

C
M
Fi
C

County:	Weld
Field:	Hambert

Log	Run	Dep	Sch	Bottom	Top	Case	Case	Bit	Bit	Type	De	Ftu	So	RM	RM	RM	RM	Sou	RM	Max	Circ	Log	Unit	Rec	Witt
-----	-----	-----	-----	--------	-----	------	------	-----	-----	------	----	-----	----	----	----	----	----	-----	----	-----	------	-----	------	-----	------

Rig: Xtreme Rig 11					
Crew: Dave Marquez, Tim Ludgate					
RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

RUN 2

SURFACE EQUIPMENT

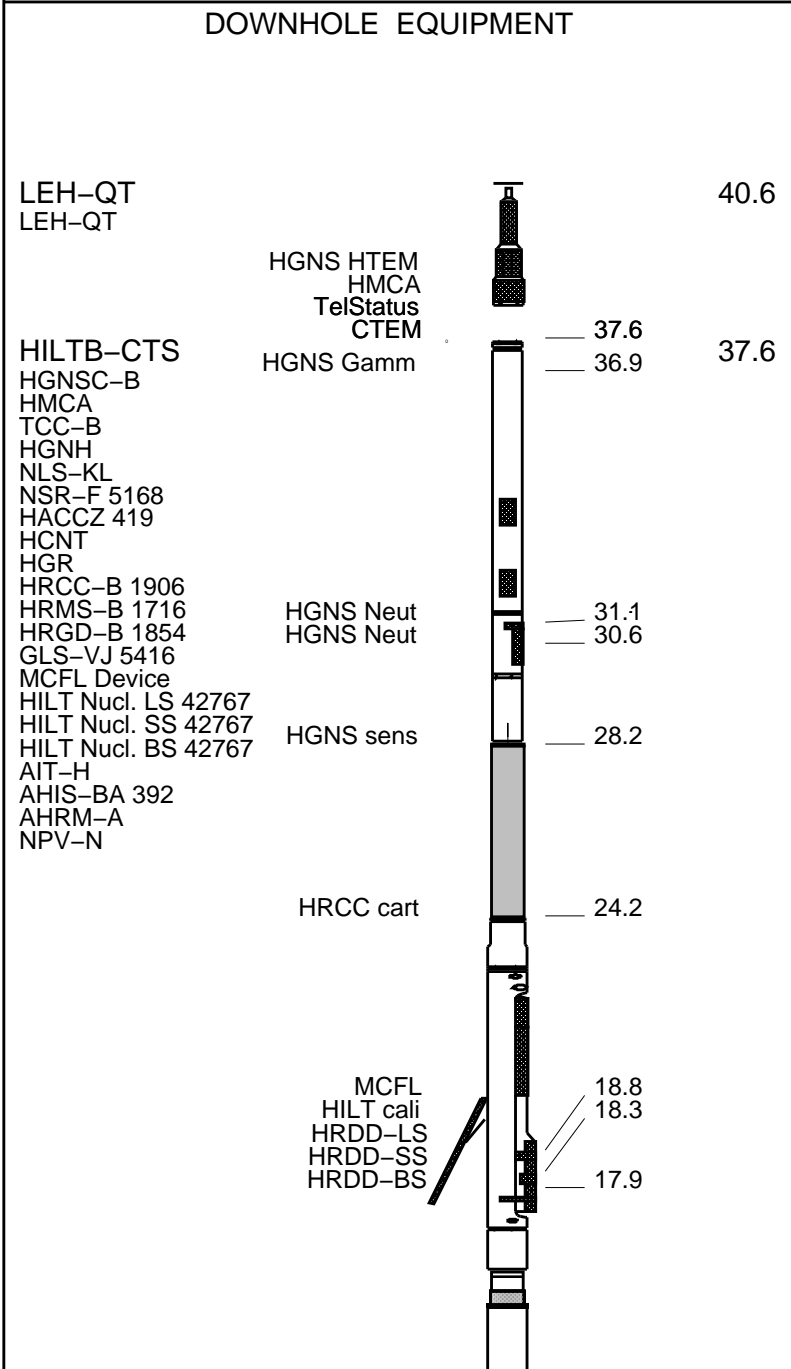
WITM (CTS)-A

GSR-U/Y

NCT-B

CNB-AB

NCS-VB



Induction
Temperatu
Power Sup

7.9

SP SENSOR
HTEN HMAS
Accelerom HV
Mud Resis
Tension

0.1

0.0

TOOL ZERO

MAXIMUM STRING DIAMETER 4.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Production String

(in)

(ft)

OD

ID

MD

Well Schematic

(ft)

(in)

MD

OD

ID

Casing String

Casing String

Casing Shoe

Borehole Segment

0.0

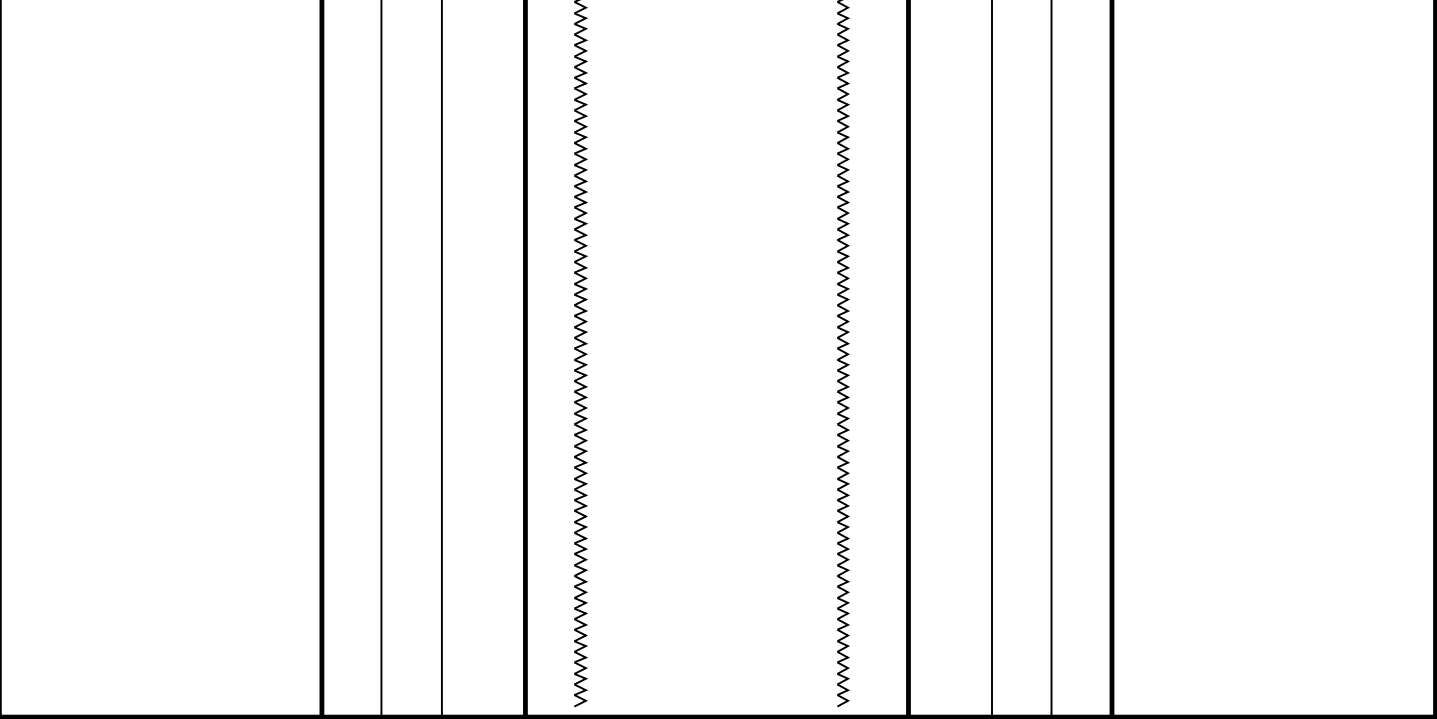
8.625

521.0

8.625

521.0

7.875



All depths are driller's depths



UPPER POROSITY LOG 5" = 100'

MAXIS Field Log

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_033PUP FN:28 PRODUCER 17-Mar-2010 00:36 7825.5 FT 391.5 FT

Integrated Hole/Cement Volume Summary

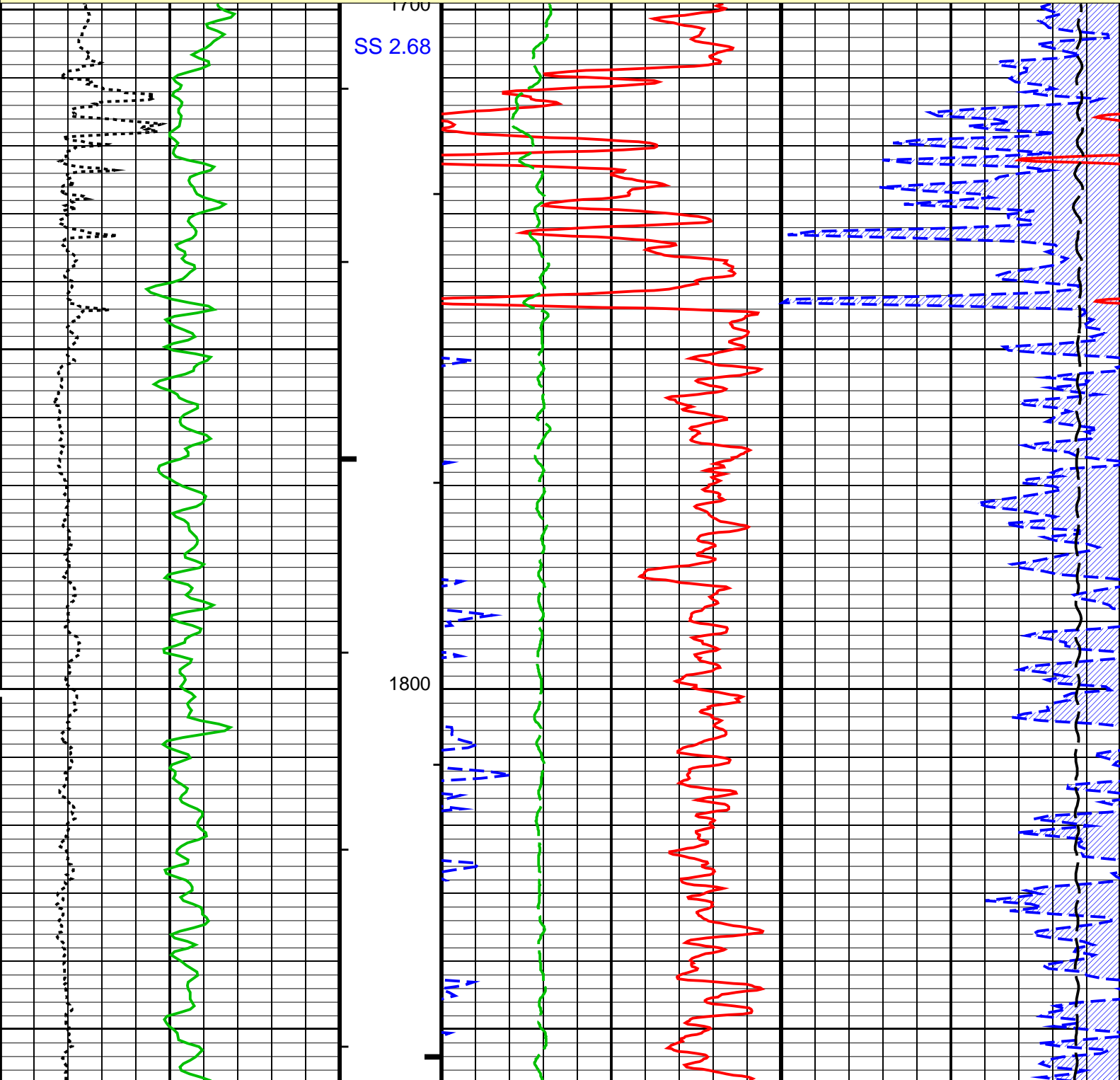
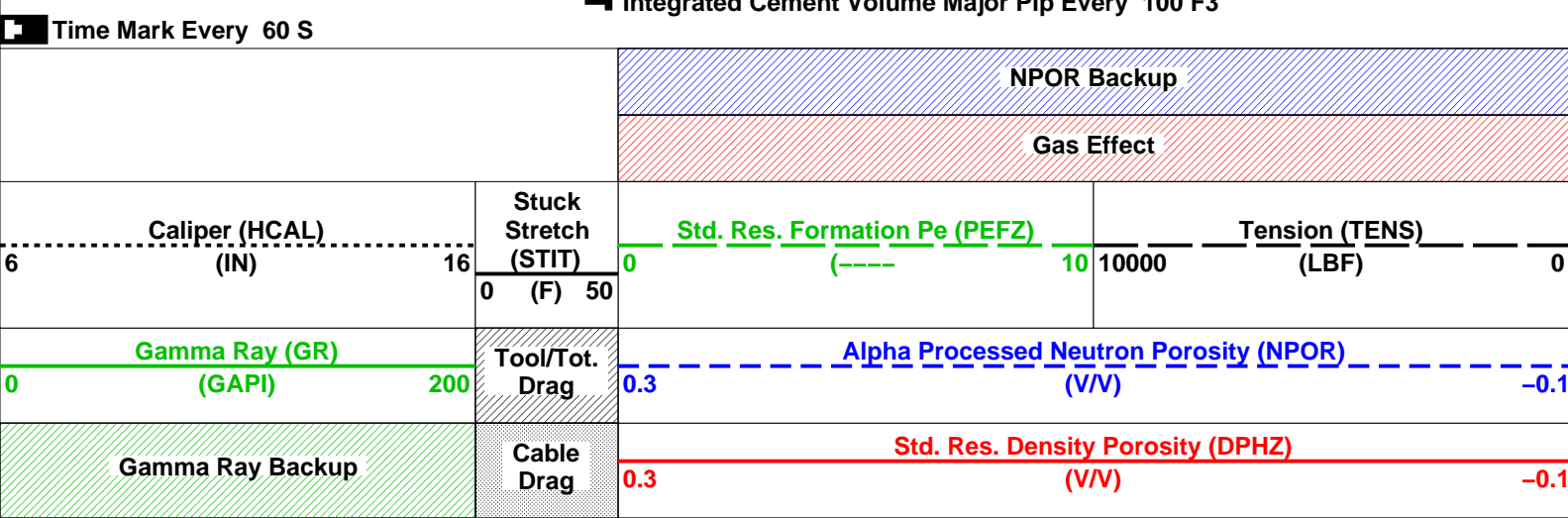
Hole Volume = 1226.74 ft3
Cement Volume = 839.56 ft3 (assuming 4.50 in casing O.D.)
Computed from 5199.5 ft to 1694.5 ft

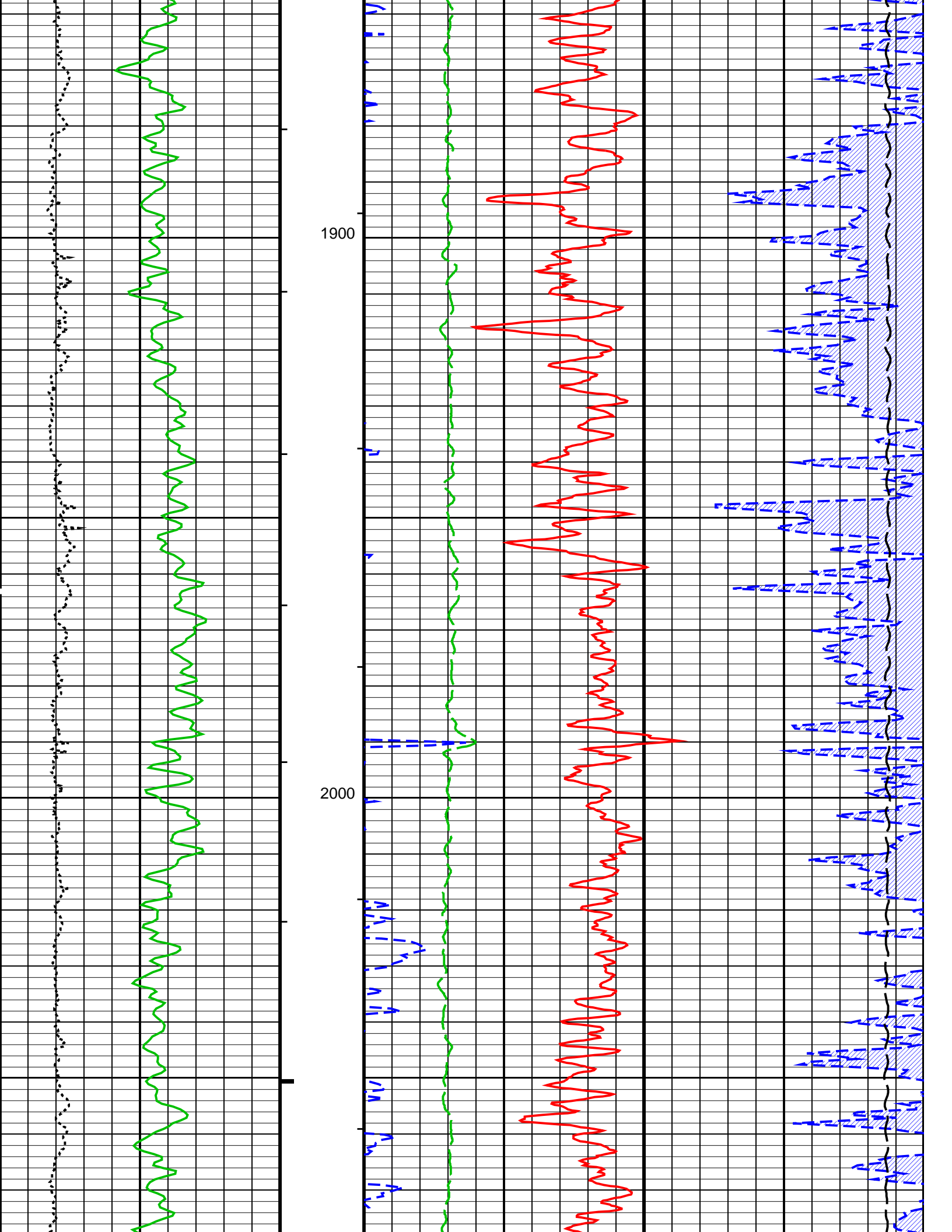
OP System Version: 17C0-154

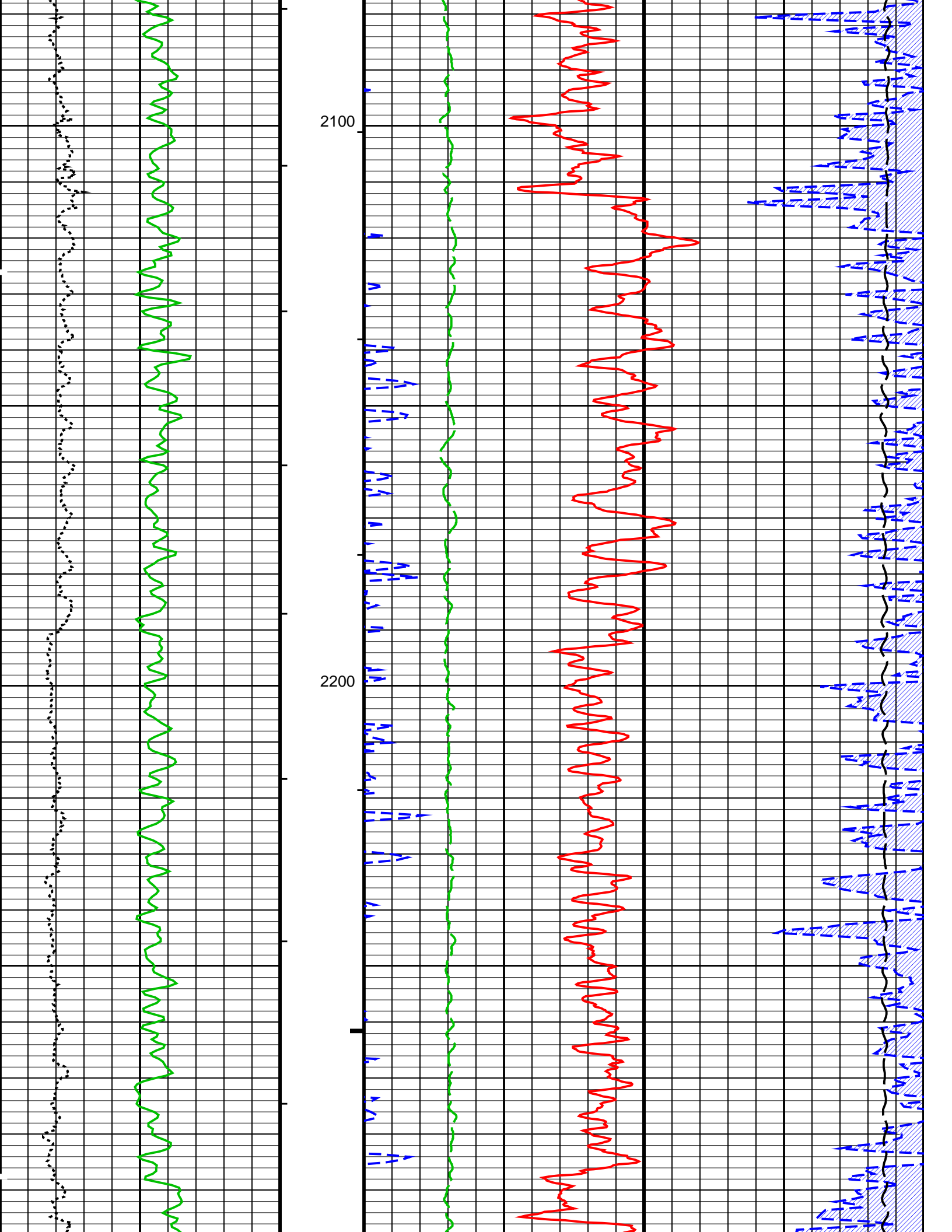
HILTC 17C0-154

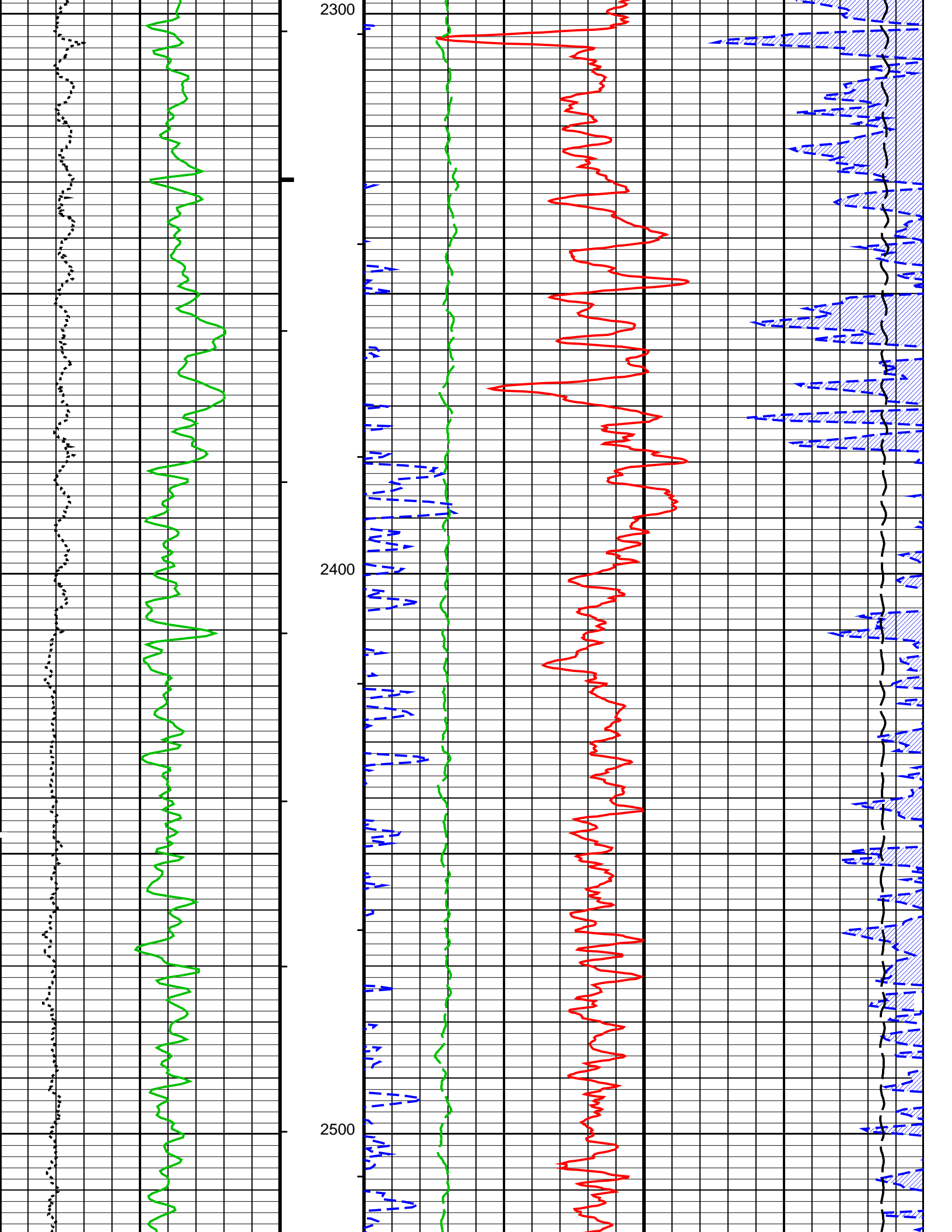
PIP SUMMARY

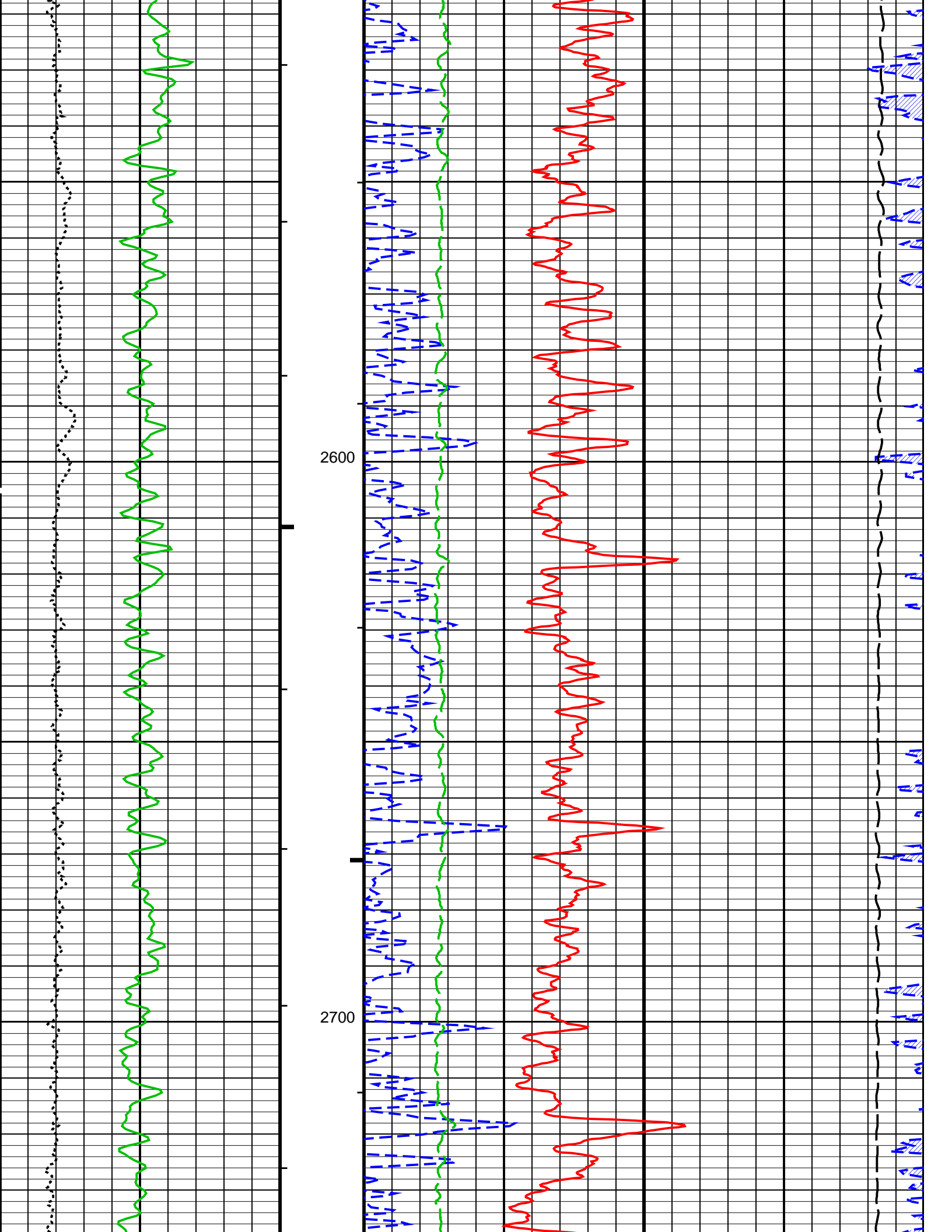
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3
- └ Integrated Cement Volume Major Pip Every 100 F3

