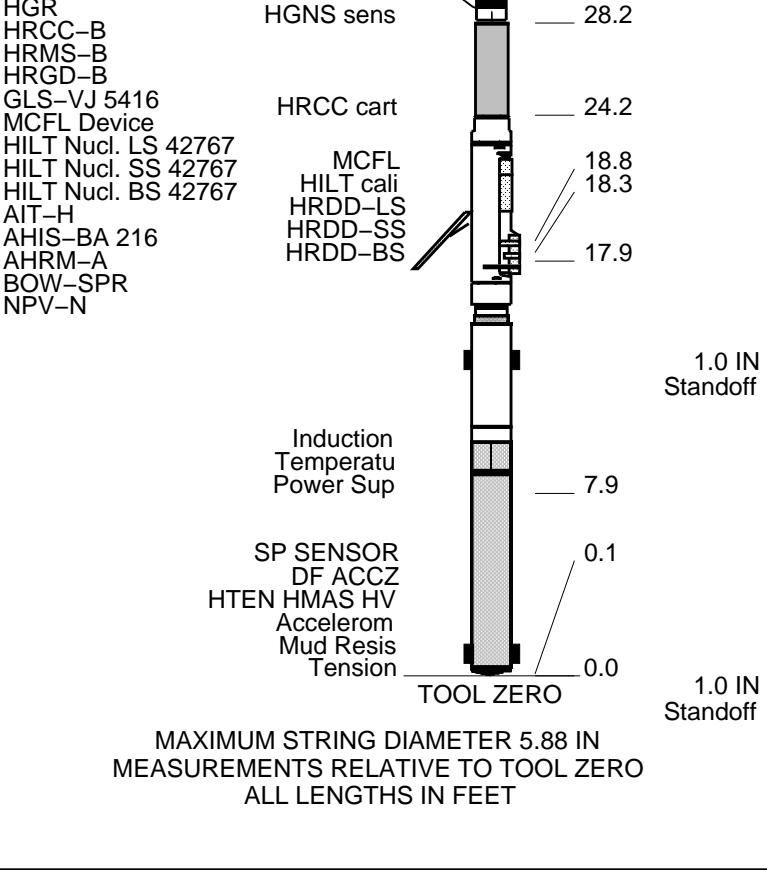




OTHER SERVICES1	OTHER SERVICES2
OS1: FMI	OS1:
OS2: Sonic Scanner	OS2:
OS3: ECS	OS3:
OS4: HNGS	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
This is the first run in the hole.	
Toolstring run as per tool sketch.	
Matrix changes are as noted on the porosity print.	

Rig: Xtreme 19					
Crew: Derrick Hunter, Ian Derry					
RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
BHDJ-00135 18C0-147 25 ft					
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 (EDTS)-A					
DOWNHOLE EQUIPMENT					



Production String	(in)			(ft)	Well Schematic	(ft)	(in)			Casing String
	OD	ID	MD				MD	OD	ID	
						0.0	9.625			Casing String
						1425.0	9.625			Casing Shoe
						1425.0	8.750			Borehole Segment

# All Dents are Drillers Dents



# MAXIS Field Log

DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:37	PRODUCER	22-Nov-2011 10:41	7044.0 FT	1309.5 FT
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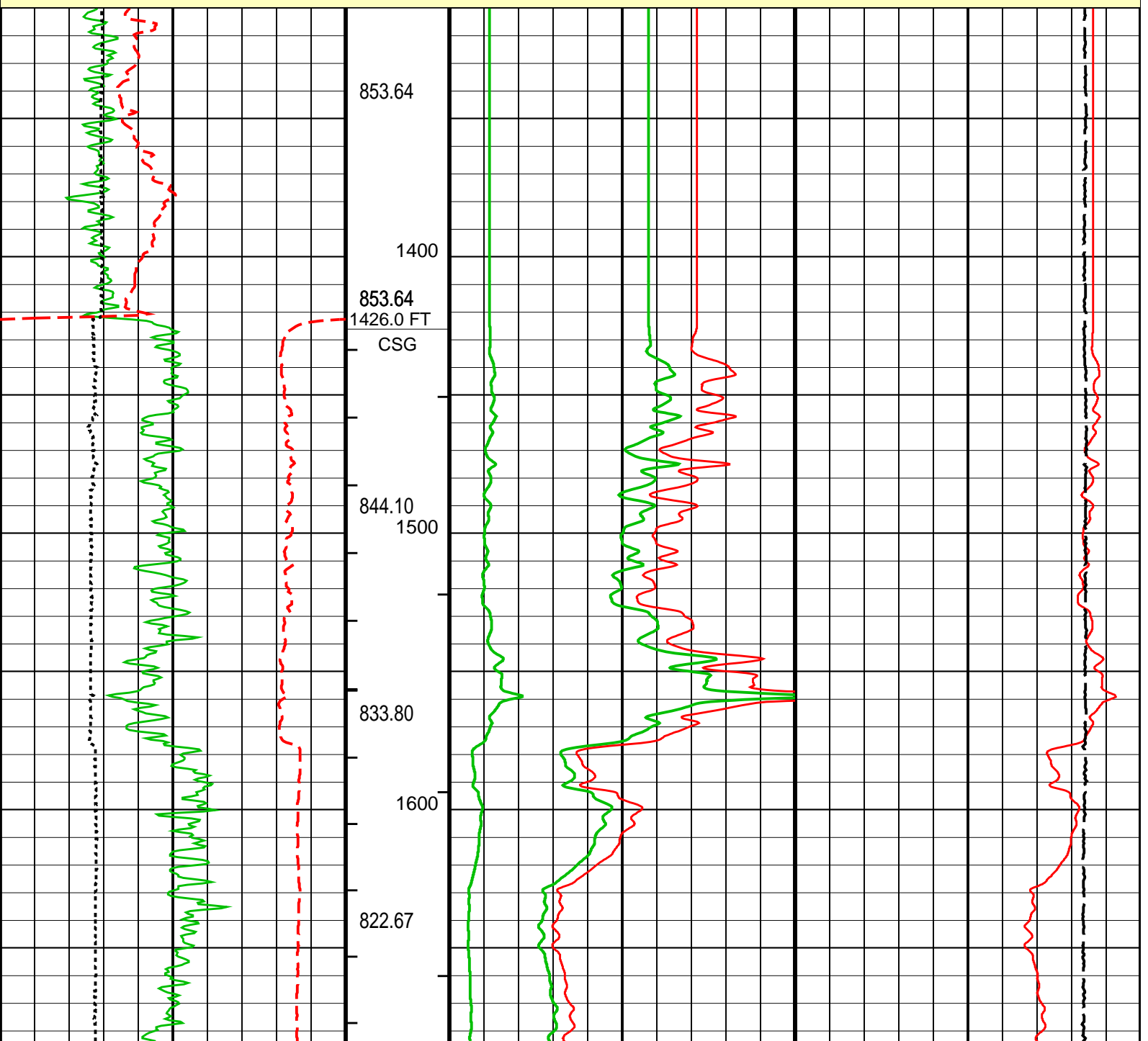
DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22-Nov-2011 11:09	7042.5 FT	1309.5 FT
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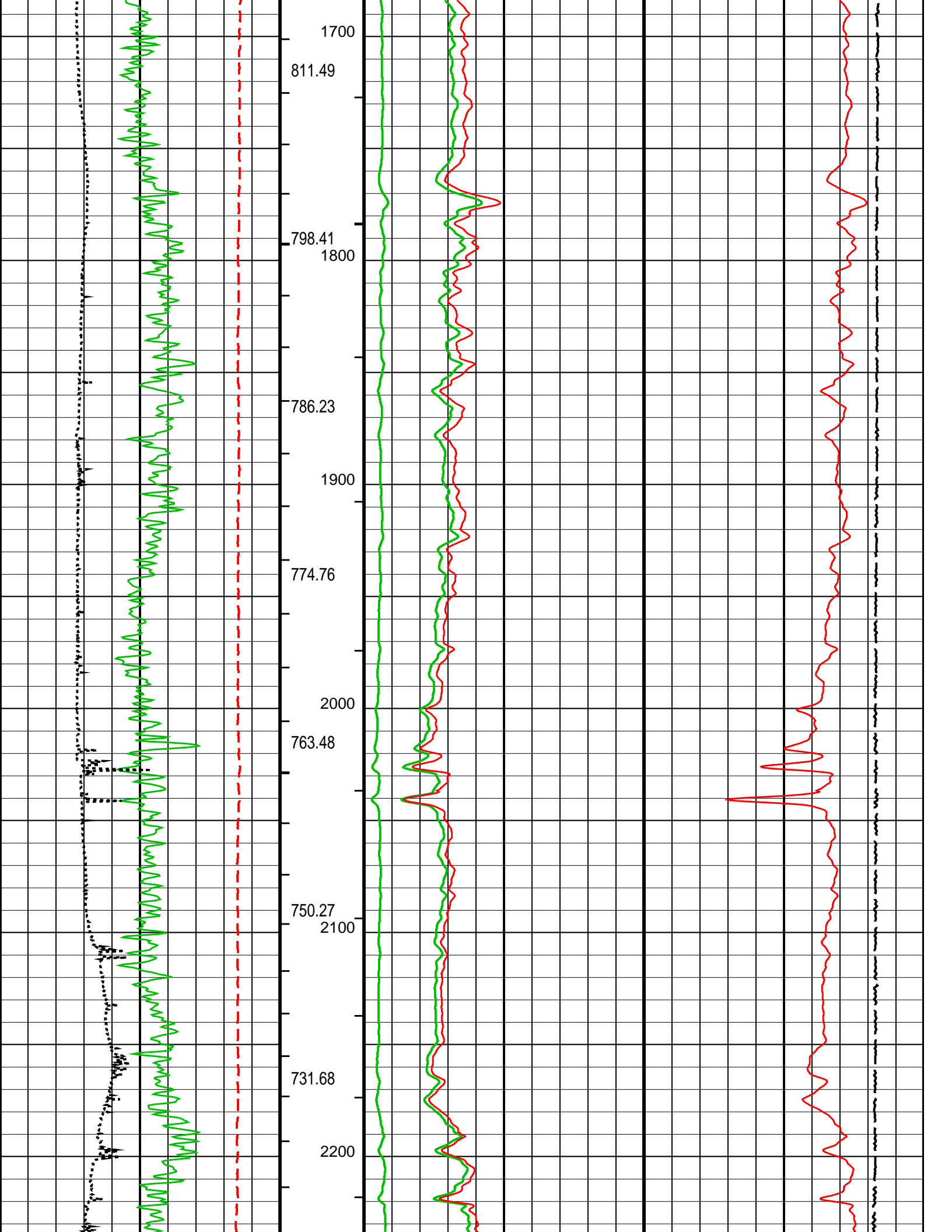
Hole Volume = 2353.29 F3  
Cement Volume = 853.64 F3 (assuming 7.00 IN casing O.D.)  
Computed from 7037.0 FT to 1426.0 FT using data channel(s) HCAL

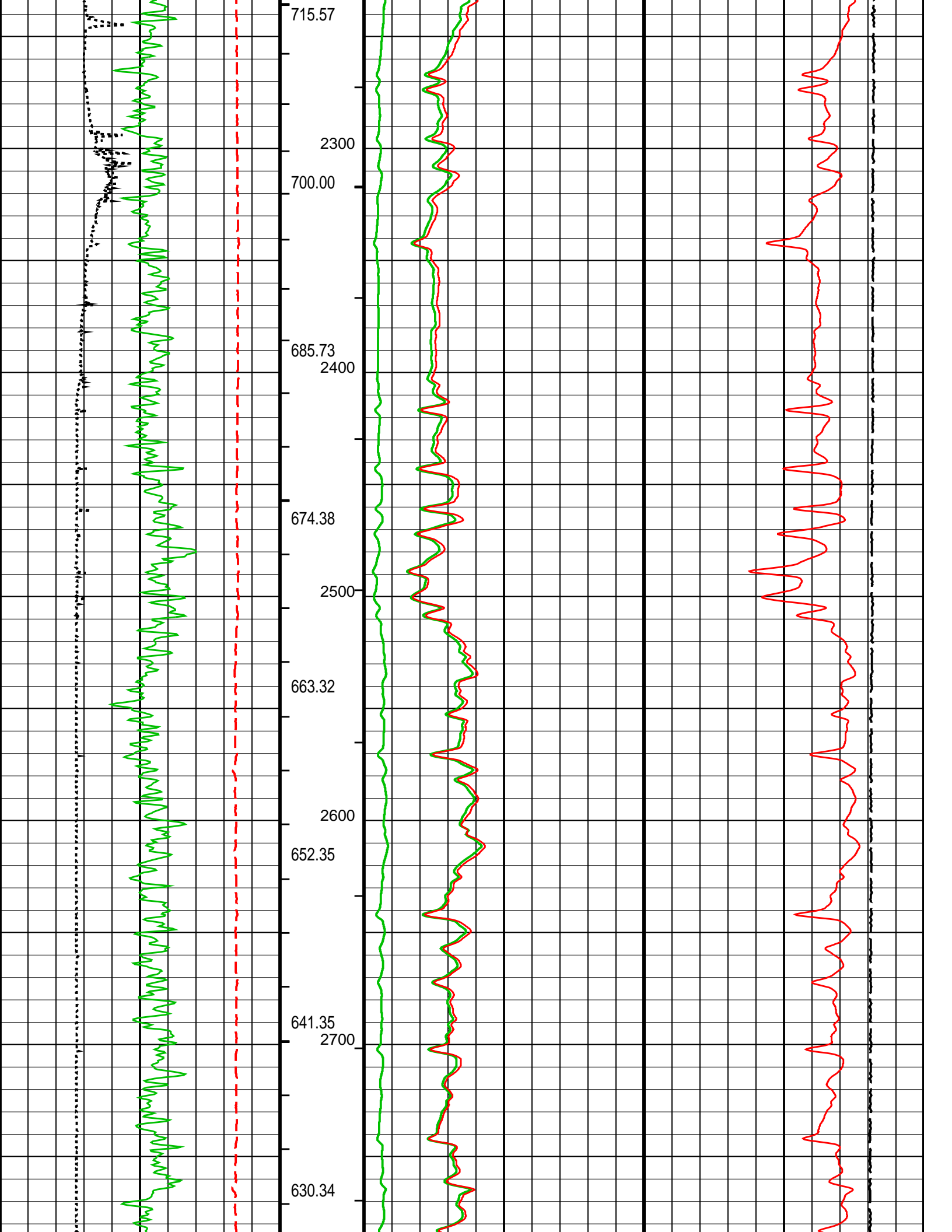
**OP System Version: 18C0-147**

18C0-147  
18C0-147  
SRPC-4072-Q4\_2010\_OP18

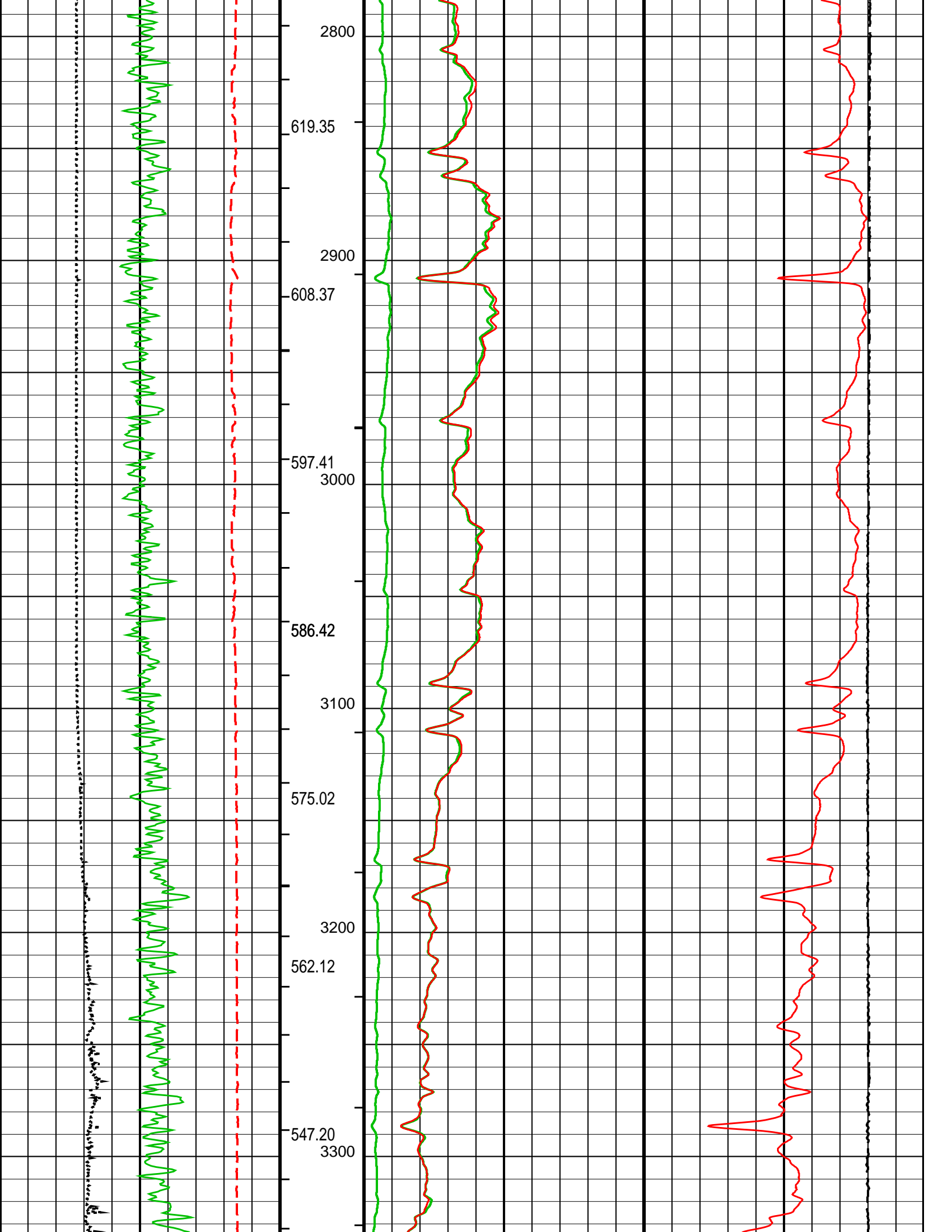
- └ Integrated Cement Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Hole Volume Minor Pip Every 10 F3

