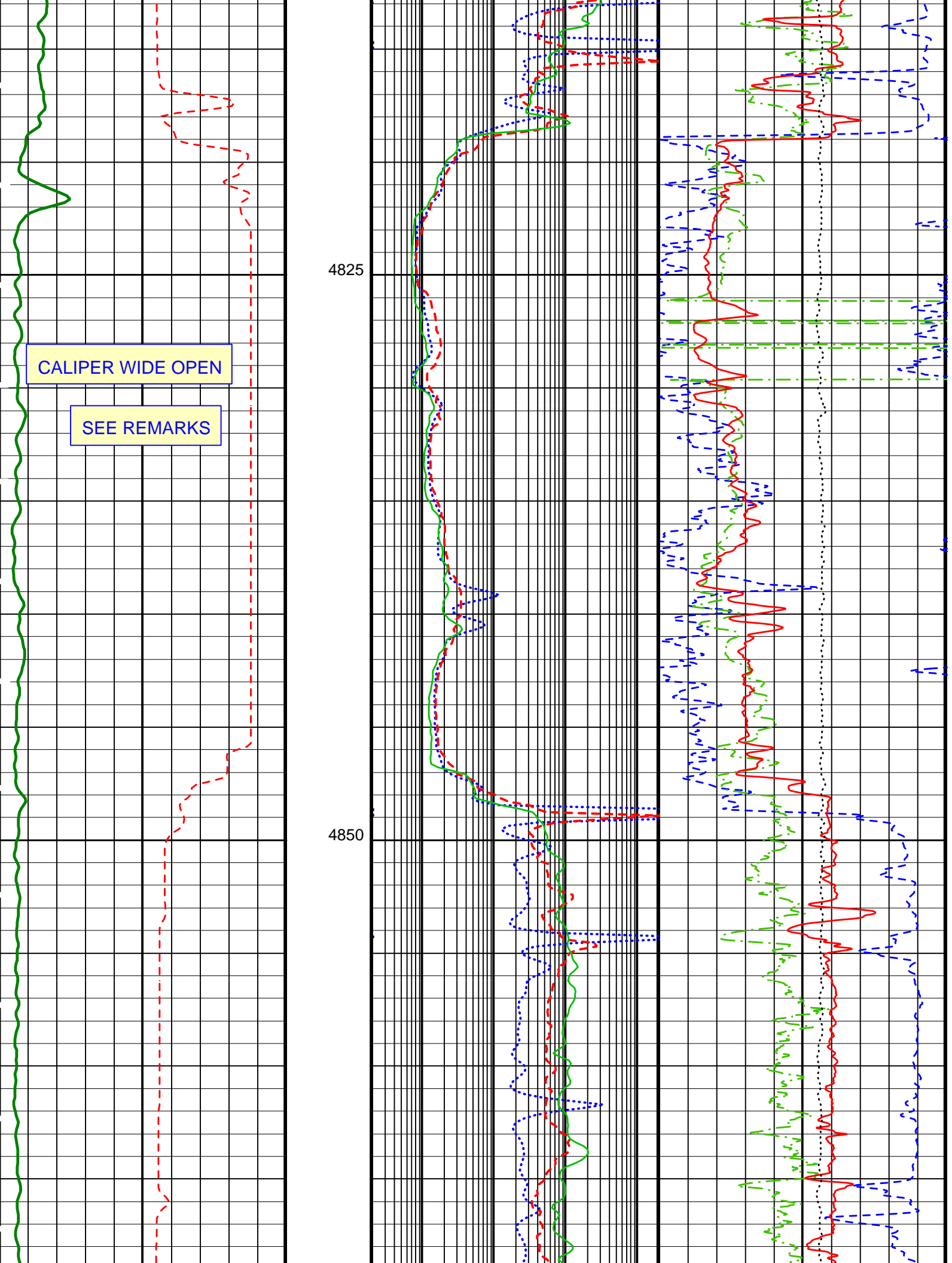


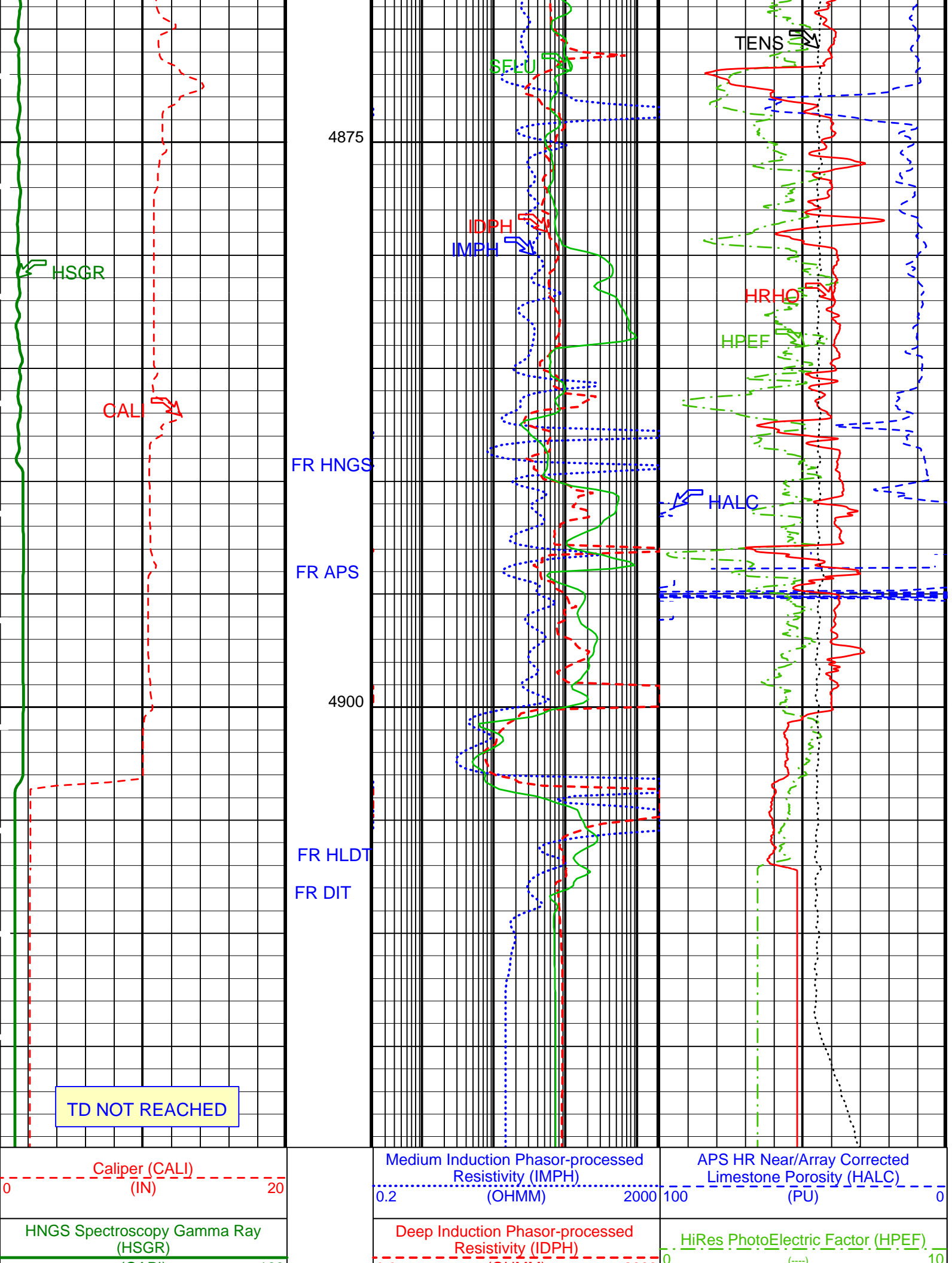












(GAPI)	100	0.2	(OHMM)	2000		
		SFL Unaveraged (SFLU)			HiRes Bulk Density (HRHO)	
		0.2	(OHMM)	2000	1	(G/C3) 4
					Tension (TENS)	
					10000	(LBF) 1000
PIP SUMMARY						
▶ Time Mark Every 60 S						
<b>Parameters</b>						
<b>DLIS Name</b>	<b>Description</b>			<b>Value</b>		
DIT-E: Dual Induction - E						
BHS	Borehole Status			OPEN		
BHT	Bottom Hole Temperature (used in calculations)			3.000	degC	
DERI	DIT-E Error Reporting Interval			10	s	
DGF1	Deep 10 kHz Gain Factor			0.996		
DGF2	Deep 20 kHz Gain Factor			1.008		
DGF4	Deep 40 kHz Gain Factor			1.026		
DICS	DIT-E Cartridge Serial Number (Shop)			438		
DICW	DIT-E Cartridge Serial Number (Wellsite)			438		
DISN	DIT-E Sonde Serial Number			442		
DPH1	Deep 10 kHz Phase Shift			0.114	deg	
DPH2	Deep 20 kHz Phase Shift			-0.152	deg	
DPH4	Deep 40 kHz Phase Shift			-1.426	deg	
DRE1	Deep Real 10 kHz Sonde Error Correction			44.950	mS/m	
DRE2	Deep Real 20 kHz Sonde Error Correction			16.357	mS/m	
DRE4	Deep Real 40 kHz Sonde Error Correction			4.690	mS/m	
DRIM	DIT-E Radial Invasion Mode			RXLT		
DSES	DIT-E Sonde Error Selector			H412		
DSR1	Deep Sigma Reference (10 kHz)			7637.0	mS/m	
DSR2	Deep Sigma Reference (20 kHz)			1843.0	mS/m	
DSR4	Deep Sigma Reference (40 kHz)			405.0	mS/m	
DSTA	DIT-E Transversal Standoff			0.000	in	
DXE1	Deep Quad 10 kHz Sonde Error Correction			108.9	mS/m	
DXE2	Deep Quad 20 kHz Sonde Error Correction			64.633	mS/m	
DXE4	Deep Quad 40 kHz Sonde Error Correction			46.096	mS/m	
GCSE	Generalized Caliper Selection			CALI		
GDEV	Average Angular Deviation of Borehole from Normal			0.000	deg	
GGRD	Geothermal Gradient			0.018	degC/m	
GRSE	Generalized Mud Resistivity Selection			GEN9		
