

Schlumberger

Company: **SHELL**

Well: **DAWSON CREEK 1 25**

Field: WILLIAMS FORK UNIT

County: ROUTT State: COLORADO

<p>**PLATFORM EXPRESS**</p> <p>COMPENSATED NEUTRON/LITHO DENSITY</p> <p>ARRAY INDUCTION, GR, SP</p>			
<p>County: ROUTT</p> <p>Field: WILLIAMS FORK UNIT</p> <p>Location: LAT: 40 DEG 27' 14.575N</p> <p>Well: DAWSON CREEK 1 25</p> <p>Company: SHELL</p>			
LOCATION			
<p>LAT: 40 DEG 27' 14.575N</p> <p>LONG: 107 DEG 12' 48.121 W</p>		<p>Elev.: K.B. 6672.50 ft</p> <p>G.L. 6658.00 ft</p> <p>D.F. 6672.50 ft</p>	
<p>Permanent Datum: _____</p> <p>Log Measured From: _____</p> <p>Drilling Measured From: _____</p>		<p>GROUND LEVEL _____</p> <p>KELLY BUSHING _____</p> <p>KELLY BUSHING _____</p>	
<p>Elev.: 6658.00 ft</p> <p>14.50 ft above Perm. Datum</p>			
API Serial No.	Section	Township	Range
0510706242	25	4N	88W

[illegible]

Logging Date	15-Oct-2012				
Run Number	1				
Depth Driller	6180 ft				
Schlumberger Depth	6088 ft				
Bottom Log Interval	6080 ft				
Top Log Interval	1620 ft				
Casing Driller Size @ Depth	10.750 in @ 1618 ft			@	
Casing Schlumberger	1620 ft				
Bit Size	9.875 in				
Type Fluid In Hole	WATER BASED MUD				
Density	Viscosity	9.2 lbm/gal		44 s	
Fluid Loss	PH			8	
Source Of Sample	MUD PIT				
RM @ Measured Temperature	1.190 ohm.m @ 111 degF		@		
RMF @ Measured Temperature	1.260 ohm.m @ 75 degF		@		
RMC @ Measured Temperature	1.120 ohm.m @ 75 degF		@		
Source RMF	RMC	CALC			
RM @ MRT	RMF @ MRT	0.840 @ 160	0.618 @ 160	@	@
Maximum Recorded Temperatures	160 degF				
Circulation Stopped	15-Oct-2012		12:30		
Logger On Bottom	15-Oct-2012		23:50		
Unit Number	Location	2276		VERNAL	
Recorded By	JAMIE UNDERWOOD				
Witnessed By	JOSH GOSSANYI				








[illegible]

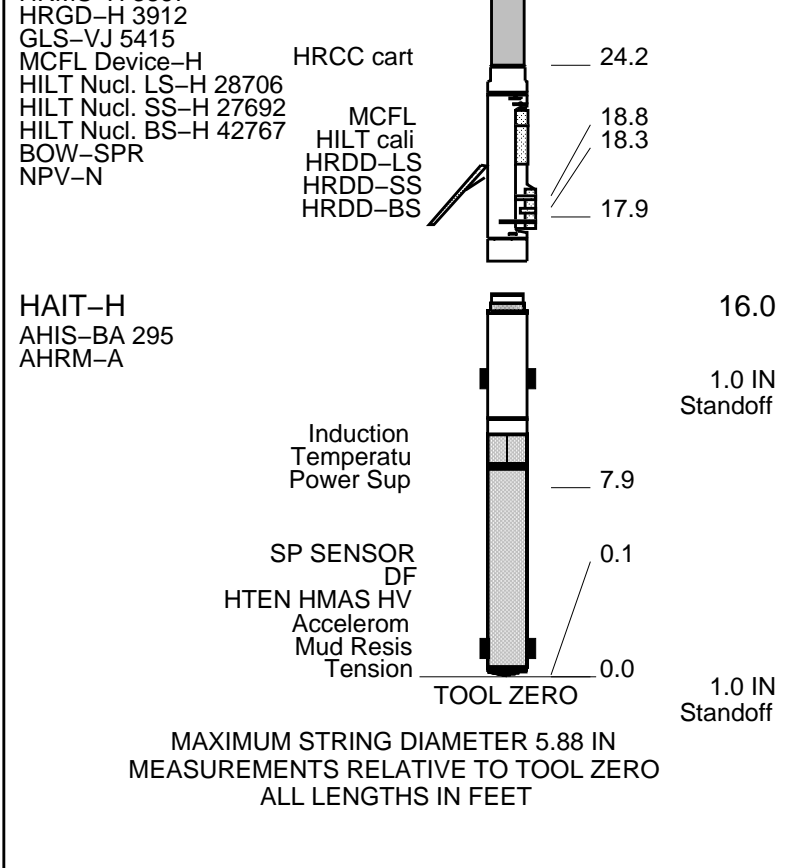
OTHER SERVICES1	OTHER SERVICES2
OS1: ECS	OS1:
OS2: HNGS	OS2:
OS3: CEMENT VOL	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
TOOL STRING RUN AS PER TOOL SKETCH	
NUETRON RUN ECCENTERED WITH BOWSPRING	
MATRIX SANDSTONE	
MATRIX DENSITY 2.68 G/CC	
AIT RUN WITH ONE INCH STANDOFFS	
ECS SHIFT FACTOR : 1.284612	

RUN 1			RUN 2		
SERVICE ORDER #:		CA80-00010	SERVICE ORDER #:		
PROGRAM VERSION:		19C0-187	PROGRAM VERSION:		
FLUID LEVEL:		0 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

SURFACE EQUIPMENT	
GSR-U/Y NCT-B CNB-AB NCS-VB	GSR-U WITM (DTS)-A

DOWNHOLE EQUIPMENT			
LEH-QT LEH-QT			65.4
DTC-H ECH-KC DTCH0-A	CTEM TelStatus ToolStatu		61.6 62.5 59.5
HNGS-BA HNGS-BA HNSH-BA	Upper_1 Lower_2		57.2 59.5 56.5
HNGC-B HNGH-A HNGC-B	HNGC Stat		49.5 51.3
ECC-B ECH-A ECC-B	ECC Statu		46.0 47.8
ECS-A ECS-A NSR-F ECSD-A ECSH-A	Detector		43.0 44.3
HILTH-FTB HGNSD-H HMCA-H HGSH NLS-KL NSR-F 1260 HACCZ-H 4665 HCNT-H HGR HRCC-H 3889 HRMS-H 3867	HGNS HTEM HMCA HGNS Gamm HGNS Neut HGNS Neut HGNS sens		37.6 36.9 31.1 30.6 28.2



Schlumberger

MAIN PASS

MAXIS Field Log

Company: SHELL

Well: DAWSON CREEK 1 25

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015LUP	FN:16	PRODUCER	15-Oct-2012 23:05	6120.0 FT	296.5 FT
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_018PUP	FN:22	PRODUCER	16-Oct-2012 02:26	6127.5 FT	304.5 FT
RTB	AIT_TLD_MCFL_CNL_018PUP	FN:23	PRODUCER	16-Oct-2012 02:26	6127.5 FT	304.5 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 2388.29 F3

Cement Volume = 971.32 F3 (assuming 7.63 IN casing O.D.)

Computed from 6088.0 FT to 1620.0 FT using data channel(s) HCAL

OP System Version: 19C0-187

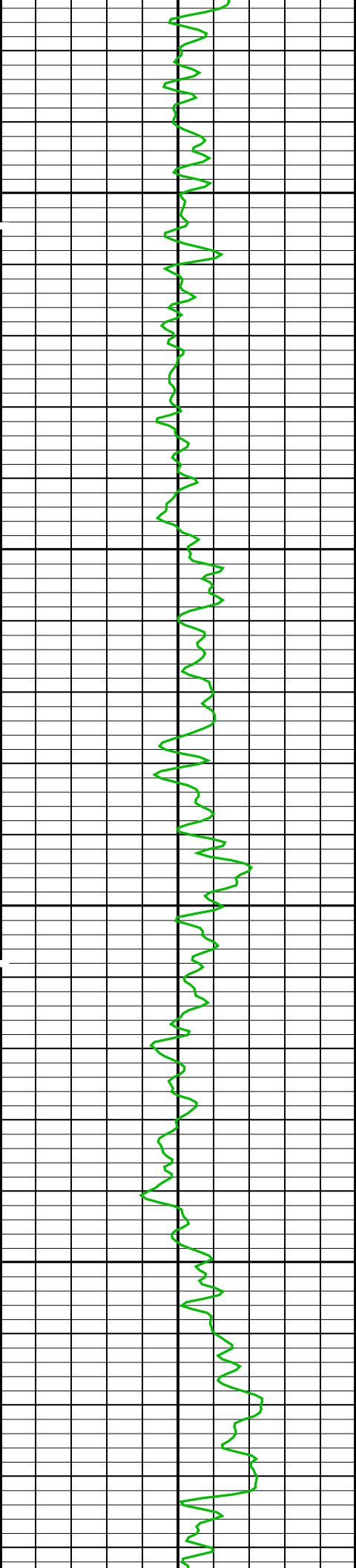
HAIT-H	SRPC-5095-H2-2011-OP19_I	HILTH-FTB	SRPC-5095-H2-2011-OP19_I
ECS-A	19C0-187	ECC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
DTC-H	19C0-187		

PIP SUMMARY

Integrated Hole Volume Minor Bin Every 10 F3

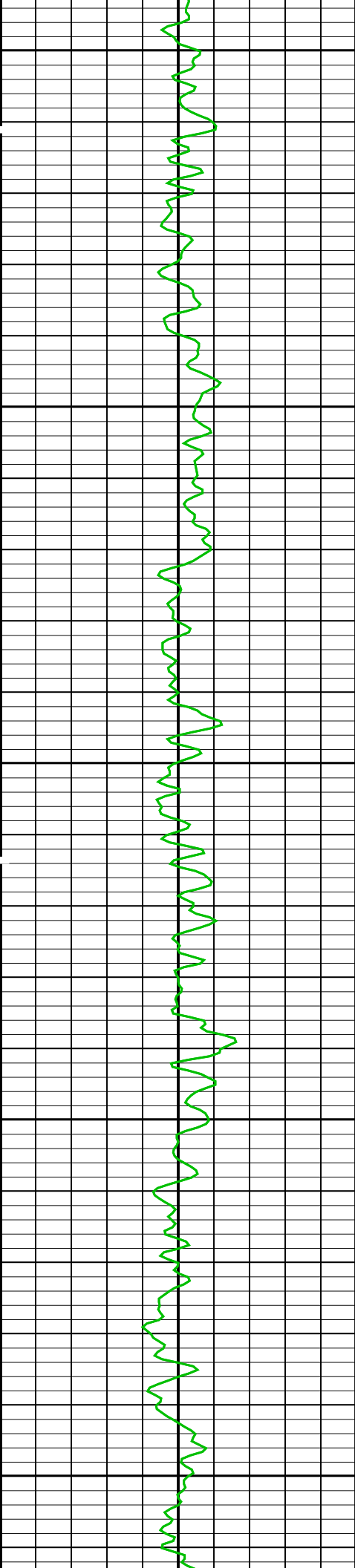
Time Mark Every 60 S

Time Mark Every 60 S



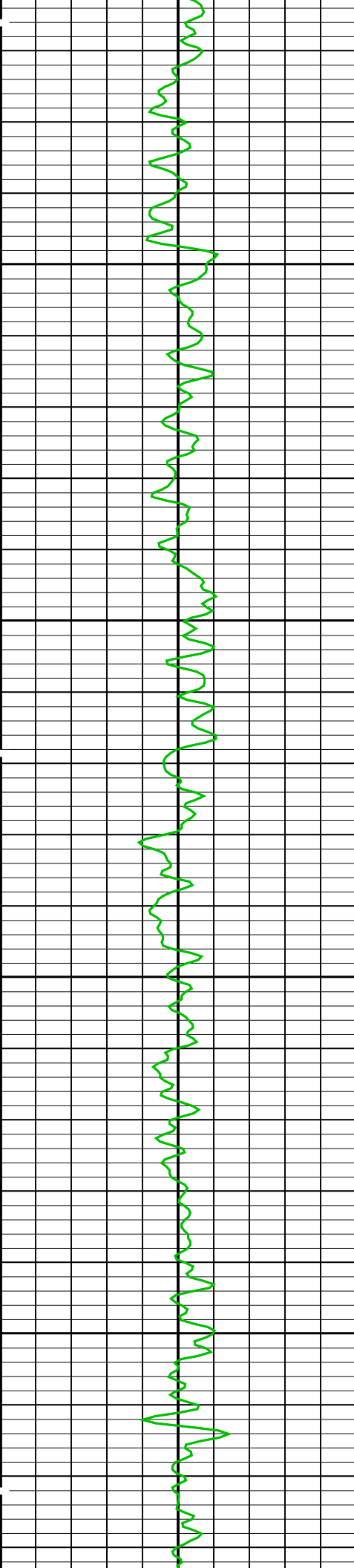
500

600



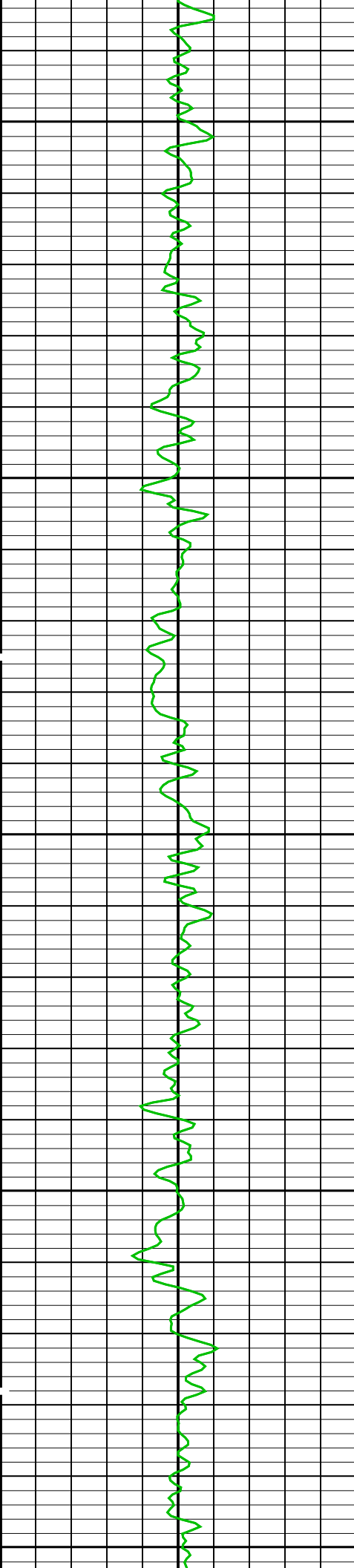
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800



