

County: Weld  
Field: Wattenberg

Log	MUD			Typ	Bit #	Cas	Cas	Top	Bot	Sch	Dep	Rur
De	Flu	So	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM
Unit	Log	Circ	Max	Sou	RM	RM	RM	RM	RM	RM	RM	RM
Rec	Unit	Log	Circ	Max	Sou	RM	RM	RM	RM	RM	RM	RM
Wit	Unit	Log	Circ	Max	Sou	RM	RM	RM	RM	RM	RM	RM

## Schlumberger

**Kerr McGee Oil and Gas Onshore, LP**

# P Ville Federal 5-7

# Wattenberg

Weld  
State: Colorado

# Platform Express

## State: Colorado

Location: SENW Sec. 7 , T 3N , R 66W  
Well: P Ville Federal 5-7

Company: Kerr McGee Oil and Gas Onshore

<h1>Platform Express</h1> <h2>Compensated Neutron</h2> <h3>Density Lithology</h3>			
<b>LOCATION</b>		<b>Elev.:</b> K.B.    4805.00 ft G.L.    4790.00 ft D.F.    4804.00 ft	
SENW Sec. 7 , T 3N , R 66W SHL: 1523' FNL / 1352' FWL SENW BHL: 2024' FNL / 655' FWL SWNW (Est)		Elev.:    4790.00 ft	
Permanent Datum: <u>Ground Level</u> Log Measured From: <u>Kelly Bushing</u> Drilling Measured From: <u>Kelly Bushing</u>		15.00 ft    above Perm. Datum	
API Serial No.                      05-123-30764-000C		Section 7	Township 3N
		Range 66W	

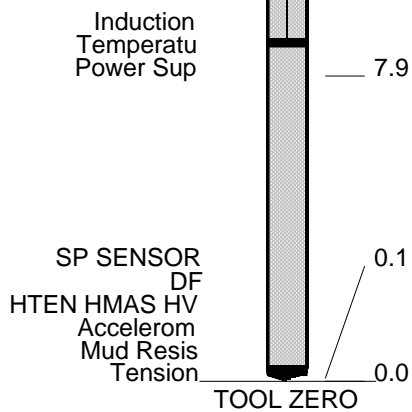
[illegible]

Logging Date	16-Jan-2010								
Drill Number	1								
Drill Depth	8035 ft								
Drill Depth	8013 ft								
Drill Depth	8005 ft								
Drill Depth	911 ft								
Drill Depth	8.625 in			@		909 ft			
Drill Depth	911 ft								
Drill Depth	7.875 in								
Drill Depth	KCL Polymer								
Drill Depth	8.4 lbm/gal			27 s					
Drill Depth	PH								
Drill Depth	Flowline								
Drill Depth	0.770 ohm.m			@		81 degF		@	
Drill Depth	0.577 ohm.m			@		81 degF		@	
Drill Depth	1.155 ohm.m			@		79 degF		@	
Drill Depth	Calculated			Calculated					
Drill Depth	0.303 @ 217			0.227	@	217		@	
Drill Depth	217 degF								
Drill Depth	16-Jan-2010					4:00			
Drill Depth	16-Jan-2010					13:57			
Drill Depth	3055			Fort Morgan, CO					
Drill Depth	Jared R. Hoskins								
Drill Depth	Greg Hovivian & M Scanniello								

Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth		@	
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density	Viscosity		
Fluid Loss	PH		
Source Of Sample			
RM @ Measured Temperature		@	
RMF @ Measured Temperature		@	
RMC @ Measured Temperature		@	
Source RMF	RMC		
RM @ MRT	RMF @ MRT	@	@
Maximum Recorded Temperatures			
Circulation Stopped	Time		
Logger On Bottom	Time		
Unit Number	Location		
Recorded By			
Witnessed By			

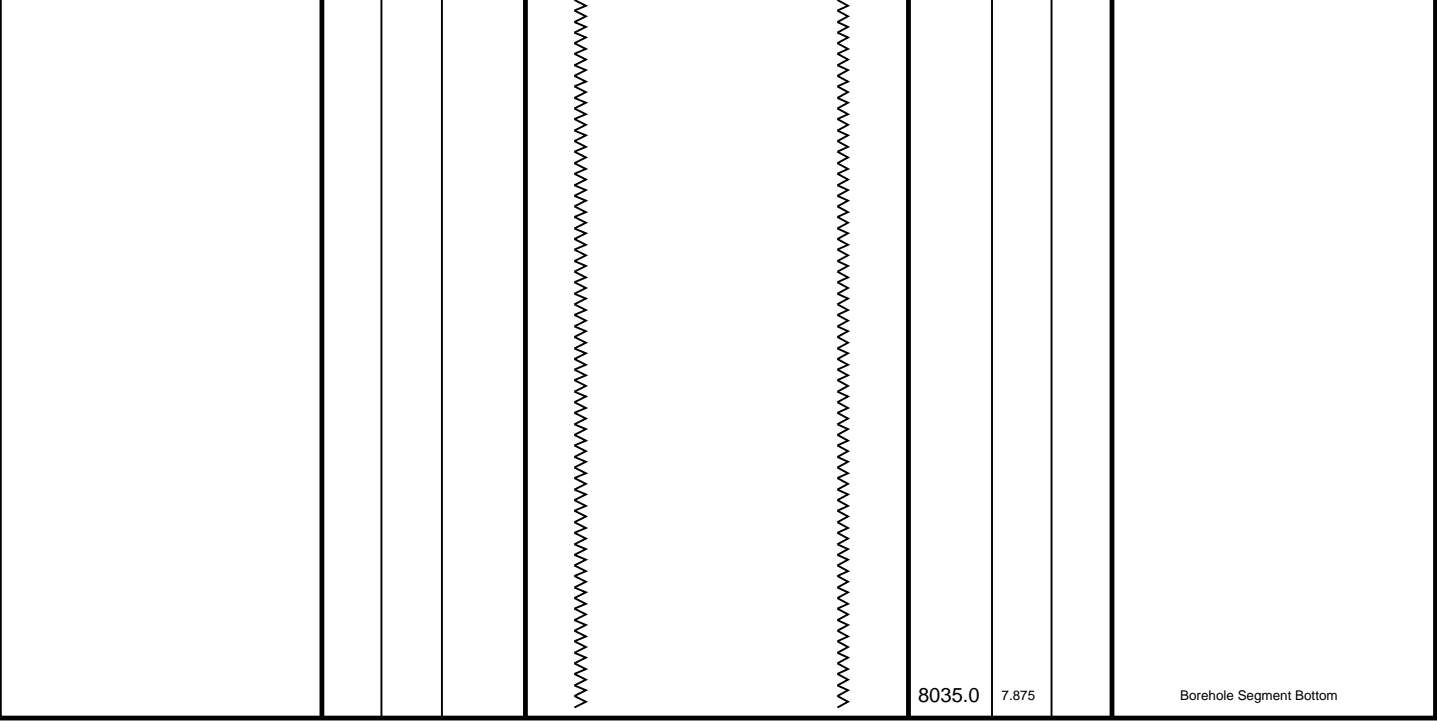






MAXIMUM STRING DIAMETER 4.63 IN  
MEASUREMENTS RELATIVE TO TOOL ZERO  
ALL LENGTHS IN FEET

Production String	(in)			(ft)	Well Schematic	(ft)			(in)	Casing String
	OD	ID	MD			MD	OD	ID		
						0.0	8.625			Casing String
						909.0	8.625			Casing Shoe
						909.0	7.875			Borehole Segment



All depths are driller's depths

Schlumberger

UPPER POROSITY LOG 5" = 100'

MAXIS Field Log

Input DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_028PUP FN:22 PRODUCER 16-Jan-2010 16:01 8026.5 FT 615.5 FT

Integrated Hole/Cement Volume Summary

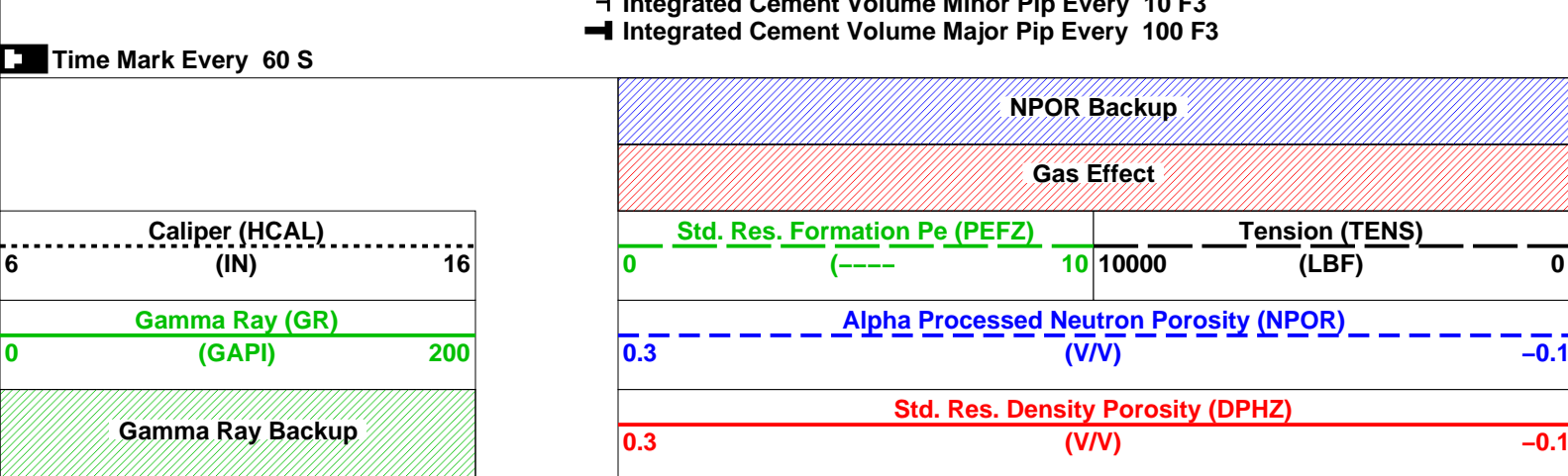
Hole Volume = 987.85 ft3  
Cement Volume = 683.52 ft3 (assuming 4.50 in casing O.D.)  
Computed from 5099.5 ft to 2344.5 ft

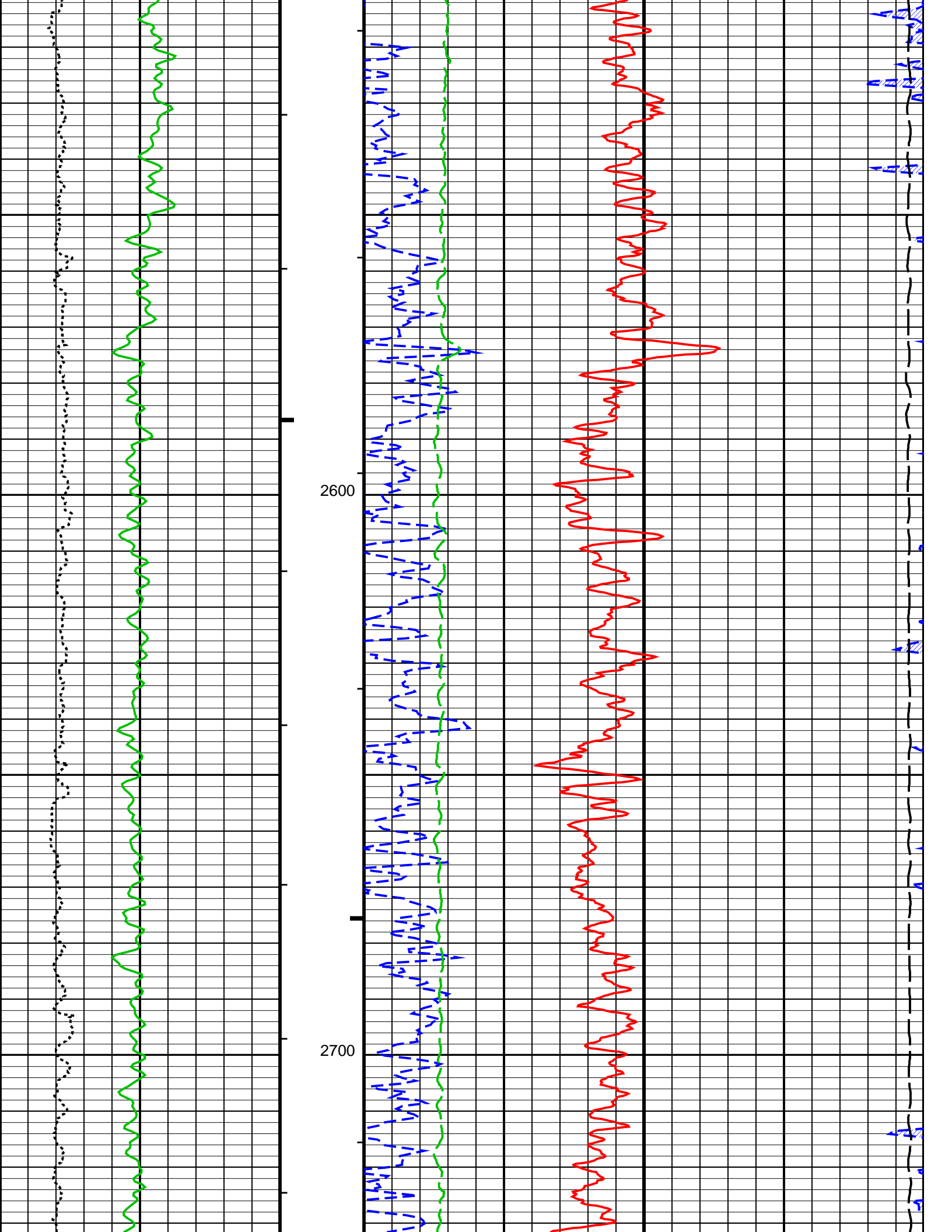
OP System Version: 17C0-154

AITM 17C0-154 HILTD 17C0-154  
DTCH 17C0-154

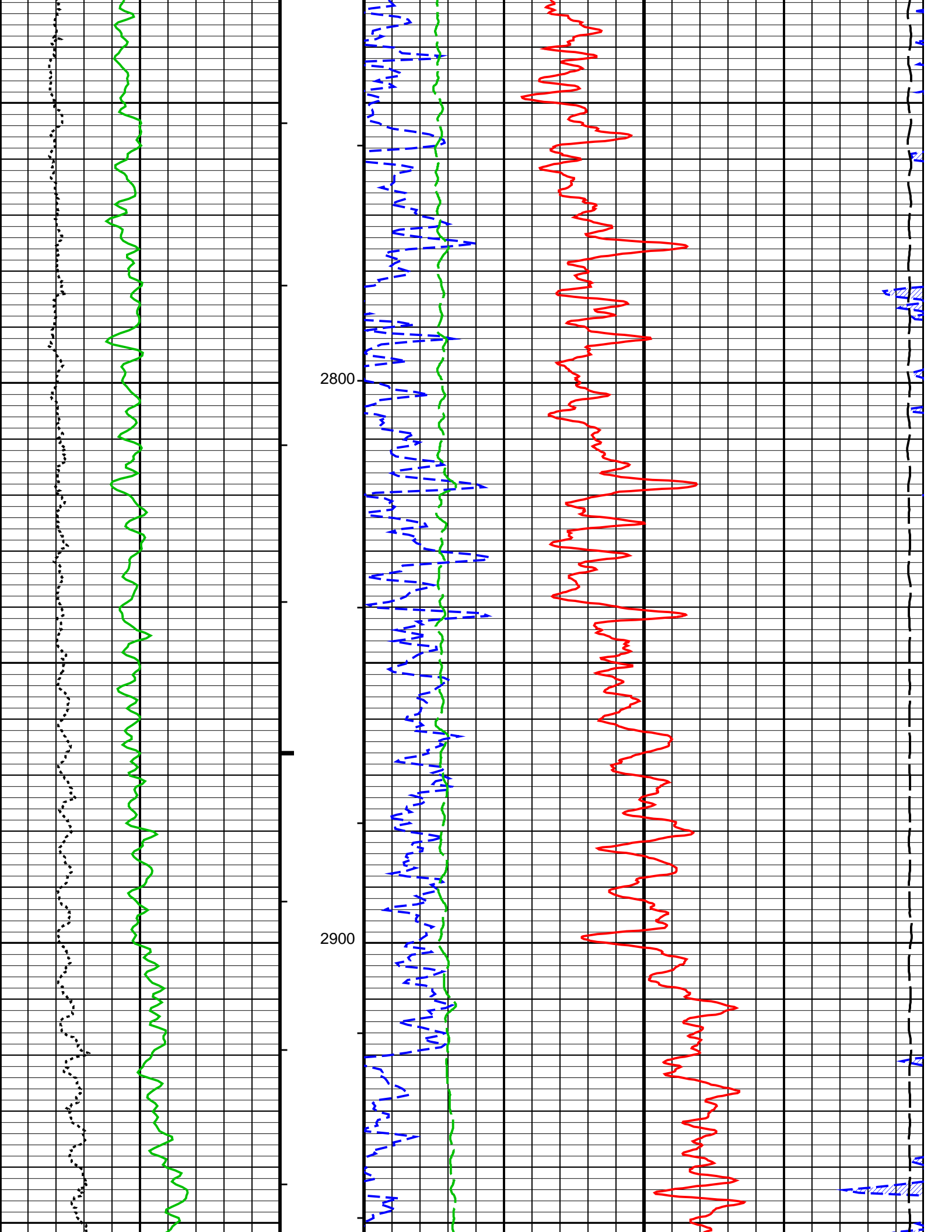
PIP SUMMARY

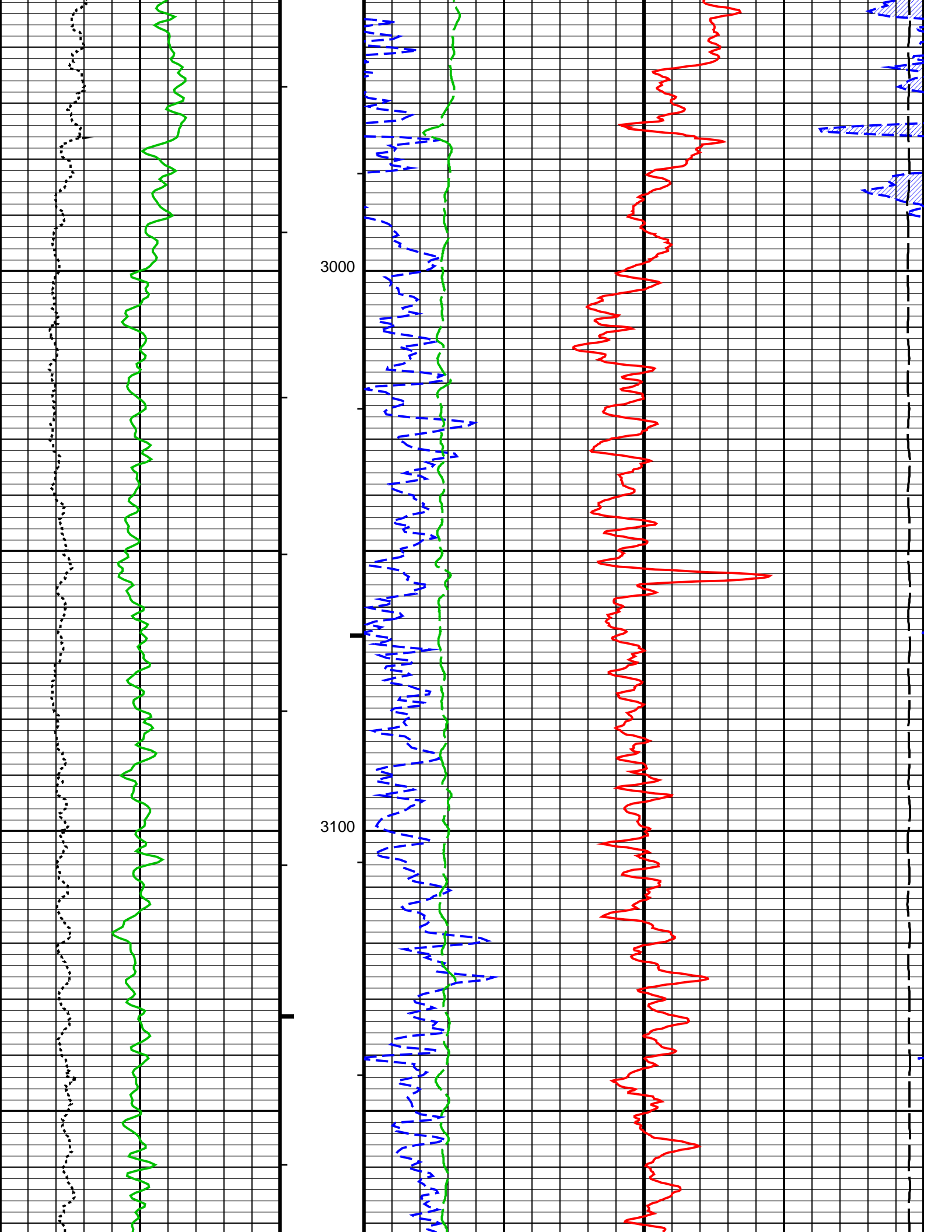
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3