GTSE	Generalized Temperature Selection			TEMP		
IFRC	DIT-E Electronic Calibration Induction Frequency			40		
IFRS	DIT-E Induction Frequency Selector			20		
IPHA	DIT-E Phasor Processing Mode			ALL		
IPRO	DIT-E Induction Processing Selector			PHAS		
ITEN	DIT-E Temperature Enable			ENAB		
MATR	Rock Matrix for Neutron Porosity Corrections			LIME		
MGF1	Medium 10 kHz Gain Factor			1.022		
MGF2	Medium 20 kHz Gain Factor			1.030		
MGF4	Medium 40 kHz Gain Factor			1.061		
MPH1	Medium 10 kHz Phase Shift			-0.256	deg	
MPH2	Medium 20 kHz Phase Shift			-0.933	deg	
MPH4	Medium 40 kHz Phase Shift			-2.461	deg	
MRE1	Medium Real 10 kHz Sonde Error Correction			20.729	mS/m	
MRE2	Medium Real 20 kHz Sonde Error Correction			-1.786	mS/m	
MRE4	Medium Real 40 kHz Sonde Error Correction			-10.459	mS/m	
MSR1	Medium Sigma Reference (10 kHz)			13520.0	mS/m	
MSR2	Medium Sigma Reference (20 kHz)			3250.0	mS/m	
MSR4	Medium Sigma Reference (40 kHz)			685.0	mS/m	
MXE1	Medium Quad 10 kHz Sonde Error Correction			-105.752	mS/m	
MXE2	Medium Quad 20 kHz Sonde Error Correction			-34.204	mS/m	
MXE4	Medium Quad 40 kHz Sonde Error Correction			11.452	mS/m	
SBR	Shoulder Bed Resistivity Factor			1.000	ohm.m	
SFCR	SFL Channel Ratio			1000.0		
SFLE	SFL Enable			ENAB		
SHT	Surface Hole Temperature			20.000	degC	
SPAE	DIT-E SPARC Processing Enable			ENAB		
SPDR	SP Drift			0.000	mV/m	
SPNV	SP Next Value			0.000	mV	
HLDT-A: Hostile Environment Litho Density - A						
BFM	Borehole Fluid Medium			LIQUID		
DHC	Density Hole Correction			BS		
DPPM	Density Porosity Processing Mode			HIRS		
FD	Fluid Density			1.000	g/cm3	
LSHC	LS Hardware Loop Control			DISALLOW		
MDEN	Matrix Density			2.710	g/cm3	
MLLS	Mode Loop - LS			CLOSE		
MLSS	Mode Loop - SS			CLOSE		