900

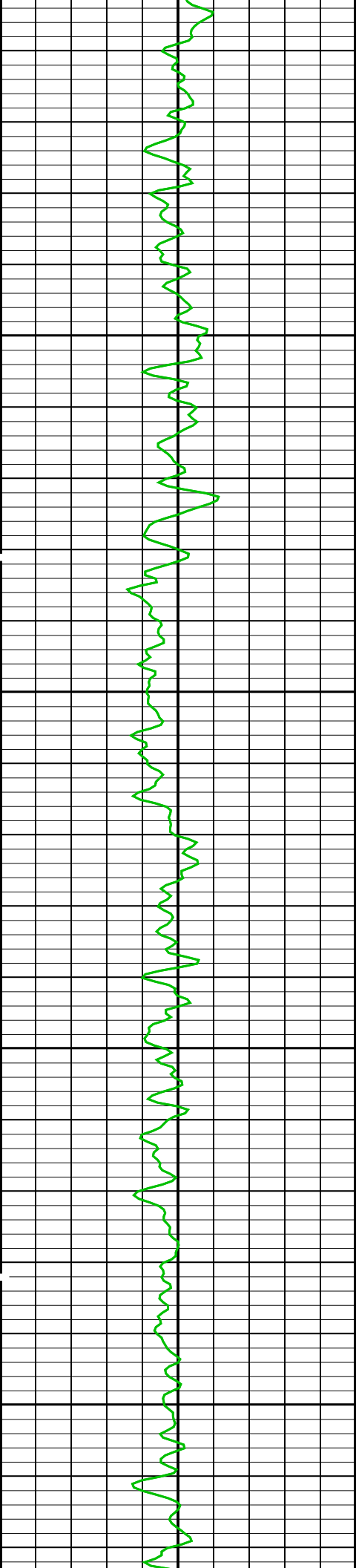
1000



1100

1200

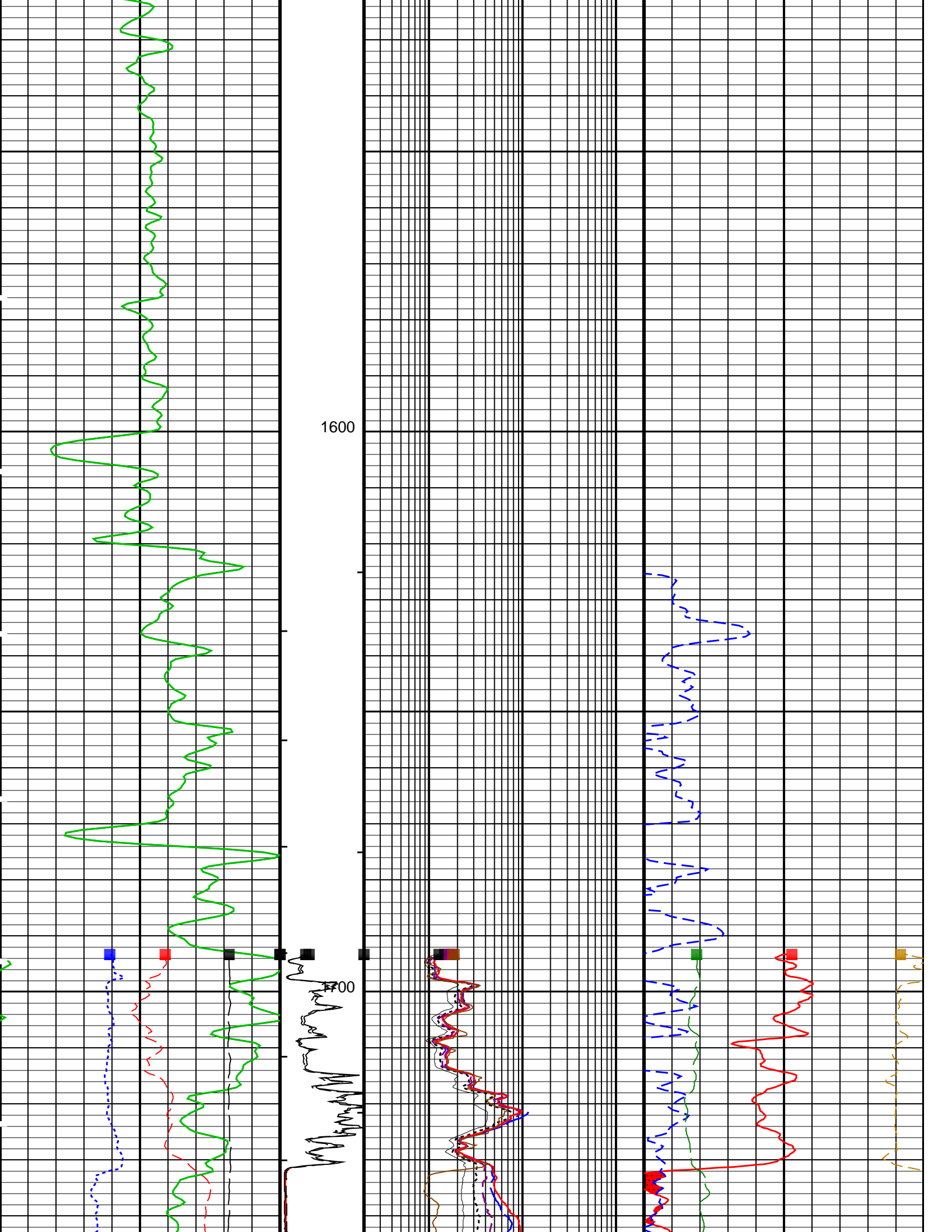
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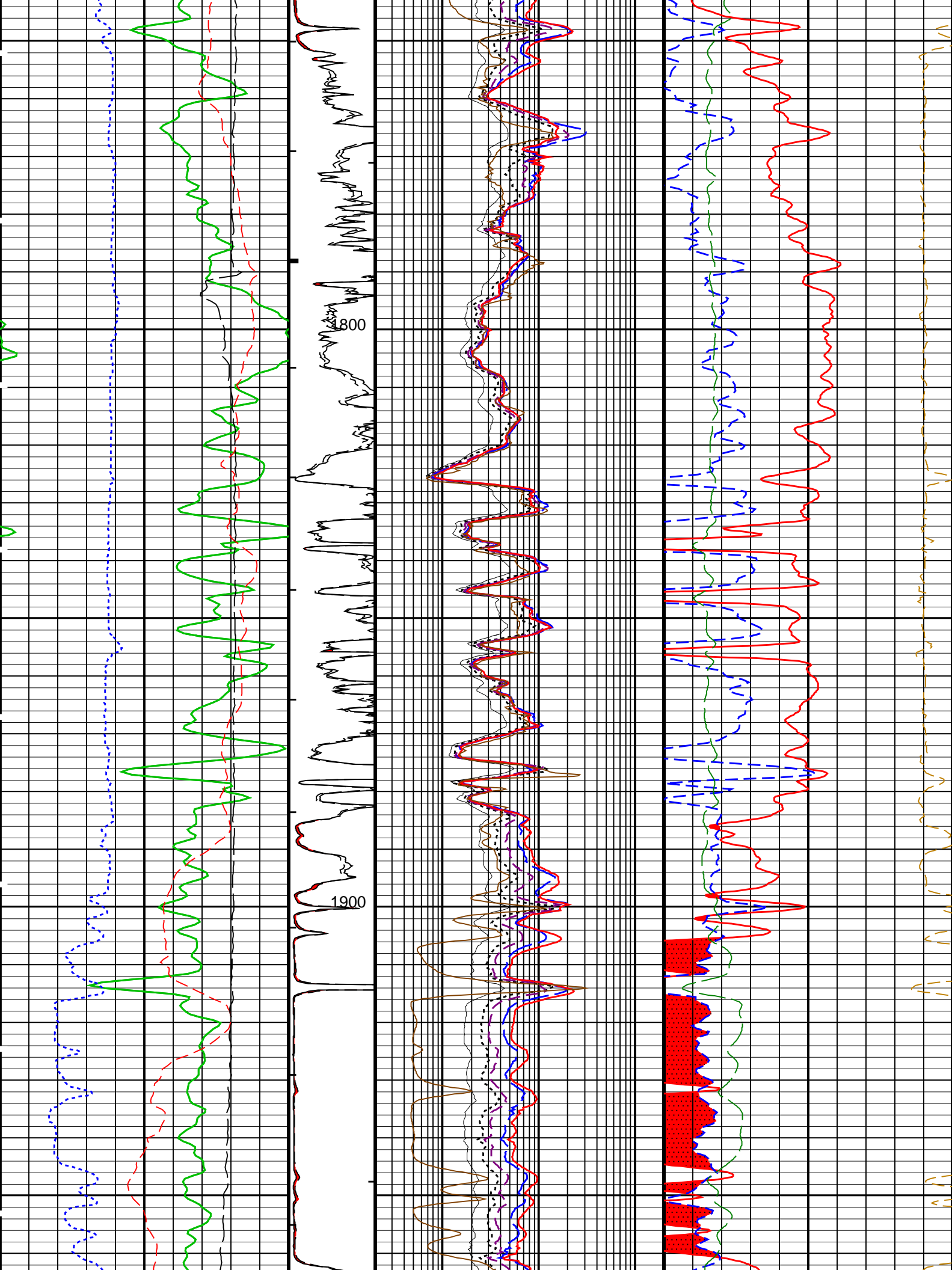


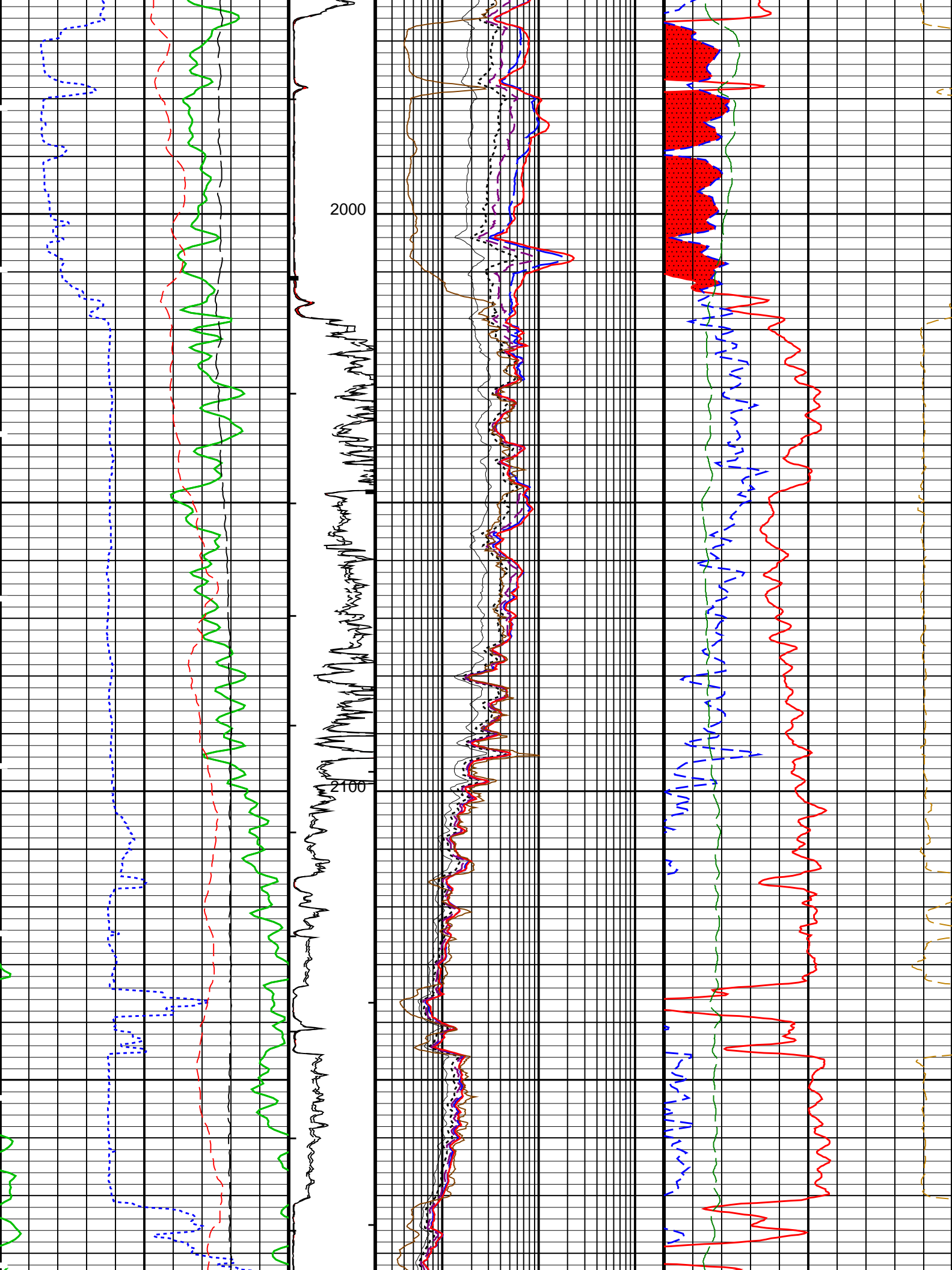
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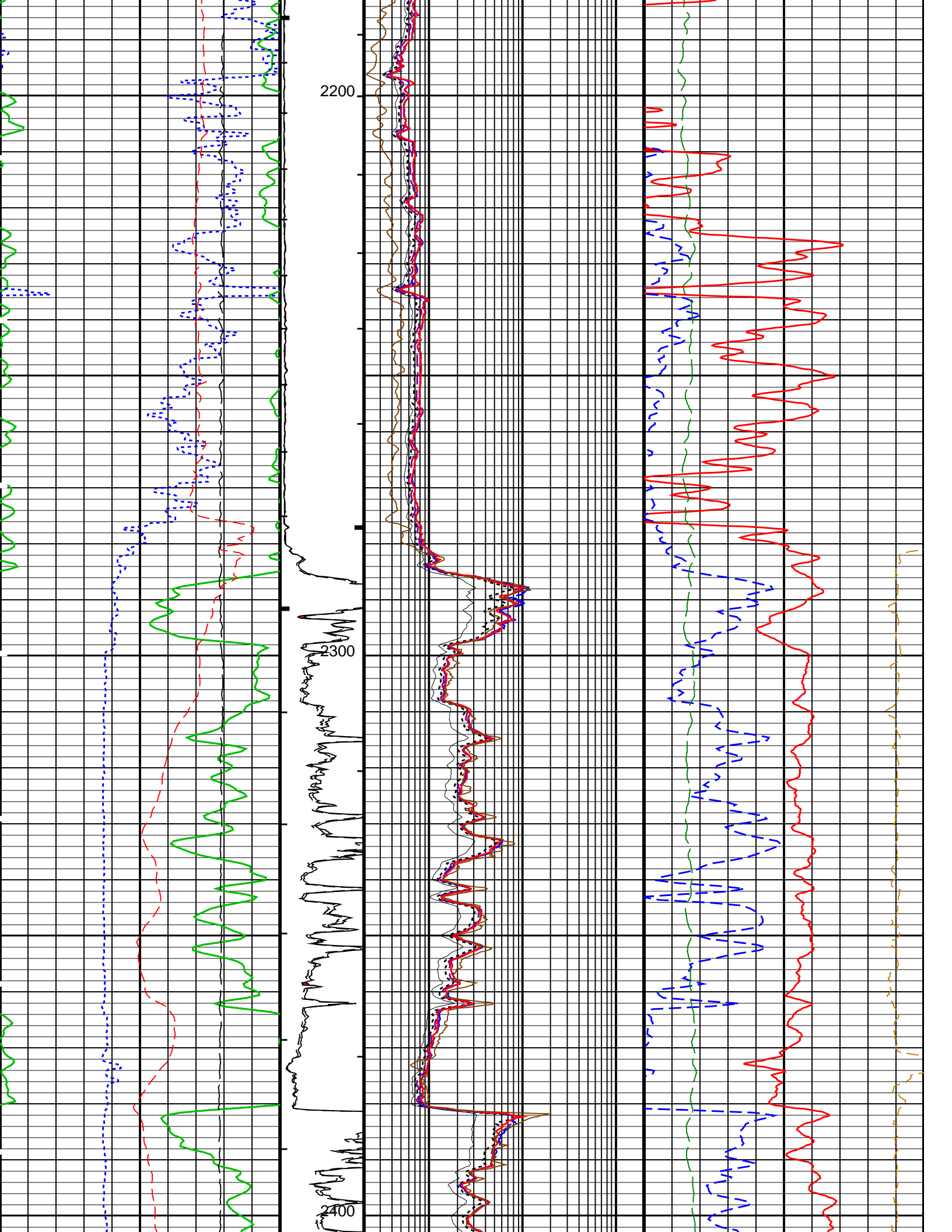
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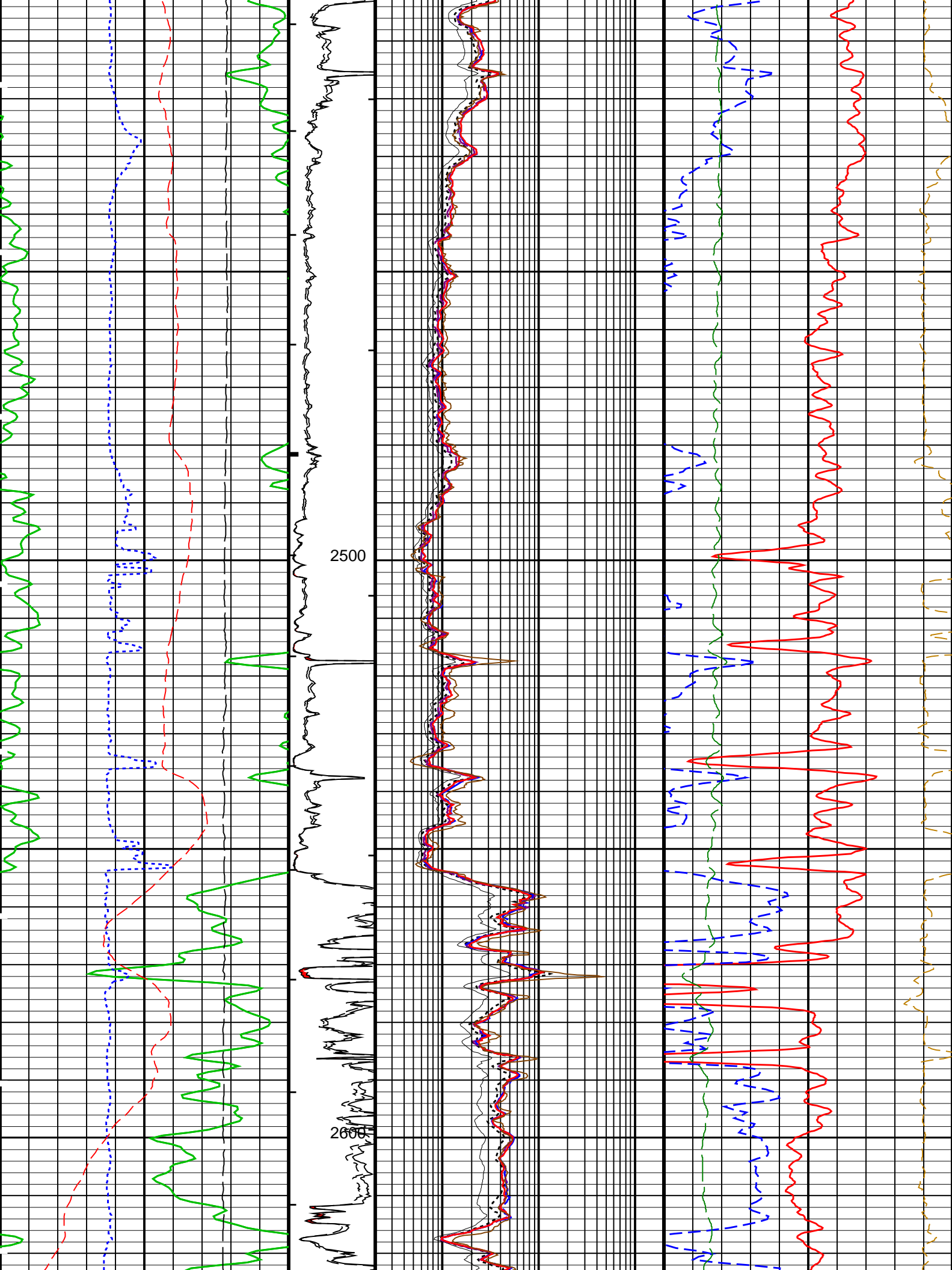
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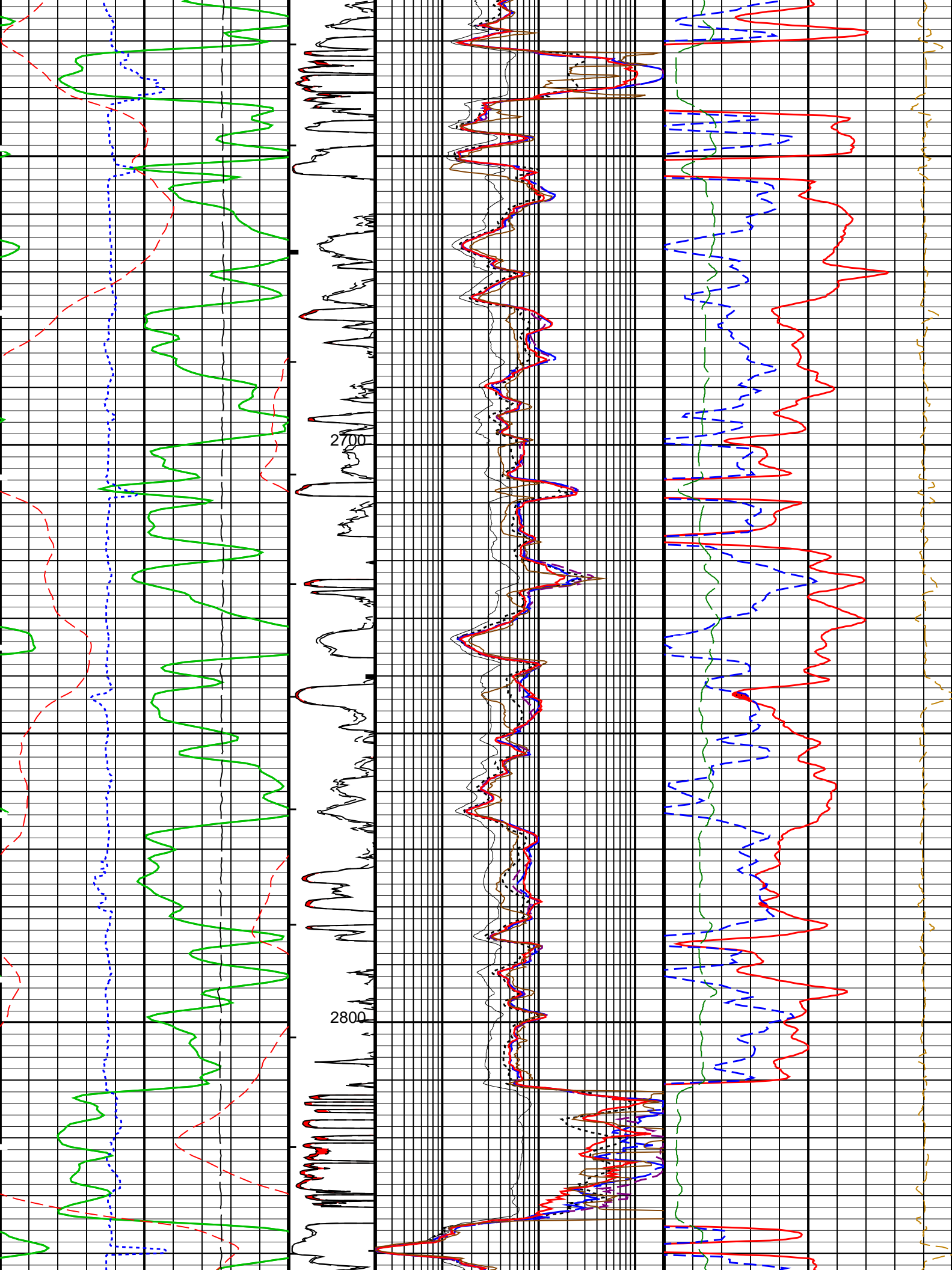


