



## Schlumberger

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

Well: KCB 17-14

**Field:** **Wattenberg**

County: **Weld** State: **Colorado**

# Platform Express Compensated Neutron Density Lithology

Platform Express				
Compensated Neutron				
Density Lithology				
LOCATION				
NENE Sec. 14, T 5N , R 64W		Elev.: K.B. 4606.00 ft		
SHL: 731 FNL / 779 FEL NENE		G.L. 4591.00 ft		
BHL: 1256 FNL / 1411 FEL NWNE		D.F. 4605.00 ft		
Permanent Datum:	Ground Level	Elev.: 4591.00 ft		
Log Measured From:	Kelly Bushing	15.00 ft above Perm. Datum		
Drilling Measured From:	Kelly Bushing			
API Serial No.	Section	Township	Range	
05-123-30821-000C	14	5N	64W	
County: Weld				
Field: Wattenberg				
Location: NENE Sec. 14, T 5N , R 64W				
Well: KCB 17-14				
Company: Kerr McGee Oil and Gas Onshore				

[illegible]

Logging Date	7-Apr-2010					
Run Number	1					
Depth Driller	7405 ft					
Schlumberger Depth	7385 ft					
Bottom Log Interval	7377 ft					
Top Log Interval	708 ft					
Casing Driller Size @ Depth	8.625 in @ 705 ft					
Casing Schlumberger	708 ft					
Bit Size	7.875 in					
Type Fluid In Hole	KCL Polymer					
Density	8.2 lbm/gal				34 s	
Fluid Loss	PH					
Source Of Sample	Flowline					
RM @ Measured Temperature	1.167 ohm.m @ 86 degF					
RMF @ Measured Temperature	0.875 ohm.m @ 86 degF					
RMC @ Measured Temperature	1.750 ohm.m @ 86 degF					
Source RMF	RMC		Calculated			
RM @ MRT	RMF @ MRT		0.548 @ 191 0.411 @ 191		@	@
Maximum Recorded Temperatures	191 degF					
Circulation Stopped	Time		7-Apr-2010		9:30	
Logger On Bottom	Time		7-Apr-2010		17:04	
Unit Number	Location		3055 Fort Morgan, CO			
Recorded By	Jared R. Hoskins					
Witnessed By	Rick Masters & Marek Ciesnik					

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			

OTHER SERVICES1	OTHER SERVICES2
OS1:   None	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
1. This is the first run in hole.	
2. Tool run as per tool sketch.	
3. Matrix changes are as noted on porosity log.	
4. Toolstring run with minimum jewelry.	

Rig: Xtreme 11	
Crew: Tim Ludgate & Jay Musgrave	

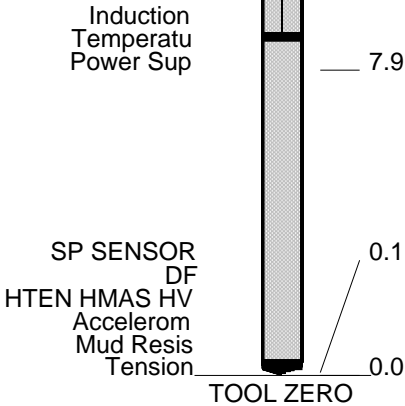
RUN 1 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

[illegible]

SURFACE EQUIPMENT		DOWNHOLE EQUIPMENT	
GSR-U/Y NCT-B CNB-AB NCS-VB	WITM (DTS)-A		
LEH-QT LEH-QT			43.6
DTC-H ECH-KC DTCH0-A DTCH1-A	CTEM TelStatus ToolStatu HGNS HTEM HMCA		39.7 37.6 37.6 36.9
HILTB-FTB HGNSD-B HMCA HGNH NLS-KL NSR-F 5068 HACCZ 452 HCNT HGR HRCC-B HRMS-B HRGD-B GLS-VJ 5416 MCFL Device HILT Nucl. LS 42767 HILT Nucl. SS 42767 HILT Nucl. BS 42767 NPV-N	HGNS Gamm HGNS Neut HGNS Neut HGNS sens		37.6 37.6 30.6 28.2
	HRCC cart		24.2
	MCFL HILT cali HRDD-LS HRDD-SS HRDD-BS		18.8 18.3 17.9

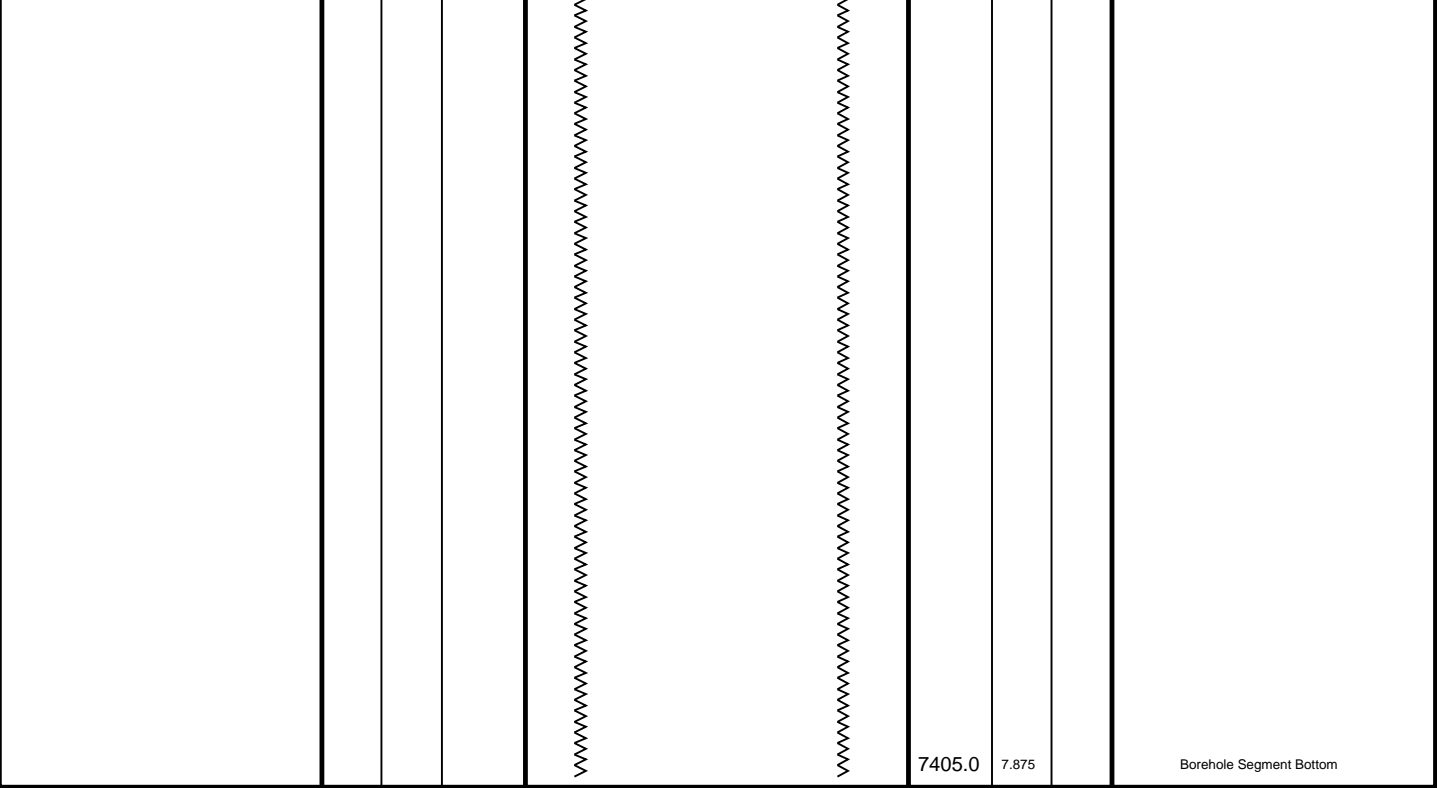
AIT-M  
AMIS-A 1372  
AMRM-A

16.0



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		
					706.0	8.625		



All depths are driller's depths



UPPER POROSITY LOG 5" = 100'

MAXIS Field Log

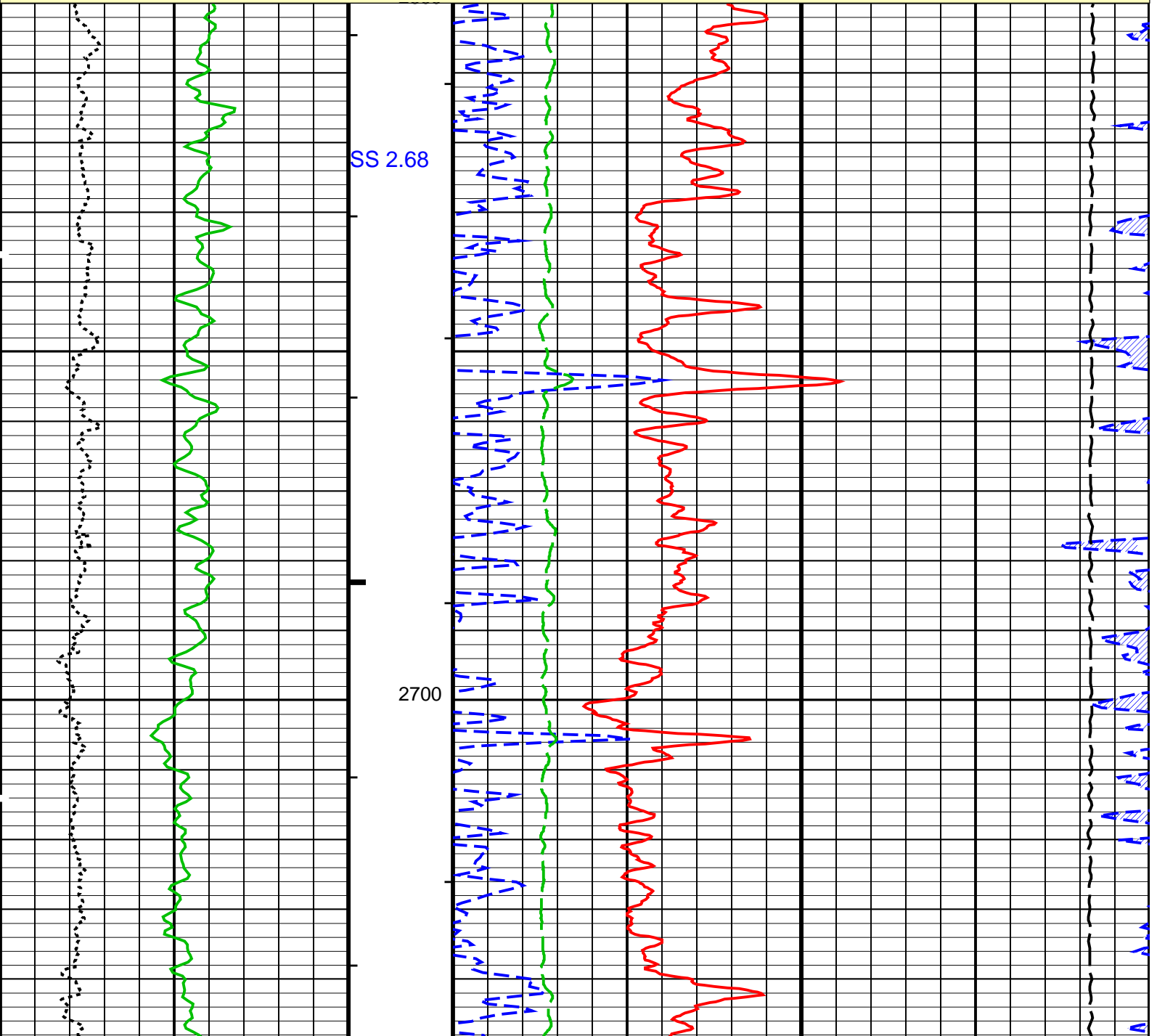
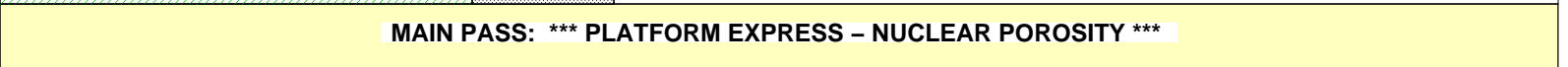
Input DLIS Files					
DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:8	PRODUCER	07-Apr-2010 17:12	7405.5 FT
					0.0 FT