PLHV	Programmable LS High Voltage	500.0	v
PSHV	Programmable SS High Voltage	500.0	v
QPPS	Quicklook Processing Pe Select	PEFL	
SSHC	SS Hardware Loop Control	DISALLOW	
WMUD	Mud Weight	1.100	g/cm3
DTA-A: Downhole Toolbus Adapter - A			
TMRI	Telemetry Error Msg Report Interval (for SCP)	60	s
TSRI	Telemetry Status Report Interval (for IO Mon)	10	s
NPLC-B: Nuclear Porosity Lithology Cartridge - B			
DHCV	NPLC Downhole Controller Software Version	513	
DHNV	NPLC Downhole Software Version	1540	
NMVN	NPLC Maxis Software Version	1.520	
NOTS	NPLC Old Temperature Sensor	NO	
NPCO	NPLC Pulser Control	OFF	
NPGA	NPLC Pulser Gain	GAIN_1	
PASN	NPLC Pulser Amplitude Setting	0	
APS-BA: Accelerator-Porosity Tool			
ABOS	APS Neutron Burst-Off Background Subtraction Switch	ON	
ABSM	APS Minitron Beam Current Set Point	69.672	uA
ACSM	APS Minitron Cathode Current Set Point	0.000	mA
ADSO	APS Array Detectors Data Source Switch	BOTH	
AFSM	APS Minitron Filament Current Set Point	0.000	mA
AGSM	APS Minitron Grid Current Set Point	12.000	mA
AHCS	APS Hothesize Correction Source	GCSE	
AHSM	APS Minitron High Voltage Set Point	100000.0	v
AHSS	APS Hothesize Correction Switch	ON	
AMTD	APS Minitron Turn Off Depth	60.960	m
AMTY	APS Environmental Corrections Mud Type	WATERBASEBARITE	
AOTS	APS Old Temperature Sensor Switch	NO	
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature-Pressure-Salinity Correction Switch	OFF	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	3.000	degC
DPPM	Density Porosity Processing Mode	HIRS	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.018	degC/m
GRSE	Generalized Mud Resistivity Selection	GEN9	
GTSE	Generalized Temperature Selection	TEMP	
MATR	Rock Matrix for Neutron Porosity Corrections	LIME	
NARC	APS Near/Array Calibration Ratio	1.057	
NFRC	APS Near/Far Calibration Ratio	0.894	
SHT	Surface Hole Temperature	20.000	degC
HNCS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNCS Detector 1 Barite Constant	1.000	
BAR2	HNCS Detector 2 Barite Constant	1.000	
BHK	HNCS Borehole Potassium Correction Concentration	0.000	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	3.000	degC
BKSF	HNCS Borehole Fluid Excluder Sleeve Algorithm Factor	1.000	
BKSH	HNCS Borehole Fluid Excluder Sleeve Algorithm High Channel	245.0	
BKSL	HNCS Borehole Fluid Excluder Sleeve Algorithm Low Channel	17.000	
CSD1	Inner Casing Outer Diameter	0.000	in
CSD2	Outer Casing Outer Diameter	0.000	in
CSW1	Inner Casing Weight	0.000	lbm/ft
CSW2	Outer Casing Weight	0.000	lbm/ft
D1PR	HNCS Detector 1 Calibration Thorium Peak Resolution	8.327	%
D1TC	HNCS Detector 1 Calibration Temperature	25.807	degC
D1TL	HNCS Detector 1 Calibration Thorium Peak Location	210.2	
D2PR	HNCS Detector 2 Calibration Thorium Peak Resolution	7.580	%
D2TC	HNCS Detector 2 Calibration Temperature	24.972	degC
D2TL	HNCS Detector 2 Calibration Thorium Peak Location	210.1	
DBCC	HNCS Barite Constant Correction Flag	NONE	
GCF1_START	HNCS Detector 1 GCF Constant	1.000	
GCF2_START	HNCS Detector 2 GCF Constant	1.000	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.018	degC/m
GRSE	Generalized Mud Resistivity Selection	GEN9	
GTSE	Generalized Temperature Selection	TEMP	
H1P	HNCS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNCS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNCS Borehole Potassium Running Average	-0.024	
HALF	HNCS Alpha Filter Length	60.000	in
HATIM	HNCS Marquardt Accumulation Time	600.0	s
HCRB	HNCS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNCS Processing Enable	YES	
HSLV	HNCS Borehole Fluid Excluder Sleeve Status	NO	
HSVN	HNCS Spectral Standards Version Number	1.000	
MARQ_START	HNCS Marquardt Start-up Mode	INTERNAL	
MATR	Rock Matrix for Neutron Porosity Corrections	LIME	
P1HV	HNCS Detector 1 High Voltage Setting	1439.8	v
P1NR	HNCS Detector 1 Na22 Set Point	41.000	
P1XX	HNCS Detector 1 Pulse Shape Compensation Setting	16000.0	

P1XX	HNGS Detector 1 Pulse Shape Compensation Setting	16000.0	
P1YY	HNGS Detector 1 Low Level Discriminator Setting	14000.0	
P2HV	HNGS Detector 2 High Voltage Setting	1439.8	v
P2NR	HNGS Detector 2 Na22 Set Point	41.000	
P2XX	HNGS Detector 2 Pulse Shape Compensation Setting	16000.0	
P2YY	HNGS Detector 2 Low Level Discriminator Setting	14000.0	
PHVG	HNGS High Voltage Gain Factor	0.022	
PHVO	HNGS High Voltage Offset Factor	685.0	v
RDF1_START	HNGS Detector 1 RDF Constant	0.000	
RDF2_START	HNGS Detector 2 RDF Constant	0.000	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.300	1/s
S1NA	HNGS Detector 1 Calibration Sodium Count Rate	49.090	1/s
S1NG	HNGS Detector 1 Calibration End-On / Side-On Gain Ratio	0.986	
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.300	1/s
S2NA	HNGS Detector 2 Calibration Sodium Count Rate	48.664	1/s
S2NG	HNGS Detector 2 Calibration End-On / Side-On Gain Ratio	0.985	
SABK	HNGS Statistical Uncertainty in Borehole Potassium Running Average	0.001	
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20.000	degC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.954	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.043	
DTC-H: DTS Telemetry Tool			
DDLG	Digital Telemetry Module Downlink Gain	AUTOMATIC_	
DDLS	Digital Telemetry Module Downlink Shape	AUTOMATIC_	
DULG	Digital Telemetry Cartridge Uplink Gain	AUTOMATIC_	
DULM	Digital Telemetry Cartridge Uplink Mode	T5T7	
DULR	Digital Telemetry Cartridge Uplink Rate	350KBS	
TMRI	Telemetry Error Msg Report Interval (for SCP)	60	s
TSRI	Telemetry Status Report Interval (for IO Mon)	10	s
System and Miscellaneous			
ALDTPCHAN	Name of alternate depth channel	SPEEDCORRECTEDDEPTH	
AMD	Azimuth of Maximum Deviation		
APD	Above Permanent Datum	11.300	m
APIN	API Serial Number		
BG	Gas Formation Volume Factor, Bg		
BLI	Bottom Log Interval	4917.0	m
BO	Oil Formation Volume Factor, Bo		
BPP	Bubble Point Pressure		
BPT	Bubble Point Temperature		
BS	Bit Size	9.875	in
BSAL	Borehole Salinity		
BSDF	Bit Size Depth From		
BSDT	Bit Size Depth To		
BW	Water Formation Volume Factor, Bw		
CADD	Cement Additives		
CADT	Casing Depth To		
CASG	Casing Grade		
CASN	Casing String Number		
CBDR	Casing Bottom of Driller	4800.0	m
CBLO	Casing Bottom of Logger	4800.0	m
CDEN	Cement Density		
CDF	Casing Depth From		
CJT	Cement Job Type	Primary	
CLAB	County/Rig Label	Ocean:	
CN	Company Name	Lamont Doherty Earth Observatory	
CN1	Company Name Line 1		
CONT	Continent		
CONTYP	Conveyance Type	WIRESLINE	
COUN	County or Rig Name	Pacific	
CSIZ	Current Casing Size	0.000	in
CTOP	Estimated Cement Top		
CWEI	Casing Weight	0.000	lbm/ft
CWLO	Cement Water Loss		
DATE	Date as Month-Day-Year	8-Oct-2002	
DCS	Date Circulation Stopped	7-Oct-2002	
DEPREM1	Depth Remark 1		
DEPREM2	Depth Remark 2		
DEPREM3	Depth Remark 3		
DEPREM4	Depth Remark 4		
DEPREM5	Depth Remark 5		
DEPREM6	Depth Remark 6		
DFD	Drilling Fluid Density	1.100	g/cm3
DFL	Drilling Fluid Loss		
DFPH	Drilling Fluid PH		
DFT	Drilling Fluid Type	Sepiolite Salt Water Base	
DFV	Drilling Fluid Viscosity		
DIFF	Maximum Permitted Depth Difference	2.000	m
DLAB	Date Logger At Bottom	8-Oct-2002	
DMF	Drilling Measured From	Rig Floor	
EDF	Elevation of Derrick Floor	11.000	m
EGL	Elevation of Ground Level	0.000	m
EKB	Elevation of Kelly Bushing	11.300	m
ELZ	Elevation of Log Zero	11.300	m