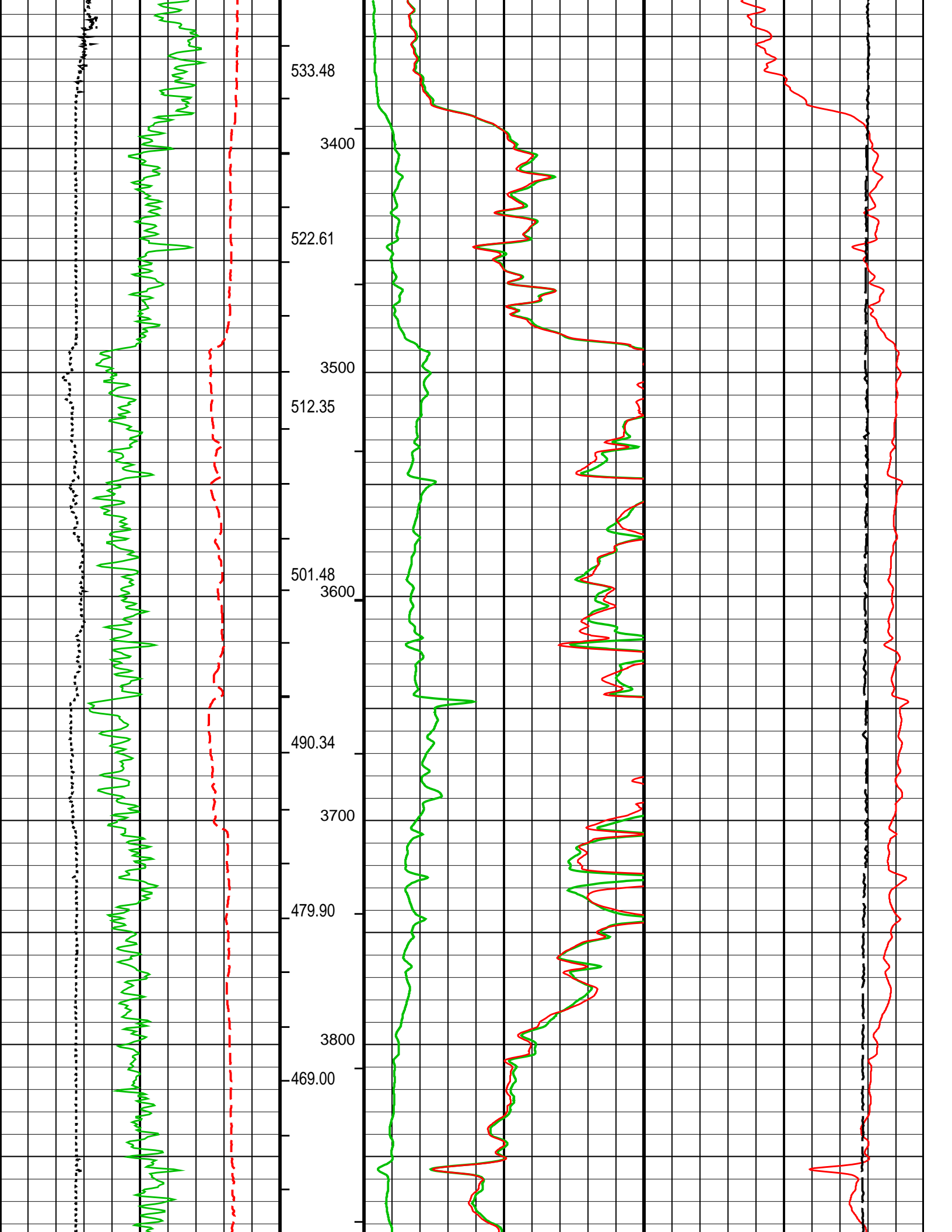


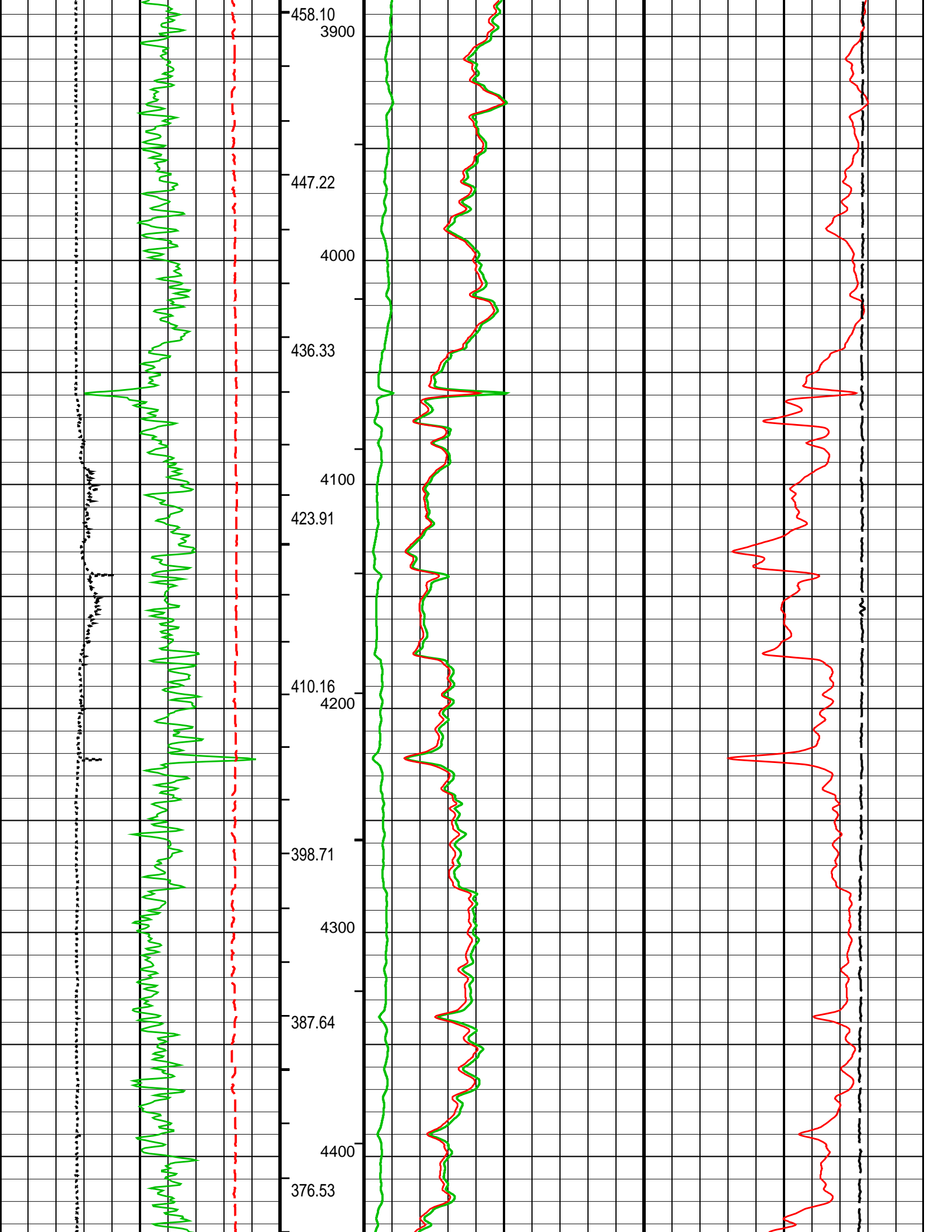


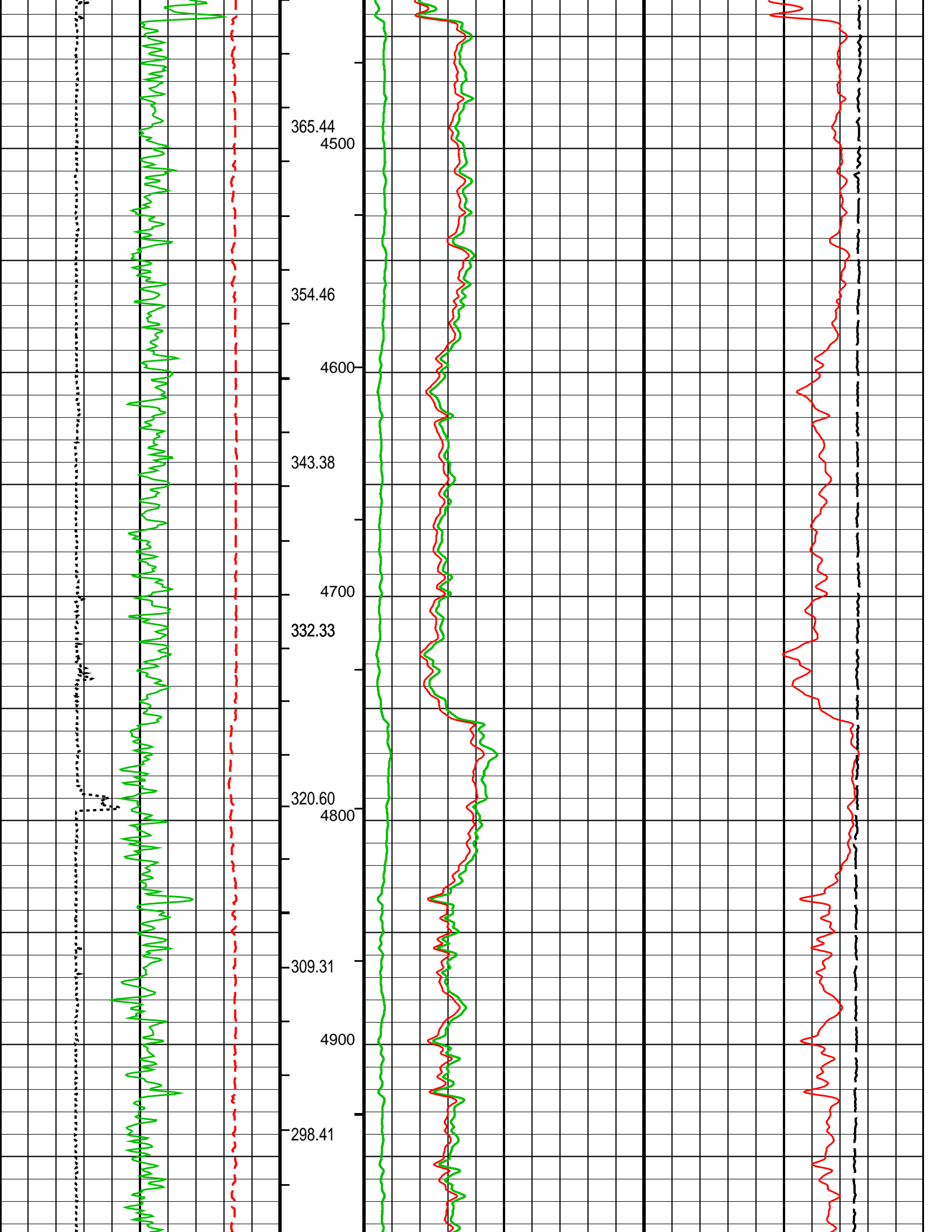


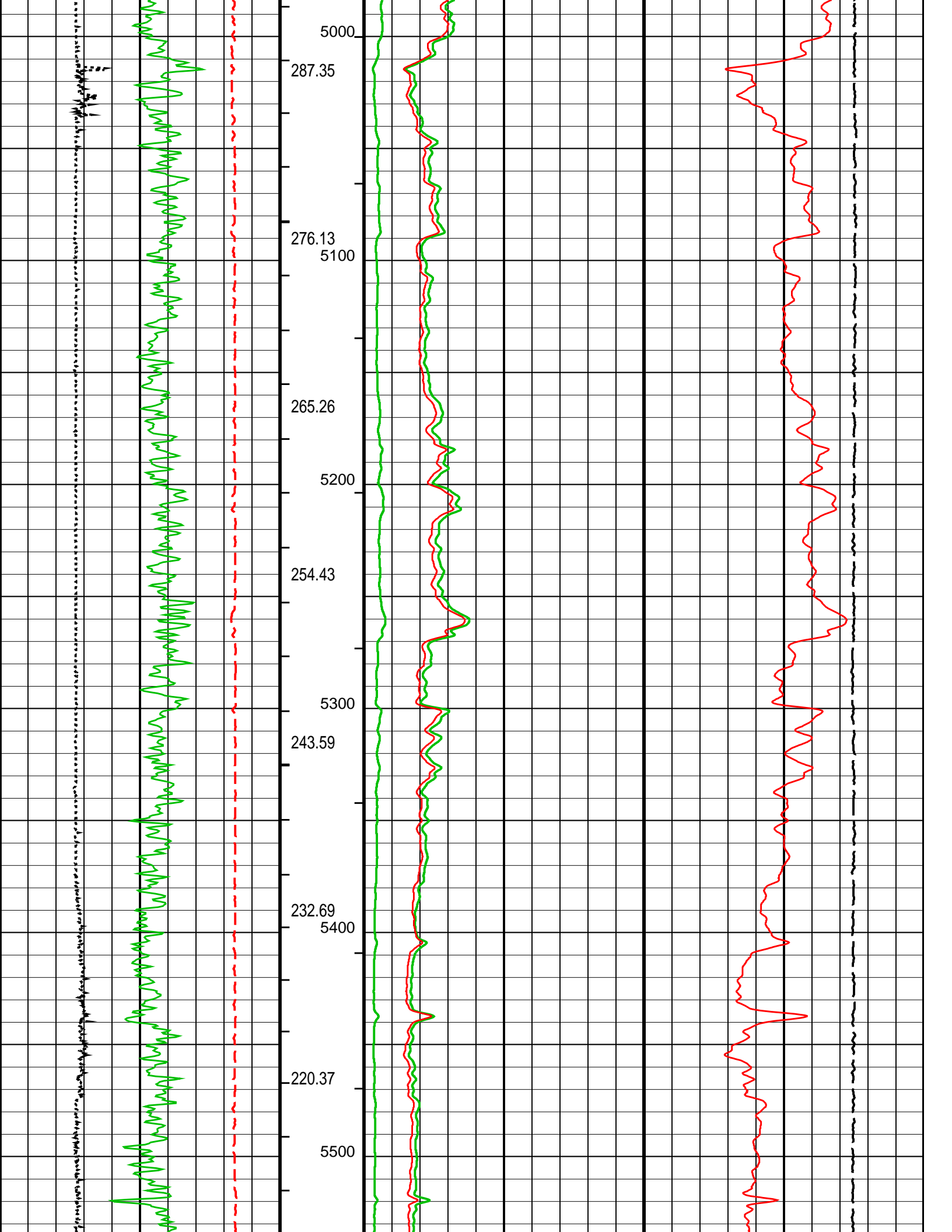


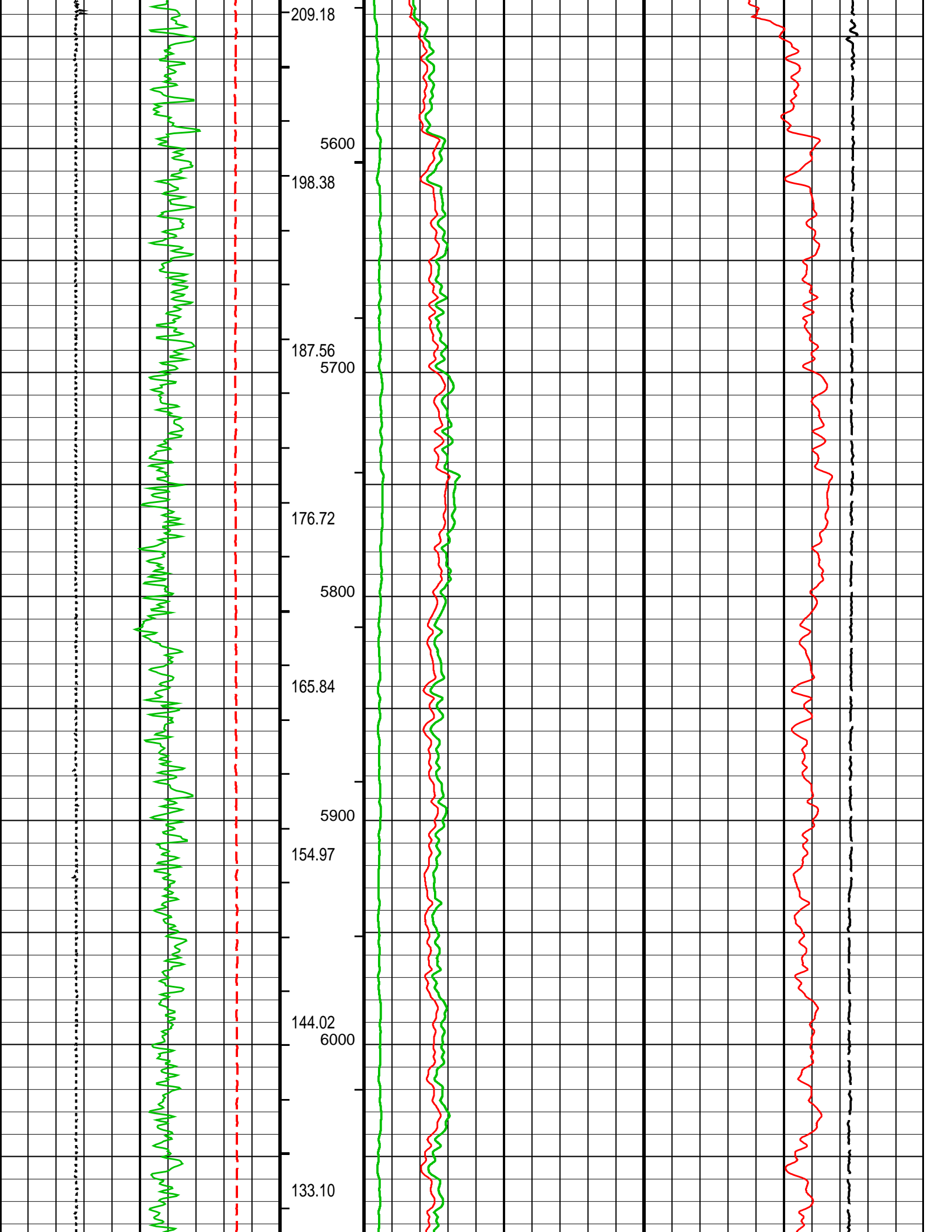


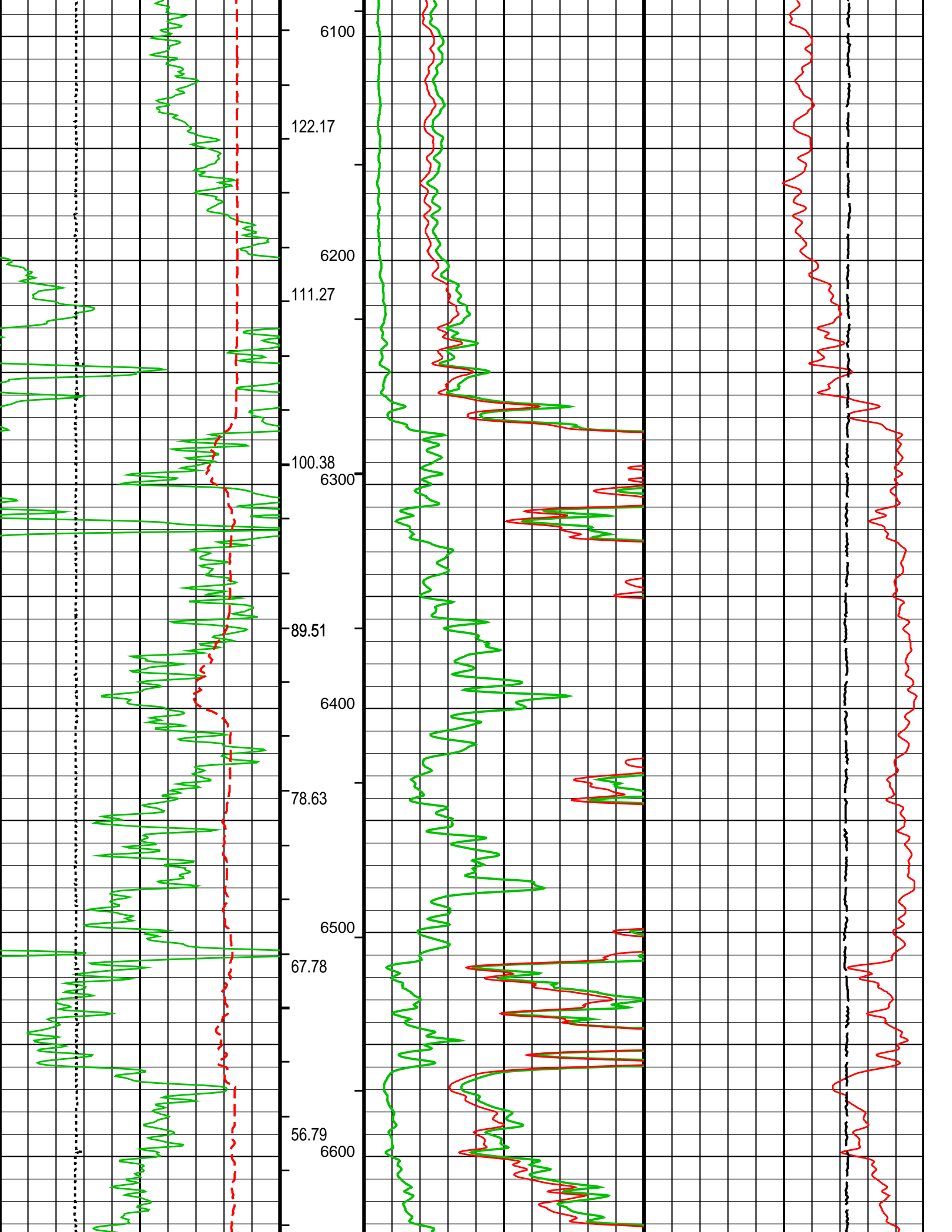


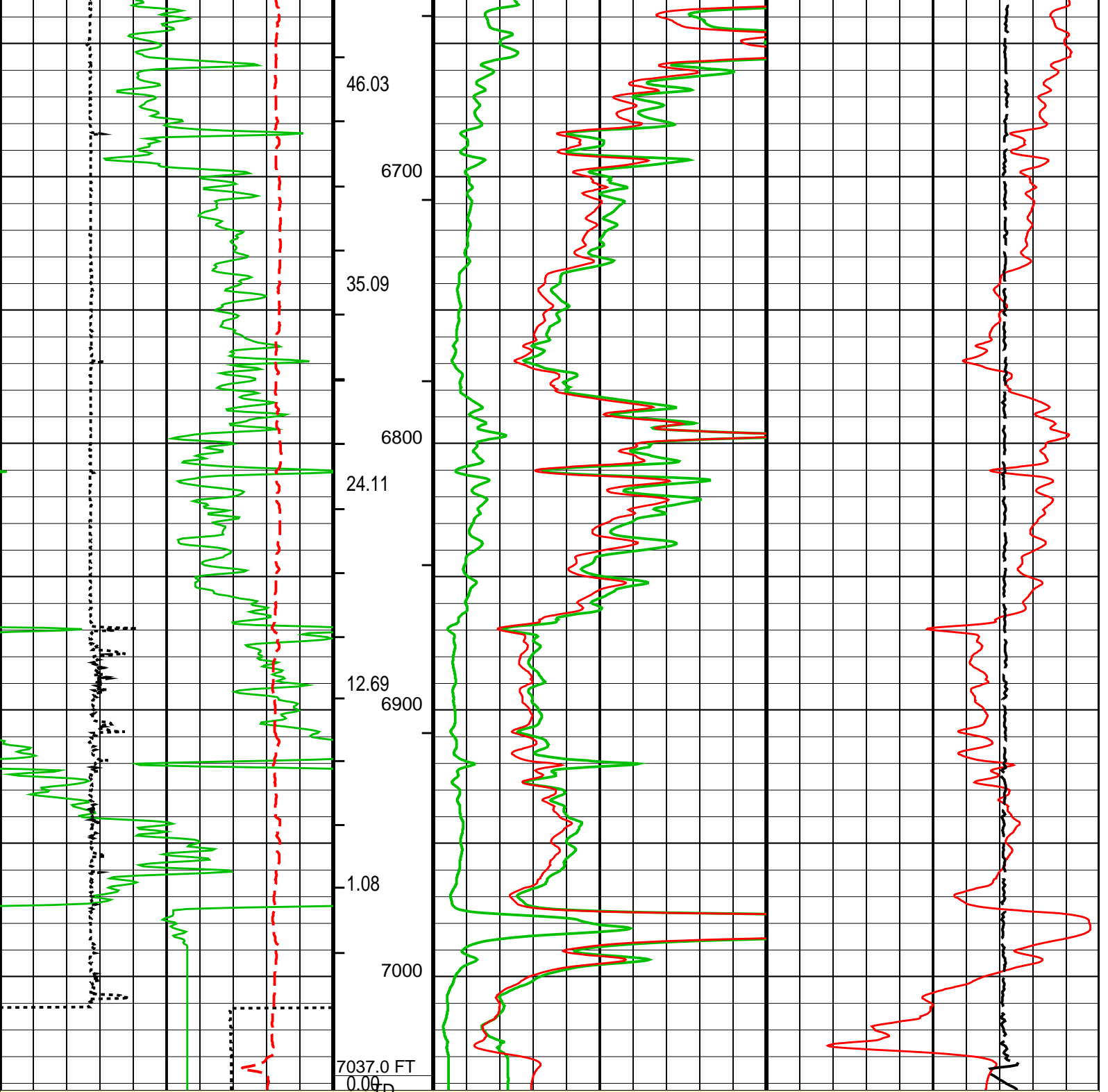












MAIN PASS: \*\*\* PLATFORM EXPRESS – ARRAY INDUCTION \*\*\*

<div>Gamma Ray (GR_EDTC) (GAPI)</div> <div>0200</div>	<div>Cement Volume (ICV) (F3)</div>	<div>AIT-H 10 Inch Investigation (AHF10) (OHMM)</div> <div>050</div>	<div>AIT-H 90 Inch Investigation Conductivity (AHFCO90) (MM/M)</div> <div>10000</div>
		<div>AIT-H 10 Inch Investigation (AHF10) (OHMM)</div> <div>010</div>	<div>Tension (TENS) (LBF)</div> <div>100000</div>
		<div>AIT-H 90 Inch Investigation (AHF90) (OHMM)</div> <div>010</div>	
<div>Caliper (HCAL) (IN)</div> <div>616</div>			
<div>SP (SP) (MV)</div> <div>-16040</div>			

#### PIP SUMMARY

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



# Parameters

DLIS Name	Description	Value	
<b>HILTB-FTB: High resolution Integrated Logging Tool-DTS</b>			
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	
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
<b>HNGBS-BA: Hostile Natural Gamma Ray Sonde</b>			
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
<b>EDTC-B: Enhanced DTS Cartridge</b>			
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
<b>FEQL: Formation Evaluation Quick Look</b>			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
<b>HOLEV: Integrated Hole/Cement Volume</b>			
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
FCD	Future Casing (Outer) Diameter	7	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	
SHT	Surface Hole Temperature	68	DEGF
<b>PERT: Preliminary Evaluation - Real Time</b>			
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
<b>System and Miscellaneous</b>			
BS	Bit Size	8.750	IN
DFD	Drilling Fluid Density	9.20	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	25.00	FT
MST	Mud Sample Temperature	193.75	DEGF
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	7037	FT

Format: ERES\_S2      Vertical Scale: 2" per 100'      Graphics File Created: 22-Nov-2011 11:09

## OP System Version: 18C0-147

ECC-B	18C0-147	HNGC-B	18C0-147
HNGS-BA	18C0-147	EDTC-B	SRPC-4072-Q4_2010_OP18

Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:37	PRODUCER	22-Nov-2011 10:41	7044.0 FT	1309.5 FT
Output DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22-Nov-2011 11:09		



MAIN RESISTIVITY LOG 5" = 100'

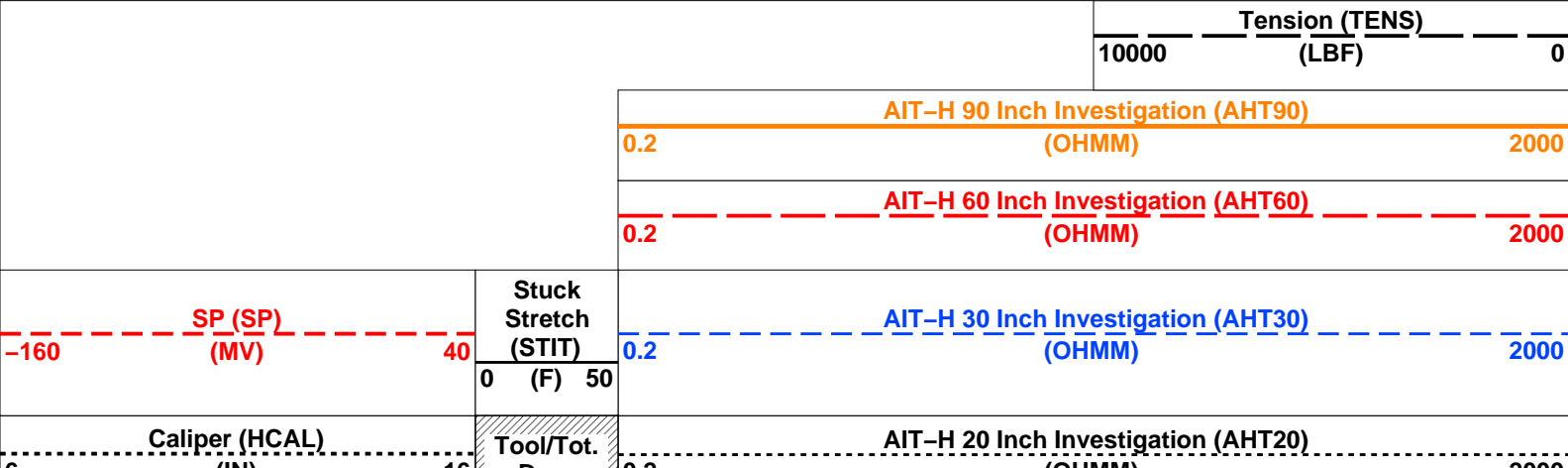


Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:37	PRODUCER	22-Nov-2011 10:41	7044.0 FT	1309.5 FT
Output DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22-Nov-2011 11:09	7042.5 FT	1309.5 FT

Integrated Hole/Cement Volume Summary						
Hole Volume = 2353.29 F3						
Cement Volume = 853.64 F3 (assuming 7.00 IN casing O.D.)						
Computed from 7037.0 FT to 1426.0 FT using data channel(s) HCAL						

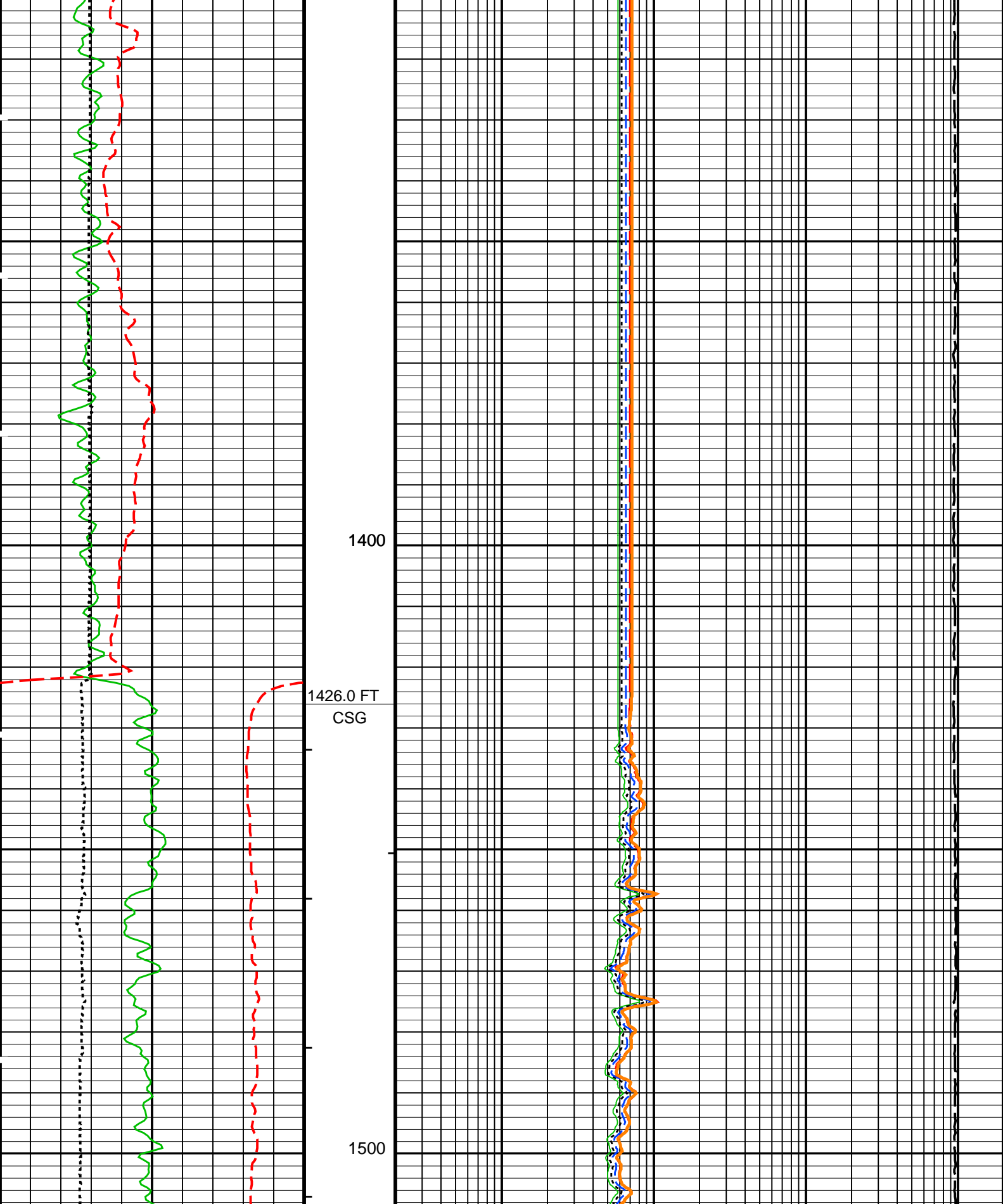
OP System Version: 18C0-147						
HILTB-FTB	18C0-147	ECS-HP	18C0-147			
ECC-B	18C0-147	HNGC-B	18C0-147			
HNGS-BA	18C0-147	EDTC-B	SRPC-4072-Q4_2010_OP18			

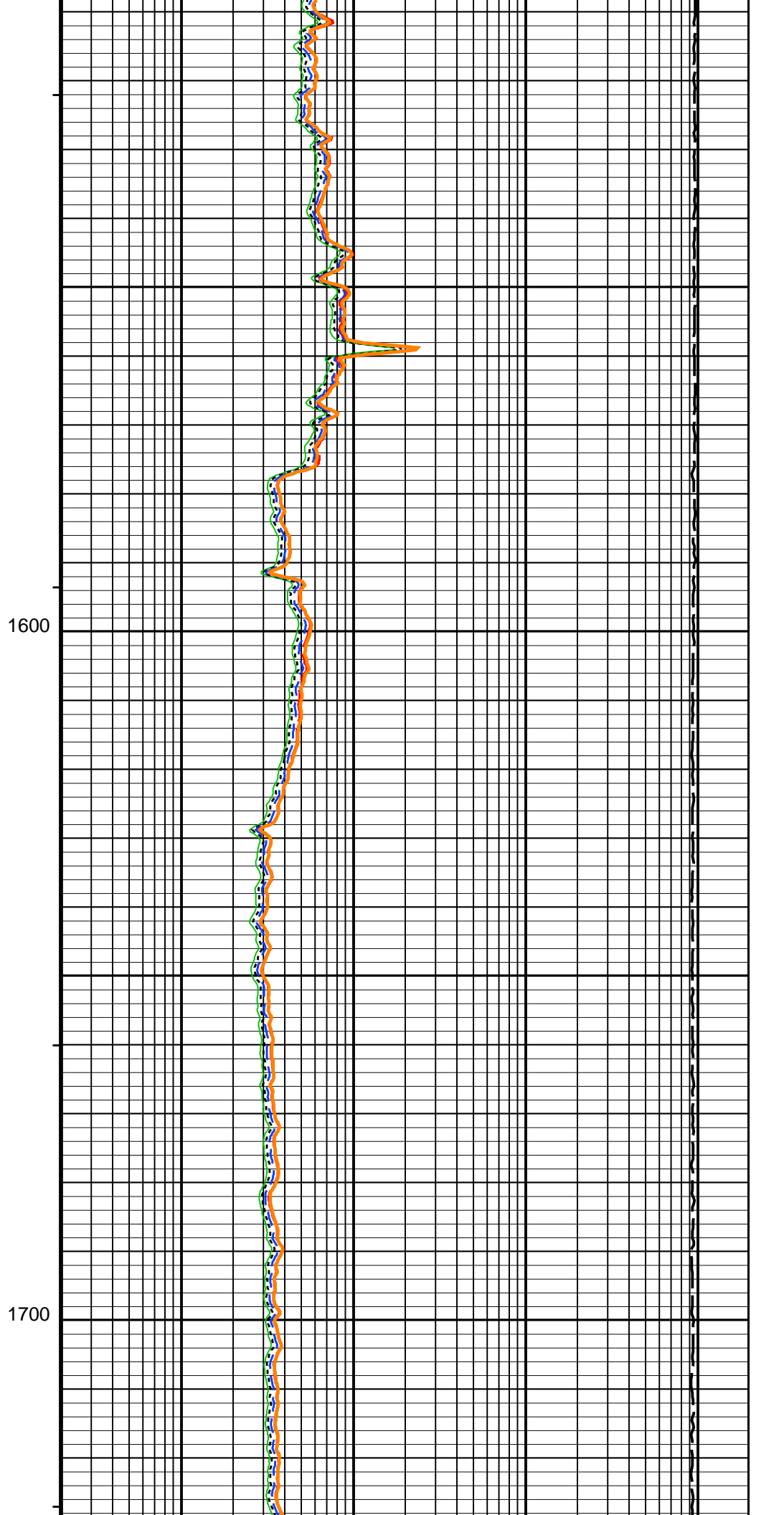
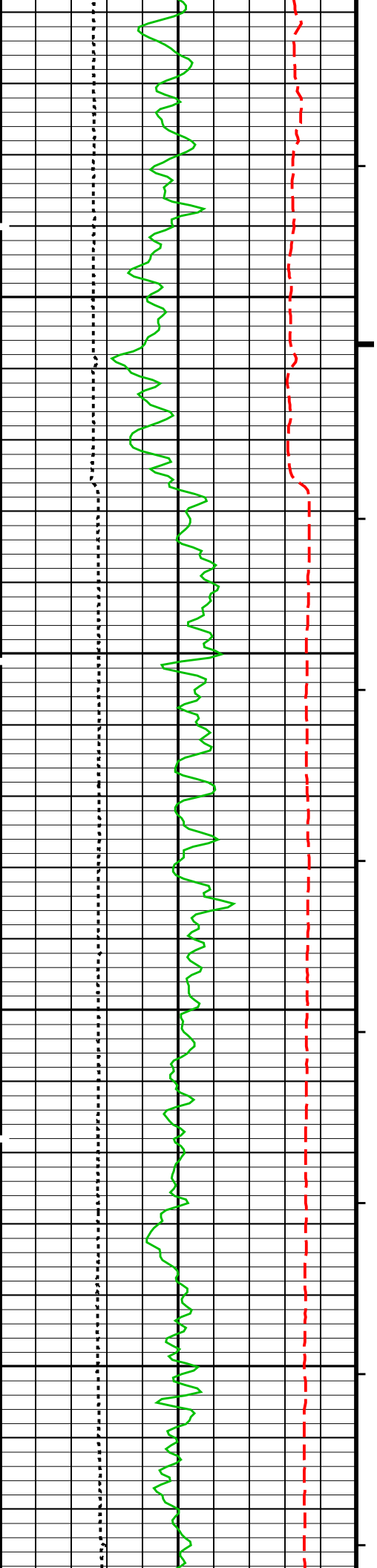
PIP SUMMARY						
└ Integrated Hole Volume Minor Pip Every 10 F3						
└ Integrated Hole Volume Major Pip Every 100 F3						
└ Integrated Cement Volume Minor Pip Every 10 F3						
└ Integrated Cement Volume Major Pip Every 100 F3						
Time Mark Every 60 S						