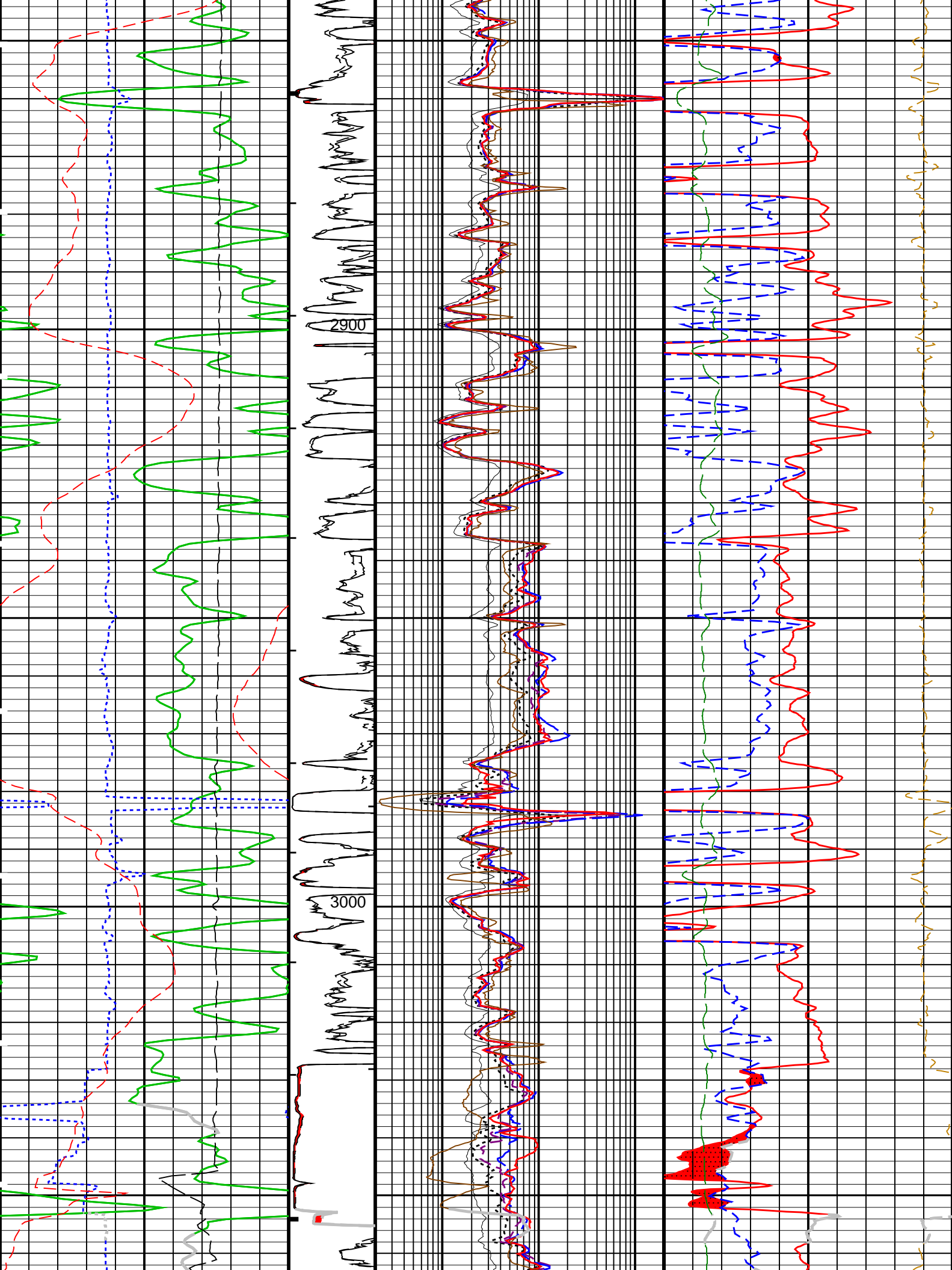


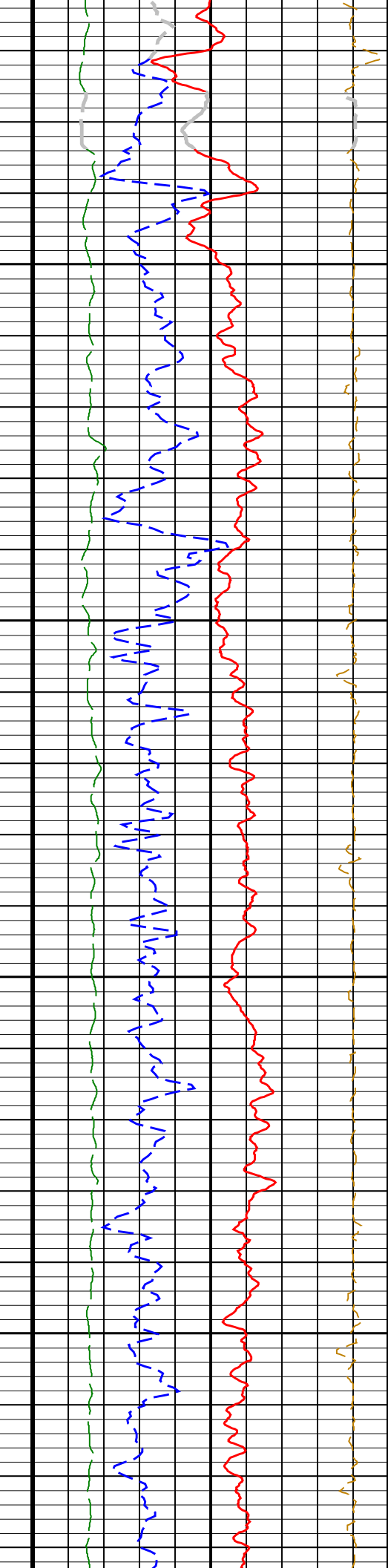
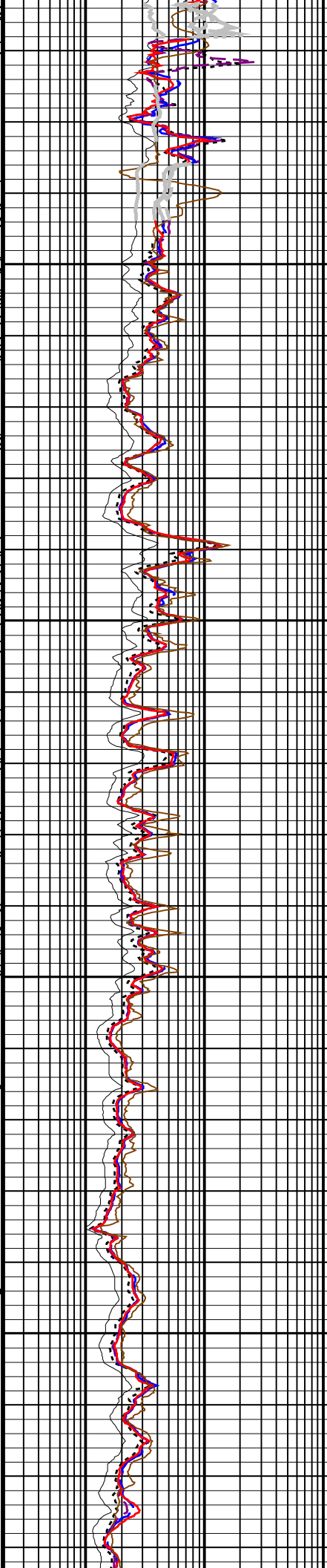
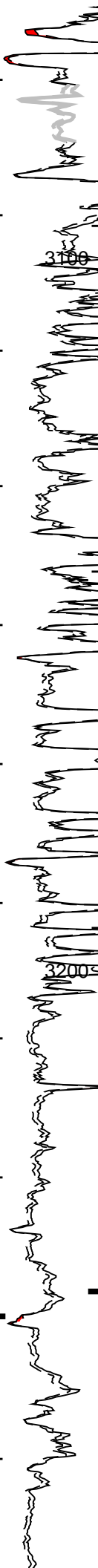
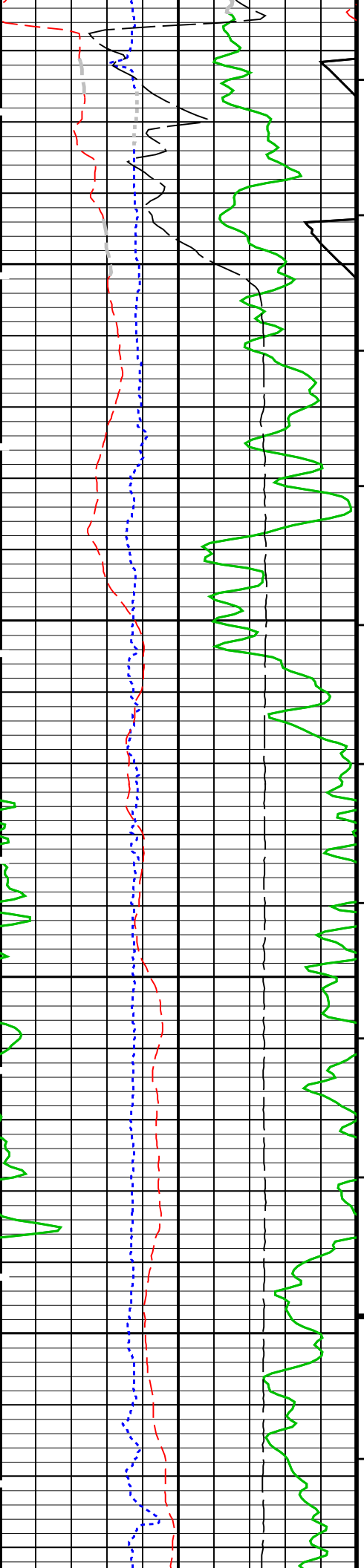