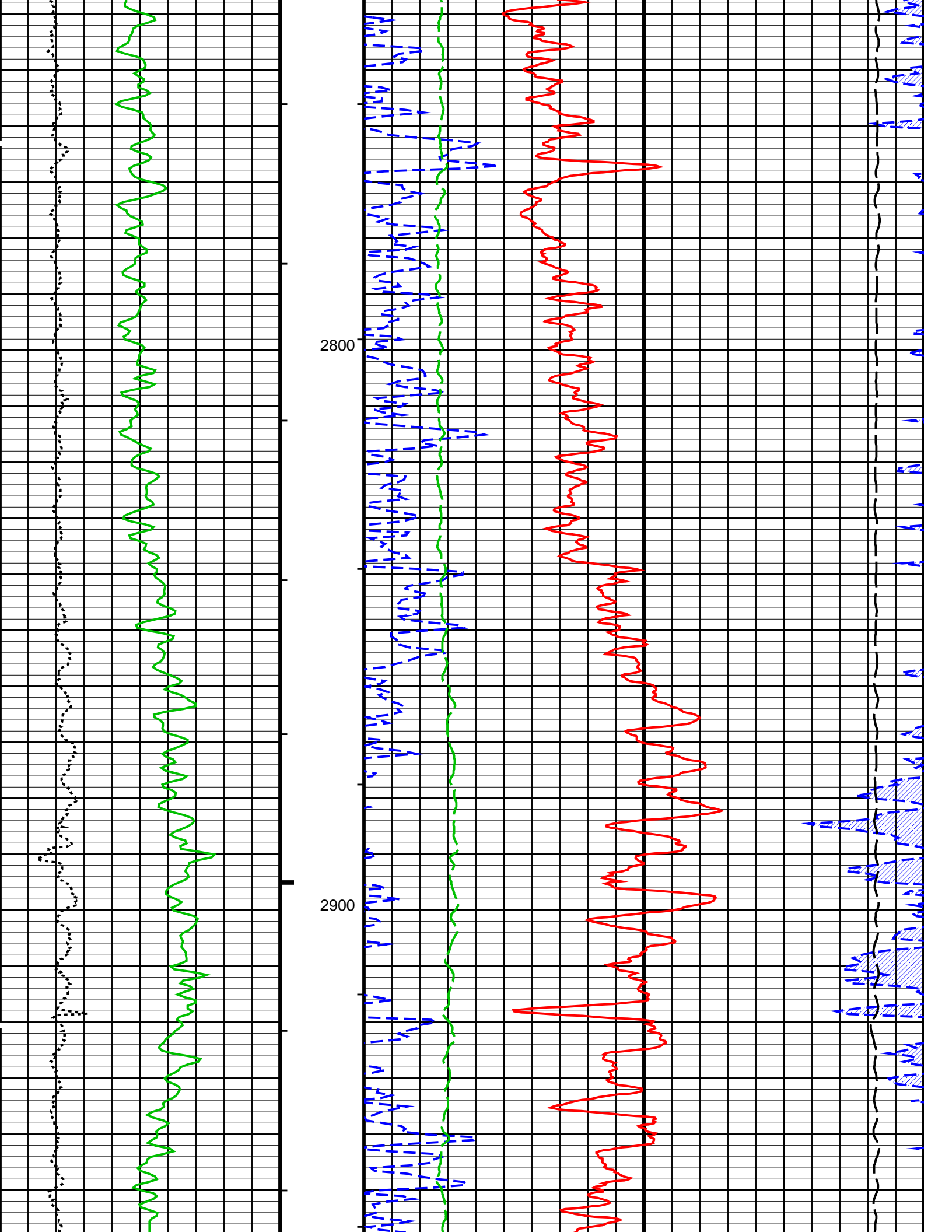


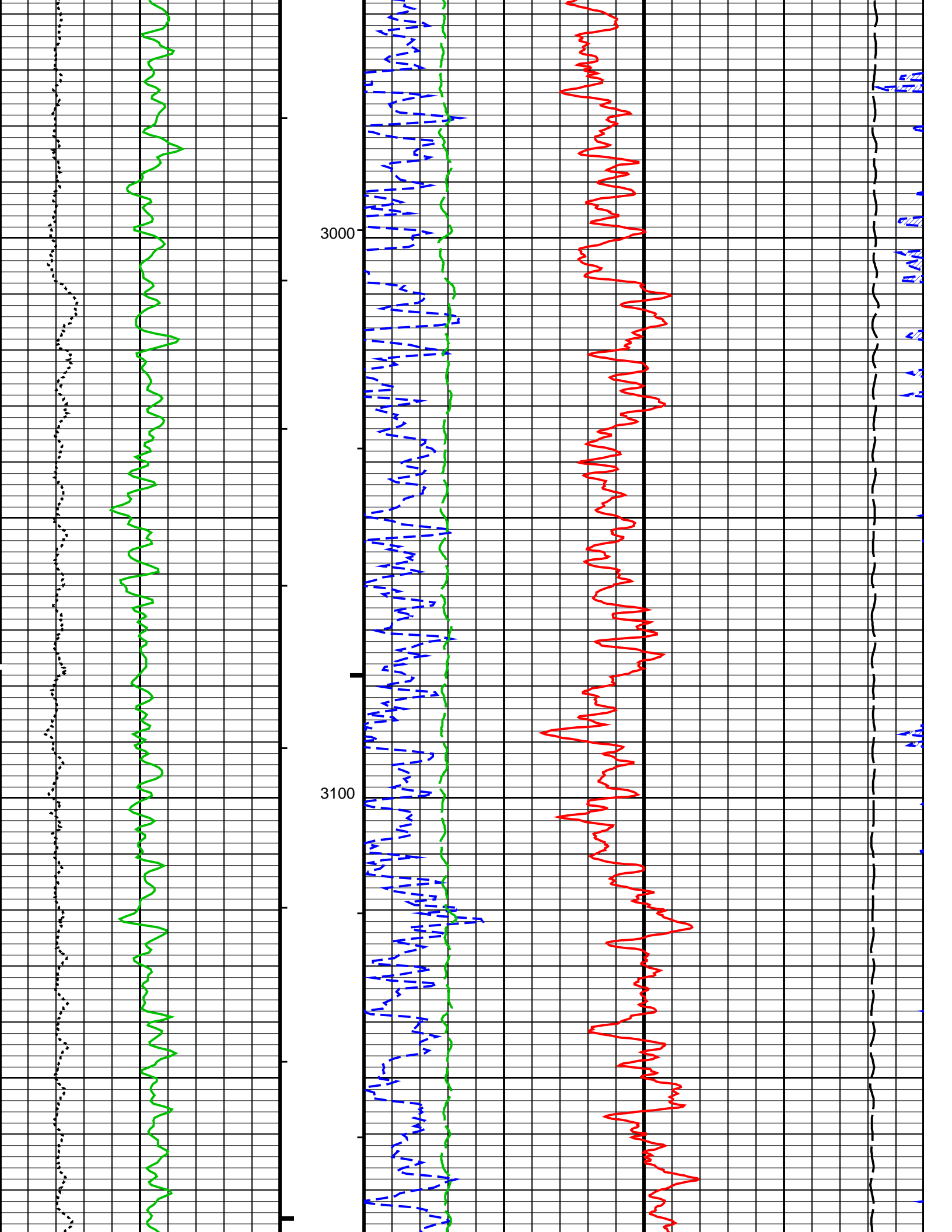


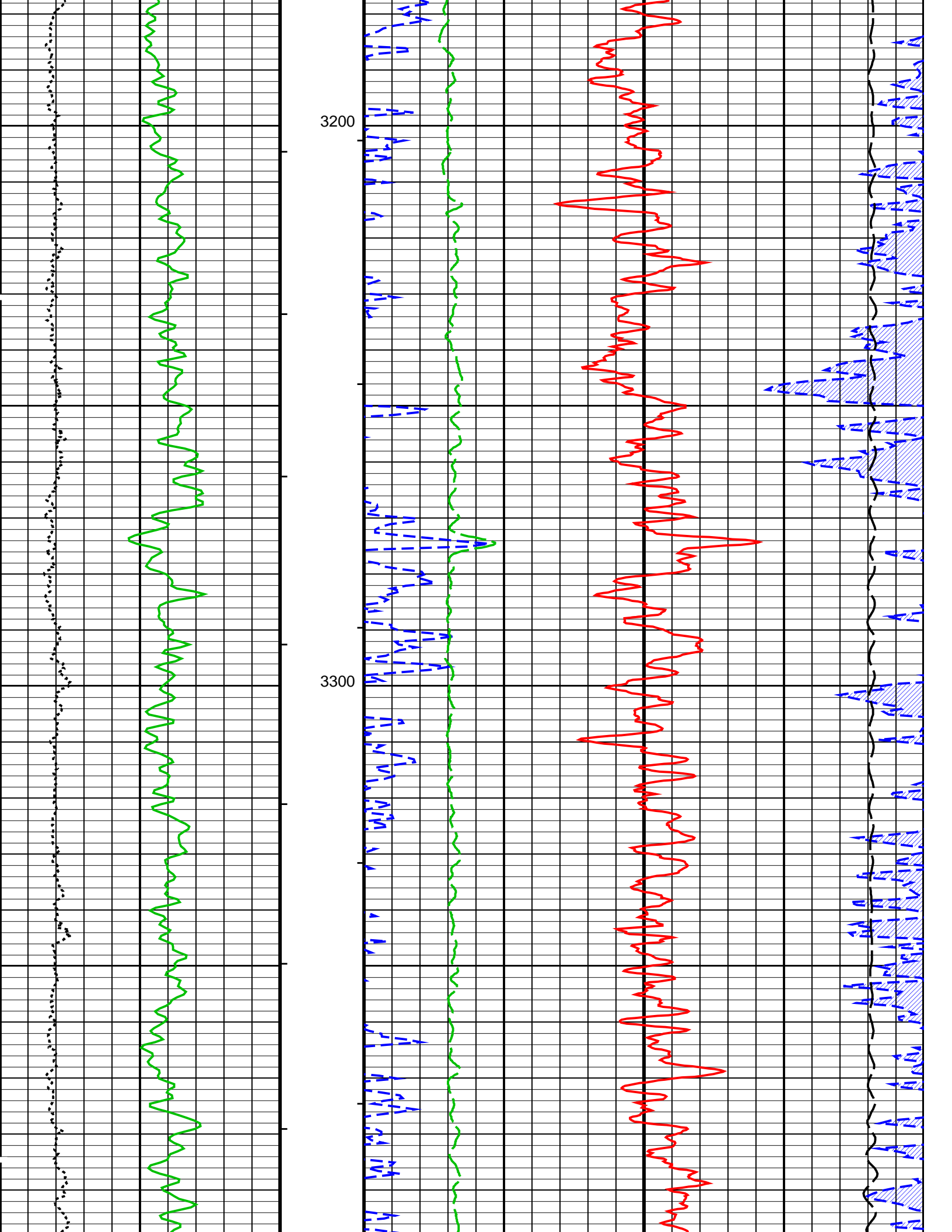


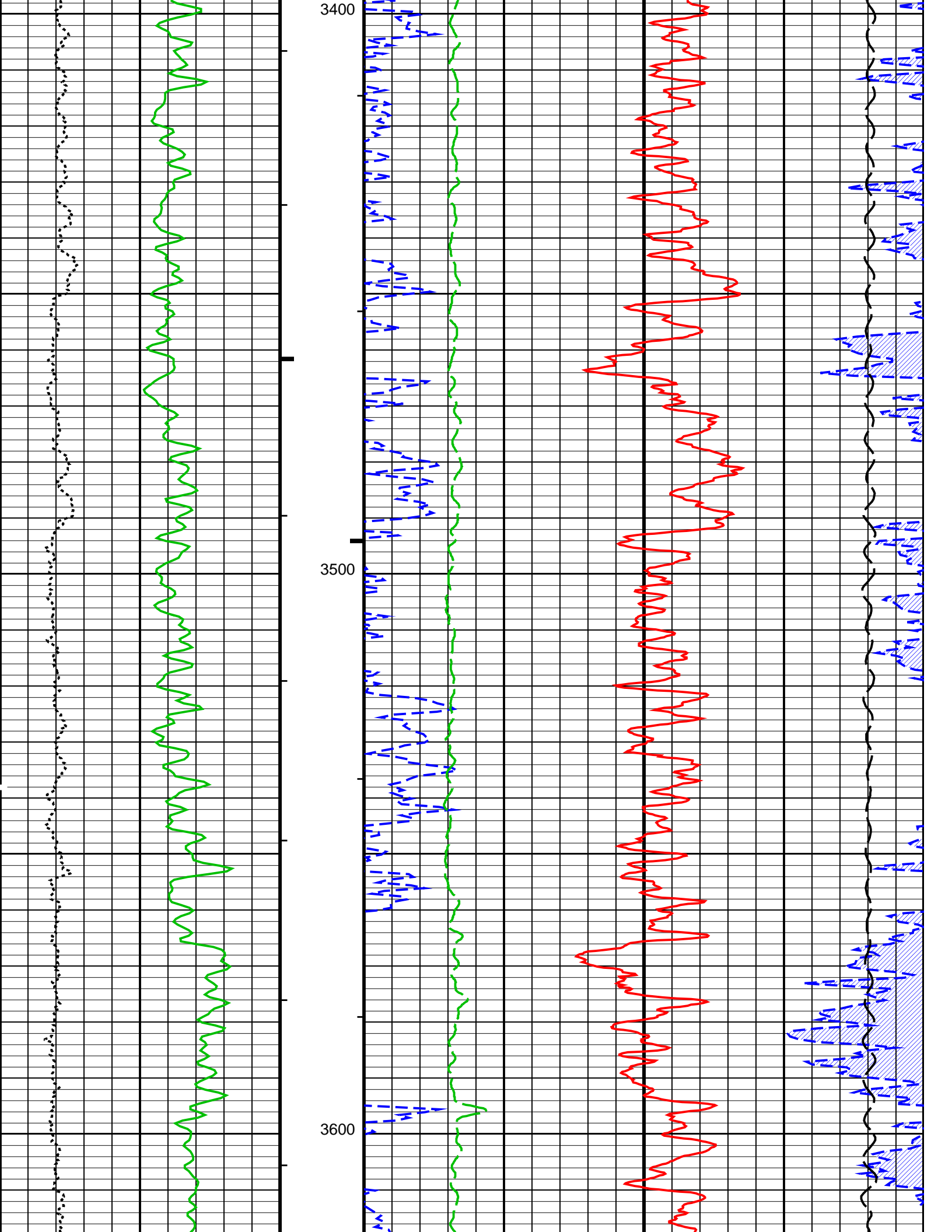


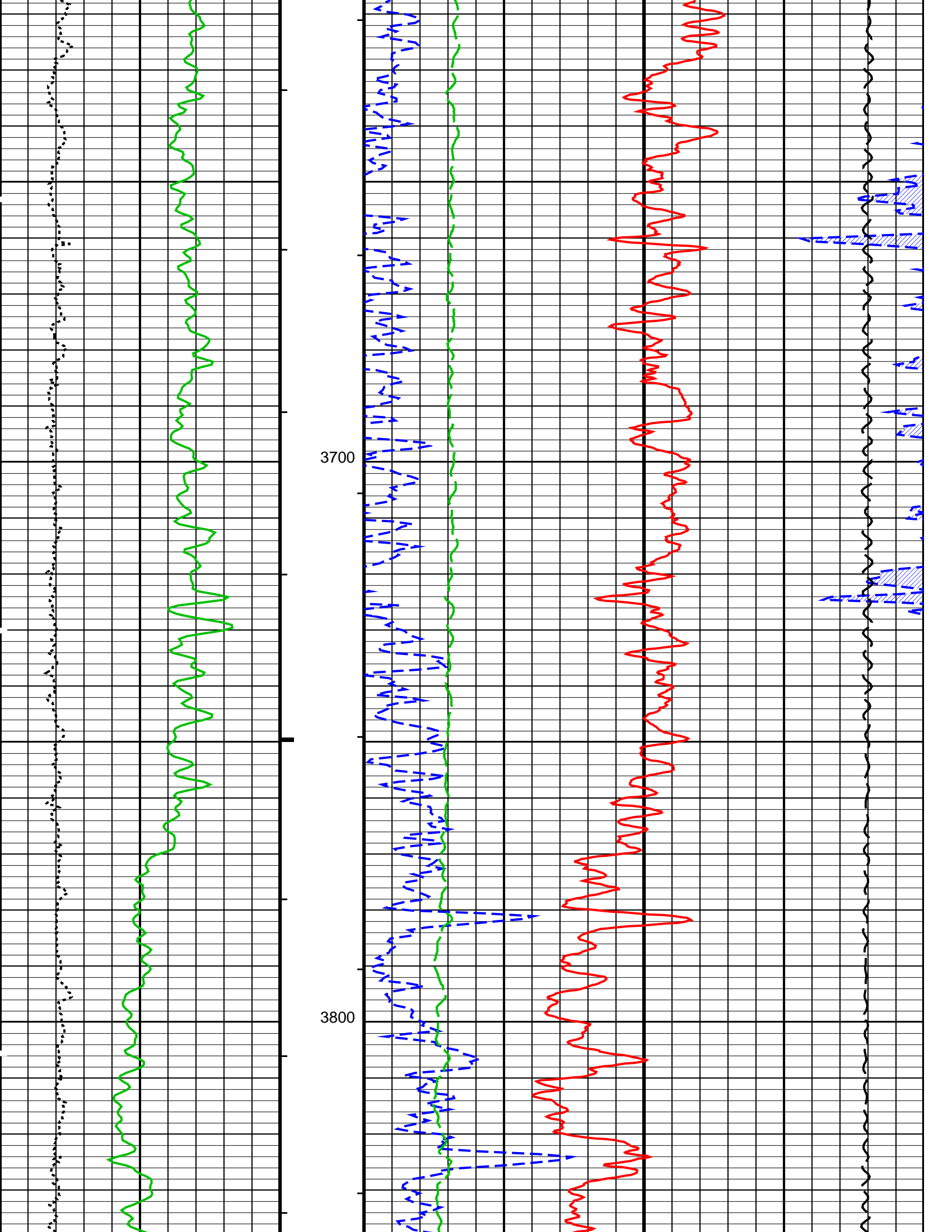


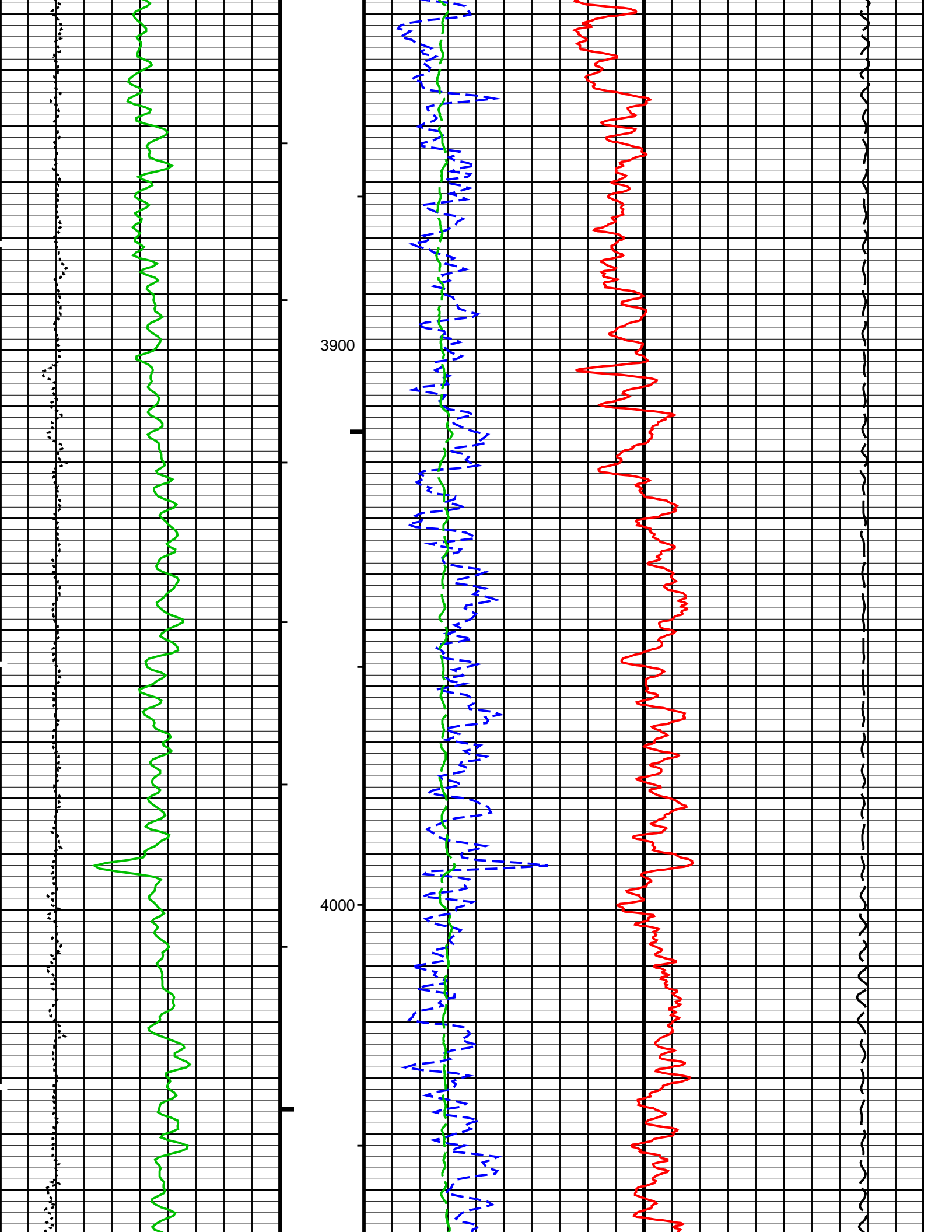


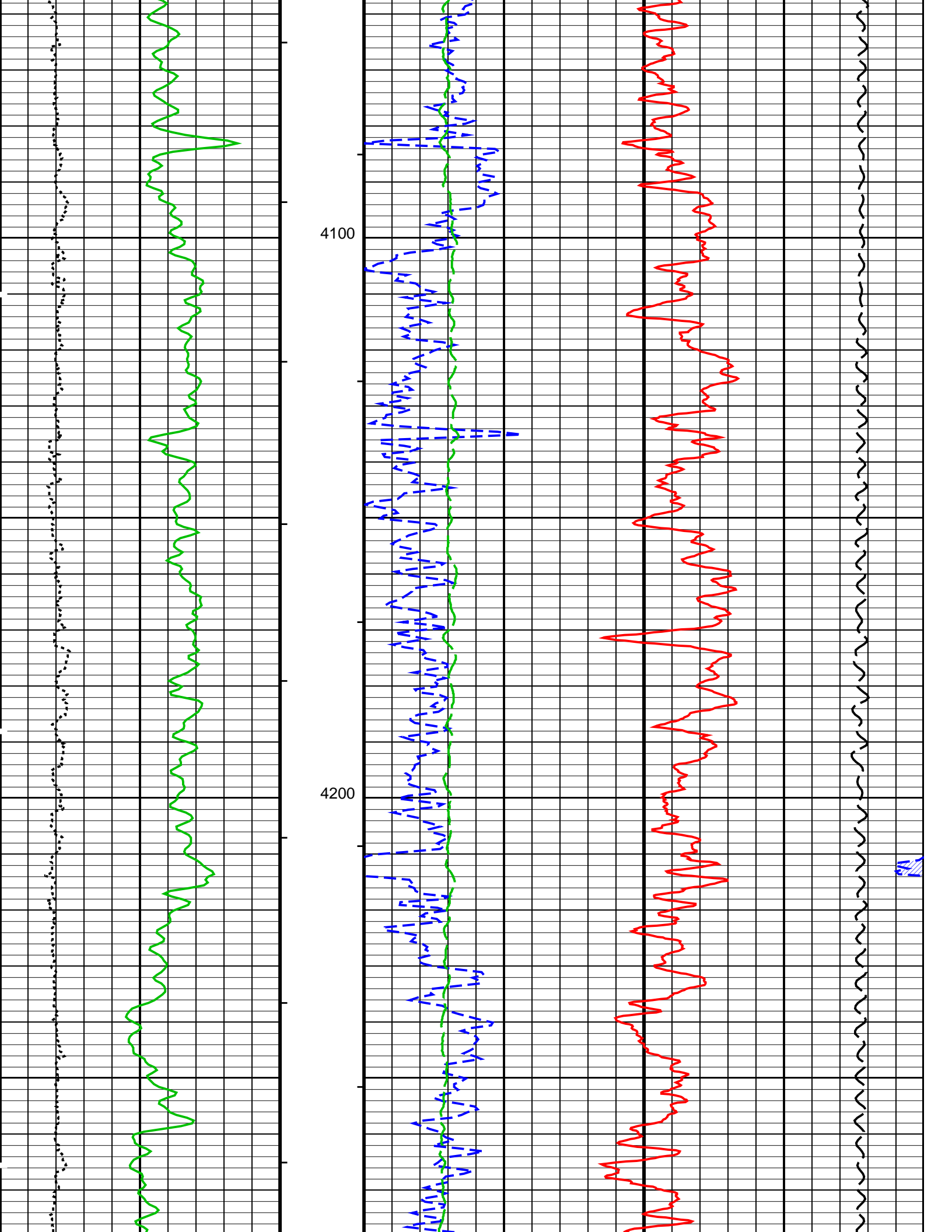


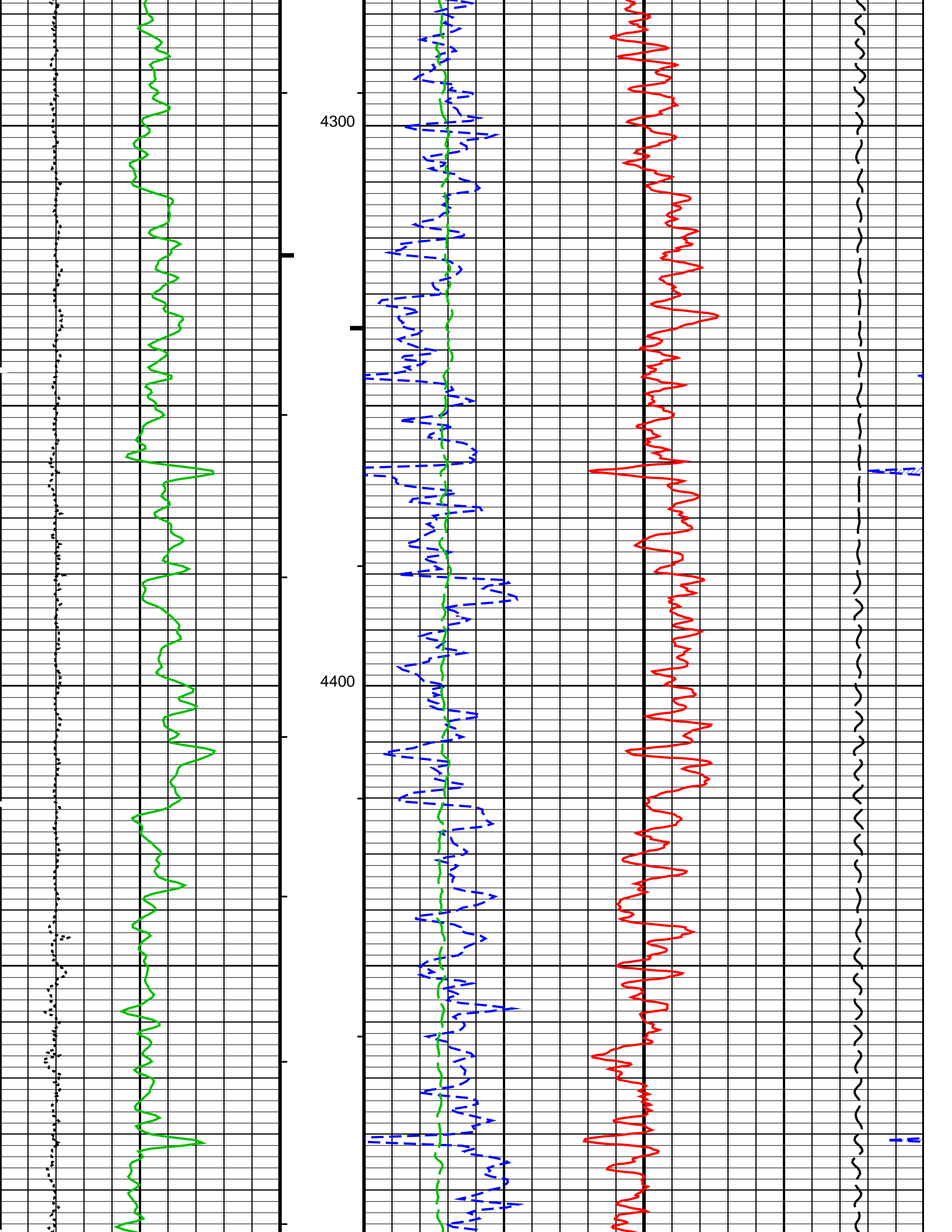


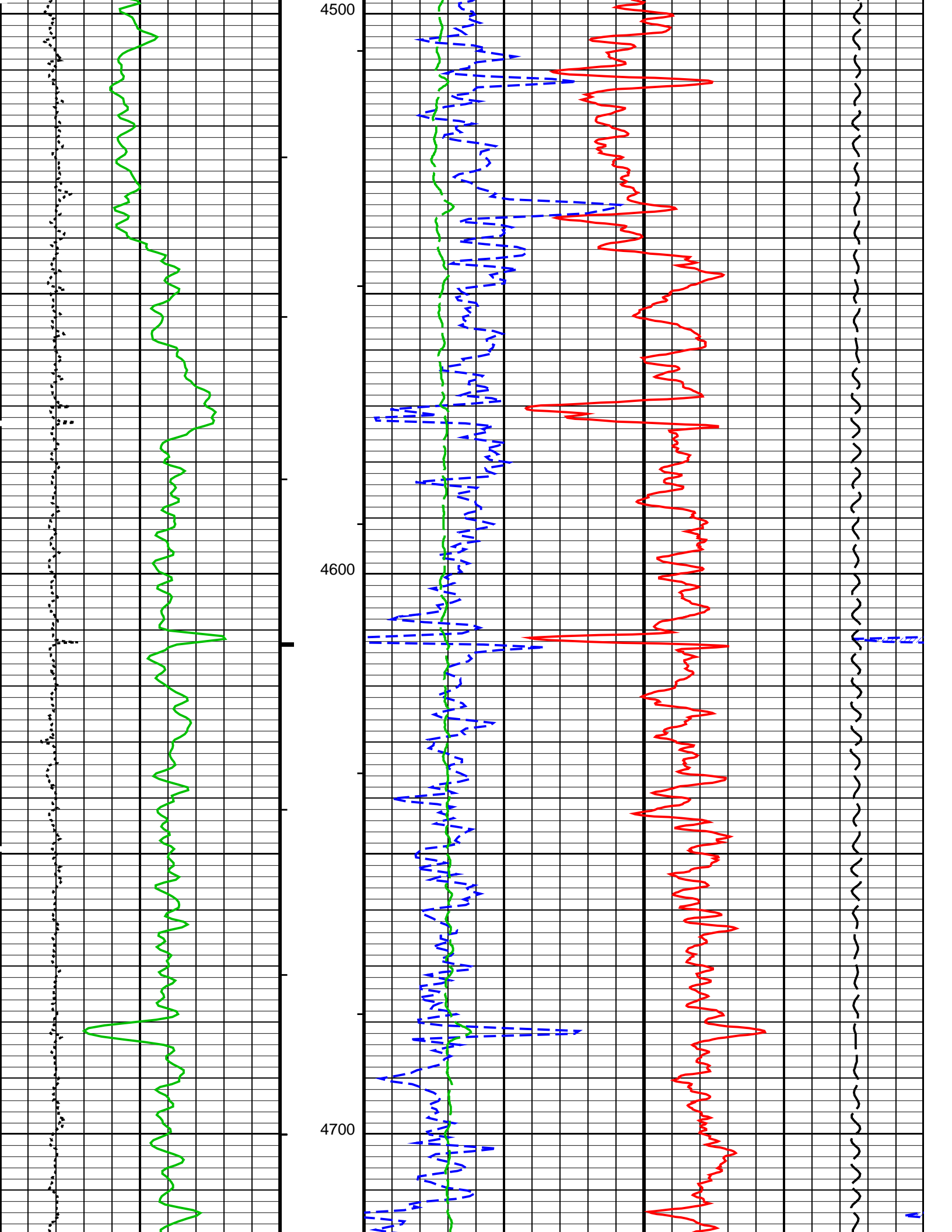


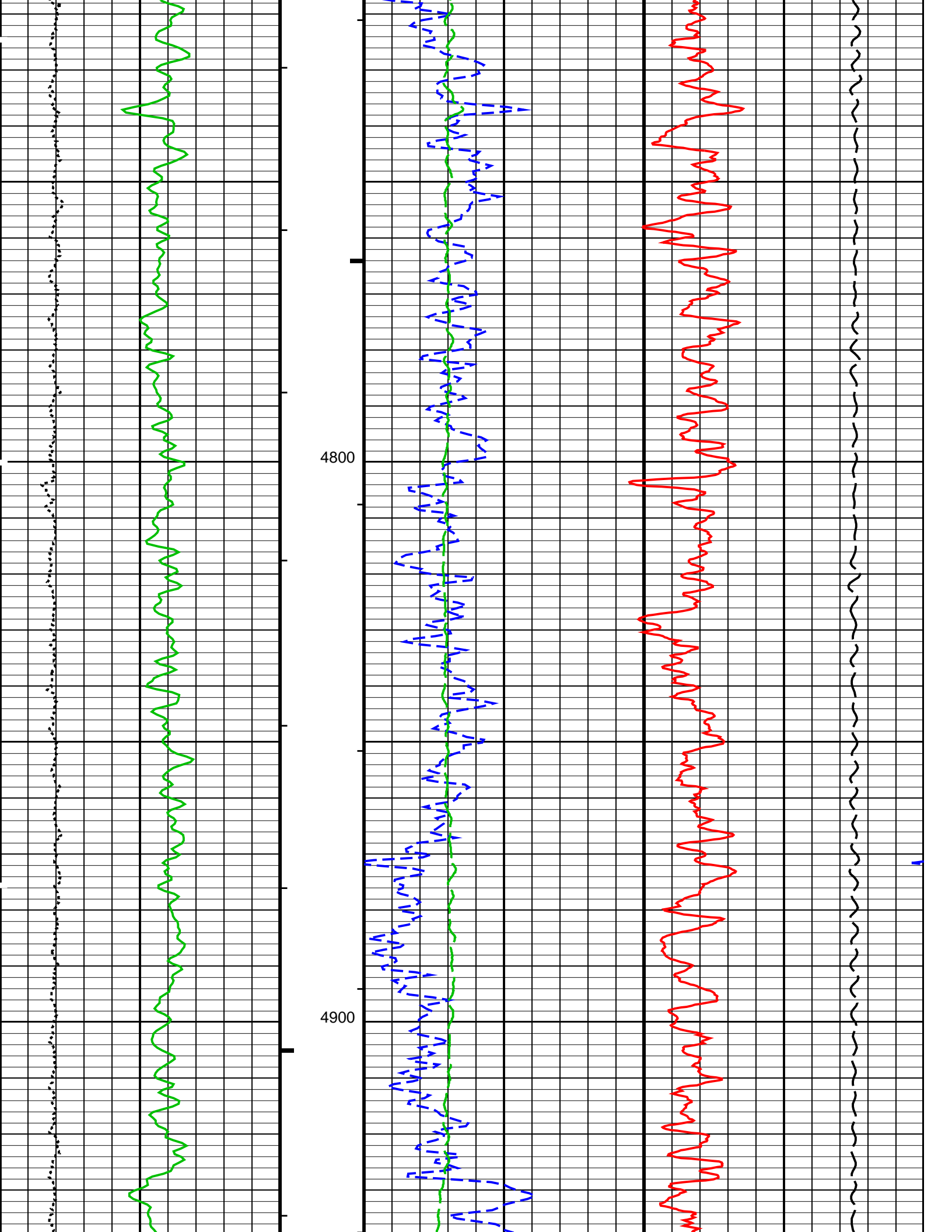


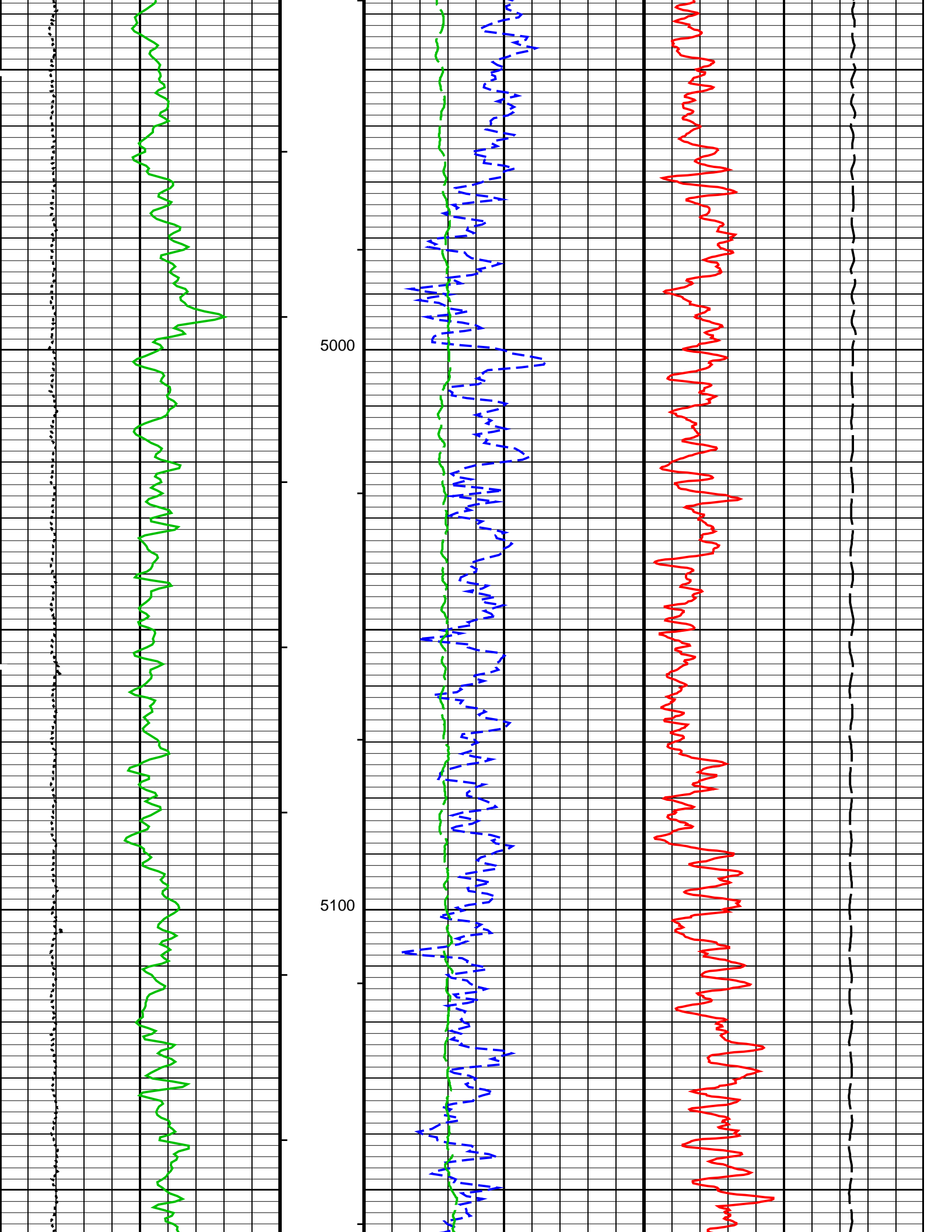


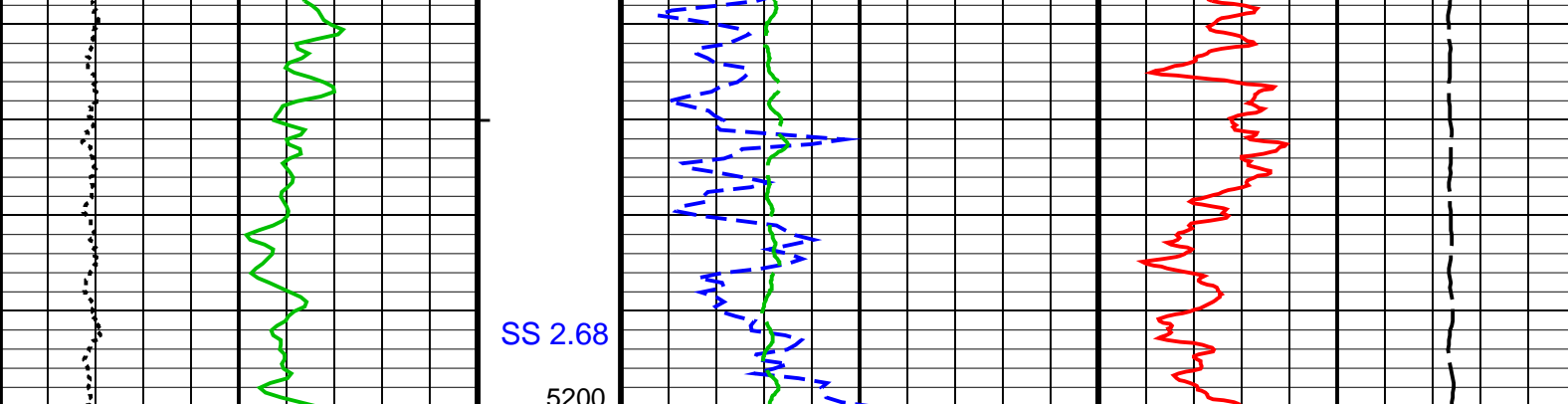












MAIN PASS: *** PLATFORM EXPRESS – NUCLEAR POROSITY ***

Gamma Ray Backup	Cable Drag	Std. Res. Density Porosity (DPHZ)	
		0.3	(V/V) -0.1
Gamma Ray (GR) (GAPI)	Tool/Tot. Drag	Alpha Processed Neutron Porosity (NPOR)	
0 200		0.3	(V/V) -0.1
Caliper (HCAL) (IN)	Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ)	Tension (TENS)
6 16	0 (F) 50	0 10 10000	(LBF) 0
		Gas Effect	
		NPOR Backup	

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	
HILTB-CTS: High resolution Integrated Logging Tool-CTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1.000	g/cm3
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	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.680	g/cm3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	STDRES	
NSAR	HRDD Depth Sampling Rate	1.000	in
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68.000	degF
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	YES	
PERT: Preliminary Evaluation – Real Time			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft

MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
SHT	Surface Hole Temperature	68.000	degF
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