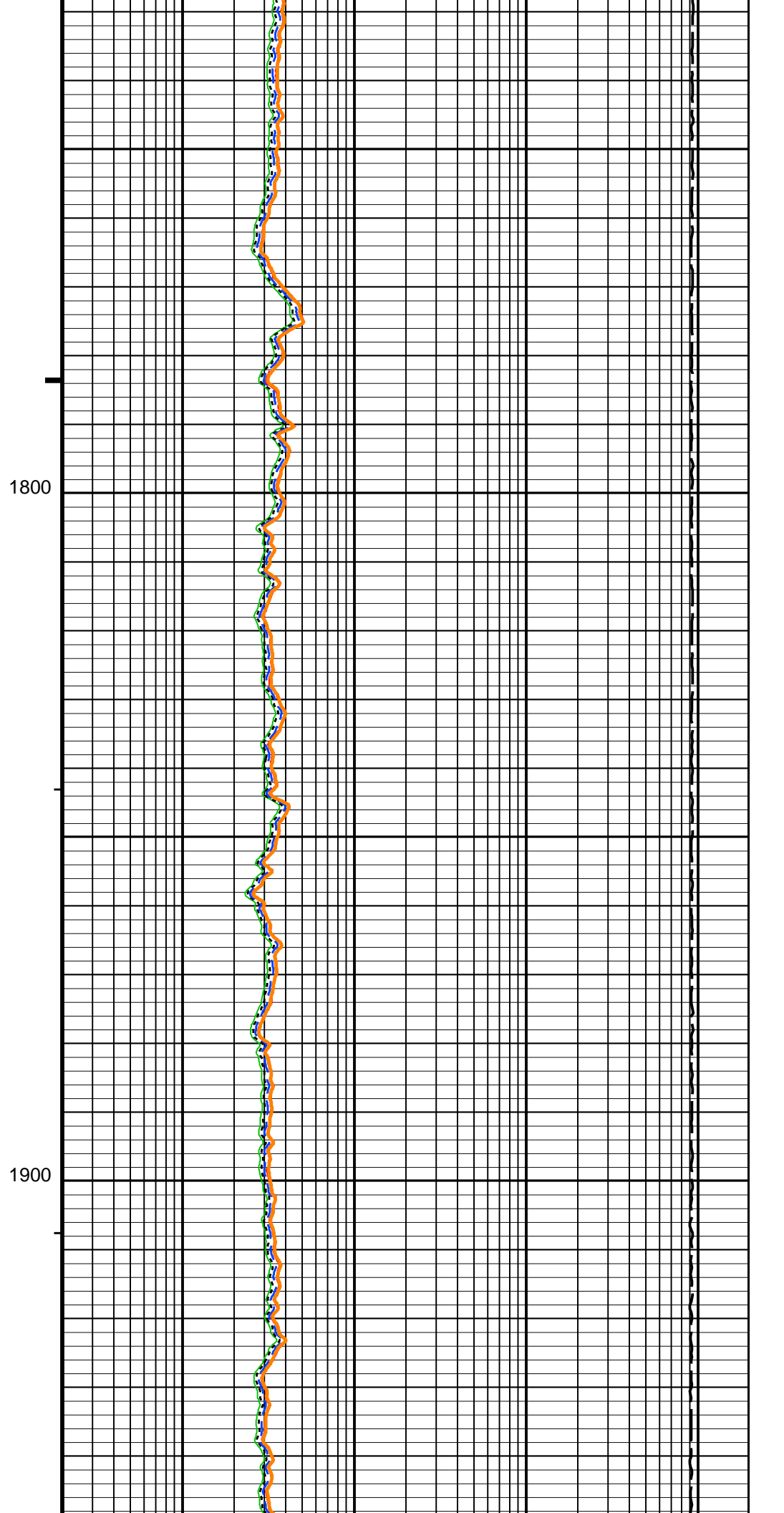
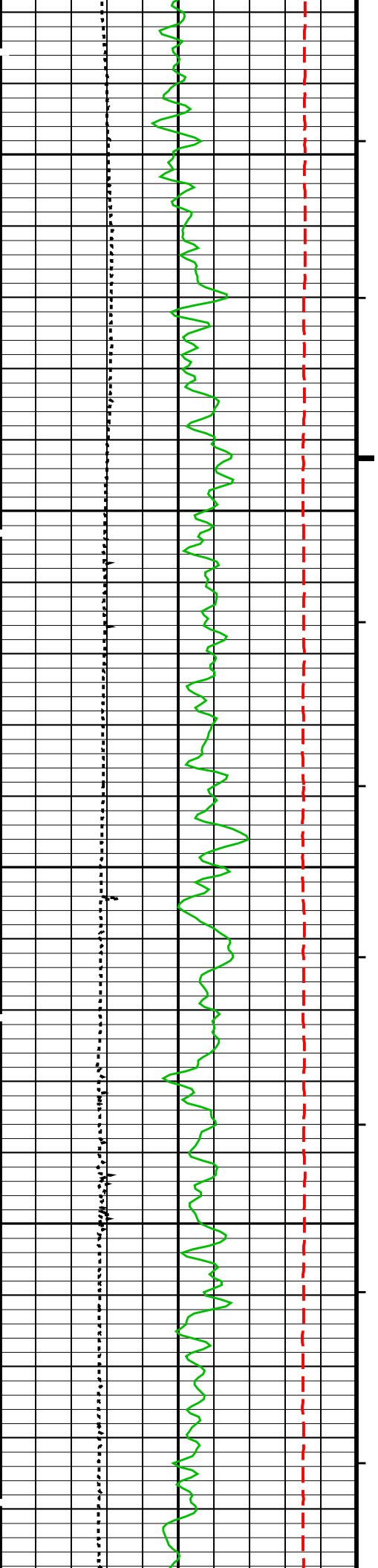


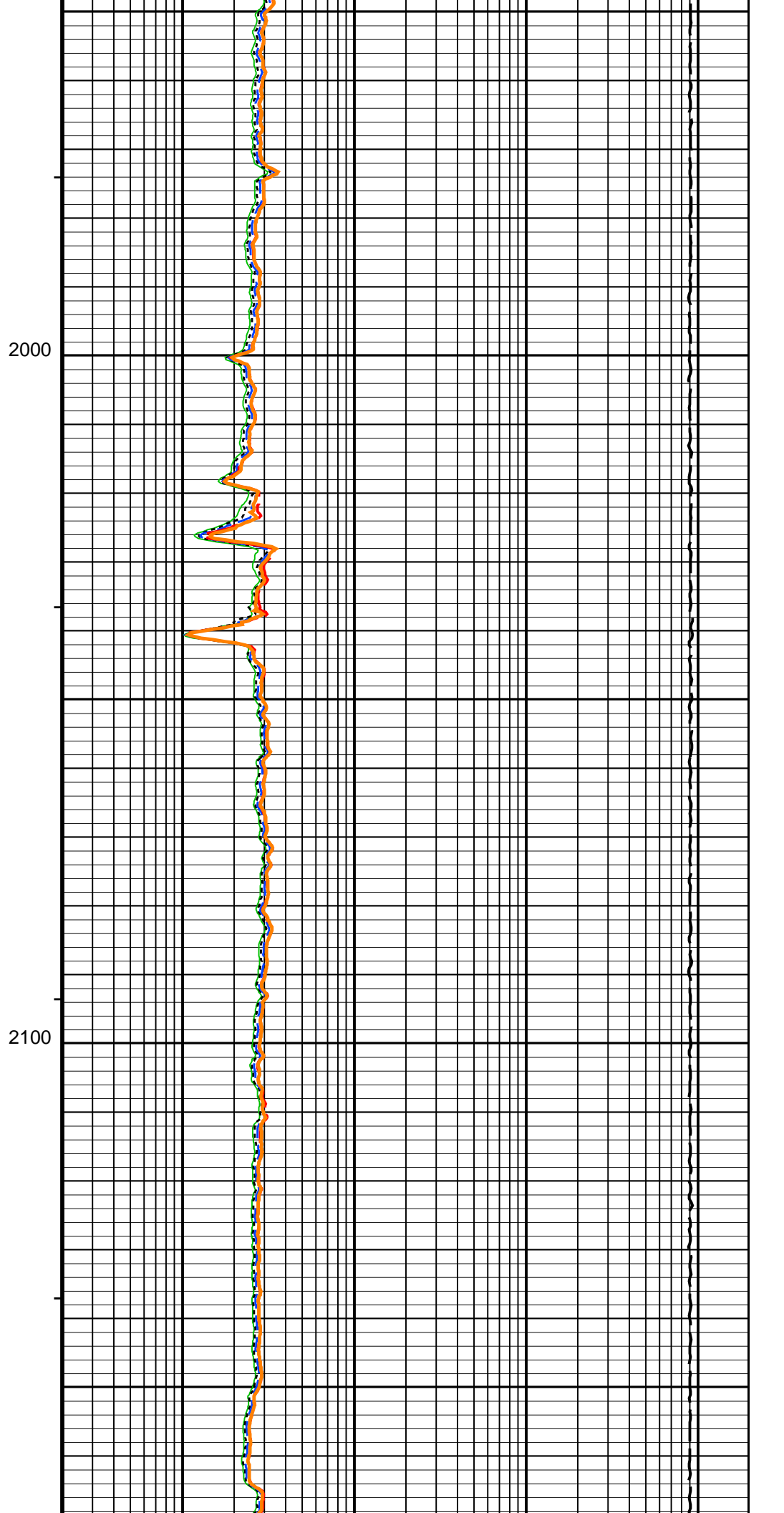
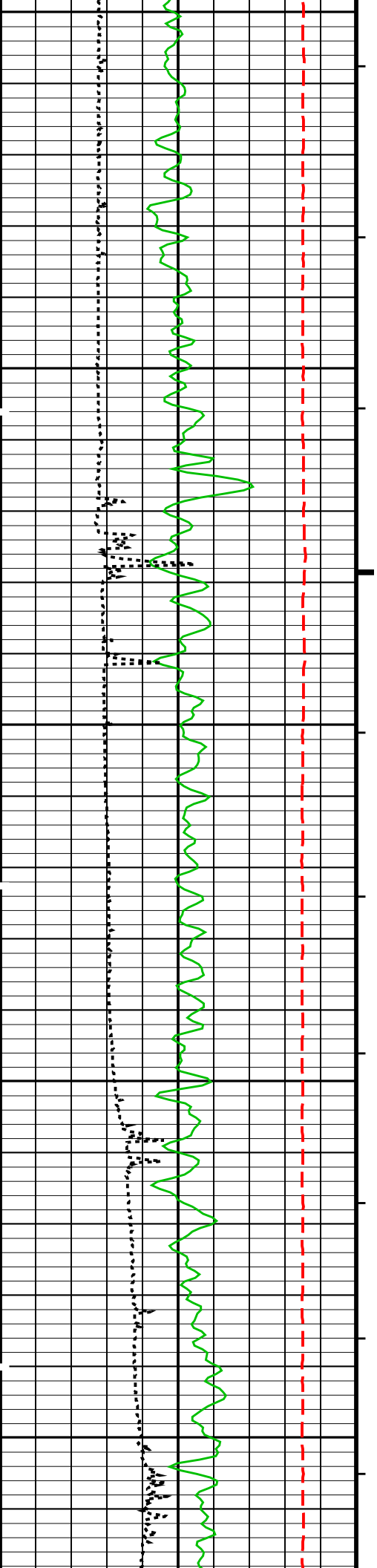
(IN)		16	Drag	0.2	(OHMM)	2000
Gamma Ray (GR_EDTC)			Cable Drag	AIT-H 10 Inch Investigation (AHT10)		
(GAPI)		200		(OHMM)		
0				0.2		2000

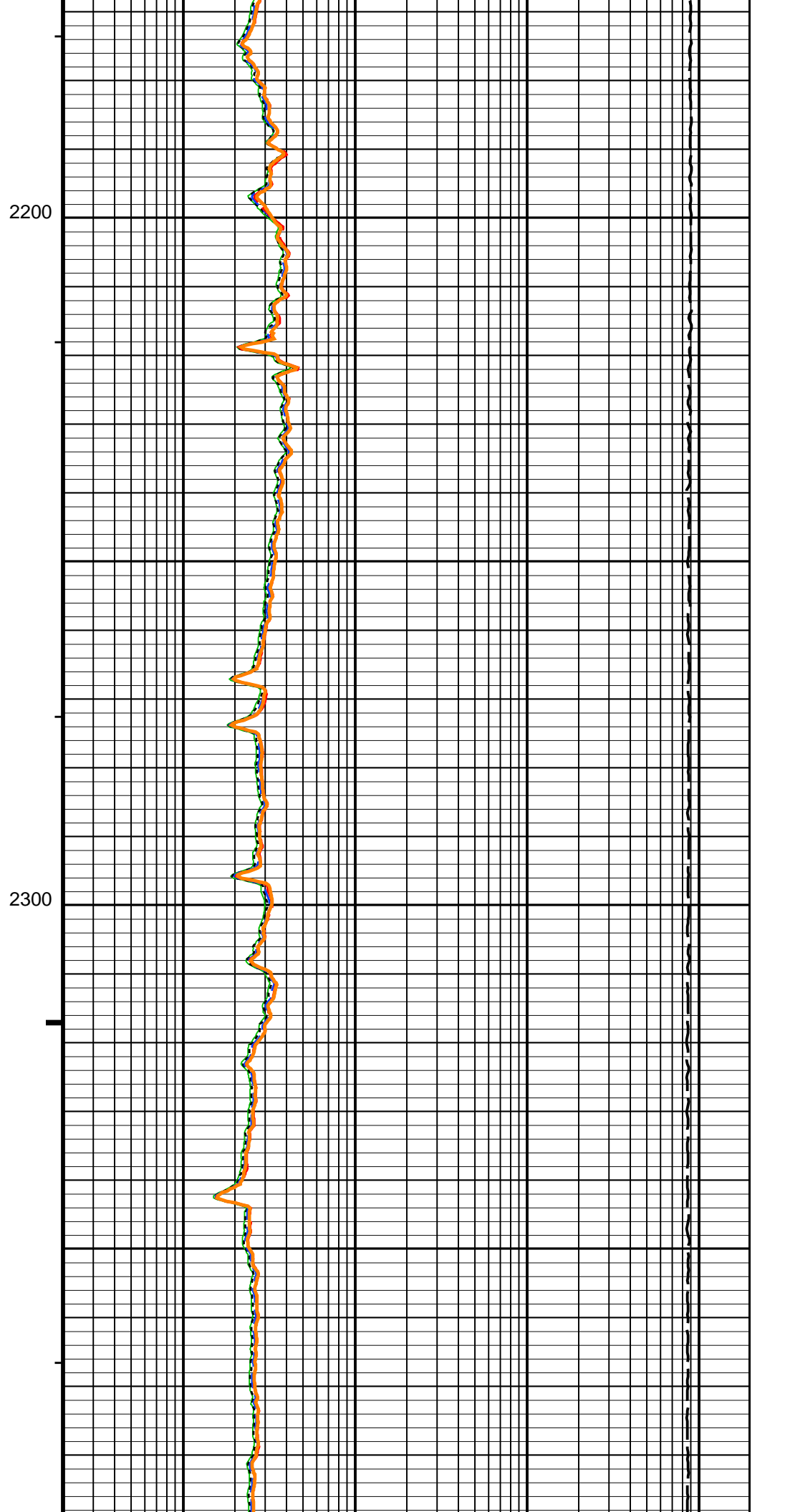
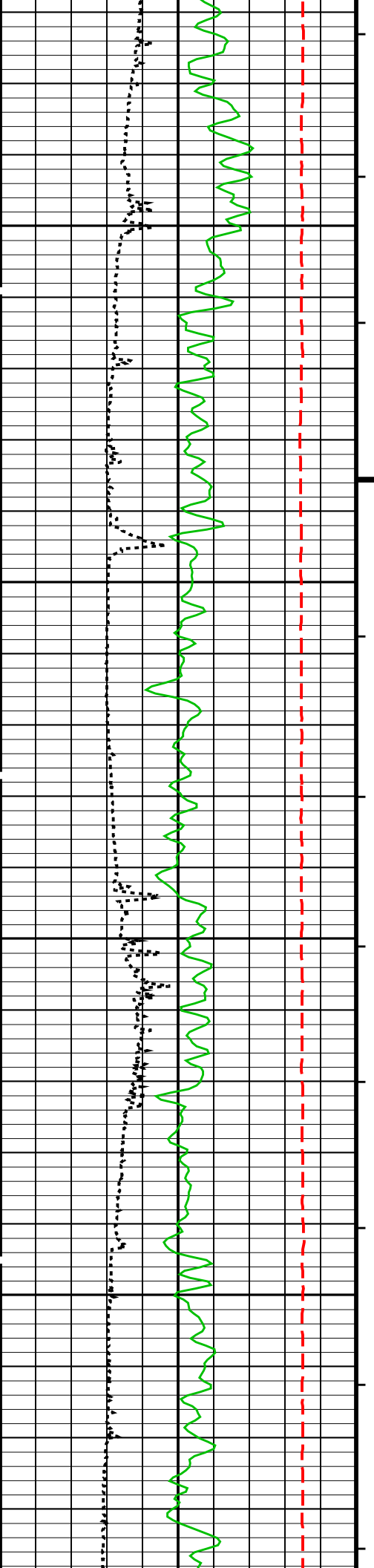
MAIN PASS: \*\*\* PLATFORM EXPRESS – ARRAY INDUCTION \*\*\*

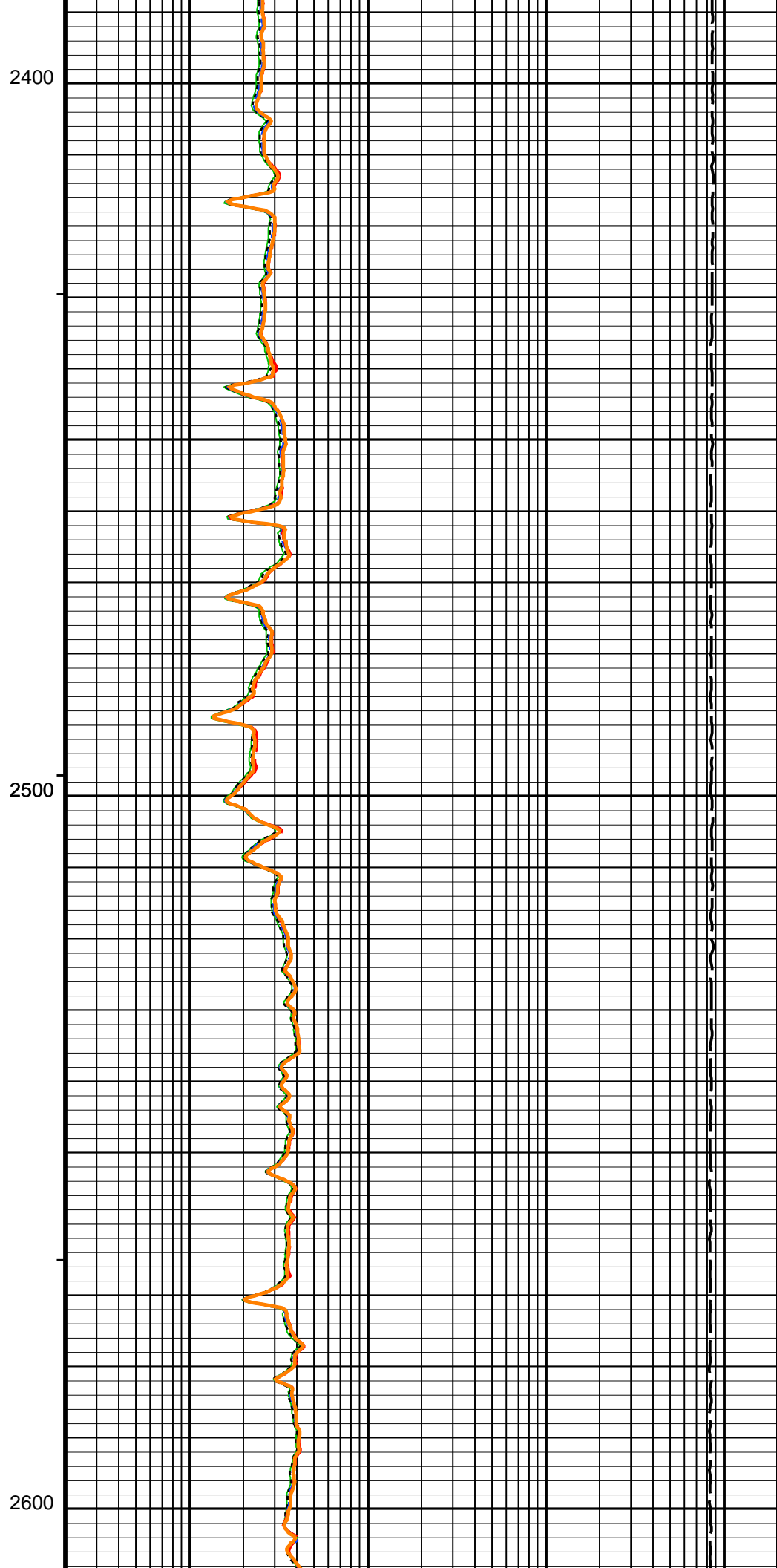
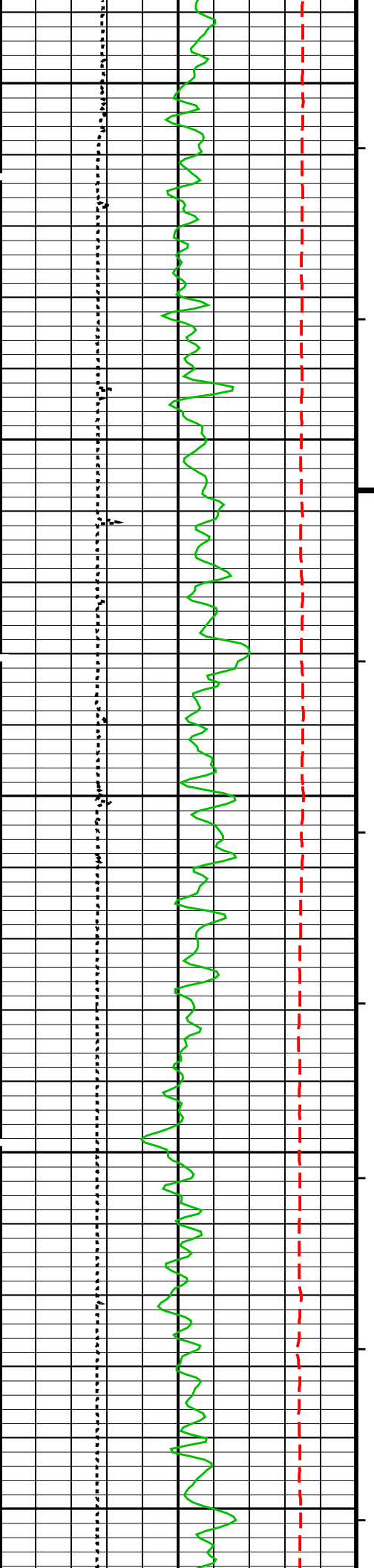




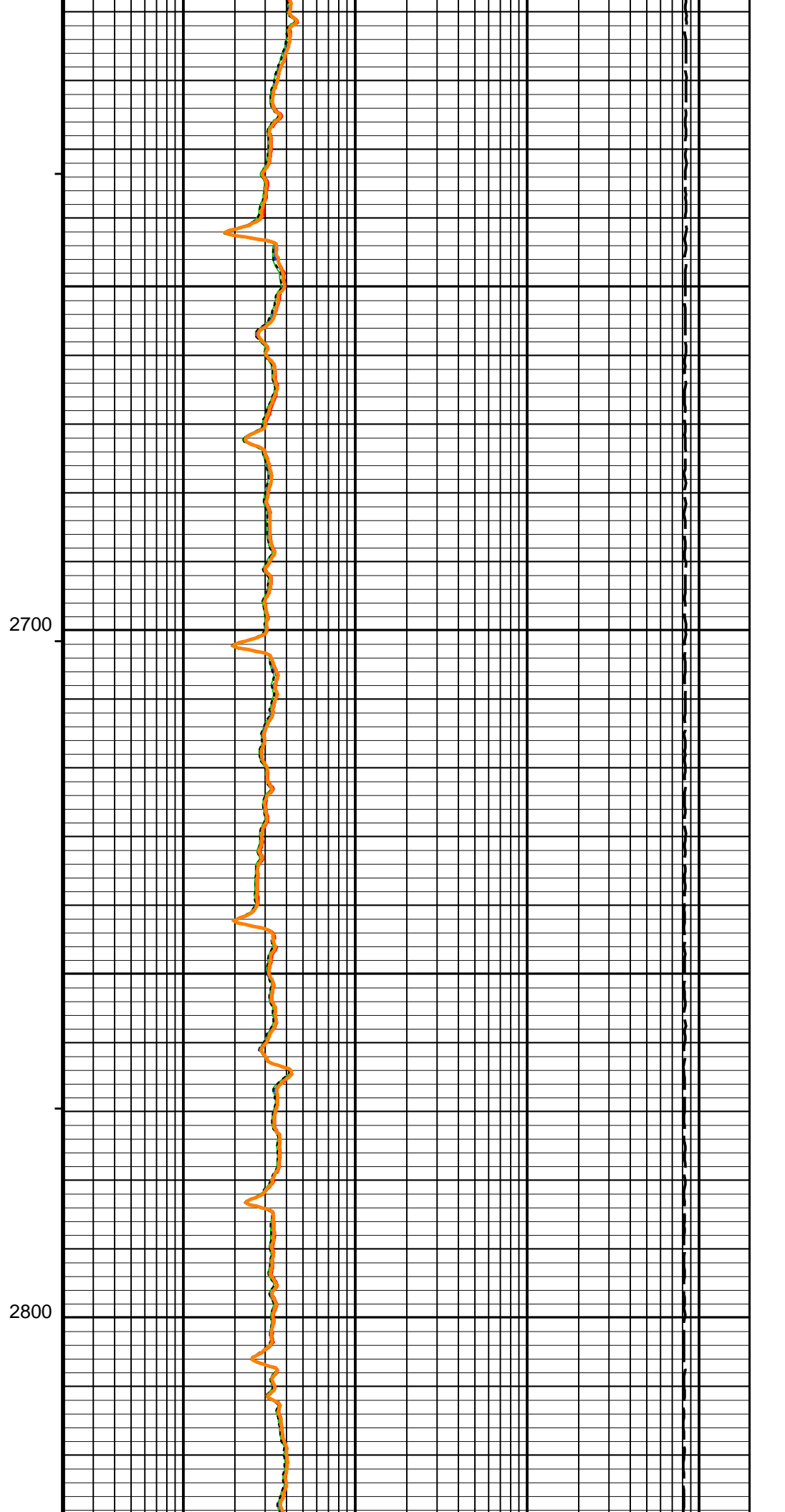
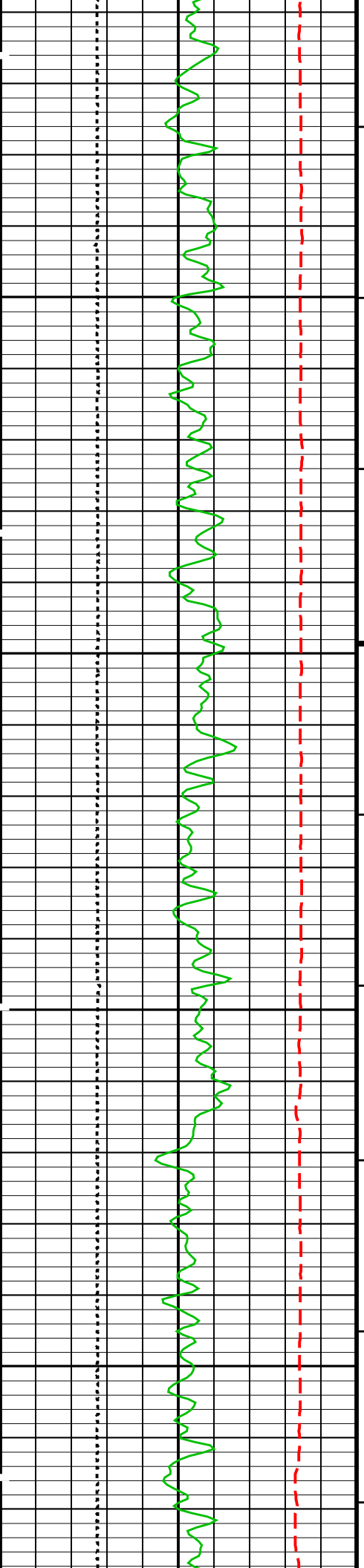