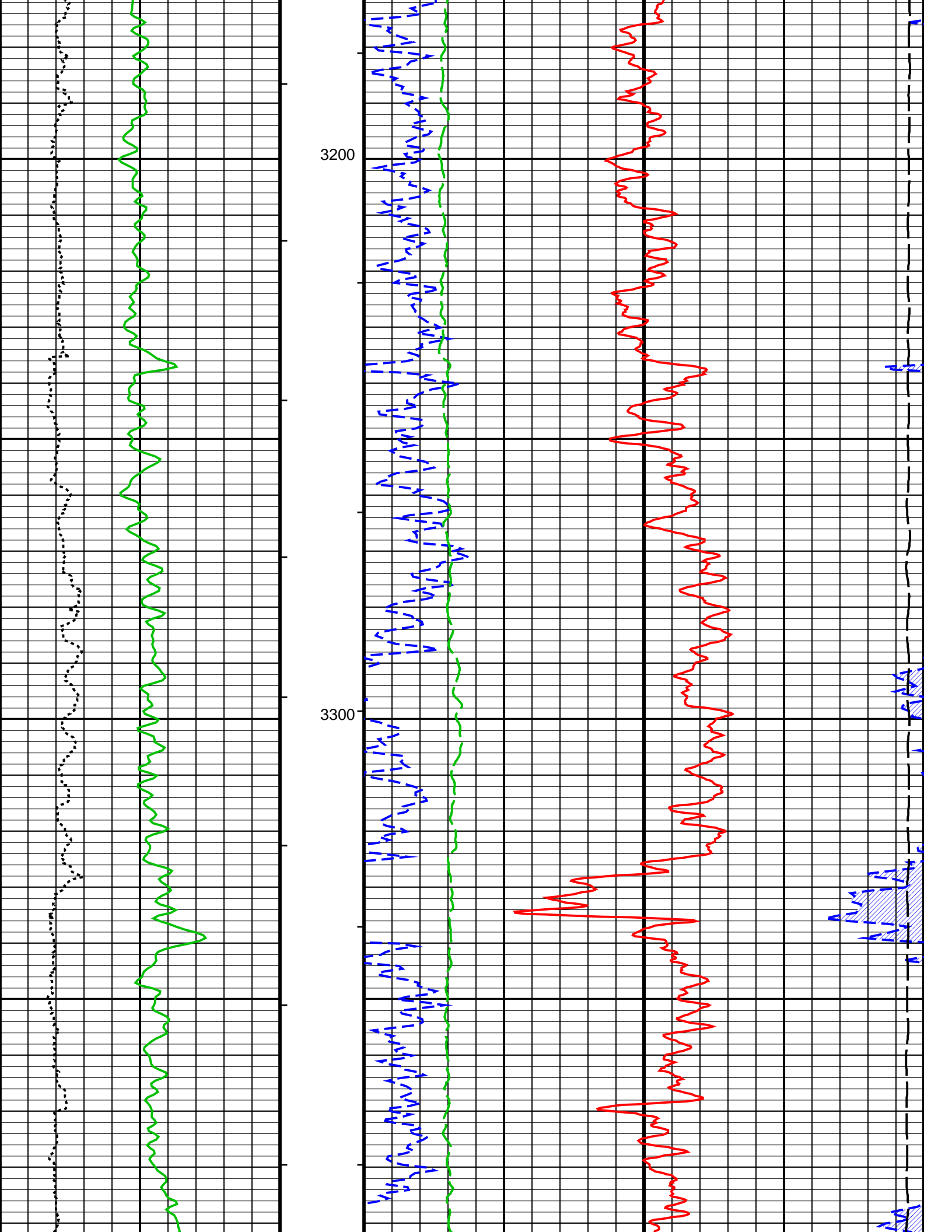


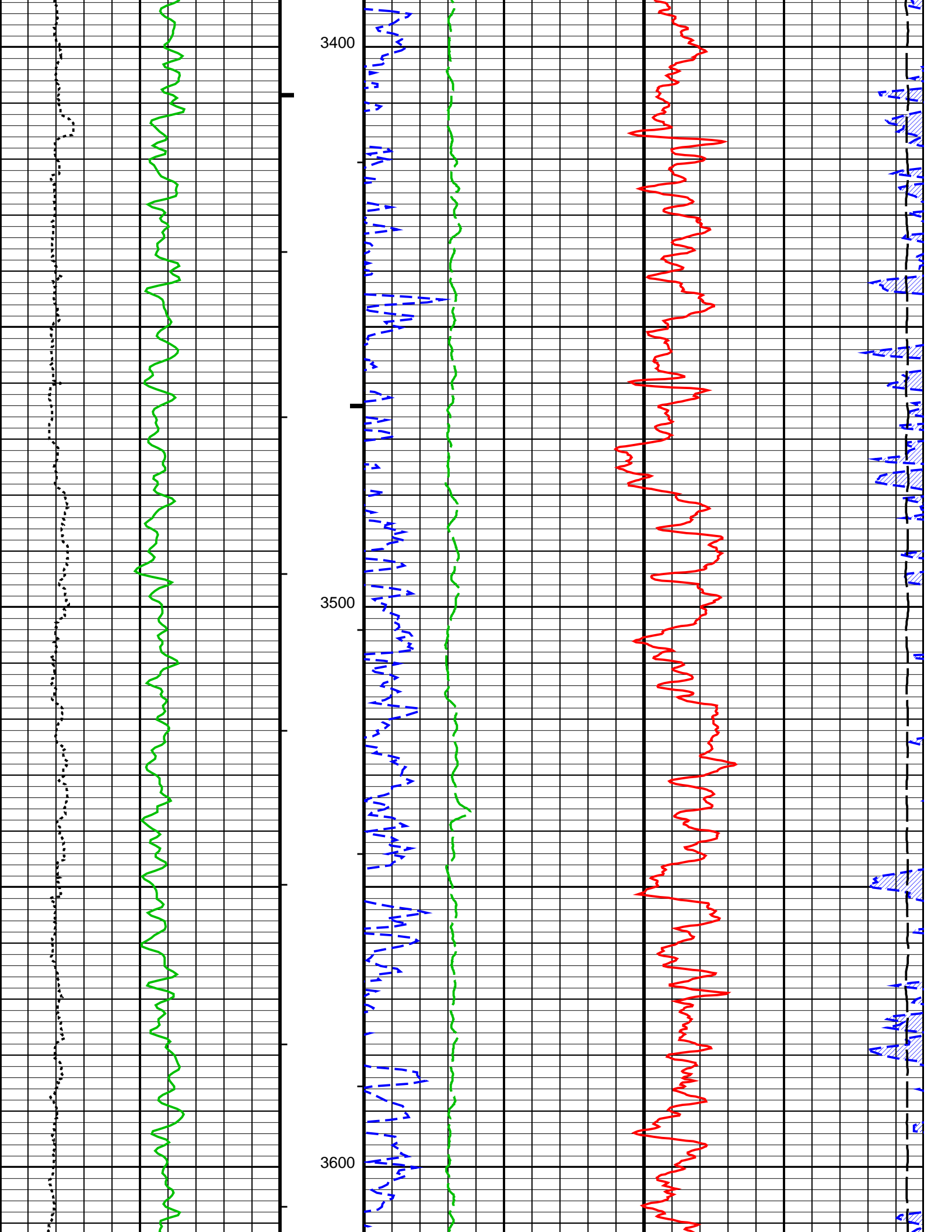


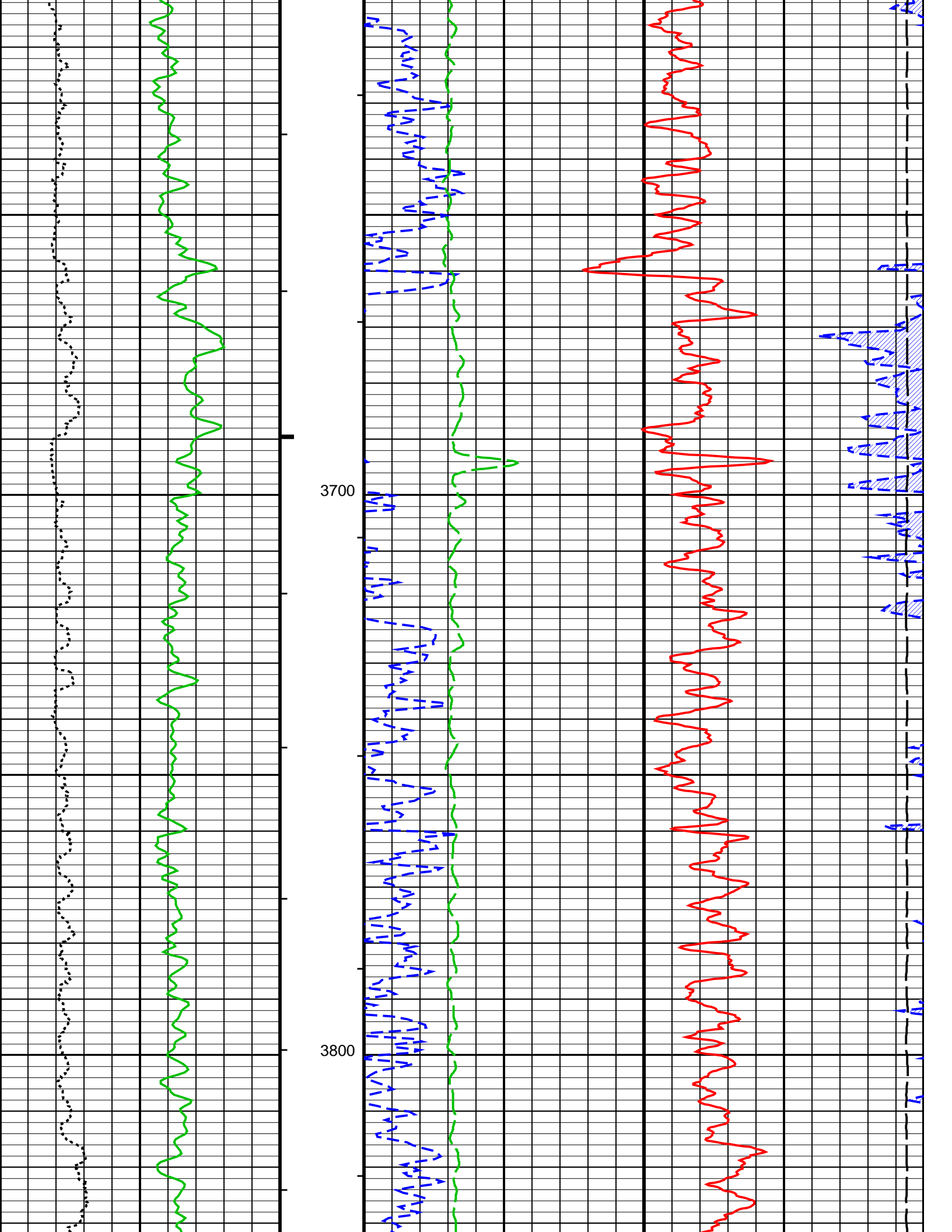


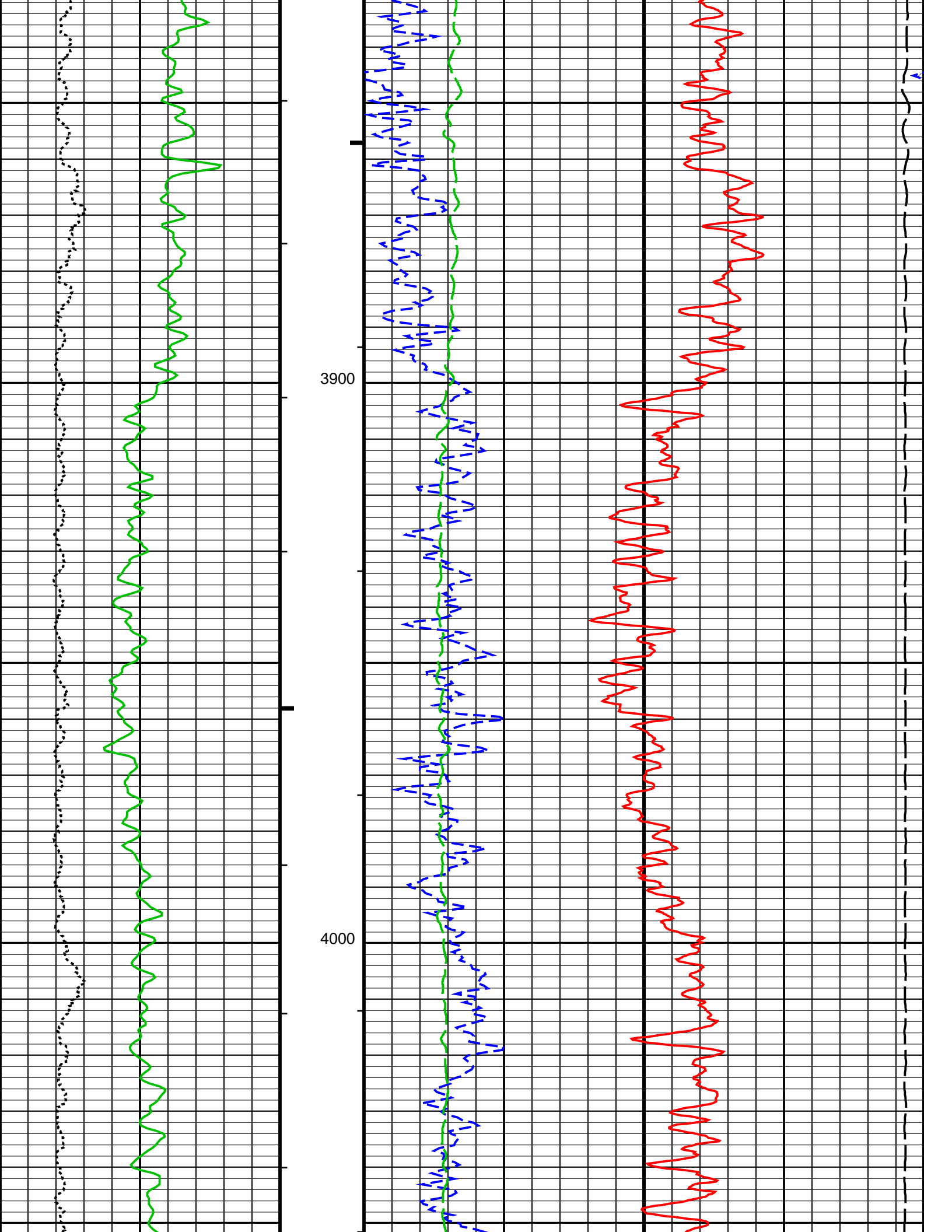


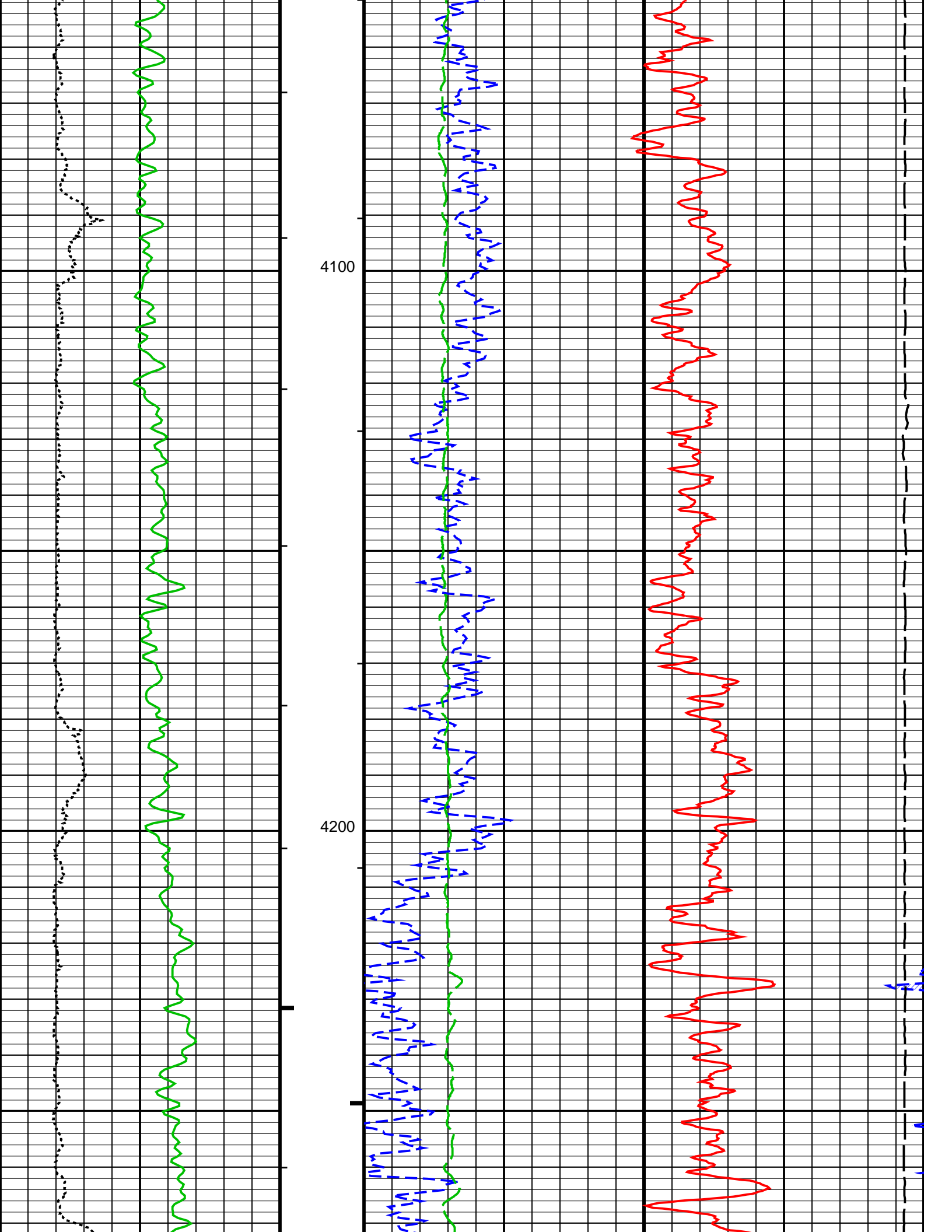


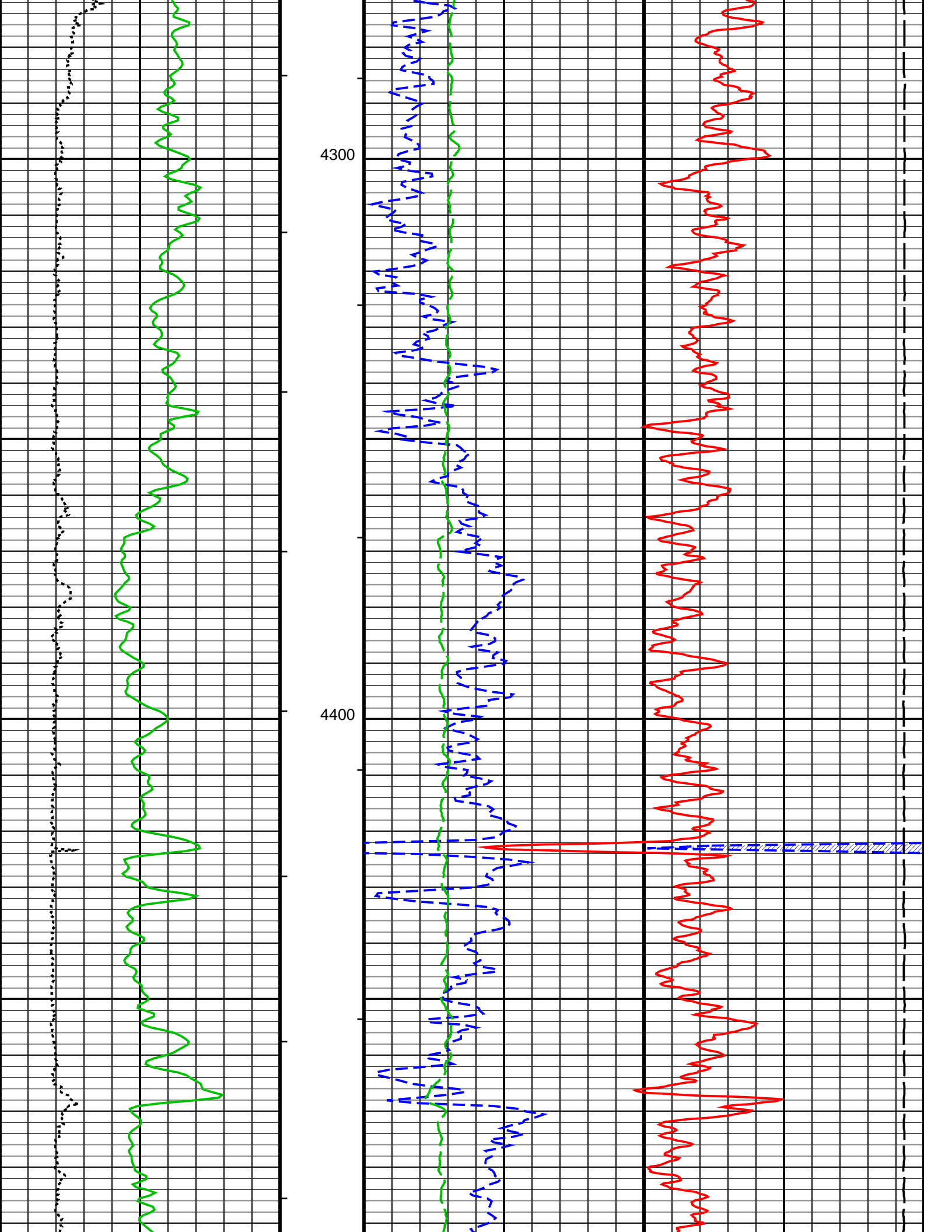




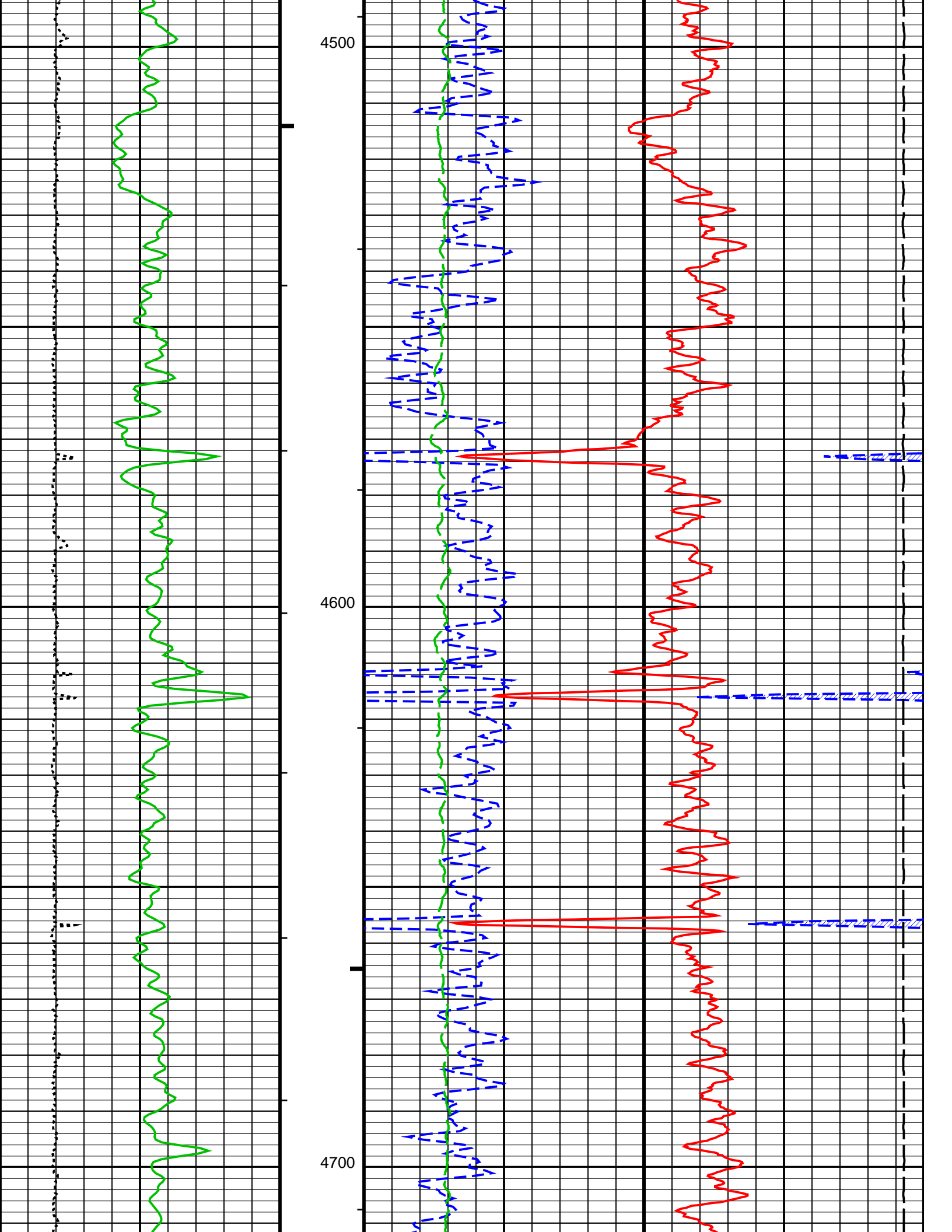


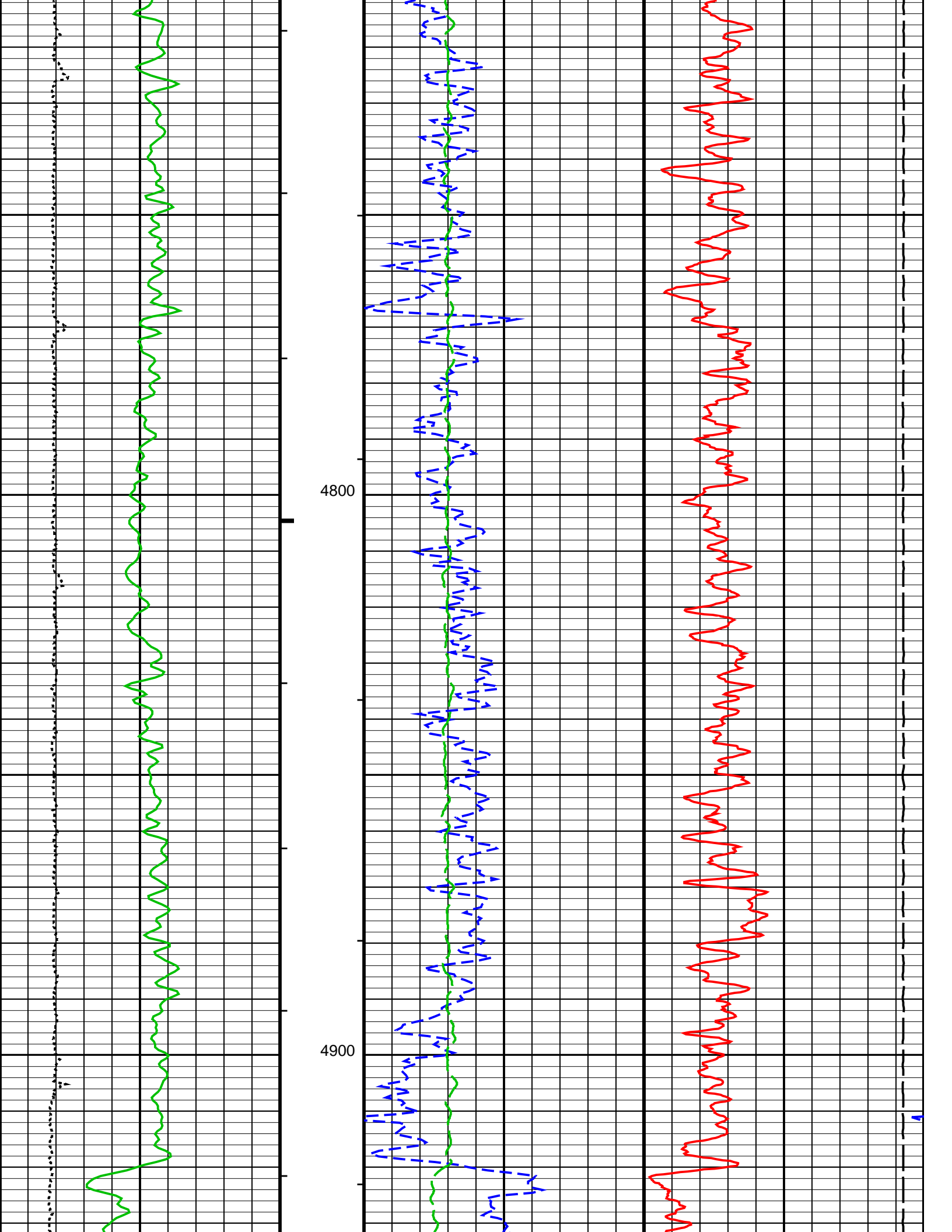


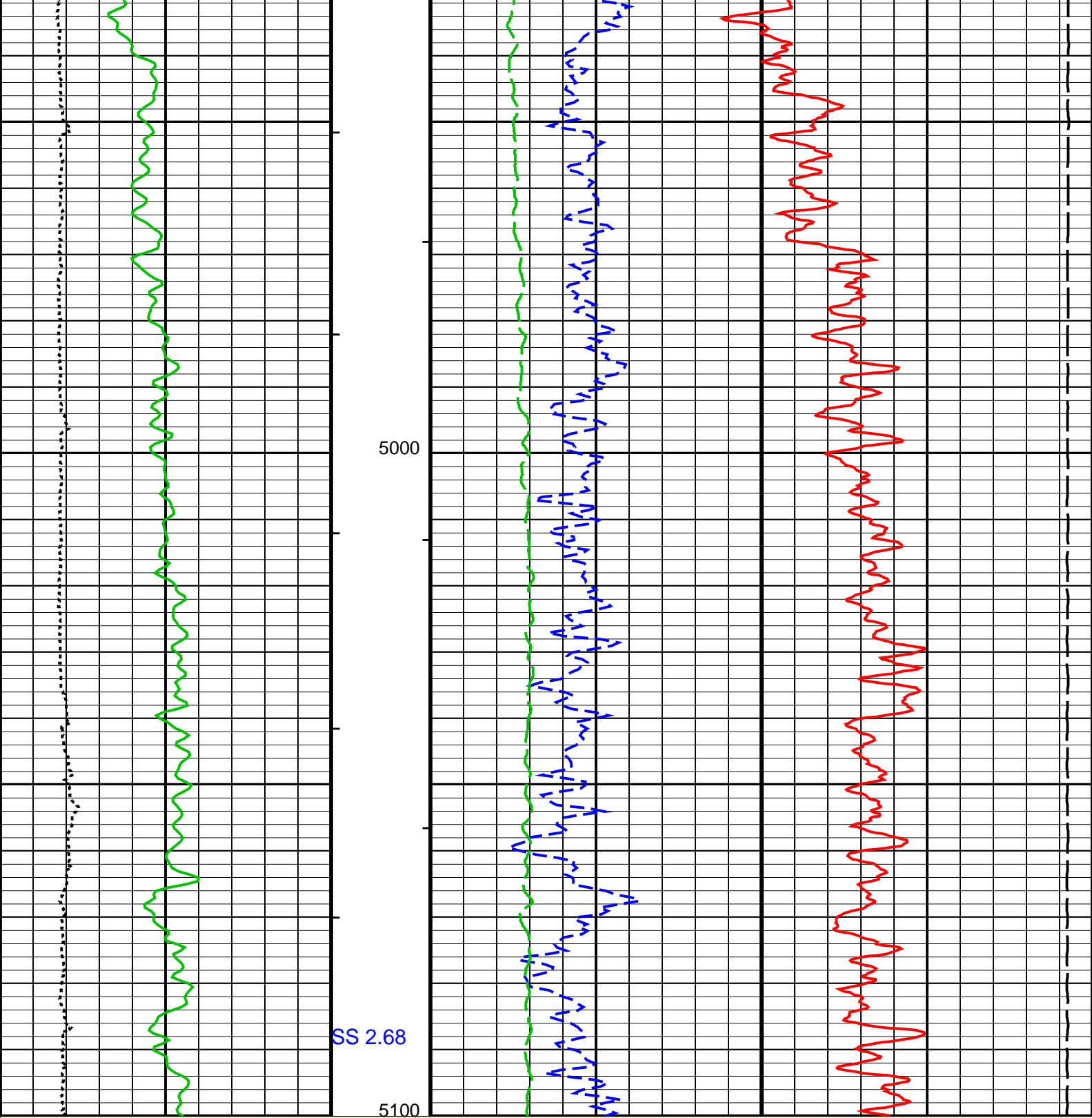




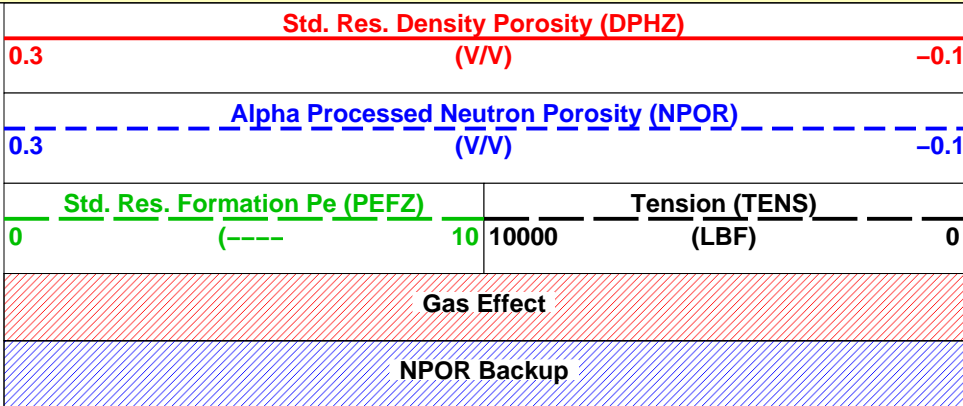
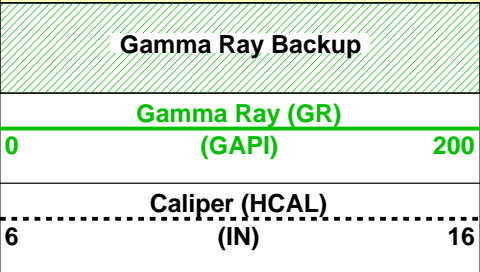








MAIN PASS: \*\*\* PLATFORM EXPRESS - NUCLEAR POROSITY \*\*\*



└ 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
AIT-M: Array Induction Tool – M		
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
HILTB-FTB: High resolution Integrated Logging Tool-DTS		
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
FSO	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
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
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
STI: Stuck Tool Indicator		
TDL	Total Depth – Logger	8013.0 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	81.400 degF
RMFS	Resistivity of Mud Filtrate Sample	0.577 ohm.m