SHT	Surface Hole Temperature	68.000	degF
	STI: Stuck Tool Indicator		
STKT	STI Stuck Threshold	2.500	ft
TDD	Total Depth – Driller	7822.0	ft
TDL	Total Depth – Logger	7804.0	ft
	System and Miscellaneous		
BS	Bit Size	7.875	in
BSAL	Borehole Salinity		
CSIZ	Current Casing Size	8.625	in
CWEI	Casing Weight	24.000	lbm/ft
DFD	Drilling Fluid Density	8.400	lbm/gal
FSAL	Formation Salinity		
MST	Mud Sample Temperature	66.100	degF
RMFS	Resistivity of Mud Filtrate Sample	1.095	ohm.m

Format: UPPER_PORO Vertical Scale: 5" per 100' Graphics File Created: 17-Mar-2010 00:57

OP System Version: 17C0-154

HILTC 17C0-154

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_033PUP	FN:28	PRODUCER	17-Mar-2010 00:36	7825.5 FT	391.5 FT
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LOWER POROSITY LOG 5" = 100'

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_025LUP	FN:21	PRODUCER	16-Mar-2010 23:29	7824.0 FT	390.5 FT
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_033PUP	FN:28	PRODUCER	17-Mar-2010 00:36
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OP System Version: 17C0-154

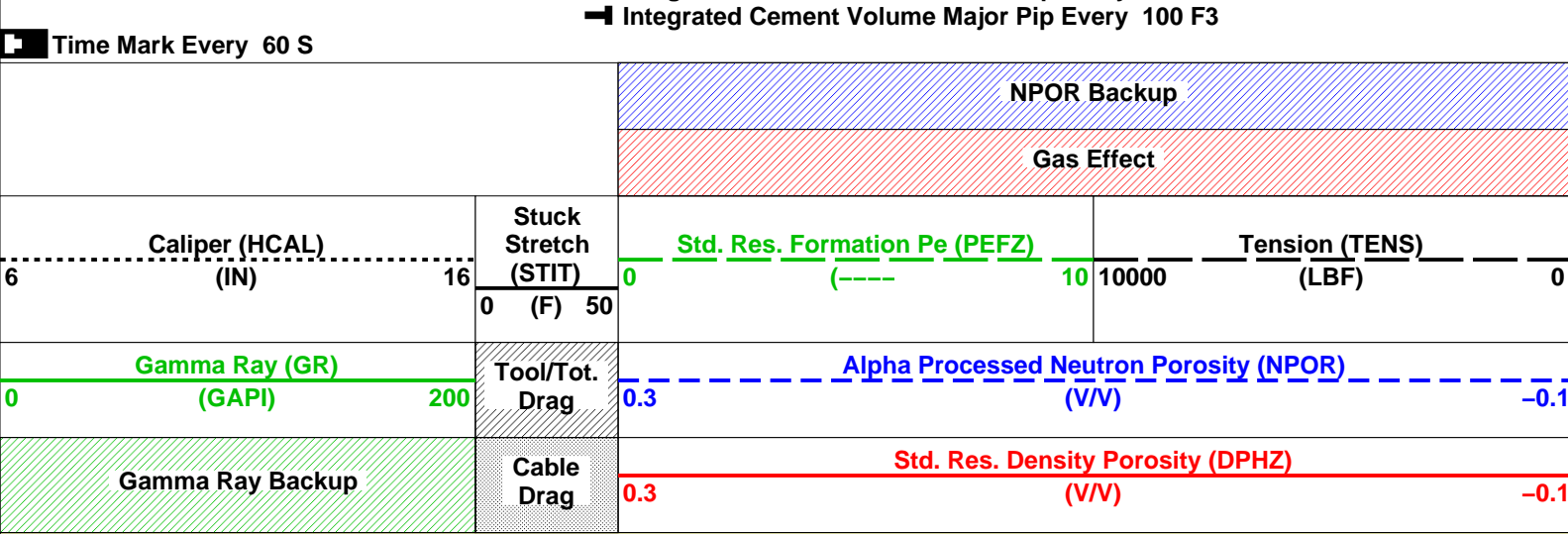
HILTB-CTS 17C0-154

Changed Parameter Summary

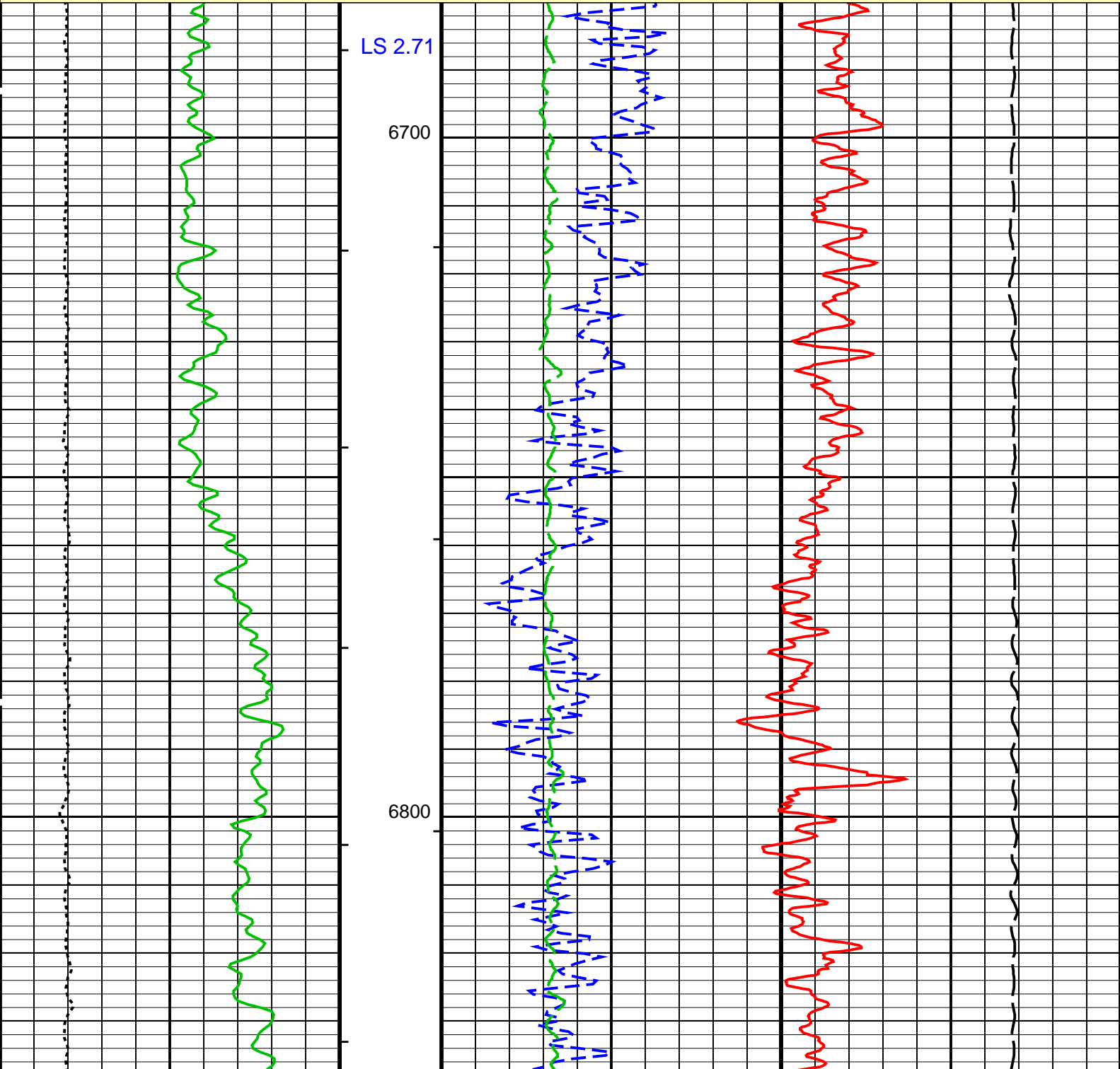
DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	7825.5 00:36:59
	SANDSTONE	SANDSTONE	7567.0 00:37:07
	LIMESTONE	SANDSTONE	7273.0 00:37:16
MDEN	2.65 G/C3	2.68 G/C3	7825.5 00:36:59
	2.68 G/C3	2.65 G/C3	7567.0 00:37:07
	2.71 G/C3	2.68 G/C3	7273.0 00:37:16

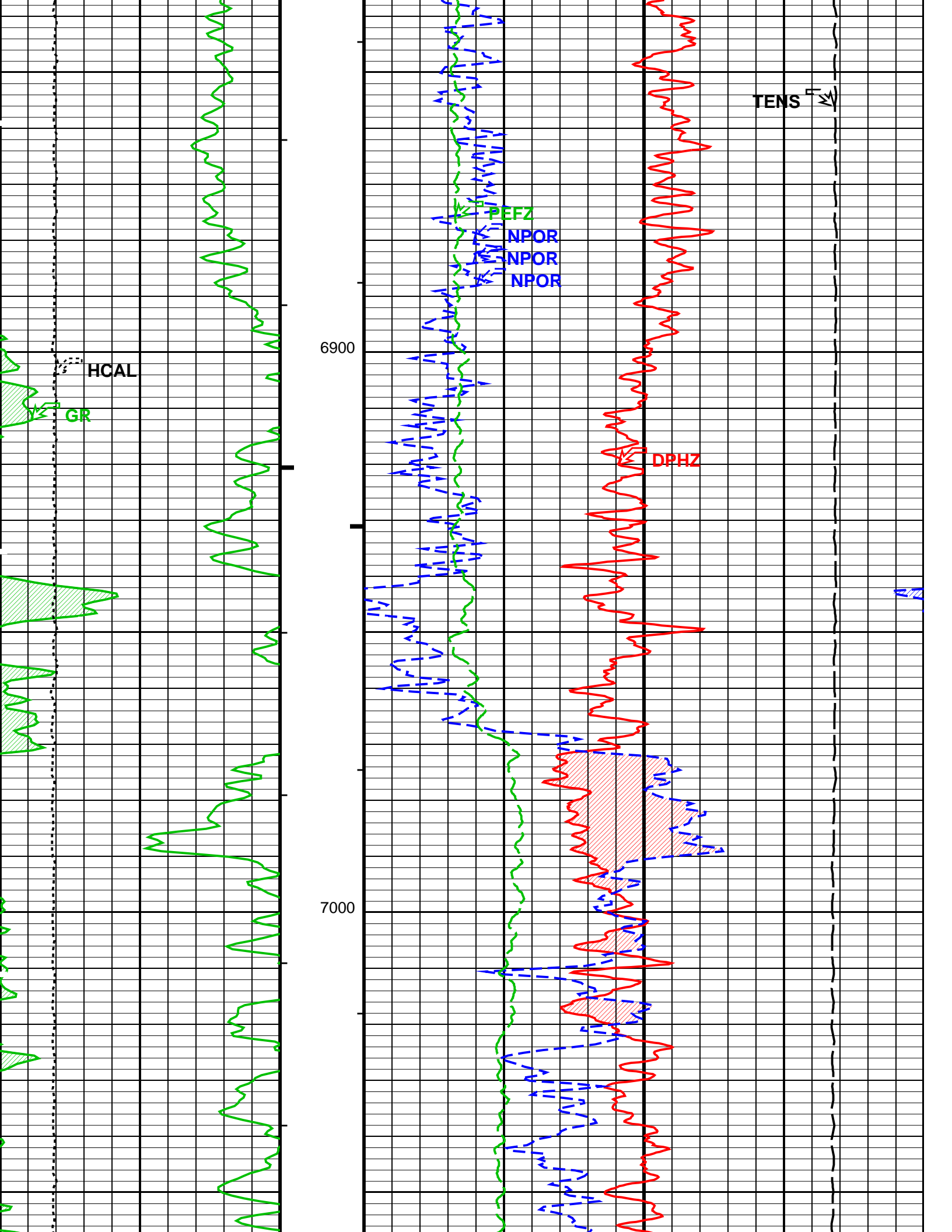
PIP SUMMARY

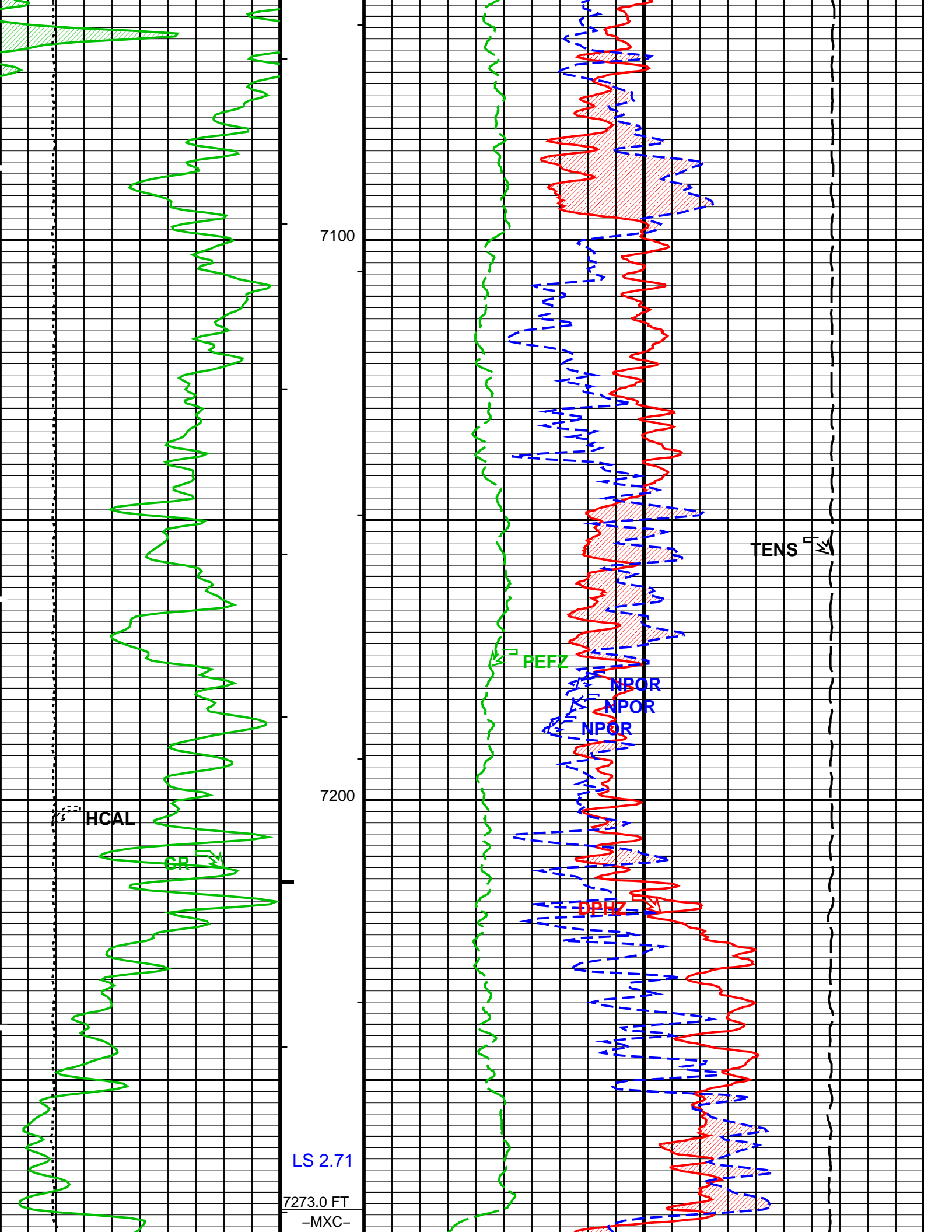
- └ Integrated Hole Volume Minor Pip Every 10 F3
- ─ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3