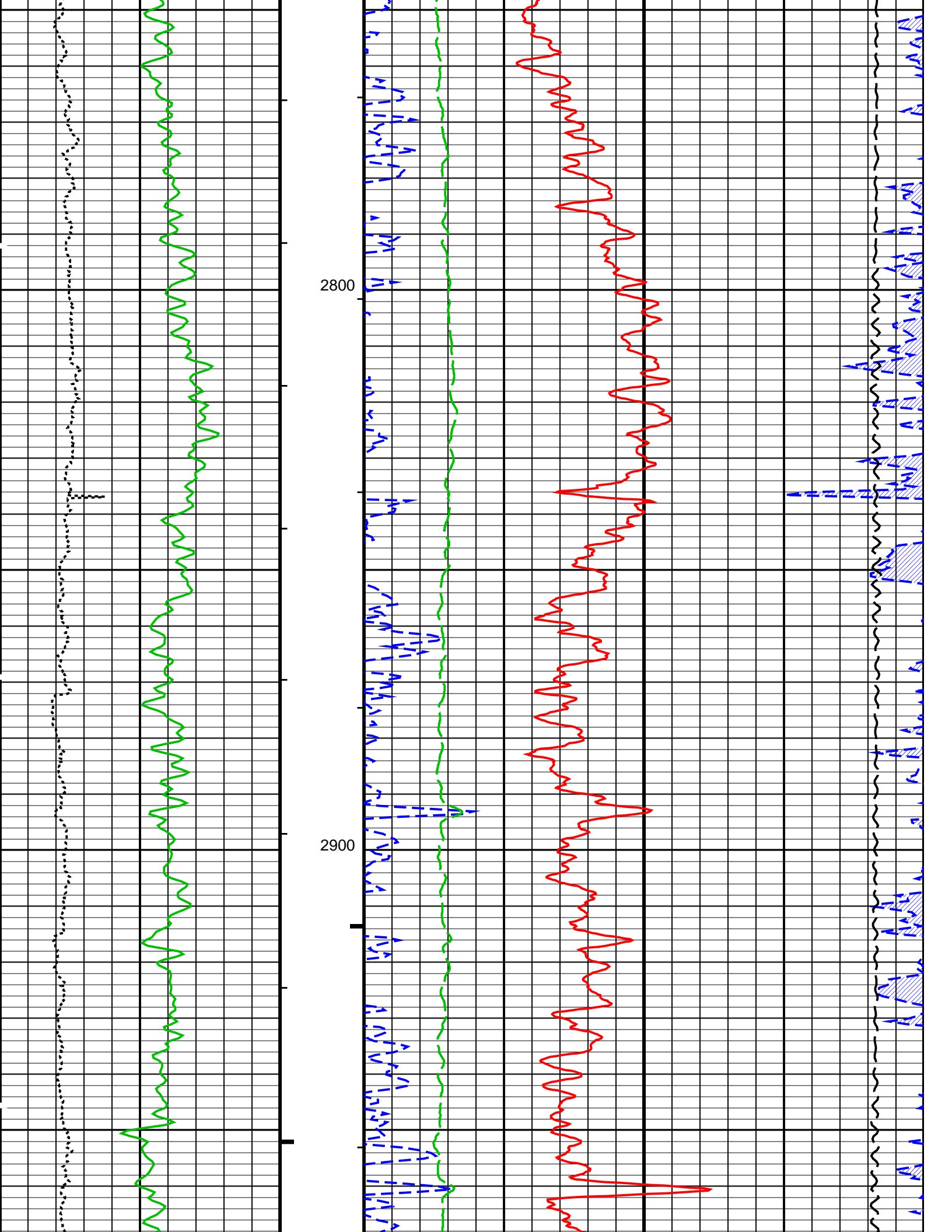
Integrated Hole/Cement Volume Summary

Hole Volume = 833.39 ft3  
Cement Volume = 584.43 ft3 (assuming 4.50 in casing O.D.)  
Computed from 4849.5 ft to 2595.5 ft

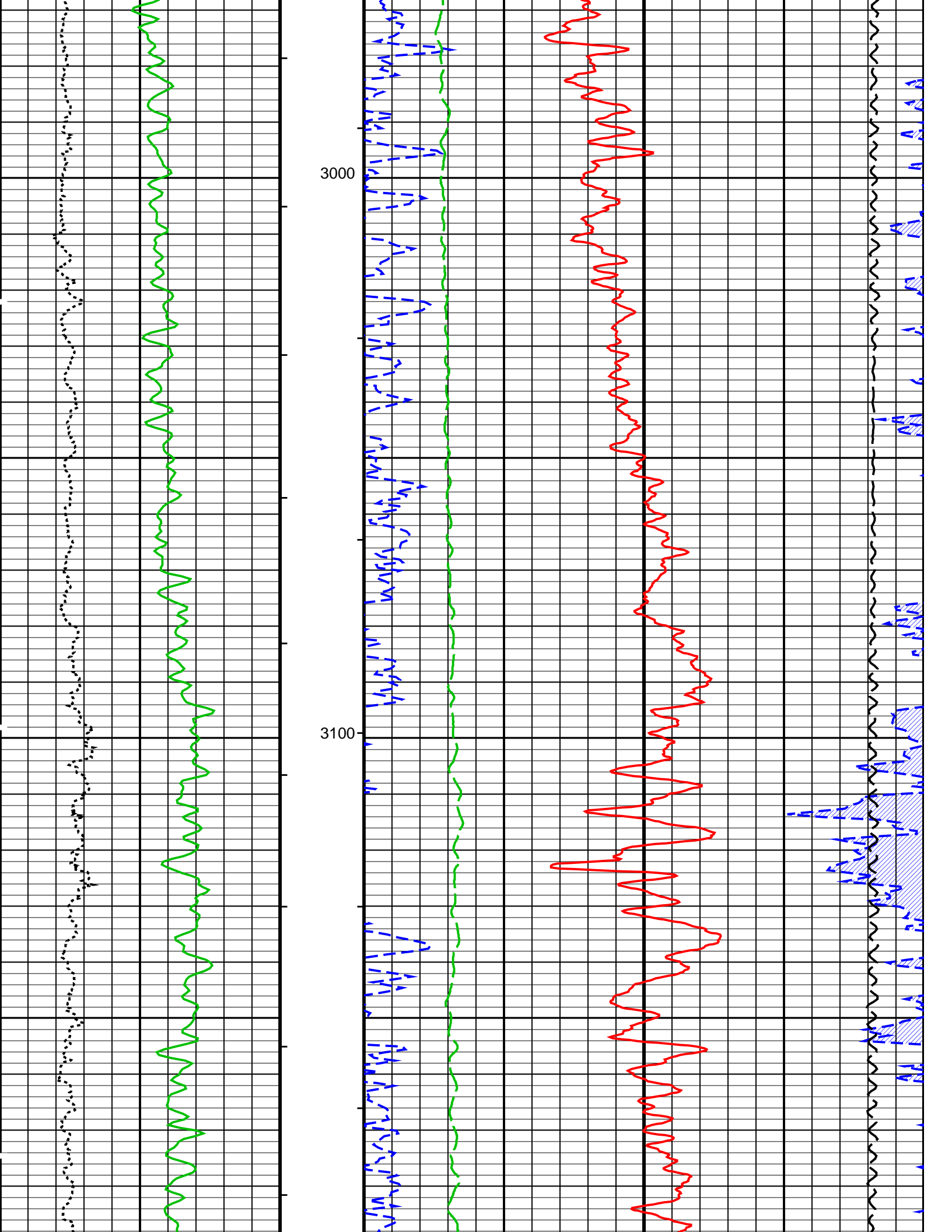
OP System Version: 17C0-154			
AITM	17C0-154	HILTD	17C0-154
DTCH	17C0-154		