Format: UPPER\_PORO

Vertical Scale: 5" per 100'

Graphics File Created: 16-Jan-2010 16:07

## OP System Version: 17C0-154

AITM 17C0-154  
 DTCH 17C0-154

HILTD

17C0-154

Input DLIS Files

Schlumberger

LOWER POROSITY LOG 5" = 100'

MAXIS Field Log

Input DLIS Files

DEFAULT MERGE\_AIT\_027 FN:1 PRODUCER 16-Jan-2010 15:57 8026.5 FT 615.0 FT

Output DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_028PUP FN:22 PRODUCER 16-Jan-2010 16:01

OP System Version: 17C0-154

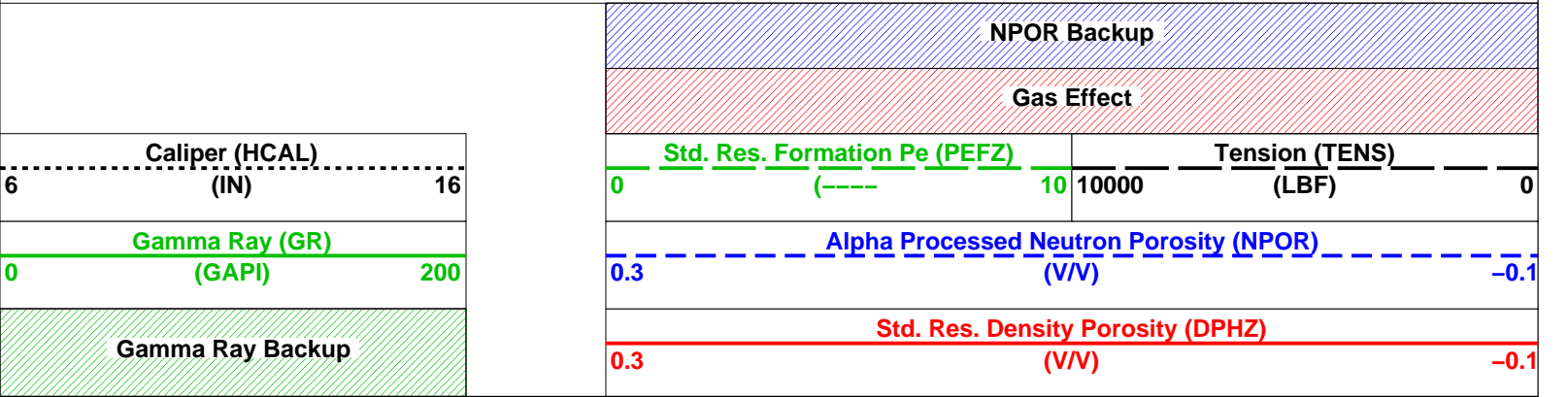
AIT-M 17C0-154 HILTB-FTB 17C0-154  
 DTC-H 17C0-154

Changed Parameter Summary

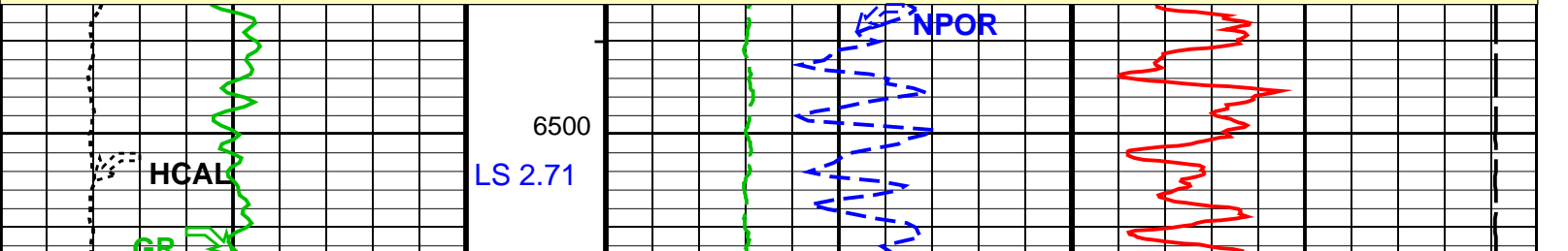
DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	8026.5 16:01:14
	SANDSTONE	SANDSTONE	7839.0 16:01:20
	LIMESTONE	SANDSTONE	7412.0 16:01:35
MDEN	2.65 G/C3	2.68 G/C3	8026.5 16:01:14
	2.68 G/C3	2.65 G/C3	7839.0 16:01:20
	2.71 G/C3	2.68 G/C3	7412.0 16:01:35

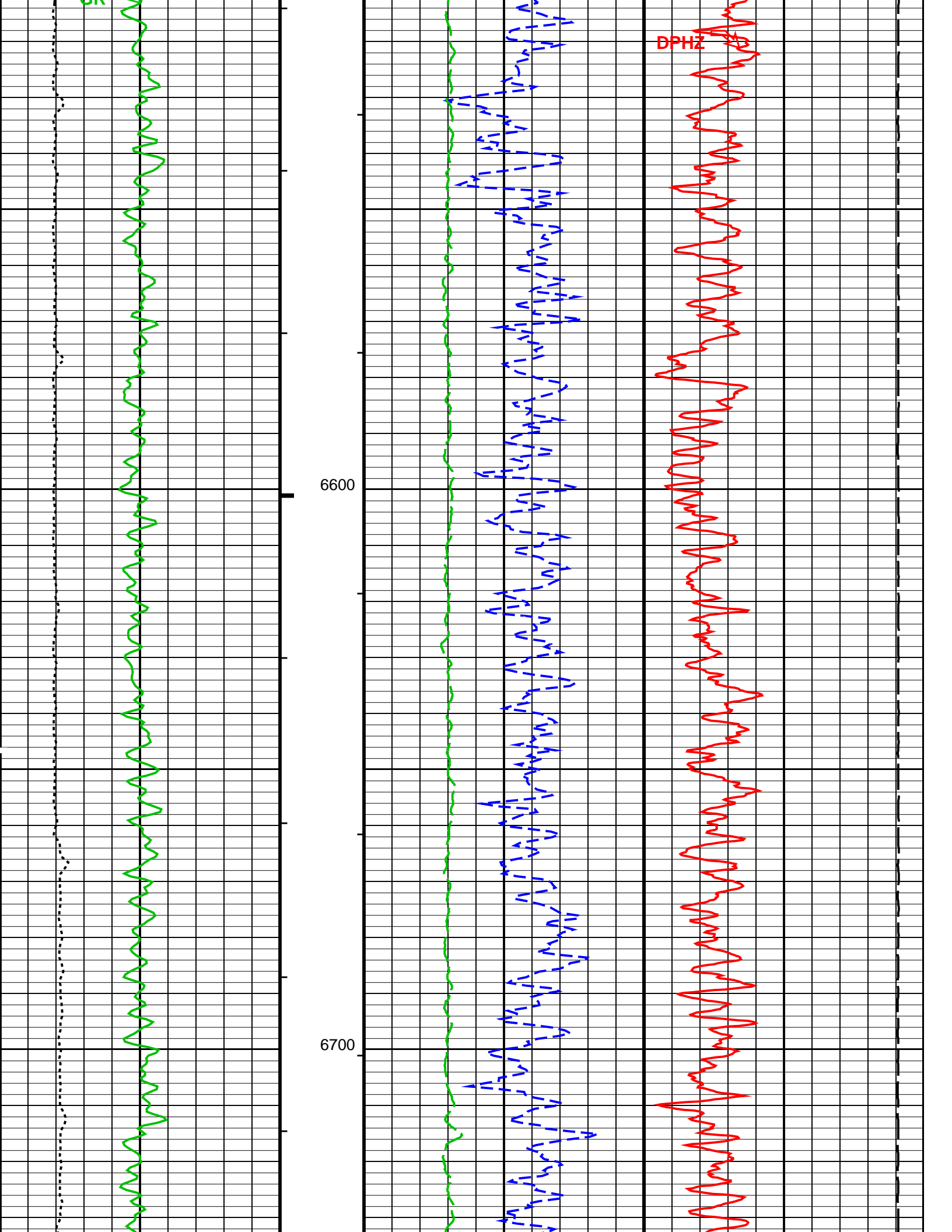
PIP SUMMARY

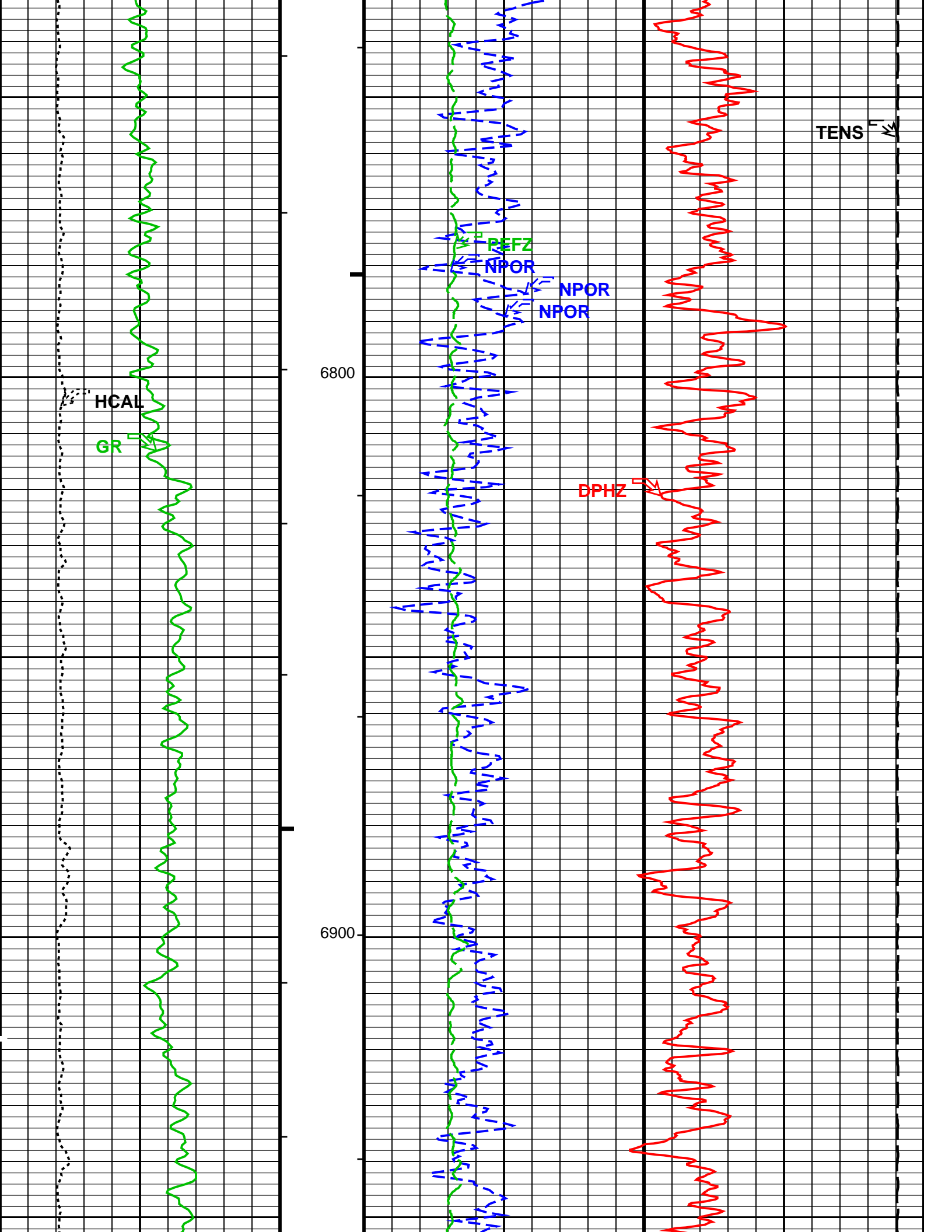
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3
- └ Integrated Cement Volume Major Pip Every 100 F3
- Time Mark Every 60 S