ENGI	Engineer's Name	Javier Espinosa	
ENVI	Acquisition Environment	FTB_TELEMETRY	
EPD	Elevation of Permanent Datum	0.000	m
FL	Field Location		
FL1	Field Location Line 1		
FL2	Field Location Line 2		
FLEV	Fluid Level		
FLSHSTRM	Flush depth-delayed streams to output at end	YES	
FN	Field Name	Costa Rica	
FSAL	Formation Salinity		
GGRA	Gas Gravity		
HID1	Header Identifier Line 1	Accelerator Porosity,	
HID2	Header Identifier Line 2	Natural Gamma Ray	
HIDE	Header Identifier	Dual Induction, Litho Density	
HLD	Header Legal Disclaimer	INCLUDE	
IBG	1/Gas Formation Volume Factor, 1/Bg		
IDWCD	IDW Calibration Date (dd-Mmm-yyyy)	dd-MMM-yyyy	
IDWCSN	IDW Calibrator Serial Number		
IDWLNCN	IDW Calibration Cable Type	7-46P	
IDWSN	IDW Serial Number		
IDWTYP	IDW Type	IDW-B	
IDWWC1	IDW Wheel Correction 1		
IDWWC2	IDW Wheel Correction 2		
ILL1	Instrumentation Logo Line 1		
ILL2	Instrumentation Logo Line 2		
JETA	Job Events Auto Save	ALLOW	
LATI	Latitude		
LCC	Logging Company Code	440	
LCL	Logging Cable Length	9000	m
LCMT	Lead Cement Type		
LCN	Logging Cable Name (Type)		
LCSN	Logging Cable Serial Number		
LCVO	Lead Cement Volume		
LLAB	Section Label	Latitude:	
LMF	Log Measured From	Rig Floor	
LOGMODE	Depth Logging Mode	MEASURED_DEPTH	
LOGSEQ	Log Sequence	FIRST_LOG_IN_WELL	
LONG	Longitude		
LUL	Logging Unit Location	Houston-ODP	
LUN	Logging Unit Number	99	
MCSS	Mud Cake Sample Source		
MCST	Mud Cake Sample Temperature		
MFSS	Mud Filtrate Sample Source		
MFST	Mud Filtrate Sample Temperature		
MHD	Maximum Hole Deviation		
MMDU	Magnetic Mark Depth Units	FEET	
MRT	Maximum Recorded Temperature		
MRT1	Maximum Recorded Temperature 1		
MRT2	Maximum Recorded Temperature 2		
MRT3	Maximum Recorded Temperature 3		
MSS	Mud Sample Source	Mud Pit	
MST	Mud Sample Temperature	27.000	degC
NATI	Nation		
NLS	Nominal Logging Speed		
ODEN	Oil Density		
OPER	Operator's Code		
OS1	Other Services Line 1	TAP	
OS2	Other Services Line 2	MEST	
OS3	Other Services Line 3	DSST	
OS4	Other Services Line 4		
OS5	Other Services Line 5		
PBVSADP	Use alternate depth channel for playback	NO	
PDAT	Permanent Datum	Mean Sea Level	
PVER	Program Version	10C0-306	
R1	Remark Line 1	Logs not depth corrected.	
R10	Remark Line 10		
R11	Remark Line 11		
R12	Remark Line 12		
R13	Remark Line 13		
R14	Remark Line 14		
R15	Remark Line 15		
R16	Remark Line 16		
R17	Remark Line 17		
R2	Remark Line 2		
R3	Remark Line 3	Corrections applied as per parameter listing below main pass.	
R4	Remark Line 4	Presentations as per ODP standards.	
R5	Remark Line 5		
R6	Remark Line 6		
R7	Remark Line 7		
R8	Remark Line 8		
R9	Remark Line 9		
RANG	Range	JOIDES Resolution	
RIGTYP	Rig Type	OFFSHORE_FLOATER_WITH_WMC	
RIAB	Range Label	Rig:	

RLDR	Range Label			
RLDT	Reference Log Date (dd-Mmm-yyyy)		dd-MMM-yyyy	
RLNM	Reference Log Name			
RLRN	Reference Log Run Number			
RMB	Resistivity of Mud - BHT			
RMCS	Resistivity of Mud Cake Sample			
RMFB	Resistivity of Mud Filtrate - BHT			
RMFS	Resistivity of Mud Filtrate Sample			
RMS	Resistivity of Mud Sample		0.322	ohm.m
RULB	Rig Up Length at Bottom		0.000	m
RULS	Rig Up Length at Surface		0.000	m
RUN	Run Number		One	
RW	Resistivity of Connate Water		1.000	ohm.m
SCD_ACCEL	Accelerometer driving Speed Corrected Depth		NONE	
SCORR	Stretch Correction			
SECT	Section		9* 38.9' N	
SGOR	Solution Gas Oil Ratio			
SIMULATE_DELAY	Simulate Acquisition Delay		0.000	
SLAB	State/Province Label		Country:	
SON	Service Order Number			
SPEE	Simulated Logging Speed		1800	ft/h
STAT	State or Province		Costa Rica	
STDLC	Subsequent Trip Down Log Correction			
STEM	Surface Temperature			
TCA	Tail Cement Additives			
TCDE	Tail Cement Density			
TCS	Time Circulation Stopped		18:00	
TCTY	Tail Cement Type			
TCV	Tail Cement Volume			
TCWL	Tail Cement Water Loss			
TD	Total Depth		4987.0	m
TDD	Total Depth - Driller		4987.0	m
TDL	Total Depth - Logger		4987.0	m
TLAB	Time Logger At Bottom		10:05	
TLI	Top Log Interval		4800.0	m
TLLAB	Township Label		Longitude:	
TNDCD	Tension Device Calibration Date (dd-Mmm-yyyy)		dd-MMM-yyyy	
TNDCSN	Tension Device Calibrator Serial Number			
TNDGN	Tension Device GAIN		1.000	
TNDOFF	Tension Device Offset		0.000	
TNDSN	Tension Device Serial Number			
TNDTYP	Tension Device		CMTD-B/A	
TOWN	Township		86* 11.4' W	
TREF	Reference Tension of the Cable		1000.0	lbf
TWS	Temperature of Connate Water Sample		37.778	degC
UWID	Unique Well Identification Number			
WITN	Witness's Name		M. Kyaw, J. Morris, H. Villinger	
WN	Well Name		ODP Leg 205, Site 1253A	
ZRCS	Tool Zero Reference Check at Surface			