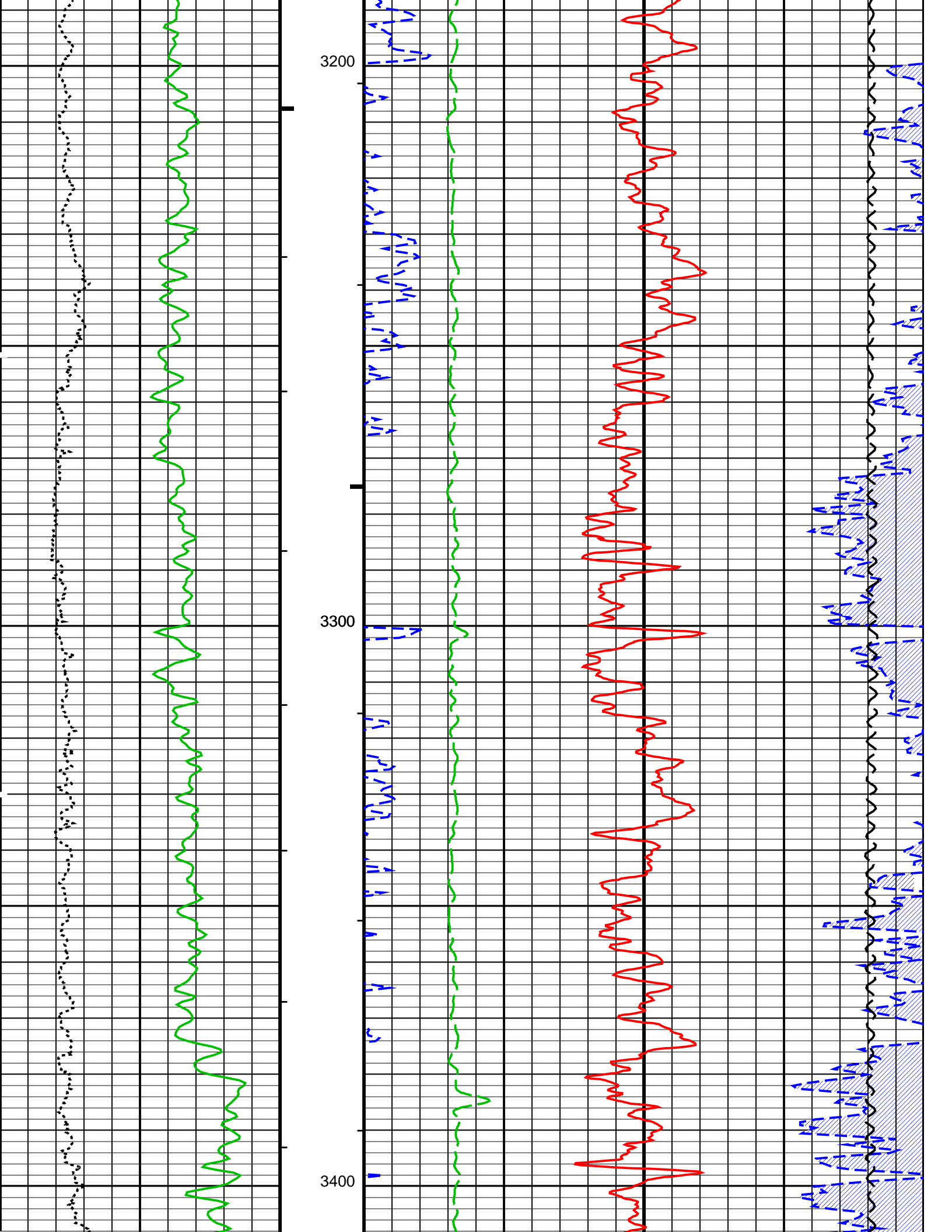
**Time Mark Every 60 S**

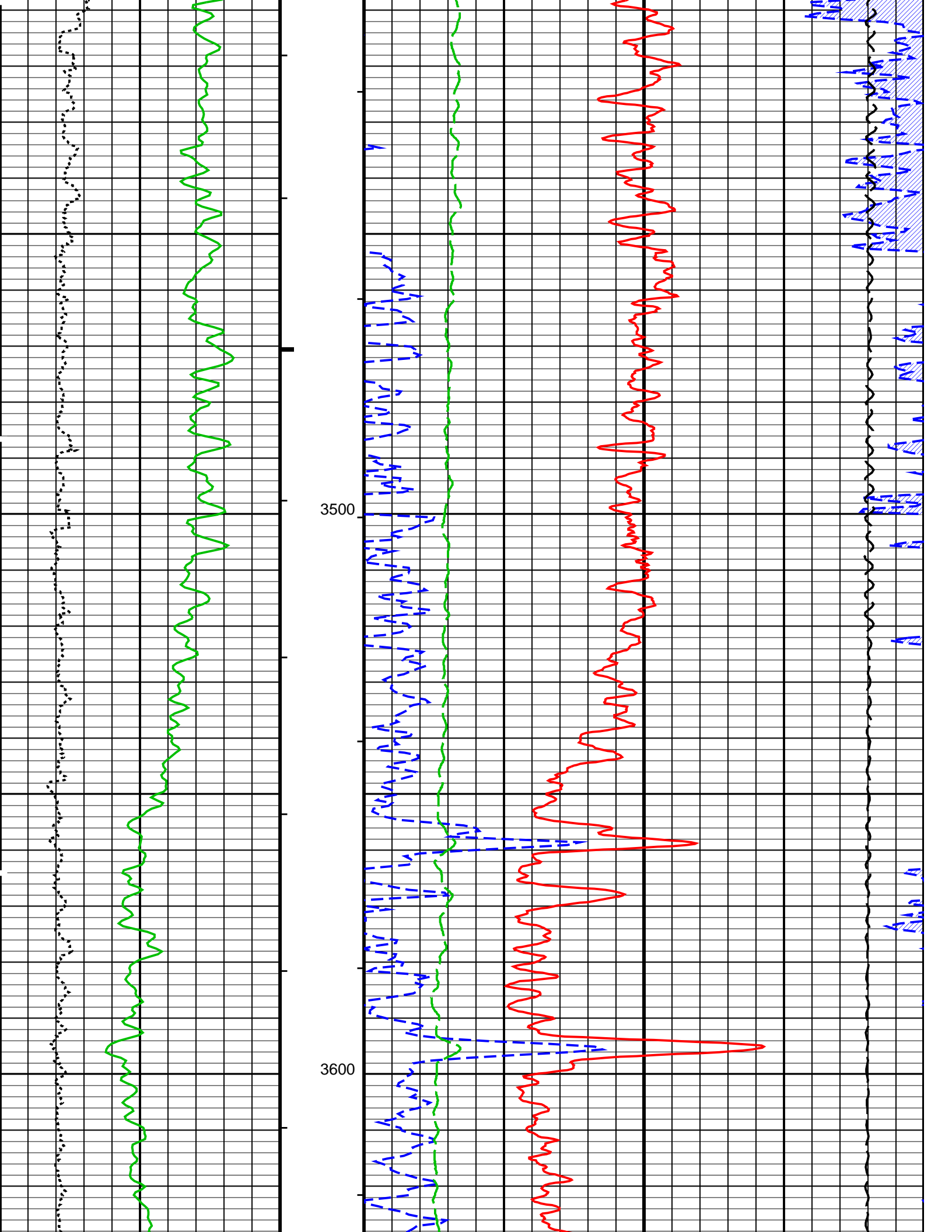


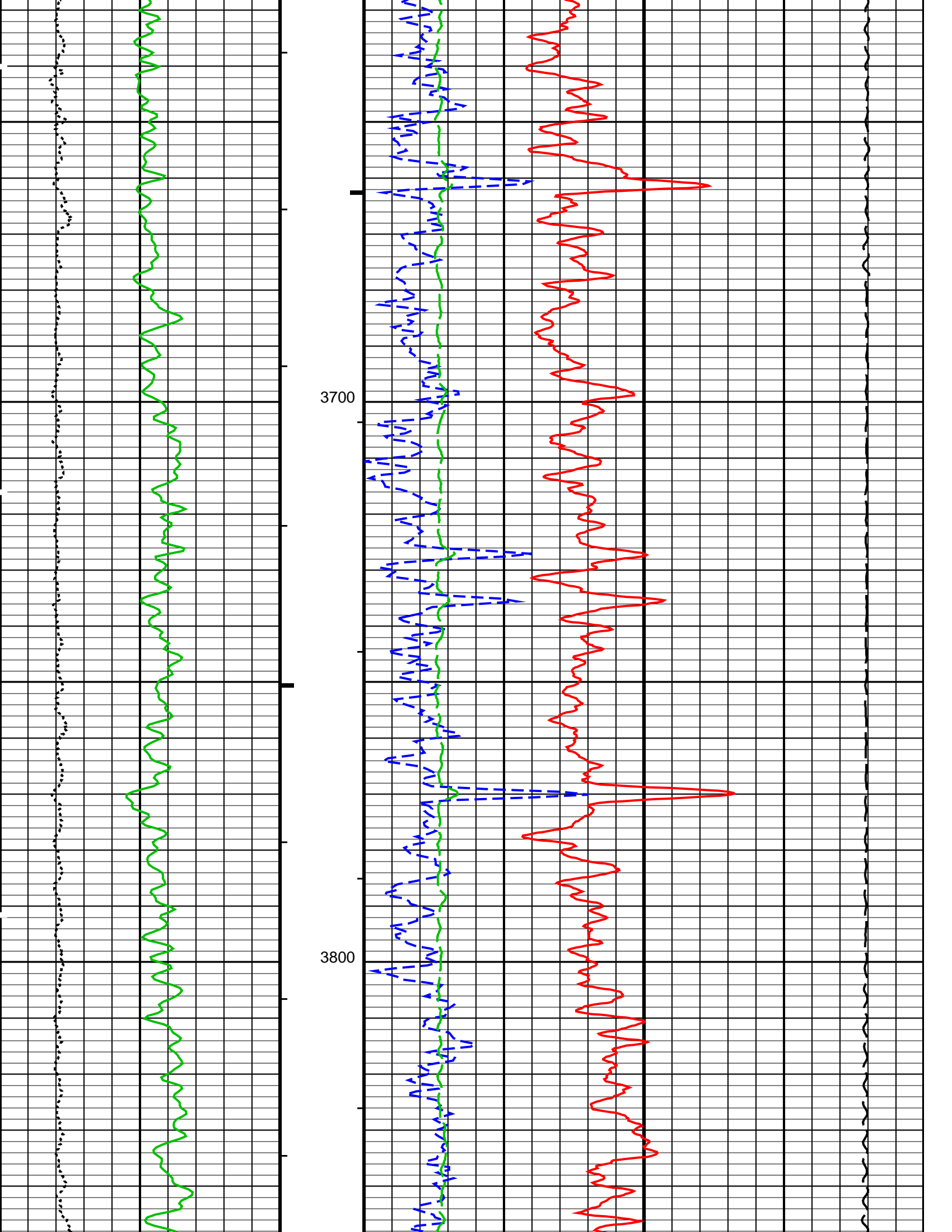


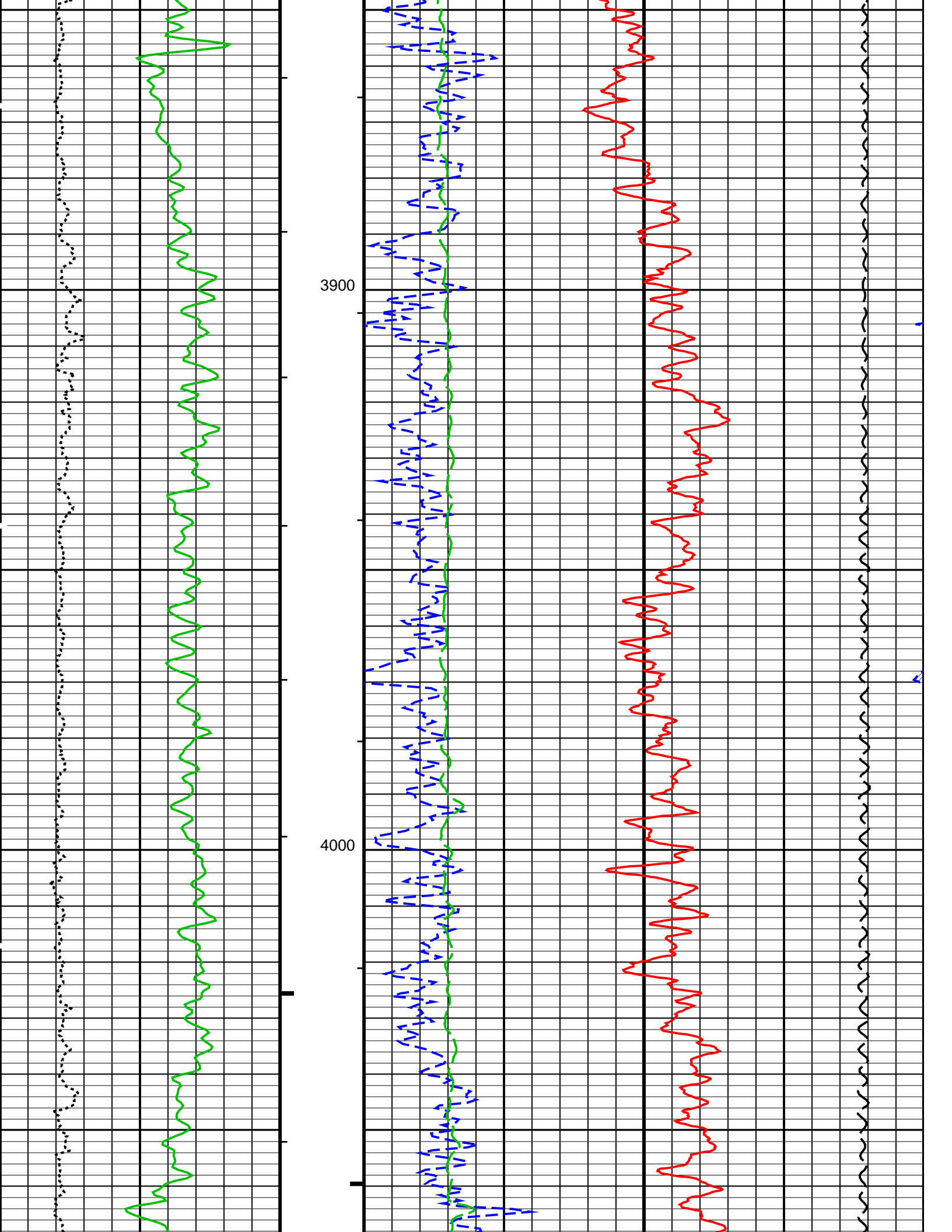


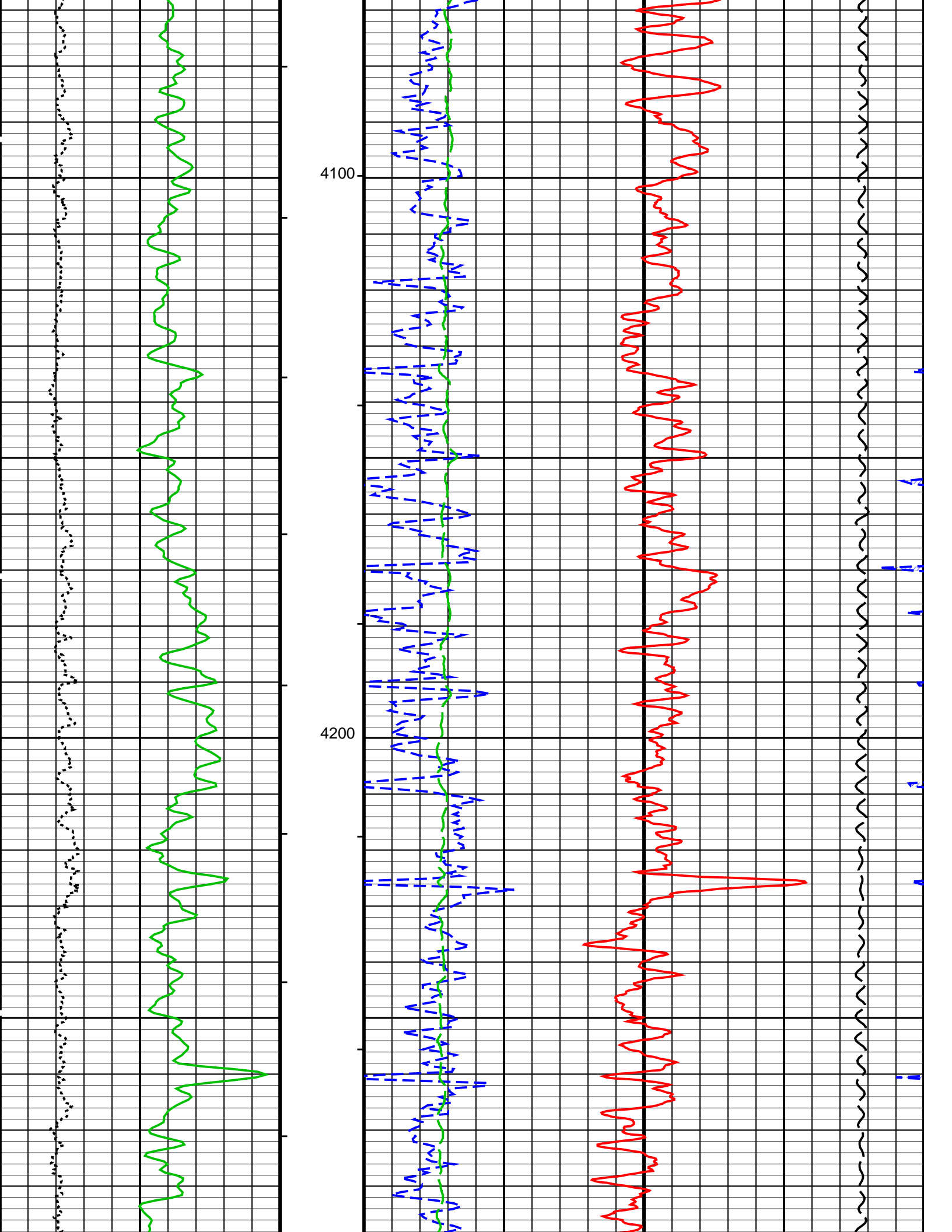


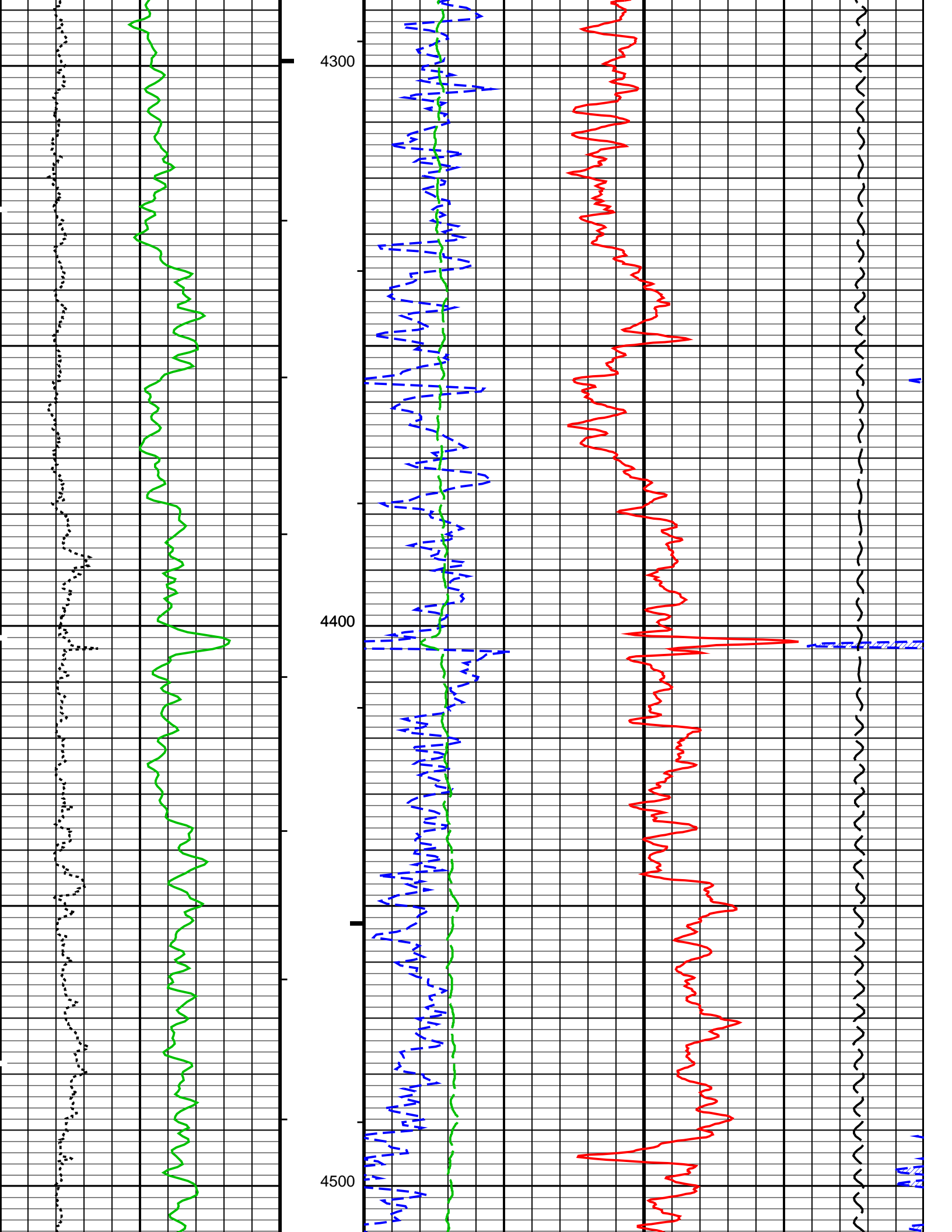


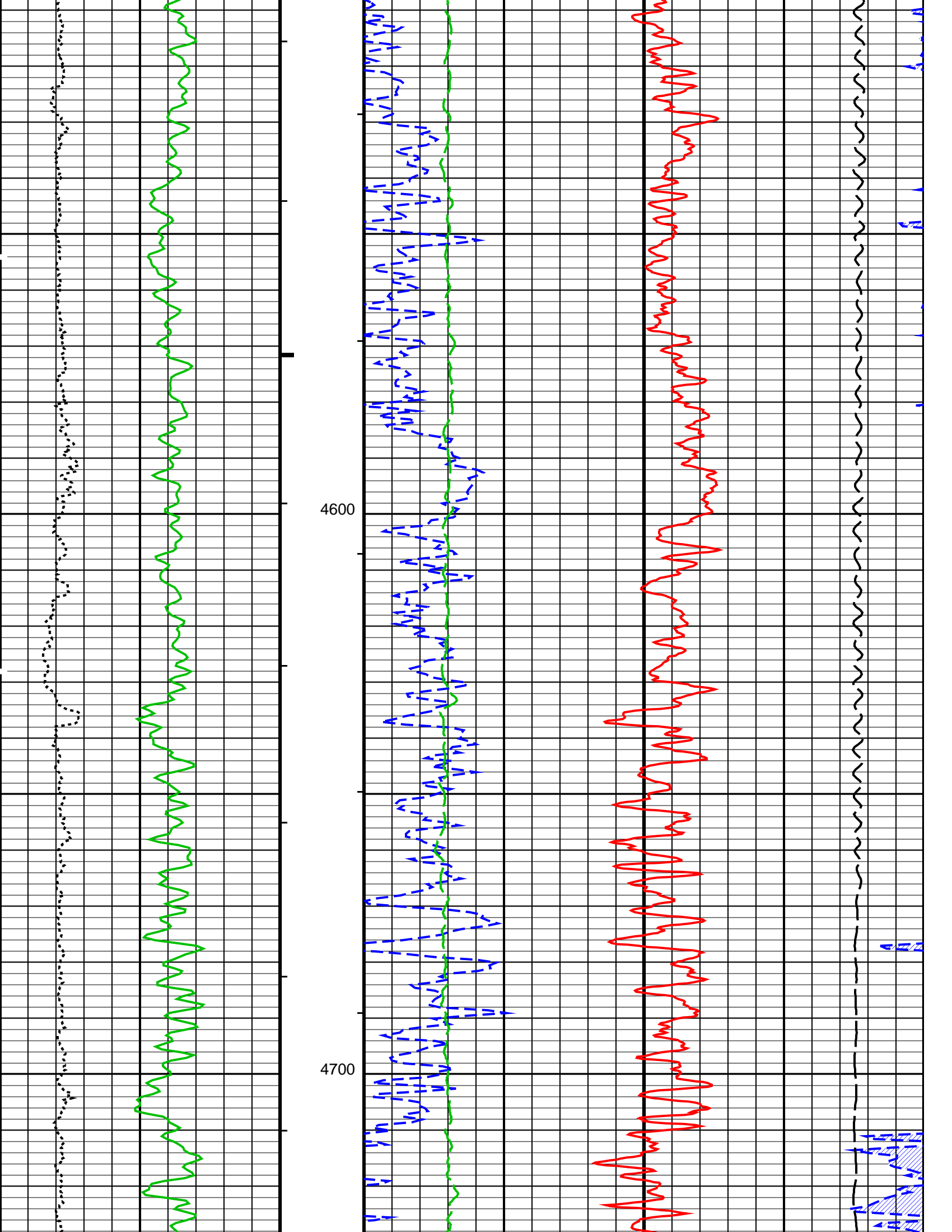




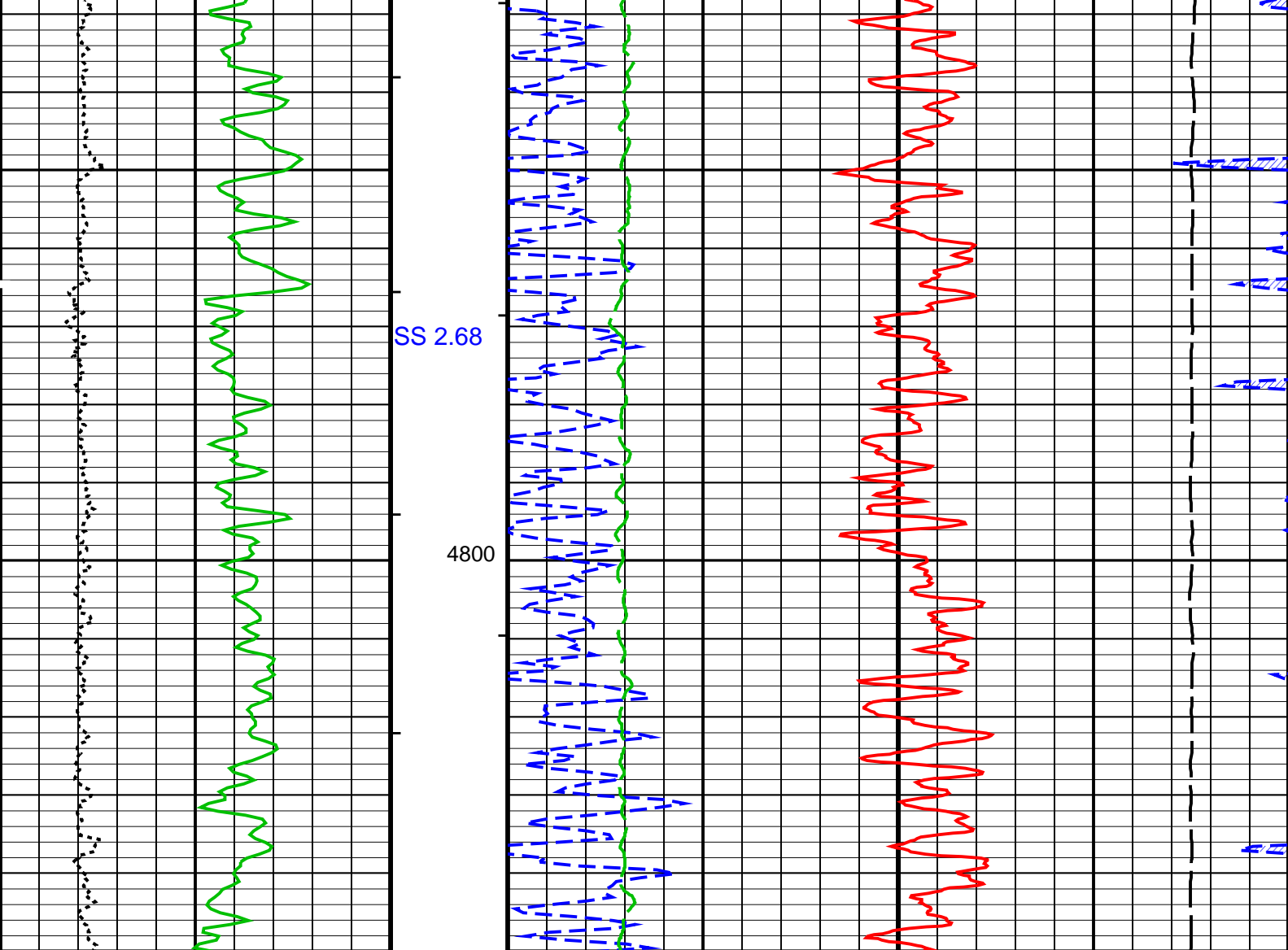












MAIN PASS: \*\*\* PLATFORM EXPRESS – NUCLEAR POROSITY \*\*\*

Gamma Ray Backup	Cable Drag	Std. Res. Density Porosity (DPHZ)	
		0.3	-0.1
Gamma Ray (GR) (GAPI)	Tool/Tot. Drag	Alpha Processed Neutron Porosity (NPOR)	
0200		0.3	-0.1
Caliper (HCAL) (IN)	Stuck Stretch (STIT) (F)	Std. Res. Formation Pe (PEFZ)	Tension (TENS)
616	050	010	100000
		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