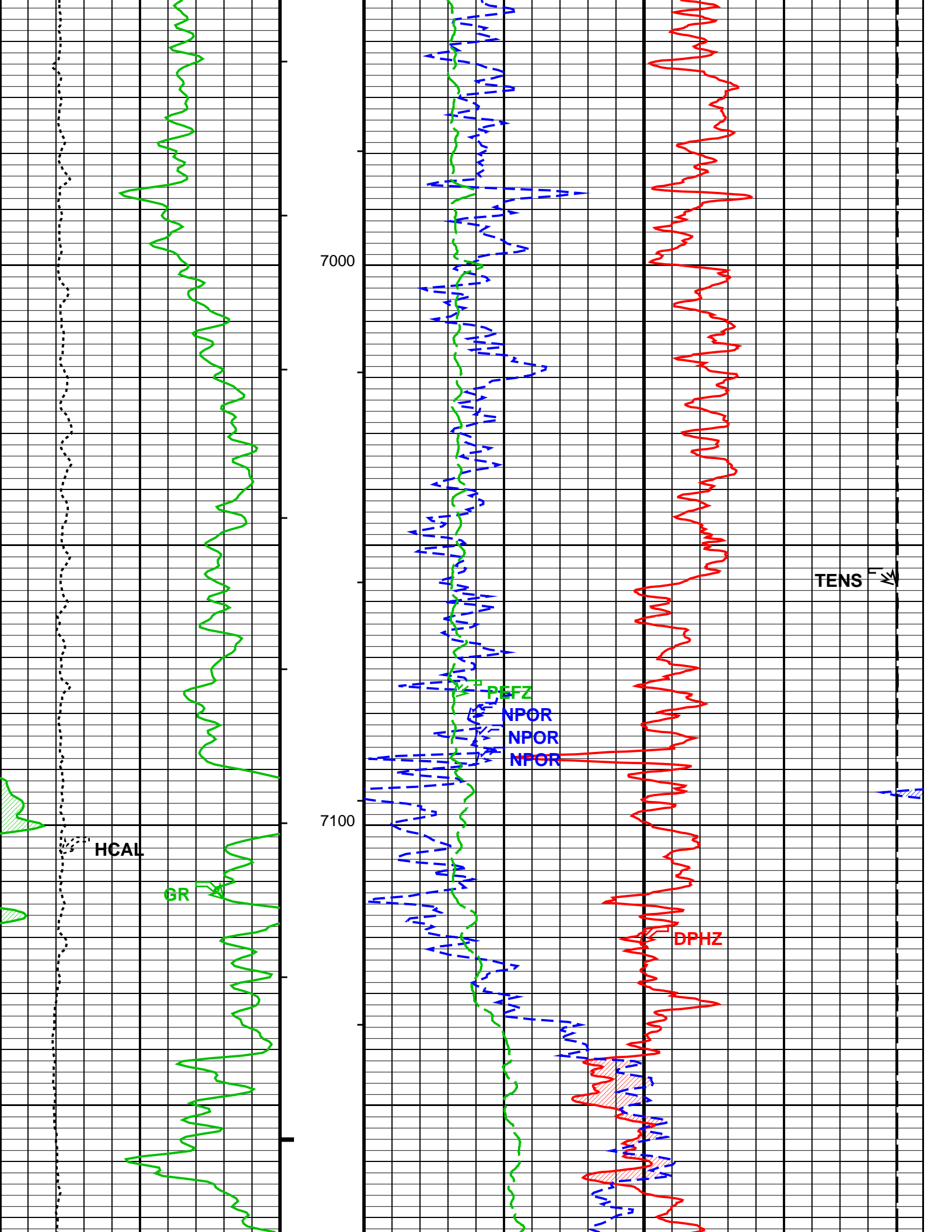


MAIN PASS: \*\*\* PLATFORM EXPRESS – NUCLEAR POROSITY \*\*\*

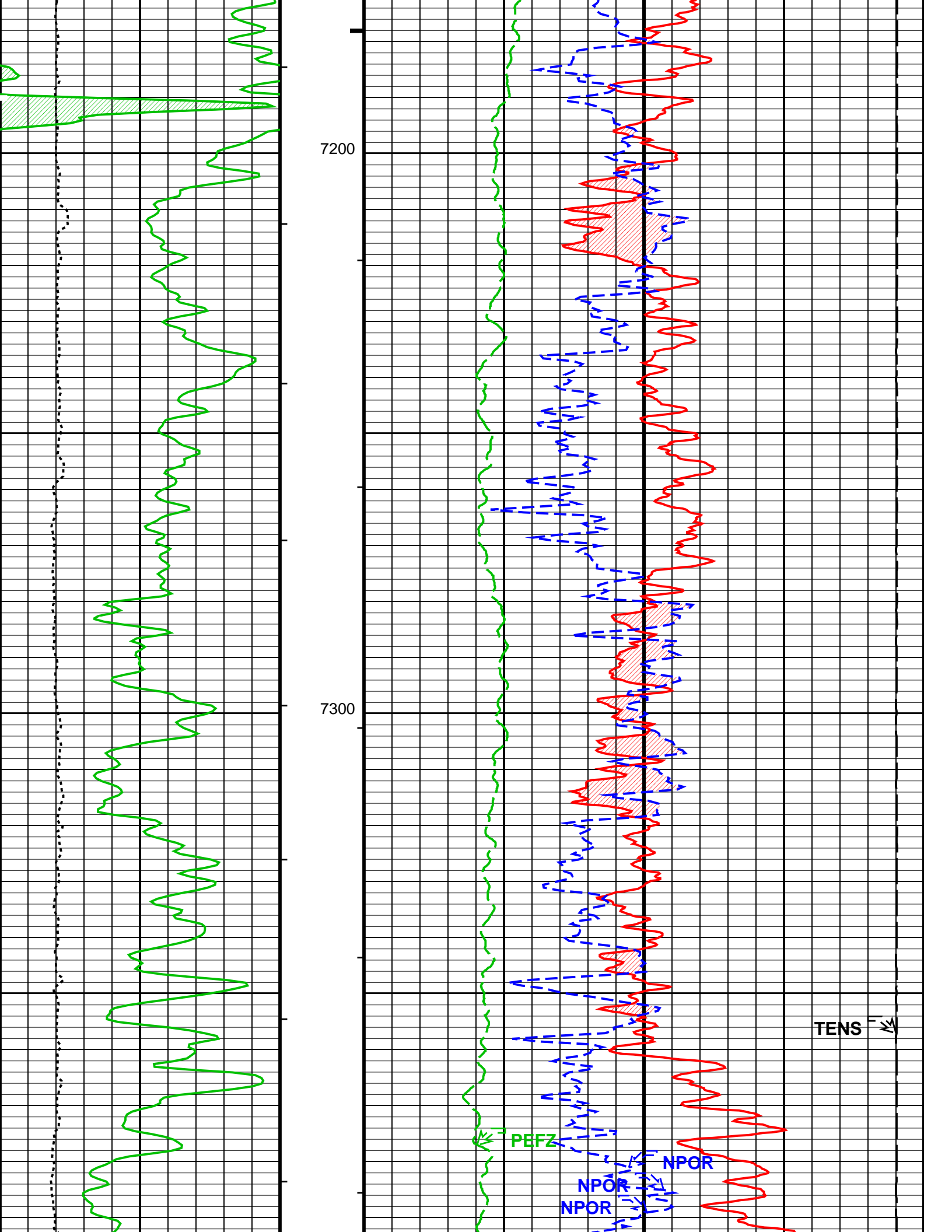


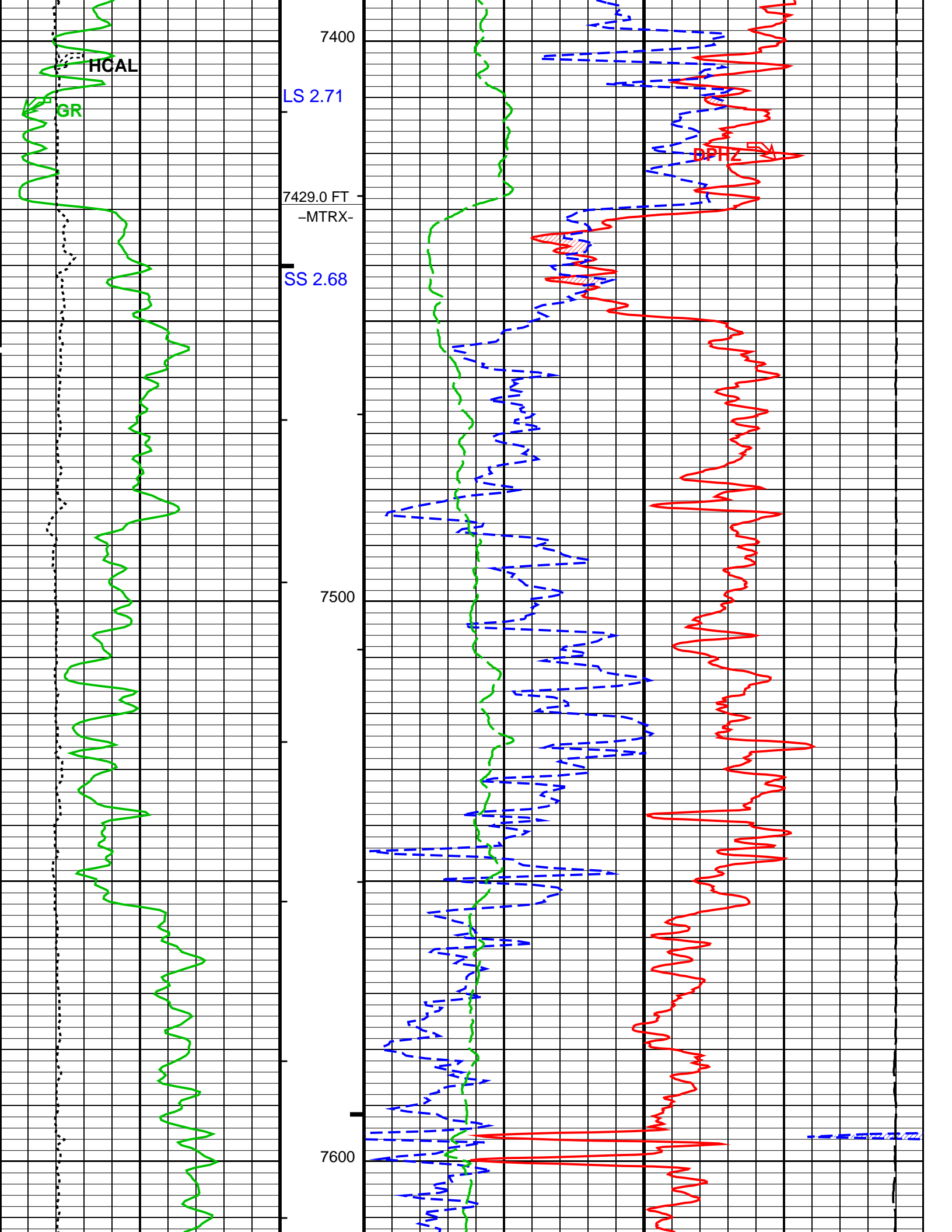


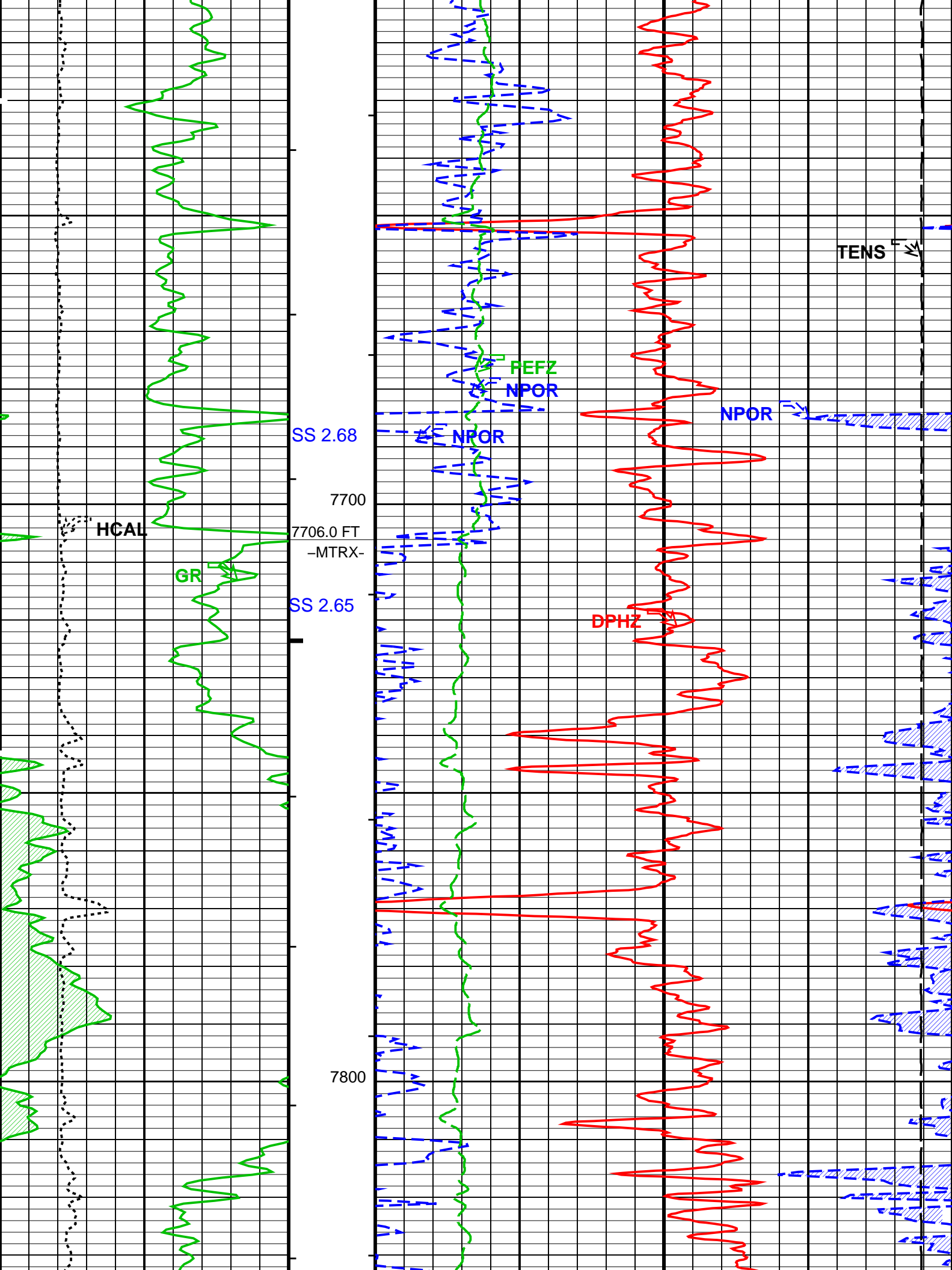


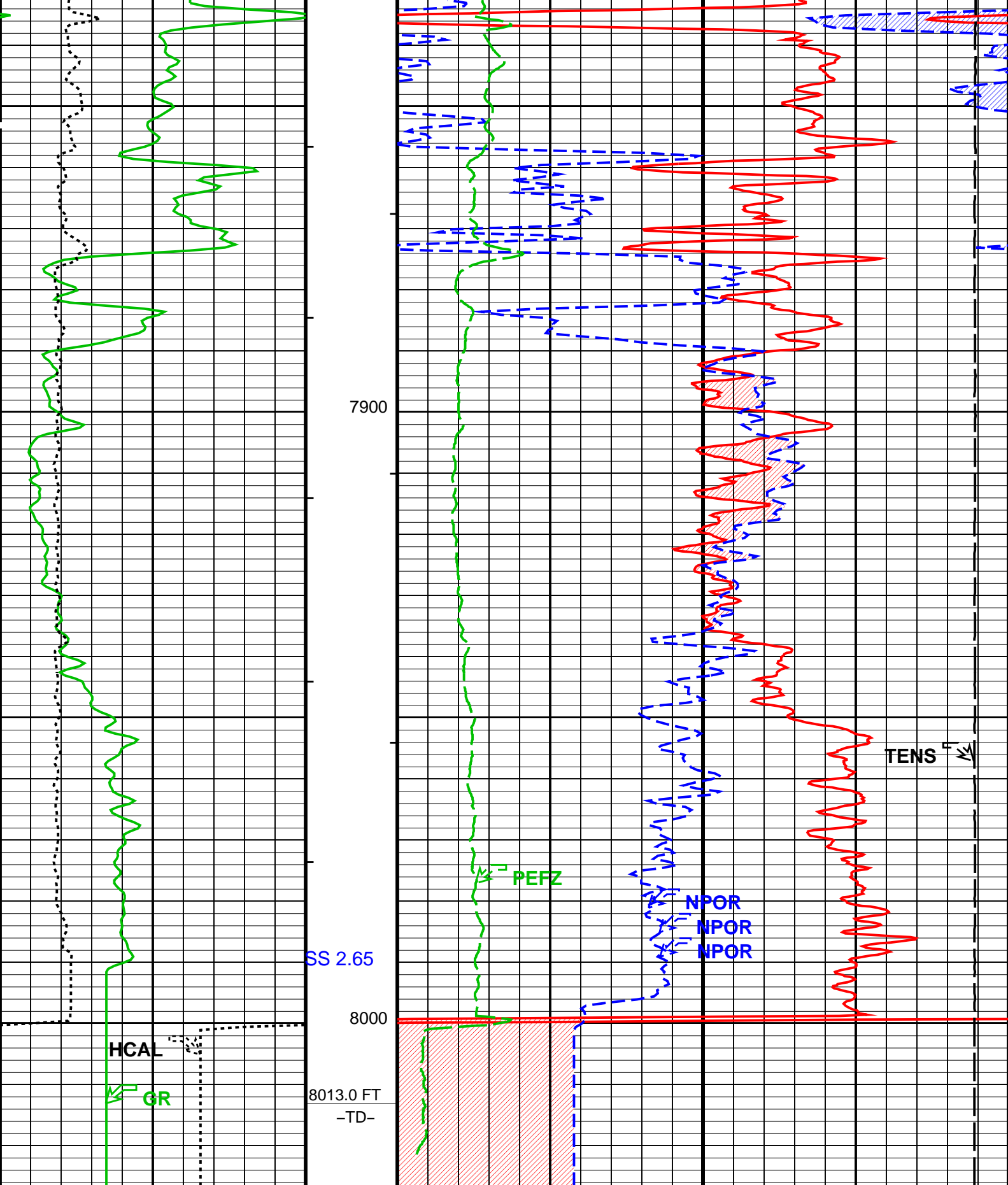












Gamma Ray Backup		Std. Res. Density Porosity (DPHZ)	
Gamma Ray (GR)		Alpha Processed Neutron Porosity (NPOR)	
0	200	0.3	-0.1
(GAPI)		(V/V)	

Caliper (HCAL)		Std. Res. Formation Pe (PEFZ)		Tension (TENS)	
6	(IN)	0	(----	10	10000
	16				(LBF)
		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			
AIT-M: Array Induction Tool – M					
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		
HILTB-FTB: High resolution Integrated Logging Tool-DTS					
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			
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	HCAL			
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE			
SHT	Surface Hole Temperature	68	DEGF		
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		
STI: Stuck Tool Indicator					
TDL	Total Depth – Logger	8013.00	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	0.0	FT		
MST	Mud Sample Temperature	81.40	DEGF		
PS	Playback Progression	NORMAL			

PP  
RMFS  
TD

Playback Processing  
Resistivity of Mud Filtrate Sample  
Total Depth

NORMAL  
0.5775  
8013

OHMM  
FT

Format: LOWER\_PORO    Vertical Scale: 5" per 100'    Graphics File Created: 16-Jan-2010 16:01

OP System Version: 17C0-154

AIT-M  
DTC-H

17C0-154  
17C0-154

HILTB-FTB

17C0-154

Input DLIS Files

DEFAULT    MERGE\_AIT\_027    FN:1    PRODUCER    16-Jan-2010 15:57    8026.5 FT    615.0 FT

Output DLIS Files

DEFAULT    AIT\_TLD\_MCFL\_CNL\_028PUP    FN:22    PRODUCER    16-Jan-2010 16:01

Schlumberger

REPEAT ANALYSIS

MAXIS Field Log

Input DLIS Files

DEFAULT    AIT\_TLD\_MCFL\_CNL\_007PUP    FN:6    PRODUCER    16-Jan-2010 14:06    8038.5 FT    7623.5 FT

Output DLIS Files

DEFAULT    AIT\_TLD\_MCFL\_CNL\_009LUP    FN:8    PRODUCER    16-Jan-2010 14:11

OP System Version: 17C0-154

AIT-M  
DTC-H

17C0-154  
17C0-154

HILTB-FTB

17C0-154

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	8026.5 14:13:17
MDEN	SANDSTONE	SANDSTONE	7839.0 14:16:26
	2.65 G/C3	2.68 G/C3	8026.5 14:13:17
	2.68 G/C3	2.65 G/C3	7839.0 14:16:26

PIP SUMMARY

Time Mark Every 60 S

HCAL\_REP Curve (HCAL\_REP)  
(IN)

PEFZ\_REP Curve (PEFZ\_REP)  
(-----)

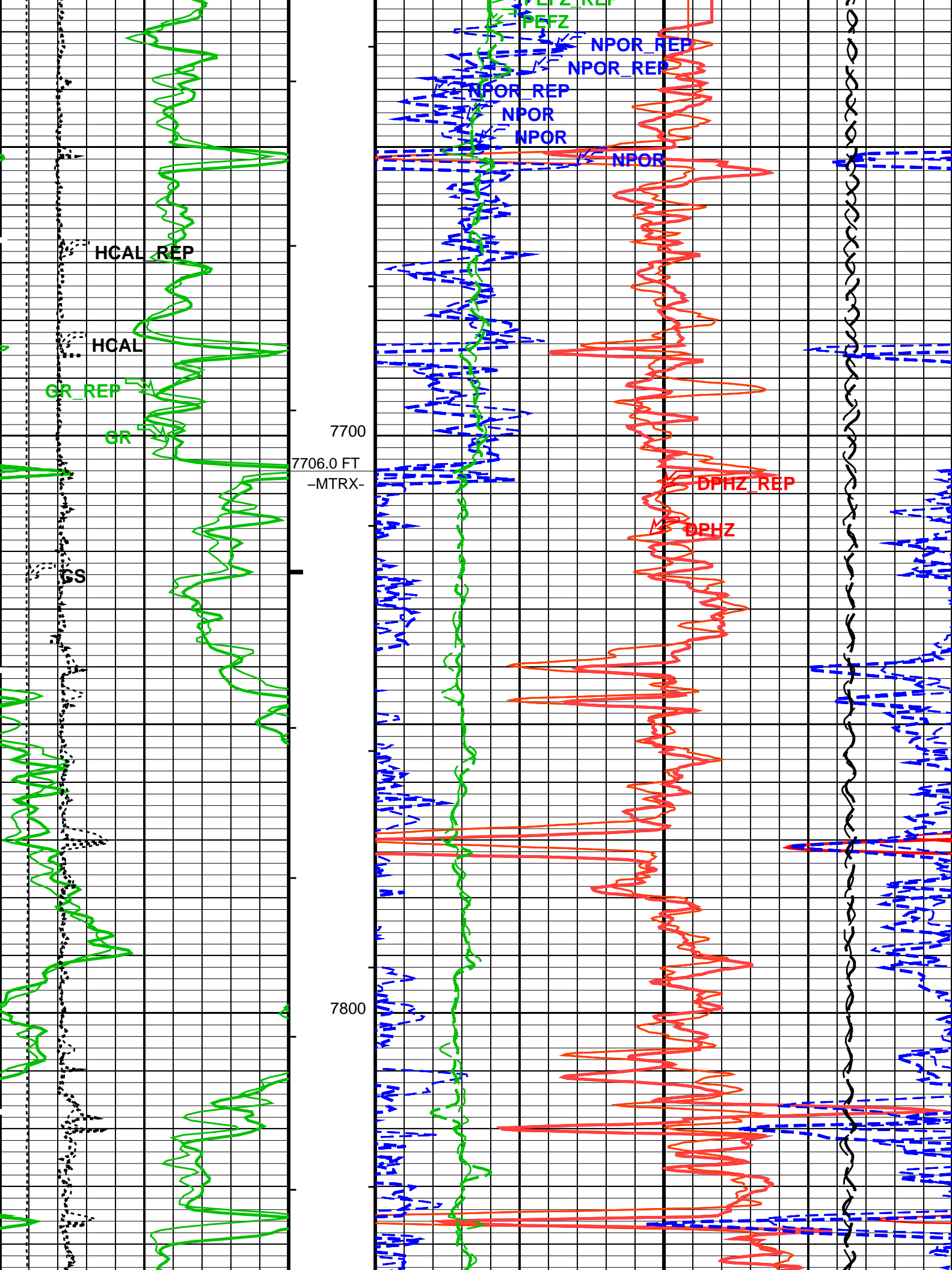
GR\_REP Curve (GR\_REP)  
(GAPI)

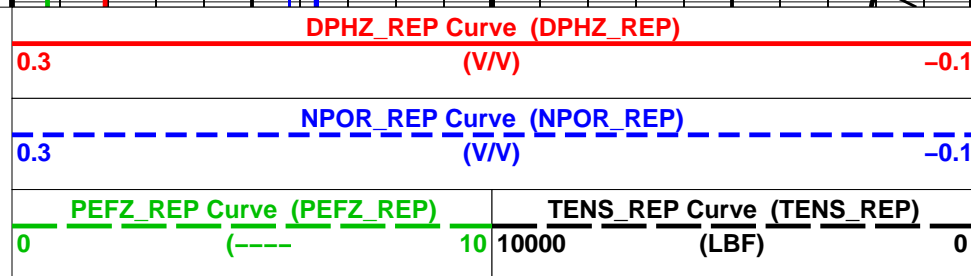
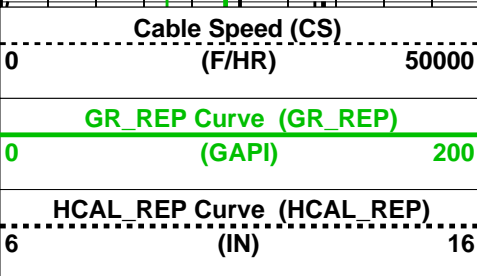
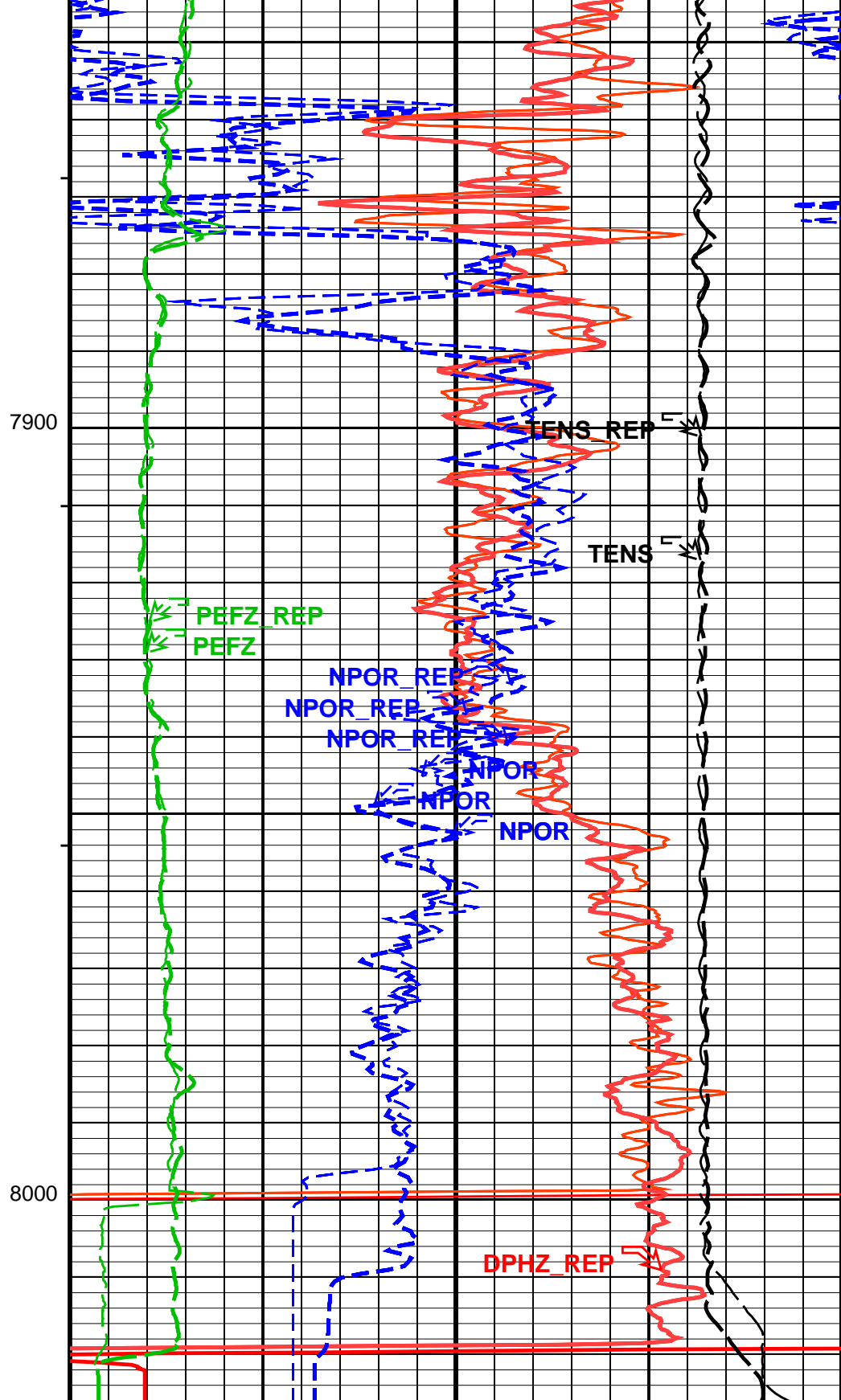
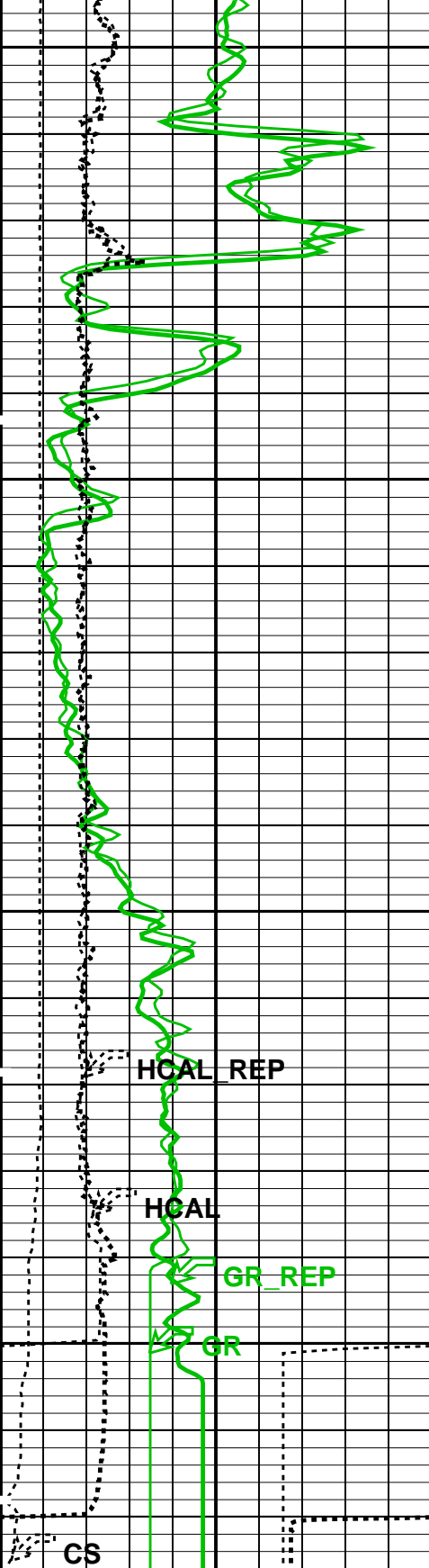
Cable Speed (CS)  
(F/HR)

TENS\_REP Curve (TENS\_REP)  
(LBF)

NPOR\_REP Curve (NPOR\_REP)  
(V/V)

DPHZ\_REP Curve (DPHZ\_REP)  
(V/V)





### PIP SUMMARY

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



Time Mark Every 60 S

## Parameters

DLIS Name	Description	Value	
AIT-M: Array Induction Tool - M			
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
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
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	
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	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
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
STI: Stuck Tool Indicator			
TDL	Total Depth - Logger	8013.00	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
DORL	Depth Offset for Repeat Analysis	0.0	FT
MST	Mud Sample Temperature	81.40	DEGF
RMFS	Resistivity of Mud Filtrate Sample	0.5775	OHMM
TD	Total Depth	8013	FT