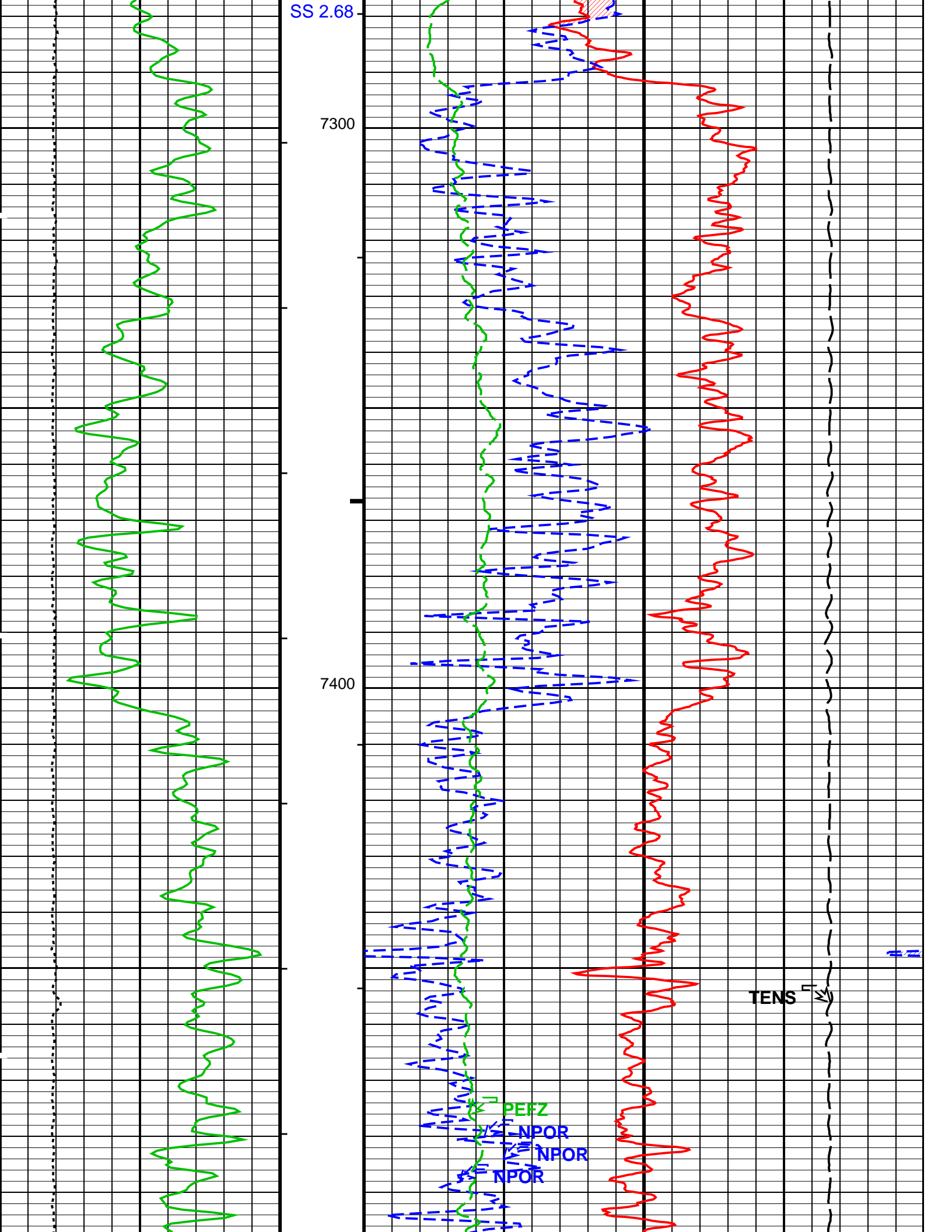


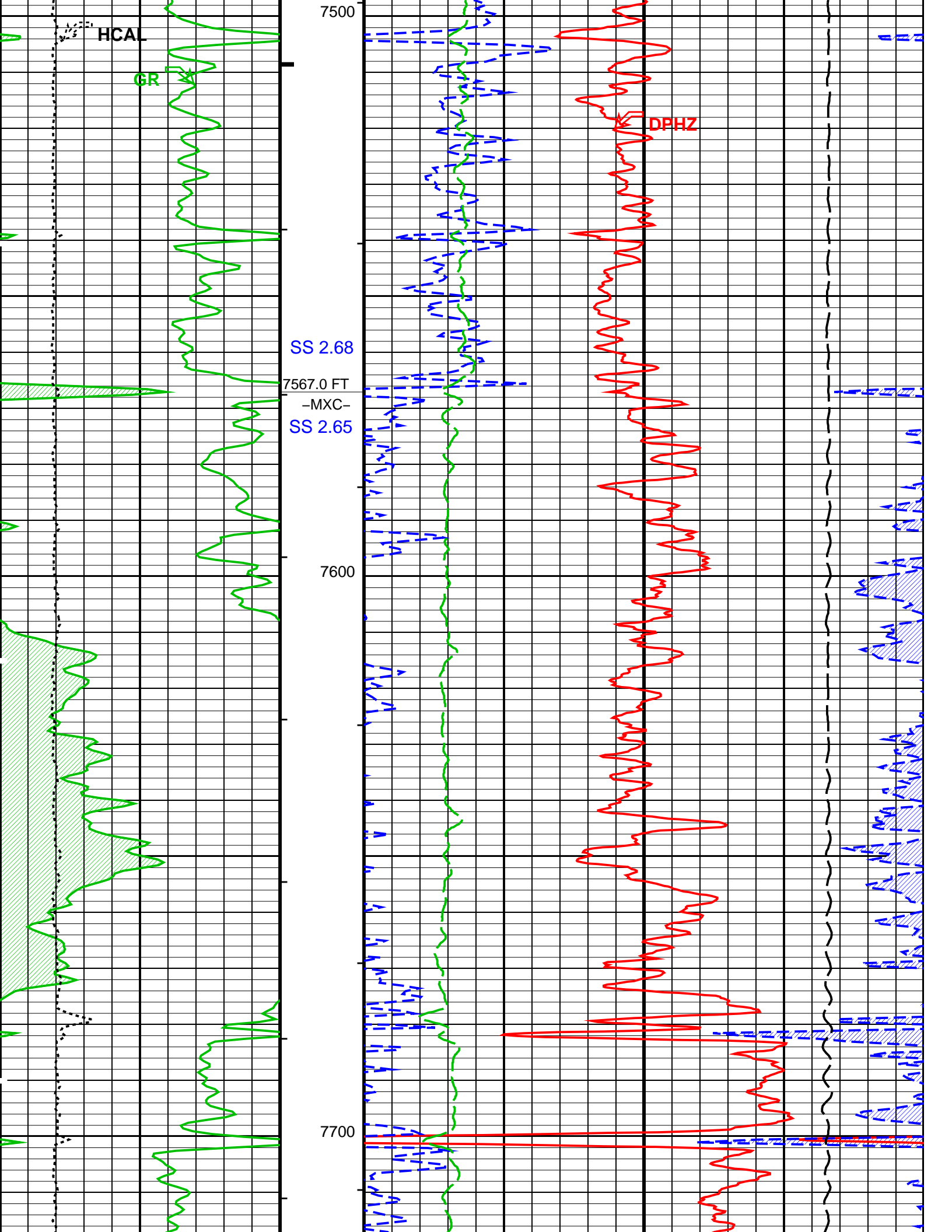
MAIN PASS: *** PLATFORM EXPRESS - NUCLEAR POROSITY ***

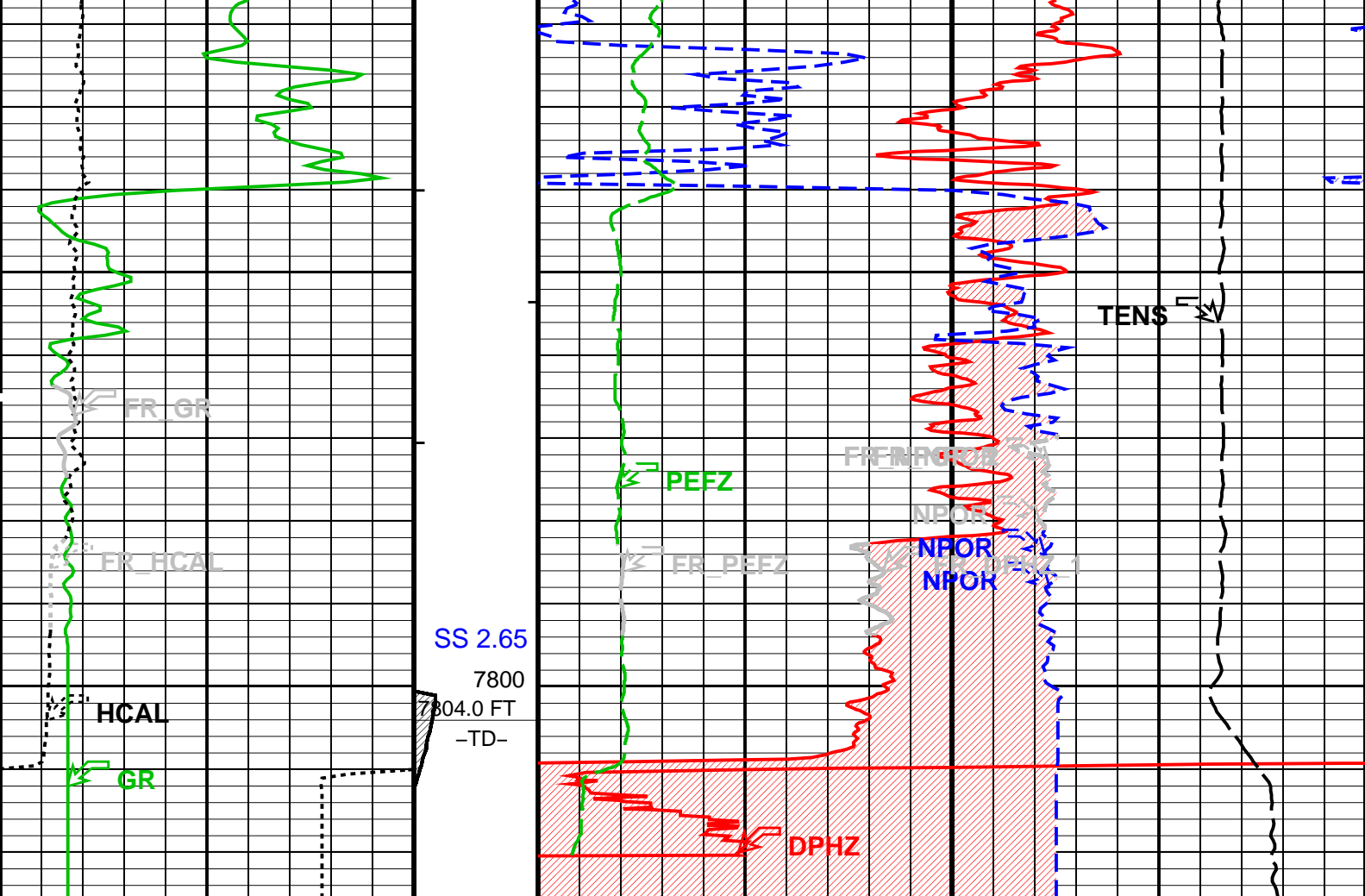












MAIN PASS: *** PLATFORM EXPRESS – NUCLEAR POROSITY ***

Gamma Ray Backup	Cable Drag	Std. Res. Density Porosity (DPHZ)	
		0.3	(V/V) -0.1
Gamma Ray (GR) (GAPI)	Tool/Tot. Drag	Alpha Processed Neutron Porosity (NPOR)	
0 200		0.3	(V/V) -0.1
Caliper (HCAL) (IN)	Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ)	Tension (TENS)
6 16	0 (F) 50	0 10 10000	(LBF) 0
		Gas Effect	
		NPOR Backup	

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
HILTB-CTS: High resolution Integrated Logging Tool-CTS		
BHFL	Borehole Fluid Type	WATER
BHFL_TLD	HILT Nuclear Mud Base	WATER
BHS	Borehole Status	OPEN
BSCO	Borehole Salinity Correction Option	NO
CCCO	Casing & Cement Thickness Correction Option	NO
DHC	Density Hole Correction	BS
FD	Fluid Density	1 G/C3

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
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
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
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	
PERT: Preliminary Evaluation – Real Time			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	4.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
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			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth – Driller	7822.00	FT
TDL	Total Depth – Logger	7804.00	FT
System and Miscellaneous			
BS	Bit Size	7.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	1.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
MST	Mud Sample Temperature	66.10	DEGF
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	1.0950	OHMM
TD	Total Depth	7804	FT

Format: LOWER_PORO Vertical Scale: 5" per 100' Graphics File Created: 17-Mar-2010 00:36

OP System Version: 17C0-154

HILTB-CTS 17C0-154

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_025LUP	FN:21	PRODUCER	16-Mar-2010 23:29	7824.0 FT	390.5 FT
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_033PUP	FN:28	PRODUCER	17-Mar-2010 00:36
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Schlumberger

REPEAT ANALYSIS

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_025LUP	FN:21	PRODUCER	16-Mar-2010 23:29	7824.0 FT	390.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_024PUP	FN:20	PRODUCER	16-Mar-2010 23:25	7830.0 FT	7054.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_033PUP	FN:28	PRODUCER	17-Mar-2010 00:36
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OP System Version: 17C0-154

HILTB-CTS 17C0-154

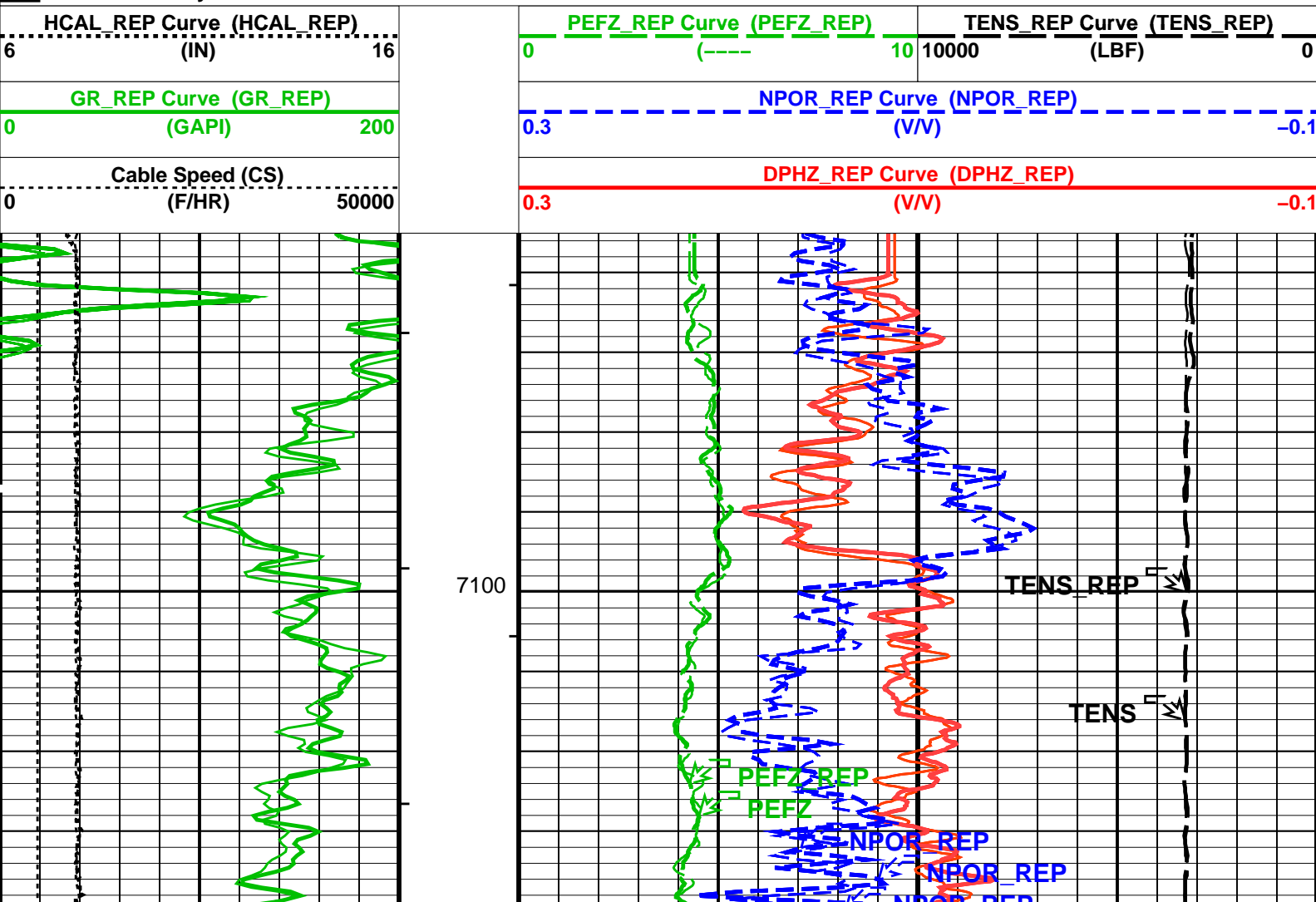
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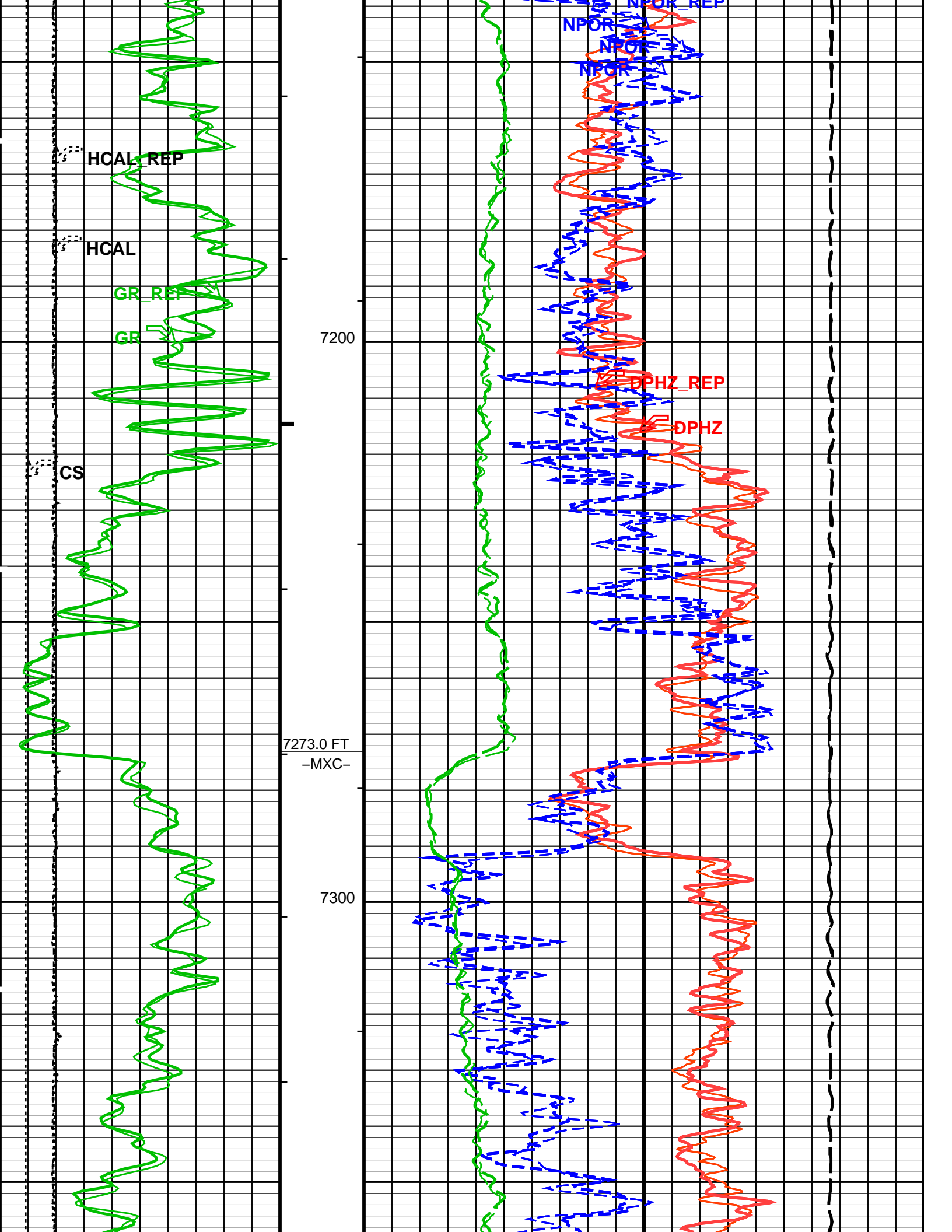
DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	7825.5 00:36:59
	SANDSTONE	SANDSTONE	7567.0 00:37:07
	LIMESTONE	SANDSTONE	7273.0 00:37:16
MDEN	2.65 G/C3	2.68 G/C3	7825.5 00:36:59
	2.68 G/C3	2.65 G/C3	7567.0 00:37:07
	2.71 G/C3	2.68 G/C3	7273.0 00:37:16

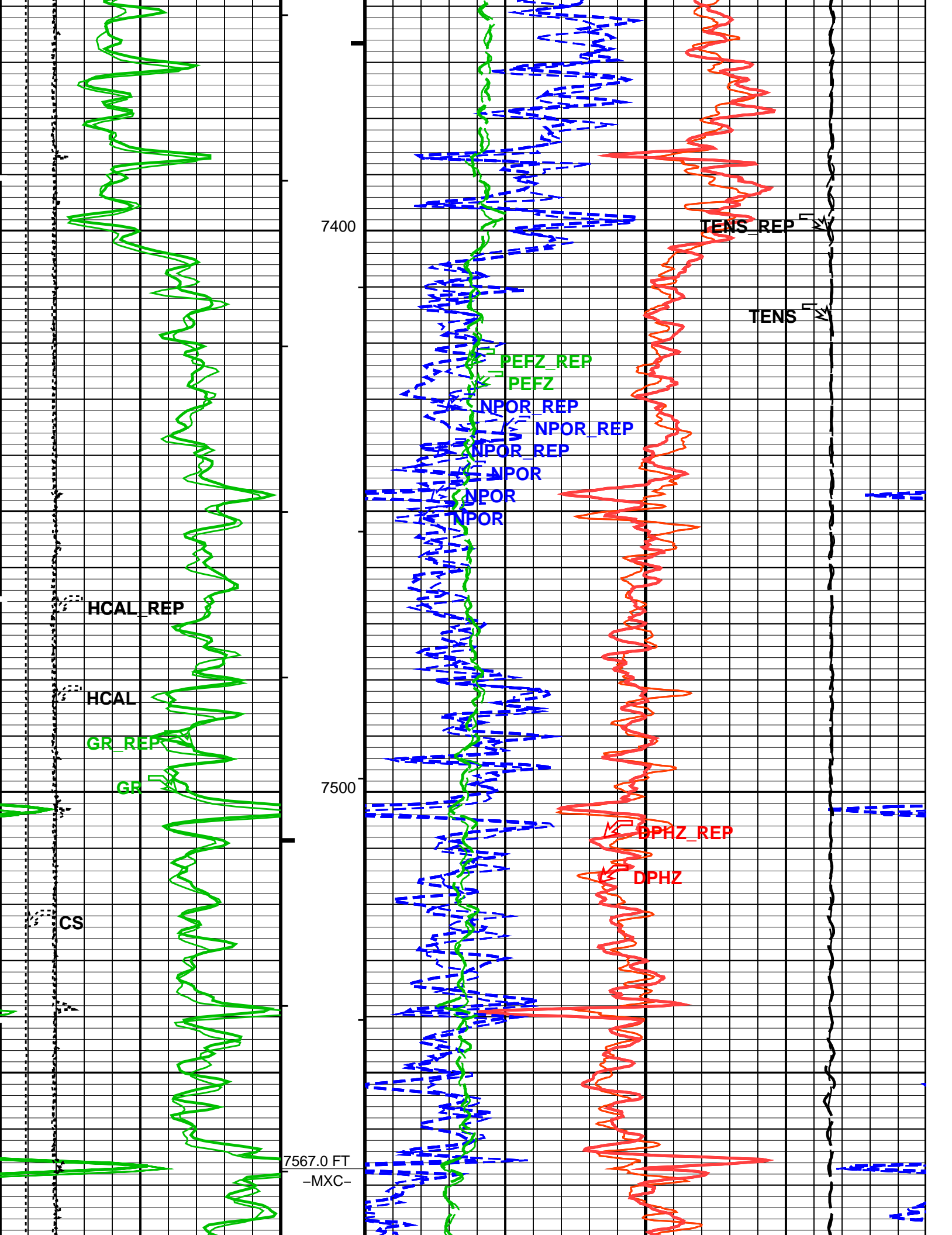
PIP SUMMARY

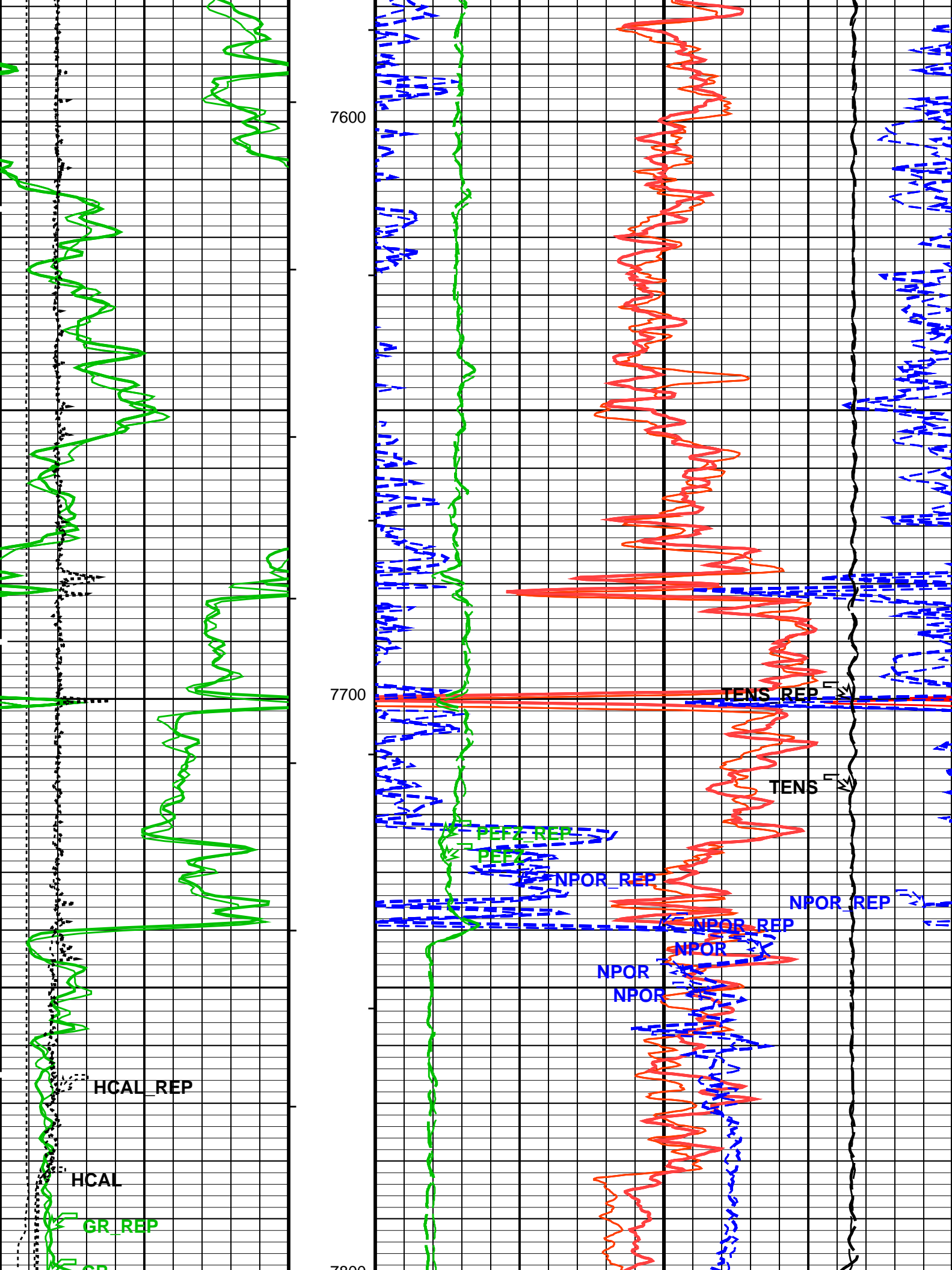
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3
- └ Integrated Cement Volume Major Pip Every 100 F3