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
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	2.650	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
STI: Stuck Tool Indicator			
STKT	STI Stuck Threshold	2.500	ft
TDD	Total Depth - Driller	7405.0	ft
TDL	Total Depth - Logger	7385.0	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	8.200	lbm/gal
FSAL	Formation Salinity		
MST	Mud Sample Temperature	86.088	degF
RMFS	Resistivity of Mud Filtrate Sample	0.875	ohm.m

Format: UPPER\_PORO      Vertical Scale: 5" per 100'      Graphics File Created: 07-Apr-2010 18:01

## OP System Version: 17C0-154

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

## Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:8	PRODUCER	07-Apr-2010 17:12	7405.5 FT	0.0 FT
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**Schlumberger**

**LOWER POROSITY LOG 5" = 100'**

# Output DLIS Files

DEFAULT

AIT\_TLD\_MCFL\_CNL\_009LUP

FN:8

PRODUCER

07-Apr-2010 17:12

## OP System Version: 17C0-154

AIT-M  
DTC-H

17C0-154  
17C0-154

HILTB-FTB

17C0-154

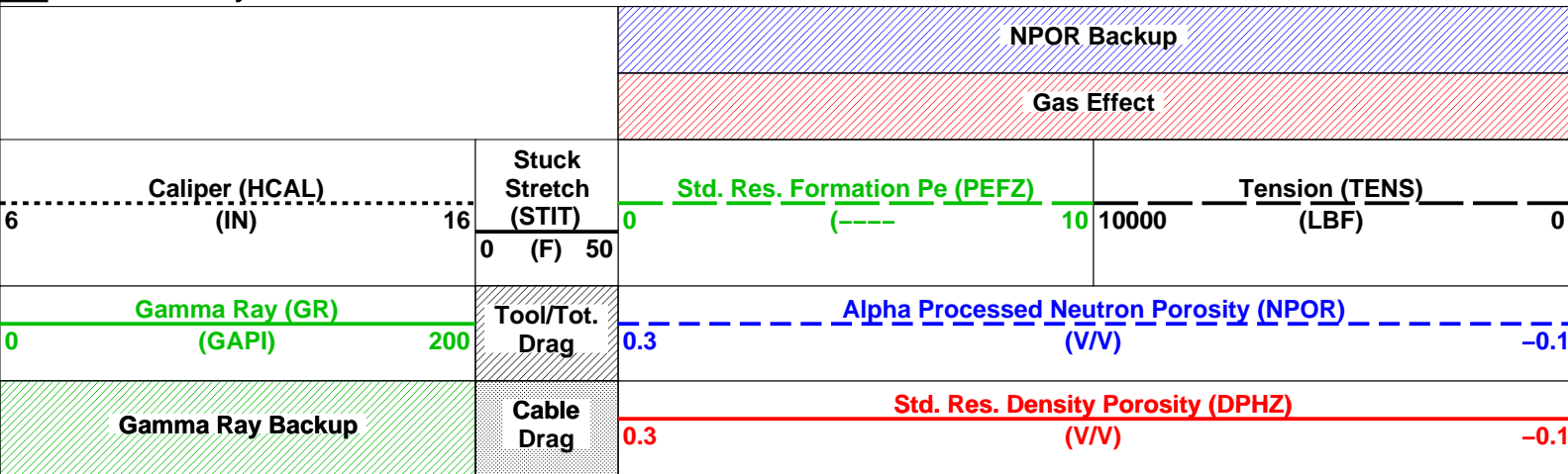
### Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	7405.5 17:12:41
MDEN	2.65 G/C3	2.65 G/C3	7405.5 17:12:41

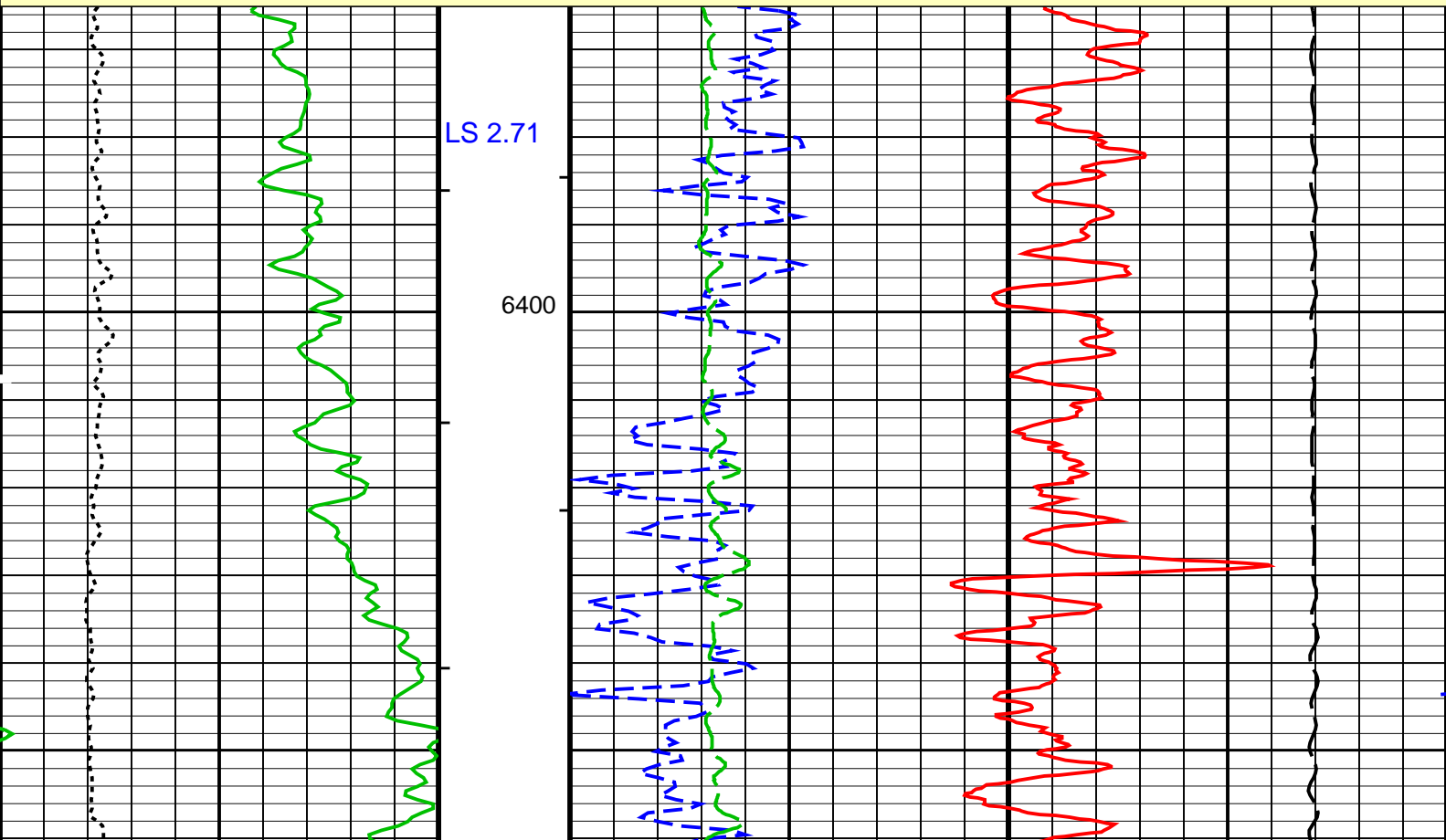
#### PIP SUMMARY

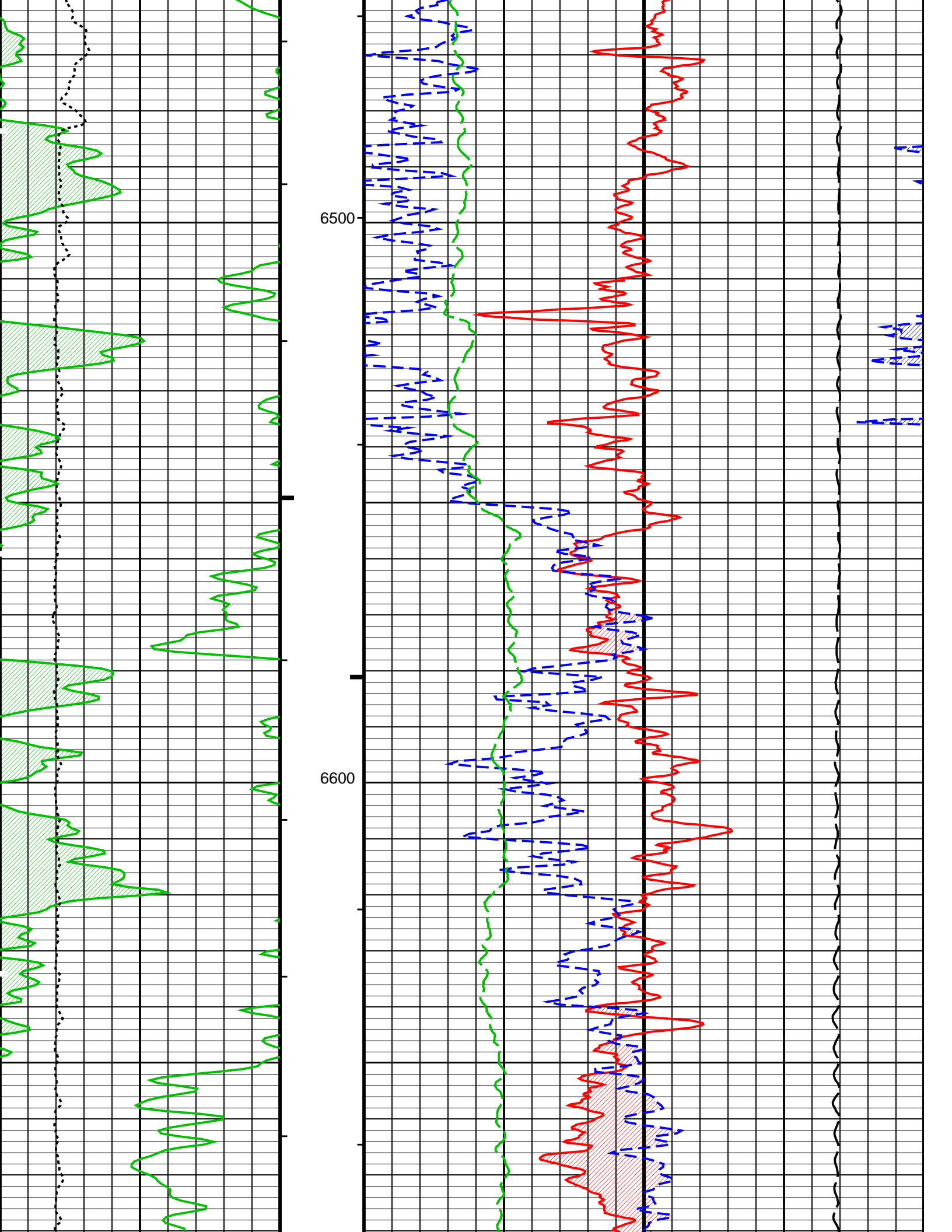
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
  - └ Integrated Cement Volume Minor Pip Every 10 F3
  - └ Integrated Cement Volume Major Pip Every 100 F3