Format: PORO\_REP

Vertical Scale: 5" per 100'

Graphics File Created: 16-Jan-2010 14:11

## OP System Version: 17C0-154

AIT-M 17C0-154  
 DTC-H 17C0-154

HILTB-FTB 17C0-154

Input DLIS Files

Output DLIS Files

Schlumberger

UPPER DENSITY LOG 5" = 100'

MAXIS Field Log

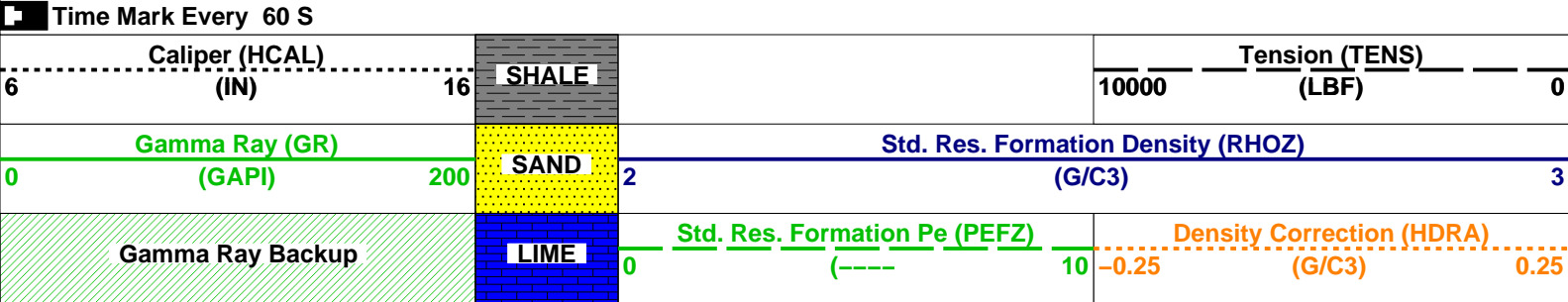
Input DLIS Files

OP System Version: 17C0-154

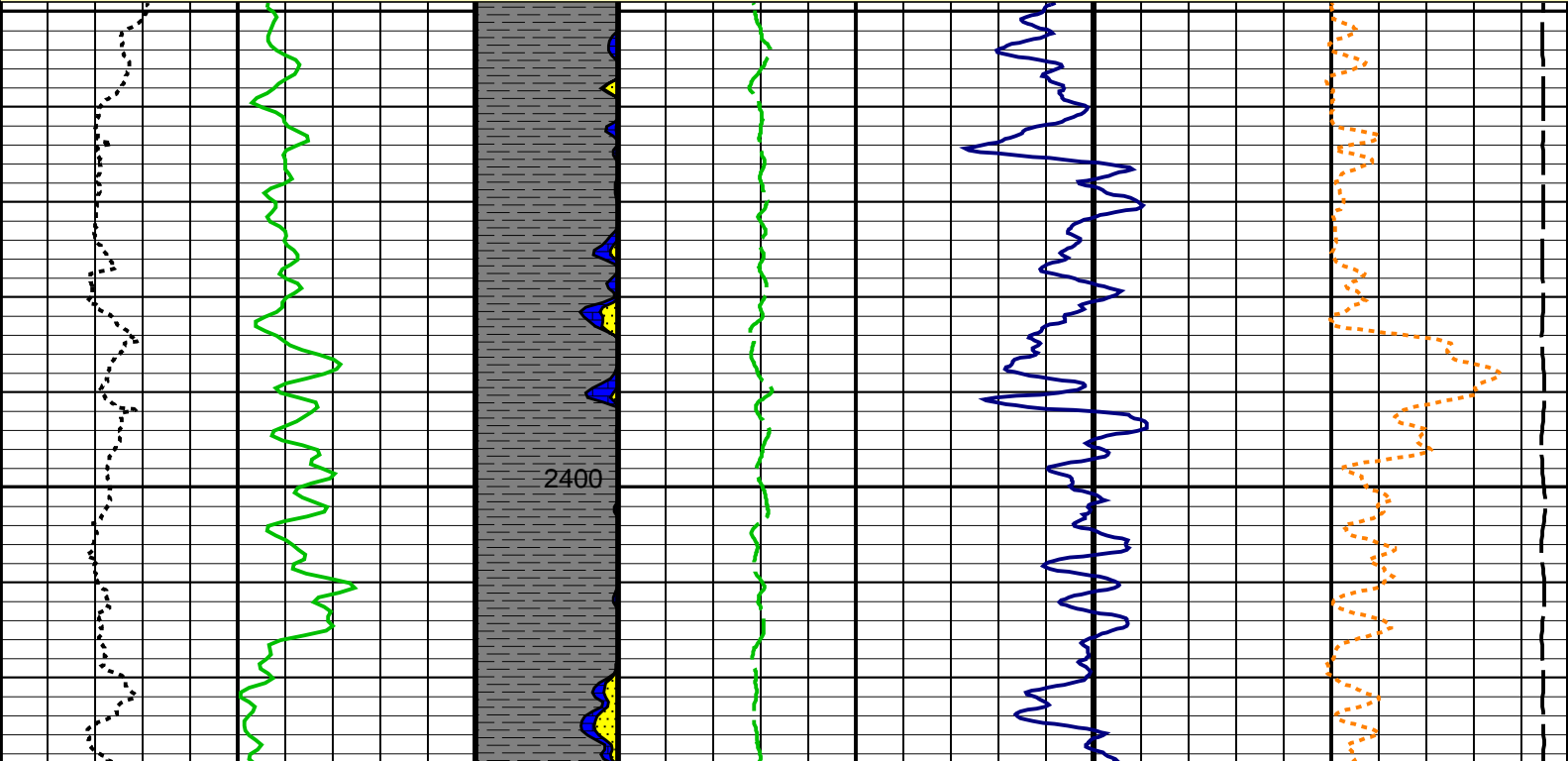
AITM17C0-154HILTD17C0-154

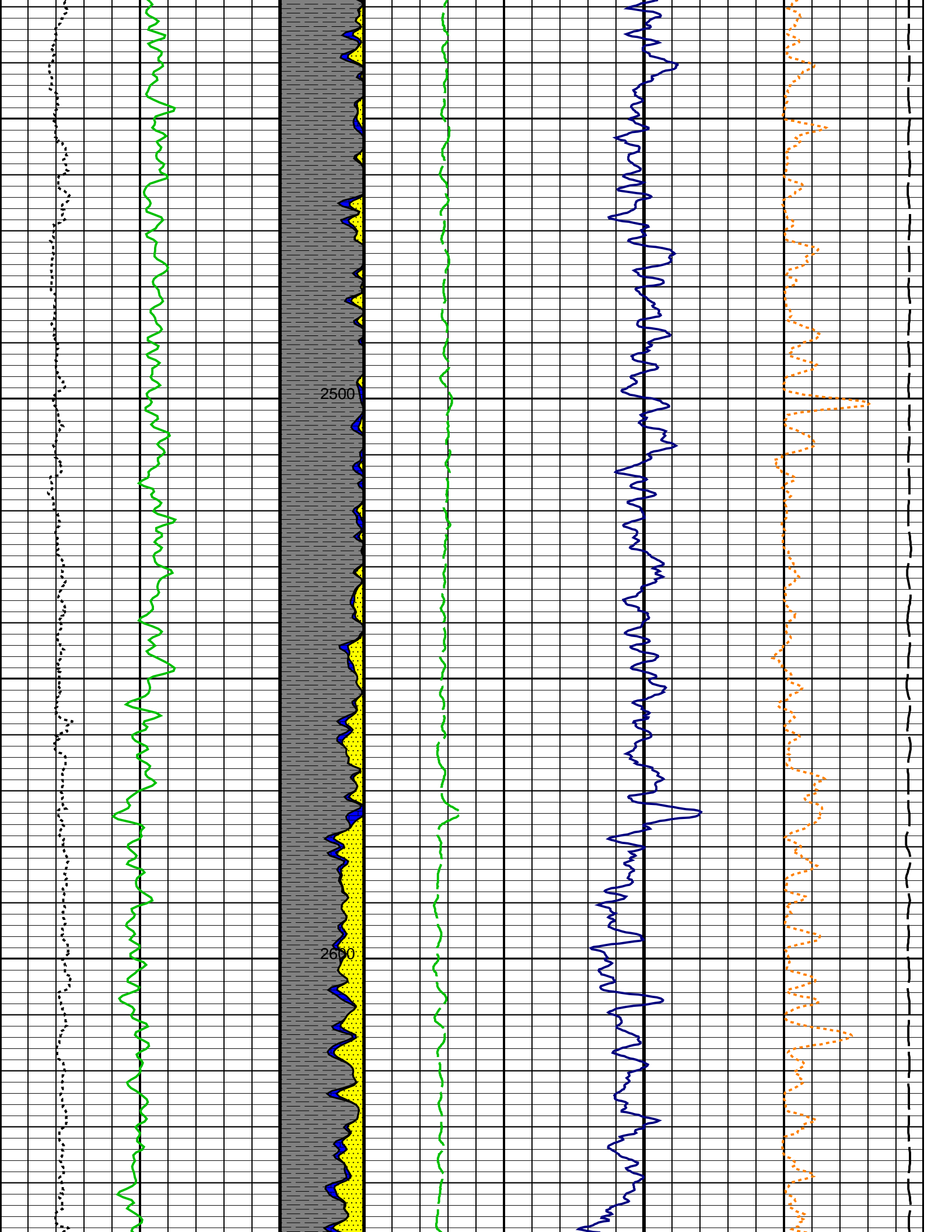
DTCH17C0-154

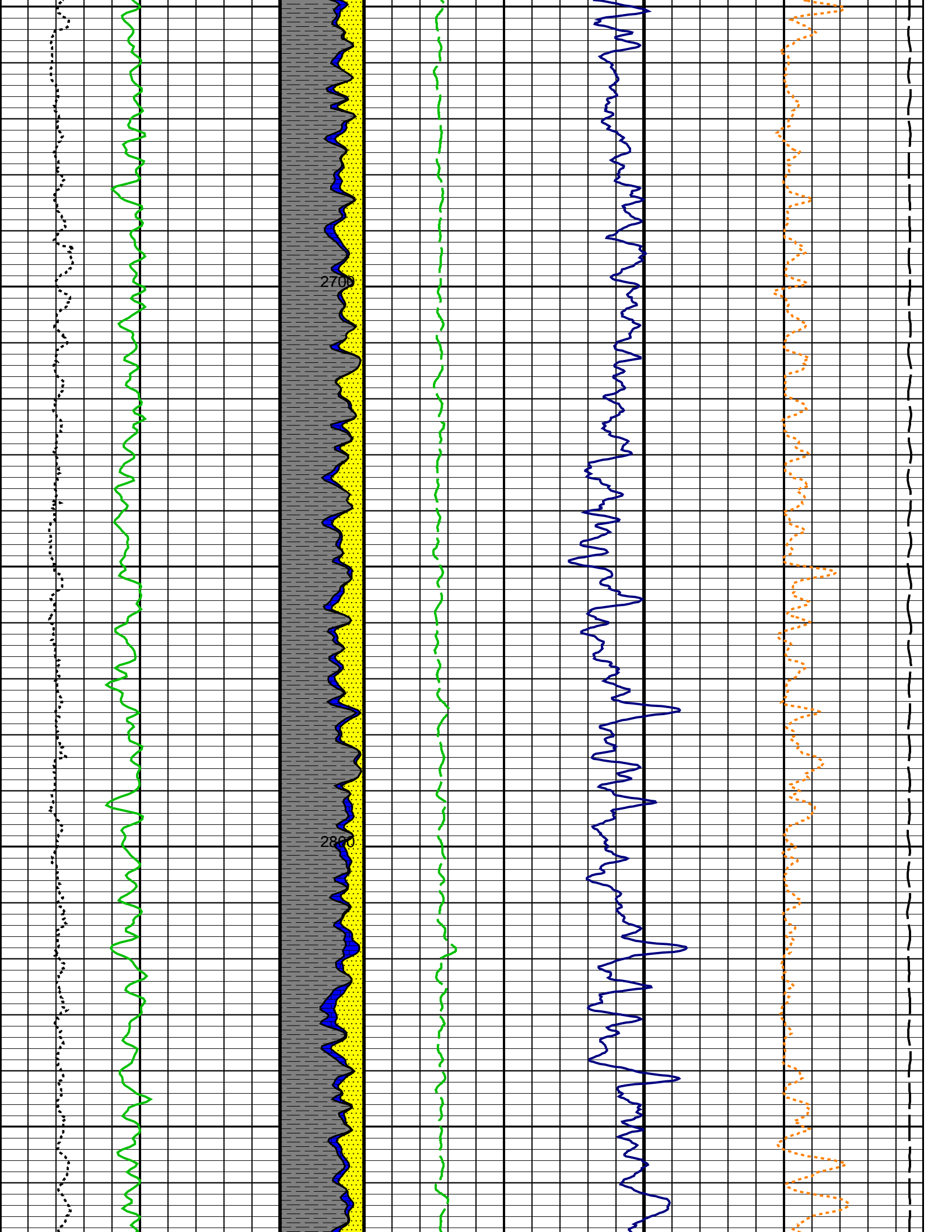
PIP SUMMARY

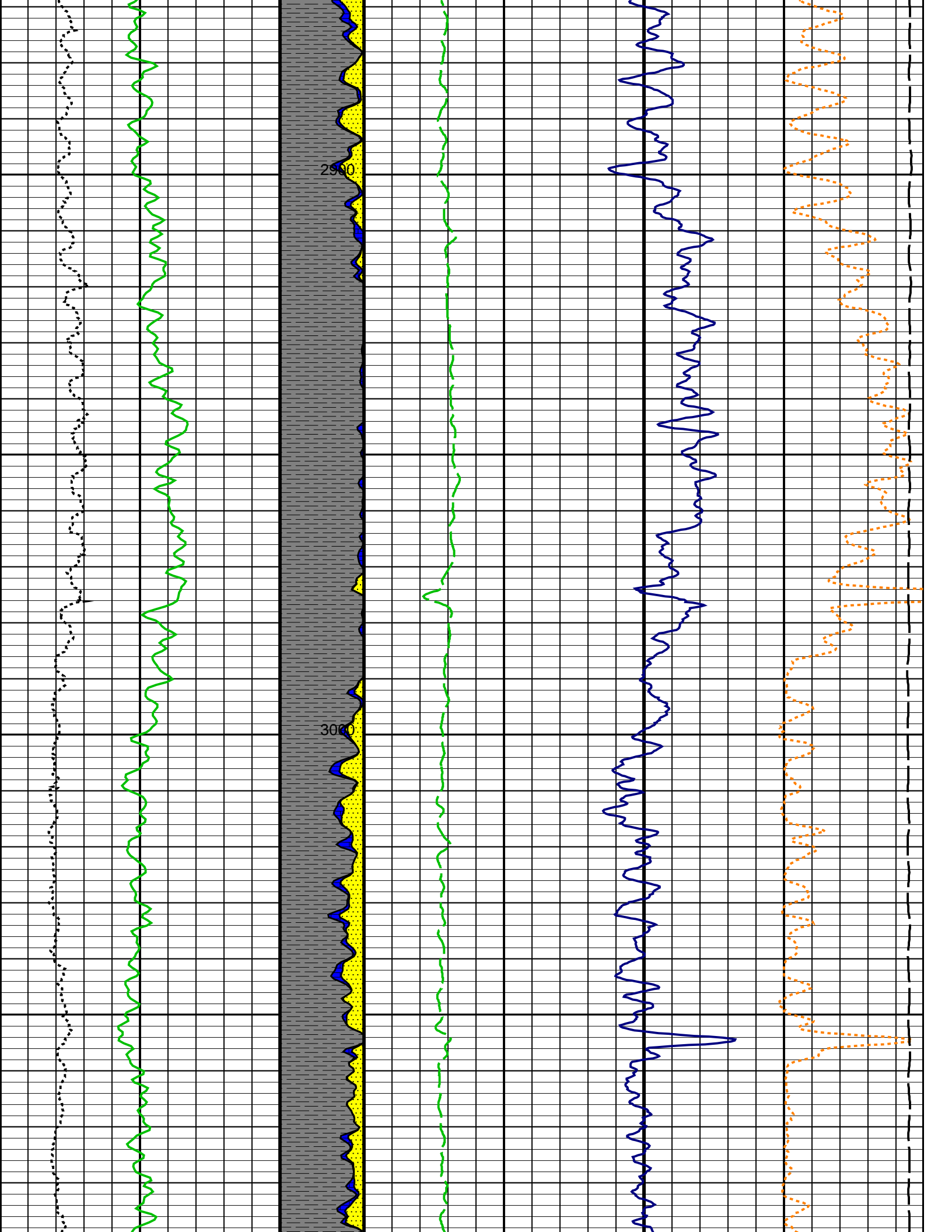


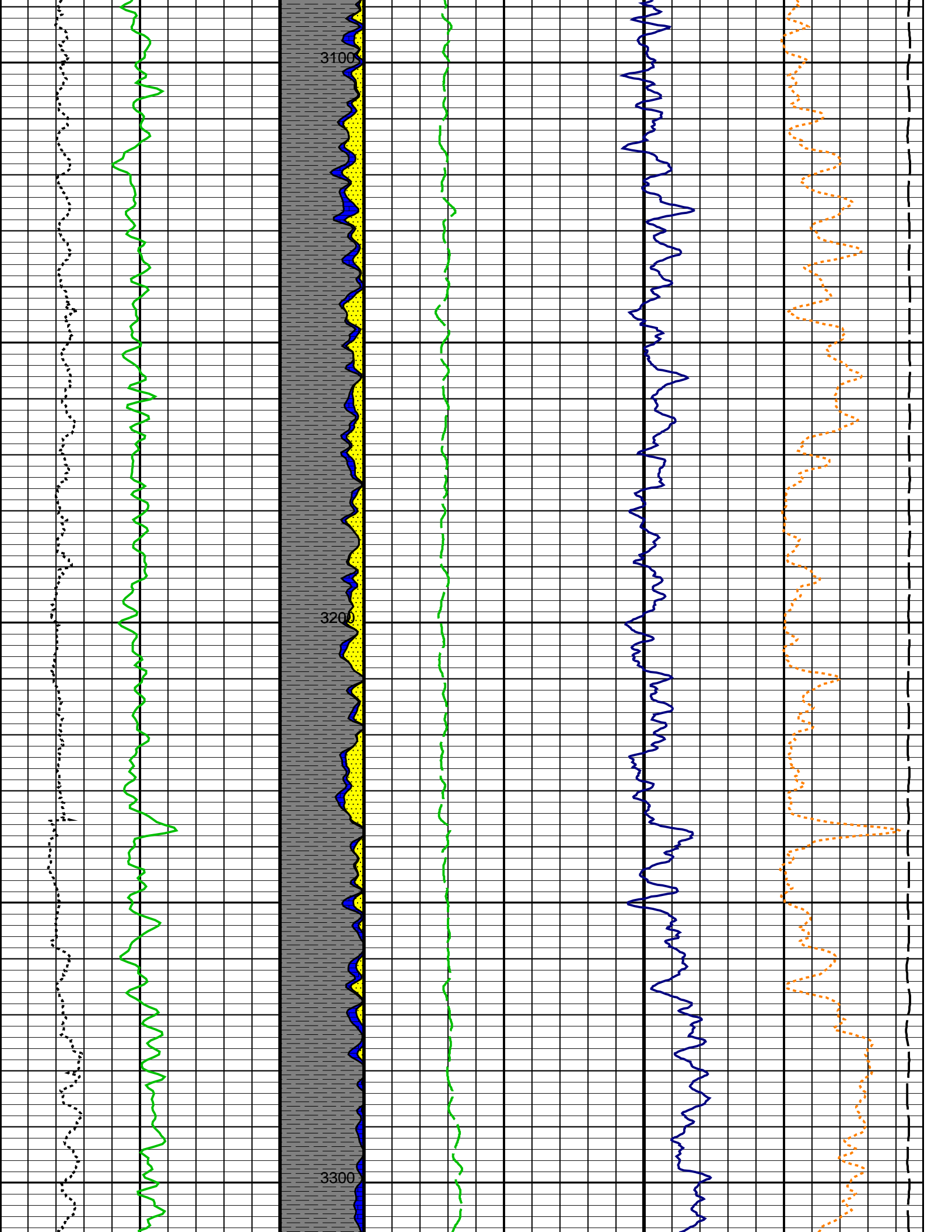
MAIN PASS: \*\*\* PLATFORM EXPRESS - LITHOLOGY DENSITY \*\*\*

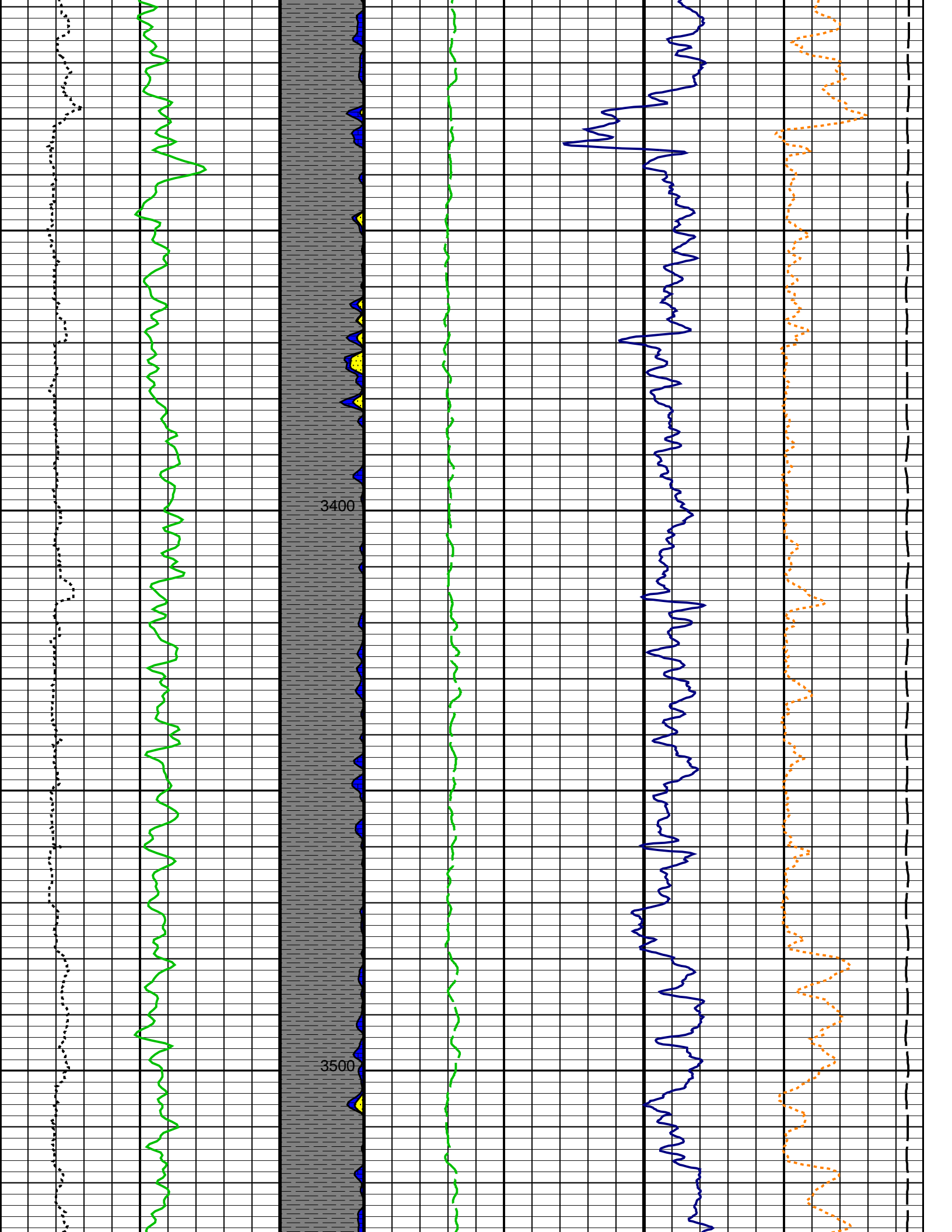