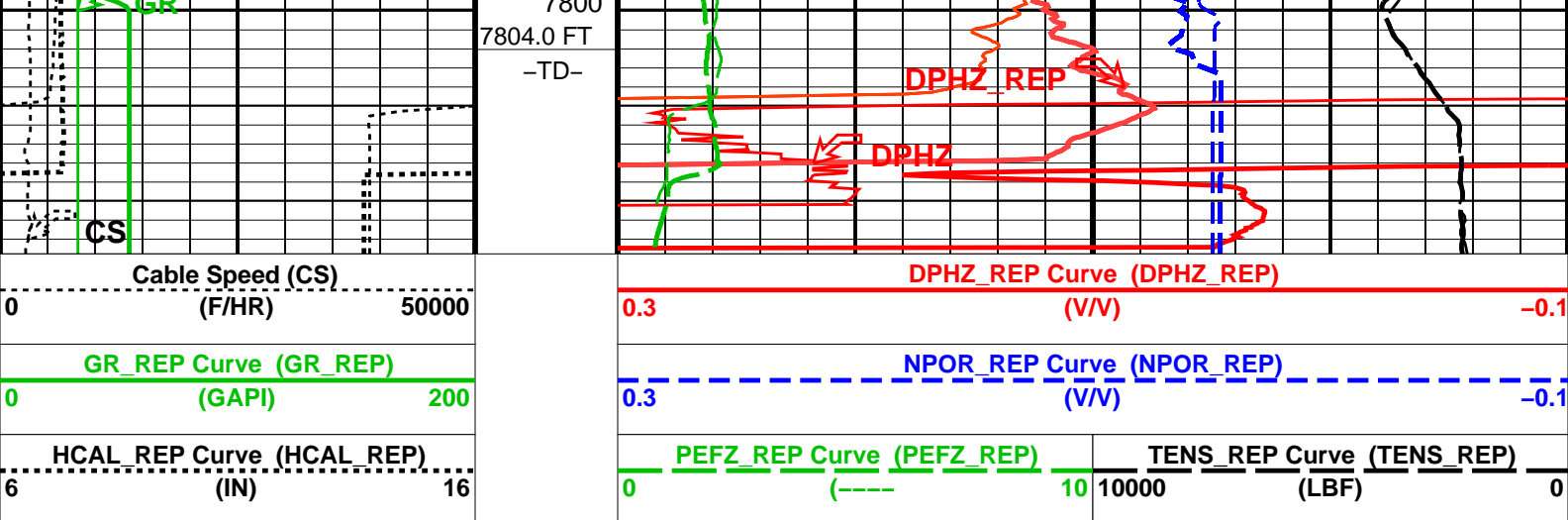
Time Mark Every 60 S











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

Parameters

DLIS Name	Description	Value
HILTB-CTS: High resolution Integrated Logging Tool-CTS		
BHFL	Borehole Fluid Type	WATER
BHFL_TLD	HILT Nuclear Mud Base	WATER
BHS	Borehole Status	OPEN
BSCO	Borehole Salinity Correction Option	NO
CCCO	Casing & Cement Thickness Correction Option	NO
DHC	Density Hole Correction	BS
FD	Fluid Density	1 G/C3
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
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
MWCO	Mud Weight Correction Option	NO
NAAC	HRDD APS Activation Correction	OFF
NMT	HILT Nuclear Mud Type	NOBARITE
NPRM	HRDD Processing Mode	StdRes
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
PERT: Preliminary Evaluation - Real Time		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.01 DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
SHT	Surface Hole Temperature	68 DEGF
HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN
FCD	Future Casing (Outer) Diameter	4.5 IN
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.01 DF/F
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	7804.00 FT
System and Miscellaneous		
BS	Bit Size	7.875 IN
BSAL	Borehole Salinity	-50000.00 PPM

CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	1.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
MST	Mud Sample Temperature	66.10	DEGF
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	1.0950	OHMM
TD	Total Depth	7804	FT

Format: PORO_REP

Vertical Scale: 5" per 100'

Graphics File Created: 17-Mar-2010 00:36

OP System Version: 17C0-154

HILTB-CTS17C0-154

Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_025LUP	FN:21	PRODUCER	16-Mar-2010 23:29	7824.0 FT	390.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_024PUP	FN:20	PRODUCER	16-Mar-2010 23:25	7830.0 FT	7054.5 FT
Output DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_033PUP	FN:28	PRODUCER	17-Mar-2010 00:36		

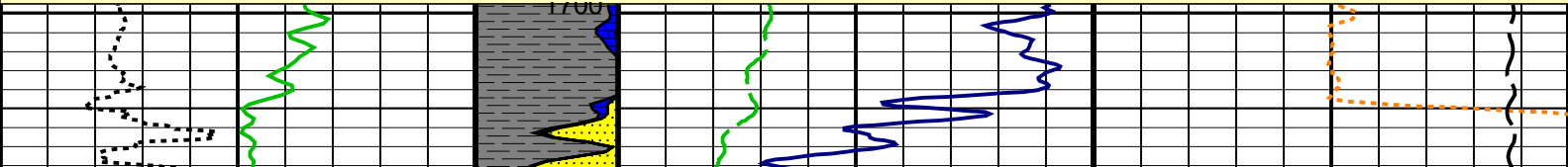
Schlumberger

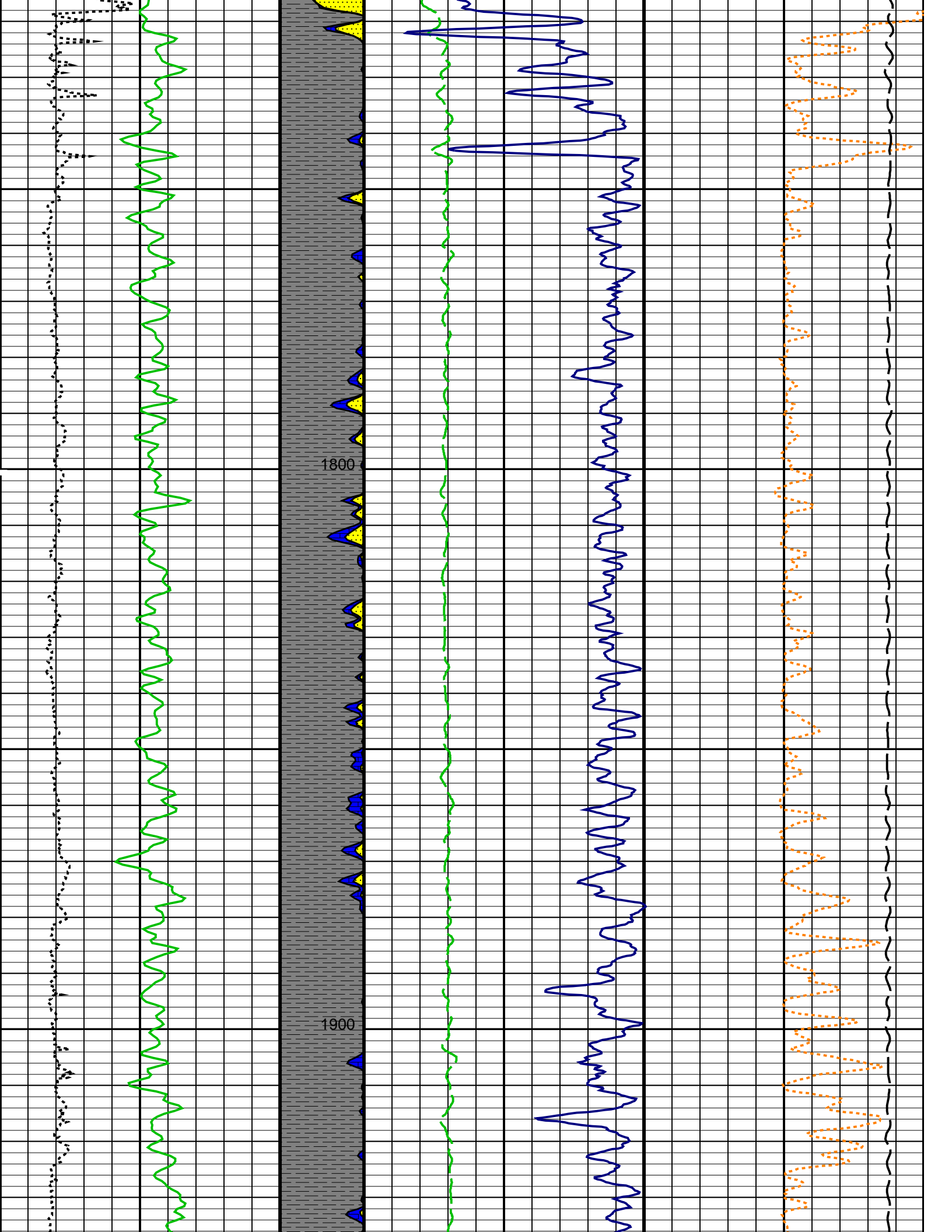
UPPER DENSITY LOG 5"= 100'

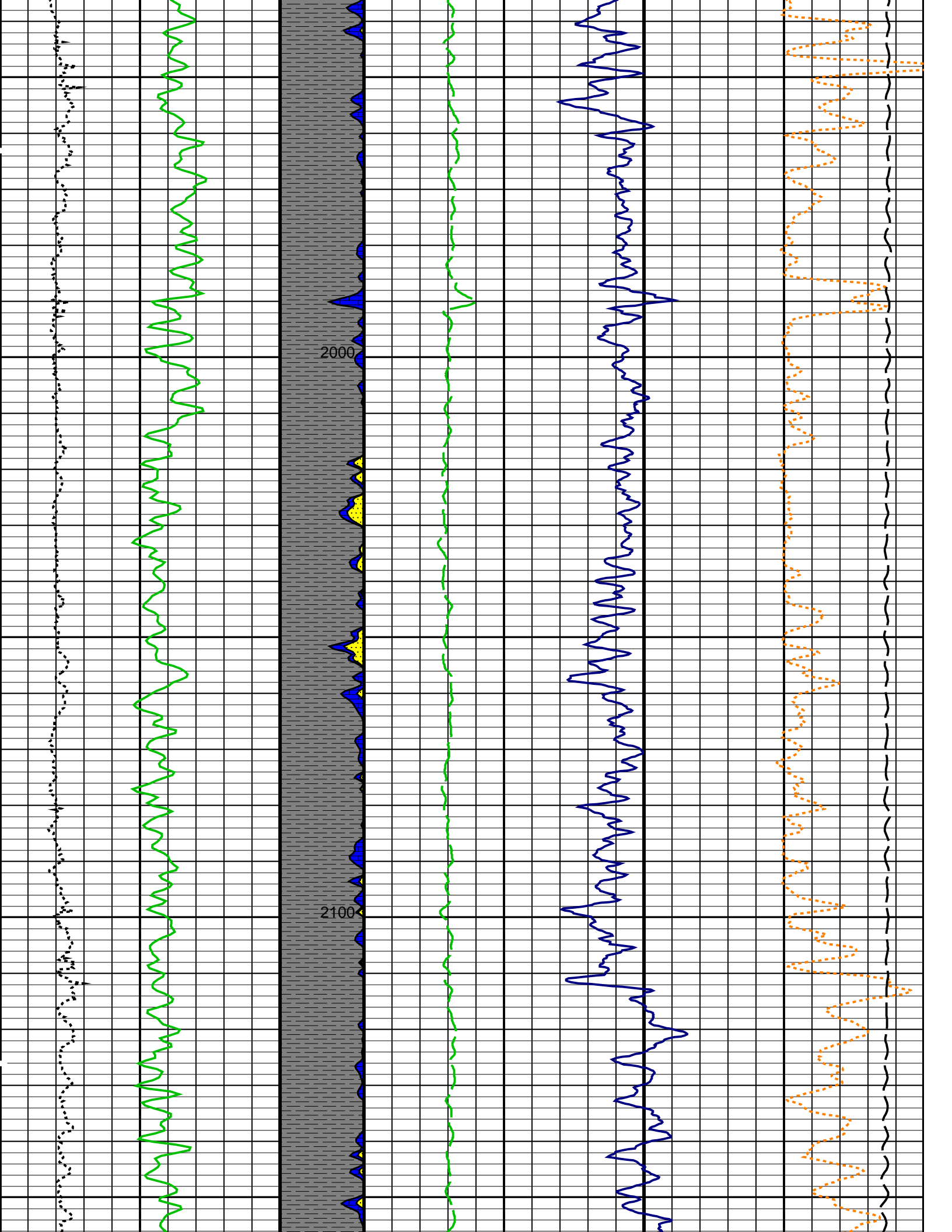
MAXIS Field Log

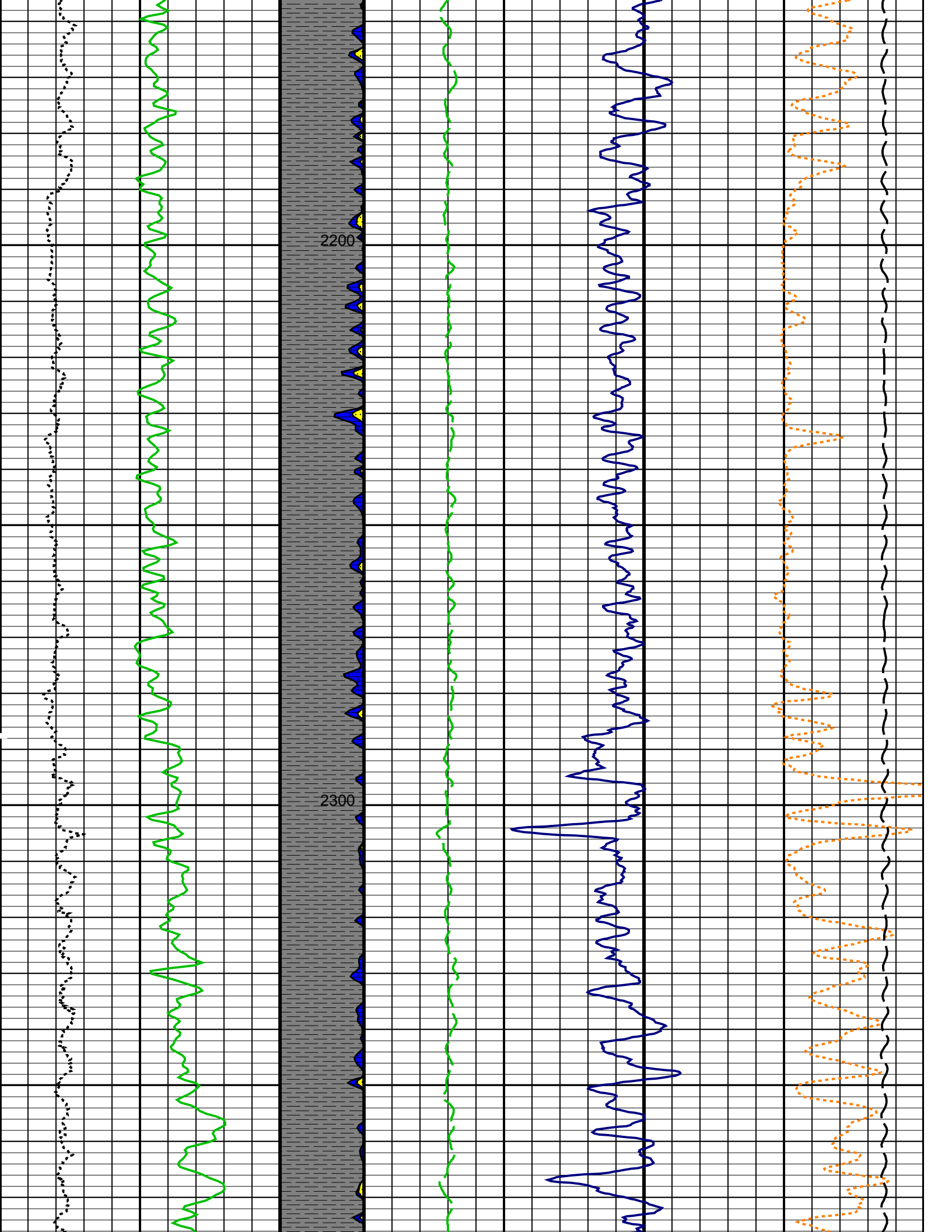
Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_033PUP	FN:28	PRODUCER	17-Mar-2010 00:36	7825.5 FT	391.5 FT
OP System Version: 17C0-154						
HILTC	17C0-154					

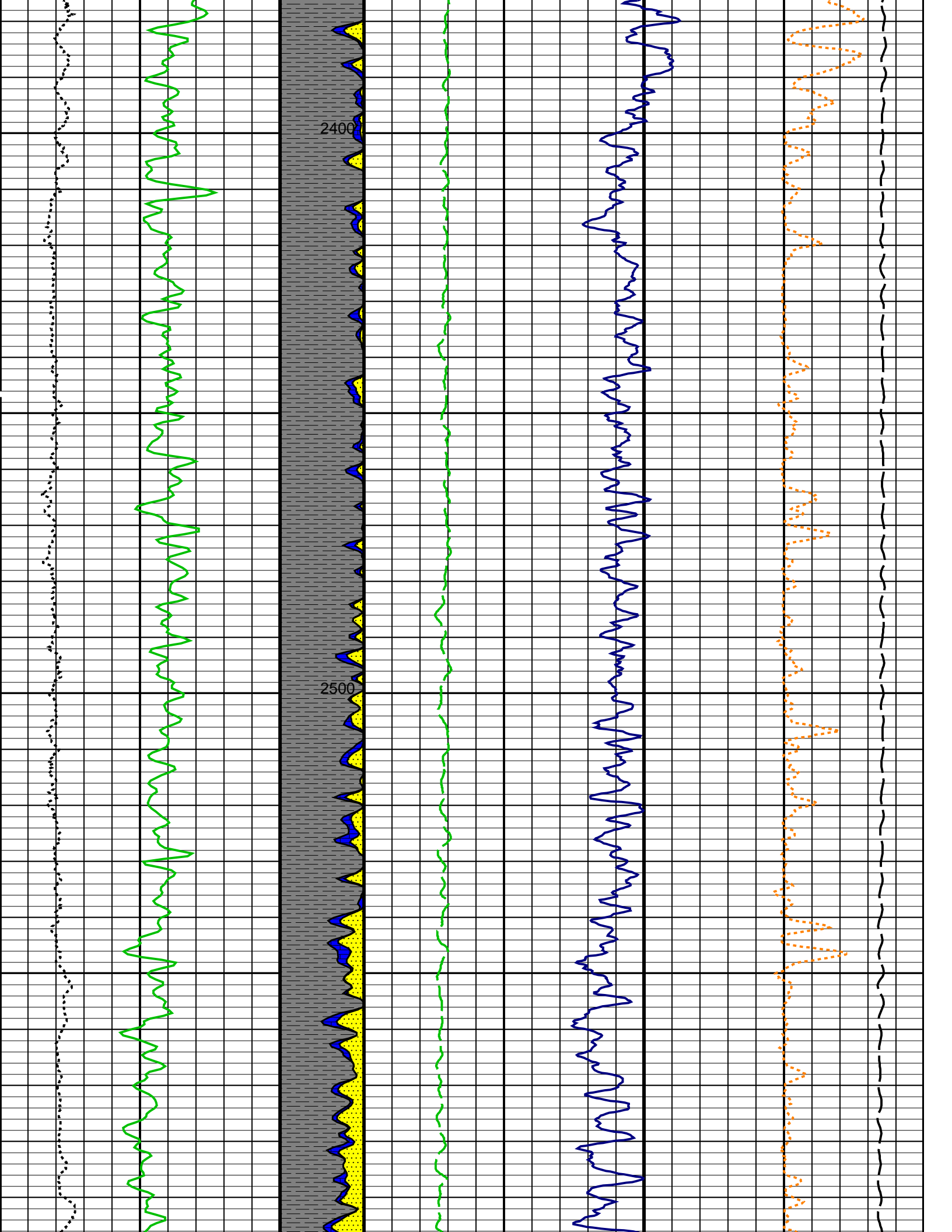
PIP SUMMARY						
Time Mark Every 60 S						
		SHALE				
Caliper (HCAL) (IN)		SAND	Tension (TENS) (LBF)			
6	16		10000			0
Gamma Ray (GR) (GAPI)		LIME	Std. Res. Formation Density (RHOZ) (G/C3)			
0	200		2			3
Gamma Ray Backup		Stuck Stretch (STIT) (F)	Std. Res. Formation Pe (PEFZ) (----		Density Correction (HDRA) (G/C3)	
		0 50	0	10	-0.25	0.25
MAIN PASS: *** PLATFORM EXPRESS – LITHOLOGY DENSITY ***						