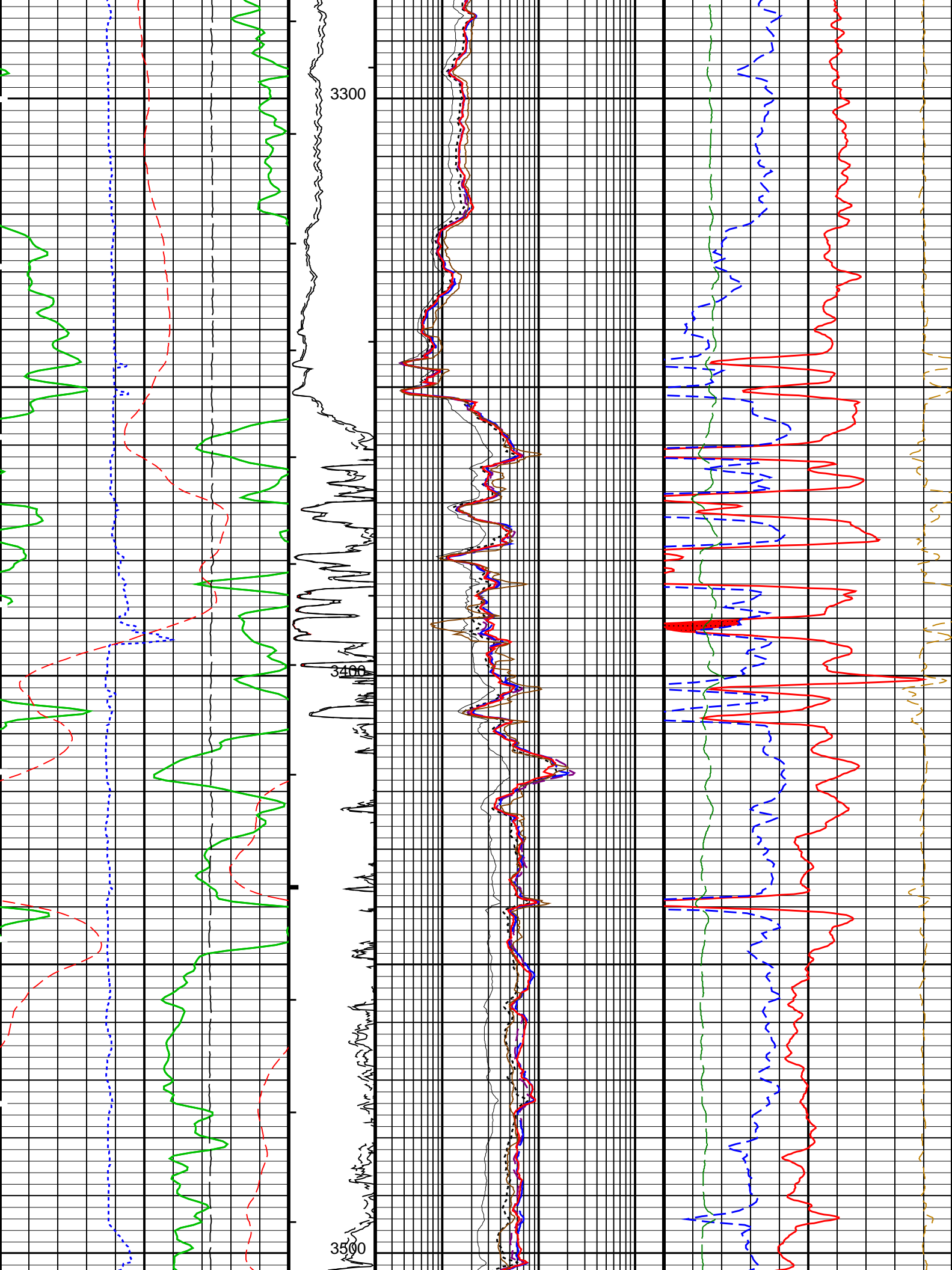


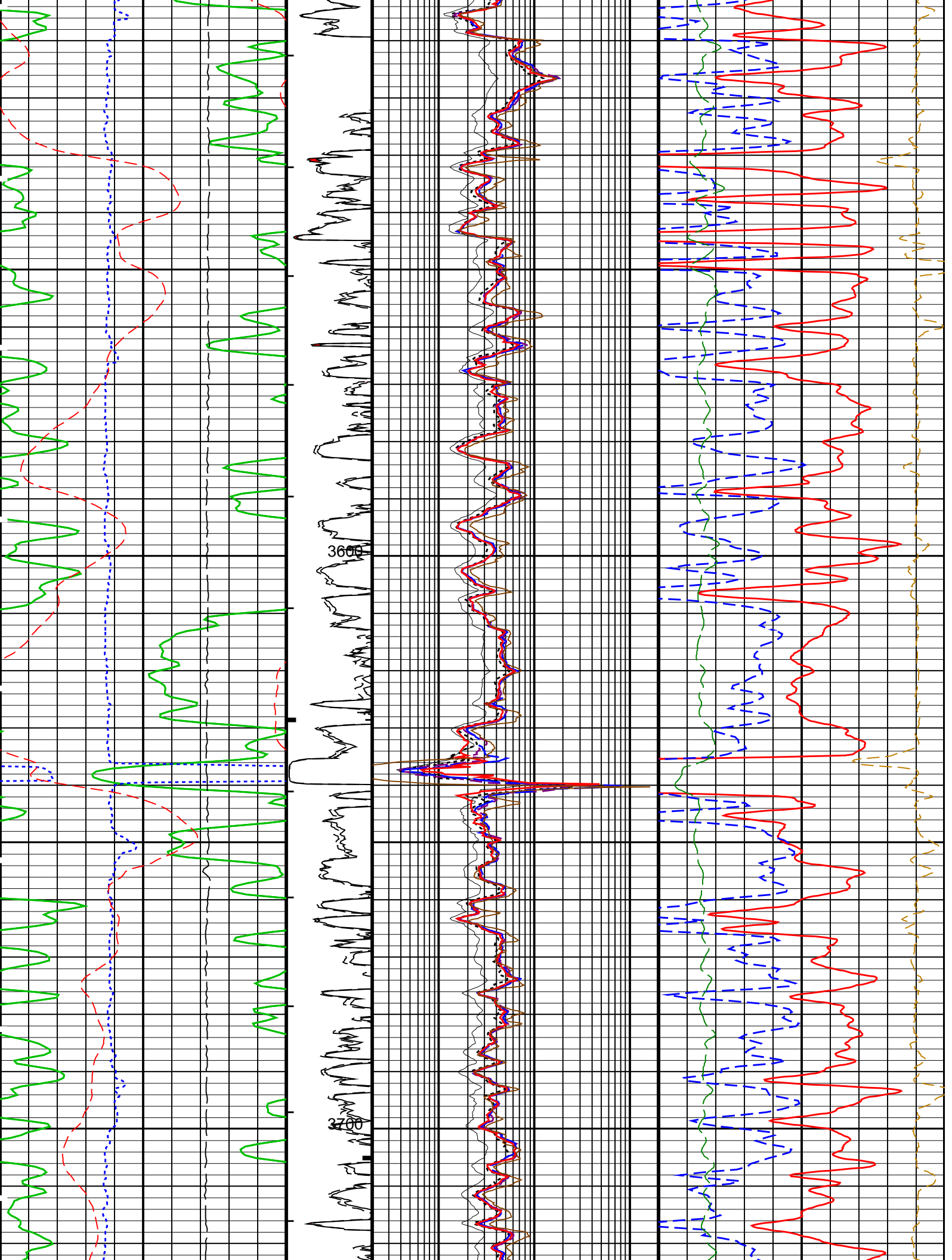


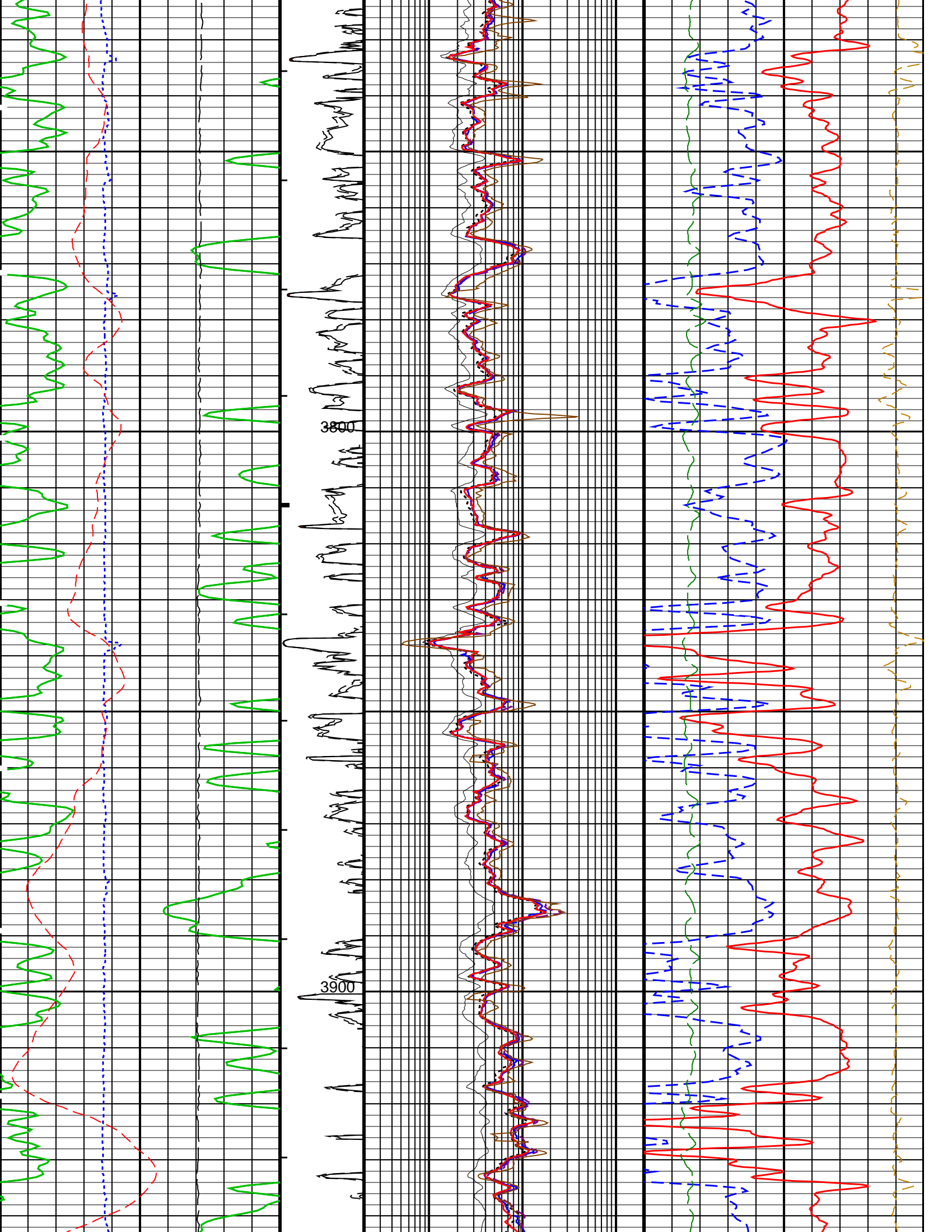


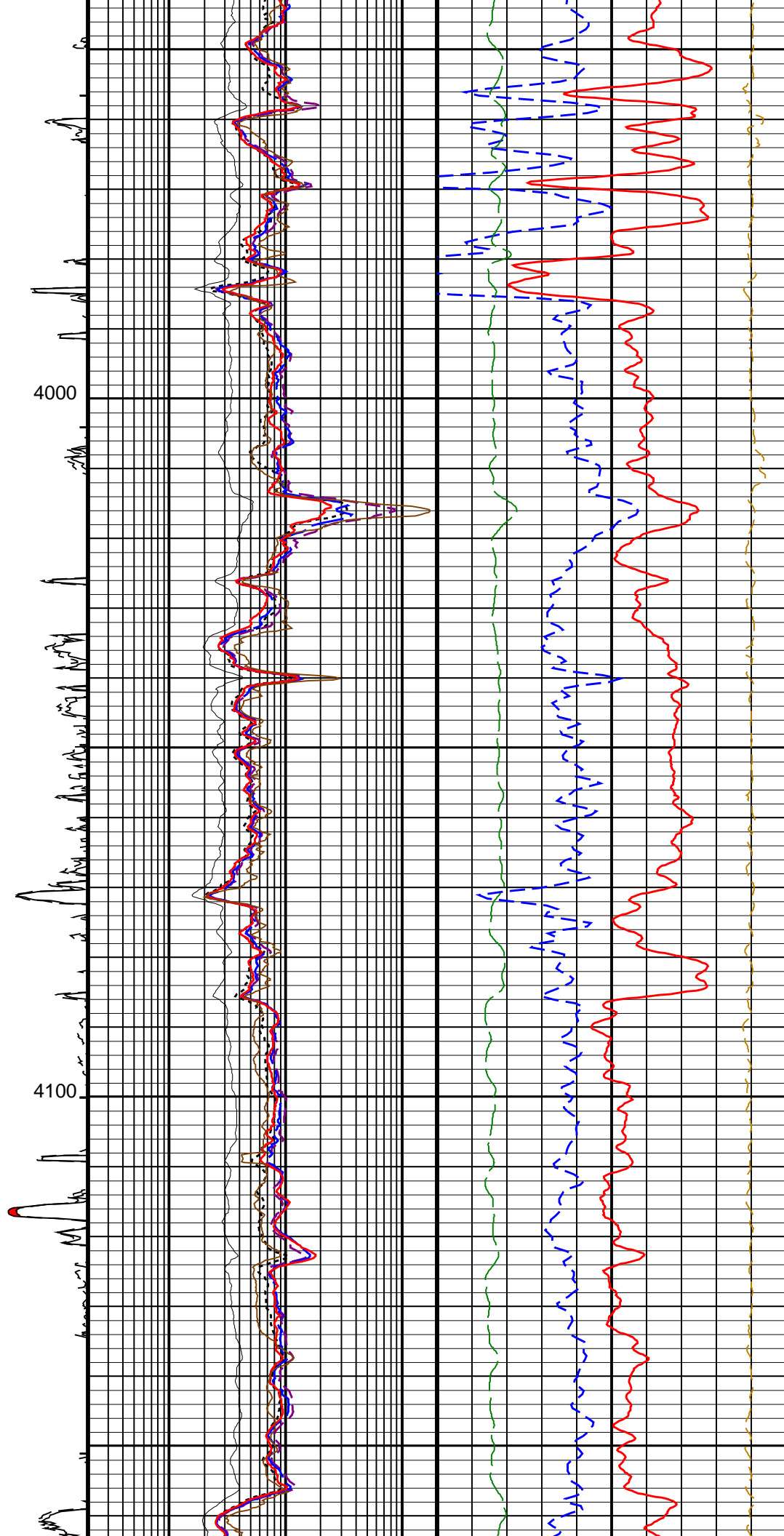
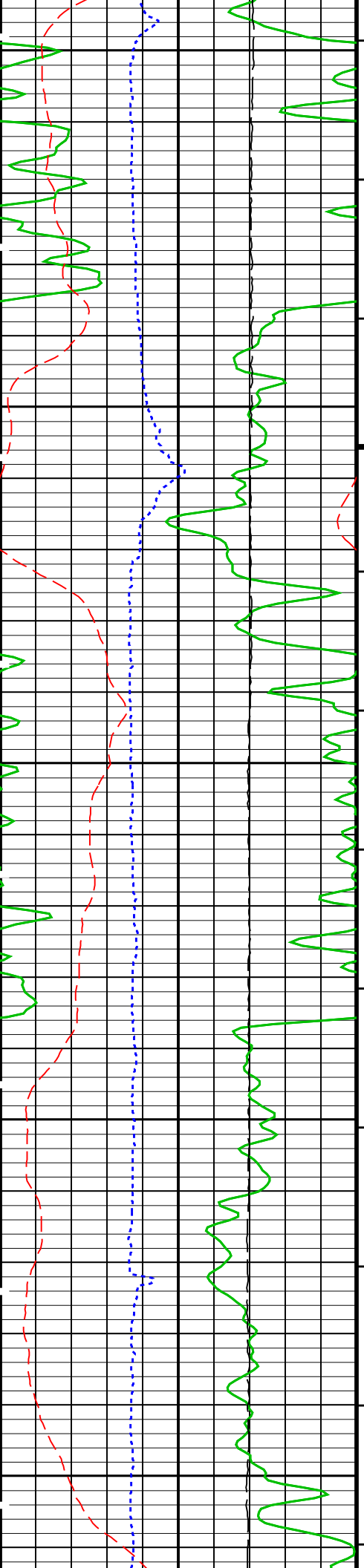