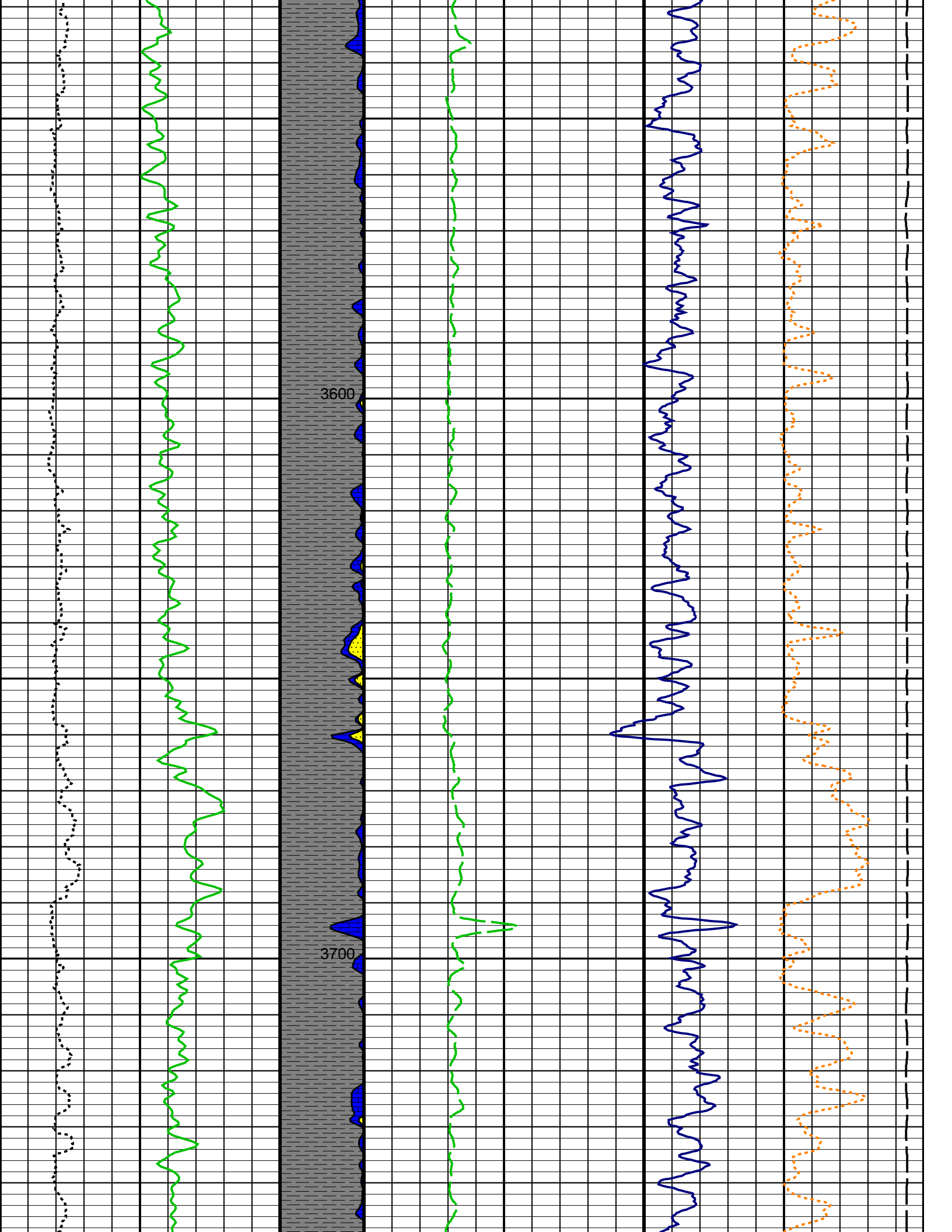




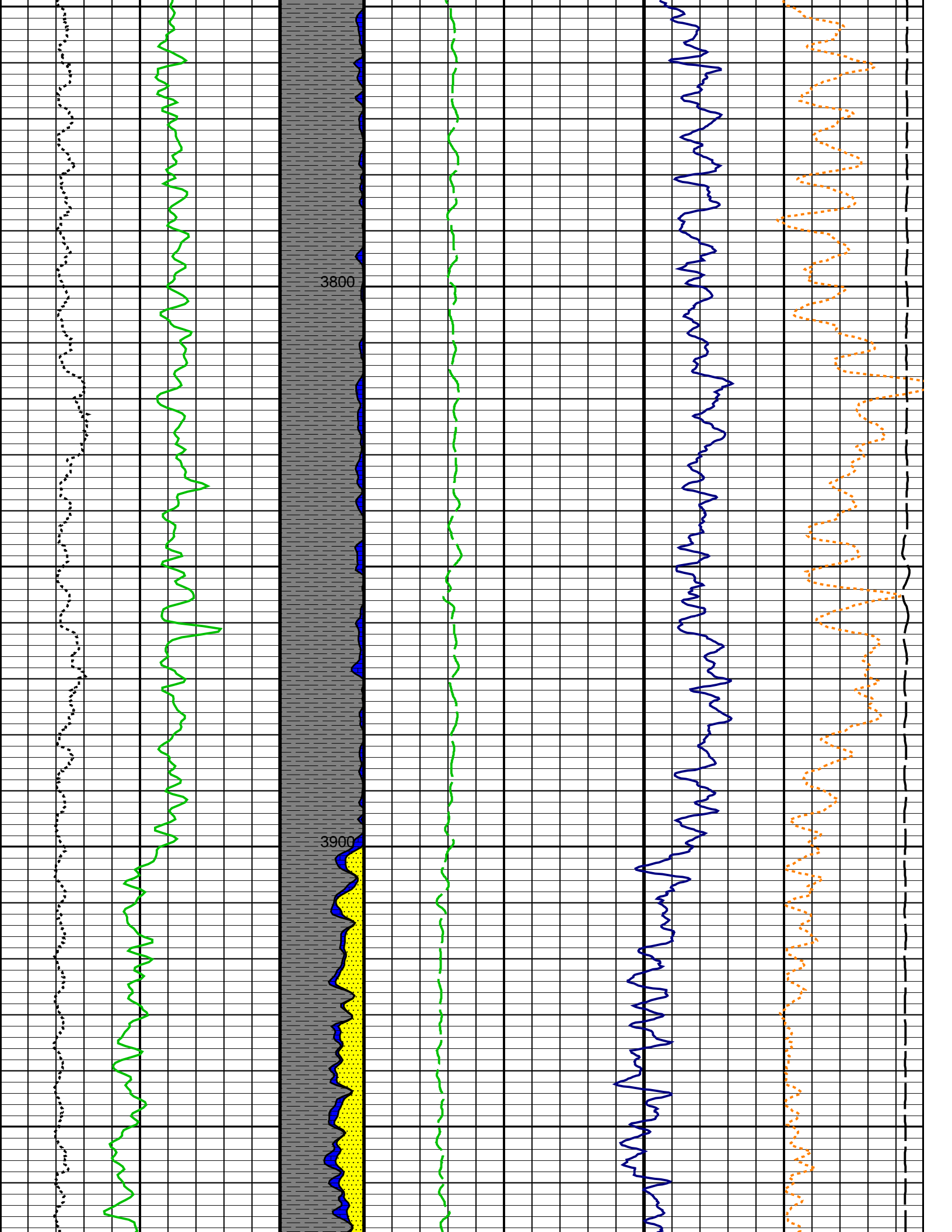


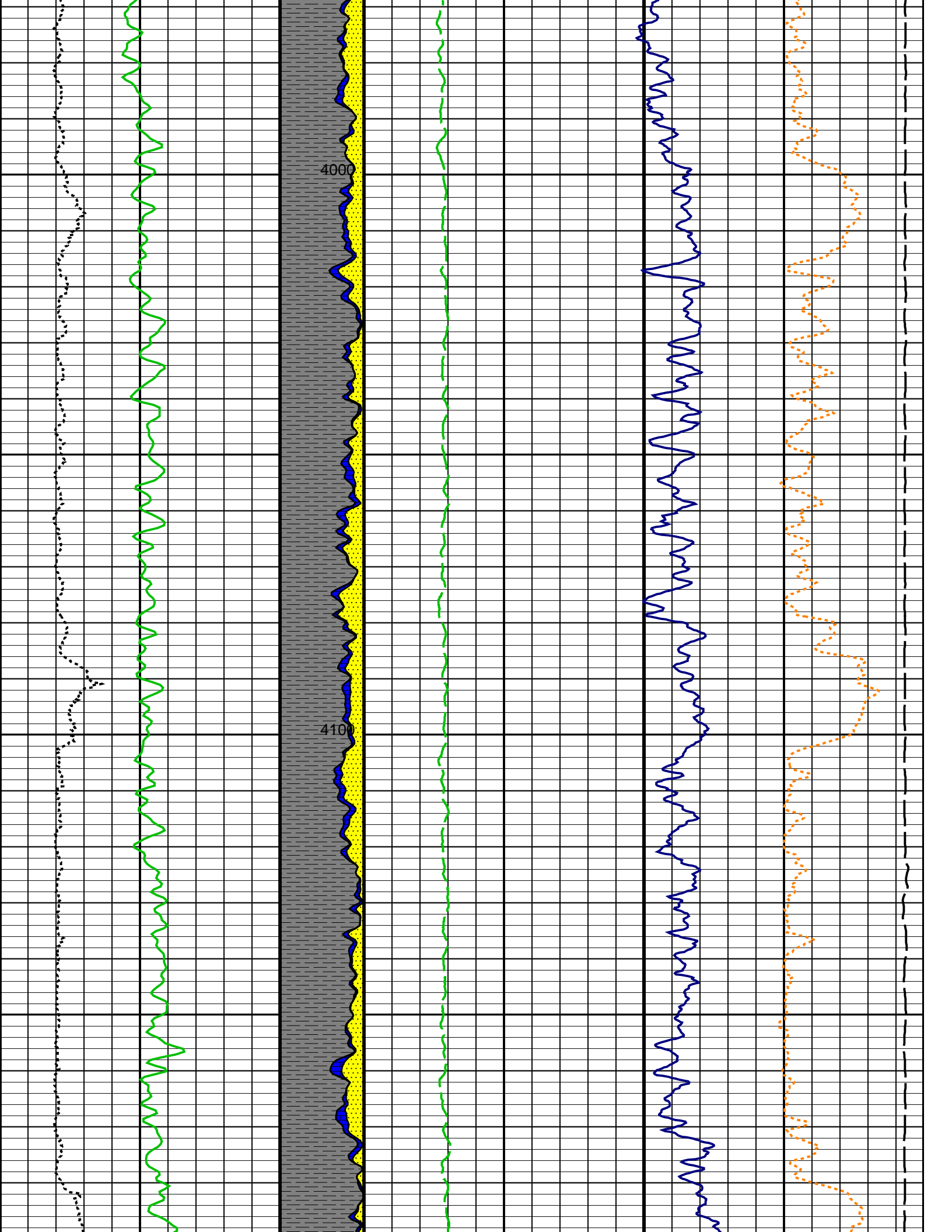


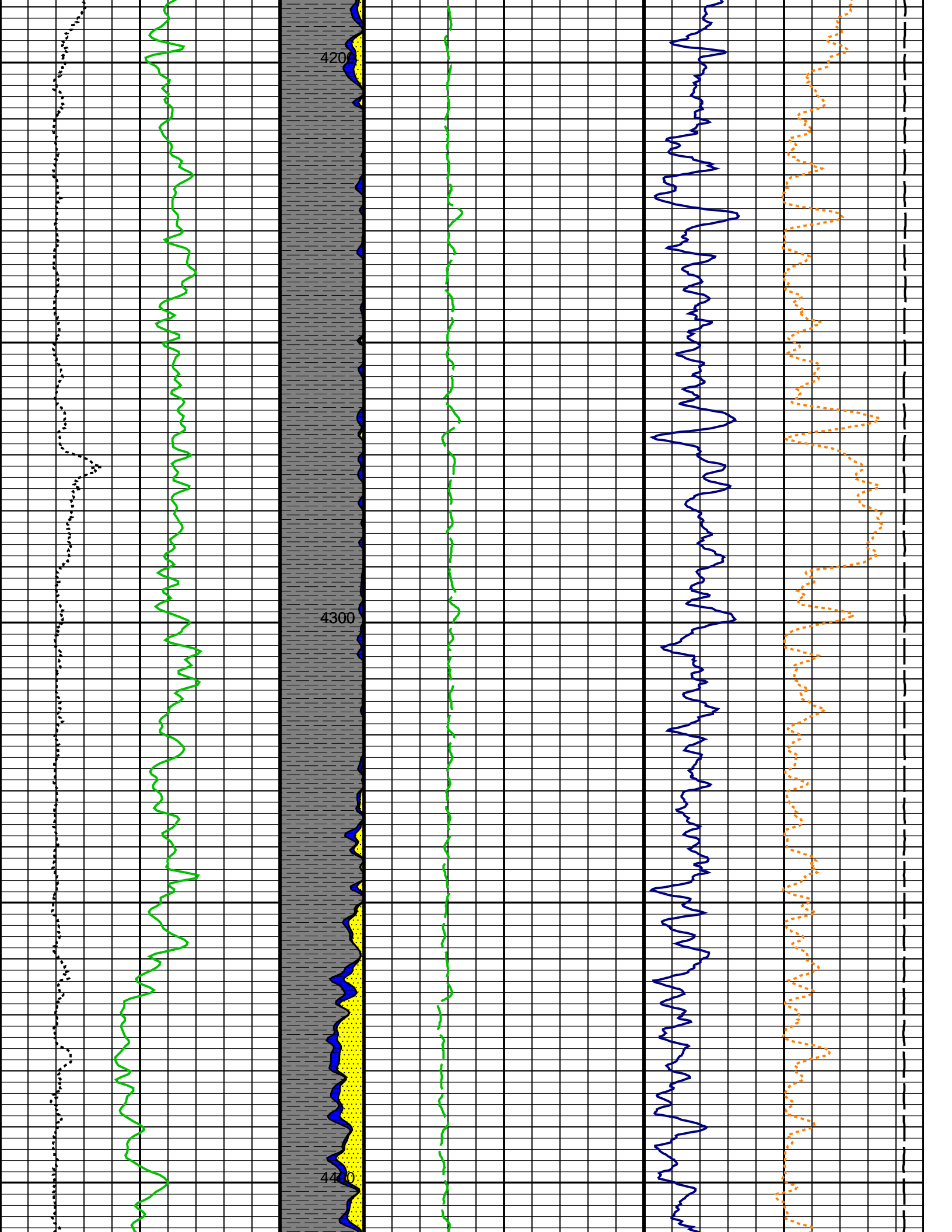


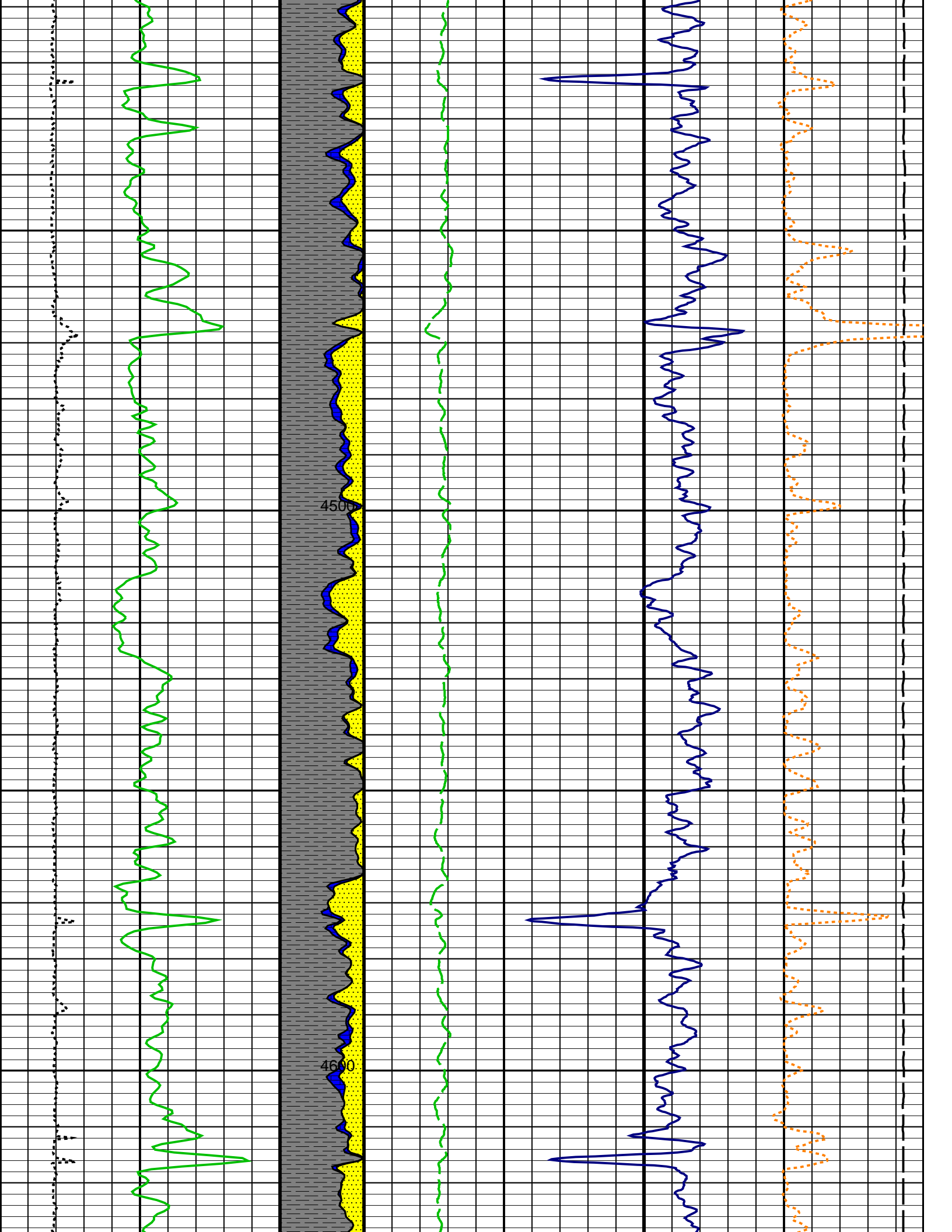


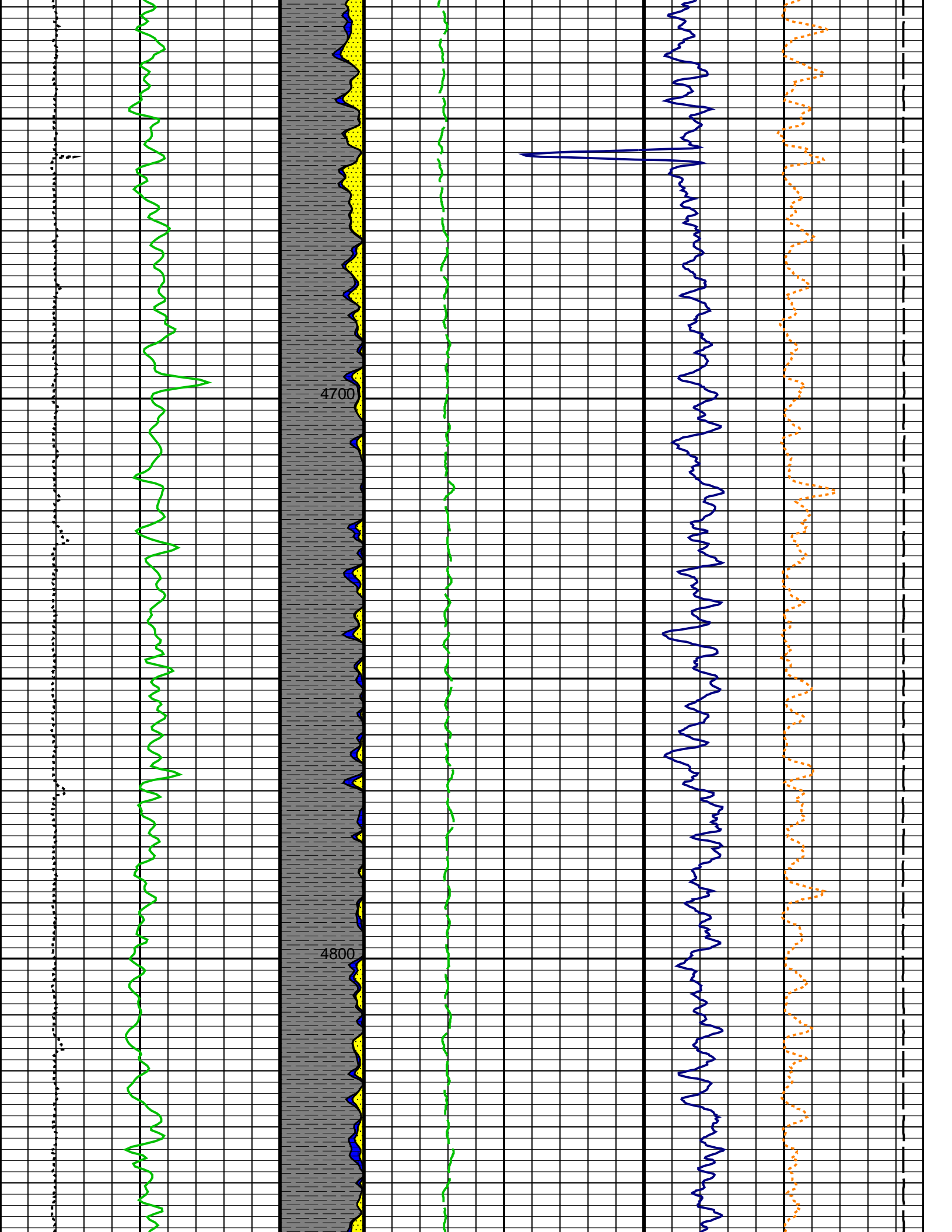


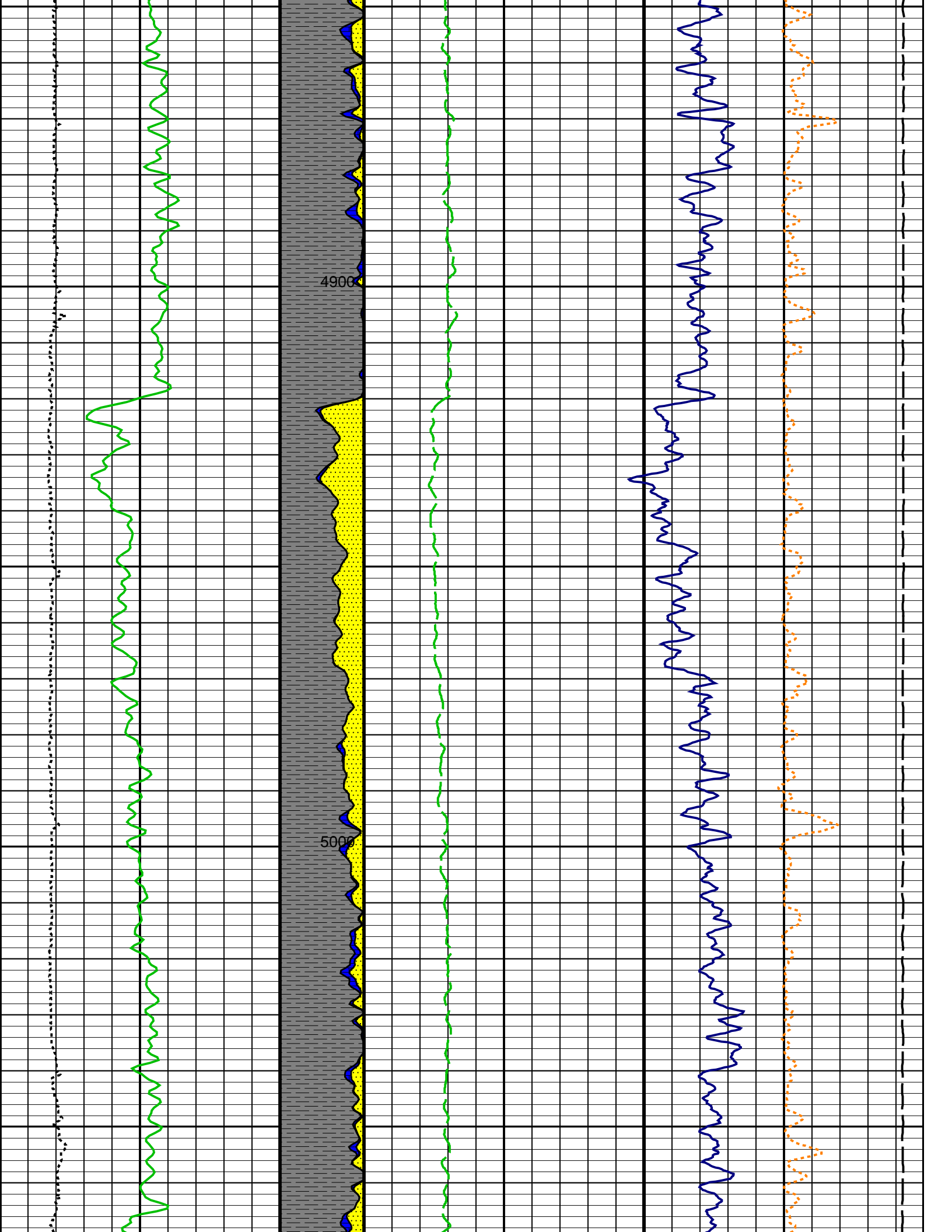


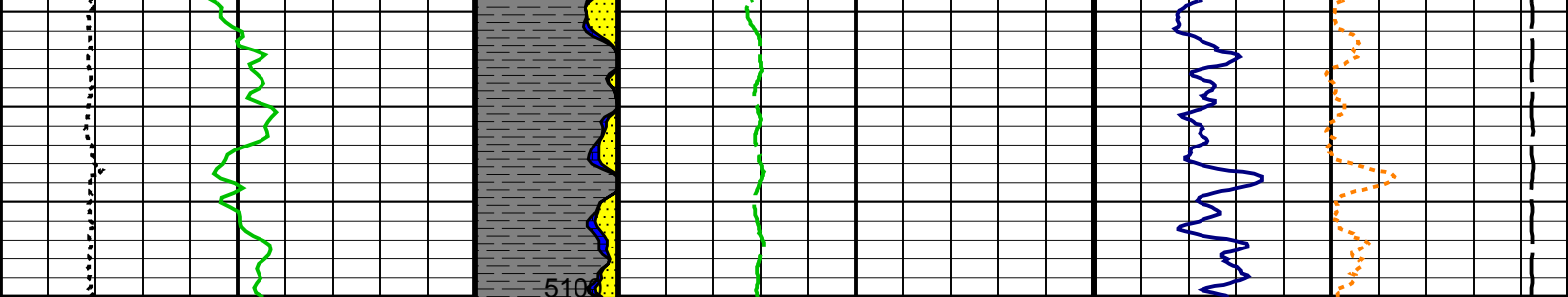












MAIN PASS: \*\*\* PLATFORM EXPRESS – LITHOLOGY DENSITY \*\*\*

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

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HILTB-FTB:	High resolution Integrated Logging Tool-DTS	
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
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: 16-Jan-2010 16:07