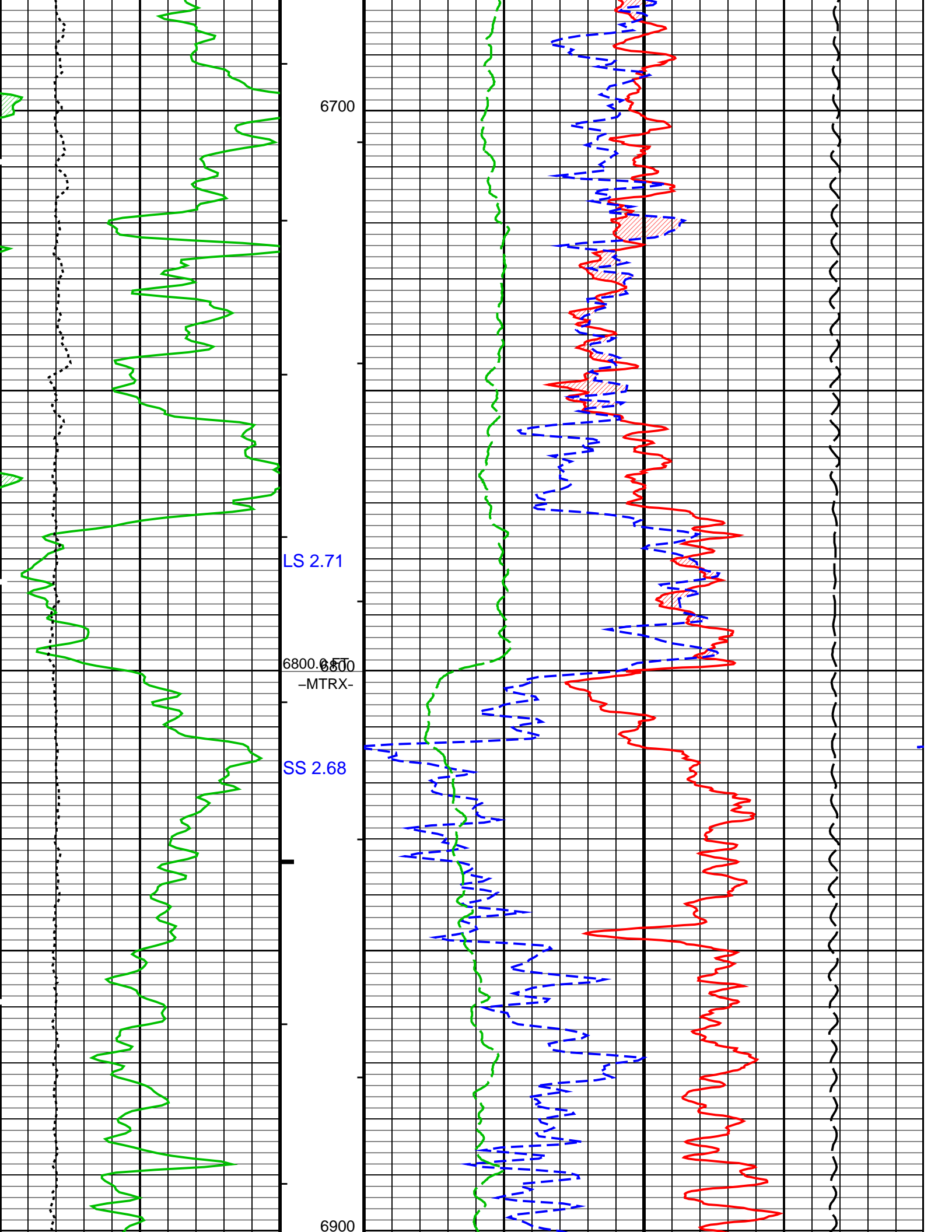
Time Mark Every 60 S

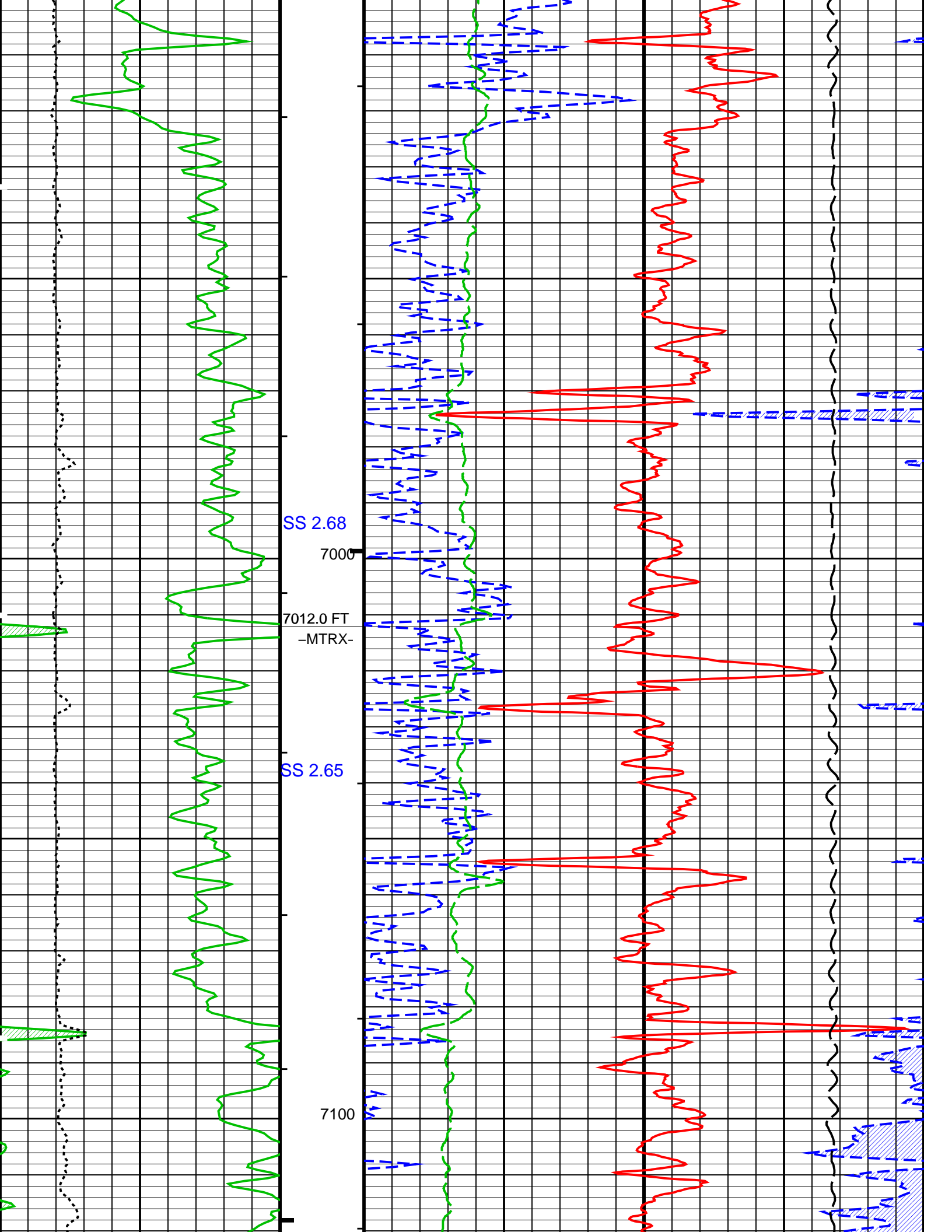


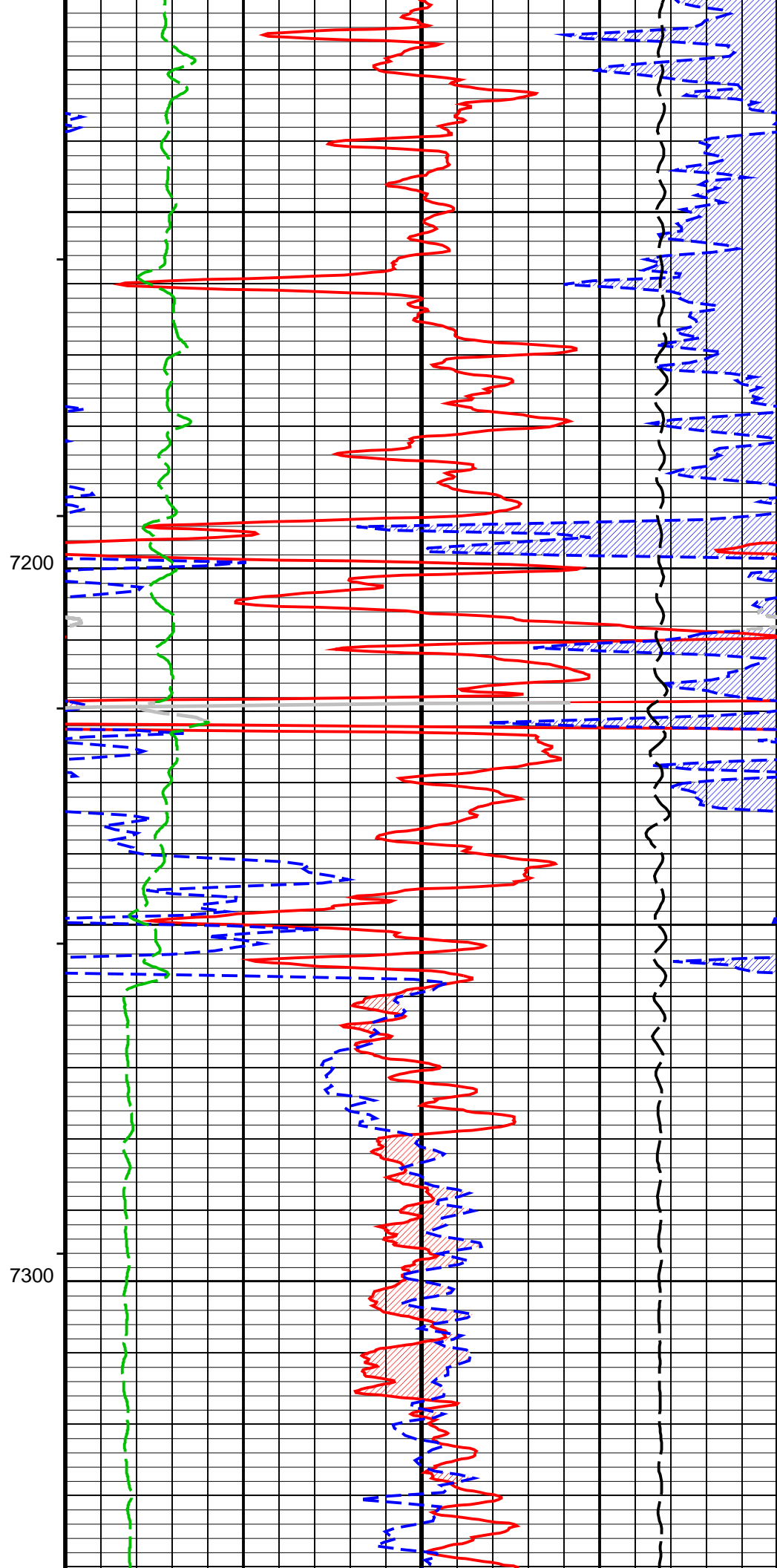
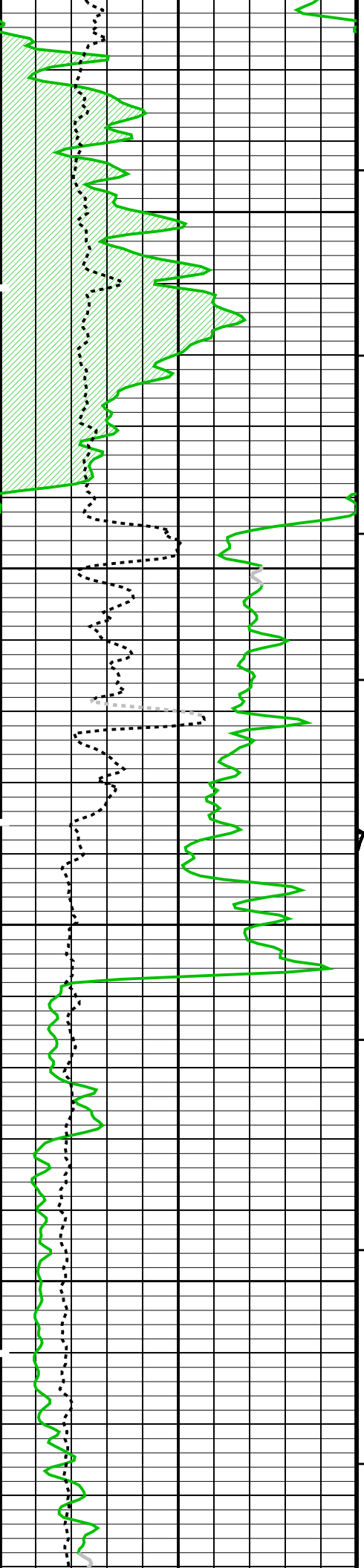
MAIN PASS: \*\*\* PLATFORM EXPRESS - NUCLEAR POROSITY \*\*\*