Format: HLDT\_HR\_TCOM    Vertical Scale: 1:200    Graphics File Created: 26-Oct-2002 07:06

**OP System Version: 10C0-306**  
MCM

DITE	10C0-306	HLDTA	10C0-306
DTAA	10C0-306	NPLC-BA	OP10-KP1
APS-BA	OP10-KP1	HNGS-BA	OP10-KP1
DTCH	10C0-306		

**Input DLIS Files**

DEFAULT	PI_LDL_APS_NGS_031PUP	FN:36	PRODUCER	08-Oct-2002 12:53	16140.0 FT	14108.0 FT
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**Calibration and Check Summary**

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Environment Litho Density - A Wellsite Calibration - Background Measurement							
Master: 10-Aug-2002 14:41    Before: 8-Oct-2002 8:18    After: 8-Oct-2002 14:09							
LSW1 Background	100.0	87.71	87.07	86.17	-0.9023	3.000	CPS
LSW2 Background	105.0	92.23	91.63	89.78	-1.849	3.150	CPS
LSW3 Background	210.0	178.9	177.4	173.6	-3.810	6.300	CPS
LSW4 Background	290.0	237.2	234.1	232.8	-1.296	8.700	CPS
LSW5 Background	610.0	515.8	517.4	515.5	-1.838	18.30	CPS
SSW1 Background	100.0	85.59	83.63	83.31	-0.3251	3.000	CPS
SSW2 Background	200.0	165.7	164.5	164.7	0.2105	6.000	CPS
SSW3 Background	530.0	437.0	439.4	437.8	-1.644	15.90	CPS

SSW4 Background	280.0	232.7	231.7	232.5	0.8710	8.400	CPS
SSW5 Background	205.0	174.6	174.3	172.9	-1.427	6.150	CPS
Hostile Environment Litho Density - A Wellsite Calibration - Tool Quality Control Information High Voltage							
Master: 10-Aug-2002 14:41 Before: 8-Oct-2002 8:18 After: 8-Oct-2002 14:09							
LS Bkg. High Voltage	1131	1131	1132	1134	2.187	N/A	V
SS Bkg. High Voltage	1175	1175	1177	1176	-1.414	N/A	V
Hostile Environment Litho Density - A Wellsite Calibration - Detectors Resolution From BKG Measurements							
Master: 10-Aug-2002 14:41 Before: 8-Oct-2002 8:18 After: 8-Oct-2002 14:09							
LS Background Resolution	1.000	1.033	1.032	1.029	-0.003019	N/A	
SS Background Resolution	1.000	0.9460	0.9525	0.9378	-0.01467	N/A	
Hostile Environment Litho Density - A Wellsite Calibration - Caliper Calibration							
Before: 8-Oct-2002 8:09							
Caliper Small Ring	8.000	N/A	12.33	N/A	N/A	N/A	IN
Caliper Large Ring	12.00	N/A	17.21	N/A	N/A	N/A	IN
Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement							
Master: 10-Aug-2002 15:00							
LSW1 Aluminum	648.4	570.7	--	--	--	--	CPS
LSW2 Aluminum	1018	918.2	--	--	--	--	CPS
LSW3 Aluminum	1105	980.5	--	--	--	--	CPS
LSW4 Aluminum	609.5	545.9	--	--	--	--	CPS
LSW5 Aluminum	533.8	491.9	--	--	--	--	CPS
SSW1 Aluminum	2664	2470	--	--	--	--	CPS
SSW2 Aluminum	7731	7217	--	--	--	--	CPS
SSW3 Aluminum	10380	9702	--	--	--	--	CPS
SSW4 Aluminum	4574	4233	--	--	--	--	CPS
SSW5 Aluminum	745.2	702.7	--	--	--	--	CPS
Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage							
Master: 10-Aug-2002 15:00							
LS Alum. High Voltage	1131	1131	--	--	--	--	V
SS Alum. High Voltage	1175	1165	--	--	--	--	V
Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Aluminum Measurement							
Master: 10-Aug-2002 15:00							
LS Aluminum Resolution	1.000	1.052	--	--	--	--	
SS Aluminum Resolution	1.000	1.027	--	--	--	--	
Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement (Window Ratios)							
Master: 10-Aug-2002 15:00							
LSW1/(LSW4 + LSW5) Calc.	0.5400	0.5499	--	--	--	--	
LSW3/(LSW4 + LSW5) Calc.	0.9600	0.9448	--	--	--	--	
SSW1/(SSW4 + SSW5) Calc.	0.4600	0.5004	--	--	--	--	
SSW3/(SSW4 + SSW5) Calc.	1.900	1.966	--	--	--	--	
Hostile Environment Litho Density - A Master Calibration - Litholog Measurement							
Master: 10-Aug-2002 15:09							
LSW1 Iron	410.0	396.5	--	--	--	--	CPS
LSW2 Iron	870.0	759.6	--	--	--	--	CPS
LSW3 Iron	1030	893.2	--	--	--	--	CPS
LSW4 Iron	590.0	509.0	--	--	--	--	CPS
LSW5 Iron	530.0	459.6	--	--	--	--	CPS
SSW1 Iron	1850	1829	--	--	--	--	CPS
SSW2 Iron	6500	6168	--	--	--	--	CPS
SSW3 Iron	10000	9026	--	--	--	--	CPS
SSW4 Iron	4500	3956	--	--	--	--	CPS
SSW5 Iron	750.0	628.4	--	--	--	--	CPS
Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage							
Master: 10-Aug-2002 15:09							
LS Lith High Voltage	1131	1131	--	--	--	--	V
SS Lith High Voltage	1175	1164	--	--	--	--	V
Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Litholog Measurement							
Master: 10-Aug-2002 15:09							
LS Lith Resolution	1.000	1.039	--	--	--	--	
SS Lith Resolution	1.000	1.013	--	--	--	--	
Accelerator-Porosity Tool Wellsite Calibration - Detector Background							
Master: 14-Sep-2002 10:44 Before: 8-Oct-2002 2:23 After: 8-Oct-2002 14:09							
Near Det Bkg Cntrate	30.00	32.07	32.53	31.39	-1.147	N/A	CPS
Far Det Bkg Cntrate	30.00	32.26	33.70	33.47	-0.2327	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	29.47	28.88	28.86	-0.01661	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	30.06	31.45	29.74	-1.711	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	32.24	32.67	33.82	1.149	N/A	CPS
Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios							
Master: 14-Sep-2002 10:44							