OP System Version: 17C0-154

AITM	17C0-154	HILTD	17C0-154
DTCH	17C0-154		

Input DLIS Files

DEFAULT    AIT\_TLD\_MCFL\_CNL\_028PUP    FN:22    PRODUCER    16-Jan-2010 16:01    8026.5 FT    615.5 FT

Schlumberger

LOWER DENSITY LOG 5" = 100'

MAXIS Field Log

Input DLIS Files

DEFAULT    MERGE\_AIT\_027    FN:1    PRODUCER    16-Jan-2010 15:57    8026.5 FT    615.0 FT

Output DLIS Files

# OP System Version: 17C0-154

AIT-M	17C0-154	HILTB-FTB	17C0-154
DTC-H	17C0-154		

## Changed Parameter Summary

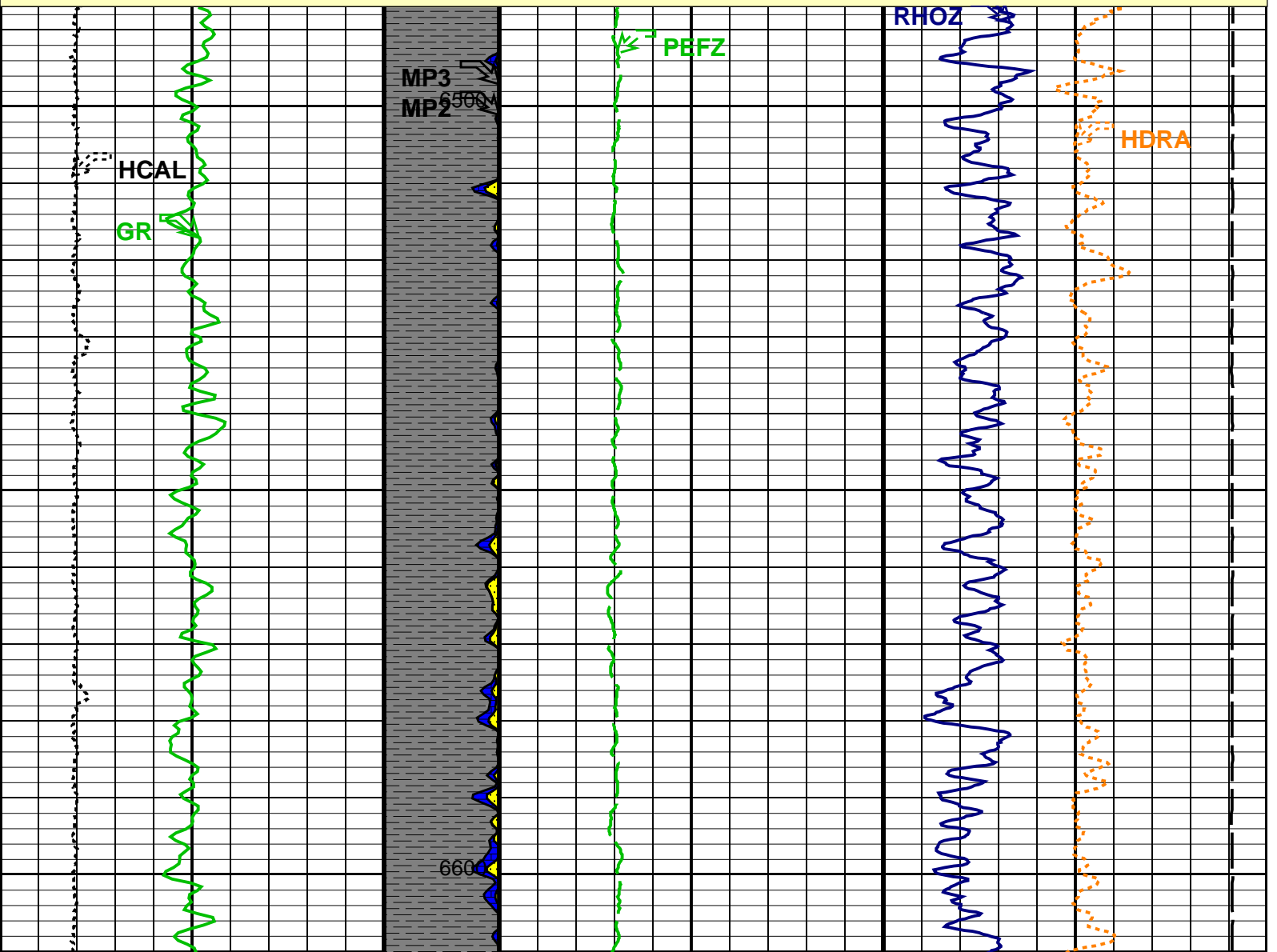
DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	8026.5 16:01:14
	SANDSTONE	SANDSTONE	7839.0 16:01:20
	LIMESTONE	SANDSTONE	7412.0 16:01:35
POUT	SANDSTONE	SANDSTONE	8026.5 16:01:14
	SANDSTONE	SANDSTONE	7839.0 16:01:20
	LIMESTONE	SANDSTONE	7412.0 16:01:35

## PIP SUMMARY

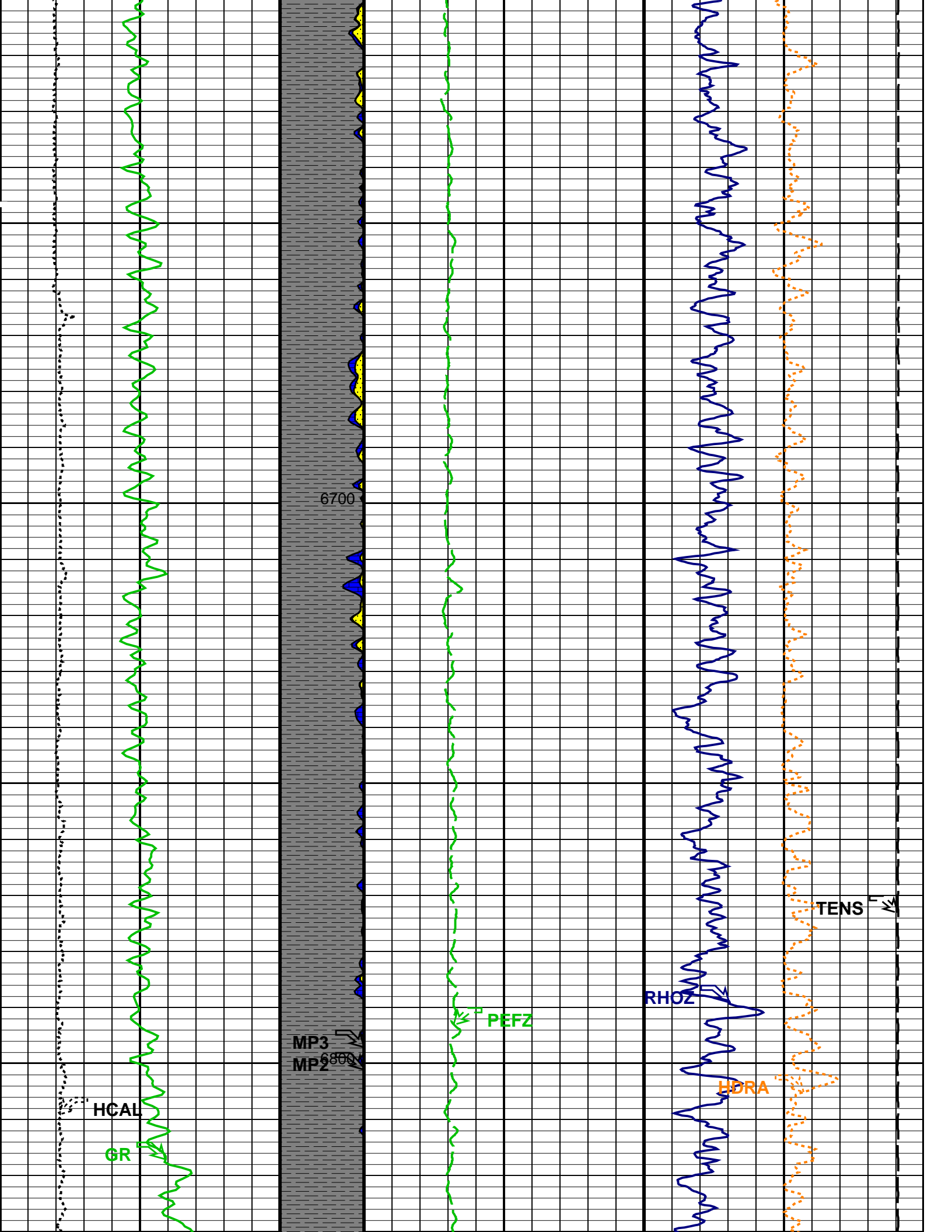
Time Mark Every 60 S

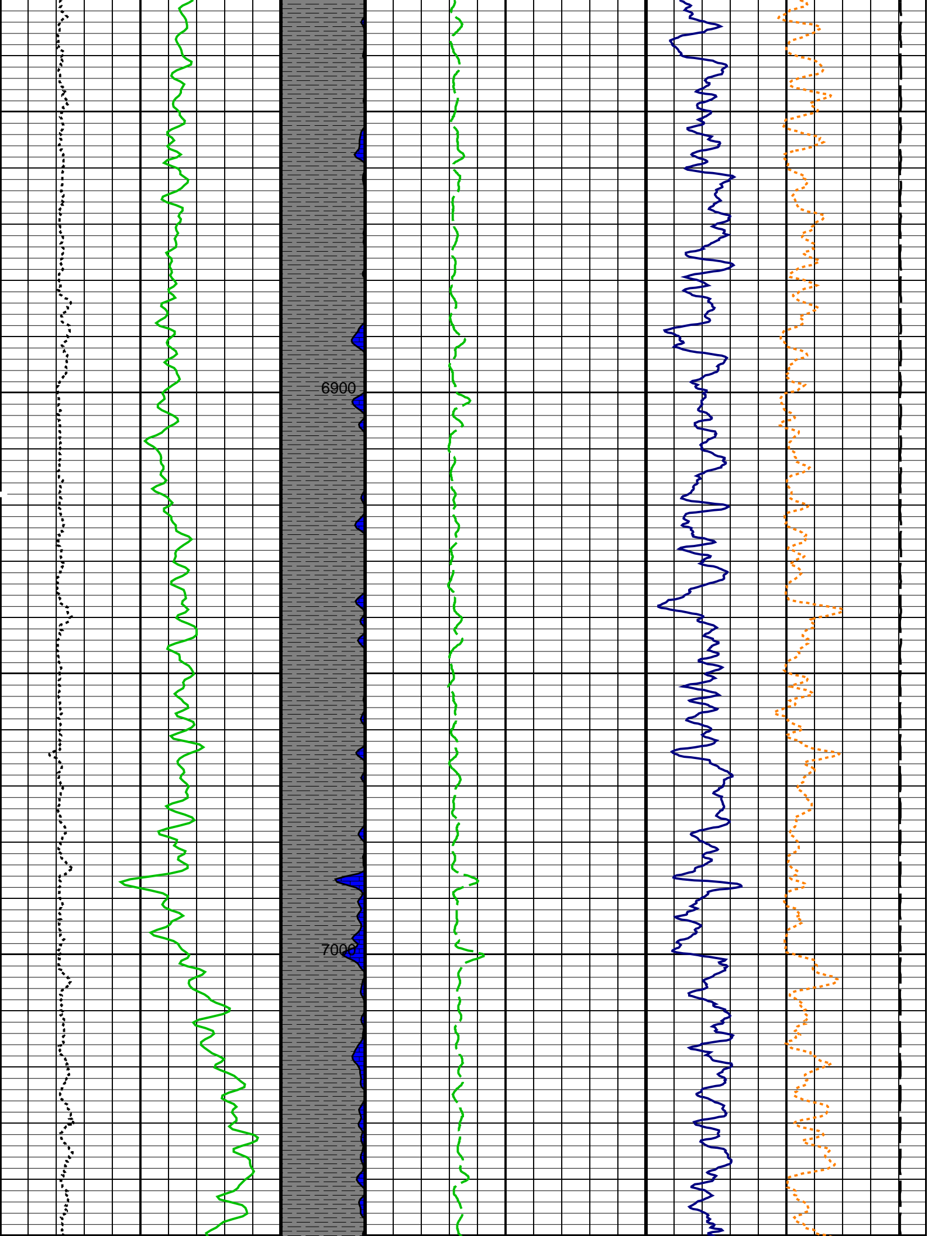
Caliper (HCAL) (IN)		SHALE	Tension (TENS) (LBF)	
6	16		10000	0
Gamma Ray (GR) (GAPI)		SAND	Std. Res. Formation Density (RHOZ) (G/C3)	
0	200		2	3
Gamma Ray Backup		LIME	Std. Res. Formation Pe (PEFZ) (----	Density Correction (HDRA) (G/C3)
			0 10	-0.25 0.25