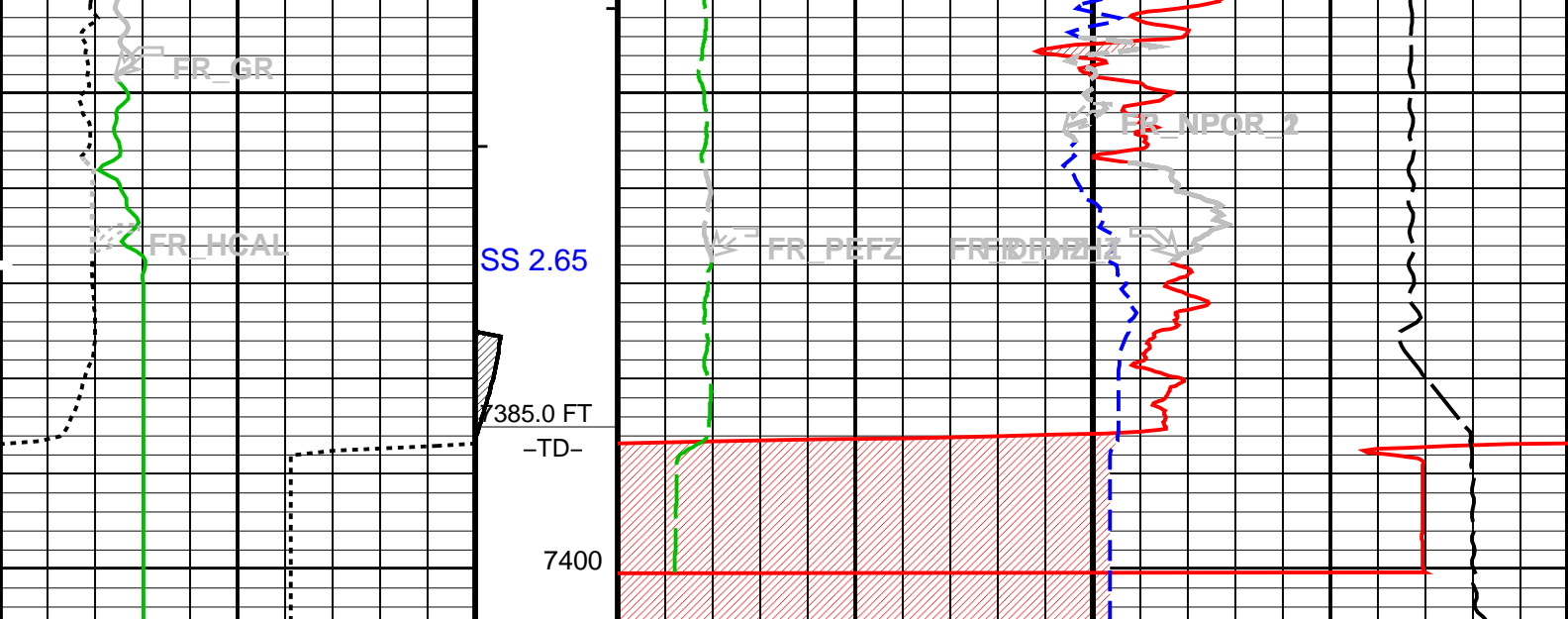












### MAIN PASS: \*\*\* PLATFORM EXPRESS – NUCLEAR POROSITY \*\*\*

Gamma Ray Backup	Cable Drag	Std. Res. Density Porosity (DPHZ)	
		0.3	-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	
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	
MCCO	Mud Correction	NATU	



MCOR	Mud Correction	NATU	2.65	G/C3
MDEN	Matrix Density	NO		
MWCO	Mud Weight Correction Option	OFF		
NAAC	HRDD APS Activation Correction	NOBARITE		
NMT	HILT Nuclear Mud Type	StdRes		
NPRM	HRDD Processing Mode	1	IN	
NSAR	HRDD Depth Sampling Rate	NO		
PTCO	Pressure/Temperature Correction Option	SOCN		
SDAT	Standoff Data Source	68	DEGF	
SHT	Surface Hole Temperature	0.125	IN	
SOCN	Standoff Distance	YES		
SOCO	Standoff Correction Option			
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	
STI: Stuck Tool Indicator				
LBFR	Trigger for MAXIS First Reading Label	TDL		
STKT	STI Stuck Threshold	2.5	FT	
TDD	Total Depth - Driller	7405.00	FT	
TDL	Total Depth - Logger	7385.00	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	8.20	LB/G	
DORL	Depth Offset for Repeat Analysis	0.0	FT	
MST	Mud Sample Temperature	86.09	DEGF	
RMFS	Resistivity of Mud Filtrate Sample	0.8752	OHMM	
TD	Total Depth	7385	FT	

Format: LOWER\_PORO    Vertical Scale: 5" per 100'    Graphics File Created: 07-Apr-2010 17:12

## OP System Version: 17C0-154

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

## Output DLIS Files

DEFAULT                      AIT\_TLD\_MCFL\_CNL\_009LUP                      FN:8                      PRODUCER                      07-Apr-2010 17:12

**Schlumberger**

**REPEAT ANALYSIS**

MAXIS Field Log

## Input DLIS Files

DEFAULT                      AIT\_TLD\_MCFL\_CNL\_008PUP                      FN:7                      PRODUCER                      07-Apr-2010 17:10                      7419.0 FT                      7147.0 FT

## Output DLIS Files

DEFAULT                      AIT\_TLD\_MCFL\_CNL\_009LUP                      FN:8                      PRODUCER                      07-Apr-2010 17:12

## 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  
MDEN

SANDSTONE  
2.65 G/C3

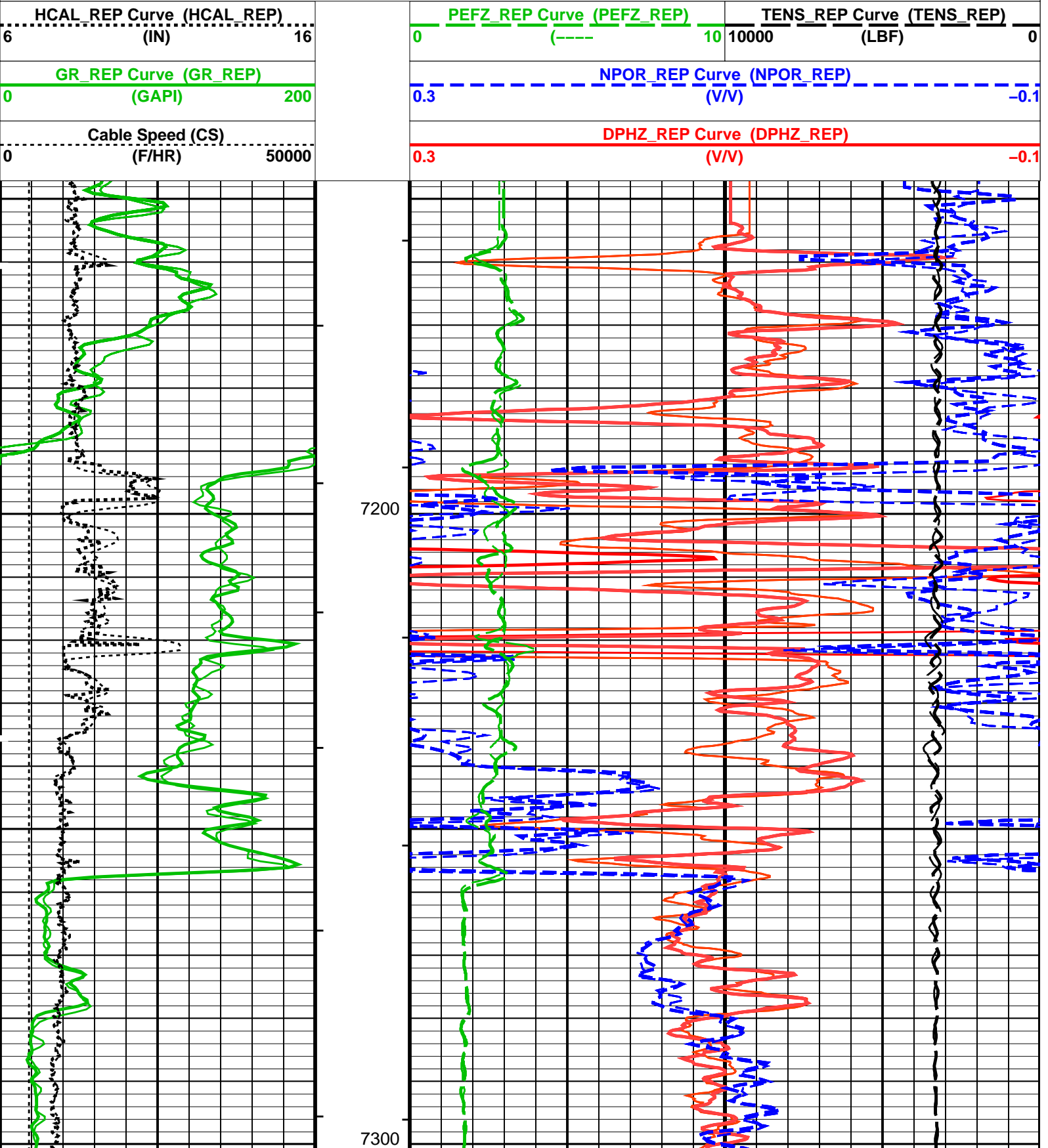
SANDSTONE  
2.65 G/C3

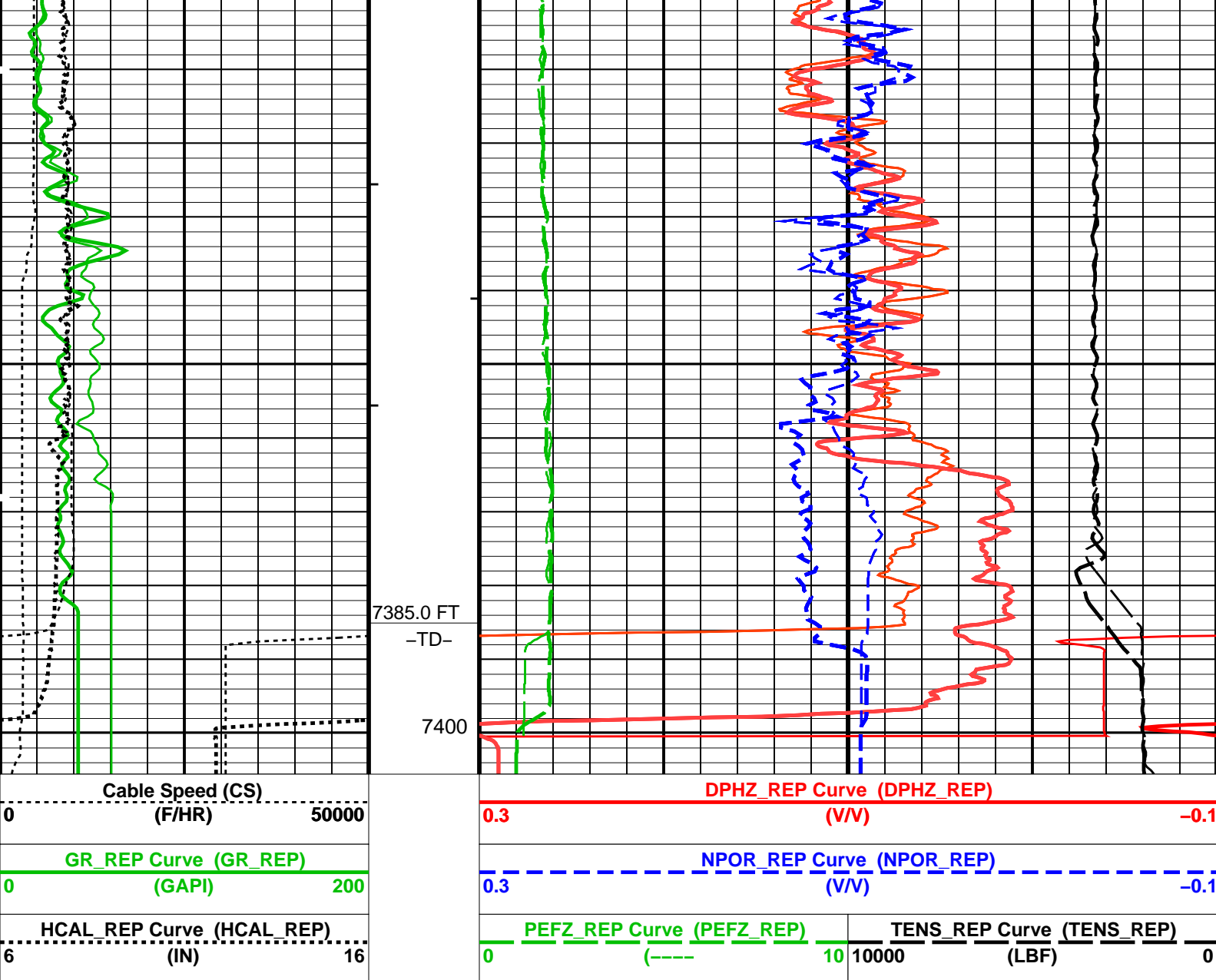
7405.5 17:12:41  
7405.5 17:12:41

## 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	
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	2.65	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
STI: Stuck Tool Indicator			
TDL	Total Depth – Logger	7385.00	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	8.20	LB/G
DORL	Depth Offset for Repeat Analysis	0.0	FT
MST	Mud Sample Temperature	86.09	DEGF
RMFS	Resistivity of Mud Filtrate Sample	0.8752	OHMM
TD	Total Depth	7385	FT