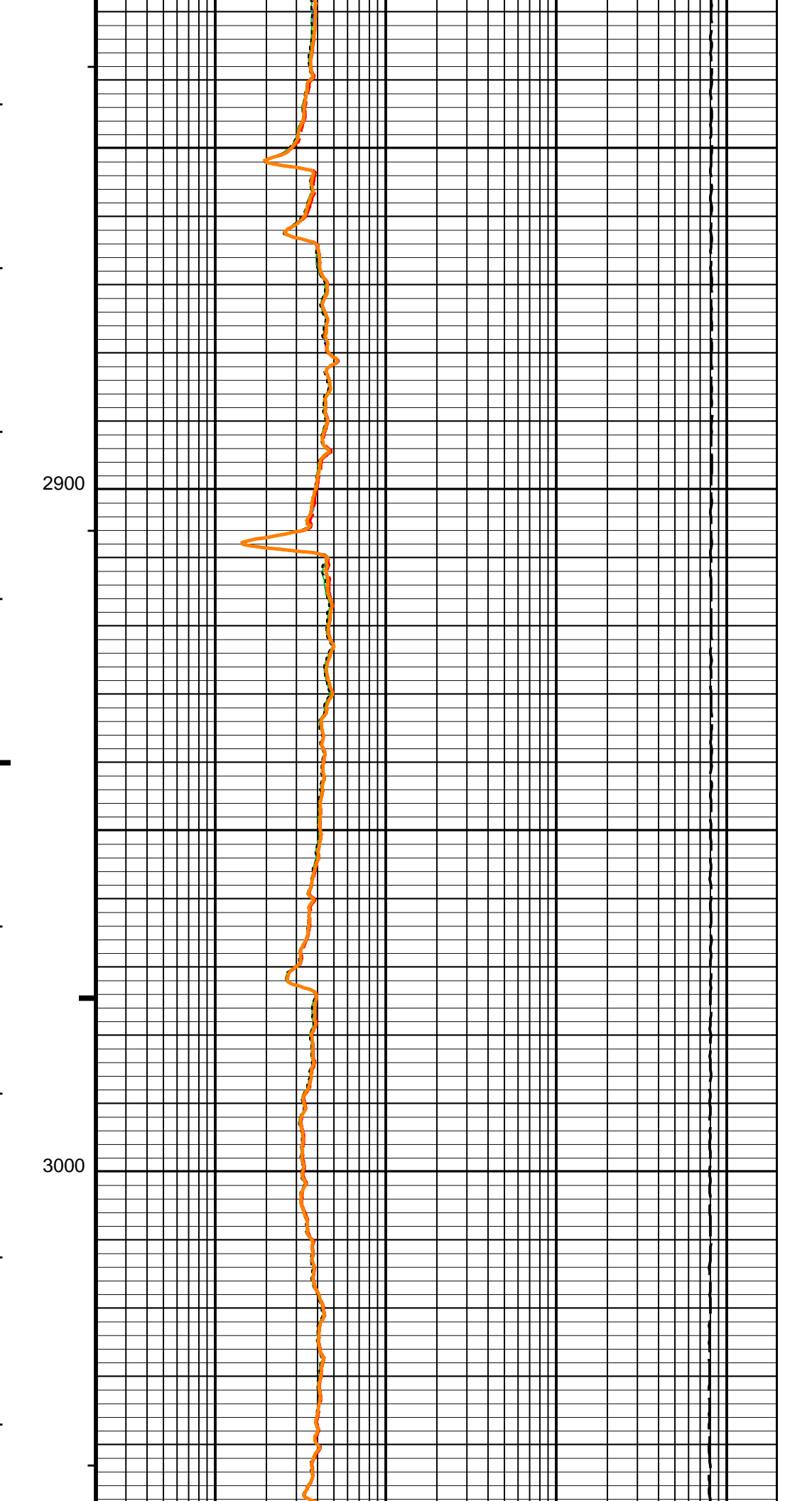
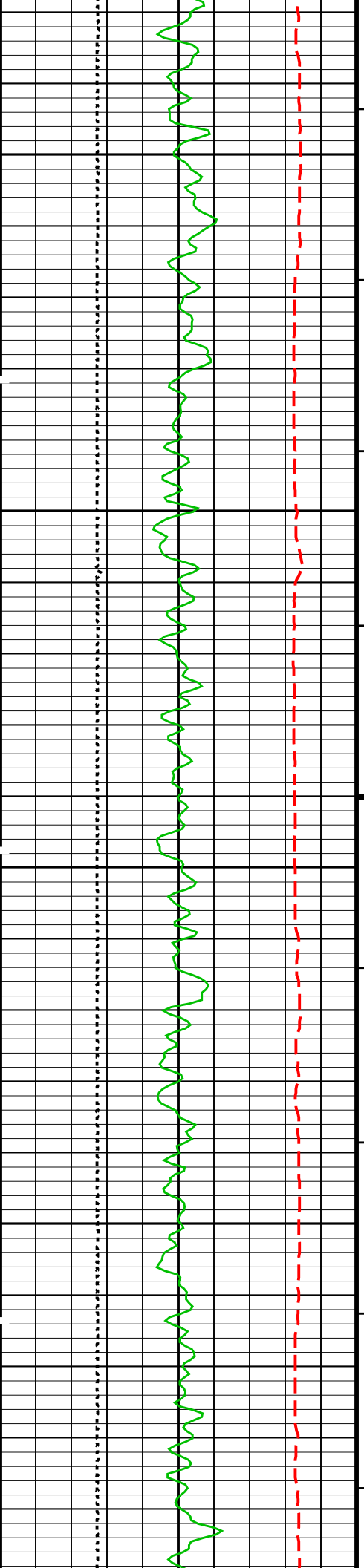


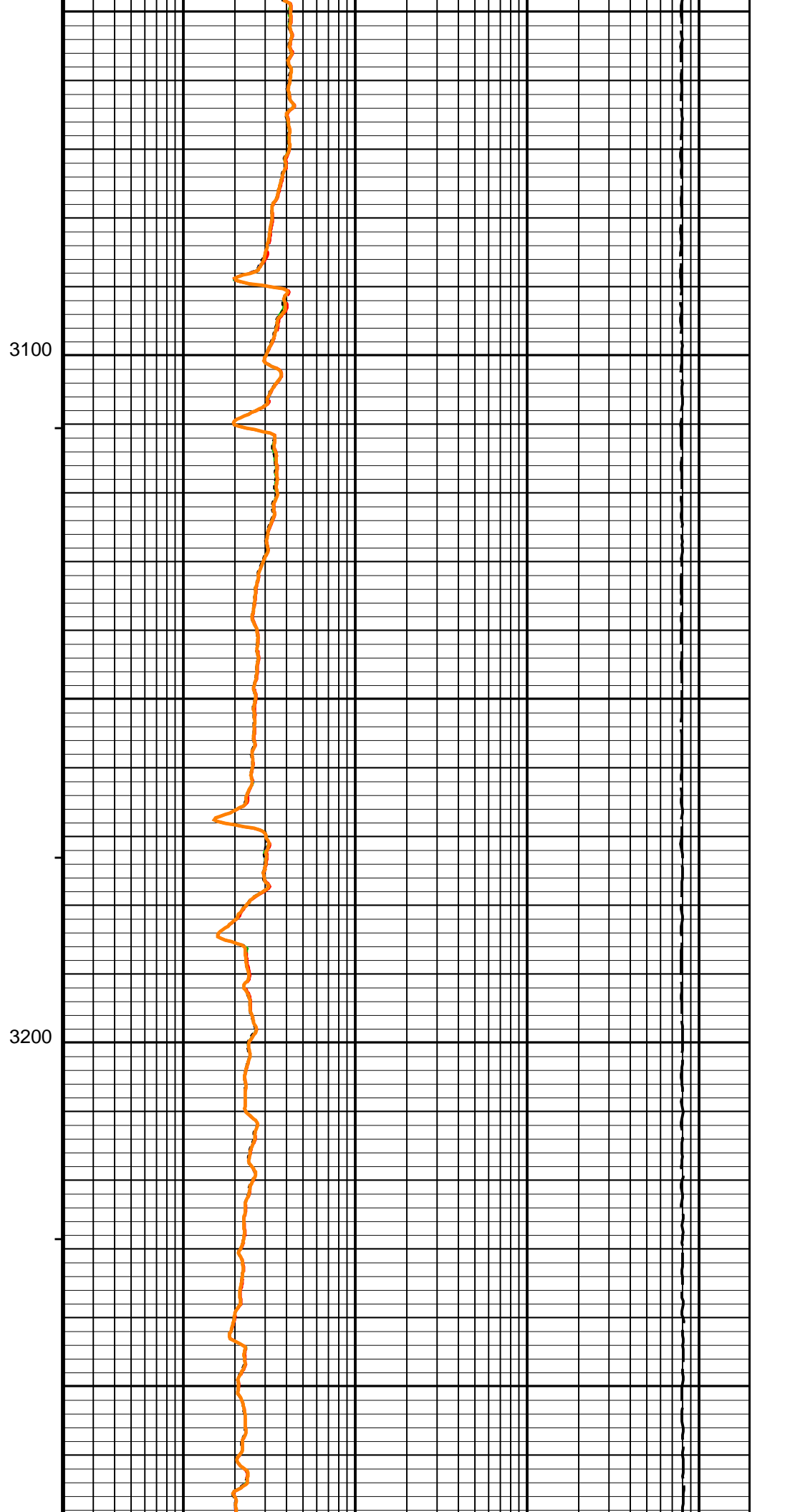
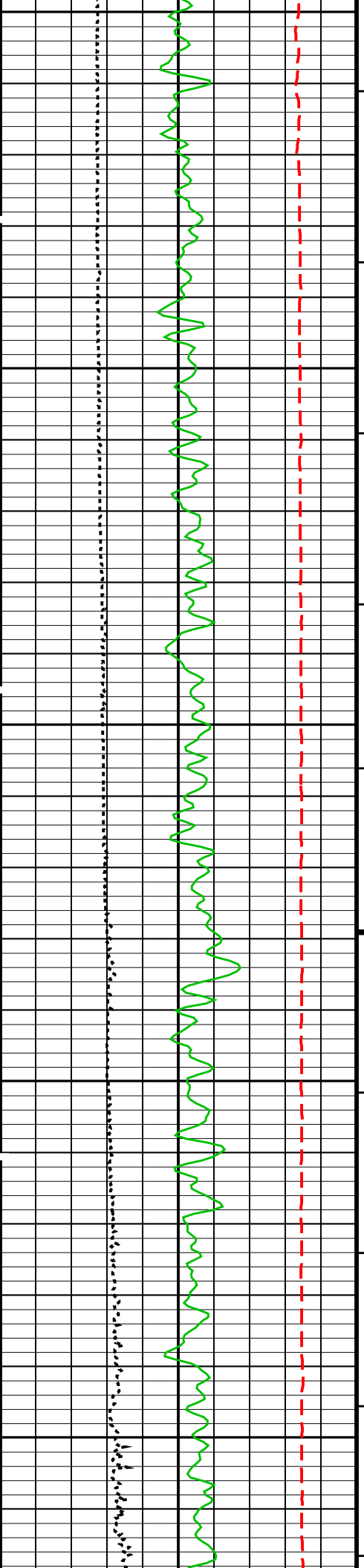


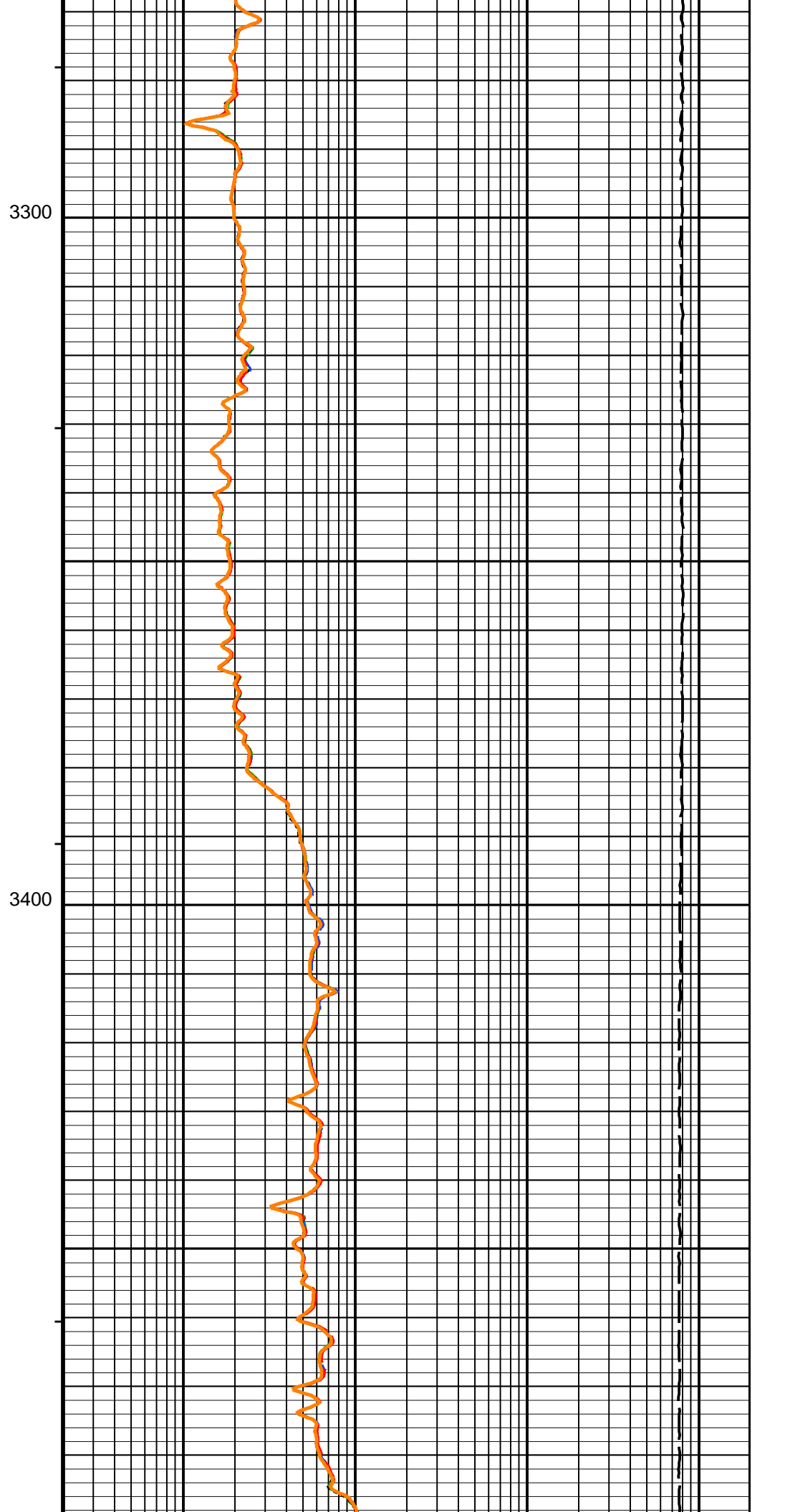
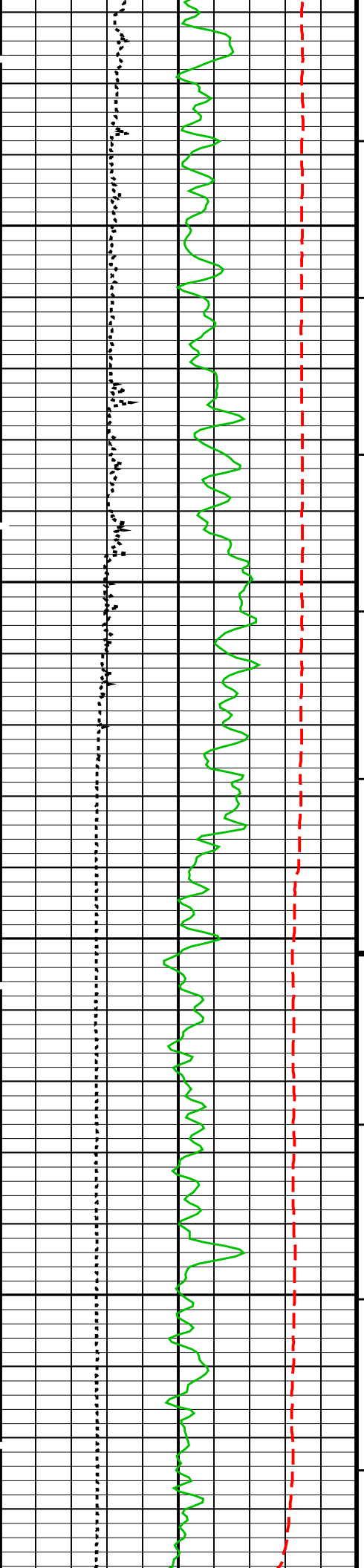