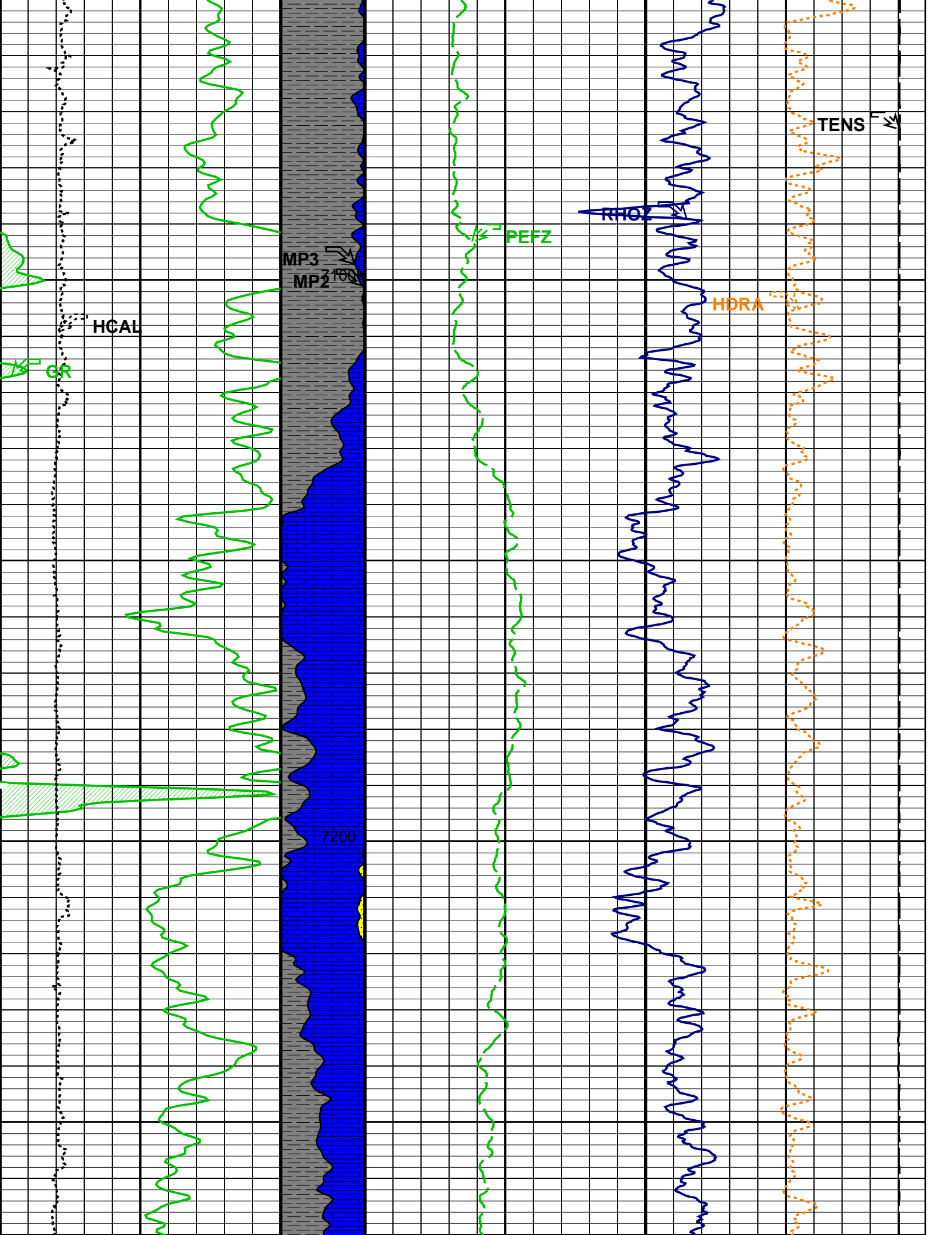
MAIN PASS: \*\*\* PLATFORM EXPRESS - LITHOLOGY DENSITY \*\*\*

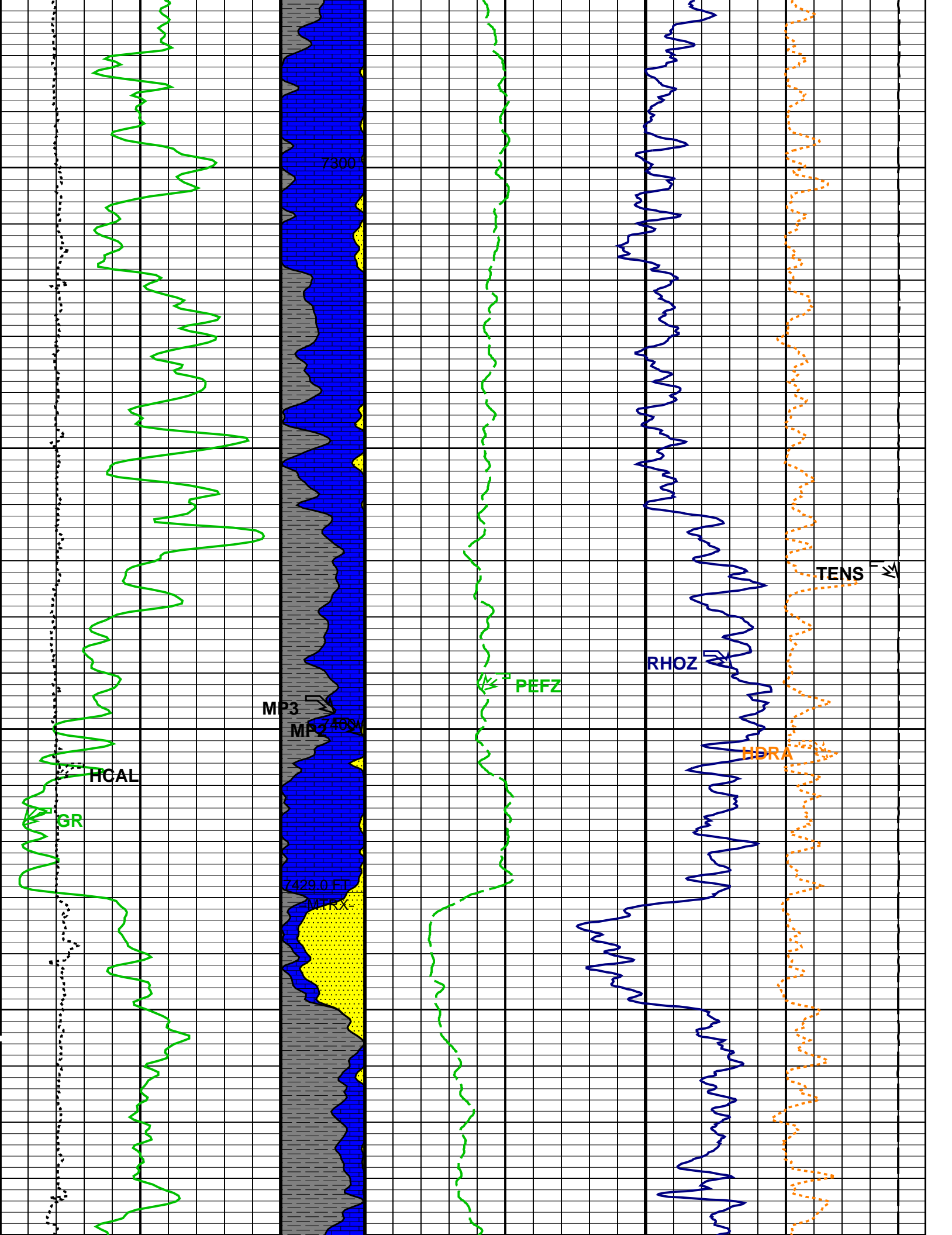


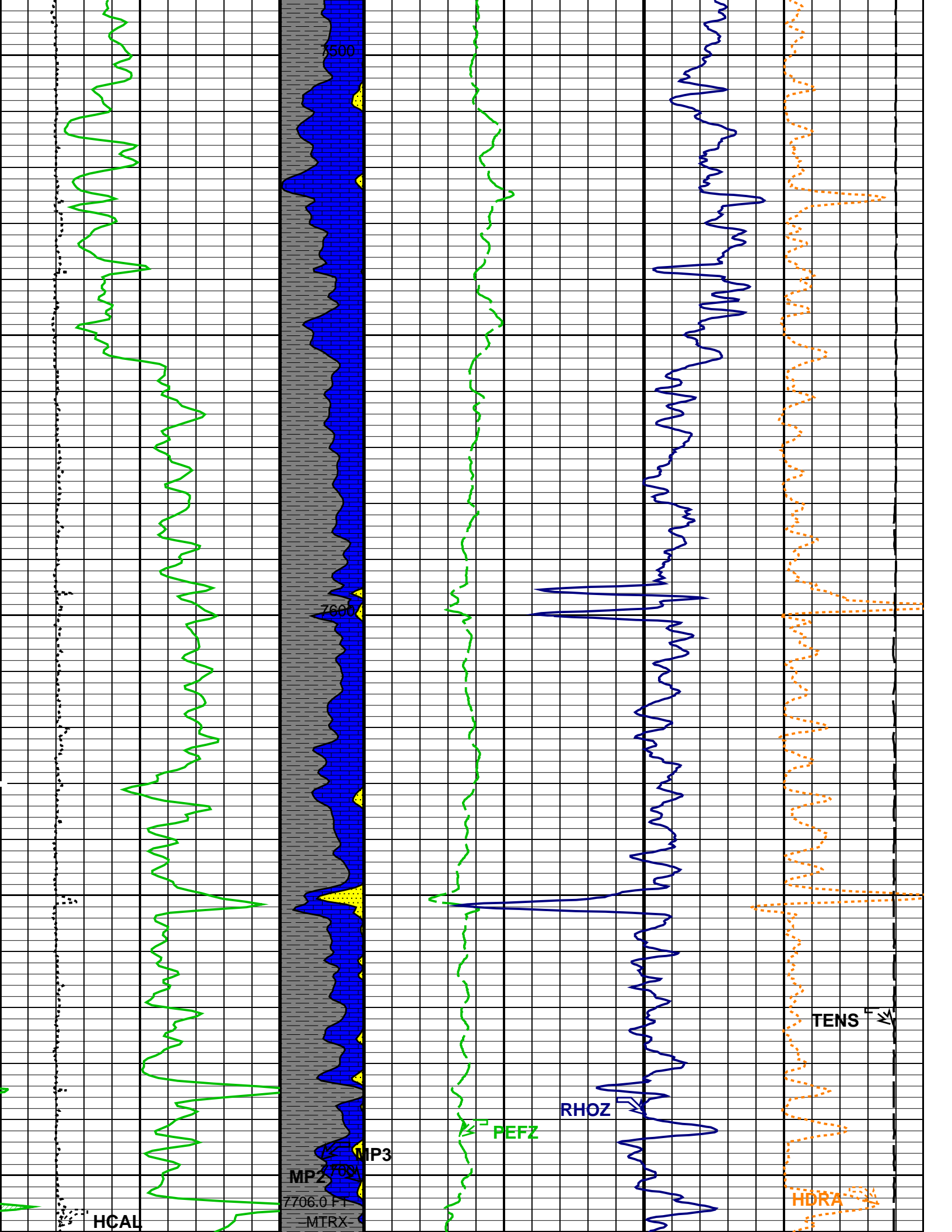


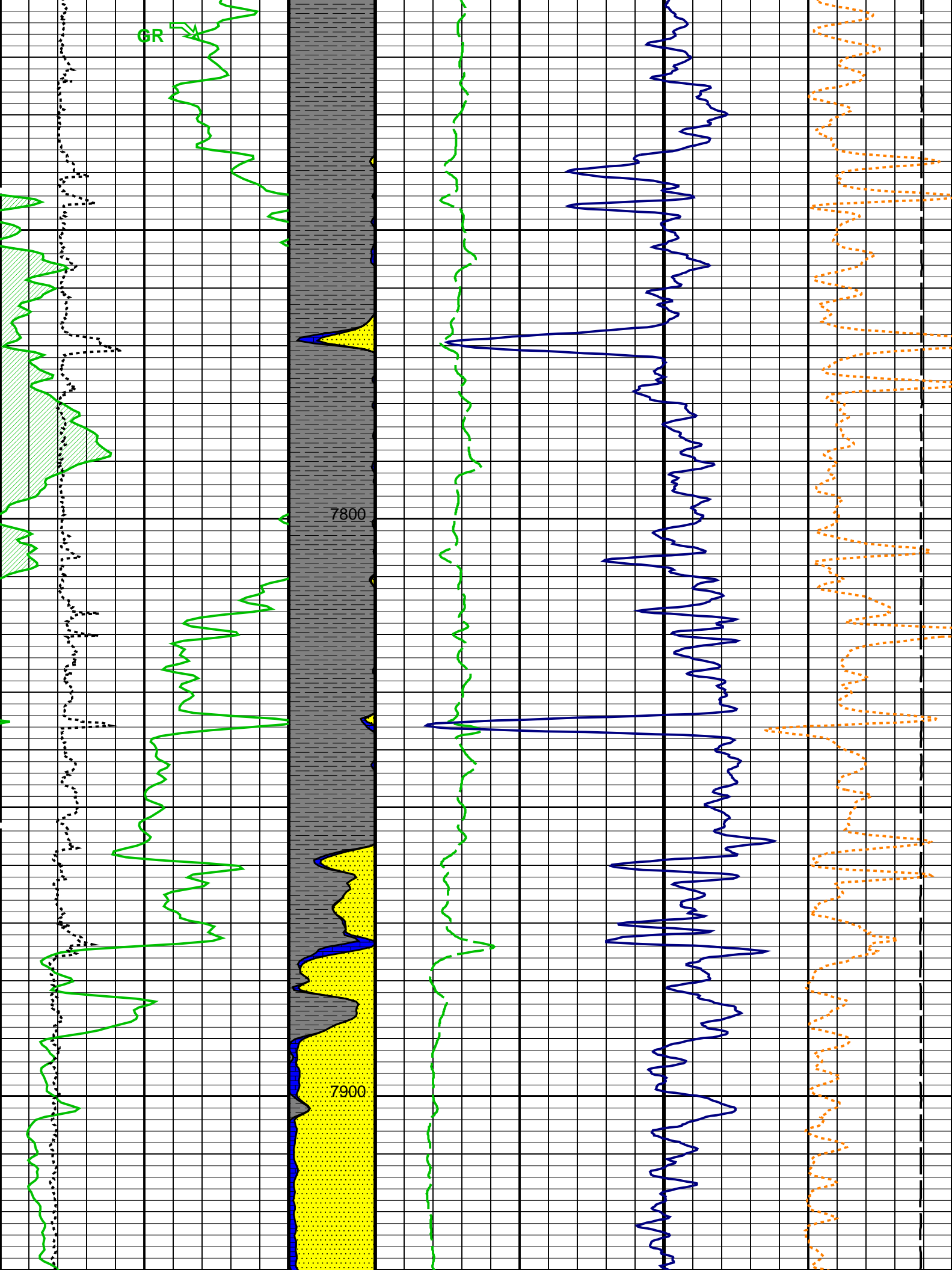


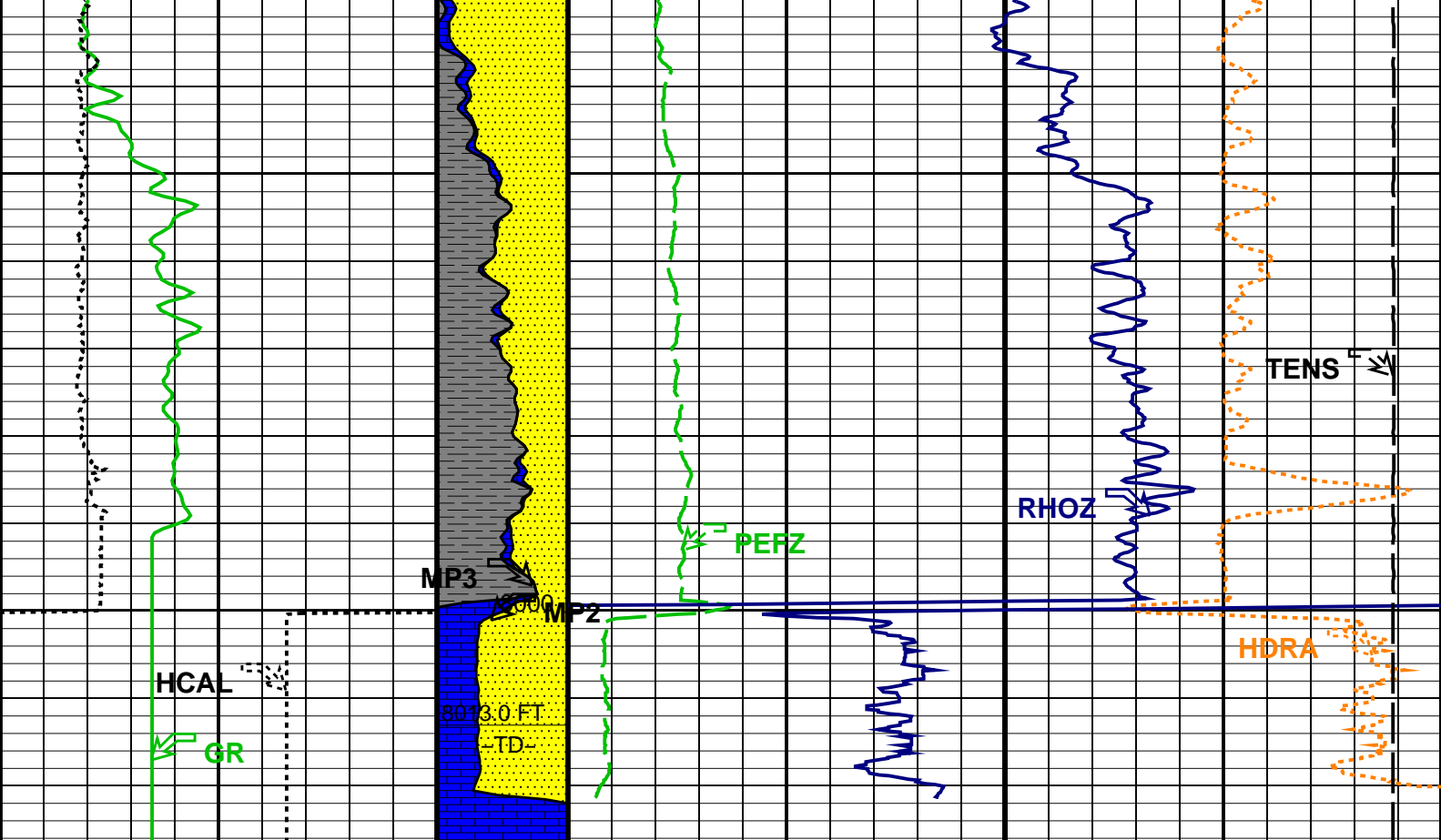












MAIN PASS: \*\*\* PLATFORM EXPRESS – LITHOLOGY DENSITY \*\*\*

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

#### PIP SUMMARY

Time Mark Every 60 S

### Parameters

DLIS Name	Description	Value	
AIT-M: Array Induction Tool – M			
BHT	Bottom Hole Temperature (used in calculations)	217	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHT	Bottom Hole Temperature (used in calculations)	217	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	LINEAR_ESTIMATE	
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
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)	217	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	PERT: Preliminary Evaluation – Real Time		
BDPS	Bulk Density Processing Selector	Standard	
BHT	Bottom Hole Temperature (used in calculations)	217	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	LINEAR_ESTIMATE	
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	
	System and Miscellaneous		
BS	Bit Size	7.875	IN
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	0.5775	OHMM
TD	Total Depth	8013	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: LOWER\_DENS      Vertical Scale: 5" per 100'      Graphics File Created: 16–Jan–2010 16:01

## OP System Version: 17C0–154

AIT–M	17C0–154	HILTB–FTB	17C0–154
DTC–H	17C0–154		

### Input DLIS Files

DEFAULT	MERGE_AIT_027	FN:1	PRODUCER	16–Jan–2010 15:57	8026.5 FT	615.0 FT
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### Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_028PUP	FN:22	PRODUCER	16–Jan–2010 16:01
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**Schlumberger**

**BEFORE CALIBRATIONS**



# Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
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## Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase

Master: 13-Jan-2010 12:35 Before: 15-Jan-2010 16:47

Thru Cal Magnitude – 0	0	0.6204	0.6205	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.271	1.271	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6318	0.6316	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7131	0.7129	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.334	1.334	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.953	1.953	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.949	1.949	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.419	1.416	N/A	N/A	N/A	V
Thru Cal Phase – 0	0	180.2	181.6	N/A	N/A	N/A	DEG
Thru Cal Phase – 1	0	179.1	180.6	N/A	N/A	N/A	DEG
Thru Cal Phase – 2	0	175.5	177.0	N/A	N/A	N/A	DEG
Thru Cal Phase – 3	0	174.8	176.3	N/A	N/A	N/A	DEG
Thru Cal Phase – 4	0	168.6	170.1	N/A	N/A	N/A	DEG
Thru Cal Phase – 5	0	166.9	168.4	N/A	N/A	N/A	DEG
Thru Cal Phase – 6	0	167.0	168.4	N/A	N/A	N/A	DEG
Thru Cal Phase – 7	0	166.2	167.6	N/A	N/A	N/A	DEG

## Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Auxiliary

Master: 13-Jan-2010 12:35 Before: 15-Jan-2010 16:47

Array Induction SPA Plus	991.0	992.7	992.7	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	0.6657	0.6835	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9170	0.9196	0.9196	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.0006534	0.0006749	N/A	N/A	N/A	V

## Array Induction Tool – M Wellsite Calibration – Test Loop Gain Correction

Master: 13-Jan-2010 12:35

Test Loop Gain Correctio – 0	0	1.034	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 1	0	1.022	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 2	0	1.015	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 3	0	1.011	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 4	0	0.9928	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 5	0	0.9883	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 6	0	0.9934	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 7	0	1.004	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 0	0	0.4776	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 1	0	0.7064	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 2	0	0.1915	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 3	0	0.1817	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 4	0	0.1287	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 5	0	-0.03256	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 6	0	0.3307	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 7	0	-0.2143	N/A	N/A	N/A	N/A	DEG

## Array Induction Tool – M Wellsite Calibration – Sonde Error Correction

Master: 13-Jan-2010 12:35

R Sonde Error Correction – 0	0	-73.77	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	170.3	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	115.4	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	61.79	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	25.72	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	11.35	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	9.275	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-1.480	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	-344.0	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	133.8	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	62.75	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	-33.85	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	22.34	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	-14.54	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	-4.481	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	-10.82	N/A	N/A	N/A	N/A	MM/M

## Array Induction Tool – M Wellsite Calibration – Mud Gain Correction

Master: 13-Jan-2010 12:35

Coarse – Mag, Real, Imag – 0	0	0.8500	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 1	0	0.8500	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 2	0	0.8500	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 0	0	0.8500	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 1	0	0.8500	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 2	0	0.8500	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool-DTS Wellsite Calibration – Stab Measurement Summary							
Before: 15-Jan-2010 17:02							
BS Window Ratio	0.7094	N/A	0.7116	N/A	N/A	N/A	
BS Window Sum	8629	N/A	8598	N/A	N/A	N/A	CPS
SS Window Ratio	0.4898	N/A	0.4908	N/A	N/A	N/A	
SS Window Sum	9755	N/A	9725	N/A	N/A	N/A	CPS
LS Window Ratio	0.2973	N/A	0.2892	N/A	N/A	N/A	
LS Window Sum	1027	N/A	1009	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Photo-multiplier High Voltages Calibrations							
Before: 15-Jan-2010 17:02							
BS PM High Voltage (Command)	1499	N/A	1492	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1689	N/A	1690	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1479	N/A	1478	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Crystal Quality Resolutions Calibration							
Before: 15-Jan-2010 17:02							
BS Crystal Resolution	10.47	N/A	10.54	N/A	N/A	N/A	%
SS Crystal Resolution	9.822	N/A	9.881	N/A	N/A	N/A	%
LS Crystal Resolution	10.15	N/A	10.16	N/A	N/A	N/A	%
High resolution Integrated Logging Tool-DTS Wellsite Calibration – MCFL Calibration							
Before: 15-Jan-2010 16:48							
Raw B0 Resistivity	3875	N/A	3853	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3797	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3800	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool-DTS Wellsite Calibration – HILT Caliper Calibration							
Before: 15-Jan-2010 16:48							
HILT Caliper Zero Measurement	8.000	N/A	8.543	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.64	N/A	N/A	N/A	IN
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Detector Calibration							
Before: 15-Jan-2010 16:47							
Gamma Ray Background	30.00	N/A	85.52	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	179.7	N/A	179.7	N/A	N/A	16.33	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Zero Measurement							
Master: 10-Jan-2010 18:05 Before: 15-Jan-2010 16:48							
CNTC Background	26.74	26.74	26.89	N/A	N/A	4.011	CPS
CFTC Background	26.83	26.83	28.58	N/A	N/A	4.025	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Ratio Measurement							
Master: 10-Jan-2010 18:05							
Thermal Near Corr. (Tank)	5800	5204	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2196	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.370	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Accelerometer Calibration							
Before: 16-Jan-2010 13:23							
Z-Axis Acceleration	32.19	N/A	32.08	N/A	N/A	N/A	F/S2
High resolution Integrated Logging Tool-DTS Master Calibration – Inversion results							
Master: 20-Dec-2009 17:11							
Rho Aluminum	2.596	2.600	--	--	--	--	G/C3
Rho Magnesium	1.686	1.689	--	--	--	--	G/C3
Pe Aluminum	2.570	2.536	--	--	--	--	
Pe Magnesium	2.650	2.630	--	--	--	--	
High resolution Integrated Logging Tool-DTS Master Calibration – Deviation Summary							
Master: 20-Dec-2009 17:11							
BS Average Deviation	0	0.3690	--	--	--	--	%
BS Max Deviation	0	0.6436	--	--	--	--	%
SS Average Deviation	0	0.3737	--	--	--	--	%
SS Max Deviation	0	1.617	--	--	--	--	%
LS Average Deviation	0	0.5129	--	--	--	--	%
LS Max Deviation	0	1.805	--	--	--	--	%
The GLS-VJ source activity is acceptable.							
The HGNS Neutron Master Calibration was done with the following parameters :							
NCT-B Water Temperature	57.6	DEGF.					
Thermal Housing Size	3.362	IN.					
NSR-F serial number	5068						

# Array Induction Tool – M / Equipment Identification

Primary Equipment:  
Rm/SP Bottom Nose  
Array Induction Sonde

AMRM – A  
AMIS – A

1372

Auxiliary Equipment:

Array Induction Tool – M Wellsite Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG	Nominal
0	Master	0.6204		0.6100	180.2		197.0
	Before	0.6205			181.6		
1	Master	1.271		1.270	179.1		196.0
	Before	1.271			180.6		
2	Master	0.6318		0.6200	175.5		192.0
	Before	0.6316			177.0		
3	Master	0.7131		0.7000	174.8		191.0
	Before	0.7129			176.3		
4	Master	1.334		1.340	168.6		185.0
	Before	1.334			170.1		
5	Master	1.953		1.960	166.9		182.0
	Before	1.953			168.4		
6	Master	1.949		1.960	167.0		181.0
	Before	1.949			168.4		
7	Master	1.419		1.410	166.2		175.0
	Before	1.416			167.6		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 13-Jan-2010 12:35				Before: 15-Jan-2010 16:47			

Array Induction Tool – M Wellsite Calibration							
Electronics Calibration Check – Auxiliary							
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value
Master			992.7	Master			0.6657
Before			992.7	Before			0.6835
941.0 (Minimum)			991.0 (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			0.9196	Master			0.0006534
Before			0.9196	Before			0.0006749
0.8710 (Minimum)			0.9170 (Nominal)	0.9630 (Maximum)			
-0.05000 (Minimum)			0 (Nominal)	0.05000 (Maximum)			
Master: 13–Jan–2010 12:35				Before: 15–Jan–2010 16:47			

Array Induction Tool – M Wellsite Calibration					
Test Loop Gain Correction					
Idx	Value	Test Loop Gain Correction Magnitude V	Value	Test Loop Gain Correction Phase DEG	
0	1.034		0.4776		
		0.9500 (Minimum)		-3.000 (Minimum)	3.000 (Maximum)
1	1.022		0.7064		
		0.9500 (Minimum)		-3.000 (Minimum)	3.000 (Maximum)
2	1.015		0.1915		



1	Master	1.271		1.270	179.1		196.0
2	Master	0.6318		0.6200	175.5		192.0
3	Master	0.7131		0.7000	174.8		191.0
4	Master	1.334		1.340	168.6		185.0
5	Master	1.953		1.960	166.9		182.0
6	Master	1.949		1.960	167.0		181.0
7	Master	1.419		1.410	166.2		175.0
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)

Master: 13-Jan-2010 12:35

Array Induction Tool – M Master Calibration									
Electronics Calibration Check – Auxiliary									
Phase	Array Induction SPA Plus MV			Value	Phase	Array Induction SPA Zero MV			Value
Master	<div><div></div></div>			992.7	Master	<div><div></div></div>			0.6657
		941.0 (Minimum)	991.0 (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	<div><div></div></div>			0.9196	Master	<div><div></div></div>			0.0006534
		0.8710 (Minimum)	0.9170 (Nominal)	0.9630 (Maximum)			-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)
Master: 13-Jan-2010 12:35									

Master: 13-Jan-2010 12:35

Array Induction Tool – M Master Calibration									
Test Loop Gain Correction									
Idx	Value	Test Loop Gain Correction Magnitude V			Value	Test Loop Gain Correction Phase DEG			DEC
0	1.034				0.4776				
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
1	1.022				0.7064				
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
2	1.015				0.1915				
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
3	1.011				0.1817				
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
4	0.9928				0.1287				
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
5	0.9883				-0.03256				
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
6	0.9934				0.3307				
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
7	1.004				-0.2143				
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	

Master: 13-Jan-2010 12:35

Array Induction Tool – M Master Calibration								
Sonde Error Correction								
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-73.77	<div><div></div></div>			-344.0	<div><div></div></div>		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	170.3	<div><div></div></div>			133.8	<div><div></div></div>		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	115.4	<div><div></div></div>			62.75	<div><div></div></div>		

		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	61.79					-33.85		
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	25.72					22.34		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	11.35					-14.54		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.275					-4.481		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-1.480					-10.82		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
Master: 13-Jan-2010 12:35								

Array Induction Tool – M Master Calibration								
Mud Gain Correction								
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	0.8500	<div><div></div></div>			0.8500	<div><div></div></div>		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.8500	<div><div></div></div>			0.8500	<div><div></div></div>		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.8500	<div><div></div></div>			0.8500	<div><div></div></div>		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
Master: 13–Jan–2010 12:35								




High resolution Integrated Logging Tool–DTS / Equipment Identification				
Primary Equipment:				
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			
HILT Gamma-Ray Neutron Sonde–DTS	HGNS – B			
HGNS Gamma-Ray Device	HGR –			
HGNS Neutron Detector with Alpha Source	HCNT –			
Auxiliary Equipment:				
Neutron Calibration Tank	NCT – B			
Gamma Source Radioactive	GSR – U/Y			
HGNS Housing	HGNH –			

High resolution Integrated Logging Tool–DTS Wellsite Calibration									
Stab Measurement Summary									
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value
Before				0.7116	Before				0.4908
	0.6740 (Minimum)	0.7094 (Nominal)	0.7449 (Maximum)			0.4653 (Minimum)	0.4898 (Nominal)	0.5143 (Maximum)	
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value
Before				8598	Before				9725
	8197 (Minimum)	8629 (Nominal)	9060 (Maximum)			9268 (Minimum)	9755 (Nominal)	10240 (Maximum)	
Phase	LS Window Ratio			Value	Phase	LS Window Sum CPS			Value
Before				0.2892	Before				1009
	0.2825 (Minimum)	0.2973 (Nominal)	0.3122 (Maximum)			976.1 (Minimum)	1027 (Nominal)	1079 (Maximum)	
Before: 15-Jan-2010 17:02									




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
Before				1492	Before				1690
Phase	LS PM High Voltage (Command) V			Value	Phase	LS PM High Voltage (Command) V			Value
Before				1478	Before				

1399 (Minimum)	1499 (Nominal)	1599 (Maximum)	1589 (Minimum)	1689 (Nominal)	1789 (Maximum)	1379 (Minimum)	1479 (Nominal)	1579 (Maximum)
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Before: 15-Jan-2010 17:02

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			10.54	Before			9.881	Before			10.16
	9.466 (Minimum)	10.47 (Nominal)	11.47 (Maximum)		8.822 (Minimum)	9.822 (Nominal)	10.82 (Maximum)		9.153 (Minimum)	10.15 (Nominal)	11.15 (Maximum)
Before: 15-Jan-2010 17:02											




Before: 15-Jan-2010 17:02

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				3853	Before				3797	Before				3800
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)			3524 (Minimum)	3830 (Nominal)	4136 (Maximum)			3524 (Minimum)	3830 (Nominal)	4136 (Maximum)	
Before: 15-Jan-2010 16:48														





Before: 15-Jan-2010 16:48

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			8.543	Before			12.64
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 15-Jan-2010 16:48							

Before: 15-Jan-2010 16:48




High resolution Integrated Logging Tool-DTS Wellsite Calibration														
Detector Calibration														
Phase	Gamma Ray Background GAPI			Value	Phase	Gamma Ray (Jig – Bkg) GAPI			Value	Phase	Gamma Ray (Calibrated) GAPI			Value
Before				85.52	Before				179.7	Before				165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		163.3 (Minimum)	179.7 (Nominal)	196.0 (Maximum)			150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)		
Before: 15-Jan-2010 16:47														

Before: 15-Jan-2010 16:47


High resolution Integrated Logging Tool–DTS Wellsite Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				26.74	Master				26.83
Before				26.89	Before				28.58
5.000 (Minimum)      26.74 (Nominal)      40.00 (Maximum)					5.000 (Minimum)      26.83 (Nominal)      40.00 (Maximum)				
Master: 10–Jan–2010 18:05					Before: 15–Jan–2010 16:48				

Master: 10-Jan-2010 18:05



Before: 15-Jan-2010 16:48





High resolution Integrated Logging Tool–DTS Wellsite Calibration														
Ratio Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				5204	Master				2196	Master				2.370
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)			
Master: 10–Jan–2010 18:05														

Master: 10-Jan-2010 18:05



High resolution Integrated Logging Tool-DTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration F/S2	Value
Before		32.08
	31.53 (Minimum)	32.19 (Nominal)
		32.84 (Maximum)
Before: 16-Jan-2010 13:23		

Before: 16-Jan-2010 13:23

High resolution Integrated Logging Tool–DTS Master Calibration					
Inversion results					
Phase	Rho Aluminum G/C3	Value	Phase	Rho Magnesium G/C3	Value
					

Master		2.600	Master		1.689		
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		2.536	Master		2.630		
2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)	2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)		
Master: 20-Dec-2009 17:11							

High resolution Integrated Logging Tool–DTS Master Calibration																	
Deviation Summary																	
Phase	BS Average Deviation %			Value	Phase	SS Average Deviation %			Value	Phase	LS Average Deviation %			Value			
Master	<div><div></div></div>			0.3690	Master	<div><div></div></div>			0.3737	Master	<div><div></div></div>			0.5129			
–0.6000 (Minimum)				0 (Nominal)	0.6000 (Maximum)				–1.000 (Minimum)				0 (Nominal)	1.000 (Maximum)			
Phase	BS Max Deviation %			Value	Phase	SS Max Deviation %			Value	Phase	LS Max Deviation %			Value			
Master	<div><div></div></div>			0.6436	Master	<div><div></div></div>			1.617	Master	<div><div></div></div>			1.805			
–1.600 (Minimum)				0 (Nominal)	1.600 (Maximum)				–2.500 (Minimum)				0 (Nominal)	2.500 (Maximum)			
–3.500 (Minimum)				0 (Nominal)	3.500 (Maximum)				–3.500 (Minimum)				0 (Nominal)	3.500 (Maximum)			
Master: 20–Dec–2009 17:11																	

High resolution Integrated Logging Tool—DTS Master Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				26.74	Master				26.83
	5.000 (Minimum)	26.74 (Nominal)	40.00 (Maximum)			5.000 (Minimum)	26.83 (Nominal)	40.00 (Maximum)	
Master: 10-Jan-2010 18:05									

High resolution Integrated Logging Tool–DTS Master Calibration											
Tank Measurement											
Phase	Thermal Near Corr. (Tank) CPS		Value	Phase	Thermal Far Corr. (Tank) CPS		Value	Phase	CNTC/CFTC (Tank)		Value
Master	<div><div></div></div>		5204	Master	<div><div></div></div>		2196	Master	<div><div></div></div>		2.370
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)
Master: 10–Jan–2010 18:05											

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

Company: **Kerr McGee Oil and Gas Onshore, LP**

**Schlumberger**

Well: **P Ville Federal 5-7**

Field: **Wattenberg**

County: **Weld**

State: **Colorado**

Platform Express