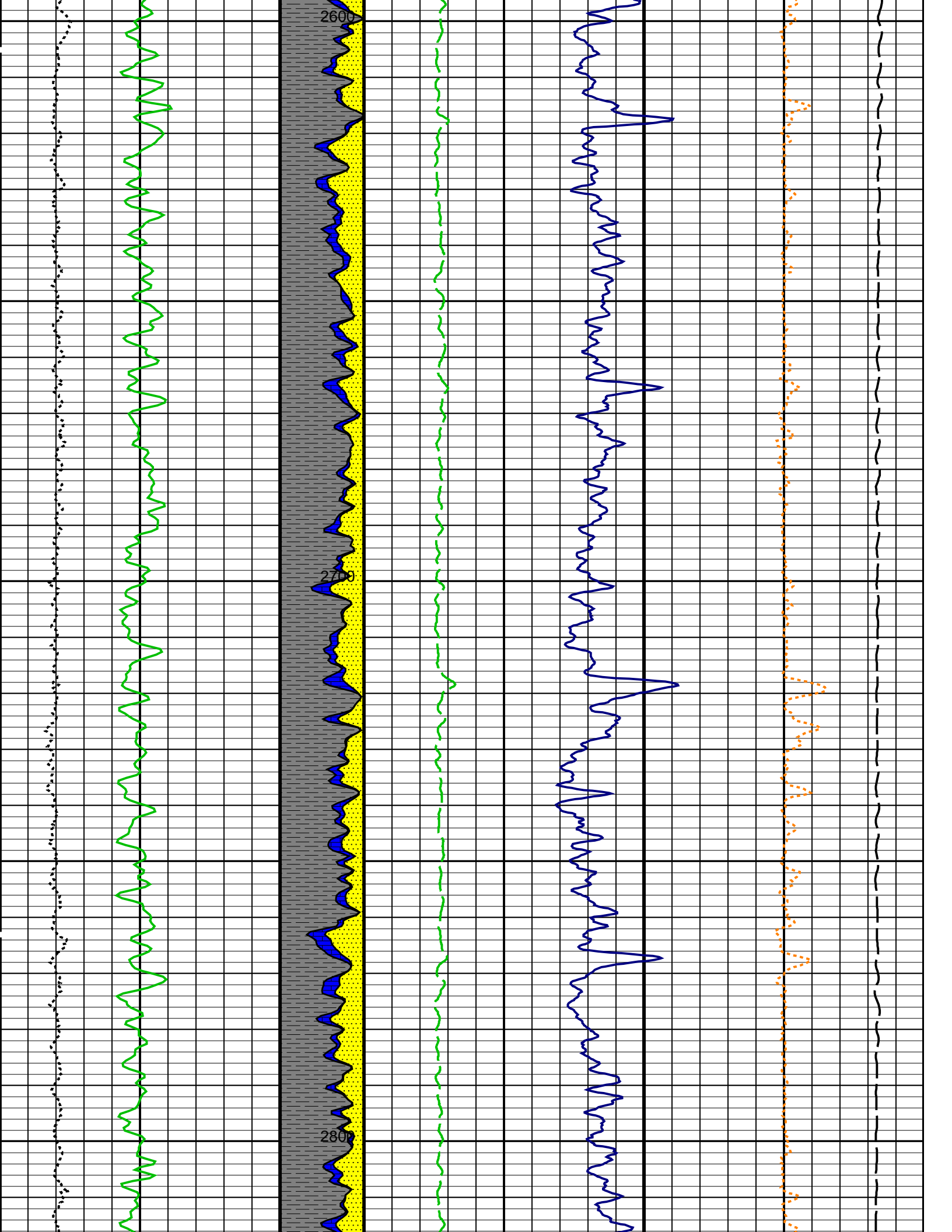


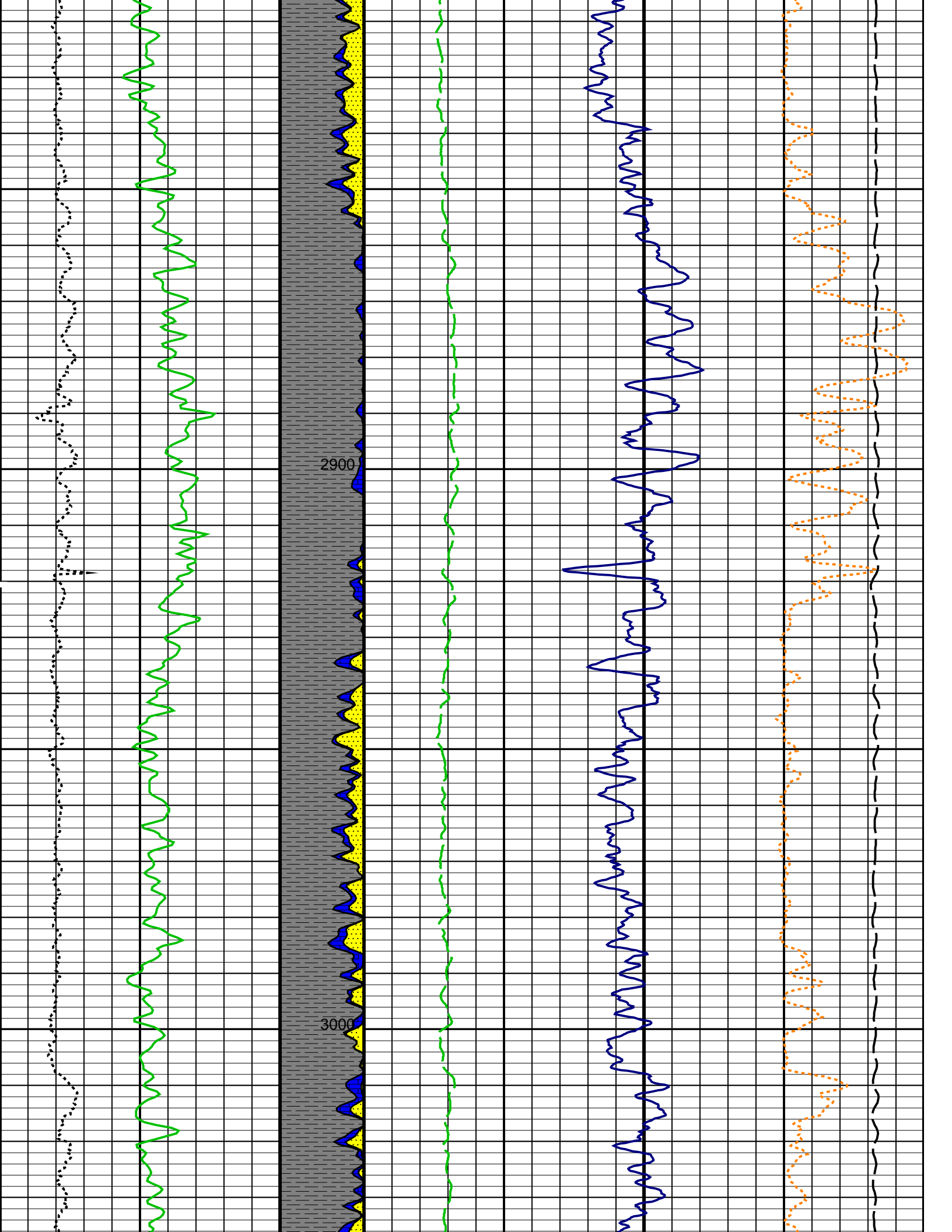


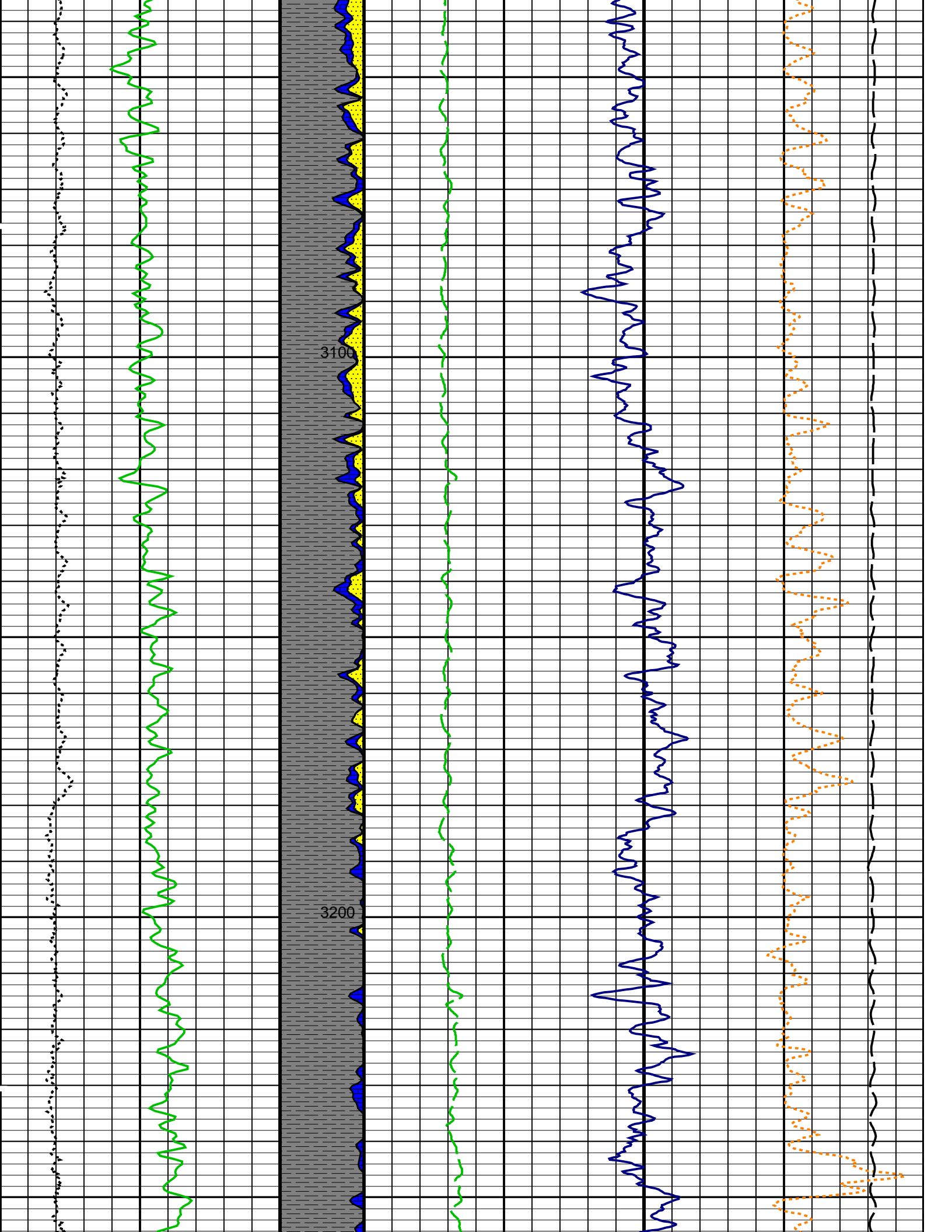


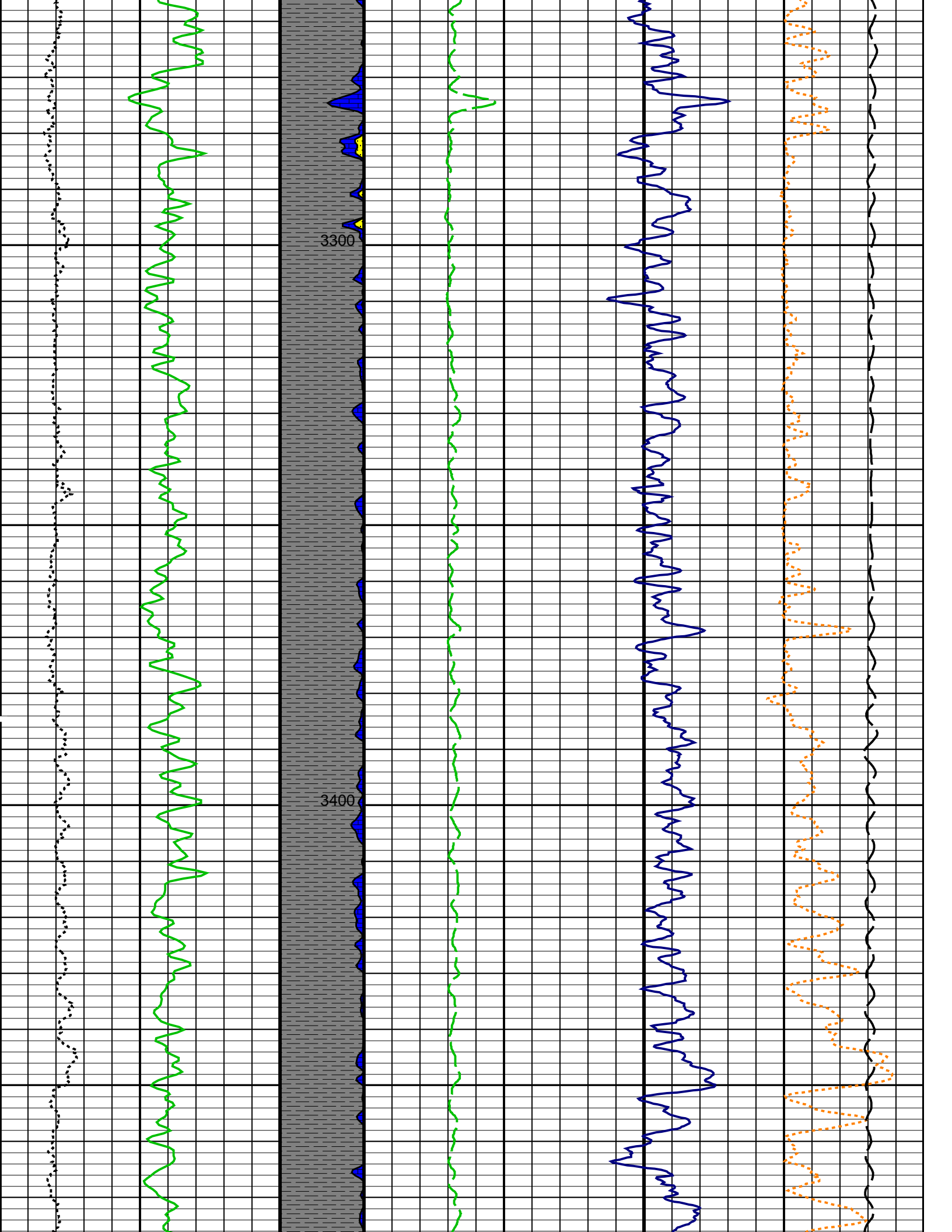


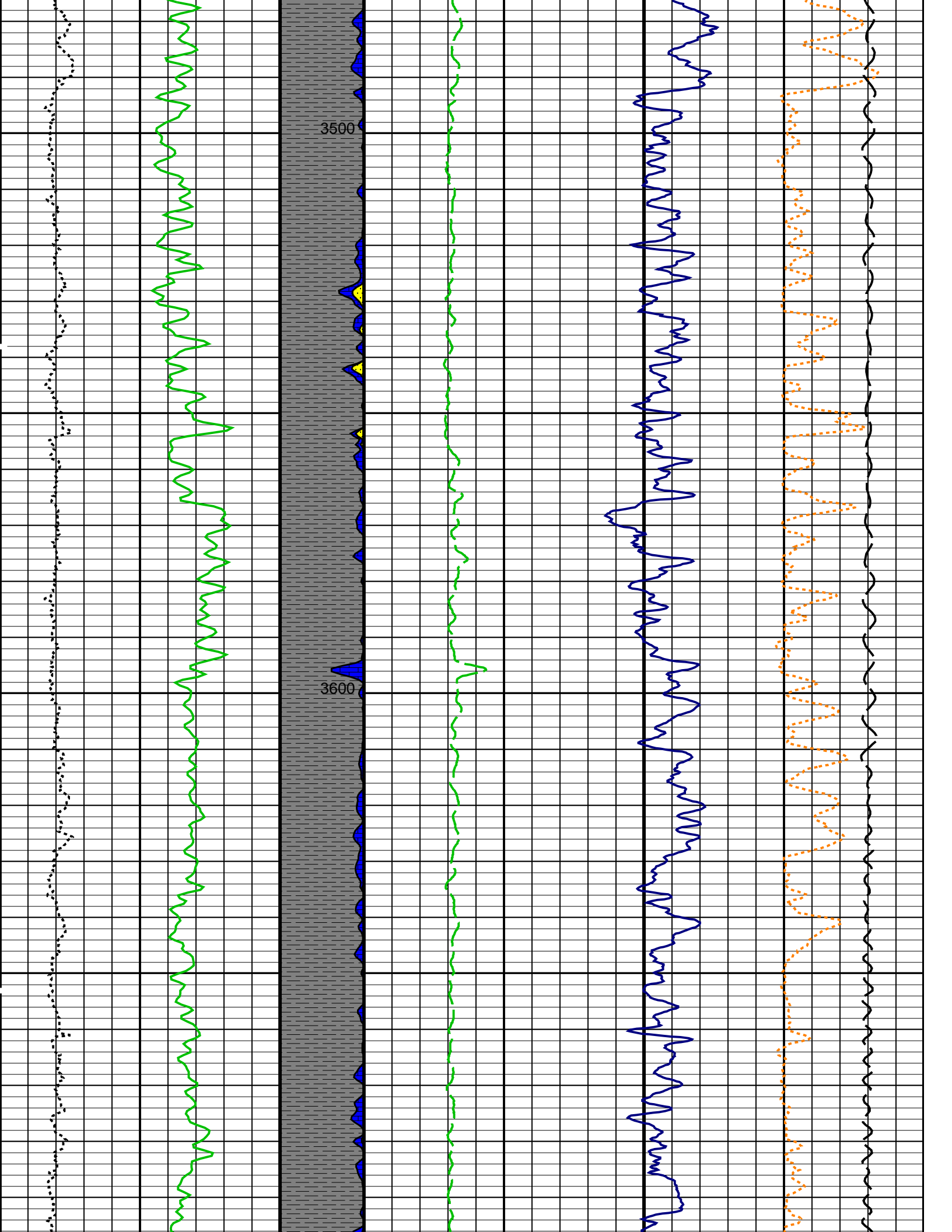


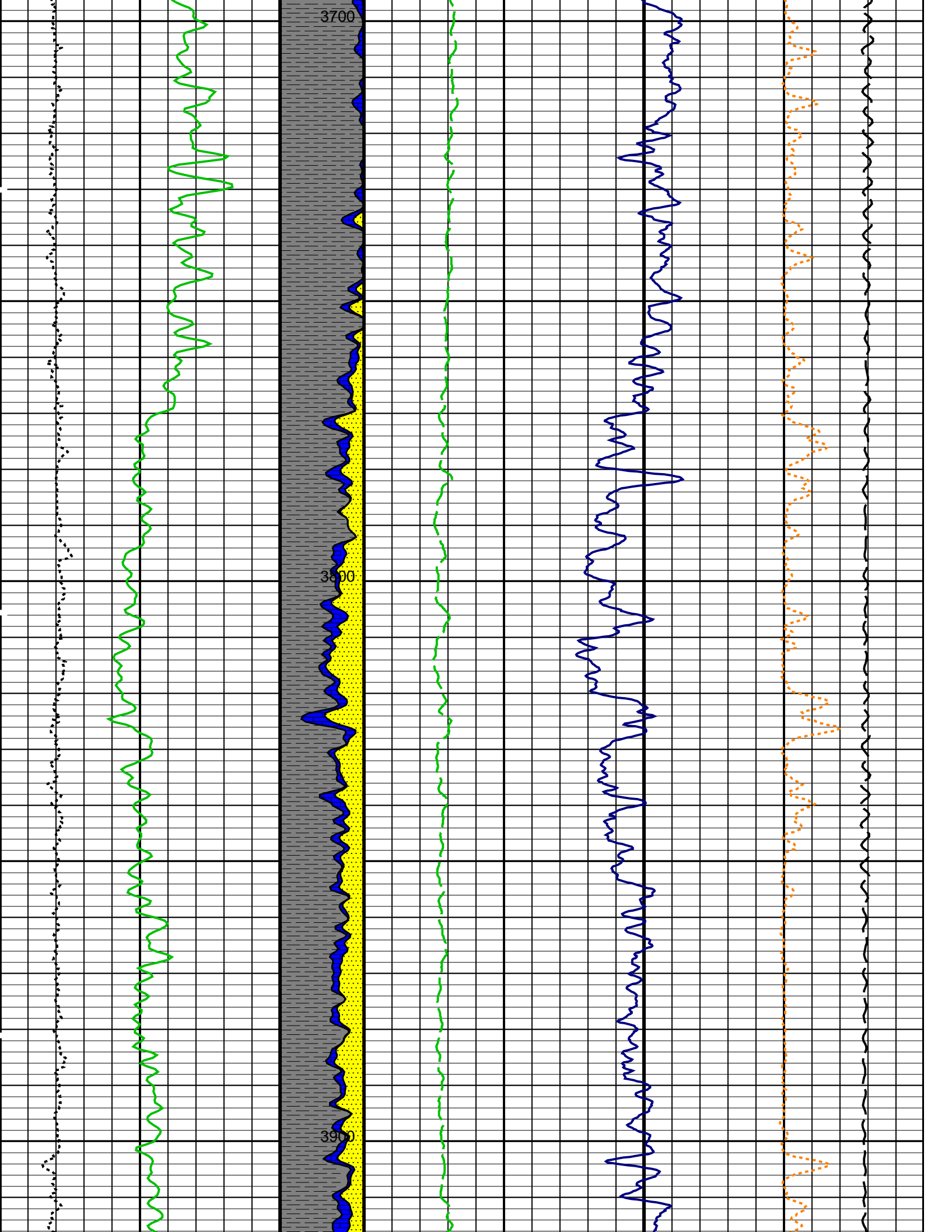


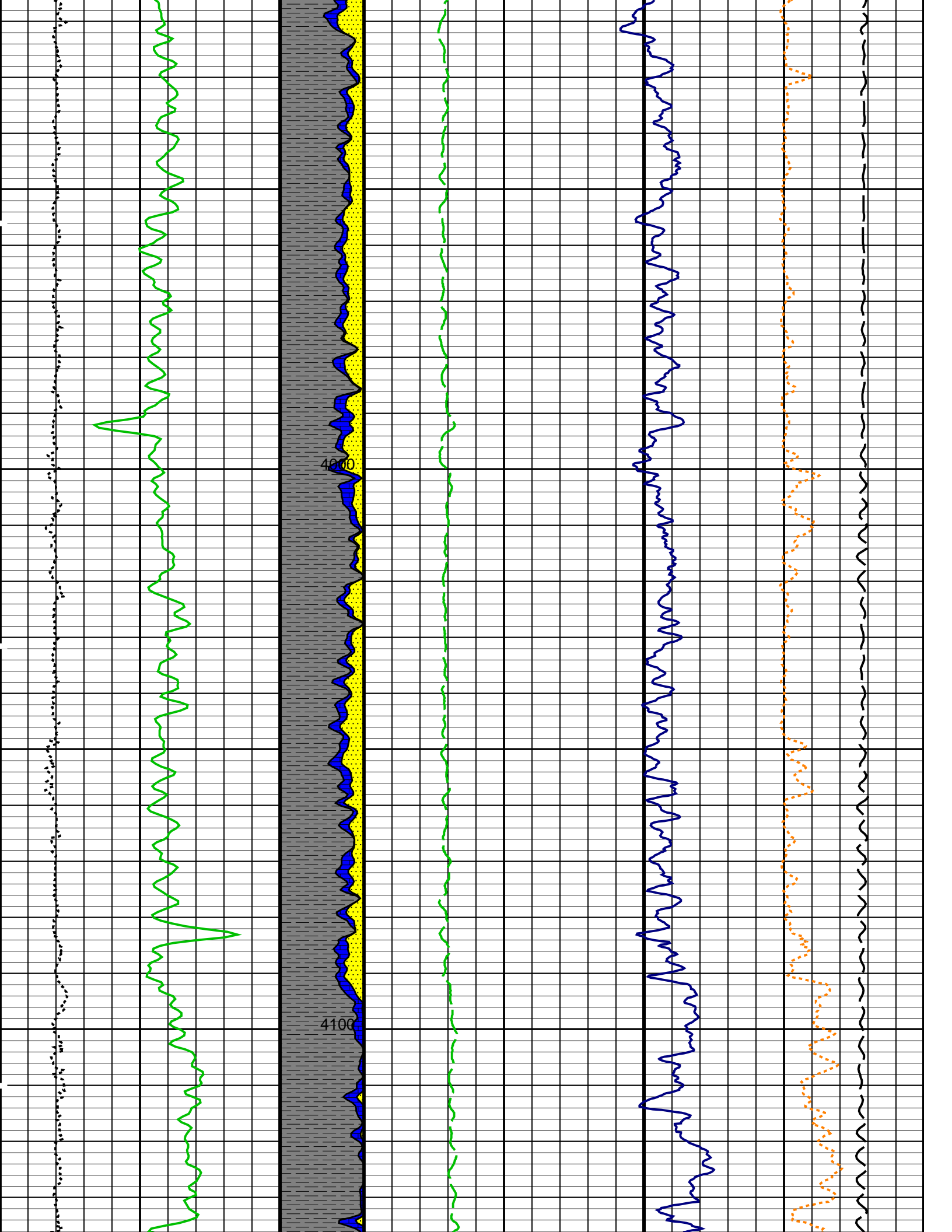


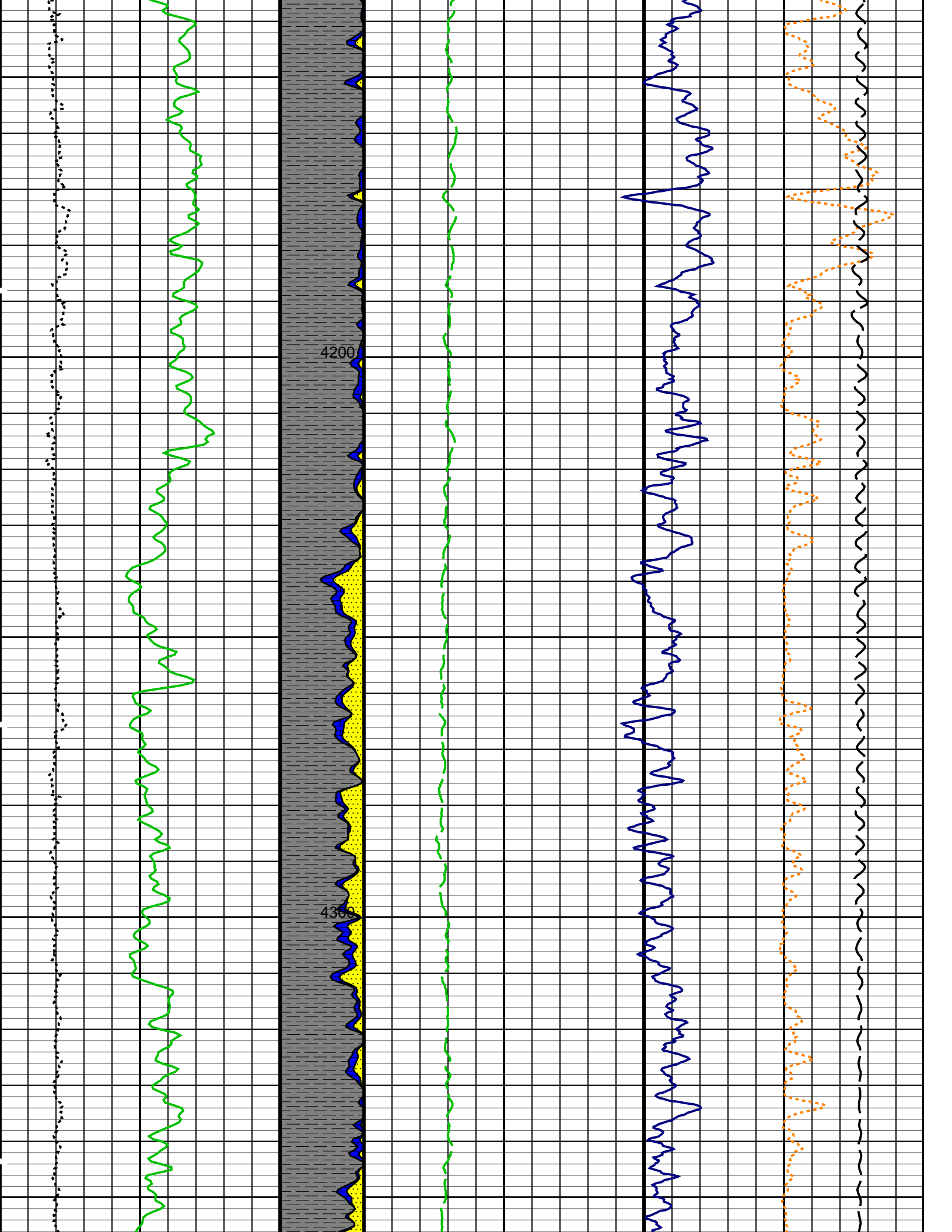


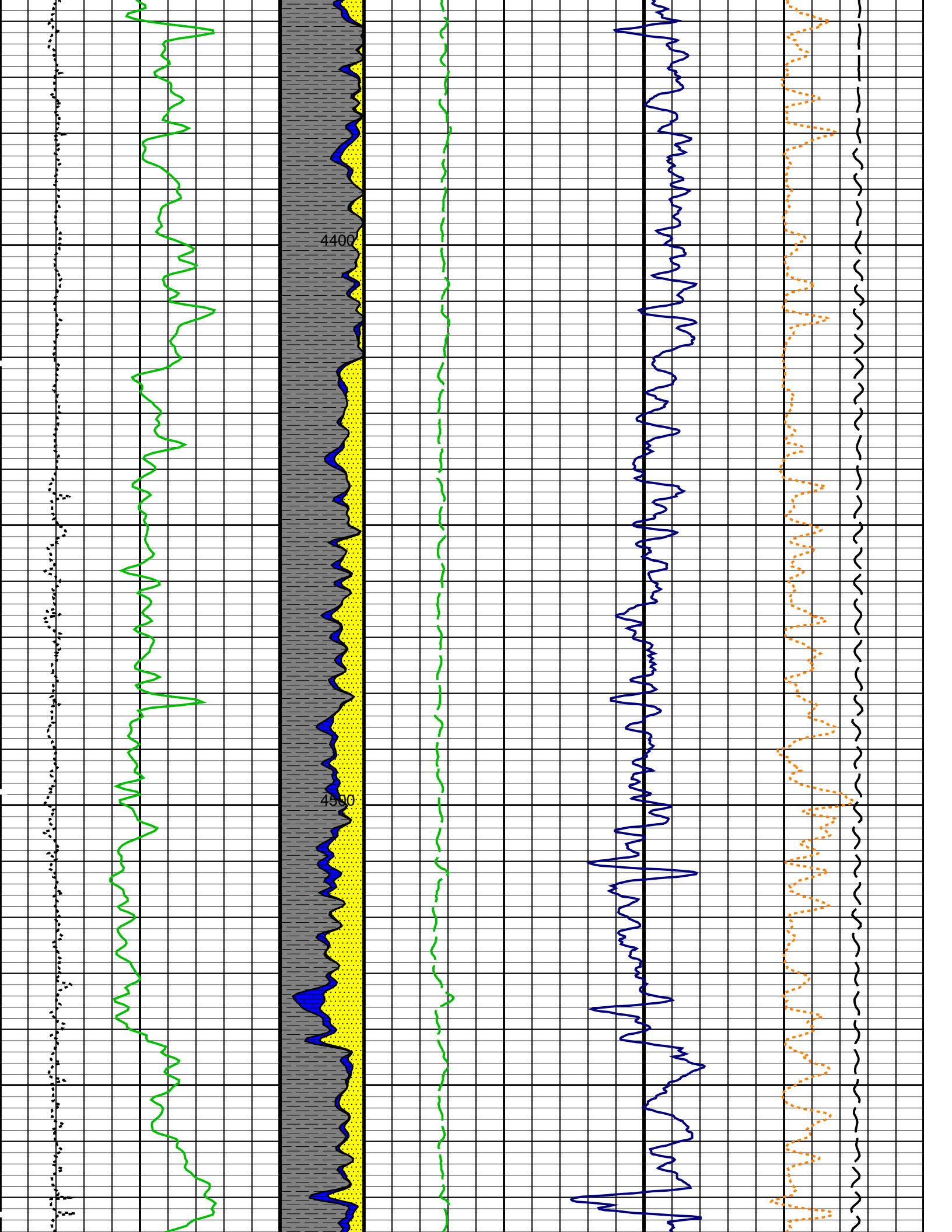


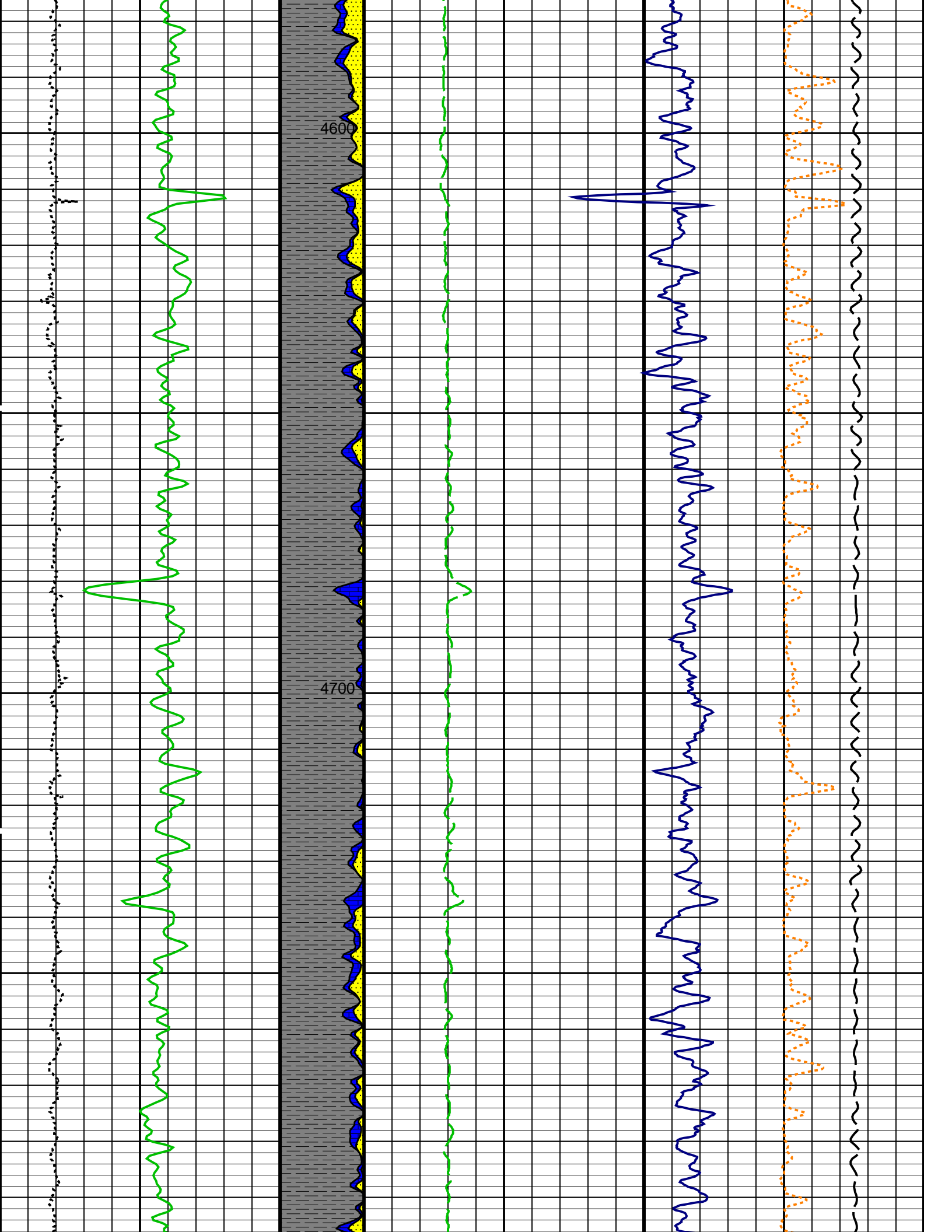


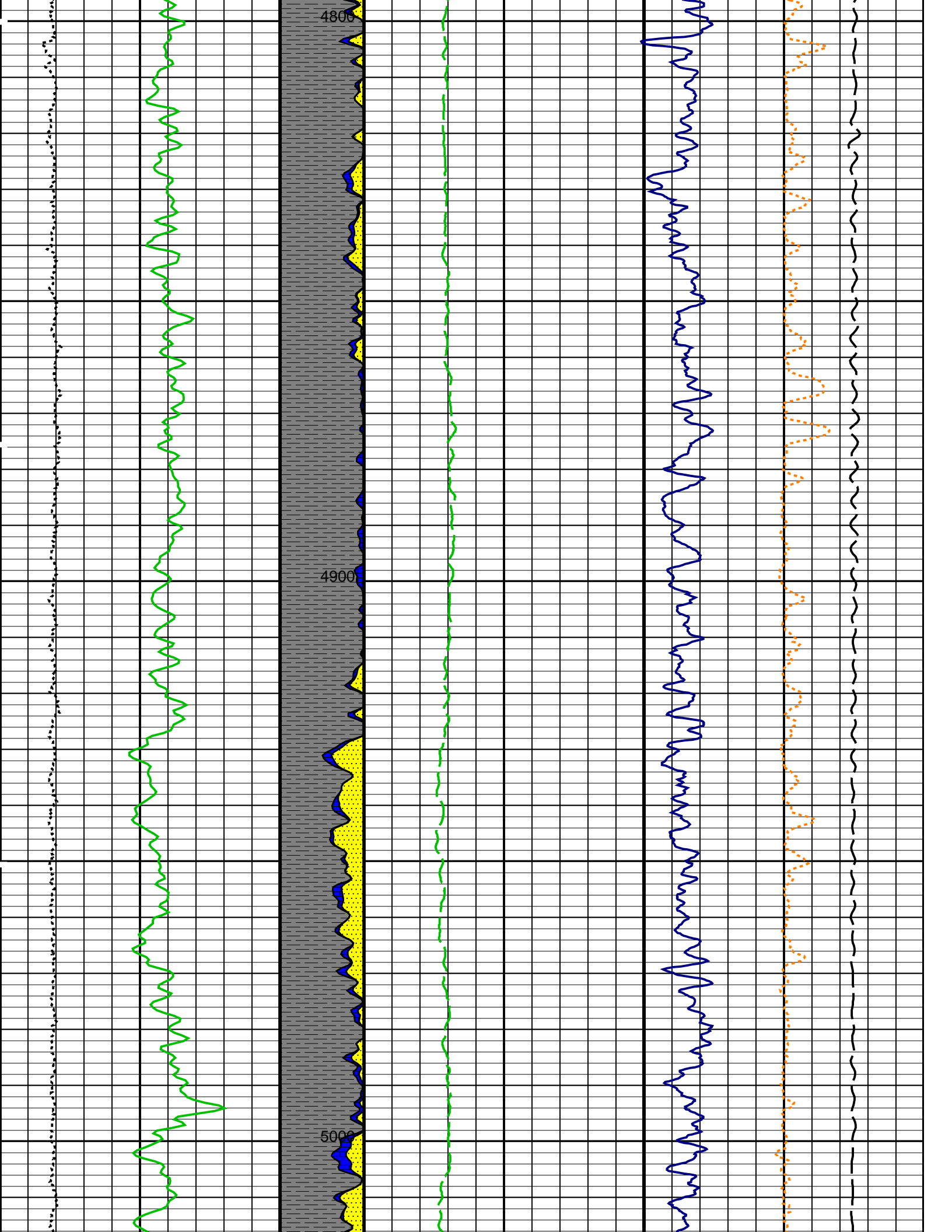


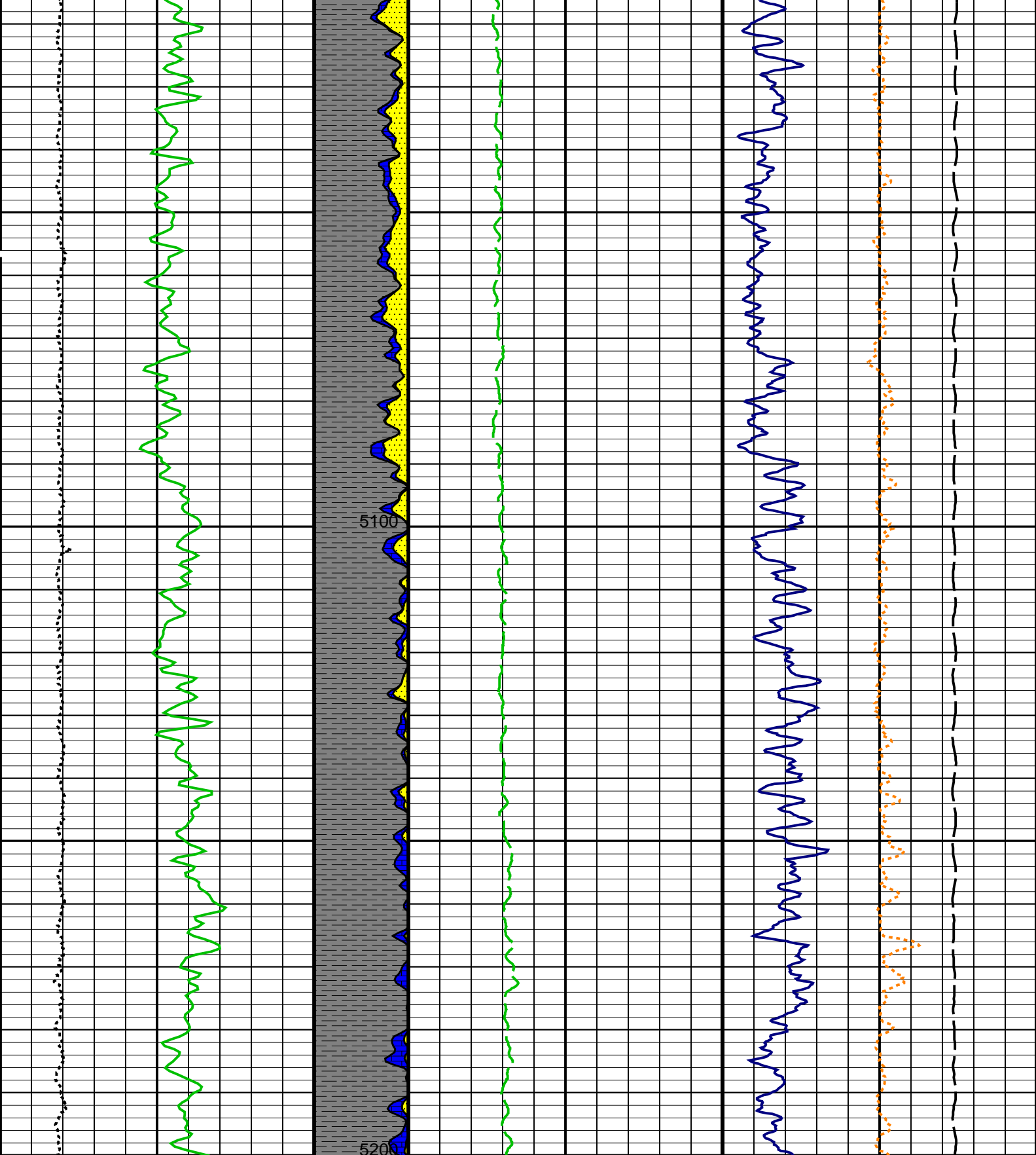












MAIN PASS: *** PLATFORM EXPRESS - LITHOLOGY DENSITY ***

Gamma Ray Backup	Stuck Stretch (STIT)	0	Std. Res. Formation Pe (PEFZ)	10	Density Correction (HDRA)	0.25
	0 (F) 50		(-----)		(G/C3)	
Gamma Ray (GR)	LIME	2	Std. Res. Formation Density (RHOZ)		3	
0 (GAPI) 200			(G/C3)			
Caliper (HCAL)	SAND		Tension (TENS)			

SHALE

PIP SUMMARY

Time Mark Every 60 S

Parameters			
DLIS Name	Description	Value	
HILTB-CTS: High resolution Integrated Logging Tool-CTS			
BHFL_TLD	HILT Nuclear Mud Base	WATER	
DHC	Density Hole Correction	BS	
GCLF	Germany Coal-like Formation Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	STDRES	
NSAR	HRDD Depth Sampling Rate	1.000	in
STI: Stuck Tool Indicator			
STKT	STI Stuck Threshold	2.500	ft
TDD	Total Depth – Driller	7822.0	ft
TDL	Total Depth – Logger	7804.0	ft
System and Miscellaneous			
BS	Bit Size	7.875	in