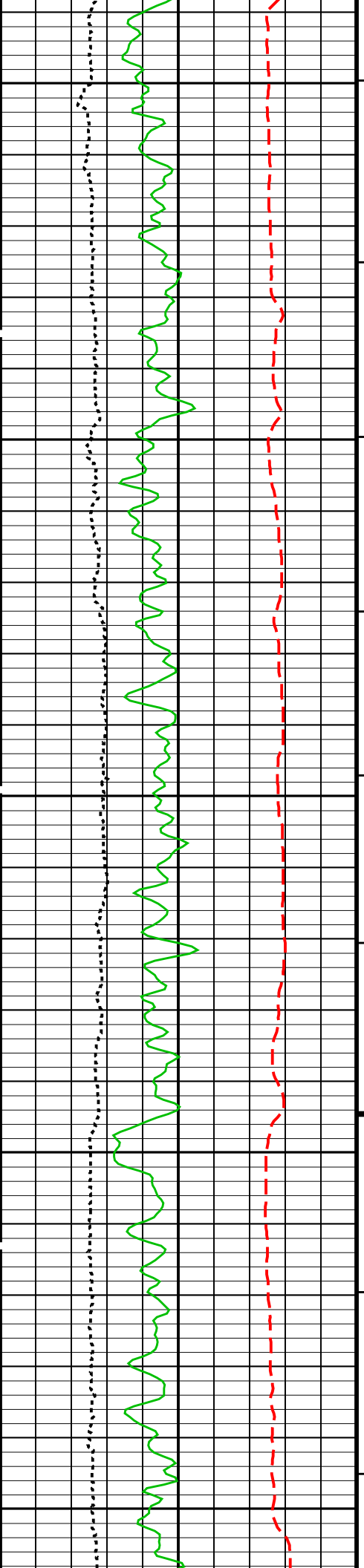








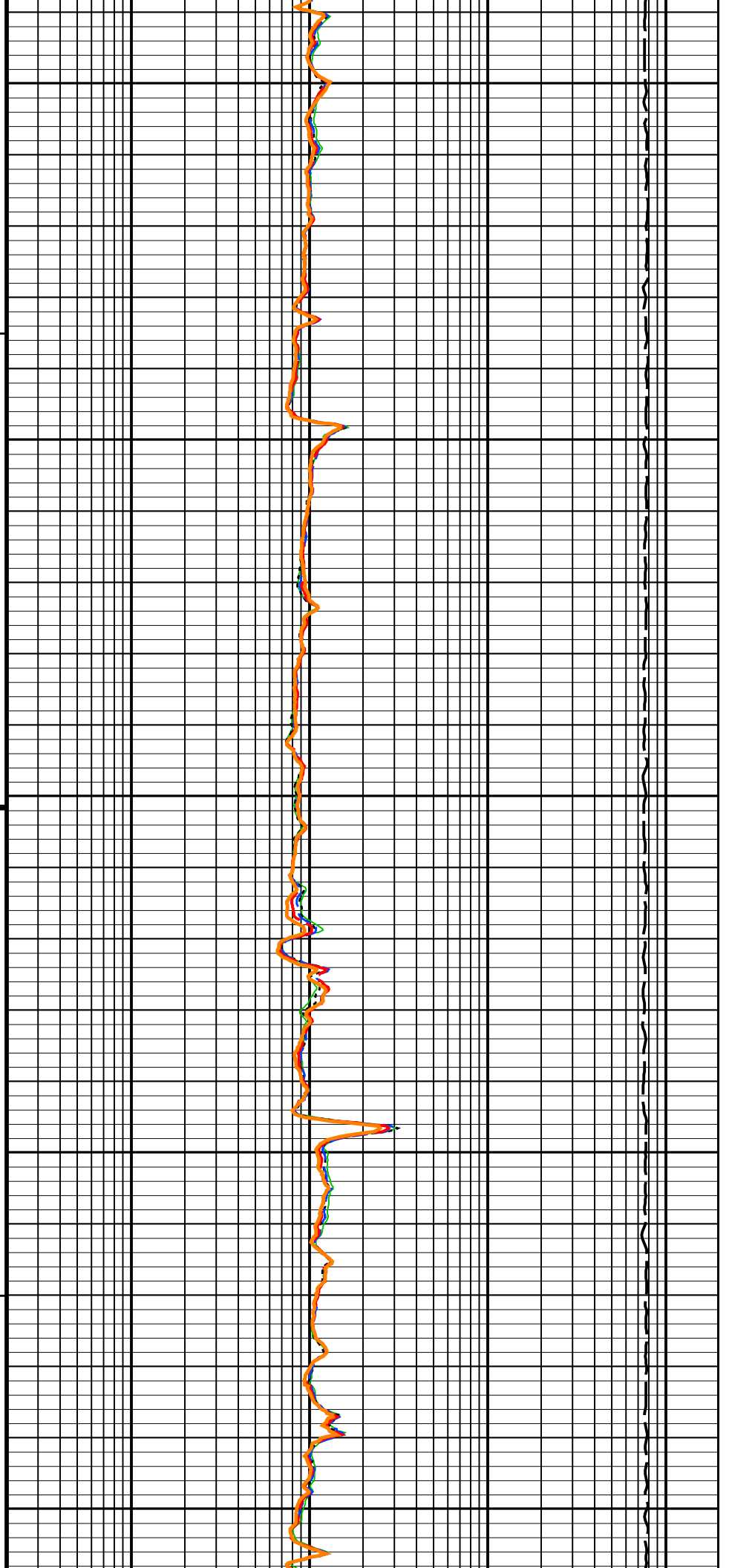


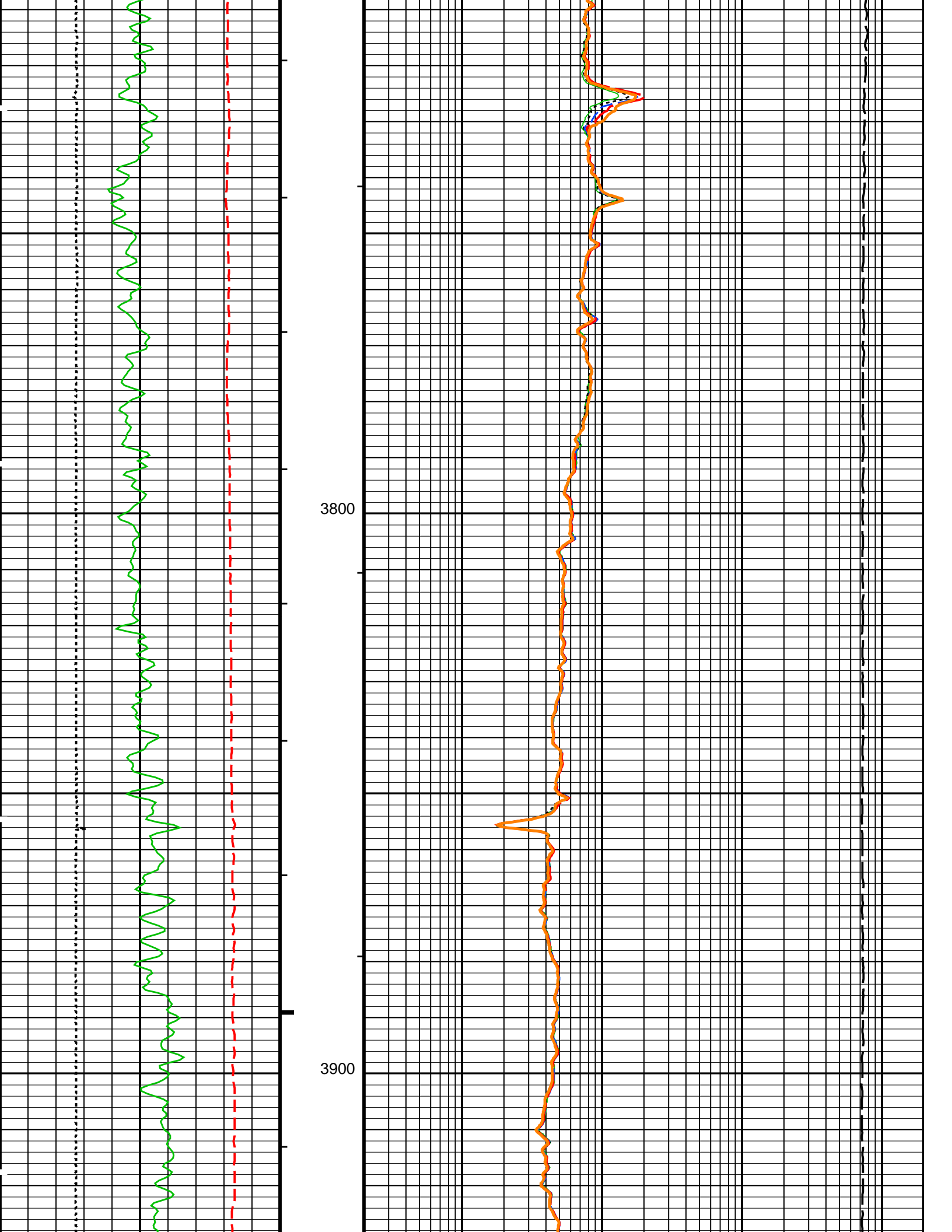


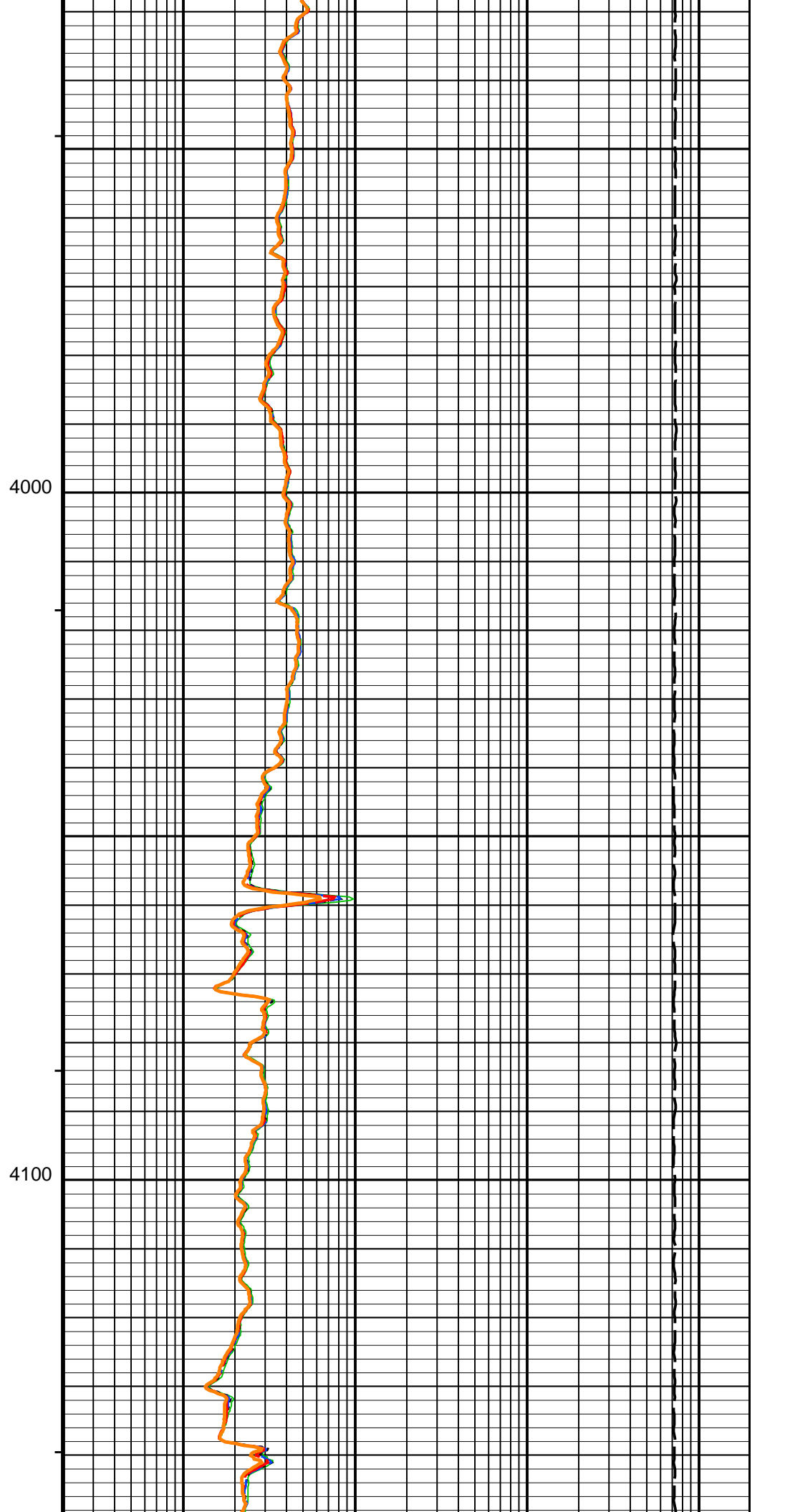
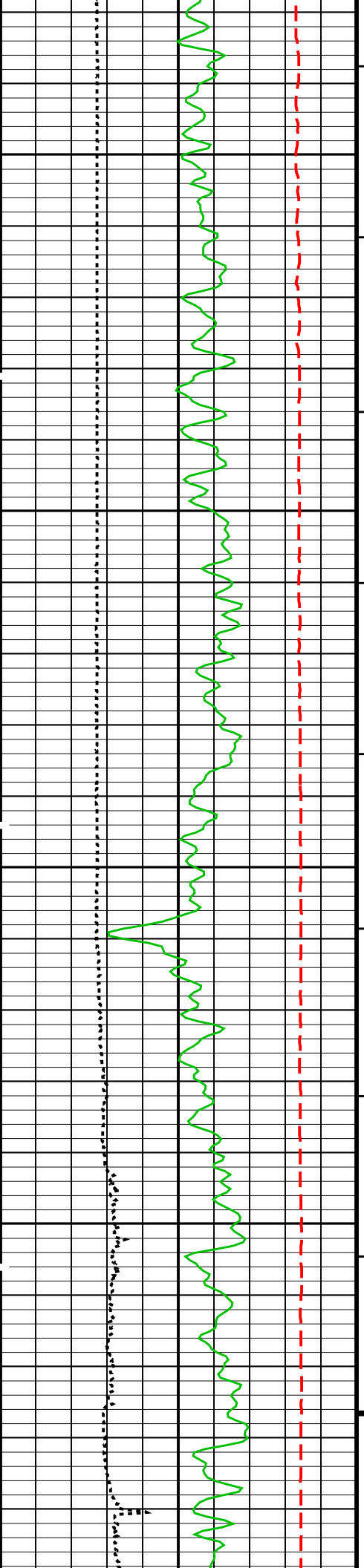
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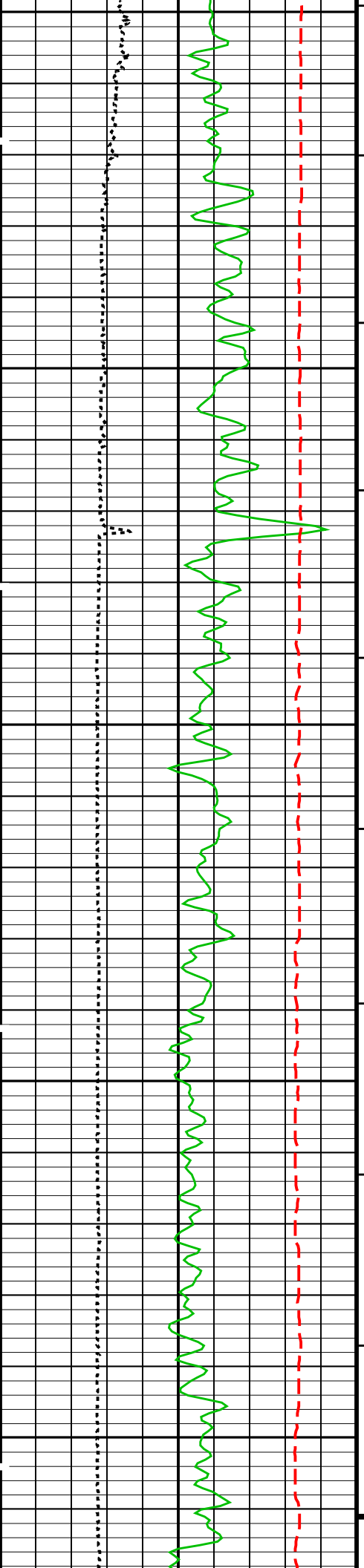
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3700



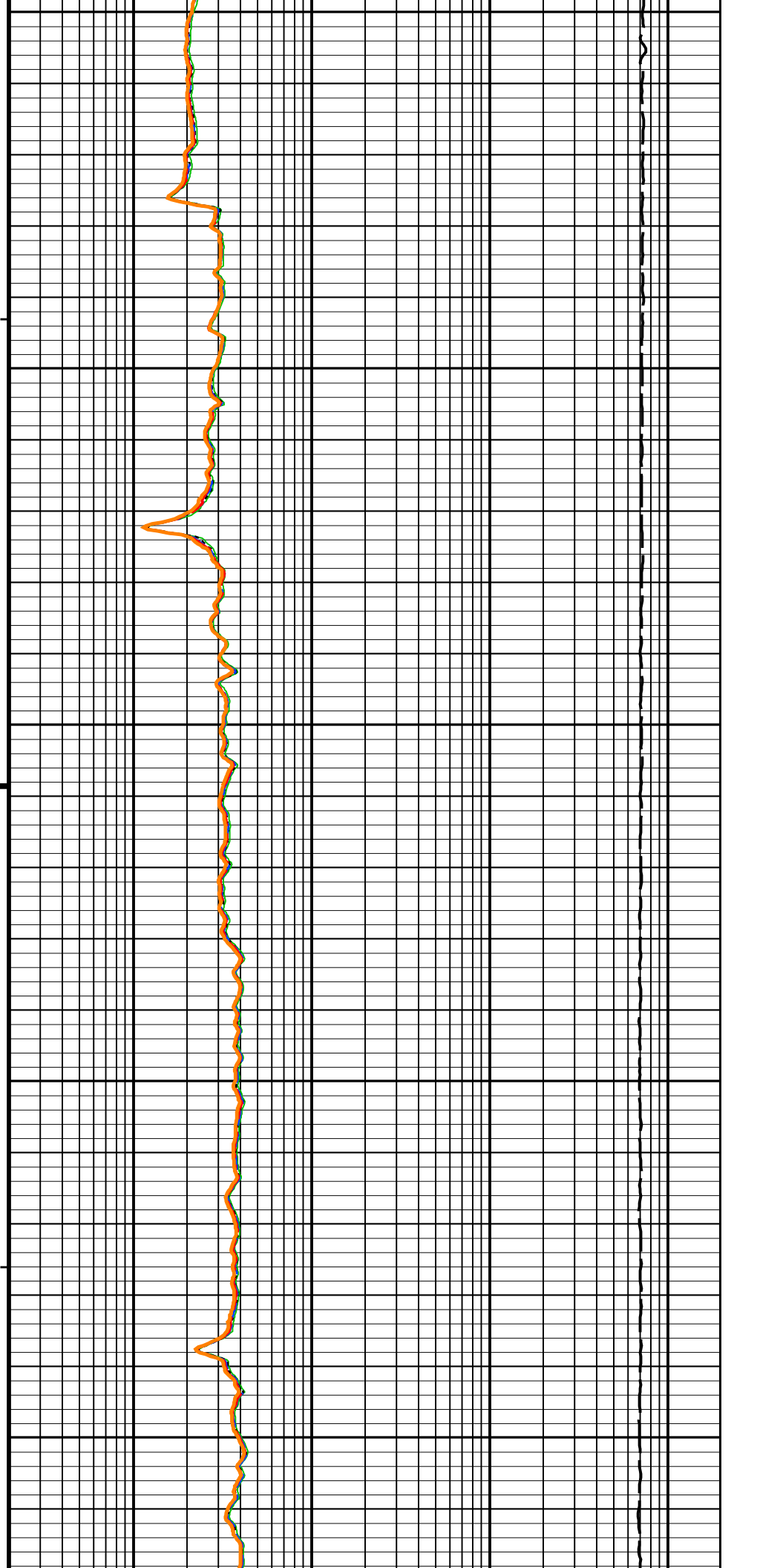




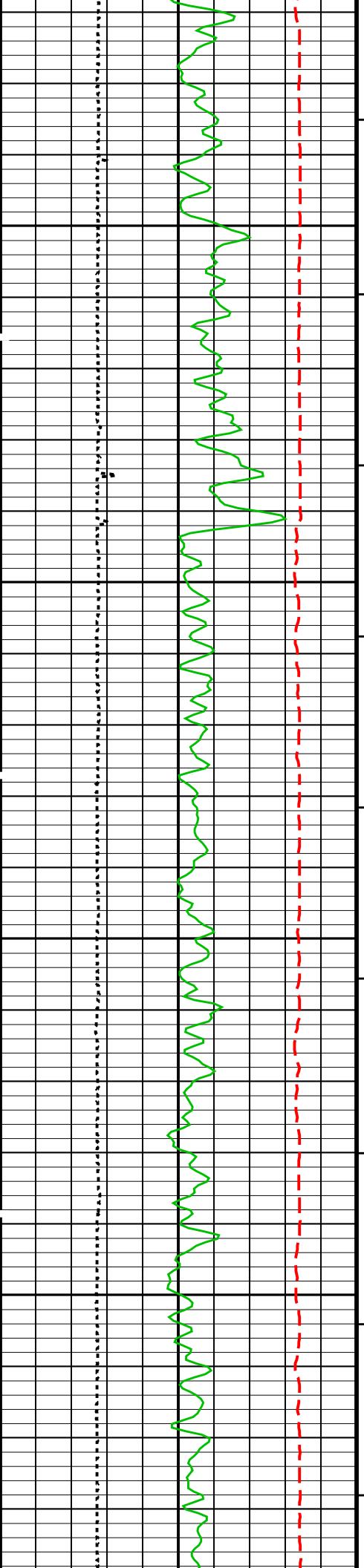


4200

4300

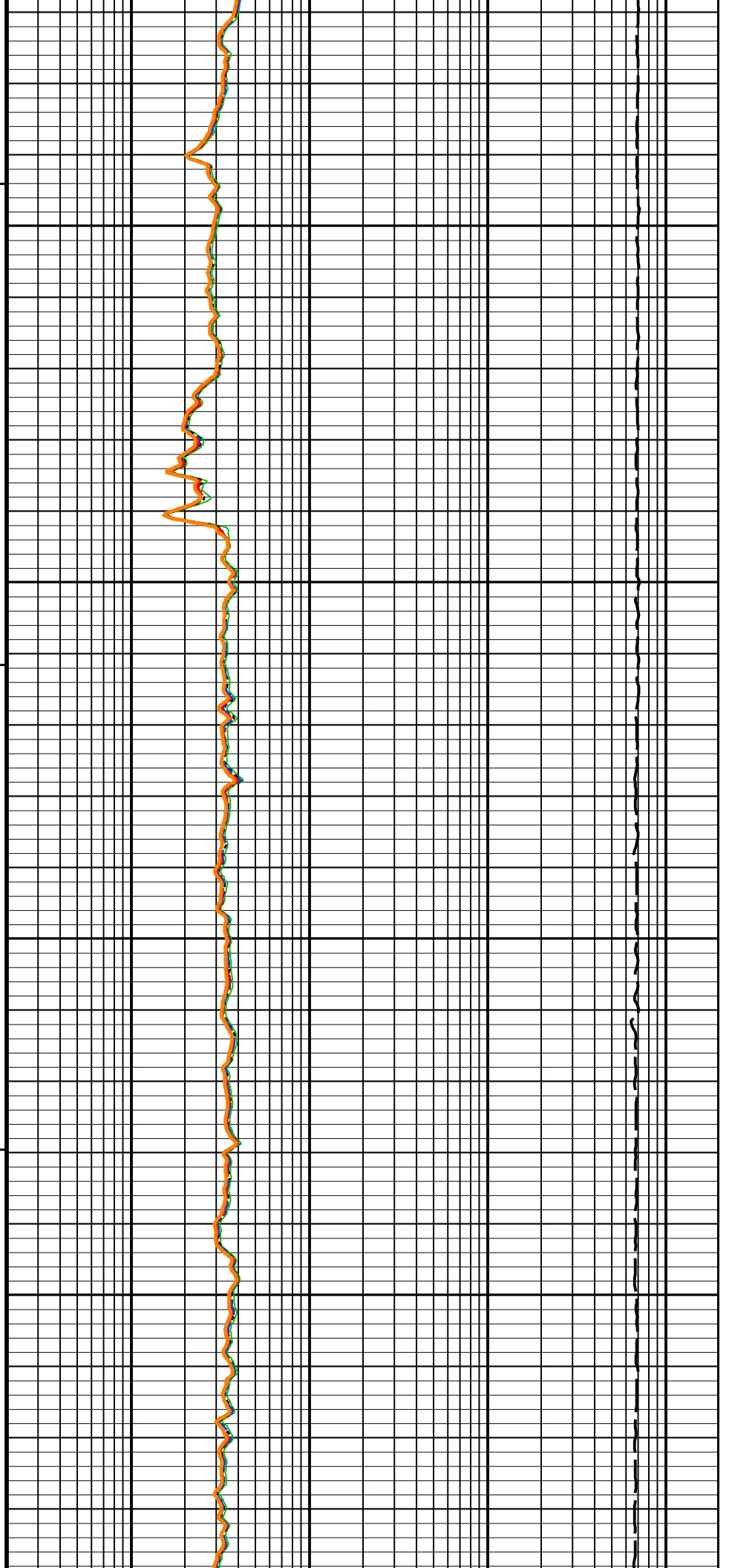


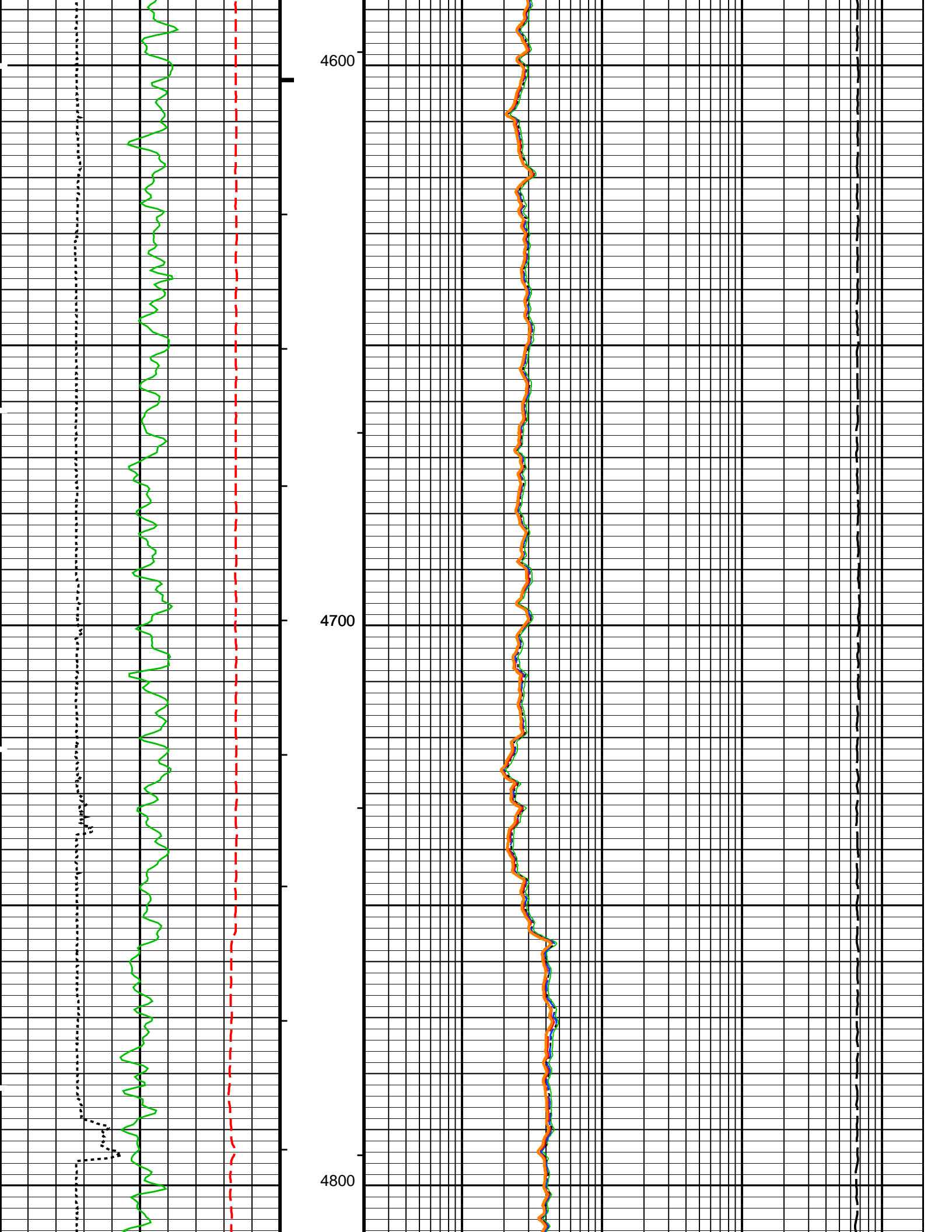


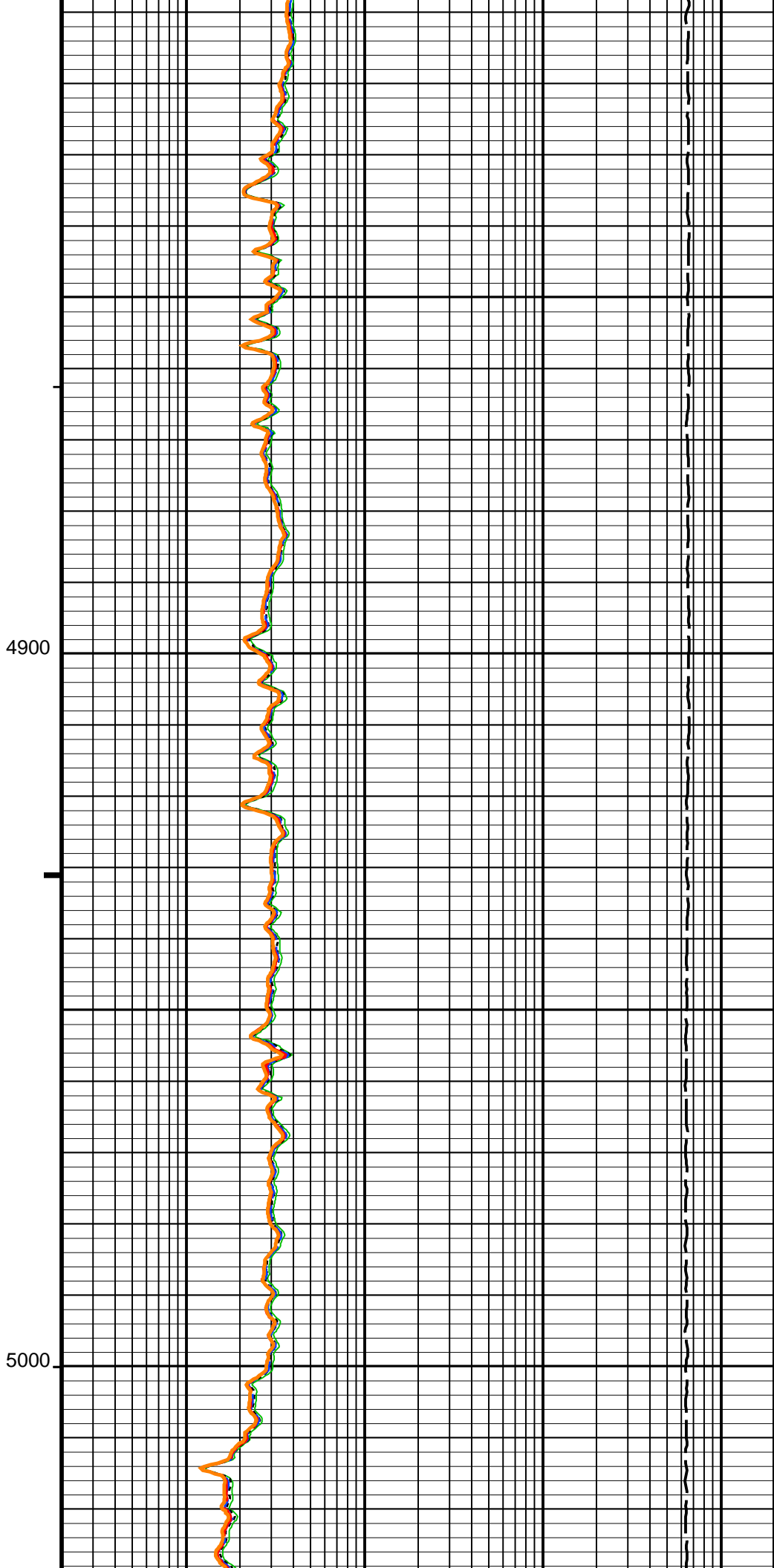
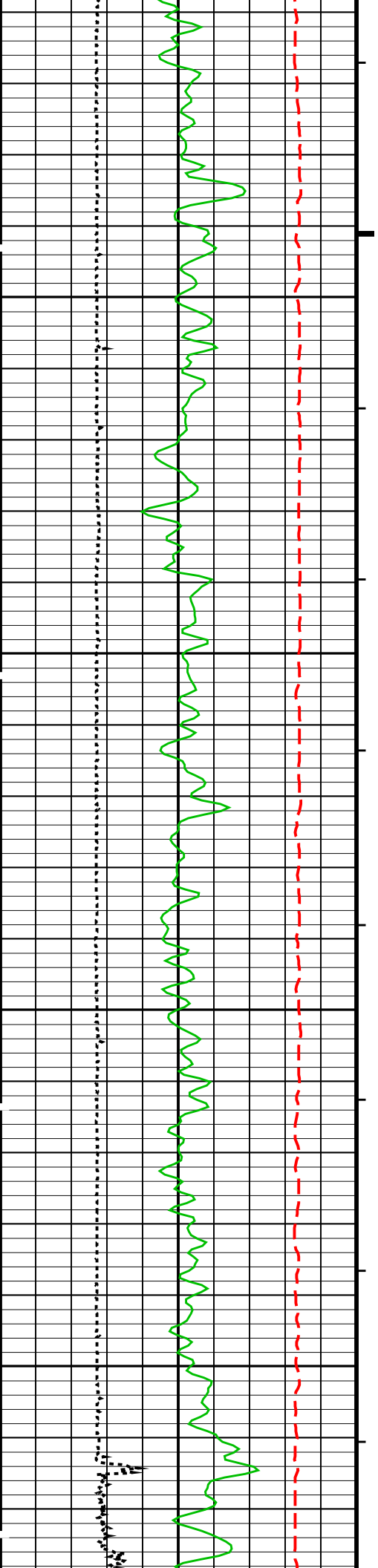