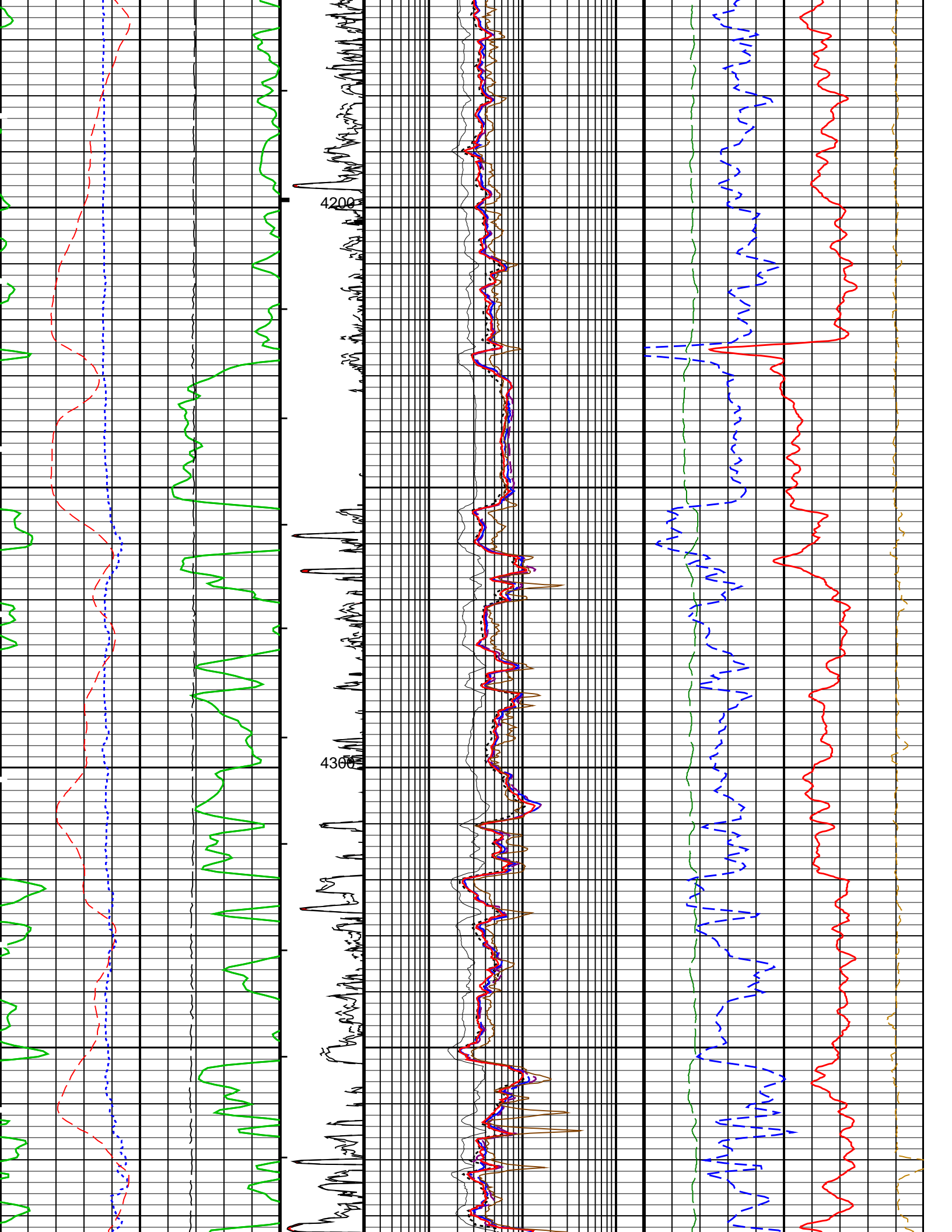


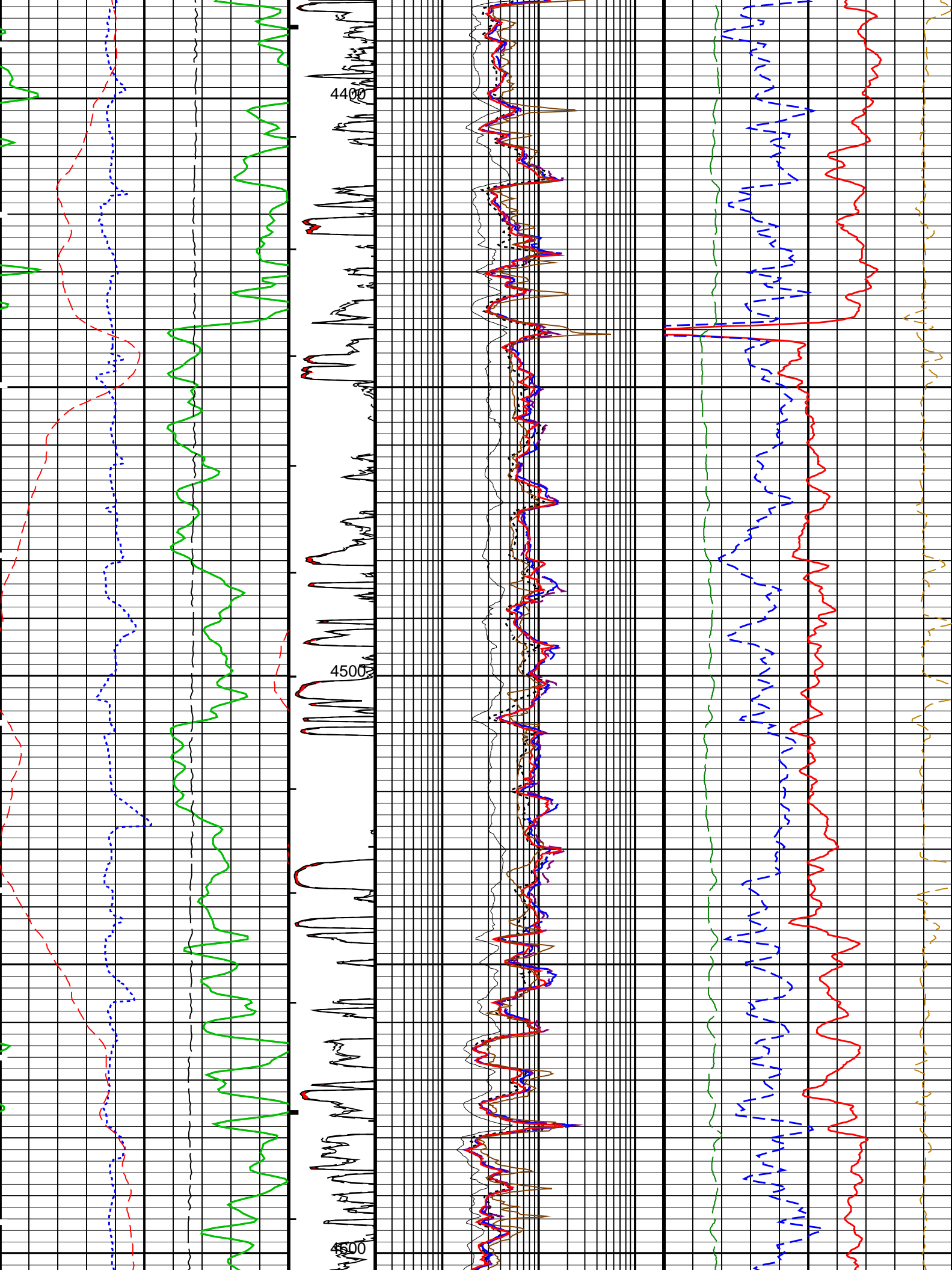


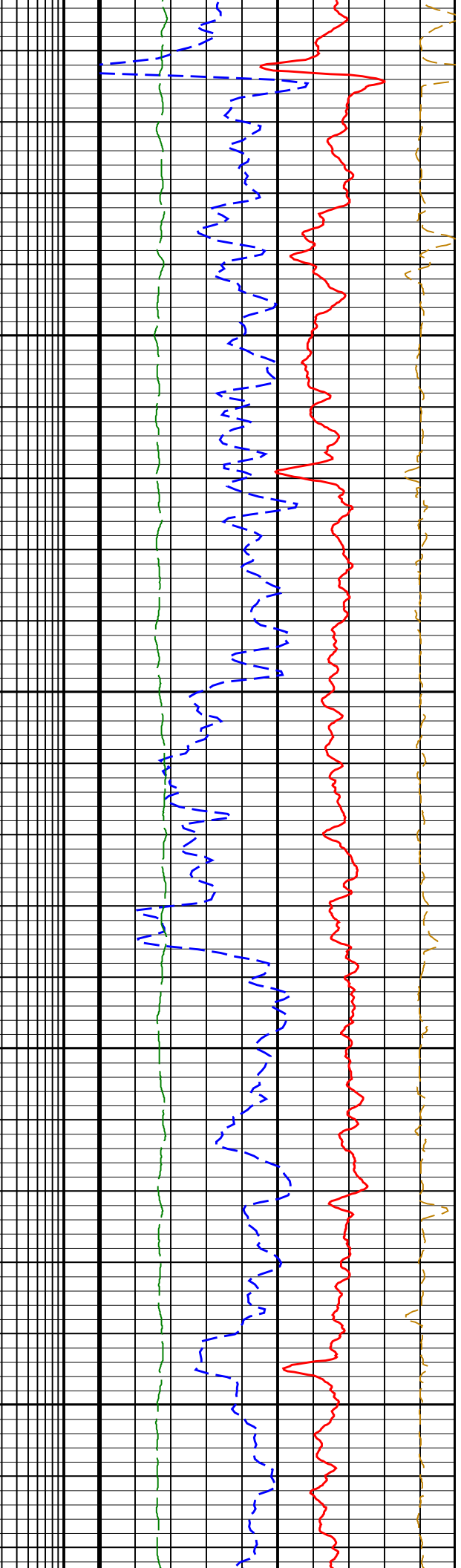
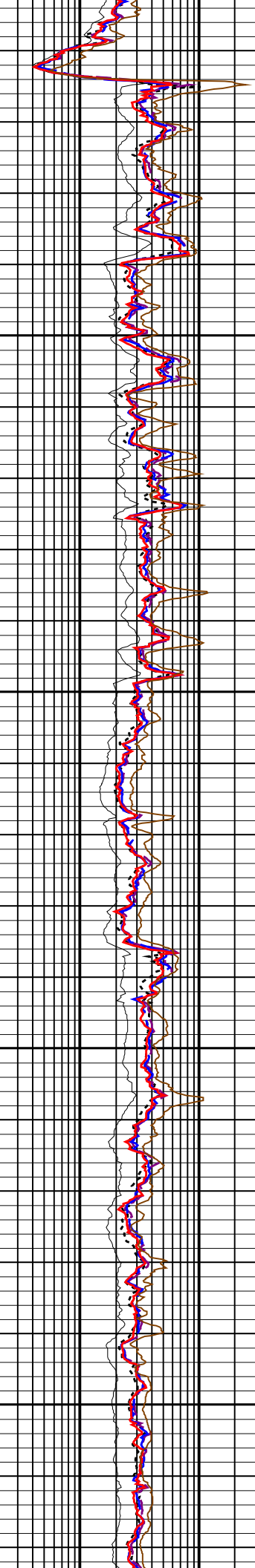
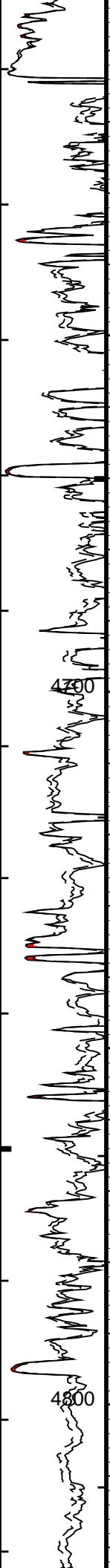
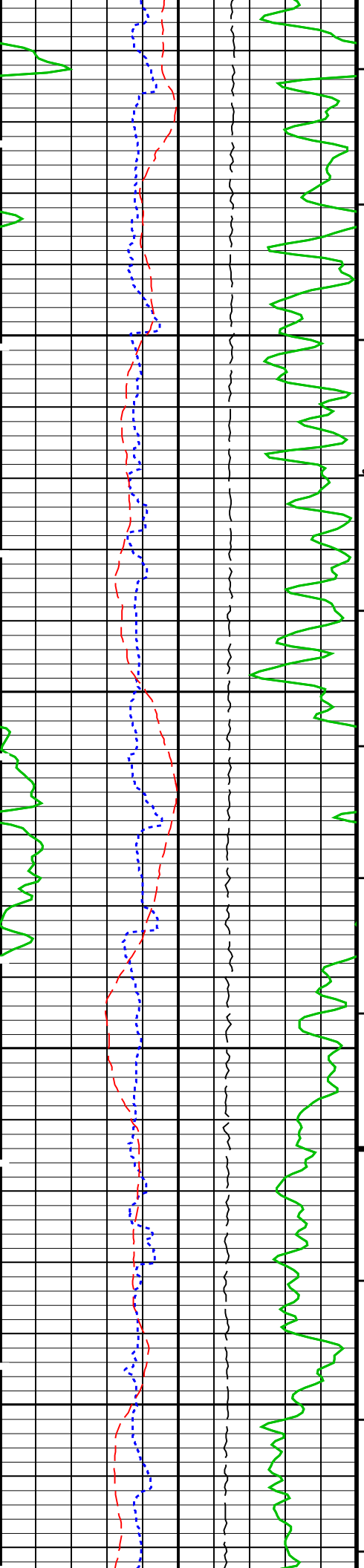