DFD	Drilling Fluid Density	8.400	lbm/gal

Format: UPPER_DENS Vertical Scale: 5" per 100' Graphics File Created: 17-Mar-2010 00:57

OP System Version: 17C0-154

HILTC 17C0-154

Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_033PUP	FN:28	PRODUCER	17-Mar-2010 00:36	7825.5 FT	391.5 FT

Schlumberger

LOWER DENSITY LOG 5" = 100'

MAXIS Field Log

Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_025LUP	FN:21	PRODUCER	16-Mar-2010 23:29	7824.0 FT	390.5 FT
Output DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_033PUP	FN:28	PRODUCER	17-Mar-2010 00:36		

OP System Version: 17C0-154

HILTB-CTS 17C0-154

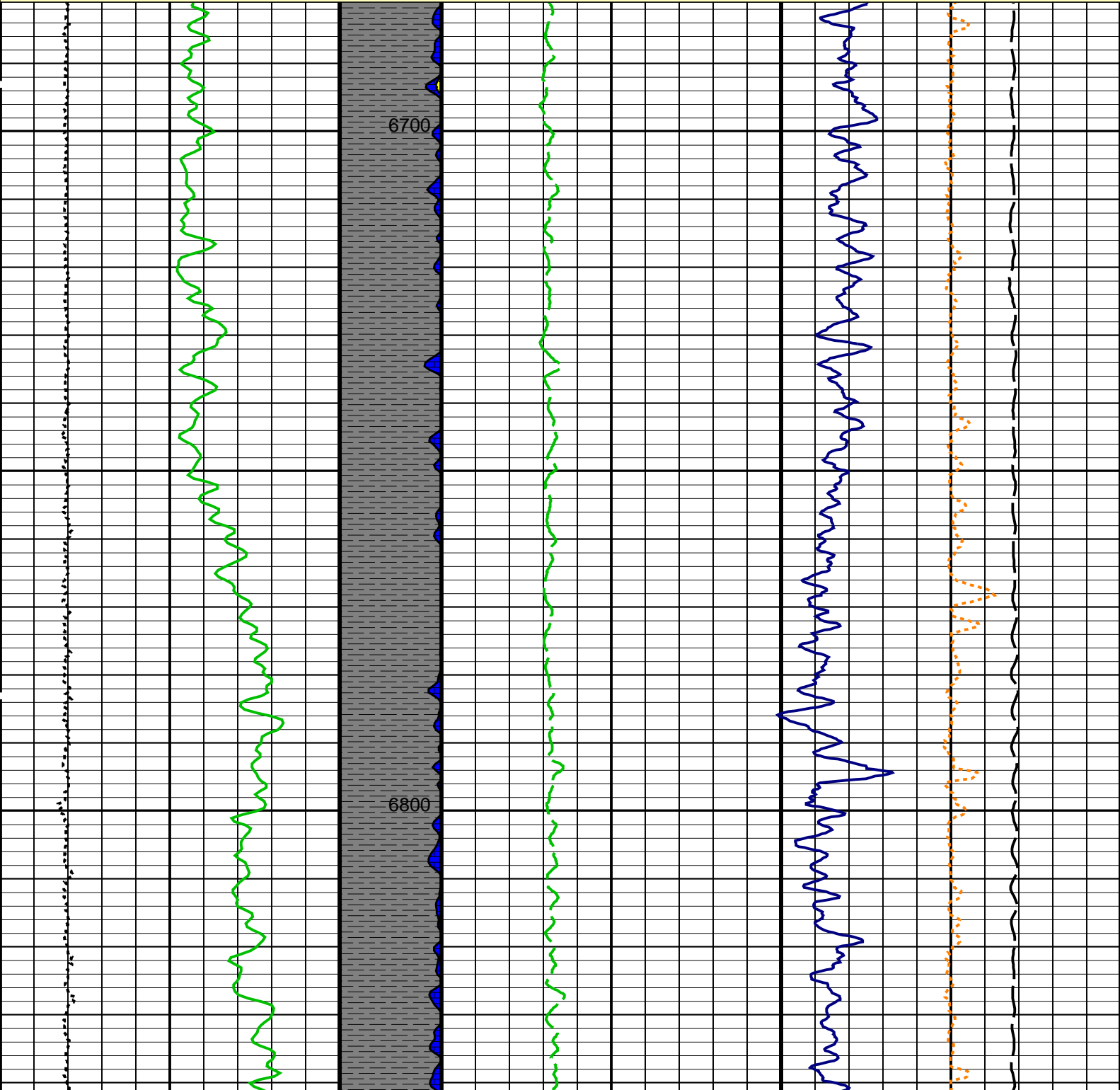
Changed Parameter Summary			
DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	7825.5 00:36:59
	SANDSTONE	SANDSTONE	7567.0 00:37:07
	LIMESTONE	SANDSTONE	7273.0 00:37:16
POUT	SANDSTONE	SANDSTONE	7825.5 00:36:59
	SANDSTONE	SANDSTONE	7567.0 00:37:07

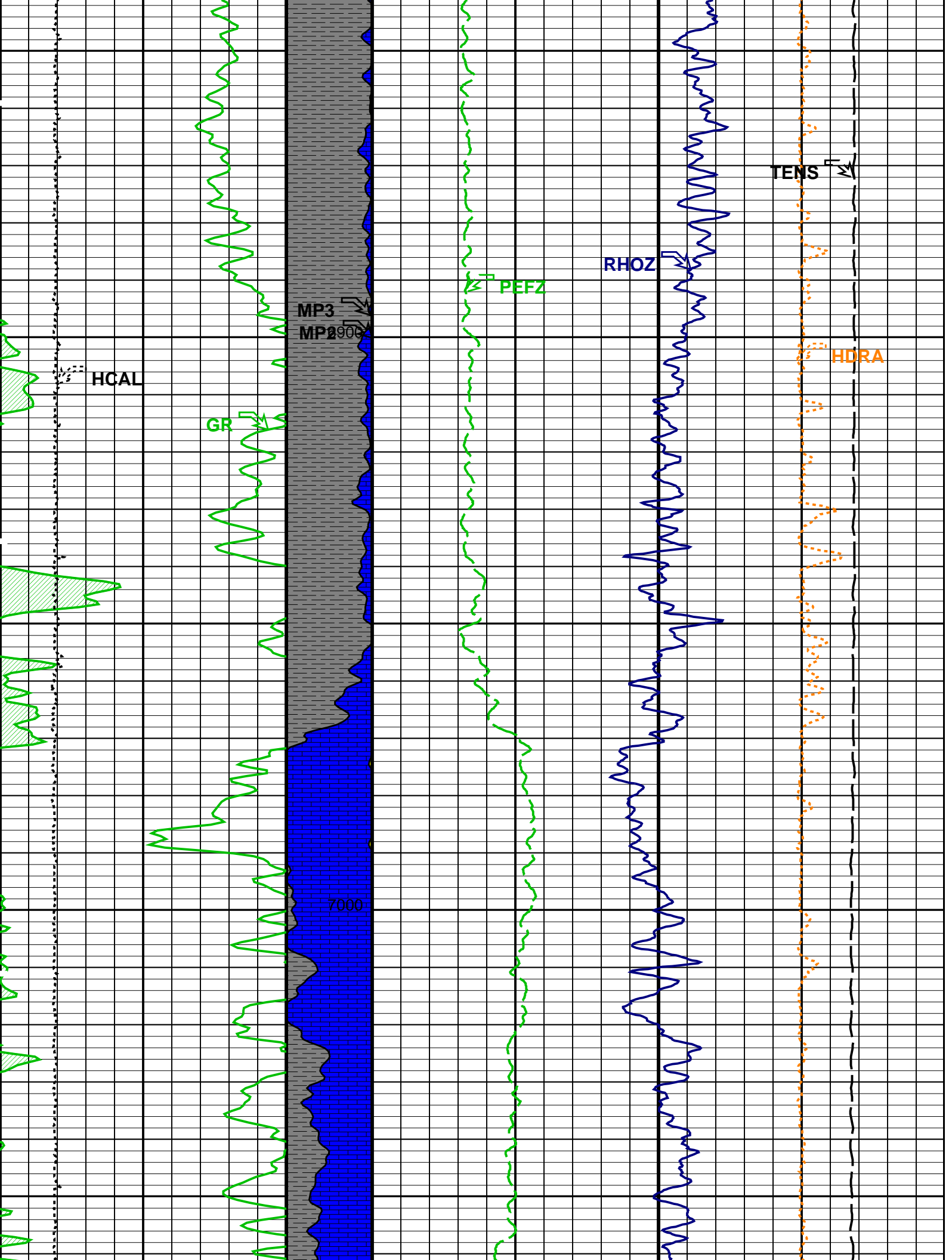
PIP SUMMARY

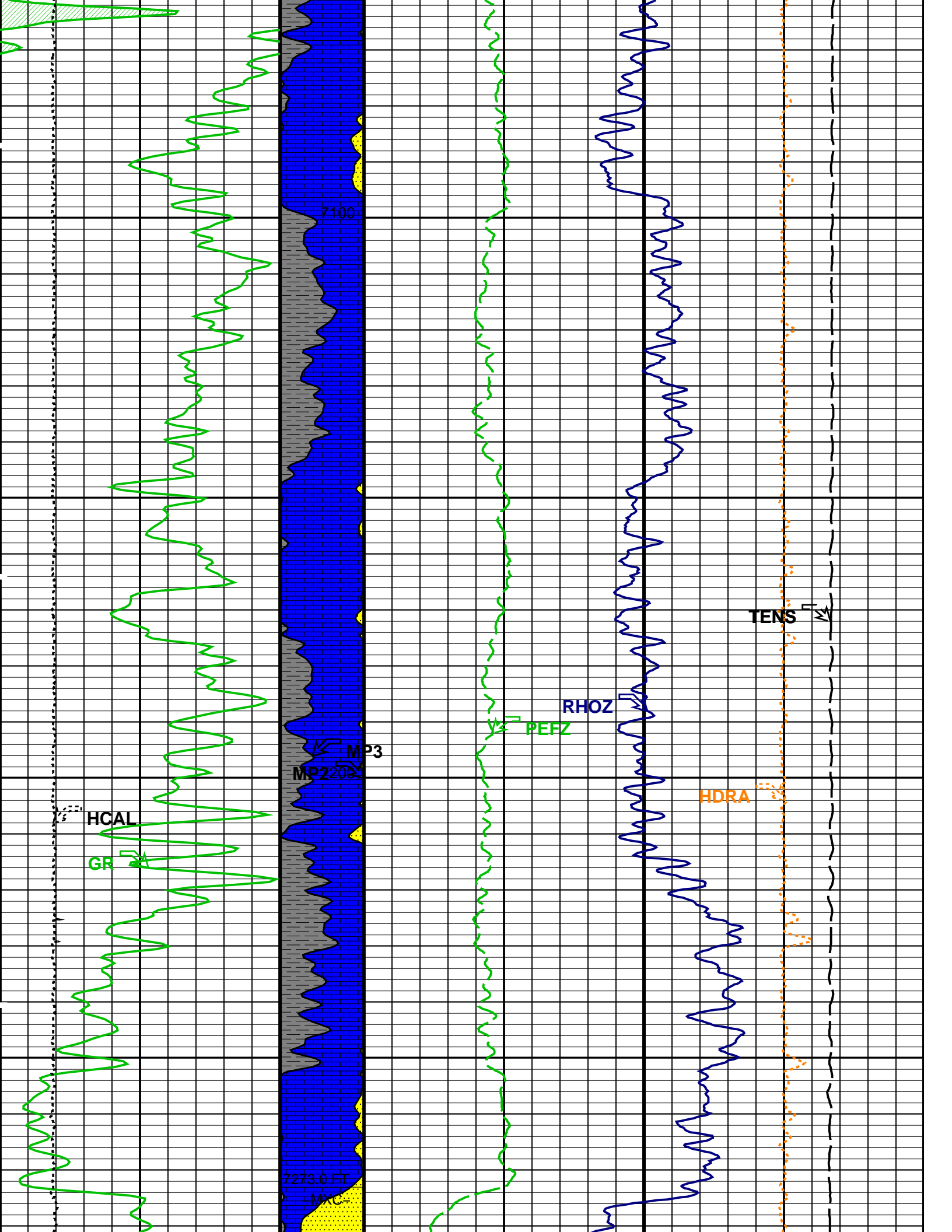
Time Mark Every 60 S

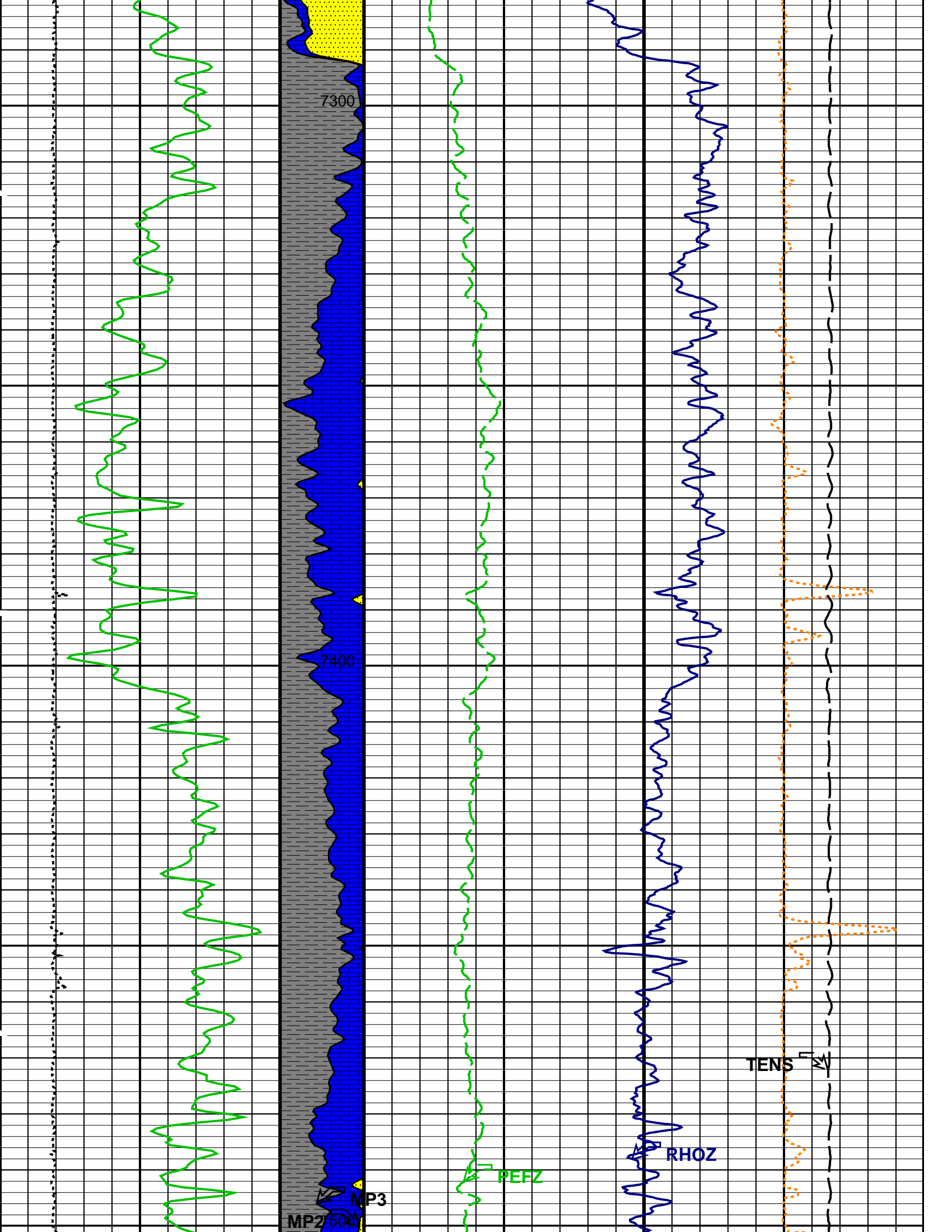
		SHALE		
Caliper (HCAL) (IN)		SAND	Tension (TENS) (LBF)	
6	16		10000	0
Gamma Ray (GR) (GAPI)		LIME	Std. Res. Formation Density (RHOZ) (G/C3)	
0	200		2	3
Gamma Ray Backup		Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ) (----	
		0 (F) 50	0	10
			Density Correction (HDRA) (G/C3)	
			-0.25	0.25