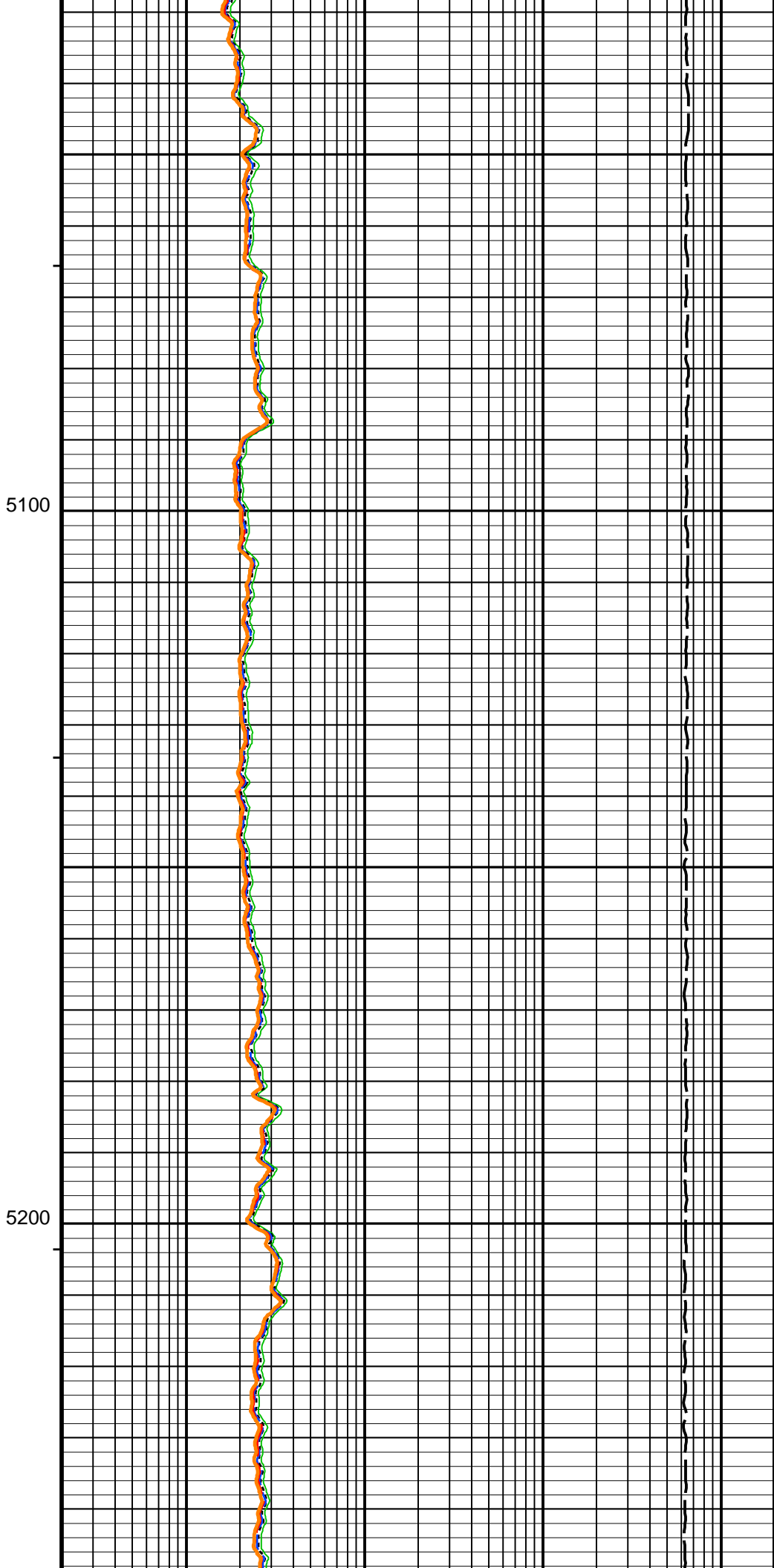
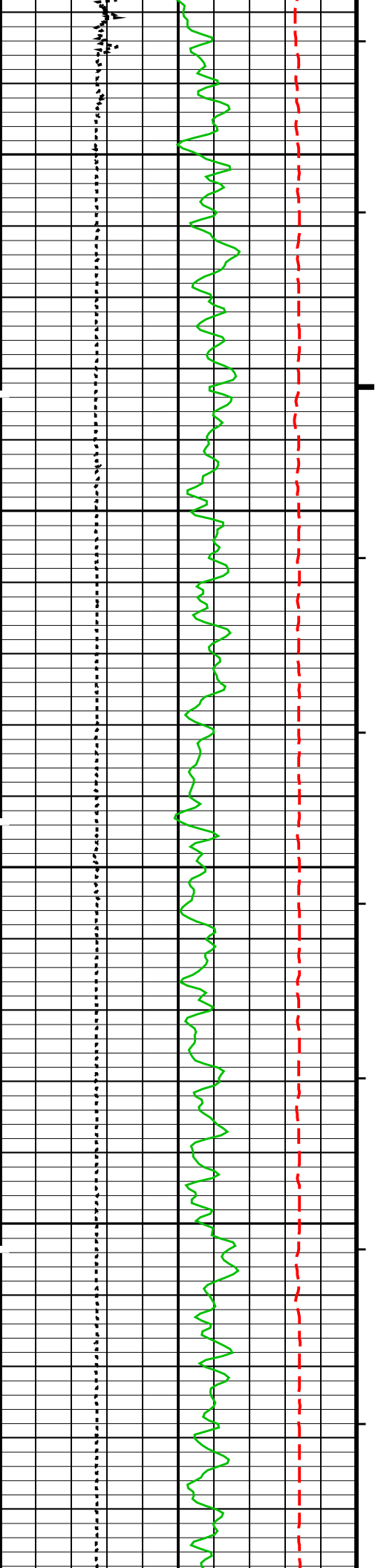
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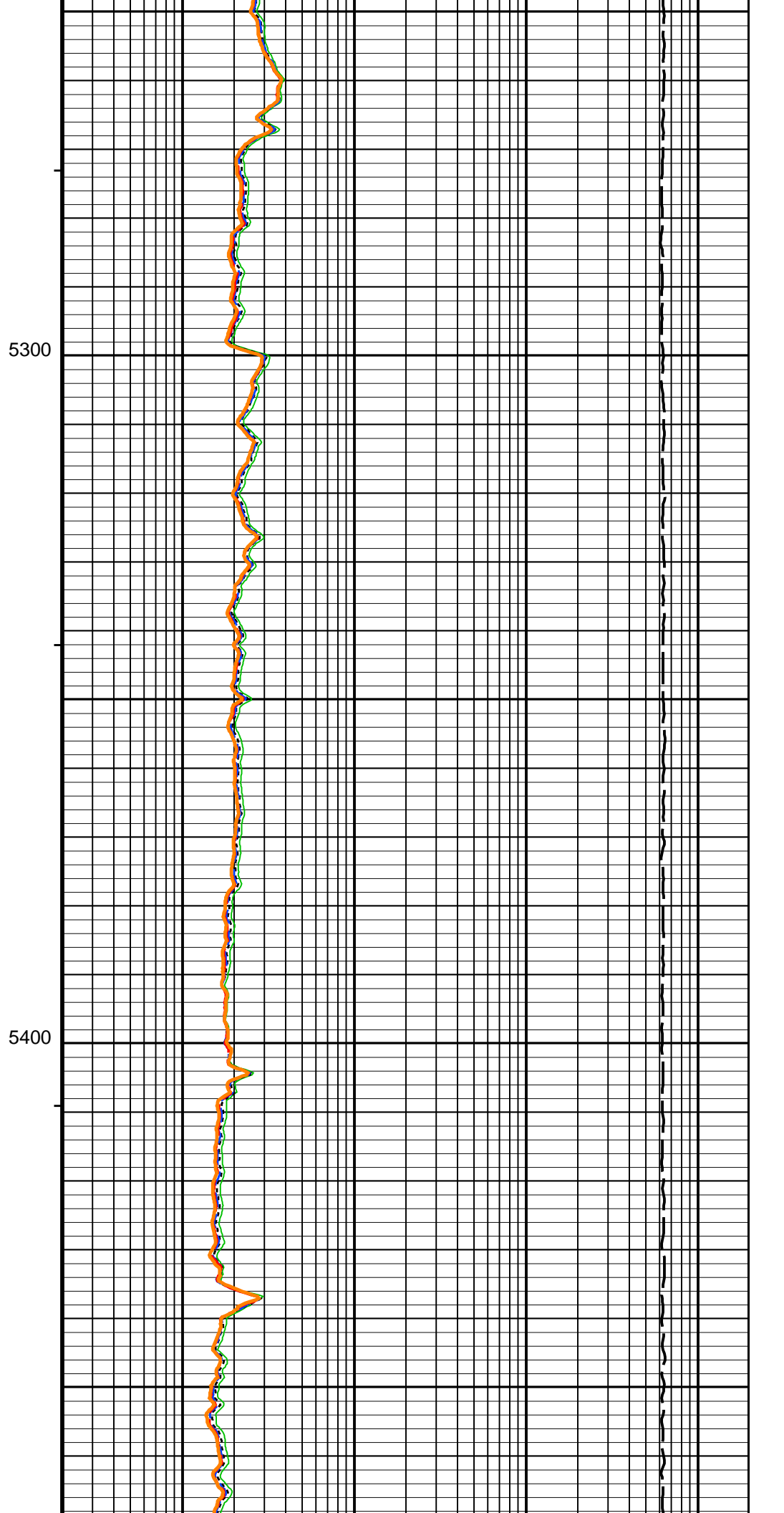
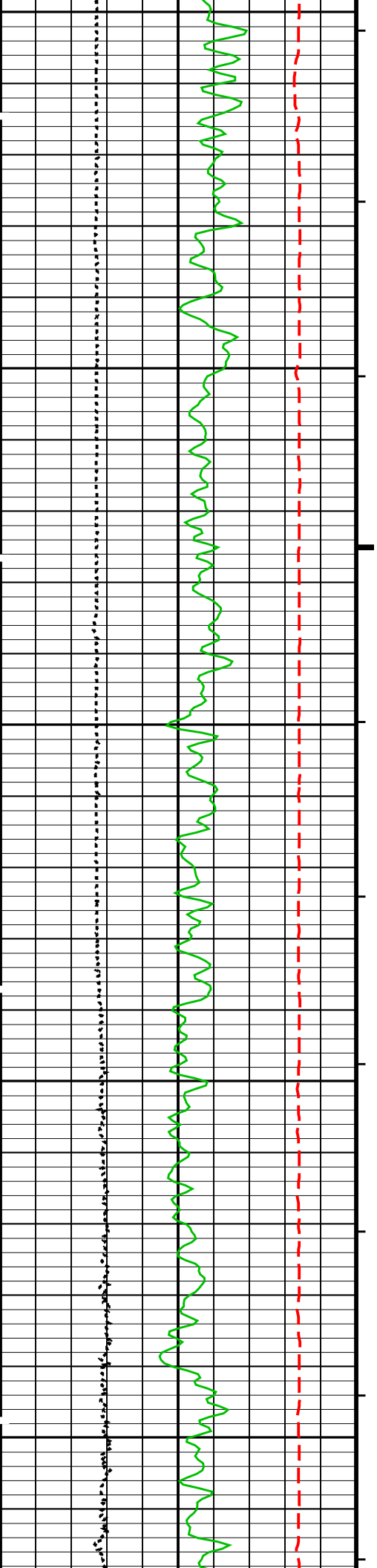
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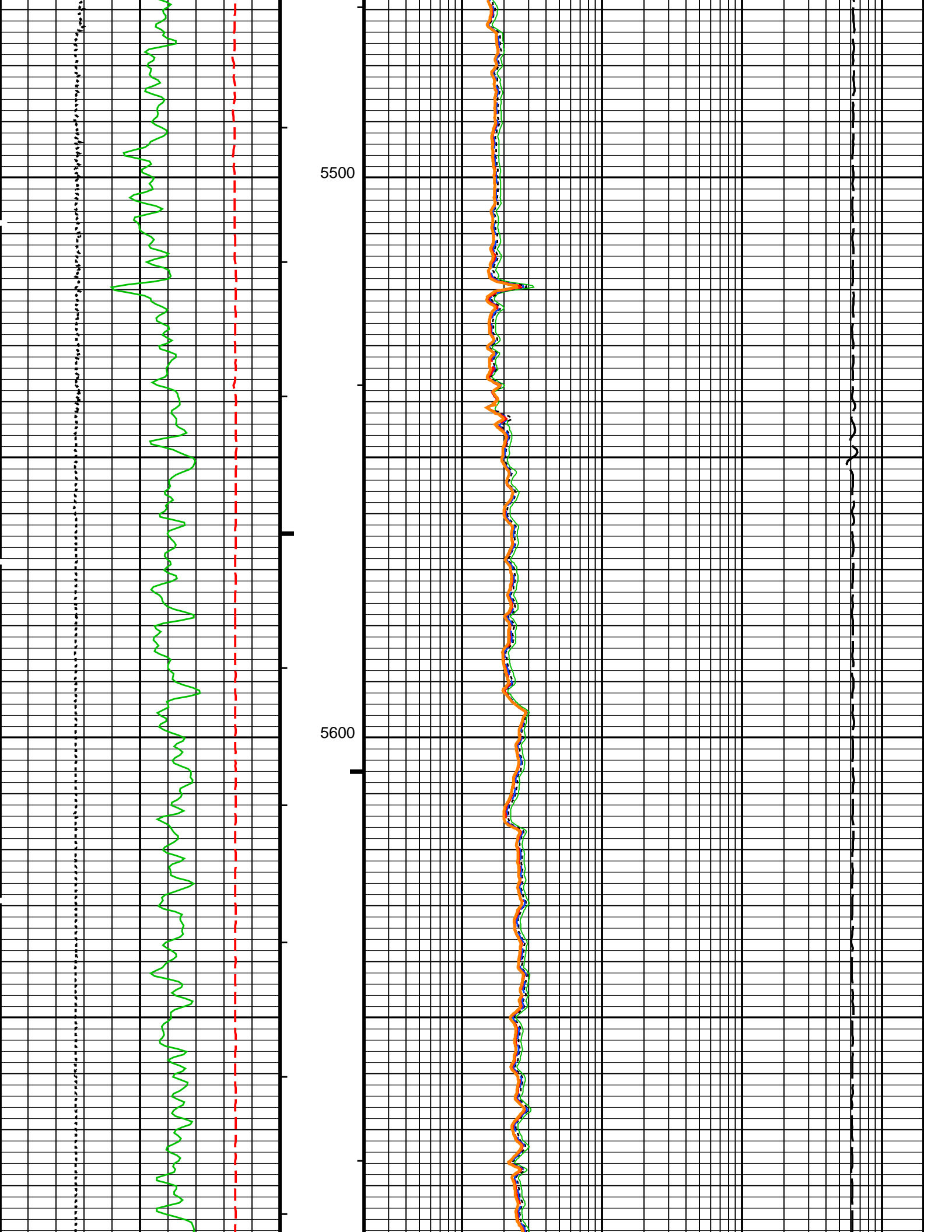


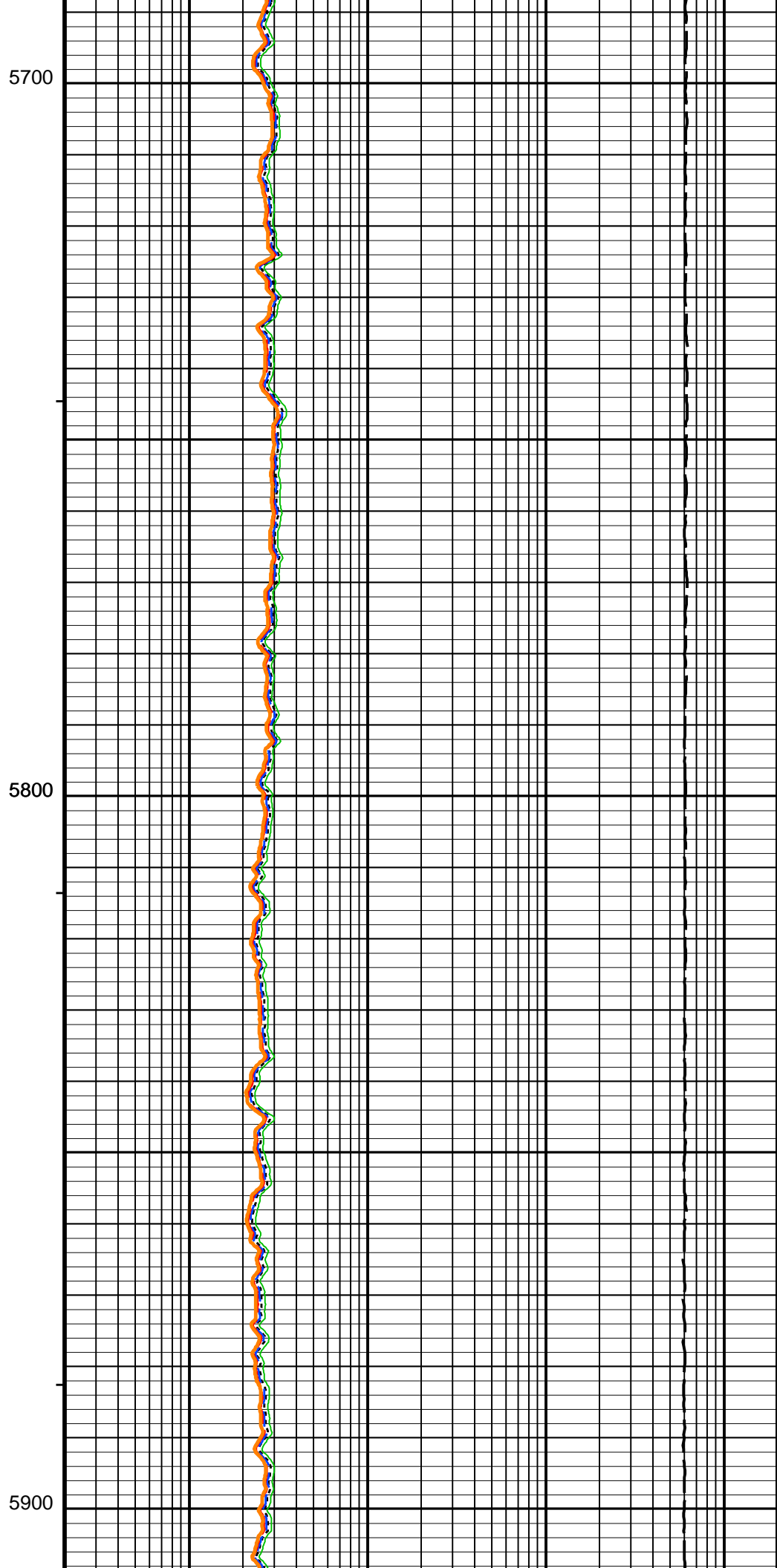
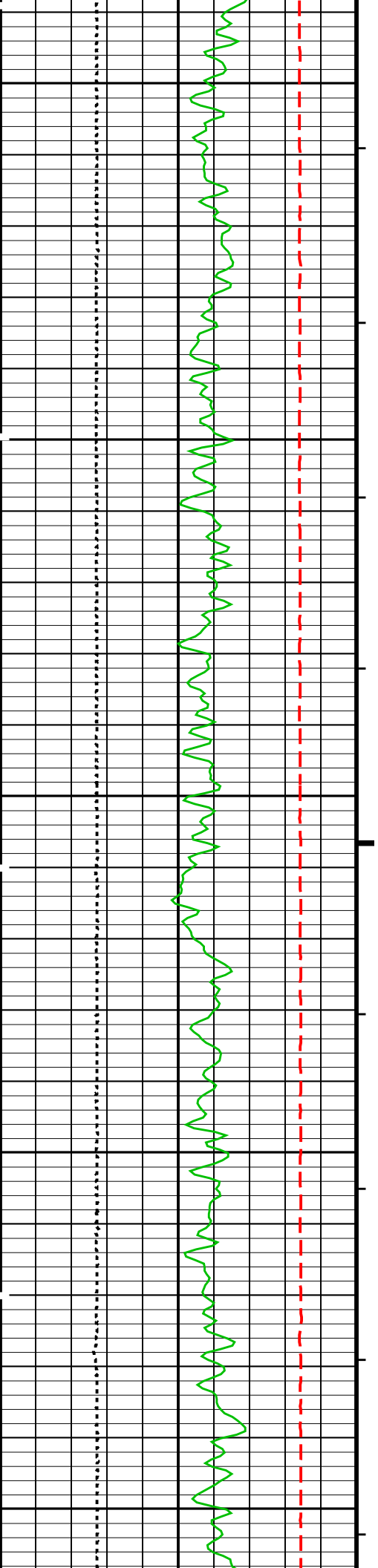


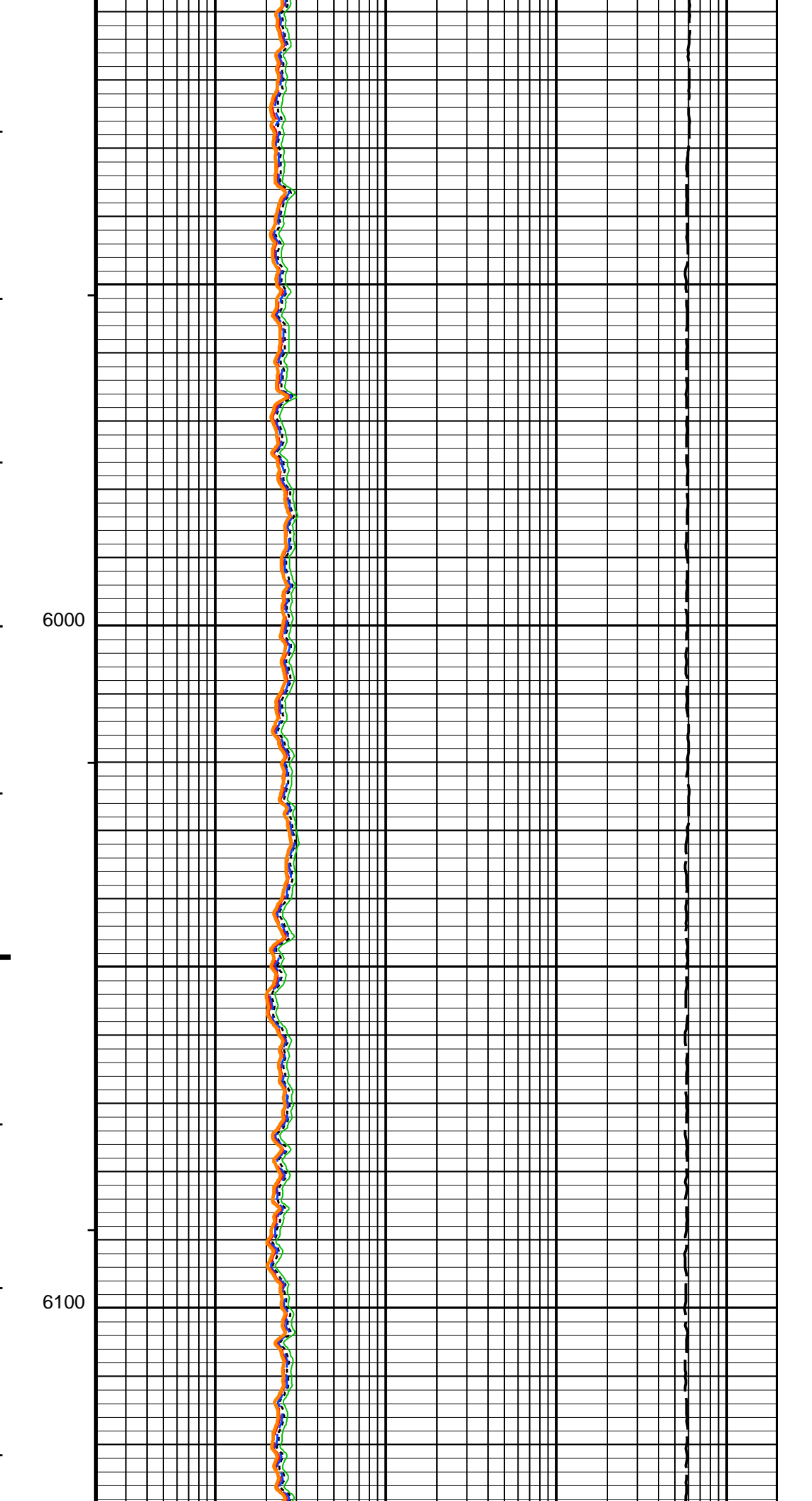
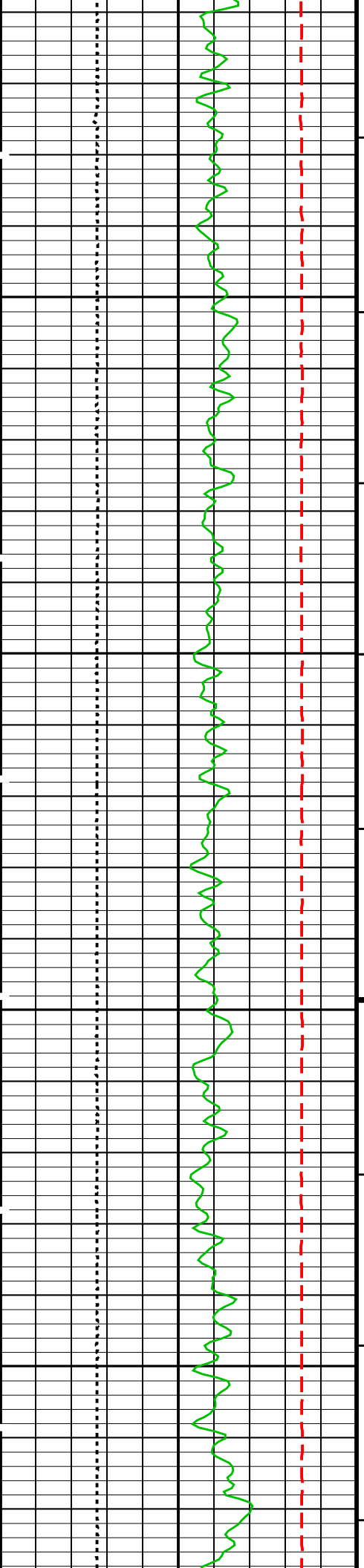




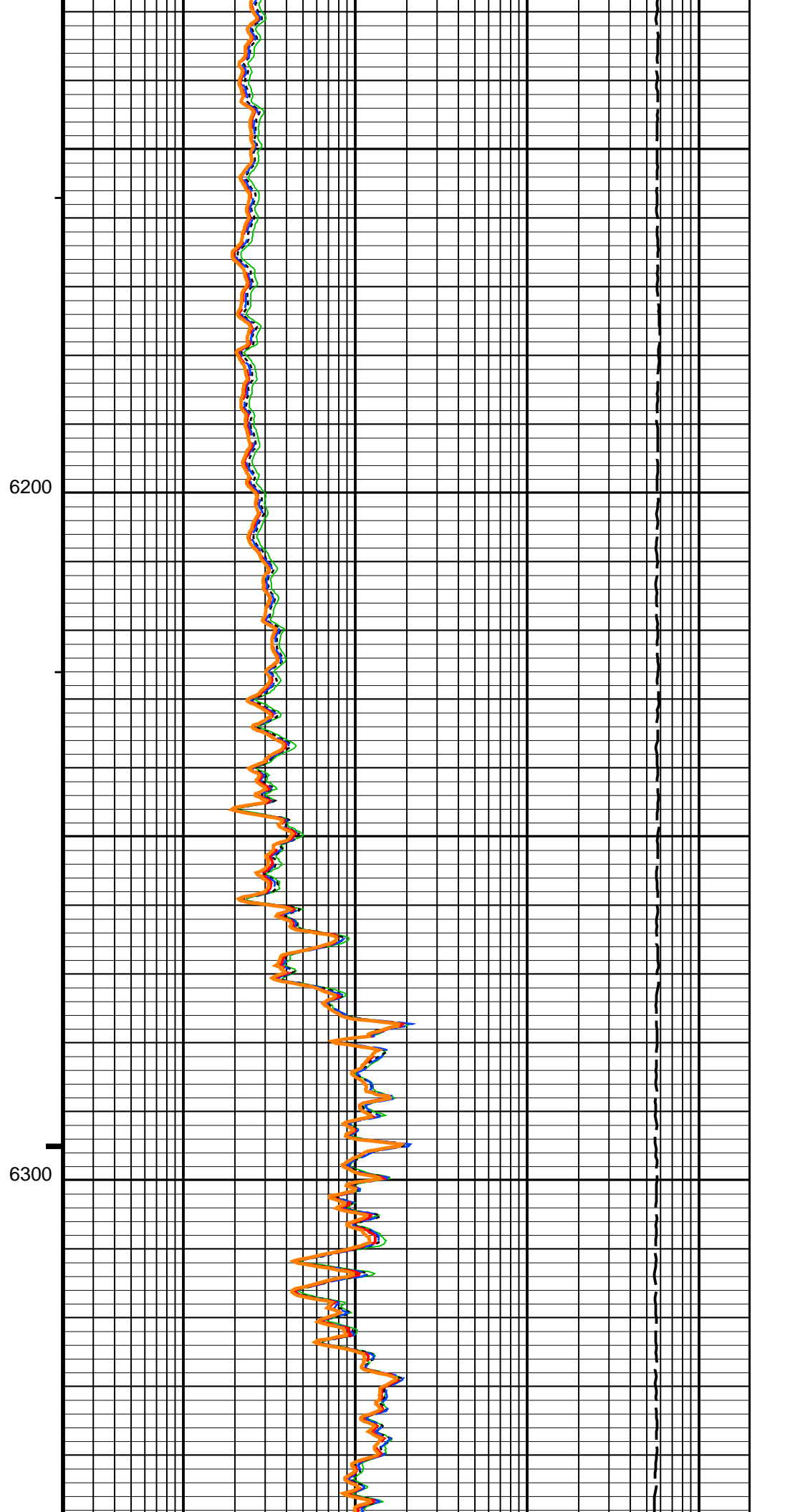
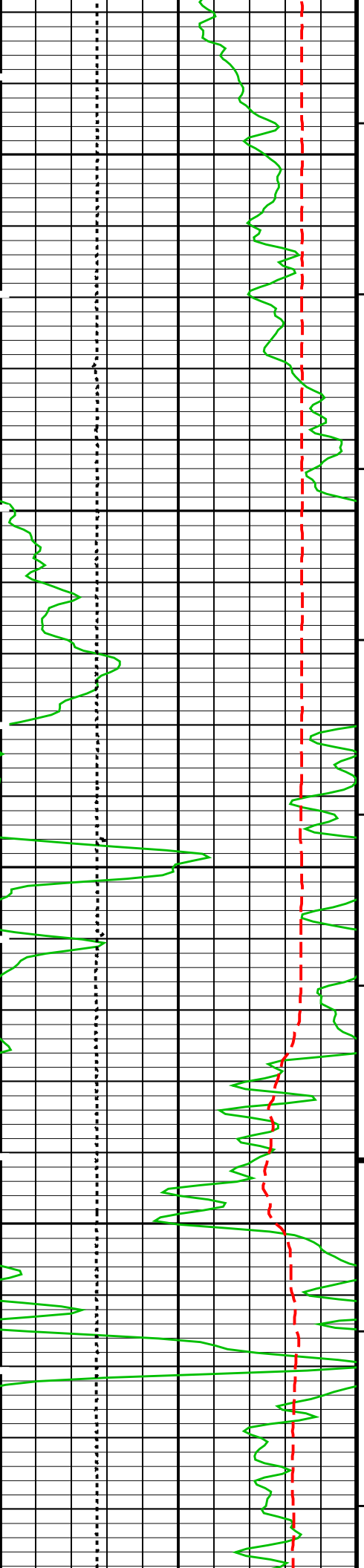