Near/Far Calibration Ratio	0.9250	0.8936	N/A	N/A	N/A	N/A
Near/Array Calibration Ratio	1.030	1.057	N/A	N/A	N/A	N/A
Near/Array Cal Ratio Up/Down	1.000	1.010	N/A	N/A	N/A	N/A

Accelerator-Porosity Tool Wellsite Calibration - Tank Check

Master: 14-Sep-2002 10:44

Array-1 Standoff Porosity	11.75	11.34	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	11.40	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.887	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	0.9786	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9907	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.97	N/A	N/A	N/A	N/A	CU

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: 14-Sep-2002 4:26 Before: 8-Oct-2002 2:26 After: 8-Oct-2002 14:10

Na 511 Peak Loc	40.00	40.54	40.60	40.64	0.04438	1.000	
Na 511 Peak Res	15.50	16.41	16.80	15.13	-1.668	2.000	%
High Voltage	1150	1213	1213	1216	3.450	30.00	V
Na 1785 Peak Loc	142.6	145.3	144.8	146.3	1.493	7.000	
Na 1785 Peak Res	8.500	9.453	9.721	9.020	-0.7013	2.000	%
Temperature	15.50	25.85	33.50	30.10	-3.403	N/A	DEGC
Na Count Rate	45.00	49.09	48.30	47.97	-0.3303	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: 14-Sep-2002 4:26 Before: 8-Oct-2002 2:26 After: 8-Oct-2002 14:10

Na 511 Peak Loc	40.00	40.59	40.67	40.46	-0.2148	1.000	
Na 511 Peak Res	15.50	16.13	16.87	17.50	0.6309	2.000	%
High Voltage	1150	1241	1241	1243	1.524	30.00	V
Na 1785 Peak Loc	142.6	145.1	145.0	145.2	0.2300	7.000	
Na 1785 Peak Res	8.500	9.614	8.934	9.641	0.7062	2.000	%
Temperature	15.50	25.04	33.03	30.65	-2.375	N/A	DEGC
Na Count Rate	45.00	48.66	47.84	47.93	0.09333	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2

Master: 14-Sep-2002 4:26 Before: 8-Oct-2002 2:26 After: 8-Oct-2002 14:10

Coincidence Count Rate Ratio	1.000	1.009	1.009	1.003	-0.005861	0.05000	
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Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration

Master: 14-Sep-2002 4:19

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	210.2	--	--	--	--	
Th Peak Res	7.000	8.327	--	--	--	--	%
Background Count Rate	142.5	24.00	--	--	--	--	CPS
Gain Ratio	1.000	0.9863	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration

Master: 14-Sep-2002 4:19

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	210.1	--	--	--	--	
Th Peak Res	7.000	7.580	--	--	--	--	%
Background Count Rate	142.5	23.40	--	--	--	--	CPS
Gain Ratio	1.000	0.9848	--	--	--	--	

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1728 V  
 Far Detector Plateau Setting 2073 V  
 Array Detector Plateau Setting 1958 V

Dual Induction - E / Equipment Identification

Primary Equipment:

Dual Induction Sonde DIS - HB 442  
 Dual Induction Cartridge DIC - EB 438

Auxiliary Equipment:

Mass Isolated Housing MIH - ZA

Dual Induction - E Wellsite Calibration

Electronics Calibration Changes Files/Depth Intervals:

Phase	ID (R > 27 OHM-M) MM/M	Value	Phase	ID (R < 27 OHM-M) %	Value	Phase	SFL (R < 1 OHM-M) OHMM	Value
After		0.03270	After		0.0003062	After		0.0005584

Phase	IM (R > 27 OHM-M) MM/M	Value	Phase	IM (R < 27 OHM-M) %	Value
After		0.04155	After		0.0005407
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)	
Phase	SFL (R > 27 OHM-M) MM/M	Value	Phase	SFL (R < 27 OHM-M) %	Value
After		0.002421	After		0.0004484
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)	

After: 8-Oct-2002 12:31

Dual Induction - E Master Calibration									
Test Loop Calibration: Calibration of Internal Reference to Test Loop Standard									
Phase	Deep 10 kHz Gain Factor	Value	Phase	Deep 20 kHz Gain Factor	Value	Phase	Deep 40 kHz Gain Factor	Value	
Master		0.9956	Master		1.008	Master		1.026	
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)		
Phase	Medium 10 kHz Gain Factor	Value	Phase	Medium 20 kHz Gain Factor	Value	Phase	Medium 40 kHz Gain Factor	Value	
Master		1.022	Master		1.030	Master		1.061	
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)		
Phase	Deep 10 kHz Phase Shift	Value	Phase	Deep 20 kHz Phase Shift	Value	Phase	Deep 40 kHz Phase Shift	Value	
Master		0.1143	Master		-0.1524	Master		-1.426	
	-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)			-2.000 (Minimum) 0 (Nominal) 2.000 (Maximum)			-4.000 (Minimum) -1.000 (Nominal) 2.000 (Maximum)		
Phase	Medium 10 kHz Phase Shift	Value	Phase	Medium 20 kHz Phase Shift	Value	Phase	Medium 40 kHz Phase Shift	Value	
Master		-0.2558	Master		-0.9331	Master		-2.461	
	-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)			-3.000 (Minimum) -1.000 (Nominal) 1.000 (Maximum)			-5.000 (Minimum) -2.000 (Nominal) 1.000 (Maximum)		

Master: Calibration out of date 5-Oct-2001 21:50

Dual Induction - E Master Calibration									
Sonde Error Corrections: Correction for sonde response in zero conductivity environment. (Normalized to 25C).									
Phase	Real Deep 10 kHz S.E. Corr.	Value	Phase	Real Deep 20 kHz S.E. Corr.	Value	Phase	Real Deep 40 kHz S.E. Corr.	Value	
Master		44.95	Master		16.36	Master		4.690	
	-50.00 (Minimum) 0 (Nominal) 125.0 (Maximum)			-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)		
Phase	Quad Deep 10 kHz S.E. Corr.	Value	Phase	Quad Deep 20 kHz S.E. Corr.	Value	Phase	Quad Deep 40 kHz S.E. Corr.	Value	
Master		108.9	Master		64.63	Master		46.10	
	-250.0 (Minimum) 0 (Nominal) 350.0 (Maximum)			-125.0 (Minimum) 0 (Nominal) 200.0 (Maximum)			-75.00 (Minimum) 0 (Nominal) 125.0 (Maximum)		
Phase	Real Medium 10 kHz S.E. Corr.	Value	Phase	Real Medium 20 kHz S.E. Corr.	Value	Phase	Real Medium 40 kHz S.E. Corr.	Value	
Master		20.73	Master		-1.786	Master		-10.46	
	-50.00 (Minimum) 0 (Nominal) 140.0 (Maximum)			-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)			-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)		
Phase	Quad Medium 10 kHz S.E. Corr.	Value	Phase	Quad Medium 20 kHz S.E. Corr.	Value	Phase	Quad Medium 40 kHz S.E. Corr.	Value	
Master		-105.8	Master		-34.20	Master		11.45	
	-1300 (Minimum) 0 (Nominal) 1300 (Maximum)			-650.0 (Minimum) 0 (Nominal) 650.0 (Maximum)			-350.0 (Minimum) 0 (Nominal) 350.0 (Maximum)		