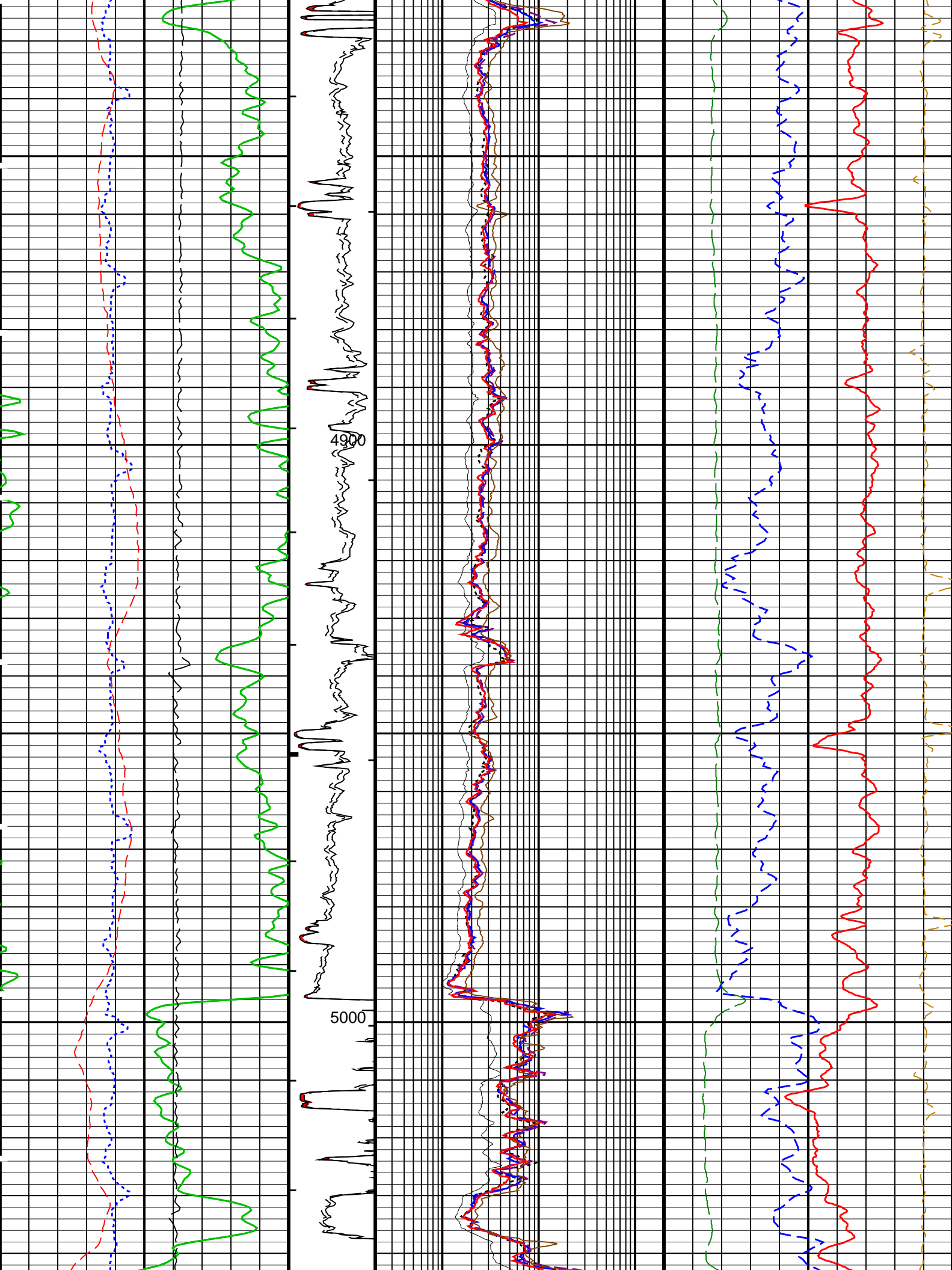


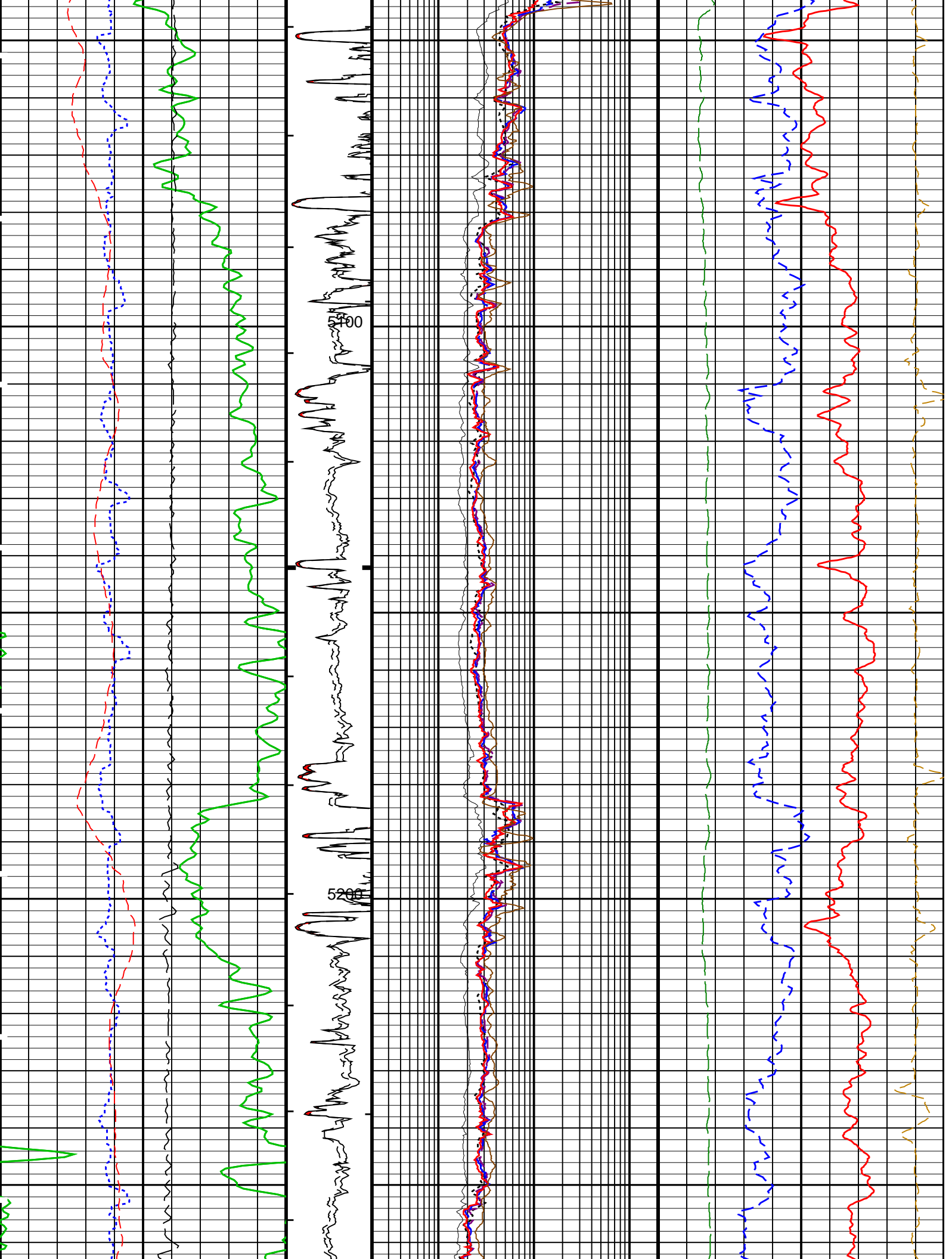


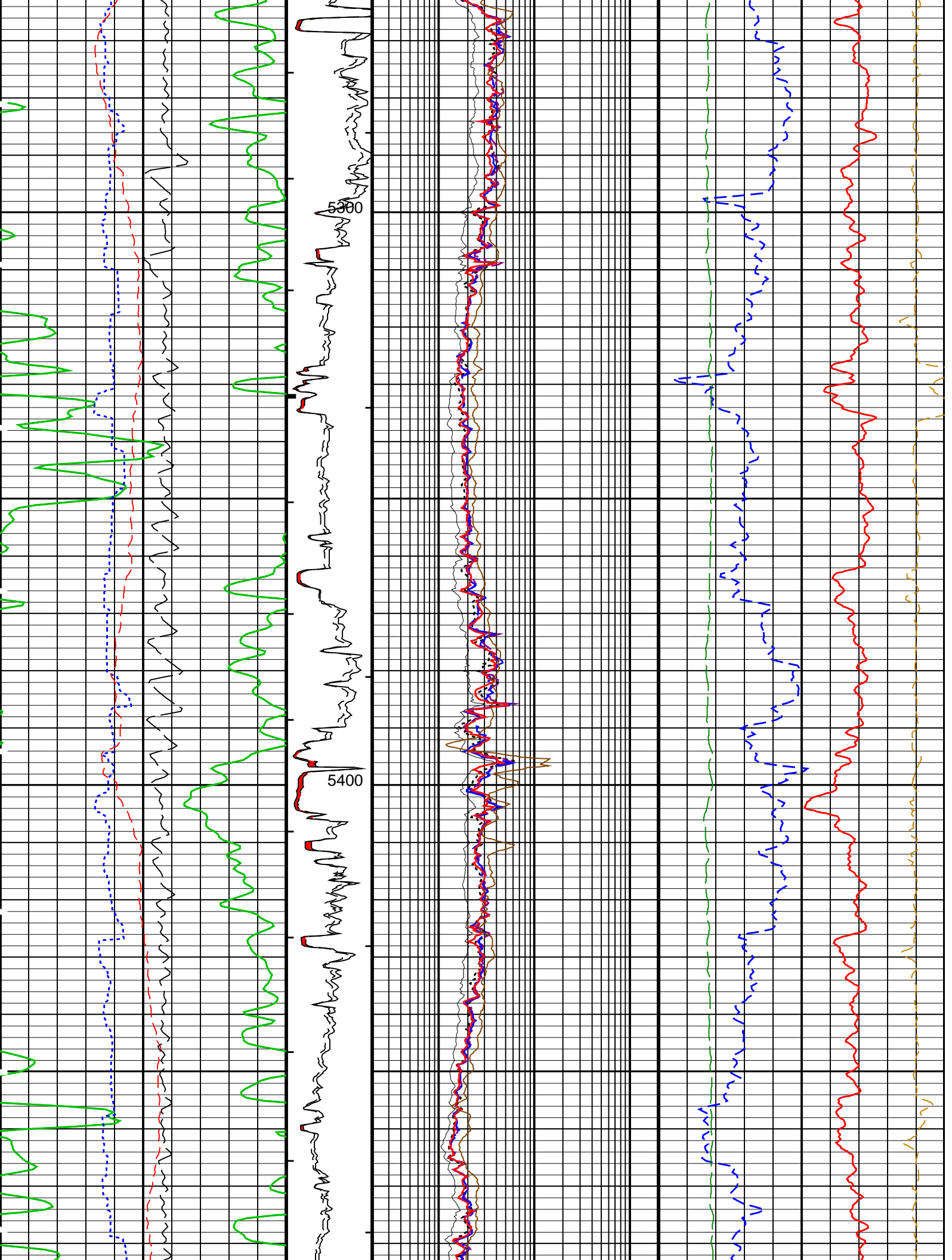


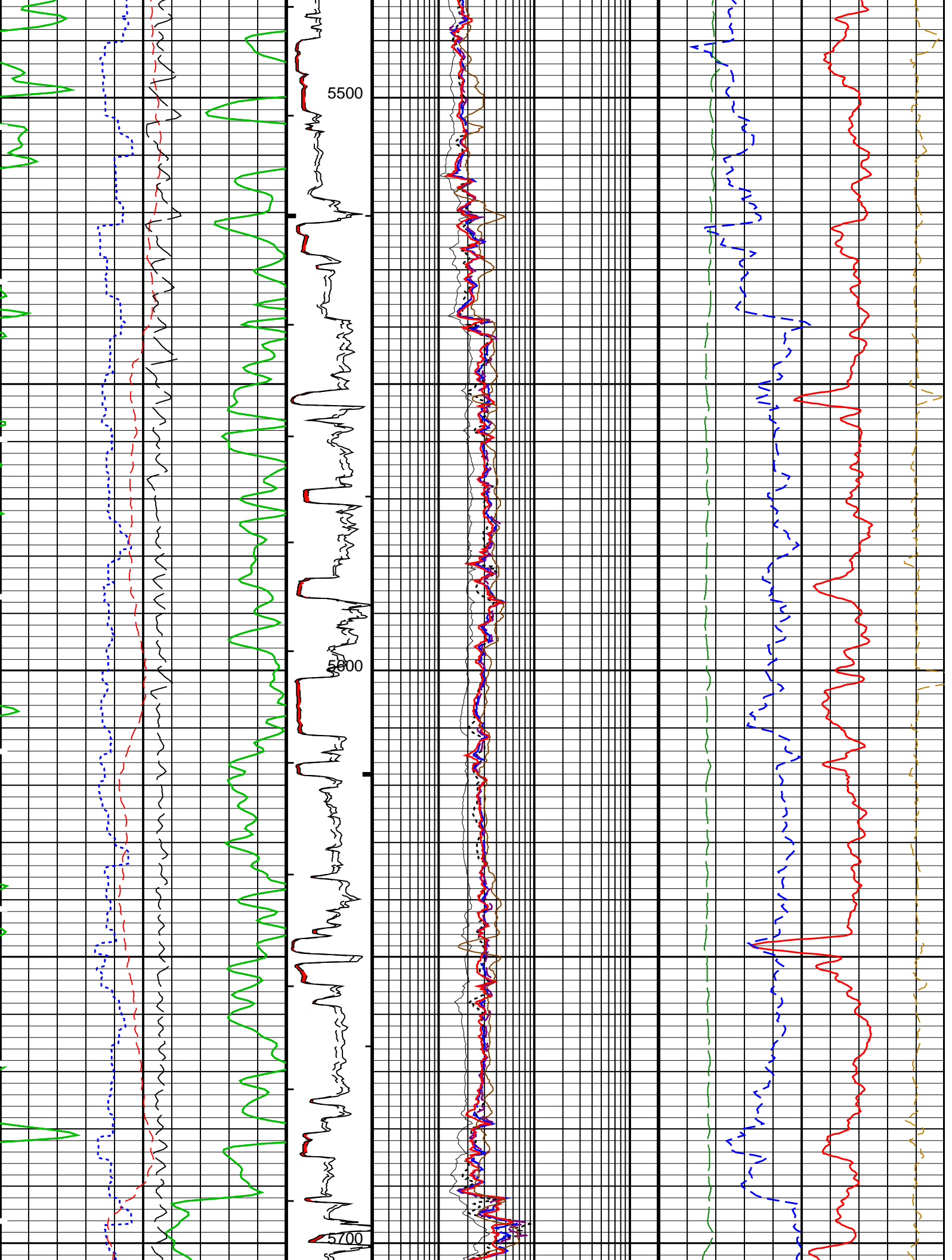


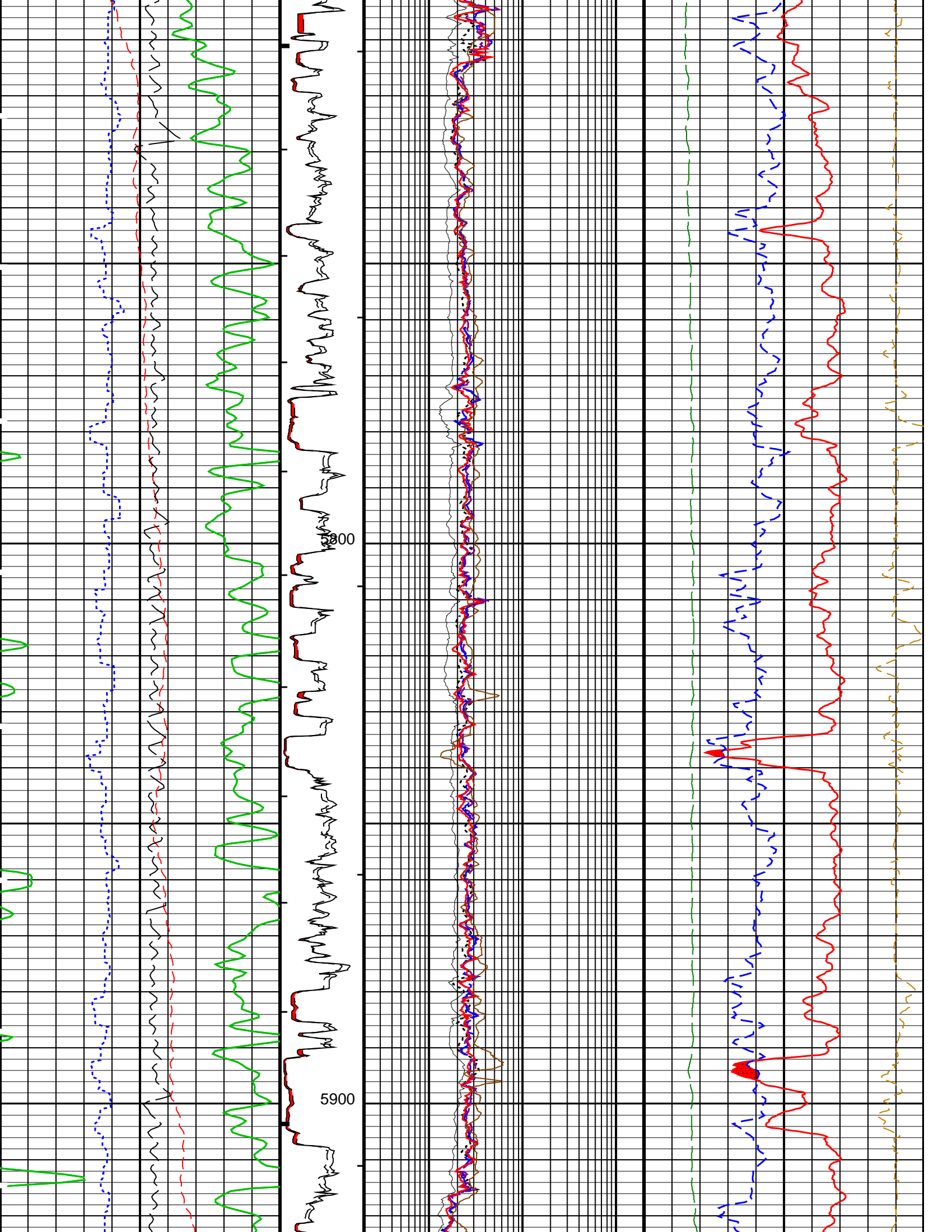


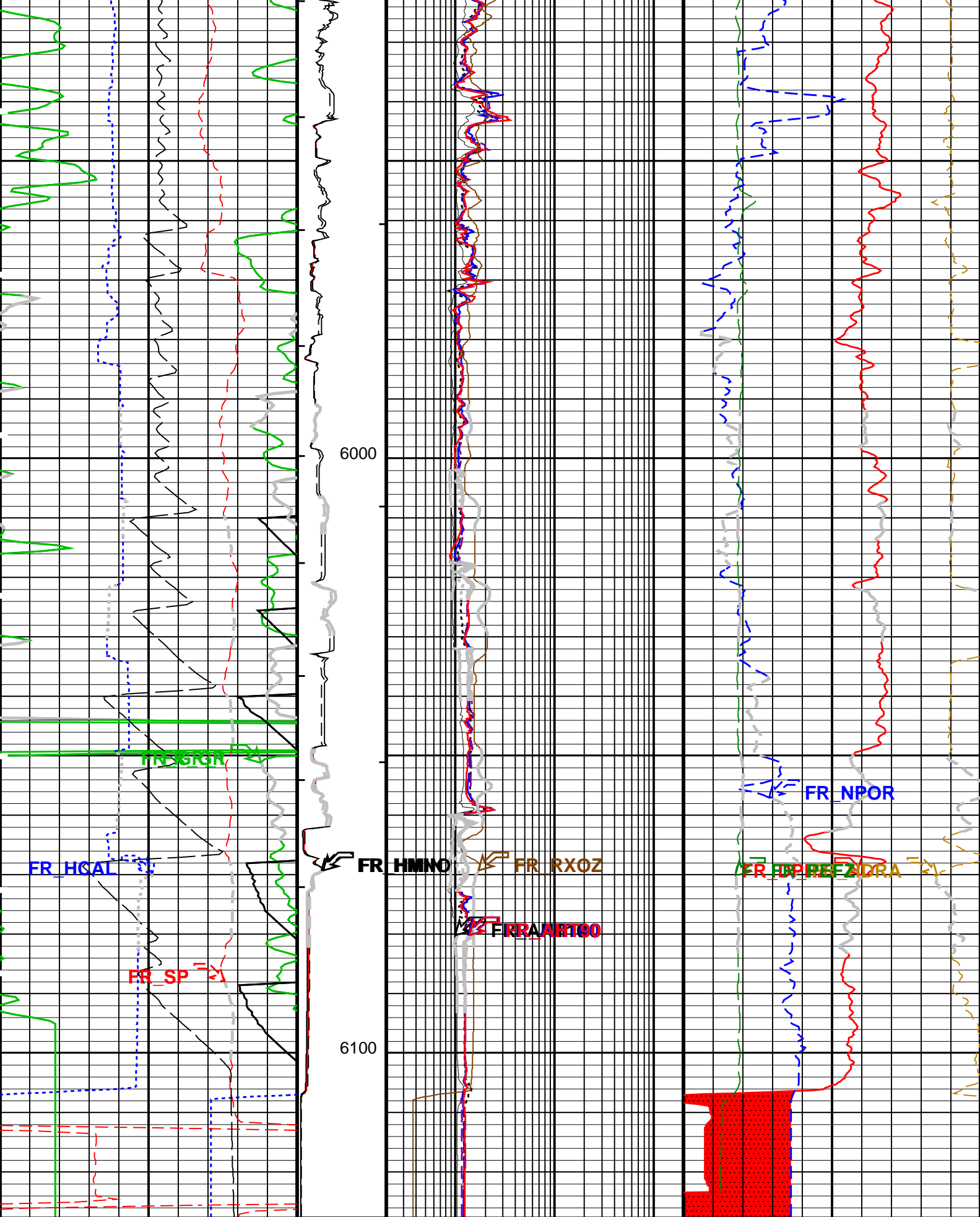












<div> <div>Tension (TENS)</div> <div>(LBF)</div> <div>100000</div> <div>0</div> </div>	<div> <div>Computed Micro Normal (HMNO) (OHMM)</div> <div>0</div> <div>40</div> </div>	<div> <div>AIT-H 20 Inch Investigation (AHT20) (OHMM)</div> <div>2</div> <div>2000</div> </div>	<div> <div>Alpha Processed Neutron Porosity (NPOR) (V/V)</div> <div>0.3</div> <div>-0.1</div> </div>	
<div> <div>Gamma Ray (GR)</div> <div>(GAPI)</div> <div>0</div> <div>150</div> </div>	<div> <div>Computed Micro Inverse (HMIN) (OHMM)</div> <div>0</div> <div>40</div> </div>	<div> <div>AIT-H 30 Inch Investigation (AHT30) (OHMM)</div> <div>2</div> <div>2000</div> </div>	<div> <div>Std. Res. Formation Pe (PEFZ) (-----)</div> <div>0</div> <div>10</div> </div>	<div> <div>Density Correction (HDRA) (G/C3)</div> <div>-0.2</div> <div>0.05</div> </div>
<div> <div>HILT Caliper (HCAL) (IN)</div> <div>6</div> <div>16</div> </div>		<div> <div>AIT-H 60 Inch Investigation (AHT60) (OHMM)</div> <div>2</div> <div>2000</div> </div>	<div> <div>Gas From DPHZ to NPOR</div> </div>	
		<div> <div>AIT-H 90 Inch Investigation (AHT90) (OHMM)</div> <div>2</div> <div>2000</div> </div>		
		<div> <div>Std. Res. Invaded Zone Resistivity (RXOZ) (OHMM)</div> <div>2</div> <div>2000</div> </div>		

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HAIT-H: Array Induction Tool – H			
AHAPL	Array Induction Answer Product Level(Depth Log/View only)		
	3_BholeCorr_BasicLogs_Radial_Processing		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	900	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	223	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHDITM	Array Induction Desired Tool Mode	0x00_Log_000	
AHEBC	Array Induction Enable Borehole Correction	Yes	
AHEBL	Array Induction Enable Basic Logs	Yes	
AHERP	Array Induction Enable Radial Processing	Yes	
AHETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AHIGS	Array Induction Select Akima Interpolation Gating	On	
AHLNV	Array Induction Log Not Valid Flag	Log_Valid-No_Default_Parameters	
AHMRD	Array Induction Mud Resistivity Calibration Depth	0	FT
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
AHRFV	Array Induction Radial Profiling Code Version Number	701	
AHRPM	Array Induction Radial Processing Mode	6_One_Two_and_Four	
AHRPV	Array Induction Radial Parametrization Code Version Number	232	
AHSTA	Array Induction Tool Standoff	1	IN
AHTNO	Array Induction Tool Serial Number	295	
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
AHTSE	Array Induction Temperature Selection (Sonde Error Correction)	Internal	
AHTTY	Array Induction Tool Type (of acquired data)	HAIT	
AHULV	Array Induction User Level Control	Normal	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_OneResA60	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	160	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
RTCO	RTCO – Rt Invasion Correction	YES	
CHT	Surface Hole Temperature	88	DEGF

SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	160	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	CALIPER	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HACPP	Accelerometer PROM Presence	PRESENT_DOWNHOLE	
HART	Accelerometer Reference Temperature	77	DEGF
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSSO	HRDD Nuclear Source Strength Option	NORMAL	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.68	G/C3
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e-005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e-005	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PEA_FILTER	PEA Filter	NO_FILTER	
PEFC_FILTER	PEFC Filter	NO_FILTER	
PHIMAX	HILT max porosity	35	PU
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
ECS-A: Elemental Capture Spectroscopy Tool			
	ECS Marquardt Spectrum	** V **	
SPEC_BARITE_MUD_FLAG	Barite Mud Flag for Spectroscopy Processing	Off	
SPEC_CSG_DEPTH	Casing Depth for Spectroscopy Processing	1620.5	FT
SPEC_ELE_STD_SHFT_FAC	Calibration Factor for Elemental Spectral Standards	1.28461	
SPL_CLAY_MODEL	SpectroLith Clay Model	Sub-Arkose	
SPL_SULFUR_MINERAL	SpectroLith Sulfur Mineral Option	Pyrite	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	160	DEGF
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	

H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	0.00357888	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	-999.25	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	-999.25	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.964377	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.966128	
DIR: Directional Survey Computation			
SPED	East Departure of Starting Point	0	FT
SPND	North Departure of Starting Point	0	FT
SPVD	TVD of Starting Point	0	FT
TAZI	Vertical Section Azimuth	0	DEG
TIED	East Departure of Tie-in Point	0	FT
TIMD	Along-hole depth of Tie-in Point	0	FT
TIND	North Departure of Tie-in Point	0	FT
TIVD	TVD of Tie-in Point	0	FT
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	160	DEGF
FCD	Future Casing (Outer) Diameter	7.625	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	5	FT
TDD	Total Depth - Driller	6180.00	FT
TDL	Total Depth - Logger	6088.00	FT
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	450.00	PPM
CSIZ	Current Casing Size	10.750	IN
CWEI	Casing Weight	40.50	LB/F
DFD	Drilling Fluid Density	9.20	LB/G
DO	Depth Offset for Playback	8.0	FT
FLEV	Fluid Level	0.00	FT
MST	Mud Sample Temperature	111.00	DEGF
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.2600	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	6088	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: TCOMBO_S5 Vertical Scale: 5" per 100' Graphics File Created: 16-Oct-2012 02:26

OP System Version: 19C0-187

HAIT-H	SRPC-5095-H2-2011-OP19_I	HILTH-FTB	SRPC-5095-H2-2011-OP19_I
ECS-A	19C0-187	ECC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
DTC-H	19C0-187		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015LUP	FN:16	PRODUCER	15-Oct-2012 23:05	6120.0 FT	296.5 FT
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_018PUP	FN:22	PRODUCER	16-Oct-2012 02:26
RTB	AIT_TLD_MCFL_CNL_018PUP	FN:23	PRODUCER	16-Oct-2012 02:26

Company: SHELL

Well: DAWSON CREEK 1 25

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_018PUP	FN:22	PRODUCER	16-Oct-2012 02:26	6127.5 FT	304.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_016LUP	FN:18	PRODUCER	16-Oct-2012 02:05	2107.5 FT	1372.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_020PUP	FN:26	PRODUCER	16-Oct-2012 02:37	2115.0 FT	1552.0 FT
RTB	AIT_TLD_MCFL_CNL_020PUP	FN:27	PRODUCER	16-Oct-2012 02:37	2115.0 FT	1552.0 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 239.64 F3

Cement Volume = 82.52 F3 (assuming 7.63 IN casing O.D.)