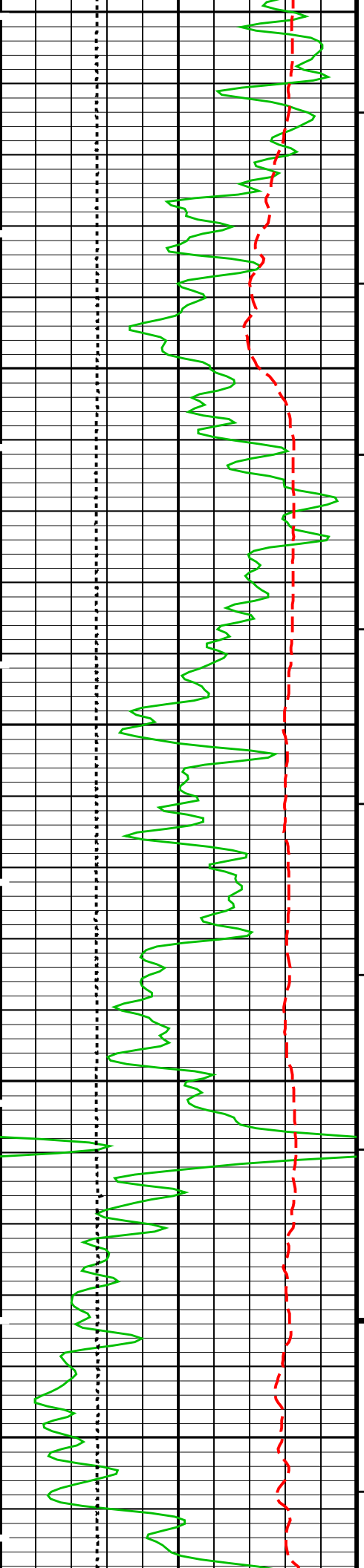






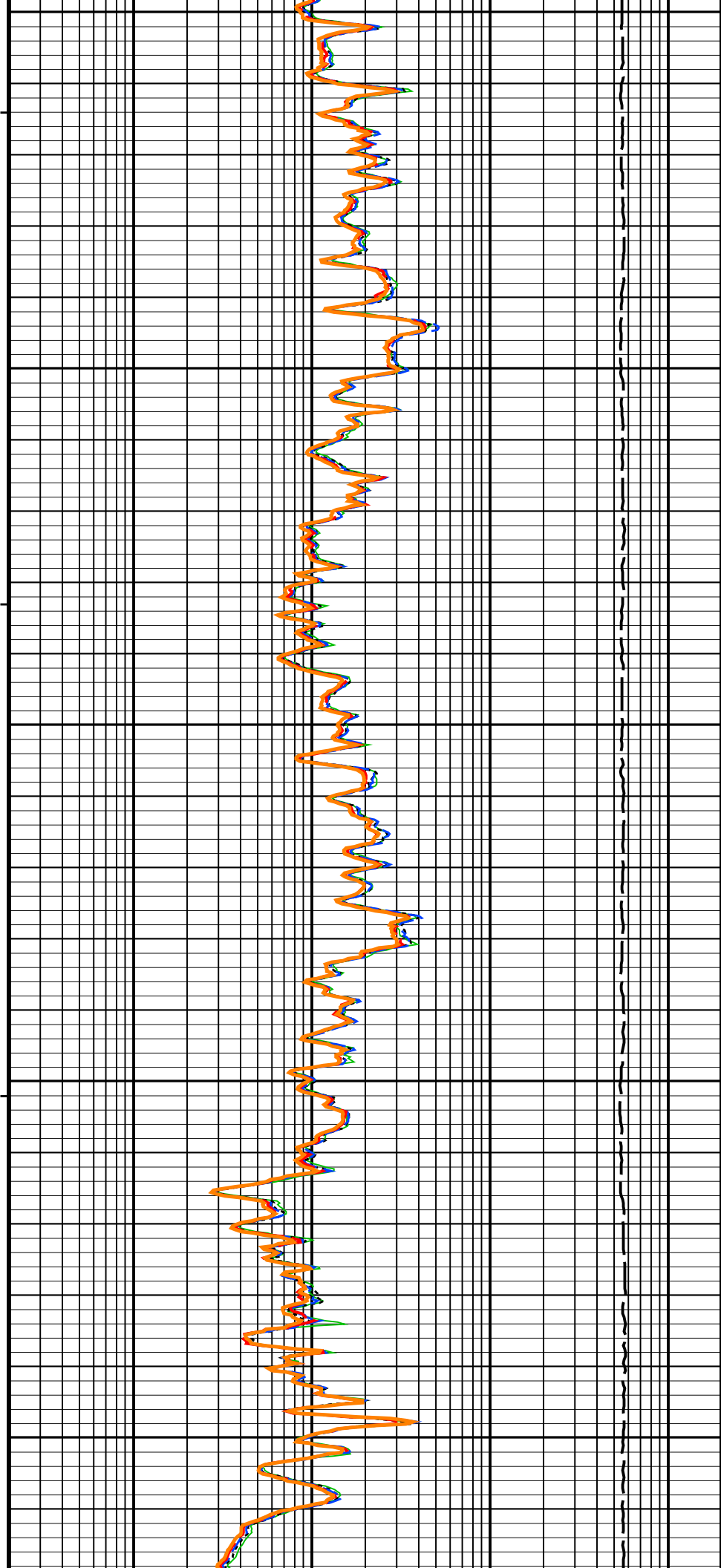


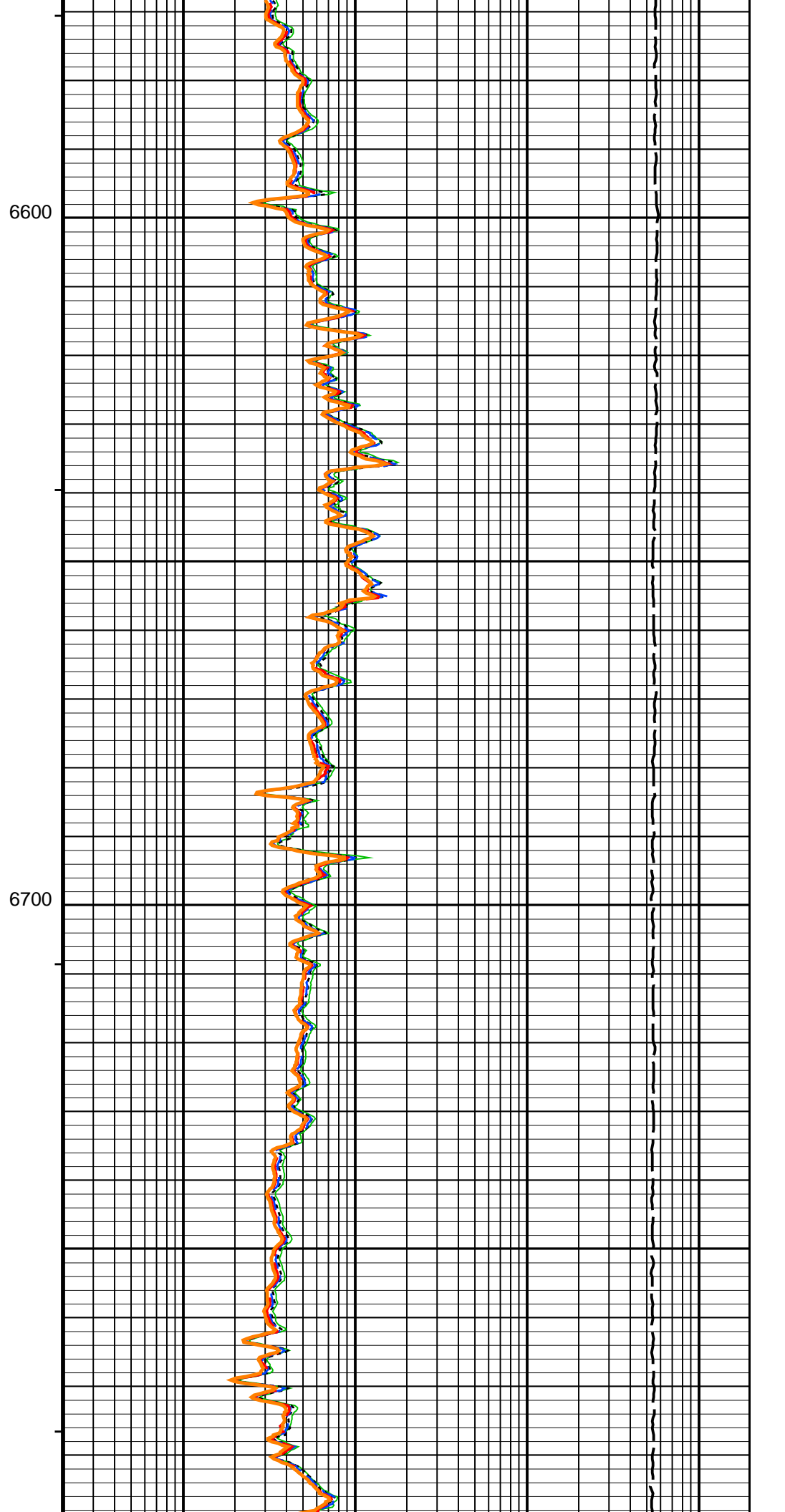
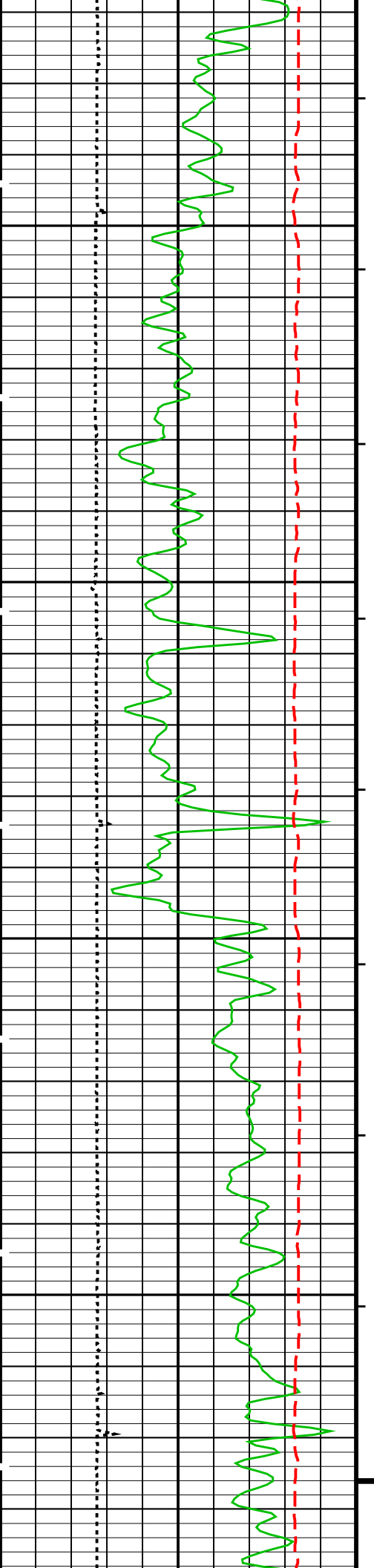


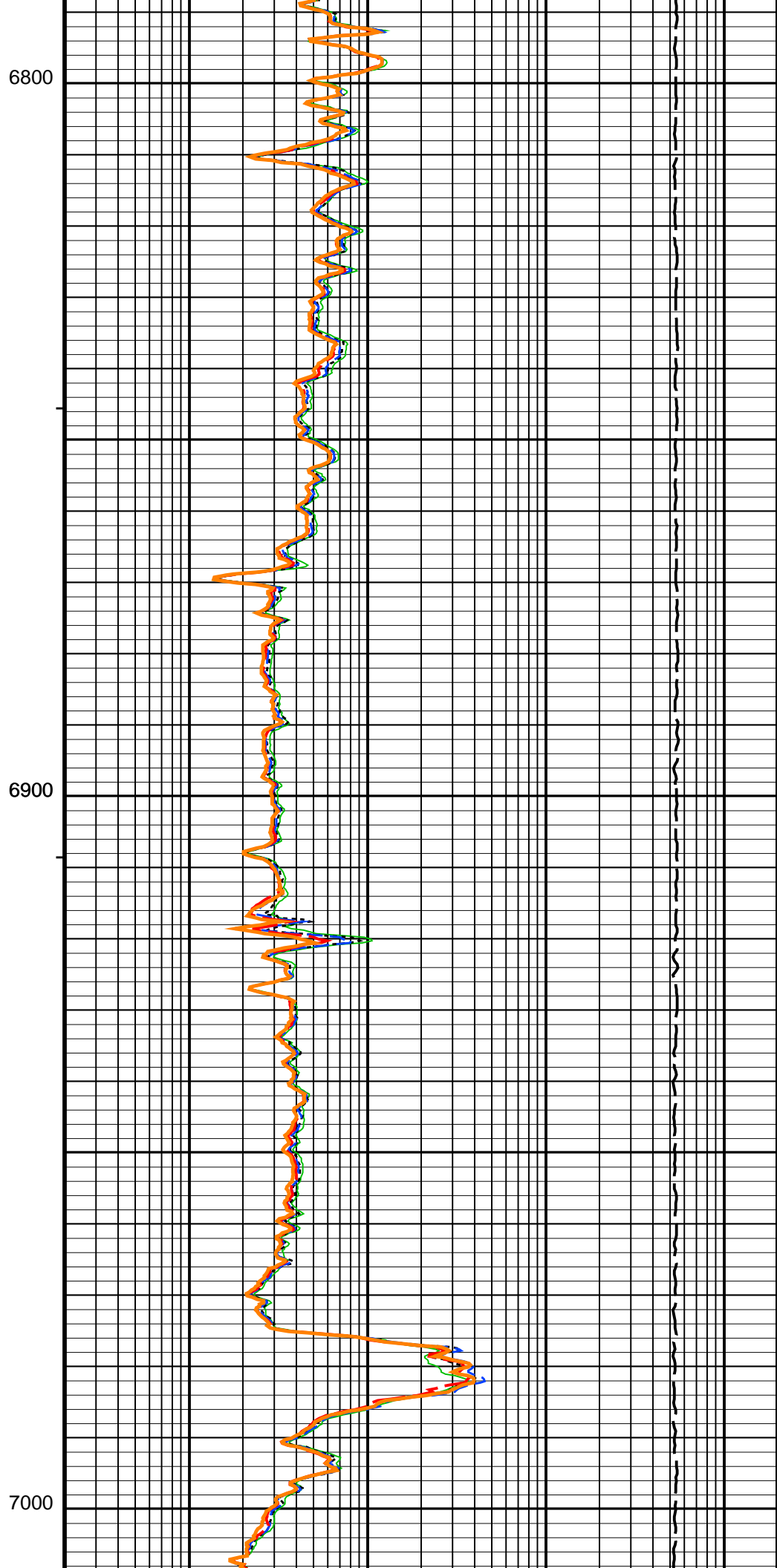
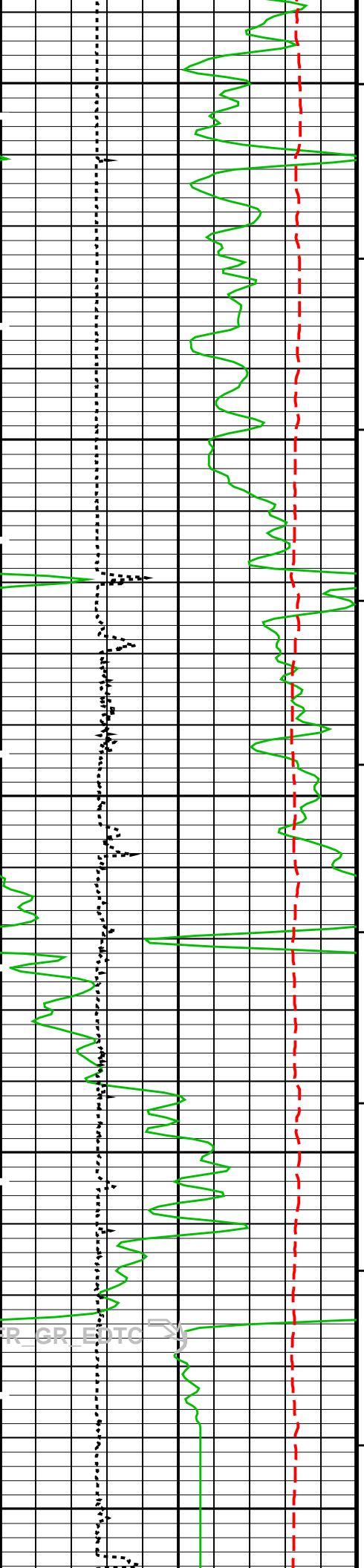


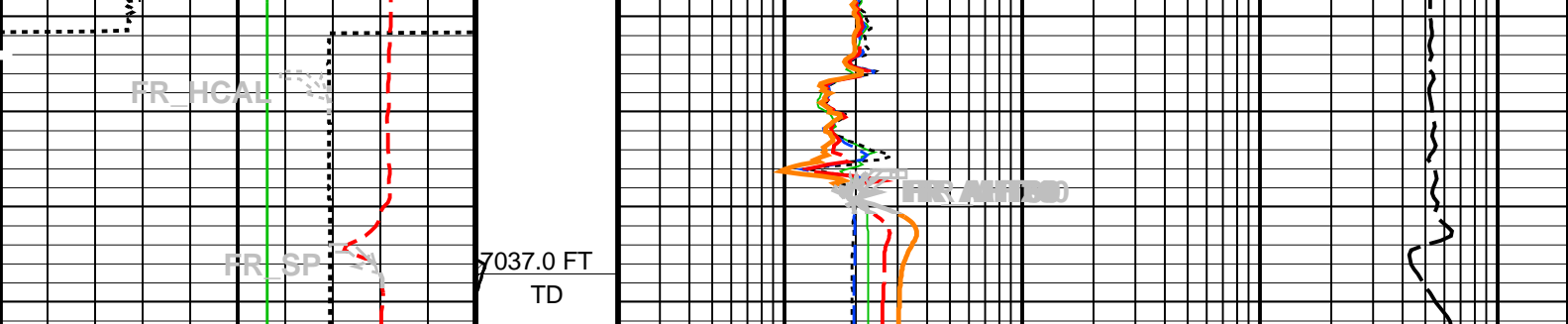
6400

6500









MAIN PASS: \*\*\* PLATFORM EXPRESS – ARRAY INDUCTION \*\*\*

Gamma Ray (GR_EDTC) (GAPI)	0	200	Cable Drag	0.2	AIT-H 10 Inch Investigation (AHT10) (OHMM)	2000
Caliper (HCAL) (IN)	6	16	Tool/Tot. Drag	0.2	AIT-H 20 Inch Investigation (AHT20) (OHMM)	2000
SP (SP) (MV)	-160	40	Stuck Stretch (STIT) (F)	0.2	AIT-H 30 Inch Investigation (AHT30) (OHMM)	2000
				0.2	AIT-H 60 Inch Investigation (AHT60) (OHMM)	2000
				0.2	AIT-H 90 Inch Investigation (AHT90) (OHMM)	2000
					Tension (TENS) (LBF)	10000 0

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

AIT-H Answer Product Processing Summary. Data taken with Tool # 216 (AHTNO)

...Acquired data from HILT/HAIT

\*\*\*\*\* Borehole Correction \*\*\*\*\*

Effective Tool Standoff computed. Borehole diameter and mud res. taken as input (see GCSE and GRSE parameters)  
Tool is run in ECCENTERED mode with a tool stand-off of 1.00 IN. Bit Size is 8.75 IN.

\*\*\*\*\* Input Selections to AIT-H Answer Product Processing \*\*\*\*\*

Caliper (GCSE): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTSE): HTEM Porosity (FPHI): DPHZ

\*\*\*\*\* Other Parameters used by AIT-H Answer Product Processing \*\*\*\*\*

Form Factor Exponent (FEXP) 2.000 Form Factor Numerator (FNUM) 1.000  
Mud Filtrate Sample Resistivity (RMFS) 1.012 OHMM Mud Filtrate Sample Temperature (MFST) 193.750 DEGF  
Resitivity Connate Water (RW) 1.000 OHMM

\*\*\*\*\* AIT-H Answer Product Processing Control Parameters \*\*\*\*\*

Playback Mode: RECOMPUTE

(AHEBC) : Yes (AHEBL) : Yes (AHERP) : Yes

(AHBHM): 2\_ComputeStandoff (AHBLM): 6\_One\_Two\_and\_Four (AHRPM): 6\_One\_Two\_and\_Four

Parameters

DLIS Name	Description	Value
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HILTB-FTB: High resolution Integrated Logging Tool-DTS

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	
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
HNCS-BA: Hostile Natural Gamma Ray Sonde			
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
EDTC-B: Enhanced DTS Cartridge			
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
HOLEV: Integrated Hole/Cement Volume			
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
FCD	Future Casing (Outer) Diameter	7	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	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation - Real Time			
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	7067.00	FT
TDL	Total Depth - Logger	7037.00	FT
System and Miscellaneous			
BS	Bit Size	8.750	IN
DFD	Drilling Fluid Density	9.20	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	25.00	FT
MST	Mud Sample Temperature	193.75	DEGF
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	7037	FT

Format: GRES      Vertical Scale: 5" per 100'      Graphics File Created: 22-Nov-2011 11:09

## OP System Version: 18C0-147

HILTB-FTB	18C0-147	ECS-HP	18C0-147
ECC-B	18C0-147	HNGC-B	18C0-147
HNCS-BA	18C0-147	EDTC-B	SRPC-4072-Q4_2010_OP18

Input DLIS Files

# Input DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_039PUP FN:37 PRODUCER 22-Nov-2011 10:41 7044.0 FT 1309.5 FT

## Output DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_044PUP FN:42 PRODUCER 22-Nov-2011 11:09



## REPEAT ANALYSIS

MAXIS Field Log

### Input DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_039PUP FN:37 PRODUCER 22-Nov-2011 10:41 7044.0 FT 1309.5 FT  
 DEFAULT AIT\_TLD\_MCFL\_CNL\_038PUP FN:36 PRODUCER 22-Nov-2011 10:39 7057.5 FT 6489.0 FT

### Output DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_044PUP FN:42 PRODUCER 22-Nov-2011 11:09

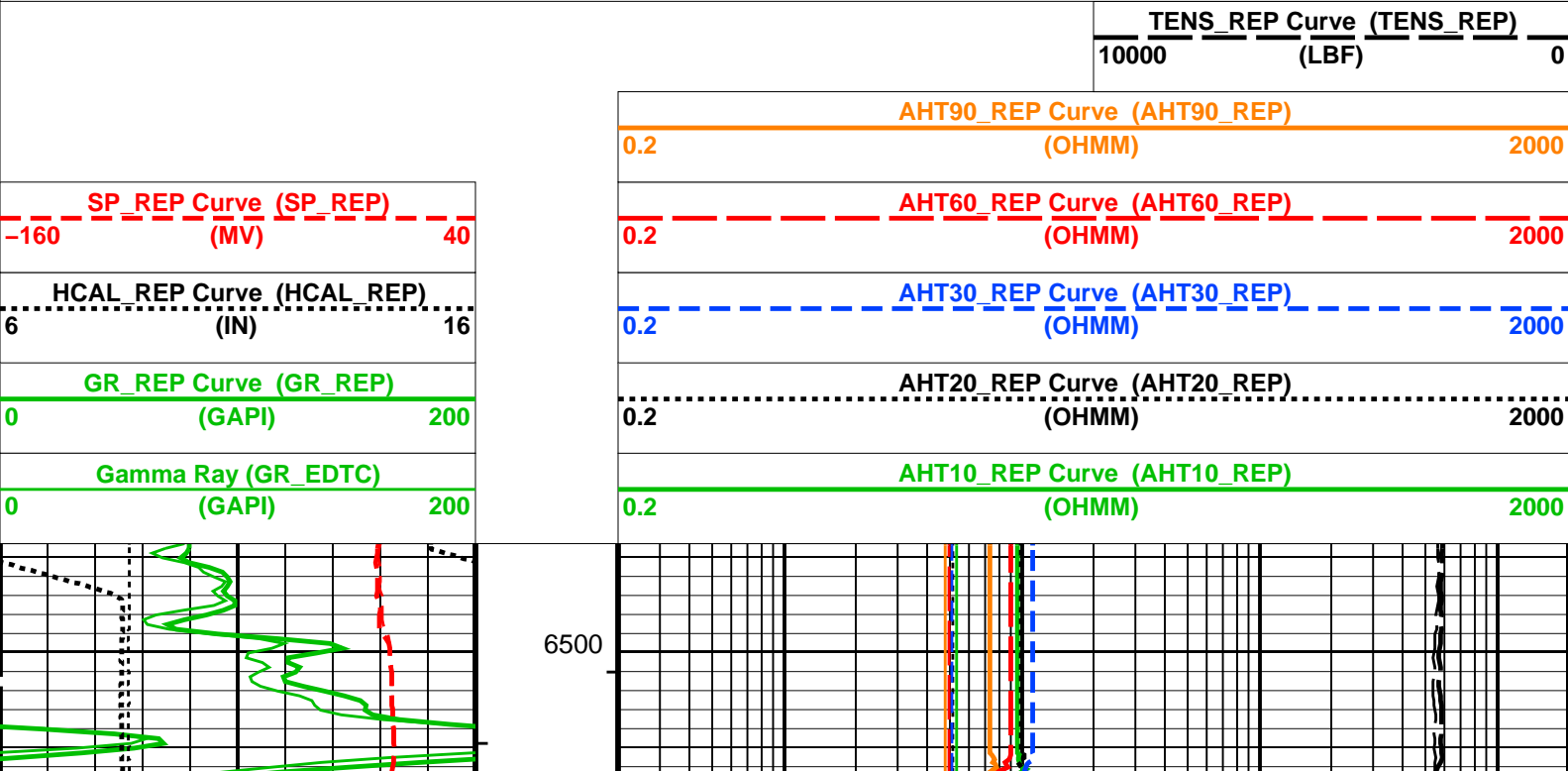
### OP System Version: 18C0-147

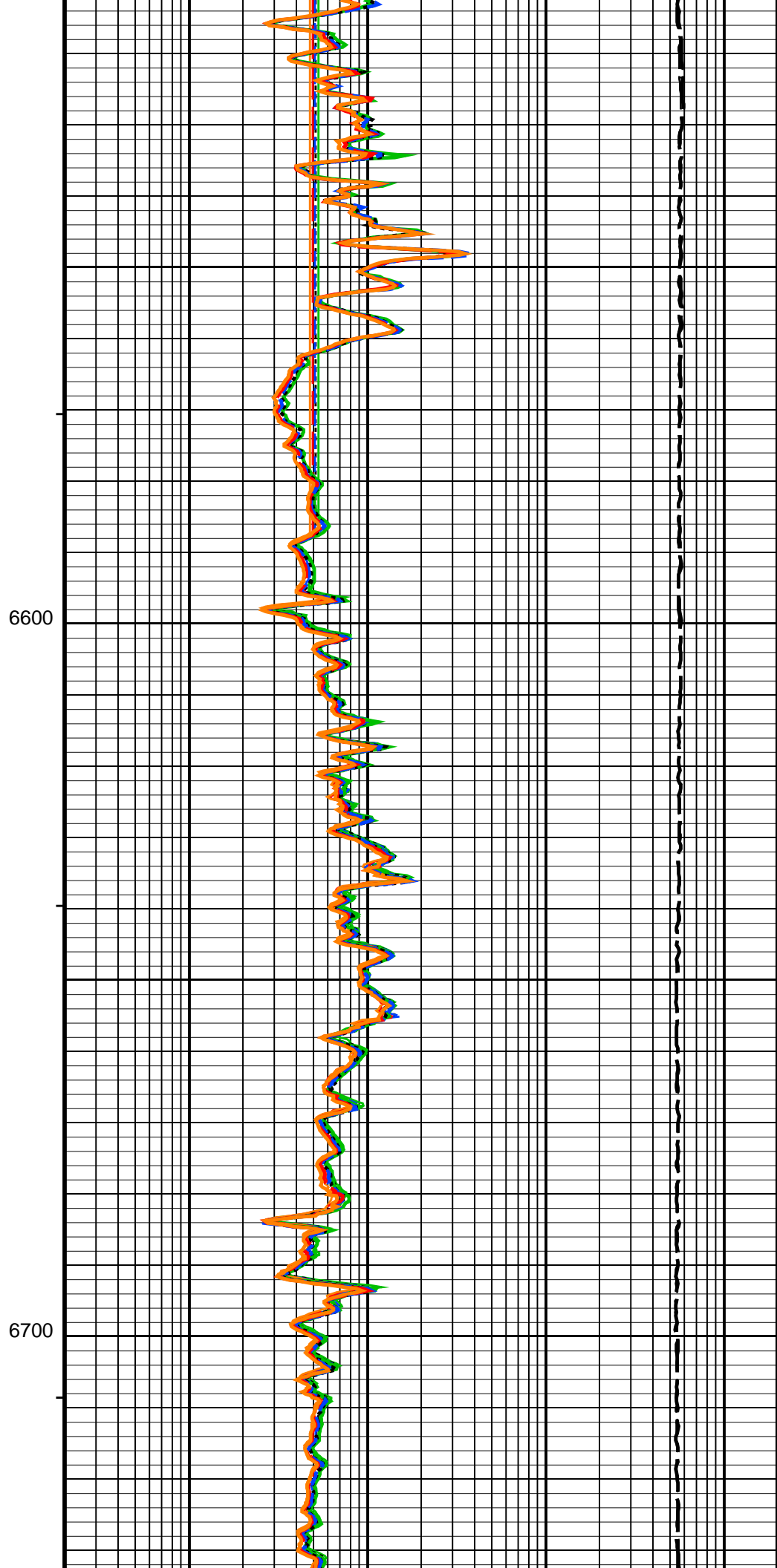
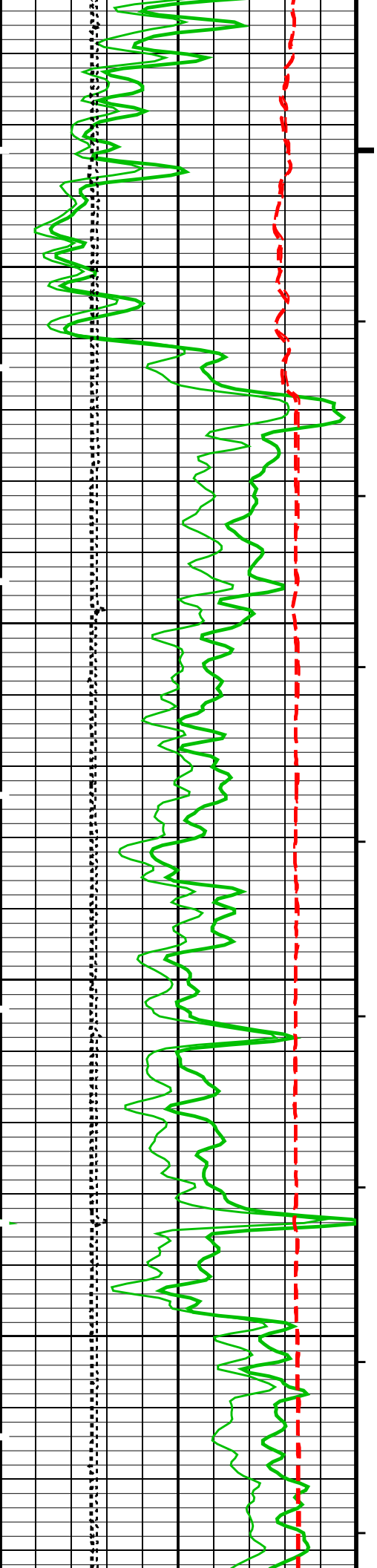
HILTB-FTB	18C0-147	ECS-HP	18C0-147
ECC-B	18C0-147	HNGC-B	18C0-147
HNGS-BA	18C0-147	EDTC-B	SRPC-4072-Q4_2010_OP18