Master: Calibration out of date 5-Oct-2001 22:22

Hostile Environment Litho Density - A / Equipment Identification			
<b>Primary Equipment:</b>			
HOSTILE ENVIRONMENT LITHO DENSITY HIGH V	HLDV - A		10
HOSTILE ENVIRONMENT LITHO DENSITY CARTRI	HLDC - AA		11
Gamma Source Radioactive	GSR - Z		1846
<b>Auxiliary Equipment:</b>			
HOSTILE ENVIRONMENT LITHO DENSITY SONDE	HLDS - B		10
HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG	HEH - H		12
HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG	HEH - G		11
HOSTILE ENVIRONMENT LITHO DENSITY PAD	HLDP - B		10

**Background Measurement**

Phase	LSW1 Background CPS	Value	Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value
Master		87.71	Master		92.23	Master		178.9
Before		87.07	Before		91.63	Before		177.4
After		86.17	After		89.78	After		173.6
	65.00 (Minimum) 100.0 (Nominal) 125.0 (Maximum)			70.00 (Minimum) 105.0 (Nominal) 130.0 (Maximum)			150.0 (Minimum) 210.0 (Nominal) 250.0 (Maximum)	
Phase	LSW4 Background CPS	Value	Phase	LSW5 Background CPS	Value	Phase	SSW1 Background CPS	Value
Master		237.2	Master		515.8	Master		85.59
Before		234.1	Before		517.4	Before		83.63
After		232.8	After		515.5	After		83.31
	220.0 (Minimum) 290.0 (Nominal) 330.0 (Maximum)			430.0 (Minimum) 610.0 (Nominal) 730.0 (Maximum)			70.00 (Minimum) 100.0 (Nominal) 120.0 (Maximum)	
Phase	SSW2 Background CPS	Value	Phase	SSW3 Background CPS	Value	Phase	SSW4 Background CPS	Value
Master		165.7	Master		437.0	Master		232.7
Before		164.5	Before		439.4	Before		231.7
After		164.7	After		437.8	After		232.5
	140.0 (Minimum) 200.0 (Nominal) 240.0 (Maximum)			380.0 (Minimum) 530.0 (Nominal) 630.0 (Maximum)			190.0 (Minimum) 280.0 (Nominal) 340.0 (Maximum)	
Phase	SSW5 Background CPS	Value						
Master		174.6						
Before		174.3						
After		172.9						
	140.0 (Minimum) 205.0 (Nominal) 250.0 (Maximum)							
Master: 10-Aug-2002 14:41			Before: 8-Oct-2002 8:18			After: 8-Oct-2002 14:09		

Hostile Environment Litho Density - A Wellsite Calibration					
Detectors Resolution From BKG Measurements					
Phase	LS Background Resolution	Value	Phase	SS Background Resolution	Value
Master		1.033	Master		0.9460
Before		1.032	Before		0.9525
After		1.029	After		0.9378
	0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)			0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)	
Master: 10-Aug-2002 14:41			Before: 8-Oct-2002 8:18		
After: 8-Oct-2002 14:09					

Hostile Environment Litho Density - A Master Calibration								
Aluminum Measurement								
Phase	LSW1 Aluminum CPS	Value	Phase	LSW2 Aluminum CPS	Value	Phase	LSW3 Aluminum CPS	Value
Master		570.7	Master		918.2	Master		980.5
	440.0 (Minimum) 648.4 (Nominal) 840.0 (Maximum)			840.0 (Minimum) 1018 (Nominal) 1200 (Maximum)			920.0 (Minimum) 1105 (Nominal) 1280 (Maximum)	
Phase	LSW4 Aluminum CPS	Value	Phase	LSW5 Aluminum CPS	Value	Phase	SSW1 Aluminum CPS	Value
Master		545.9	Master		491.9	Master		2470
	520.0 (Minimum) 609.5 (Nominal) 720.0 (Maximum)			450.0 (Minimum) 533.8 (Nominal) 670.0 (Maximum)			1850 (Minimum) 2664 (Nominal) 2900 (Maximum)	
Phase	SSW2 Aluminum CPS	Value	Phase	SSW3 Aluminum CPS	Value	Phase	SSW4 Aluminum CPS	Value
Master		7217	Master		9702	Master		4233
	6200 (Minimum) 7731 (Nominal) 8500 (Maximum)			8750 (Minimum) 10380 (Nominal) 11750 (Maximum)			4000 (Minimum) 4574 (Nominal) 5400 (Maximum)	
Phase	SSW5 Aluminum CPS	Value						
Master		702.7						
	570.0 (Minimum) 745.2 (Nominal) 1110 (Maximum)							
Master: 10-Aug-2002 15:00								

Hostile Environment Litho Density - A Master Calibration					
Detectors Resolution From Aluminum Measurement					
Phase	LS Aluminum Resolution	Value	Phase	SS Aluminum Resolution	Value
Master		1.033	Master		0.9460
Before		1.032	Before		0.9525
After		1.029	After		0.9378



Phase	LS Aluminum Resolution	Value	Phase	SS Aluminum Resolution	Value
Master		1.052	Master		1.027
	0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)			0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)	

Master: 10-Aug-2002 15:00

Hostile Environment Litho Density - A Master Calibration					
Aluminum Measurement (Window Ratios)					
Phase	LSW1/(LSW4 + LSW5) Calc.	Value	Phase	LSW3/(LSW4 + LSW5) Calc.	Value
Master		0.5499	Master		0.9448
	0.3400 (Minimum) 0.5400 (Nominal) 0.7400 (Maximum)			0.7600 (Minimum) 0.9600 (Nominal) 1.160 (Maximum)	
Phase	SSW1/(SSW4 + SSW5) Calc.	Value	Phase	SSW3/(SSW4 + SSW5) Calc.	Value
Master		0.5004	Master		1.966
	0.3600 (Minimum) 0.4600 (Nominal) 0.5600 (Maximum)			1.700 (Minimum) 1.900 (Nominal) 2.100 (Maximum)	