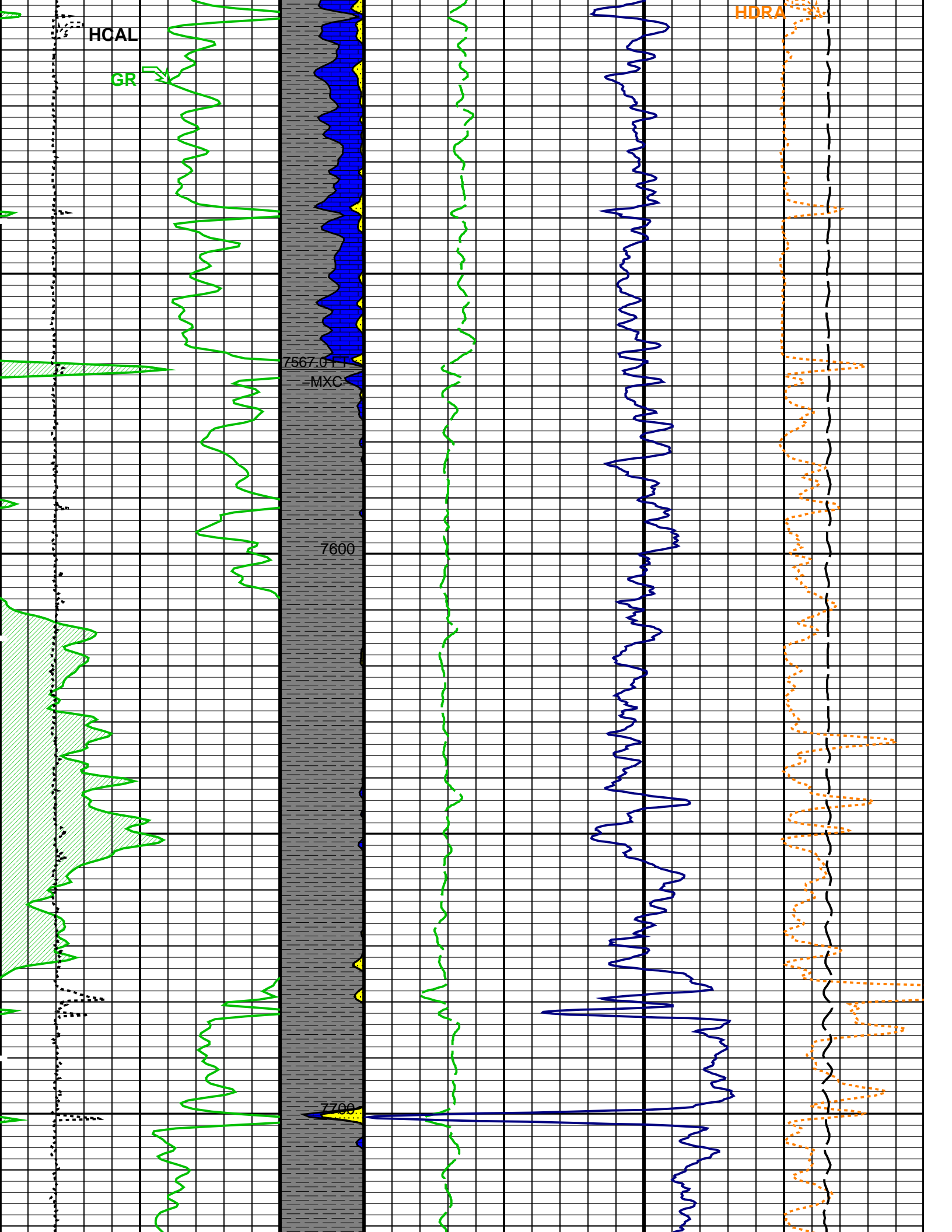
MAIN PASS: *** PLATFORM EXPRESS – LITHOLOGY DENSITY ***

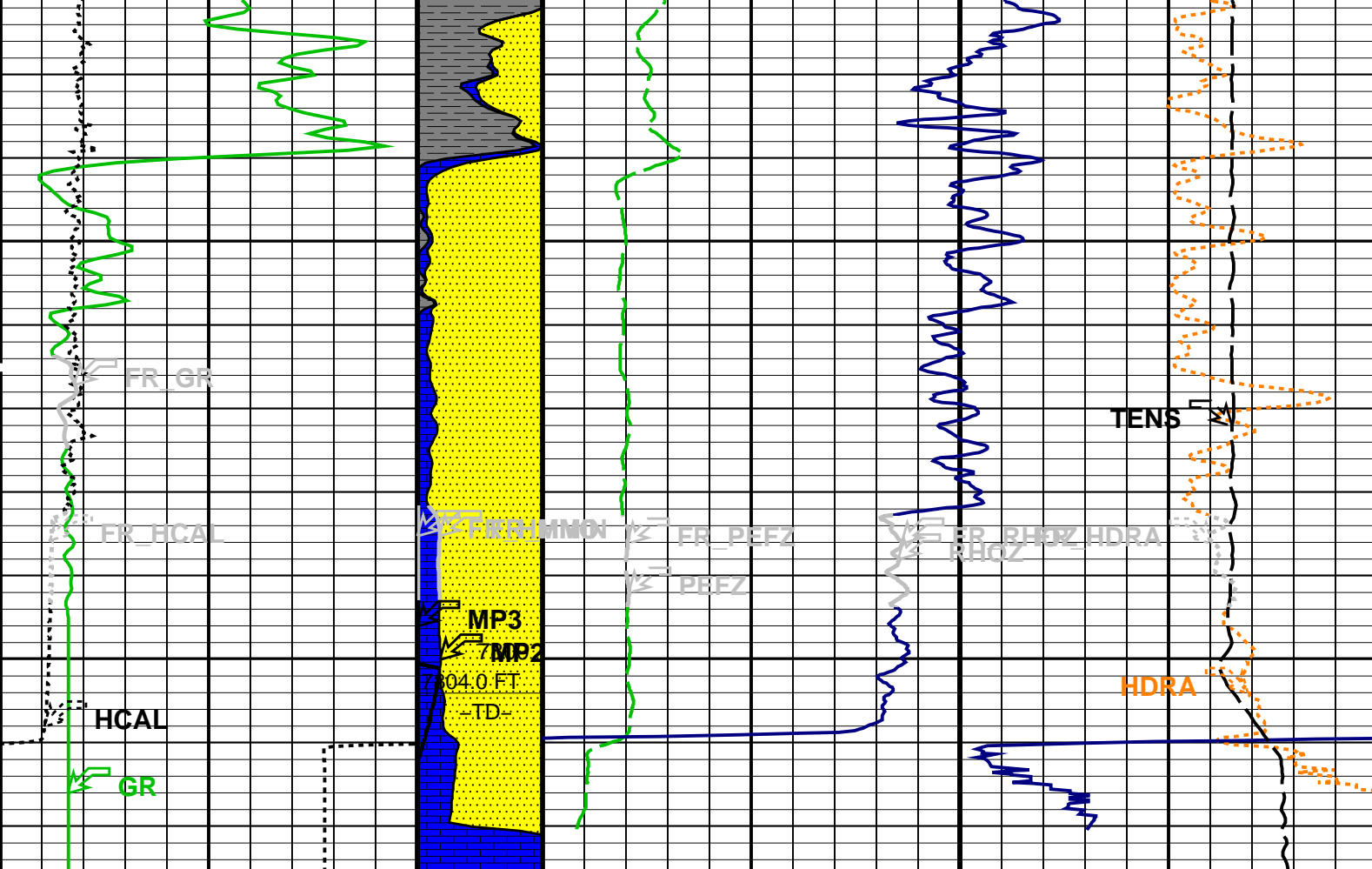




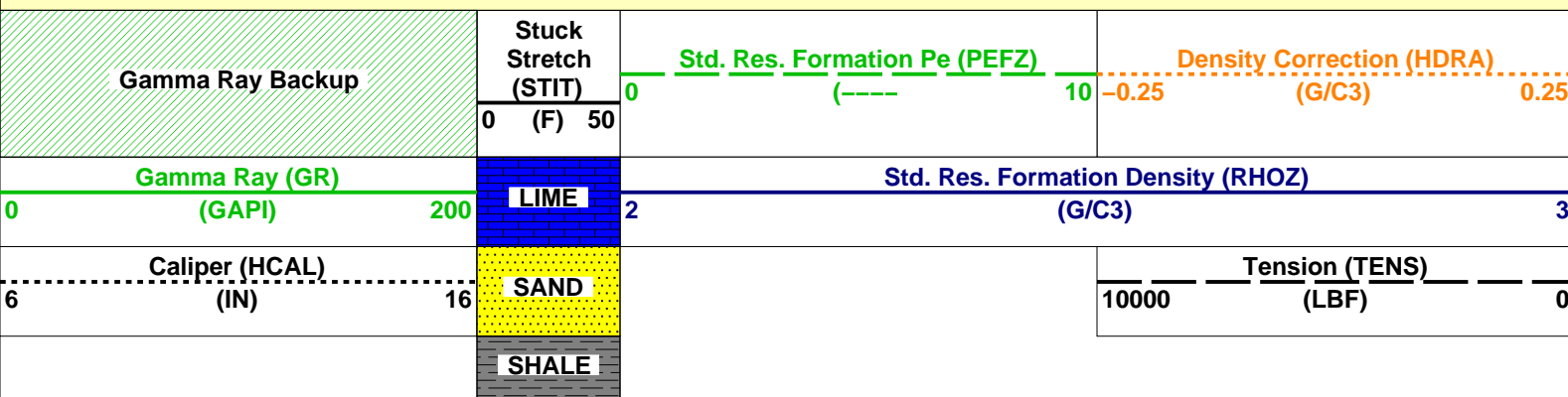








MAIN PASS: *** PLATFORM EXPRESS – LITHOLOGY DENSITY ***



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HILTB–CTS: High resolution Integrated Logging Tool–CTS		
BHFL_TLD	HILT Nuclear Mud Base	WATER
BHT	Bottom Hole Temperature (used in calculations)	216 DEGF
DHC	Density Hole Correction	BS
FD	Fluid Density	1 G/C3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCLF	Germany Coal–like Formation Option	NO
GGRD	Geothermal Gradient	0.01 DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
NAAC	HRDD APS Activation Correction	OFF
NMT	HILT Nuclear Mud Type	NOBARITE
NPRM	HRDD Processing Mode	StdRes
NSAR	HRDD Depth Sampling Rate	1 IN
SHT	Surface Hole Temperature	68 DEGF
PERT: Preliminary Evaluation – Real Time		

BDPS	Bulk Density Processing Selector	Standard	
BHT	Bottom Hole Temperature (used in calculations)	216	DEGF
CLIM	Caliper Limit for Bad Hole	999	IN
CNPS	Corrected Neutron Porosity Selector	NPHI	
DRUL	DRHO Upper Limit	999	G/C3
FCAL	Caliper Presence Flag	PRESENT	
FCGR	CGR Presence Flag	PRESENT	
FEXP	Form Factor Exponent	2	
FLDT	Bulk Density Presence Flag	PRESENT	
FNUM	Form Factor Numerator	1	
FSON	Sonic Presence Flag	ABSENT	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
PMAX	PHI Maximum	0.5	CFCF
POUT	Porosity Output Lithology	SANDSTONE	
RG21	RHO Grain (2-Mineral Model, Min-1)	2.71	G/C3
RG22	RHO Grain (2-Mineral Model, Min-2)	2.644	G/C3
RG23	RHO Grain (2-Mineral Model, Min-3)	2.877	G/C3
RG31	RHO Grain (3-Mineral Model, Min-1)	2.71	G/C3
RG32	RHO Grain (3-Mineral Model, Min-2)	2.644	G/C3
RG33	RHO Grain (3-Mineral Model, Min-3)	2.877	G/C3
RTLFL	RT Limit Flag	NO_LIMIT	
RWF	Resistivity of Free Water	0.02	OHMM
SHT	Surface Hole Temperature	68	DEGF
UF	U Fluid	0.398	
UM21	U Matrix (2-Mineral Model, Min-1)	13.77	
UM22	U Matrix (2-Mineral Model, Min-2)	4.779	
UM23	U Matrix (2-Mineral Model, Min-3)	8.997	
UM31	U Matrix (3-Mineral Model, Min-1)	13.77	
UM32	U Matrix (3-Mineral Model, Min-2)	4.779	
UM33	U Matrix (3-Mineral Model, Min-3)	8.997	
HOLEV: Integrated Hole/Cement Volume			
BHT	Bottom Hole Temperature (used in calculations)	216	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	7822.00	FT
TDL	Total Depth - Logger	7804.00	FT
System and Miscellaneous			
BS	Bit Size	7.875	IN
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	1.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	1.0950	OHMM
TD	Total Depth	7804	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: LOWER_DENS Vertical Scale: 5" per 100' Graphics File Created: 17-Mar-2010 00:36

OP System Version: 17C0-154

HILTB-CTS 17C0-154

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_025LUP FN:21 PRODUCER 16-Mar-2010 23:29 7824.0 FT 390.5 FT

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_033PUP FN:28 PRODUCER 17-Mar-2010 00:36

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BEFORE CALIBRATIONS

Calibration and Check Summary

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

Master: 18–Feb–2010 13:50 Before: 16–Mar–2010 14:13

Thru Cal Magnitude – 0	0	0.6164	0.6168	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.260	1.261	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6288	0.6291	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7109	0.7114	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.324	1.325	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.929	1.930	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.928	1.929	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.378	1.379	N/A	N/A	N/A	V
Phase – 0	0	72.68	72.79	N/A	N/A	N/A	DEG
Phase – 1	0	71.58	71.69	N/A	N/A	N/A	DEG
Phase – 2	0	67.85	67.96	N/A	N/A	N/A	DEG
Phase – 3	0	67.06	67.17	N/A	N/A	N/A	DEG
Phase – 4	0	60.79	60.91	N/A	N/A	N/A	DEG
Phase – 5	0	58.89	59.02	N/A	N/A	N/A	DEG
Phase – 6	0	58.91	59.03	N/A	N/A	N/A	DEG
Phase – 7	0	55.41	55.58	N/A	N/A	N/A	DEG

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

Master: 18–Feb–2010 13:50 Before: 16–Mar–2010 14:13

Array Induction SPA Plus	990.5	993.5	993.6	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	0.04114	0.04538	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	0.9202	0.9203	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.00004296	0.00004538	N/A	N/A	N/A	V

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Test Loop Gain Correction

Master: 18–Feb–2010 13:50

Test Loop Gain Magnitude – 0	0	1.033	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 1	0	1.025	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 2	0	1.022	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 3	0	1.019	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 4	0	1.009	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 5	0	0.9882	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 6	0	0.9962	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 7	0	1.008	N/A	N/A	N/A	N/A	V
Phase – 0	0	0.5184	N/A	N/A	N/A	N/A	DEG
Phase – 1	0	0.4801	N/A	N/A	N/A	N/A	DEG
Phase – 2	0	0.04542	N/A	N/A	N/A	N/A	DEG
Phase – 3	0	0.007685	N/A	N/A	N/A	N/A	DEG
Phase – 4	0	0.02438	N/A	N/A	N/A	N/A	DEG
Phase – 5	0	–0.2104	N/A	N/A	N/A	N/A	DEG
Phase – 6	0	0.1914	N/A	N/A	N/A	N/A	DEG
Phase – 7	0	–0.3366	N/A	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Sonde Error Correction

Master: 18–Feb–2010 13:50

R Sonde Error Correction – 0	0	–80.17	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	193.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	109.9	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	67.39	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	26.23	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	14.13	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	9.933	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	–1.518	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	–414.3	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	–63.48	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	–81.94	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	39.49	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	–40.86	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	5.345	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	–4.595	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	–6.732	N/A	N/A	N/A	N/A	MM/M

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Mud Gain Correction

Master: 18–Feb–2010 13:50

Coarse – Mag, Real, Imag – 0	0	0.9412	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 1	0	0.9412	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 2	0	0.9412	N/A	N/A	N/A	N/A	

Coarse – Mag, Real, Imag – 2	0	0.9412	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 0	0	0.9507	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 1	0	0.9507	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 2	0	0.9507	N/A	N/A	N/A	N/A

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

Before: 16–Mar–2010 14:55

BS Window Ratio	0.7398	N/A	0.7392	N/A	N/A	N/A	
BS Window Sum	10720	N/A	10710	N/A	N/A	N/A	CPS
SS Window Ratio	0.4726	N/A	0.4731	N/A	N/A	N/A	
SS Window Sum	10190	N/A	10190	N/A	N/A	N/A	CPS
LS Window Ratio	0.2985	N/A	0.3031	N/A	N/A	N/A	
LS Window Sum	1157	N/A	1154	N/A	N/A	N/A	CPS

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

Before: 16–Mar–2010 14:55

BS PM High Voltage (Command)	1478	N/A	1494	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1788	N/A	1788	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1906	N/A	1903	N/A	N/A	N/A	V

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

Before: 16–Mar–2010 14:55

BS Crystal Resolution	10.87	N/A	10.98	N/A	N/A	N/A	%
SS Crystal Resolution	11.25	N/A	11.22	N/A	N/A	N/A	%
LS Crystal Resolution	9.790	N/A	9.656	N/A	N/A	N/A	%

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

Before: 16–Mar–2010 14:10

Raw B0 Resistivity	3875	N/A	3856	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3812	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3828	N/A	N/A	N/A	OHMM

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

Before: 16–Mar–2010 14:17

HILT Caliper Zero Measurement	8.000	N/A	8.869	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	13.01	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Detector Calibration

Before: 16–Mar–2010 14:52

Gamma Ray Background	30.00	N/A	89.93	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkgd)	165.0	N/A	173.3	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Zero Measurement

Master: 26–Feb–2010 18:38 Before: 16–Mar–2010 14:14

CNTC Background	32.75	32.75	28.48	N/A	N/A	4.913	CPS
CFTC Background	31.37	31.37	26.44	N/A	N/A	4.706	CPS

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Ratio Measurement

Master: 26–Feb–2010 18:38

Thermal Near Corr. (Tank)	5800	5578	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2403	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.321	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool–CTS Wellsite Calibration – Accelerometer Calibration

Before: Calibration not done

Z–Axis Acceleration	32.19	N/A	32.19	N/A	N/A	N/A	F/S2
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High resolution Integrated Logging Tool–CTS Master Calibration – Inversion results

Master: 23–Feb–2010 17:51

Rho Aluminum	2.596	2.602	--	--	--	--	G/C3
Rho Magnesium	1.686	1.687	--	--	--	--	G/C3
Pe Aluminum	2.570	2.581	--	--	--	--	
Pe Magnesium	2.650	2.608	--	--	--	--	

High resolution Integrated Logging Tool–CTS Master Calibration – Deviation Summary

Master: 23–Feb–2010 17:51

BS Average Deviation	0	0.2623	--	--	--	--	%
BS Max Deviation	0	0.5063	--	--	--	--	%
SS Average Deviation	0	0.3740	--	--	--	--	%
SS Max Deviation	0	1.860	--	--	--	--	%
LS Average Deviation	0	0.9565	--	--	--	--	%
LS Max Deviation	0	2.096	--	--	--	--	%

Density Master Calibration is obsolete !

The GLS–VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT–B Water Temperature 62.5 DEGF.

Thermal Housing Size 3.267 IN.

High resolution Integrated Logging Tool-CTS / Equipment Identification

Primary Equipment:

Array Induction Tool – H
Rm/SP Bottom Nose
Array Induction Sonde
HILT high-Resolution Mechanical Sonde
HILT Rxo Gamma-ray Device
HILT Micro Cylindrically Focused Log Dev
GR Logging Source
HILT High Res. Control Cartridge

AIT – H
AHRM – A
AHIS – BA 392
HRMS – B 1716
HRGD – B 1854
MCFL –
GLS – VJ 5416
HRCC – B 1906

Auxiliary Equipment:

High resolution Integrated Logging Tool-CTS Wellsite Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6164		0.6050	72.68		71.00
	Before	0.6168			72.79		
1	Master	1.260		1.270	71.58		70.00
	Before	1.261			71.69		
2	Master	0.6288		0.6230	67.85		66.00
	Before	0.6291			67.96		
3	Master	0.7109		0.7040	67.06		65.00
	Before	0.7114			67.17		
4	Master	1.324		1.337	60.79		59.00
	Before	1.325			60.91		
5	Master	1.929		1.955	58.89		57.00
	Before	1.930			59.02		
6	Master	1.928		1.955	58.91		57.00
	Before	1.929			59.03		
7	Master	1.378		1.415	55.41		53.00
	Before	1.379			55.58		
		60.00 %		140.0 %	Nom -60.00		Nom + 60.00
		(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Master: 18-Feb-2010 13:50				Before: 16-Mar-2010 14:13			

High resolution Integrated Logging Tool-CTS Wellsite Calibration							
Electronics Calibration Check – Auxiliary							
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value
Master			993.5	Master			0.04114
Before			993.6	Before			0.04538
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			0.9202	Master			4.296E-00
Before			0.9203	Before			4.538E-00
0.8700 (Minimum)			0.9150 (Nominal)	0.9600 (Maximum)			
				-0.05000 (Minimum)			0 (Nominal)
							0.05000 (Maximum)
Master: 18-Feb-2010 13:50				Before: 16-Mar-2010 14:13			

High resolution Integrated Logging Tool-CTS Wellsite Calibration				
Test Loop Gain Correction				
Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG

Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG		
0	1.033				0.5184			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.025				0.4801			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.022				0.04542			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.019				0.007685			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	1.009				0.02438			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9882				-0.2104			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	0.9962				0.1914			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.008				-0.3366			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master: 18-Feb-2010 13:50

High resolution Integrated Logging Tool-CTS Wellsite Calibration								
Sonde Error Correction								
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-80.17				-414.3			
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	193.6				-63.48			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	109.9				-81.94			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	67.39				39.49			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	26.23				-40.86			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	14.13				5.345			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.933				-4.595			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-1.518				-6.732			
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
Master: 18-Feb-2010 13:50								

Master: 18-Feb-2010 13:50

High resolution Integrated Logging Tool-CTS Wellsite Calibration								
Mud Gain Correction								
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	0.9412	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	0.9507	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.9412	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	0.9507	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.9412	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	0.9507	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>

	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
Master: 18-Feb-2010 13:50						

High resolution Integrated Logging Tool—CTS Wellsite Calibration														
Stab Measurement Summary														
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value
Before				0.7392	Before				0.4731	Before				0.3031
	0.7028 (Minimum)	0.7398 (Nominal)	0.7768 (Maximum)		0.4490 (Minimum)	0.4726 (Nominal)	0.4963 (Maximum)			0.2836 (Minimum)	0.2985 (Nominal)	0.3135 (Maximum)		
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value
Before				10710	Before				10190	Before				1154
	10180 (Minimum)	10720 (Nominal)	11260 (Maximum)		9680 (Minimum)	10190 (Nominal)	10700 (Maximum)			1099 (Minimum)	1157 (Nominal)	1214 (Maximum)		
Before: 16–Mar–2010 14:55														

High resolution Integrated Logging Tool-CTS 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				1494	Before				1788	Before				1903
	1378 (Minimum)	1478 (Nominal)	1578 (Maximum)		1688 (Minimum)	1788 (Nominal)	1888 (Maximum)			1806 (Minimum)	1906 (Nominal)	2006 (Maximum)		
Before: 16-Mar-2010 14:55														

High resolution Integrated Logging Tool–CTS Wellsite Calibration														
Crystal Quality Resolutions Calibration														
Phase	BS Crystal Resolution %			Value	Phase	SS Crystal Resolution %			Value	Phase	LS Crystal Resolution %			Value
Before				10.98	Before				11.22	Before				9.656
	9.872 (Minimum)	10.87 (Nominal)	11.87 (Maximum)		10.25 (Minimum)	11.25 (Nominal)	12.25 (Maximum)			8.790 (Minimum)	9.790 (Nominal)	10.79 (Maximum)		
Before: 16–Mar–2010 14:55														

High resolution Integrated Logging Tool–CTS Wellsite Calibration														
MCFL Calibration														
Phase	Raw B0 Resistivity OHMM			Value	Phase	Raw B1 Resistivity OHMM			Value	Phase	Raw B2 Resistivity OHMM			Value
Before				3856	Before				3812	Before				3828
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)			3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		
Before: 16–Mar–2010 14:10														




High resolution Integrated Logging Tool-CTS Wellsite Calibration							
HILT Caliper Calibration							
Phase	HILT Caliper Zero Measurement IN		Value	Phase	HILT Caliper Plus Measurement IN		Value
Before			8.869	Before			13.01
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 16-Mar-2010 14:17							

High resolution Integrated Logging Tool-CTS Wellsite Calibration							
Detector Calibration							
Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig – Bkgd) GAPI		Value
Before			89.93	Before			173.3
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		157.1 (Minimum)	165.0 (Nominal)	206.3 (Maximum)
Before: 16–Mar–2010 14:52							


High resolution Integrated Logging Tool-CTS Wellsite Calibration										
Zero Measurement										
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value	
Master				32.75	Master				31.37	
Before				28.48	Before				26.44	
5.000 (Minimum)				32.75 (Nominal)	5.000 (Minimum)				31.37 (Nominal)	40.00 (Maximum)
Master: 26-Feb-2010 18:38					Before: 16-Mar-2010 14:14					

















High resolution Integrated Logging Tool-CTS Wellsite Calibration

Ratio Measurement





Rate Measurement																										
Phase			Thermal Near Corr. (Tank) CPS			Value			Phase			Thermal Far Corr. (Tank) CPS			Value			Phase			CNTC/CFTC (Tank)			Value		
Master						5578			Master						2403			Master						2.321		
4700 (Minimum)			5800 (Nominal)			6900 (Maximum)			1900 (Minimum)			2400 (Nominal)			2900 (Maximum)			2.120 (Minimum)			2.159 (Nominal)			2.540 (Maximum)		

Master: 26-Feb-2010 18:38











High resolution Integrated Logging Tool-CTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration F/S2	Value
Before		32.19
	31.53 (Minimum)	32.19 (Nominal)
		32.84 (Maximum)
Before: Calibration not done		







High resolution Integrated Logging Tool–CTS Master Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6164		0.6050	72.68		71.00
1	Master	1.260		1.270	71.58		70.00
2	Master	0.6288		0.6230	67.85		66.00
3	Master	0.7109		0.7040	67.06		65.00
4	Master	1.324		1.337	60.79		59.00
5	Master	1.929		1.955	58.89		57.00
6	Master	1.928		1.955	58.91		57.00
7	Master	1.378		1.415	55.41		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)		Nom –60.00 (Minimum)	(Nominal) Nom + 60.00 (Maximum)
Master: 18–Feb–2010 13:50							

Master: 18-Feb-2010 13:50

High resolution Integrated Logging Tool-CTS Master Calibration							
Electronics Calibration Check – Auxilliary							
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value
Master			993.5	Master			0.04114
	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			0.9202	Master			4.296E-00
	0.8700 (Minimum)	0.9150 (Nominal)	0.9600 (Maximum)		-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)
Master: 18-Feb-2010 13:50							

Master: 18-Feb-2010 13:50

High resolution Integrated Logging Tool-CTS Master Calibration						
Test Loop Gain Correction						
Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG
0	1.033				0.5184	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
1	1.025				0.4801	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
2	1.022				0.04542	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
3	1.019				0.007685	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)
4	1.009				0.02438	
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal) 3.000 (Maximum)

5	0.9882		-0.2104			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	0.9962		0.1914			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.008		-0.3366			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)





Master: 18-Feb-2010 13:50



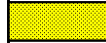



High resolution Integrated Logging Tool-CTS Master Calibration								
Sonde Error Correction								
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-80.17				-414.3			
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	193.6				-63.48			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	109.9				-81.94			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	67.39				39.49			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	26.23				-40.86			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	14.13				5.345			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.933				-4.595			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-1.518				-6.732			
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)



Master: 18-Feb-2010 13:50




High resolution Integrated Logging Tool–CTS Master Calibration								
Mud Gain Correction								
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	0.9412				0.9507			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.9412				0.9507			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.9412				0.9507			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 18–Feb–2010 13:50

High resolution Integrated Logging Tool-CTS Master Calibration							
Inversion results							
Phase	Rho Aluminum G/C3		Value	Phase	Rho Magnesium G/C3		Value
Master			2.602	Master			1.687
	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			2.581	Master			2.608
	2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)		2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)
Master: 23-Feb-2010 17:51							

High resolution Integrated Logging Tool-CTS Master Calibration														
Deviation Summary														
Phase	BS Average Deviation %			Value	Phase	SS Average Deviation %			Value	Phase	LS Average Deviation %			Value
Master				0.2623	Master				0.3740	Master				0.9565
-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				0.5063	Master				1.860	Master				2.096
-1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)					-2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)					-3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)				
Master: 23-Feb-2010 17:51														

High resolution Integrated Logging Tool—CTS Master Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				32.75	Master				31.37
	5.000 (Minimum)	32.75 (Nominal)	40.00 (Maximum)			5.000 (Minimum)	31.37 (Nominal)	40.00 (Maximum)	
Master: 26-Feb-2010 18:38									

High resolution Integrated Logging Tool-CTS Master Calibration														
Tank Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				5578	Master				2403	Master				2.321
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)			
Master: 26-Feb-2010 18:38														

Company: **Kerr-McGee Oil & Gas Onshore, LP**

Schlumberger

Well: **Brehon 18-18**

Field: **Hambert**

County: **Weld**

State: **Colorado**

Platform Express
Compensated Neutron
Density Lithology