#### PIP SUMMARY

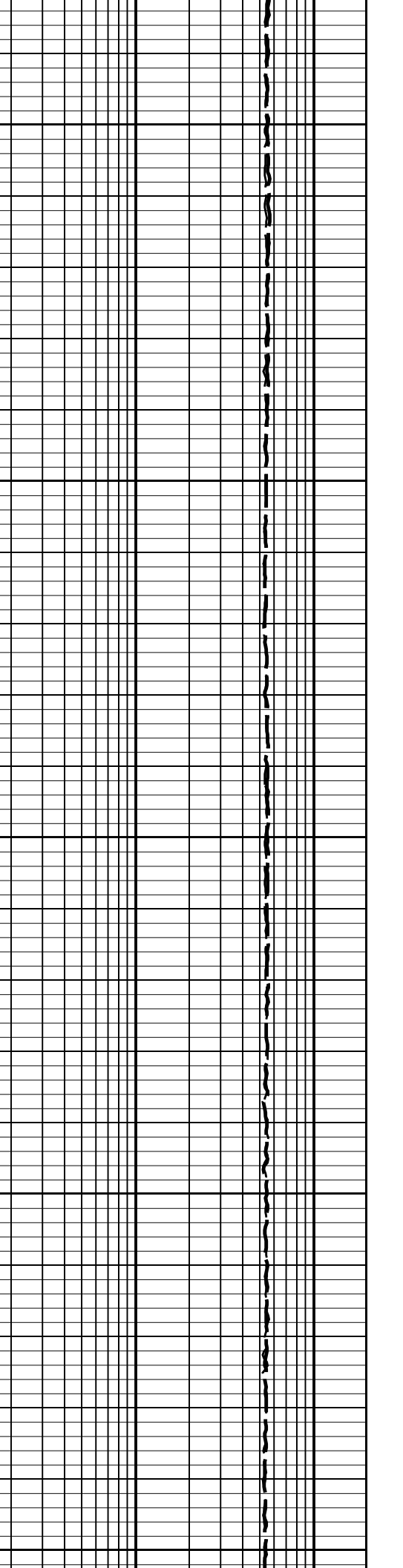
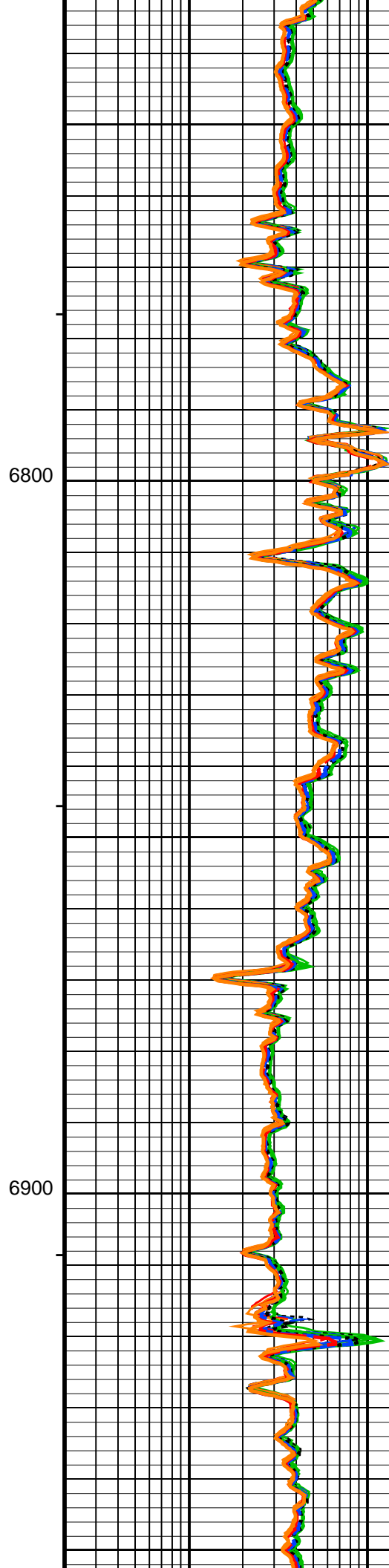
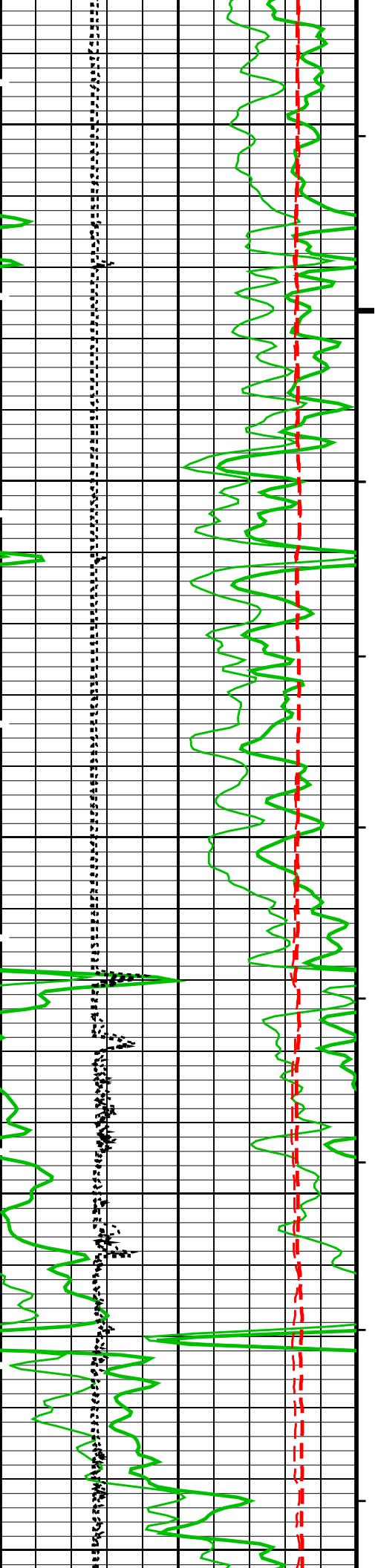
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
  - └ Integrated Cement Volume Minor Pip Every 10 F3
  - └ Integrated Cement Volume Major Pip Every 100 F3

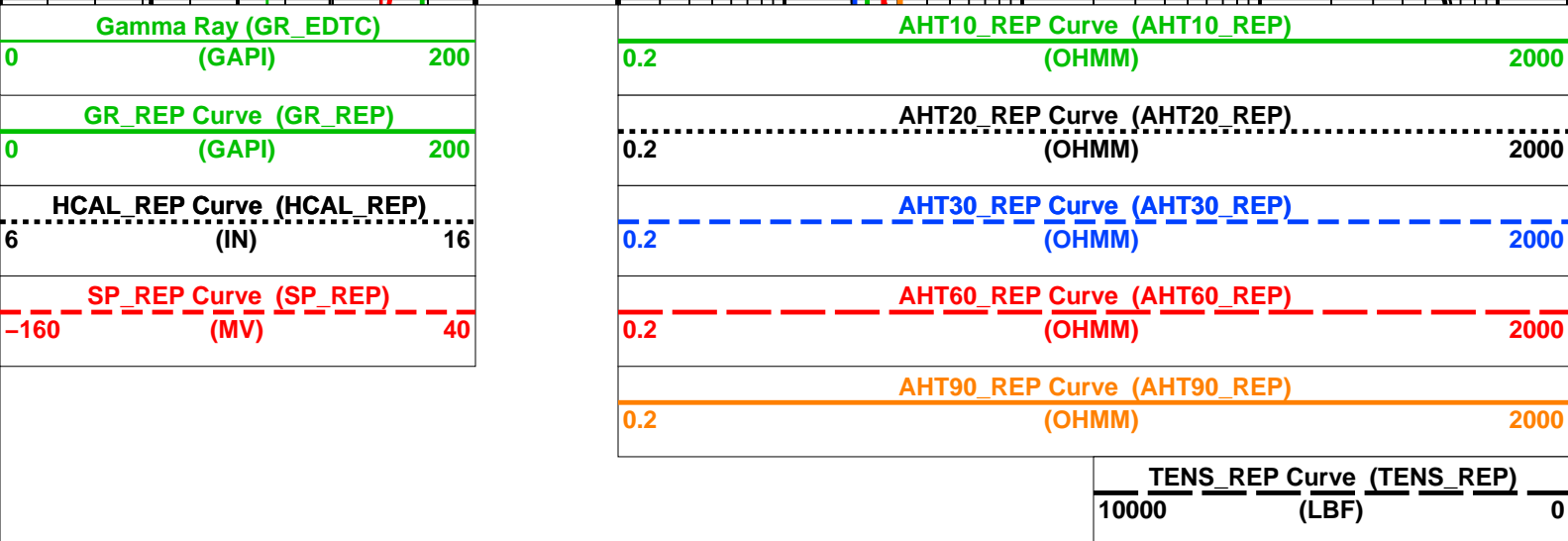
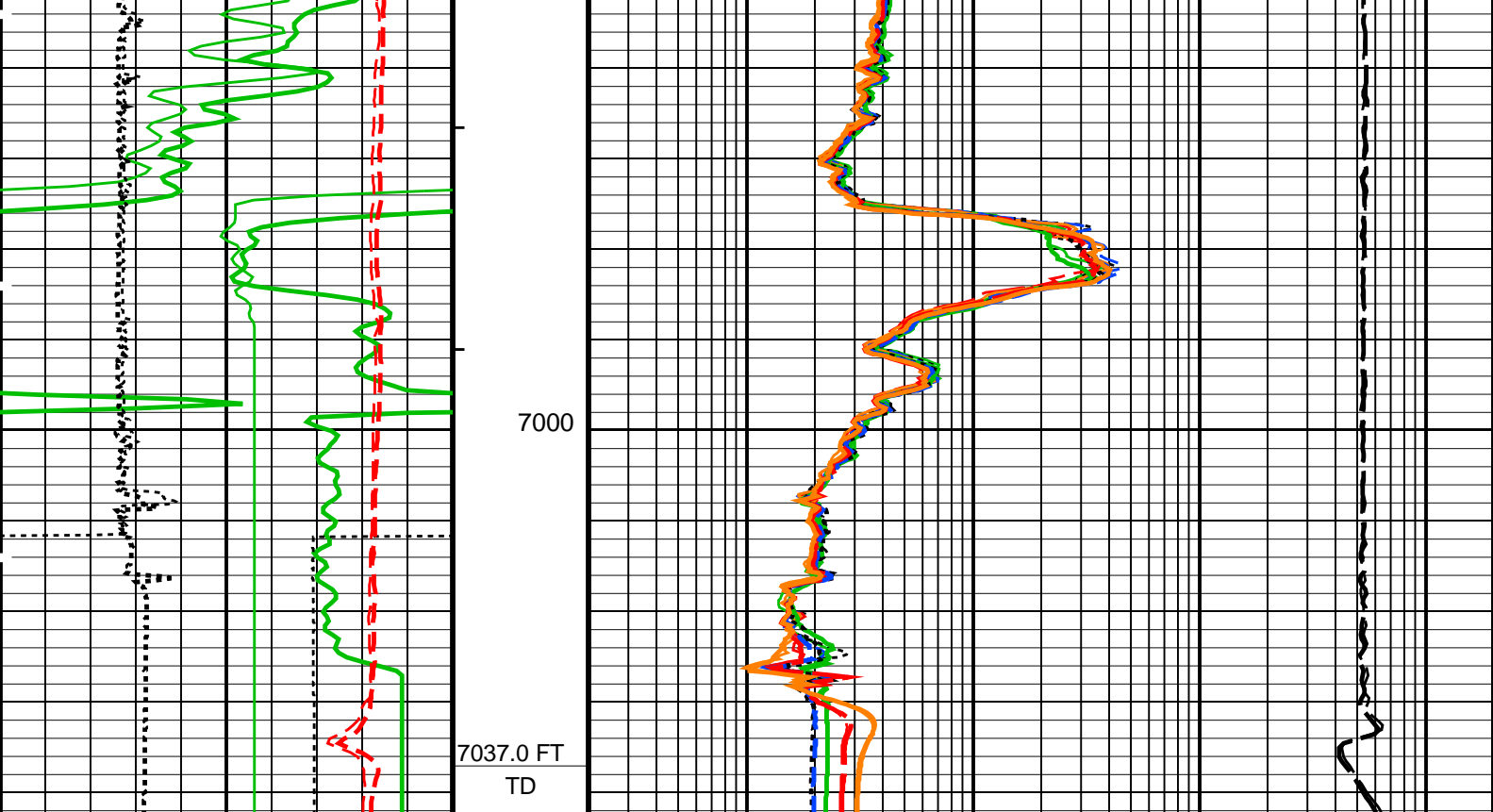
Time Mark Every 60 S











#### 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
- └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

AIT-H Answer Product Processing Summary. Data taken with Tool # 216 (AHTNO)  
...Acquired data from HILT/HAIT

\*\*\*\*\* Borehole Correction \*\*\*\*\*

Effective Tool Standoff computed. Borehole diameter and mud res. taken as input (see GCSE and GRSE parameters)  
Tool is run in ECCENTERED mode with a tool stand-off of 1.00 IN. Bit Size is 8.75 IN.

\*\*\*\*\* Input Selections to AIT-H Answer Product Processing \*\*\*\*\*

Caliper (GCSE): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTSE): HTEM Porosity (FPHI): DPHZ

\*\*\*\*\* Other Parameters used by AIT-H Answer Product Processing \*\*\*\*\*

Form Factor Exponent (FEXP) 2.000 Form Factor Numerator (FNUM) 1.000  
Mud Filtrate Sample Resistivity (RMFS) 1.012 OHMM Mud Filtrate Sample Temperature (MFST) 193.750 DEGF  
Resitivity Connate Water (RW) 1.000 OHMM

\*\*\*\*\* AIT-H Answer Product Processing Control Parameters \*\*\*\*\*

Playback Mode: RECOMPUTE

(AHBCB) : Yes (AHEBL) : Yes (AHERP) : Yes

(AHBHM): 2 ComputeStandoff (AHBLM): 6 One Two and Four (AHRPM): 6 One Two and Four

## Parameters

DLIS Name	Description	Value	
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
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	
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
HNGBS-BA: Hostile Natural Gamma Ray Sonde			
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
EDTC-B: Enhanced DTS Cartridge			
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
HOLEV: Integrated Hole/Cement Volume			
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
FCD	Future Casing (Outer) Diameter	7	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	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation - Real Time			
BHT	Bottom Hole Temperature (used in calculations)	193	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	
SHT	Surface Hole Temperature	68	DEGF
System and Miscellaneous			
BS	Bit Size	8.750	IN
DFD	Drilling Fluid Density	9.20	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	25.00	FT
MST	Mud Sample Temperature	193.75	DEGF
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	7037	FT

Format: GRES\_REP Vertical Scale: 5" per 100'

Graphics File Created: 22-Nov-2011 11:11

HILTB-FTB	18C0-147	ECS-HP	18C0-147
ECC-B	18C0-147	HNGC-B	18C0-147
HNGS-BA	18C0-147	EDTC-B	SRPC-4072-Q4 2010 OP18

## Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:37	PRODUCER	22-Nov-2011 10:41	7044.0 FT	1309.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_038PUP	FN:36	PRODUCER	22-Nov-2011 10:39	7057.5 FT	6489.0 FT

## Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22-Nov-2011 11:09
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## Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
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High resolution Integrated Logging Tool–DTS Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase

Before: 22-Nov-2011 0:20

Thru Cal Magnitude – 0	0	N/A	0.6297	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	N/A	1.290	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	N/A	0.6397	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	N/A	0.7229	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	N/A	1.360	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	N/A	1.973	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	N/A	1.973	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	N/A	1.411	N/A	N/A	N/A	V
Phase – 0	0	N/A	52.08	N/A	N/A	N/A	DEG
Phase – 1	0	N/A	51.06	N/A	N/A	N/A	DEG
Phase – 2	0	N/A	47.30	N/A	N/A	N/A	DEG
Phase – 3	0	N/A	46.51	N/A	N/A	N/A	DEG
<b>Phase – 4</b>	<b>0</b>	<b>N/A</b>	<b>40.15</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>DEG</b>
Phase – 5	0	N/A	38.25	N/A	N/A	N/A	DEG
Phase – 6	0	N/A	38.24	N/A	N/A	N/A	DEG
Phase – 7	0	N/A	34.48	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Electronics Calibration Check – Auxilliary

Before: 22-Nov-2011 0:20

Array Induction SPA Plus	990.5	N/A	993.4	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	N/A	-0.003630	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	N/A	0.9216	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	N/A	-5.445E-006	N/A	N/A	N/A	V

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

Before: 22-Nov-2011 0:22

BS Window Ratio	0.7410	N/A	0.7416	N/A	N/A	N/A	
BS Window Sum	10310	N/A	10310	N/A	N/A	N/A	CPS
SS Window Ratio	0.4850	N/A	0.4867	N/A	N/A	N/A	
SS Window Sum	9783	N/A	9781	N/A	N/A	N/A	CPS
LS Window Ratio	0.2963	N/A	0.2941	N/A	N/A	N/A	
LS Window Sum	1132	N/A	1125	N/A	N/A	N/A	CPS

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

Before: 22-Nov-2011 0:22

BS PM High Voltage (Command)	1509	N/A	1554	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1934	N/A	1955	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1322	N/A	1345	N/A	N/A	N/A	V

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

Before: 22-Nov-2011 0:22

BS Crystal Resolution	11.06	N/A	11.25	N/A	N/A	N/A	%
SS Crystal Resolution	10.94	N/A	11.01	N/A	N/A	N/A	%
LS Crystal Resolution	8.810	N/A	8.846	N/A	N/A	N/A	%

High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration

Before: 22-Nov-2011 5:46

Raw B0 Resistivity	3875	N/A	3827	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3801	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	5000	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration

Before: 22-Nov-2011 0:19

Before: 22-Nov-2011 0:19	HILT Caliper Zero Measurement	8.000	N/A	9.676	N/A	N/A	N/A	IN
	HILT Caliper Plus Measurement	12.00	N/A	13.97	N/A	N/A	N/A	IN
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Detector Calibration								
Before: 22-Nov-2011 0:17	Gamma Ray Background	30.00	N/A	82.52	N/A	N/A	N/A	GAPI
	Gamma Ray (Jig – Bkgd)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Zero Measurement								
Before: 22-Nov-2011 0:19	CNTC Background	28.58	N/A	28.86	N/A	N/A	4.287	CPS
	CFTC Background	30.22	N/A	30.88	N/A	N/A	4.533	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Accelerometer Calibration								
Before: 22-Nov-2011 5:46	Z-Axis Acceleration	32.19	N/A	31.79	N/A	N/A	N/A	F/S2
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check								
Master: 6-Nov-2011 14:53	Before: 6-Nov-2011 15:02							
	Na 511 Peak Loc	40.00	38.49	38.51	N/A	N/A	1.000	
	Na 511 Peak Res	15.50	15.21	15.29	N/A	N/A	2.000	%
	High Voltage	1150	1025	1025	N/A	N/A	N/A	V
	Na 1785 Peak Loc	142.6	138.2	139.2	N/A	N/A	7.000	
	Na 1785 Peak Res	8.500	8.744	8.622	N/A	N/A	2.000	%
	Temperature	59.90	61.08	61.03	N/A	N/A	N/A	DEGF
	Na Count Rate	45.00	16.26	16.01	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check								
Master: 6-Nov-2011 14:53	Before: 6-Nov-2011 15:02							
	Na 511 Peak Loc	40.00	39.48	39.65	N/A	N/A	1.000	
	Na 511 Peak Res	15.50	15.43	14.50	N/A	N/A	2.000	%
	High Voltage	1150	969.5	970.8	N/A	N/A	N/A	V
	Na 1785 Peak Loc	142.6	140.2	141.8	N/A	N/A	7.000	
	Na 1785 Peak Res	8.500	8.639	7.786	N/A	N/A	2.000	%
	Temperature	59.90	62.29	62.24	N/A	N/A	N/A	DEGF
	Na Count Rate	45.00	16.21	15.87	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2								
Master: 6-Nov-2011 14:53	Before: 6-Nov-2011 15:02							
	Coincidence Count Rate Ratio	1.000	0.9994	1.007	N/A	N/A	0.05000	
Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration								
Before: 22-Nov-2011 5:47	EDTC Z-Axis Acceleration	32.19	N/A	32.01	N/A	N/A	N/A	F/S2
Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration								
Before: 21-Nov-2011 23:01	Gamma Ray (Jig – Bkg)	149.3	N/A	149.3	N/A	N/A	13.57	GAPI
	Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
The GLS-VJ source activity is acceptable.								
The HGNS Neutron Master Calibration was done with the following parameters :								
NCT-B Water Temperature	77.3	DEGF.						
Thermal Housing Size	3.371	IN.						
NSR-F serial number	5068							

#### High resolution Integrated Logging Tool-DTS / Equipment Identification

##### Primary Equipment:

Array Induction Tool – H	AIT – H	
Rm/SP Bottom Nose	AHRM – A	
Array Induction Sonde	AHIS – BA	216
HILT high-Resolution Mechanical Sonde	HRMS – B	
HILT Rxo Gamma-ray Device	HRGD – B	
HILT Micro Cylindrically Focused Log Dev	MCFL –	
GR Logging Source	GLS – VJ	5416
HILT High Res. Control Cartridge	HRCC – B	

##### Auxiliary Equipment:

## High resolution Integrated Logging Tool–DTS Wellsite Calibration

## Electronics Calibration Check – Thru Cal Mag. &amp; Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Before	0.6297		0.6050	52.08		71.00
1	Before	1.290		1.270	51.06		70.00
2	Before	0.6397		0.6230	47.30		66.00
3	Before	0.7229		0.7040	46.51		65.00
4	Before	1.360		1.337	40.15		59.00
5	Before	1.973		1.955	38.25		57.00
6	Before	1.973		1.955	38.24		57.00
7	Before	1.411		1.415	34.48		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)

Before: 22–Nov–2011 0:20

## High resolution Integrated Logging Tool–DTS Wellsite Calibration

## Electronics Calibration Check – Auxilliary

Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Before		993.4	Before		-0.003630
		941.0 (Minimum)			-50.00 (Minimum)
		990.5 (Nominal)			0 (Nominal)
		1040 (Maximum)			50.00 (Maximum)
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Before		0.9216	Before		-5.445E-00
		0.8700 (Minimum)			-0.05000 (Minimum)
		0.9150 (Nominal)			0 (Nominal)
		0.9600 (Maximum)			0.05000 (Maximum)

Before: 22–Nov–2011 0:20

## 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		0.7416	Before		0.4867	Before		0.2941
		0.7039 (Minimum)			0.4608 (Minimum)			0.2815 (Minimum)
		0.7410 (Nominal)			0.4850 (Nominal)			0.2963 (Nominal)
		0.7780 (Maximum)			0.5093 (Maximum)			0.3111 (Maximum)
Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		10310	Before		9781	Before		1125
		9793 (Minimum)			9294 (Minimum)			1075 (Minimum)
		10310 (Nominal)			9783 (Nominal)			1132 (Nominal)
		10820 (Maximum)			10270 (Maximum)			1188 (Maximum)

Before: 22–Nov–2011 0:22

## 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		1554	Before		1955	Before		1345
		1409 (Minimum)			1834 (Minimum)			1222 (Minimum)
		1509 (Nominal)			1934 (Nominal)			1322 (Nominal)
		1609 (Maximum)			2034 (Maximum)			1422 (Maximum)

Before: 22–Nov–2011 0:22

## 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		11.25	Before		11.01	Before		8.846
		10.06 (Minimum)			9.943 (Minimum)			7.810 (Minimum)
		11.06 (Nominal)			10.94 (Nominal)			8.810 (Nominal)
		12.06 (Maximum)			11.94 (Maximum)			9.810 (Maximum)

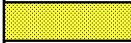
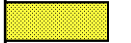
Before: 22–Nov–2011 0:22

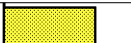

## High resolution Integrated Logging Tool–DTS Wellsite Calibration

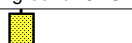
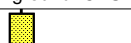
## MCFL Calibration


Phase	Raw B0 Resistivity OHMM	Value	Phase	Raw B1 Resistivity OHMM	Value	Phase	Raw B2 Resistivity OHMM	Value
Before		3827	Before		3801	Before	<div>EXCEEDS LIMIT</div>	5000
		3565 (Minimum)			3524 (Minimum)			3524 (Minimum)
		3875 (Nominal)			3830 (Nominal)			3830 (Nominal)
		4185 (Maximum)			4136 (Maximum)			4136 (Maximum)

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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			9.676	Before			13.97
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 22–Nov–2011 0:19							

High resolution Integrated Logging Tool–DTS Wellsite Calibration							
Detector Calibration							
Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig – Bkgd) GAPI		Value
Before			82.52	Before			165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		157.1 (Minimum)	165.0 (Nominal)	206.3 (Maximum)
Before: 22–Nov–2011 0:17							




High resolution Integrated Logging Tool–DTS Wellsite Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Before				28.86	Before				30.88
	5.000 (Minimum)	28.58 (Nominal)	40.00 (Maximum)			5.000 (Minimum)	30.22 (Nominal)	40.00 (Maximum)	
Before: 22–Nov–2011 0:19									

High resolution Integrated Logging Tool–DTS		
Wellsite Calibration		
Accelerometer Calibration		
Phase	Z–Axis Acceleration F/S2	Value
Before		31.79
	31.53 (Minimum)	32.19 (Nominal)
		32.84 (Maximum)
Before: 22–Nov–2011 5:46		

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

Hostile Natural Gamma Ray Sonde / Equipment Identification	
Primary Equipment: HNGS Sonde	HNGS – BA
Auxiliary Equipment: HNGS Sonde Housing	HNSH – BA
Gamma Source Radioactive	GSR – U

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		38.49	Master		15.21	Master		1025

Master:		38.51	Before:		15.29	Master:		1025
	37.50 (Minimum) 40.00 (Nominal) 43.50 (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 DEGF	Value
Master		138.2	Master		8.744	Master		61.08
Before		139.2	Before		8.622	Before		61.03
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-20.00 (Minimum) 59.90 (Nominal) 140.0 (Maximum)	
Phase	Na Count Rate CPS	Value						
Master		16.26						
Before		16.01						
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							
Master: 6-Nov-2011 14:53			Before: 6-Nov-2011 15:02					

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		39.48	Master		15.43	Master		969.5
Before		39.65	Before		14.50	Before		970.8
	37.50 (Minimum) 40.00 (Nominal) 43.50 (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 DEGF	Value
Master		140.2	Master		8.639	Master		62.29
Before		141.8	Before		7.786	Before		62.24
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-20.00 (Minimum) 59.90 (Nominal) 140.0 (Maximum)	
Phase	Na Count Rate CPS	Value						
Master		16.21						
Before		15.87						
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							
Master: 6-Nov-2011 14:53			Before: 6-Nov-2011 15:02					

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9994
Before		1.007
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	
Master: 6-Nov-2011 14:53		
Before: 6-Nov-2011 15:02		

#### Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:  
EDTC Gamma Ray Detector  
Enhanced DTS Cartridge




EDTG – A/B  
EDTC – B

Auxiliary Equipment:  
EDTC Housing

EDTH – B

Enhanced DTS Cartridge Wellsite Calibration		
EDTC Accelerometer Calibration		
Phase	EDTC Z-Axis Acceleration F/S2	Value
Before		32.01
	31.53 (Minimum) 32.19 (Nominal) 32.84 (Maximum)	
Before: 22-Nov-2011 5:47		



Enhanced DTS Cartridge Wellsite Calibration											
Detector Calibration											
Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig – Bkg) GAPI		Value	Phase	Gamma Ray (Calibrated) GAPI		Value
Before			78.18	Before			149.3	Before			165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		135.7 (Minimum)	149.3 (Nominal)	162.9 (Maximum)		150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)
Before: 21–Nov–2011 23:01											



BEFORE CALIBRATIONS

MAXIS Field Log

Company: Carrizo Oil & Gas Inc

Well: Barracuda 20–14–7–60

Field: Wildcat

County: Weld

State: Colorado



Platform Express

Array Induction

Linear Correlation