Computed from 2115.0 FT to 1620.0 FT using data channel(s) HCAL

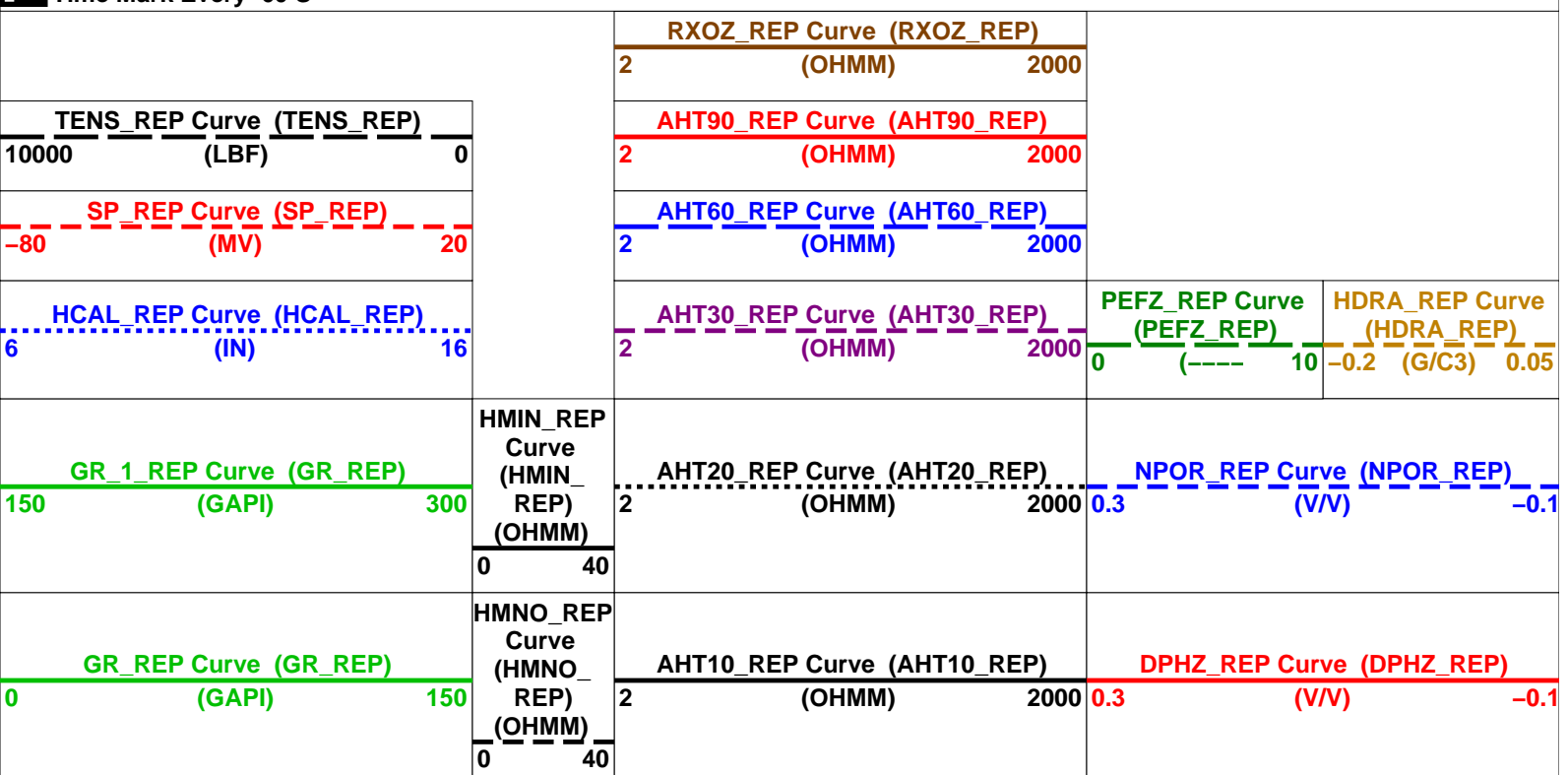
OP System Version: 19C0-187

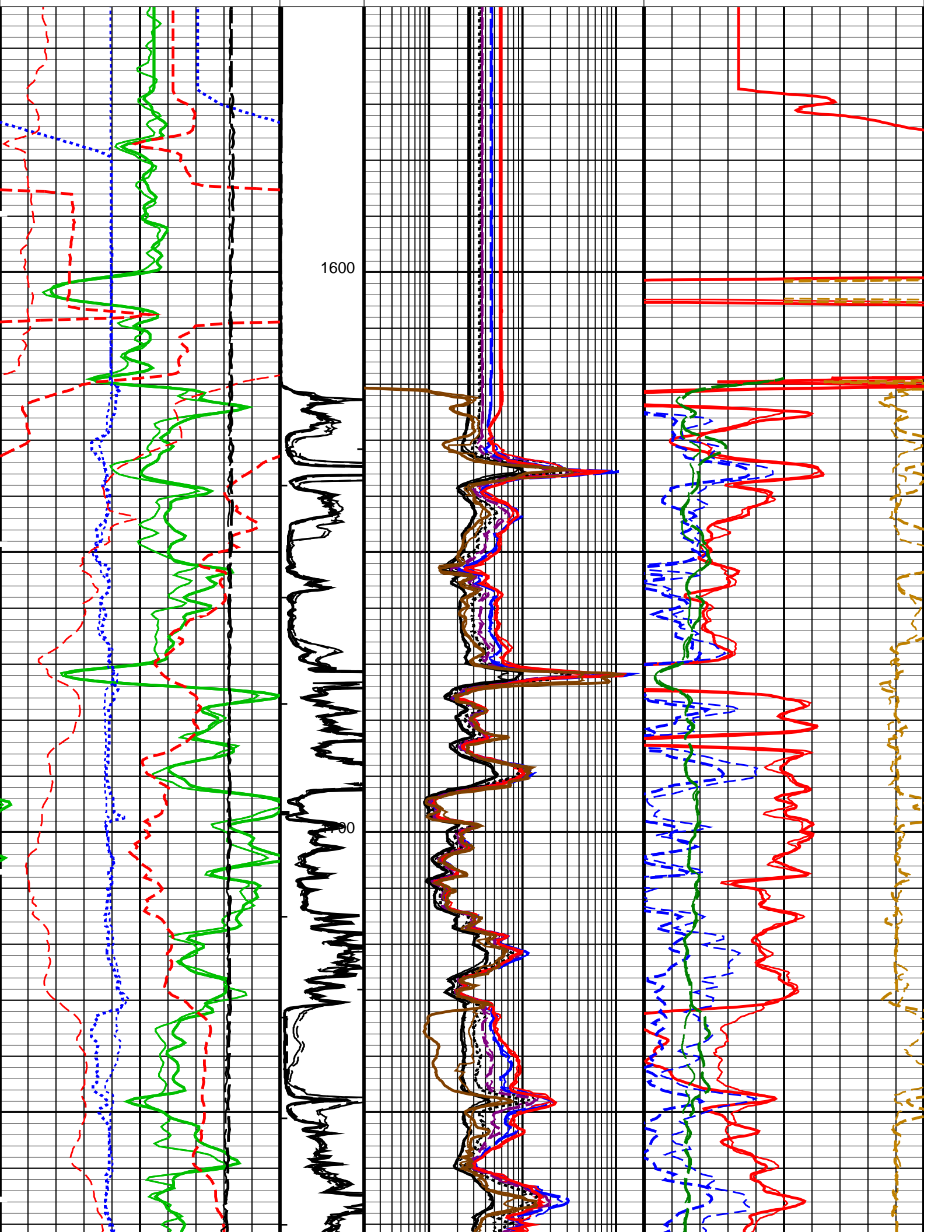
HAIT-H	SRPC-5095-H2-2011-OP19_I	HILTH-FTB	SRPC-5095-H2-2011-OP19_I
ECS-A	19C0-187	ECC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
DTC-H	19C0-187		

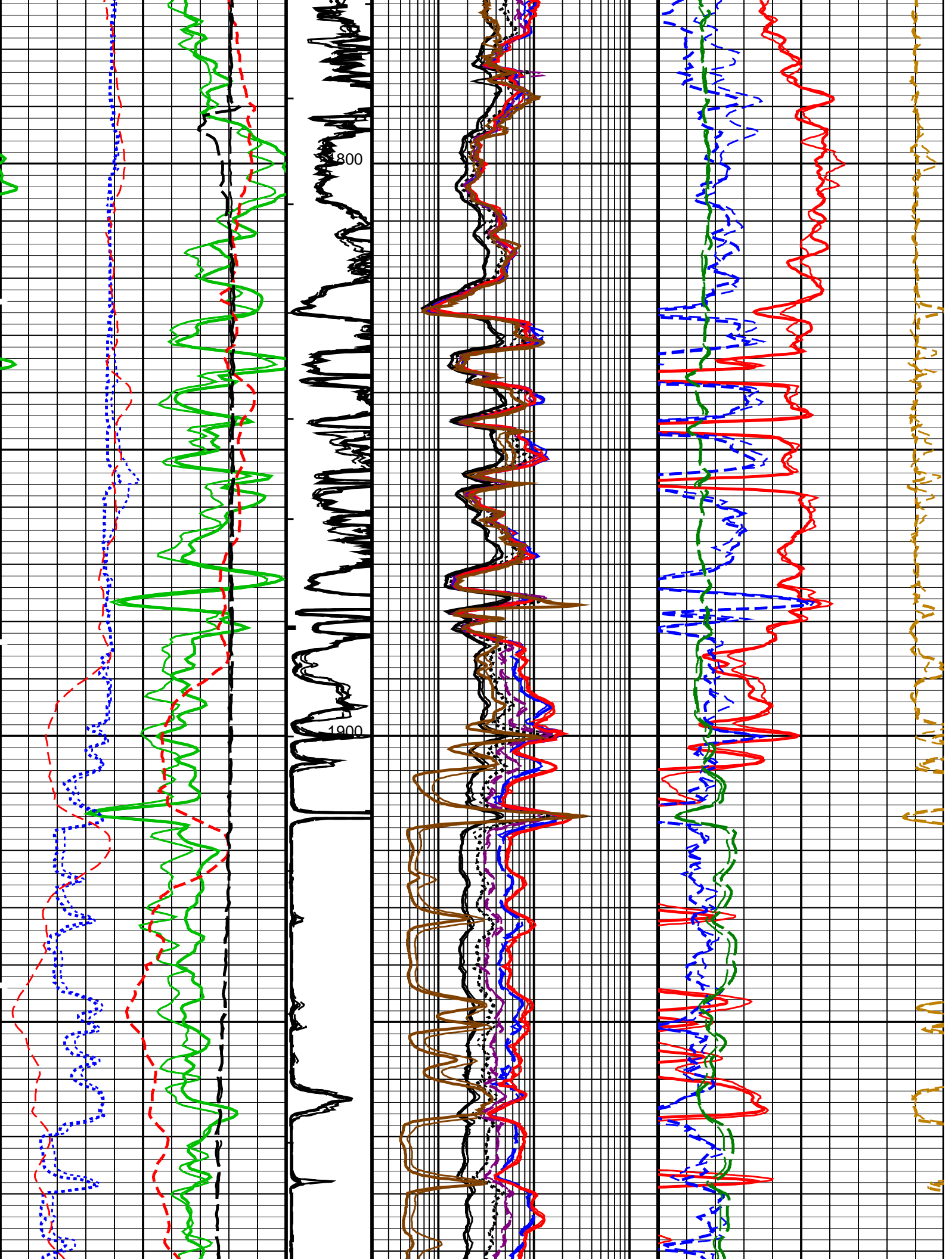
PIP SUMMARY

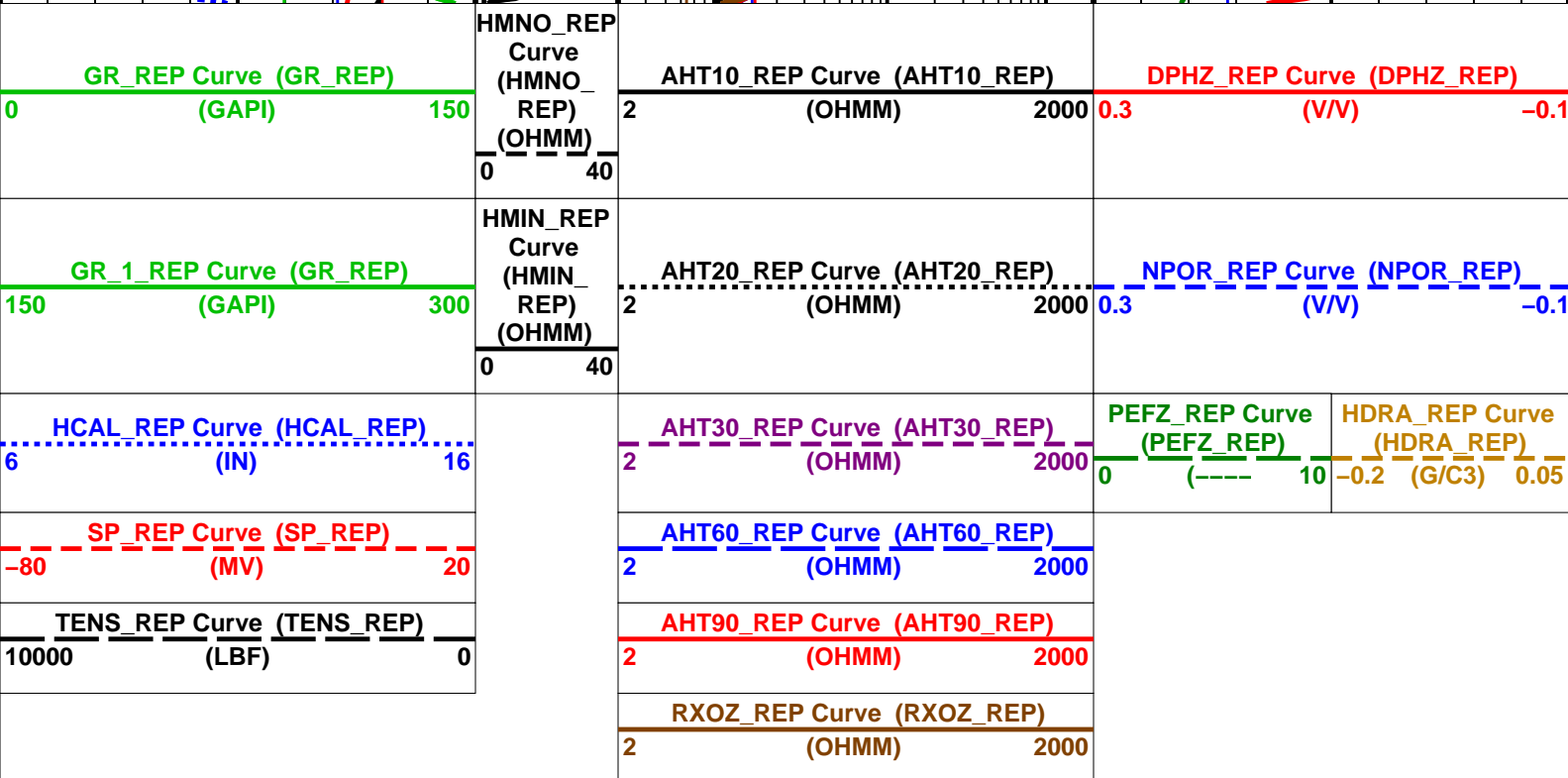
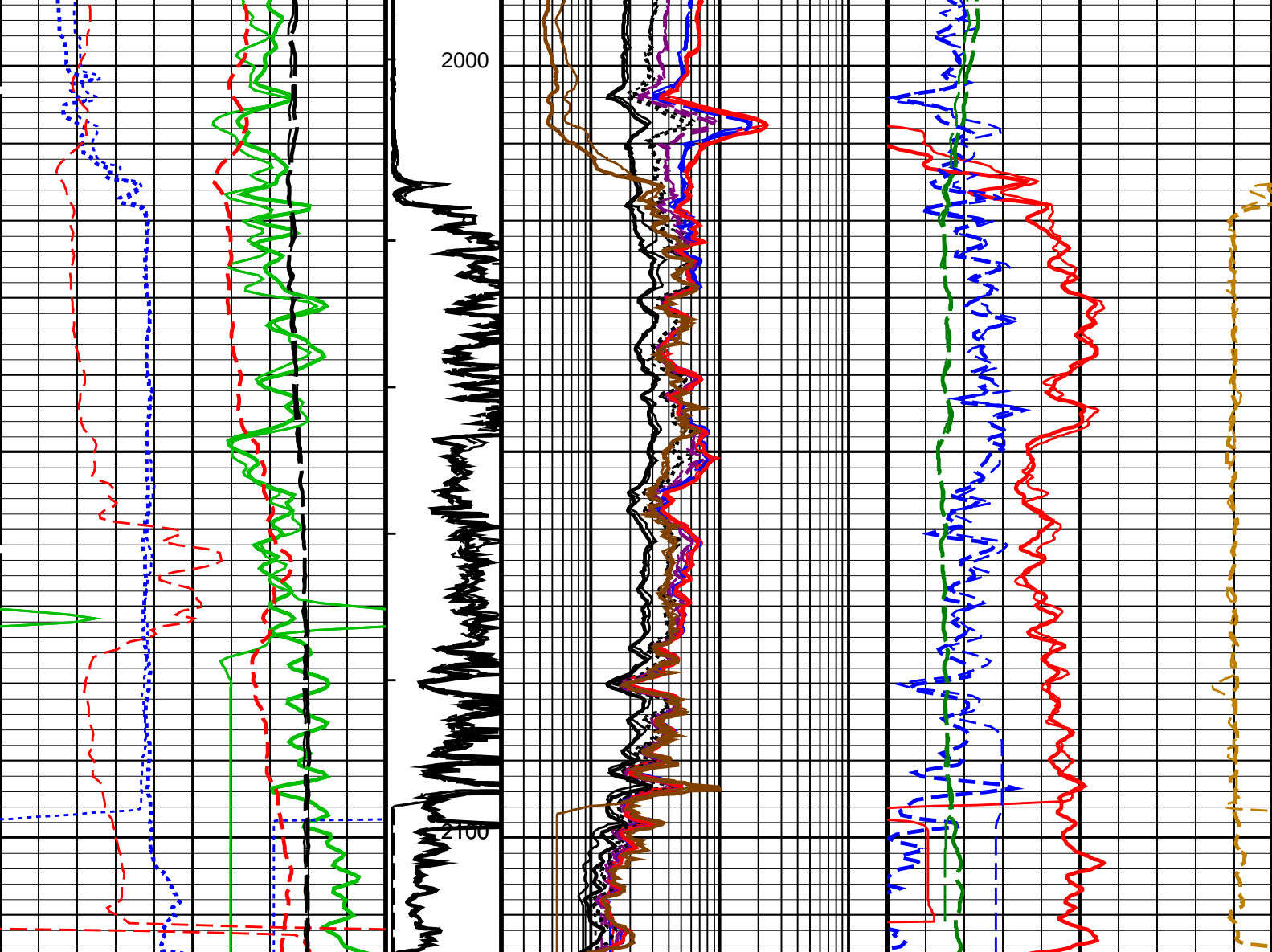
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S









PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- ┐ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3

Parameters			
DLIS Name	Description	Value	
HAIT-H: Array Induction Tool – H			
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	900	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	223	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
AHRFV	Array Induction Radial Profiling Code Version Number	701	
AHRPV	Array Induction Radial Parametrization Code Version Number	232	
AHSTA	Array Induction Tool Standoff	1	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	160	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	160	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	CALIPER	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.68	G/C3
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	160	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
DIR: Directional Survey Computation			
SPVD	TVD of Starting Point	0	FT
TIMD	Along-hole depth of Tie-in Point	0	FT
TIVD	TVD of Tie-in Point	0	FT
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	

BHT	Bottom Hole Temperature (used in calculations)	160	DEGF
FCD	Future Casing (Outer) Diameter	7.625	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
TDL	Total Depth – Logger	6088.00	FT
System and Miscellaneous			
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	450.00	PPM
CSIZ	Current Casing Size	10.750	IN
CWEI	Casing Weight	40.50	LB/F
DFD	Drilling Fluid Density	9.20	LB/G
DO	Depth Offset for Playback	8.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	0.00	FT
MST	Mud Sample Temperature	111.00	DEGF
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.2600	OHMM
TD	Total Depth	6088	FT

Format: TCOMBO_S5_REP Vertical Scale: 5" per 100' Graphics File Created: 16-Oct-2012 02:37

OP System Version: 19C0-187

HAIT-H	SRPC-5095-H2-2011-OP19_I	HILTH-FTB	SRPC-5095-H2-2011-OP19_I
ECS-A	19C0-187	ECC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
DTC-H	19C0-187		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_018PUP	FN:22	PRODUCER	16-Oct-2012 02:26	6127.5 FT	304.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_016LUP	FN:18	PRODUCER	16-Oct-2012 02:05	2107.5 FT	1372.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_020PUP	FN:26	PRODUCER	16-Oct-2012 02:37
RTB	AIT_TLD_MCFL_CNL_020PUP	FN:27	PRODUCER	16-Oct-2012 02:37

Schlumberger

CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase							
Master: 5-Sep-2012 21:19 Before: 15-Oct-2012 22:02							
Thru Cal Magnitude – 0	0	0.6240	0.6292	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.280	1.291	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6357	0.6410	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7169	0.7229	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.344	1.356	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.951	1.967	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.950	1.967	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.987	1.987	N/A	N/A	N/A	V

Thru Cal Magnitude - 7	0	1.387	1.397	N/A	N/A	N/A	V
Phase - 0	0	66.83	66.93	N/A	N/A	N/A	DEG
Phase - 1	0	65.80	65.89	N/A	N/A	N/A	DEG
Phase - 2	0	62.01	62.09	N/A	N/A	N/A	DEG
Phase - 3	0	61.23	61.32	N/A	N/A	N/A	DEG
Phase - 4	0	54.81	54.88	N/A	N/A	N/A	DEG
Phase - 5	0	52.90	52.96	N/A	N/A	N/A	DEG
Phase - 6	0	52.91	52.97	N/A	N/A	N/A	DEG
Phase - 7	0	49.05	49.03	N/A	N/A	N/A	DEG

Array Induction Tool - H Wellsite Calibration - Electronics Calibration Check - Auxilliary

Master: 5-Sep-2012 21:19 Before: 15-Oct-2012 22:02

Array Induction SPA Plus	990.5	990.9	990.8	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	-0.1669	-0.1644	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	0.9174	0.9172	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	-0.0001693	-0.0001693	N/A	N/A	N/A	V