Master: 10-Aug-2002 15:00

Hostile Environment Litho Density - A Master Calibration											
Litholog Measurement											
Phase	LSW1 Iron CPS		Value	Phase	LSW2 Iron CPS		Value	Phase	LSW3 Iron CPS		Value
Master			396.5	Master			759.6	Master			893.2
	310.0 (Minimum)	410.0 (Nominal)	510.0 (Maximum)		660.0 (Minimum)	870.0 (Nominal)	980.0 (Maximum)		810.0 (Minimum)	1030 (Nominal)	1170 (Maximum)
Phase	LSW4 Iron CPS		Value	Phase	LSW5 Iron CPS		Value	Phase	SSW1 Iron CPS		Value
Master			509.0	Master			459.6	Master			1829
	470.0 (Minimum)	590.0 (Nominal)	670.0 (Maximum)		400.0 (Minimum)	530.0 (Nominal)	620.0 (Maximum)		1400 (Minimum)	1850 (Nominal)	2120 (Maximum)
Phase	SSW2 Iron CPS		Value	Phase	SSW3 Iron CPS		Value	Phase	SSW4 Iron CPS		Value
Master			6168	Master			9026	Master			3956
	5170 (Minimum)	6500 (Nominal)	7270 (Maximum)		8100 (Minimum)	10000 (Nominal)	11000 (Maximum)		3620 (Minimum)	4500 (Nominal)	5020 (Maximum)
Phase	SSW5 Iron CPS		Value								
Master			628.4								
	470.0 (Minimum)	750.0 (Nominal)	10100 (Maximum)								

Master: 10-Aug-2002 15:09

Hostile Environment Litho Density - A Master Calibration							
Detectors Resolution From Litholog Measurement							
Phase	LS Lith Resolution		Value	Phase	SS Lith Resolution		Value
Master			1.039	Master			1.013
	0.7000 (Minimum)	1.000 (Nominal)	1.111 (Maximum)		0.7000 (Minimum)	1.000 (Nominal)	1.111 (Maximum)

Master: 10-Aug-2002 15:09

### Nuclear Porosity Lithology Cartridge - B / Equipment Identification

Primary Equipment:		
NPLC Cartridge	NPLC - B	79
Auxiliary Equipment:		
NPLC Housing	NPH - B	82

### Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:		
Accelerator-Porosity Sonde	APS - BA	22
APS Minitron	MNTR - F	4185
Auxiliary Equipment:		
Accelerator-Porosity Housing	APH - AC	22
APS Calibration Water Tank	SFT - 178	4722
APS Aluminium Calibrator Sleeve	SFT - 281	24

**Accelerator-Porosity Tool Wellsite Calibration**

**Detector Background**

Phase	Near Det Bkg Cntrate CPS	Value	Phase	Far Det Bkg Cntrate CPS	Value	Phase	Array-1 Det Bkg Cntrate CPS	Value
Master		32.07	Master		32.26	Master		29.47
Before		32.53	Before		33.70	Before		28.88
After		31.39	After		33.47	After		28.86
	0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	
Phase	Array-2 Det Bkg Cntrate CPS	Value	Phase	Array Therm Det Bkg Cntrate CPS	Value			
Master		30.06	Master		32.24			
Before		31.45	Before		32.67			
After		29.74	After		33.82			
	0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)				

Master: 14-Sep-2002 10:44      Before: 8-Oct-2002 2:23      After: 8-Oct-2002 14:09

**Accelerator-Porosity Tool Wellsite Calibration**

**Calibration Ratios**

Phase	Near/Far Calibration Ratio	Value	Phase	Near/Array Calibration Ratio	Value	Phase	Near/Array Cal Ratio Up/Down	Value
Master		0.8936	Master		1.057	Master		1.010
	0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)			0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)			0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)	

Master: 14-Sep-2002 10:44

**Accelerator-Porosity Tool Wellsite Calibration**

**Tank Check**

Phase	Array-1 Standoff Porosity PU	Value	Phase	Array-2 Standoff Porosity PU	Value	Phase	Average Slowing Down Time US	Value
Master		11.34	Master		11.40	Master		5.887
	9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)			9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)			5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)	
Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Array-2 SDT Ratio Up/Down	Value	Phase	Sigma Formation CU	Value
Master		0.9786	Master		0.9907	Master		27.97
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)	

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**Accelerator-Porosity Tool Master Calibration**

**Detector Calibration**

Phase	Near/Far Calibration Ratio	Value	Phase	Near/Array Calibration Ratio	Value	Phase	Near/Array Cal Ratio Up/Down	Value
Master		0.8936	Master		1.057	Master		1.010
	0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)			0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)			0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)	

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**Accelerator-Porosity Tool Master Calibration**

**Tank Check**

Phase	Array-1 Standoff Porosity PU	Value	Phase	Array-2 Standoff Porosity PU	Value	Phase	Average Slowing Down Time US	Value
Master		11.34	Master		11.40	Master		5.887
	9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)			9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)			5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)	
Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Array-2 SDT Ratio Up/Down	Value	Phase	Sigma Formation CU	Value
Master		0.9786	Master		0.9907	Master		27.97
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)	

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**Hostile Natural Gamma Ray Sonde / Equipment Identification**

Primary Equipment:  
HNGS Sonde

HNGS - BA      77

Auxiliary Equipment:  
HNGS Sonde Housing

HNGS - BA      70



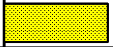
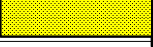

Hostile Natural Gamma Ray Sonde Wellsite Calibration									
Detector 1 Check									
Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value	
Master		40.54	Master		16.41	Master		1213	
Before		40.60	Before		16.80	Before		1213	
After		40.64	After		15.13	After		1216	
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)		
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value	
Master		145.3	Master		9.453	Master		25.85	
Before		144.8	Before		9.721	Before		33.50	
After		146.3	After		9.020	After		30.10	
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)		
Phase	Na Count Rate CPS	Value							
Master		49.09							
Before		48.30							
After		47.97							
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 14-Sep-2002 4:26			Before: 8-Oct-2002 2:26			After: 8-Oct-2002 14:10			

Hostile Natural Gamma Ray Sonde Wellsite Calibration									
Detector 2 Check									
Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value	
Master		40.59	Master		16.13	Master		1241	
Before		40.67	Before		16.87	Before		1241	
After		40.46	After		17.50	After		1243	
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)		
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value	
Master		145.1	Master		9.614	Master		25.04	
Before		145.0	Before		8.934	Before		33.03	
After		145.2	After		9.641	After		30.65	
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)		
Phase	Na Count Rate CPS	Value							
Master		48.66							
Before		47.84							
After		47.93							
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 14-Sep-2002 4:26			Before: 8-Oct-2002 2:26			After: 8-Oct-2002 14:10			

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		1.009
Before		1.009
After		1.003
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	
Master: 14-Sep-2002 4:26		
Before: 8-Oct-2002 2:26		
After: 8-Oct-2002 14:10		

Hostile Natural Gamma Ray Sonde Master Calibration






Detector 1 Calibration

Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value	
Master		41.00	Master		210.2	Master		8.327	
	38.00 (Minimum)	40.00 (Nominal)	42.00 (Maximum)	201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)	5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value				
Master		24.00	Master		0.9863				
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)			

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Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value	
Master		41.00	Master		210.1	Master		7.580	
	38.00 (Minimum)	40.00 (Nominal)	42.00 (Maximum)	201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)	5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value				
Master		23.40	Master		0.9848				
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)			

Master: 14-Sep-2002 4:19

Company: Lamont Doherty Earth Observatory

**Schlumberger**

Well: ODP Leg 205, Site 1253A

Field: Costa Rica

Country: Costa Rica

Ocean: Pacific

Dual Induction, Hostile Litho Density  
Accelerator Porosity  
Hostile Natural Gamma Ray