Array Induction Tool - H Wellsite Calibration - Test Loop Gain Correction

Master: 5-Sep-2012 21:19

Test Loop Gain Magnitude - 0	0	1.010	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.008	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.023	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	1.017	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	0.9973	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	0.9883	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	0.9976	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.003	N/A	N/A	N/A	N/A	V
Phase - 0	0	0.4423	N/A	N/A	N/A	N/A	DEG
Phase - 1	0	0.5097	N/A	N/A	N/A	N/A	DEG
Phase - 2	0	-0.9926	N/A	N/A	N/A	N/A	DEG
Phase - 3	0	-0.5008	N/A	N/A	N/A	N/A	DEG
Phase - 4	0	-0.4122	N/A	N/A	N/A	N/A	DEG
Phase - 5	0	-0.3079	N/A	N/A	N/A	N/A	DEG
Phase - 6	0	-0.05889	N/A	N/A	N/A	N/A	DEG
Phase - 7	0	-0.1520	N/A	N/A	N/A	N/A	DEG

Array Induction Tool - H Wellsite Calibration - Sonde Error Correction

Master: 5-Sep-2012 21:19

R Sonde Error Correction - 0	0	-126.9	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 1	0	175.4	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 2	0	109.2	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 3	0	55.06	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 4	0	25.67	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 5	0	13.63	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 6	0	8.652	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 7	0	-2.141	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 0	0	-636.9	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 1	0	-207.2	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 2	0	-153.9	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 3	0	18.86	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 4	0	-8.922	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 5	0	-8.549	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 6	0	-11.80	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 7	0	-9.027	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool - H Wellsite Calibration - Mud Gain Correction

Master: 5-Sep-2012 21:19

Coarse - Mag, Real, Imag - 0	0	1.092	N/A	N/A	N/A	N/A
Coarse - Mag, Real, Imag - 1	0	0.8233	N/A	N/A	N/A	N/A
Coarse - Mag, Real, Imag - 2	0	1.092	N/A	N/A	N/A	N/A
Fine - Mag, Real, Imag - 0	0	1.200	N/A	N/A	N/A	N/A
Fine - Mag, Real, Imag - 1	0	0.8223	N/A	N/A	N/A	N/A
Fine - Mag, Real, Imag - 2	0	1.200	N/A	N/A	N/A	N/A

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Stab Measurement Summary

Before: 13-Oct-2012 13:40

BS Window Ratio	0.7444	N/A	0.7454	N/A	N/A	N/A
BS Window Sum	24540	N/A	24530	N/A	N/A	N/A
SS Window Ratio	0.4775	N/A	0.4792	N/A	N/A	N/A
SS Window Sum	11470	N/A	11450	N/A	N/A	N/A
LS Window Ratio	0.3024	N/A	0.3051	N/A	N/A	N/A
LS Window Sum	1242	N/A	1238	N/A	N/A	N/A

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations

Before: 13-Oct-2012 13:40

BS PM High Voltage (Command)	1830	N/A	1820	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1858	N/A	1876	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1578	N/A	1573	N/A	N/A	N/A	V

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Crystal Quality Resolutions Calibration





Before: 13-Oct-2012 13:40































BS Crystal Resolution	11.15	N/A	11.10	N/A	N/A	N/A	%
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






SS Crystal Resolution	9.798	N/A	9.944	N/A	N/A	N/A	N/A	%
LS Crystal Resolution	8.887	N/A	8.694	N/A	N/A	N/A	N/A	%
High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration								
Before: 13–Oct–2012 13:36								
Raw B0 Resistivity	3875	N/A	3868	N/A	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3793	N/A	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3813	N/A	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration								
Before: 13–Oct–2012 13:36								
HILT Caliper Zero Measurement	8.000	N/A	9.107	N/A	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	13.24	N/A	N/A	N/A	N/A	IN
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration								
Before: 13–Oct–2012 13:34								
Gamma Ray Background	30.00	N/A	37.38	N/A	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkgd)	165.0	N/A	165.9	N/A	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement								
Master: 2–Oct–2012 12:11 Before: 13–Oct–2012 13:35								
CNTC Background	27.67	27.67	27.84	N/A	N/A	4.151	CPS	CPS
CFTC Background	32.74	32.74	28.41	N/A	N/A	4.911	CPS	CPS
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement								
Master: 2–Oct–2012 12:11								
Thermal Near Corr. (Tank)	5800	5573	N/A	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2246	N/A	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.481	N/A	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration								
Before: 15–Oct–2012 22:00								
Z–Axis Acceleration	32.19	N/A	32.23	N/A	N/A	N/A	N/A	F/S2
High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results								
Master: 1–Oct–2012 15:30								
Rho Aluminum	2.596	2.599	--	--	--	--	--	G/C3
Rho Magnesium	1.686	1.688	--	--	--	--	--	G/C3
Pe Aluminum	2.570	2.561	--	--	--	--	--	
Pe Magnesium	2.650	2.612	--	--	--	--	--	
High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary								
Master: 1–Oct–2012 15:30								
BS Average Deviation	0	0.1845	--	--	--	--	--	%
BS Max Deviation	0	0.5494	--	--	--	--	--	%
SS Average Deviation	0	0.3714	--	--	--	--	--	%
SS Max Deviation	0	0.8474	--	--	--	--	--	%
LS Average Deviation	0	0.3946	--	--	--	--	--	%
LS Max Deviation	0	0.7564	--	--	--	--	--	%

















The GLS–VJ source activity is acceptable.								
The HGNS Neutron Master Calibration was done with the following parameters :								
NCT–B Water Temperature	67.1	DEGF.						
Thermal Housing Size	3.375	IN.						
NSR–F serial number	1260							

Array Induction Tool – H / Equipment Identification			
Primary Equipment:			
Rm/SP Bottom Nose	AHRM – A		
Array Induction Sonde	AHIS – BA	295	
Auxiliary Equipment:			

Array Induction Tool – H Wellsite Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6240		0.6050	66.83		71.00
	Before	0.6000			66.00		

1	Before	0.6292		1.270	66.93		70.00
	Master	1.280			65.80		
2	Before	1.291		0.6230	65.89		66.00
	Master	0.6357			62.01		
3	Before	0.6410		0.7040	62.09		65.00
	Master	0.7169			61.23		
4	Before	0.7229		1.337	61.32		59.00
	Master	1.344			54.81		
5	Before	1.356		1.955	54.88		57.00
	Master	1.951			52.90		
6	Before	1.967		1.955	52.96		57.00
	Master	1.950			52.91		
7	Before	1.967		1.415	52.97		53.00
	Master	1.387			49.05		
	Before	1.397			49.03		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 5-Sep-2012 21:19				Before: 15-Oct-2012 22:02			

Array Induction Tool – H Wellsite Calibration							
Electronics Calibration Check – Auxilliary							
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value
Master			990.9	Master			-0.1669
Before			990.8	Before			-0.1644
941.0 (Minimum)		990.5 (Nominal)	1040 (Maximum)	-50.00 (Minimum)		0 (Nominal)	50.00 (Maximum)
Phase	Array Induction Temperature Plus V		Value	Phase	Array Induction Temperature Zero V		Value
Master			0.9174	Master			-0.0001693
Before			0.9172	Before			-0.0001693
0.8700 (Minimum)		0.9150 (Nominal)	0.9600 (Maximum)	-0.05000 (Minimum)		0 (Nominal)	0.05000 (Maximum)
Master: 5-Sep-2012 21:19				Before: 15-Oct-2012 22:02			







Array Induction Tool – H Wellsite Calibration						
Test Loop Gain Correction						
Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG
0	1.010				0.4423	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
1	1.008				0.5097	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
2	1.023				-0.9926	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
3	1.017				-0.5008	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
4	0.9973				-0.4122	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
5	0.9883				-0.3079	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
6	0.9976				-0.05889	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
7	1.003				-0.1520	

	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
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Master: 5-Sep-2012 21:19

Array Induction Tool – H Wellsite Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-126.9				-636.9		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal) 2250 (Maximum)
1	175.4				-207.2		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal) 625.0 (Maximum)
2	109.2				-153.9		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal) 350.0 (Maximum)
3	55.06				18.86		
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal) 250.0 (Maximum)
4	25.67				-8.922		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal) 63.00 (Maximum)
5	13.63				-8.549		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal) 50.00 (Maximum)
6	8.652				-11.80		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
7	-2.141				-9.027		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)

Master: 5-Sep-2012 21:19

Array Induction Tool – H Wellsite Calibration							
Mud Gain Correction							
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag	
0	1.092				1.200		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
1	0.8233				0.8223		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
2	1.092				1.200		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)





Master: 5-Sep-2012 21:19

















Array Induction Tool – H Master Calibration									
Electronics Calibration Check – Thru Cal Mag. & Phase									
Idx	Phase	Value	Thru Cal Magnitude V		Nominal	Value	Phase DEG		Nominal
0	Master	0.6240			0.6050	66.83			71.00
1	Master	1.280			1.270	65.80			70.00
2	Master	0.6357			0.6230	62.01			66.00
3	Master	0.7169			0.7040	61.23			65.00
4	Master	1.344			1.337	54.81			59.00
5	Master	1.951			1.955	52.90			57.00
6	Master	1.950			1.955	52.91			57.00
7	Master	1.387			1.415	49.05			53.00
		60.00 % (Minimum)	(Nominal)		140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)		Nom + 60.00 (Maximum)

Master: 5-Sep-2012 21:19

Array Induction Tool – H Master Calibration

Array Induction Tool – H Master Calibration

Electronics Calibration Check – Auxiliary									
Phase	Array Induction SPA Plus MV			Value	Phase	Array Induction SPA Zero MV			Value
Master				990.9	Master				-0.1669
	941.0 (Minimum)	990.5 (Nominal)	1040 (Maximum)			-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)	
Phase	Array Induction Temperature Plus V			Value	Phase	Array Induction Temperature Zero V			Value
Master				0.9174	Master				-0.0001693
	0.8700 (Minimum)	0.9150 (Nominal)	0.9600 (Maximum)			-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)	
Master: 5-Sep-2012 21:19									

Array Induction Tool – H Master Calibration							
Test Loop Gain Correction							
Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG	
0	1.010				0.4423		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.008				0.5097		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.023				-0.9926		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.017				-0.5008		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9973				-0.4122		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9883				-0.3079		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	0.9976				-0.05889		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.003				-0.1520		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
Master: 5-Sep-2012 21:19							

Array Induction Tool – H Master Calibration						
Sonde Error Correction						
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M
0	-126.9	<div><div></div></div>			-636.9	<div><div></div></div>
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)	-2250 (Minimum)	0 (Nominal) 2250 (Maximum)
1	175.4	<div><div></div></div>			-207.2	<div><div></div></div>
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)	-625.0 (Minimum)	0 (Nominal) 625.0 (Maximum)
2	109.2	<div><div></div></div>			-153.9	<div><div></div></div>
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)	-350.0 (Minimum)	0 (Nominal) 350.0 (Maximum)
3	55.06	<div><div></div></div>			18.86	<div><div></div></div>
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)	-250.0 (Minimum)	0 (Nominal) 250.0 (Maximum)
4	25.67	<div><div></div></div>			-8.922	<div><div></div></div>
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)	-63.00 (Minimum)	0 (Nominal) 63.00 (Maximum)
5	13.63	<div><div></div></div>			-8.549	<div><div></div></div>
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)	-50.00 (Minimum)	0 (Nominal) 50.00 (Maximum)
6	8.652	<div><div></div></div>			-11.80	<div><div></div></div>
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)	-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
7	-2.141	<div><div></div></div>			-9.027	<div><div></div></div>

		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)			-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
Master: 5-Sep-2012 21:19									
Array Induction Tool – H Master Calibration									
Mud Gain Correction									
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag			
0	1.092				1.200				
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
1	0.8233				0.8223				
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
2	1.092				1.200				
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
Master: 5-Sep-2012 21:19									




High resolution Integrated Logging Tool–DTS / Equipment Identification			
Primary Equipment:			
HILT high–Resolution Mechanical Sonde	HRMS – H	3867	
HILT Rxo Gamma–ray Device	HRGD – H	3912	
HILT Micro Cylindrically Focused Log Dev	MCFL – H		
GR Logging Source	GLS – VJ	5415	
HILT High Res. Control Cartridge	HRCC – H	3889	
HILT Gamma–Ray Neutron Sonde–DTS	HGNS – H		
HGNS Gamma–Ray Device	HGR –		
HGNS Neutron Detector with Alpha Source	HCNT – H		
Auxiliary Equipment:			
Neutron Calibration Tank	NCT – B		
Gamma Source Radioactive	GSR – U/Y		
HGNS Housing	HGNH –		

High resolution Integrated Logging Tool–DTS Wellsite Calibration														
Stab Measurement Summary														
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value
Before				0.7454	Before				0.4792	Before				0.3051
	0.7072 (Minimum)	0.7444 (Nominal)	0.7816 (Maximum)		0.4536 (Minimum)	0.4775 (Nominal)	0.5014 (Maximum)			0.2872 (Minimum)	0.3024 (Nominal)	0.3175 (Maximum)		
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value
Before				24530	Before				11450	Before				1238
	23320 (Minimum)	24540 (Nominal)	25770 (Maximum)		10890 (Minimum)	11470 (Nominal)	12040 (Maximum)			1180 (Minimum)	1242 (Nominal)	1304 (Maximum)		
Before: 13–Oct–2012 13:40														



High resolution Integrated Logging Tool–DTS Wellsite Calibration														
Photo–multiplier High Voltages Calibrations														
Phase	BS PM High Voltage (Command) V			Value	Phase	SS PM High Voltage (Command) V			Value	Phase	LS PM High Voltage (Command) V			Value
Before				1820	Before				1876	Before				1573
	1730 (Minimum)	1830 (Nominal)	1930 (Maximum)		1758 (Minimum)	1858 (Nominal)	1958 (Maximum)			1478 (Minimum)	1578 (Nominal)	1678 (Maximum)		
Before: 13–Oct–2012 13:40														

High resolution Integrated Logging Tool–DTS Wellsite Calibration											
Crystal Quality Resolutions Calibration											
Phase	BS Crystal Resolution %		Value	Phase	SS Crystal Resolution %		Value	Phase	LS Crystal Resolution %		Value
Before			11.10	Before			9.944	Before			8.694
	10.15 (Minimum)	11.15 (Nominal)	12.15 (Maximum)		8.798 (Minimum)	9.798 (Nominal)	10.80 (Maximum)		7.887 (Minimum)	8.887 (Nominal)	9.887 (Maximum)
Before: 13-Oct-2012 13:40											



High resolution Integrated Logging Tool–DTS Wellsite Calibration											
MCFL Calibration											
Phase	Raw B0 Resistivity OHMM		Value	Phase	Raw B1 Resistivity OHMM		Value	Phase	Raw B2 Resistivity OHMM		Value

Before		3875 (Nominal)	3868	Before		3830 (Nominal)	3793	Before		3813
3565 (Minimum)		4185 (Maximum)		3524 (Minimum)		4136 (Maximum)		3524 (Minimum)		4136 (Maximum)





Before: 13-Oct-2012 13:36

High resolution Integrated Logging Tool-DTS Wellsite Calibration					
HILT Caliper Calibration					
Phase	HILT Caliper Zero Measurement IN	Value	Phase	HILT Caliper Plus Measurement IN	Value
Before		9.107	Before		13.24
6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)	9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)

Before: 13-Oct-2012 13:36



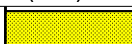
High resolution Integrated Logging Tool-DTS Wellsite Calibration					
Detector Calibration					
Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkgd) GAPI	Value
Before		37.38	Before		165.9
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	157.1 (Minimum)	165.0 (Nominal)	206.3 (Maximum)

Before: 13-Oct-2012 13:34


High resolution Integrated Logging Tool-DTS Wellsite Calibration					
Zero Measurement					
Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		27.67	Master		32.74
Before		27.84	Before		28.41
5.000 (Minimum)	27.67 (Nominal)	40.00 (Maximum)	5.000 (Minimum)	32.74 (Nominal)	40.00 (Maximum)

Master: 2-Oct-2012 12:11





Before: 13-Oct-2012 13:35

High resolution Integrated Logging Tool-DTS Wellsite Calibration									
Ratio Measurement									
Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value	
Master		5573	Master		2246	Master		2.481	
4700 (Minimum)	5800 (Nominal)	6900 (Maximum)	1900 (Minimum)	2400 (Nominal)	2900 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)	




Master: 2-Oct-2012 12:11




High resolution Integrated Logging Tool-DTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration F/S2	Value
Before		32.23
31.53 (Minimum)	32.19 (Nominal)	32.84 (Maximum)

Before: 15-Oct-2012 22:00



High resolution Integrated Logging Tool-DTS Master Calibration					
Inversion results					
Phase	Rho Aluminum G/C3	Value	Phase	Rho Magnesium G/C3	Value
Master		2.599	Master		1.688
2.586 (Minimum)	2.596 (Nominal)	2.606 (Maximum)	1.676 (Minimum)	1.686 (Nominal)	1.696 (Maximum)
Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.561	Master		2.612
2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)	2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)

Master: 1-Oct-2012 15:30




High resolution Integrated Logging Tool-DTS Master Calibration								
Deviation Summary								
Phase	BS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master		0.1845	Master		0.3714	Master		0.3946
-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)	-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)	-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)

Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		0.5494	Master		0.8474	Master		0.7564
	-1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)		-2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)	
	-3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)					

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High resolution Integrated Logging Tool-DTS Master Calibration							
Zero Measurement							
Phase	CNTC Background CPS		Value	Phase	CFTC Background CPS		Value
Master			27.67	Master			32.74
	5.000 (Minimum)	27.67 (Nominal)	40.00 (Maximum)		5.000 (Minimum)	32.74 (Nominal)	40.00 (Maximum)

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High resolution Integrated Logging Tool-DTS Master Calibration									
Tank Measurement									
Phase	Thermal Near Corr. (Tank) CPS		Value	Phase	Thermal Far Corr. (Tank) CPS		Value	Phase	CNTC/CFTC (Tank)
Master			5573	Master			2246	Master	
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)
									2.159 (Nominal)
									2.540 (Maximum)

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Elemental Capture Cartridge – B / Equipment Identification	
Primary Equipment: ECC Cartridge	ECC – B
Auxiliary Equipment: ECC Housing	ECH – A

Hostile Natural Gamma Ray Cartridge – B / Equipment Identification	
Primary Equipment: HNGC Cartridge	HNGC – B
Auxiliary Equipment: HNGC Housing	HNGH – A

DTS Telemetry Tool / Equipment Identification	
Primary Equipment: DTC-H Auxiliary Cartridge DTC-H Telemetry Cartridge	DTCH – A DTCH – A
Auxiliary Equipment: DTCH Telemetry Cartridge Housing	ECH – KC

Company: **SHELL**

Schlumberger

Well: **DAWSON CREEK 1 25**

Field: **WILLIAMS FORK UNIT**

County: **ROUTT**

State: **COLORADO**

State:

COLORADO

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COMPENSATED NEUTRON/ LITHO DENSITY

ARRAY INDUCTION, GR, SP