Format: PORO\_REP      Vertical Scale: 5" per 100'      Graphics File Created: 07-Apr-2010 17:12

### OP System Version: 17C0-154

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

### Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_008PUP	FN:7	PRODUCER	07-Apr-2010 17:10	7419.0 FT	7147.0 FT
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### Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:8	PRODUCER	07-Apr-2010 17:12		
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**Schlumberger**

**UPPER DENSITY LOG 5" = 100'**

MAXIS Field Log

### Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_009LUP	FN:8	PRODUCER	07-Apr-2010 17:12	7405.5 FT	0.0 FT
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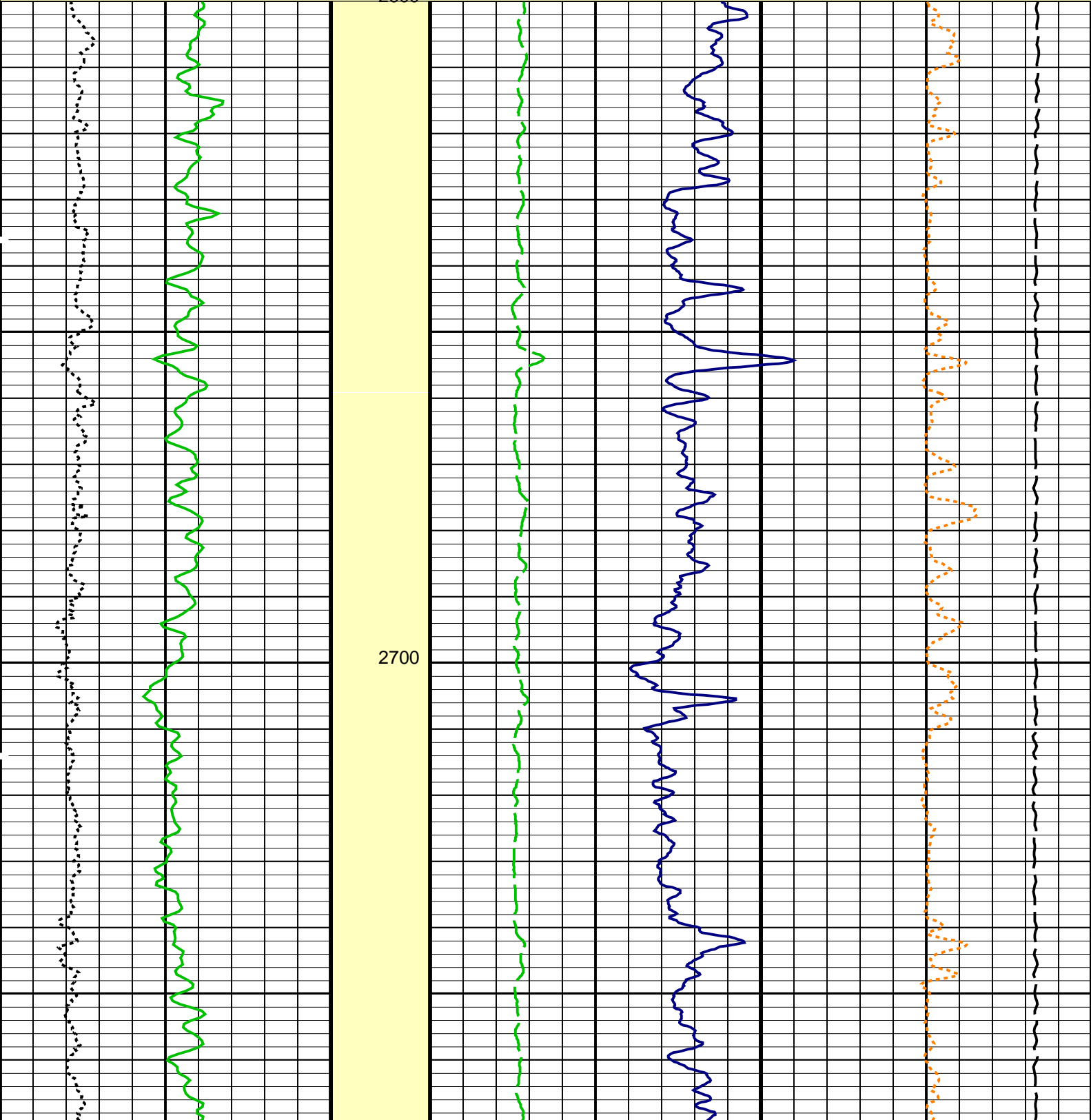
### OP System Version: 17C0-154

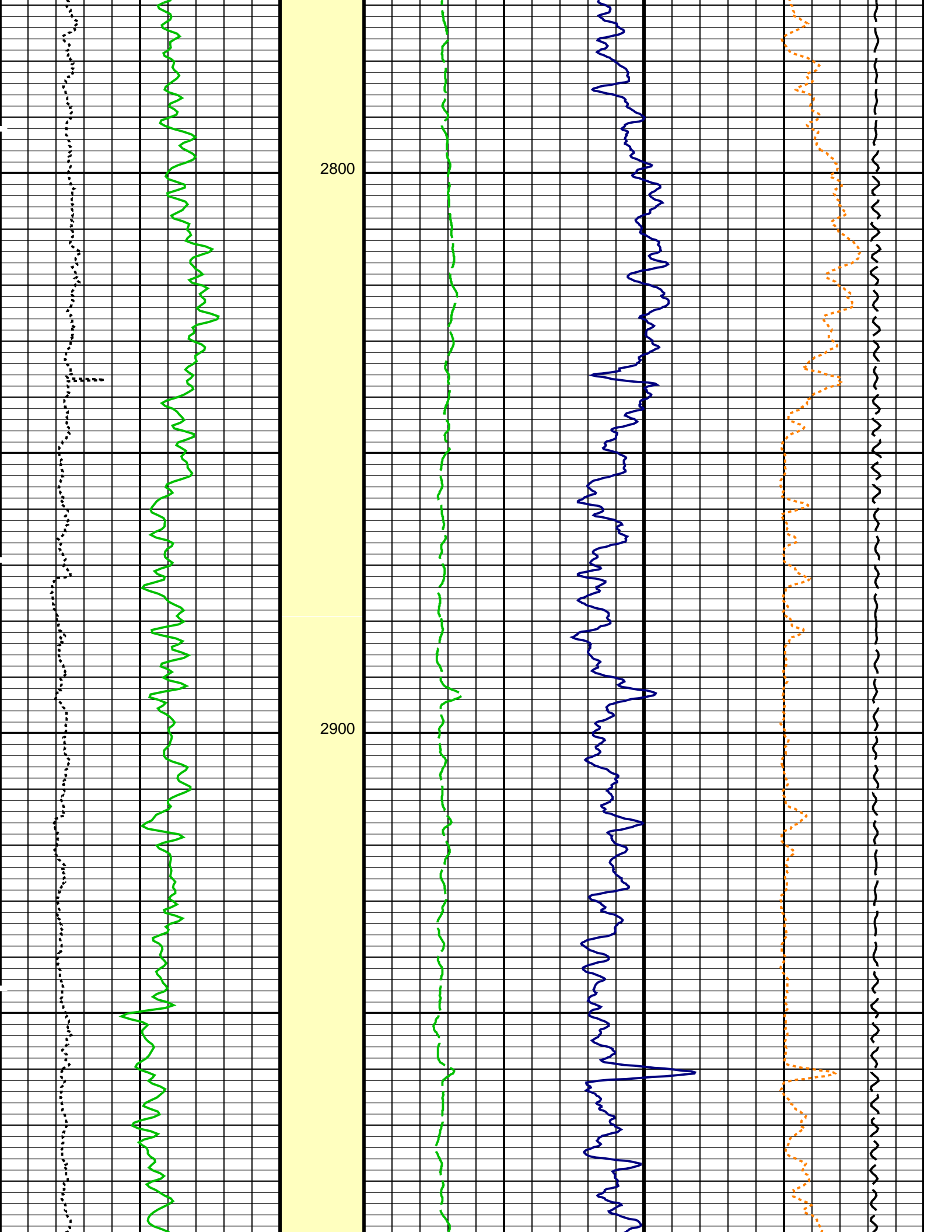
AITM	17C0-154	HILTD	17C0-154
DTCH	17C0-154		

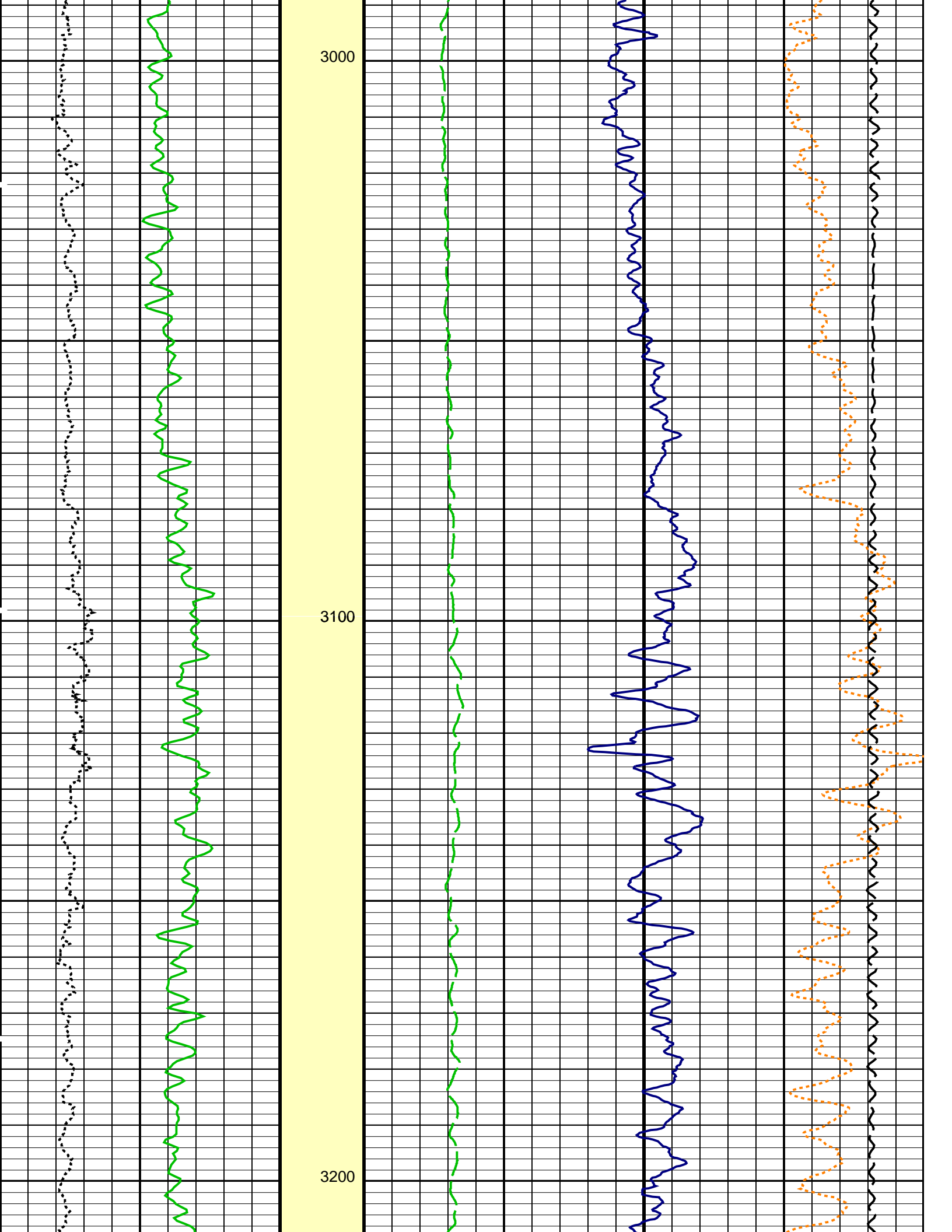
PIP SUMMARY

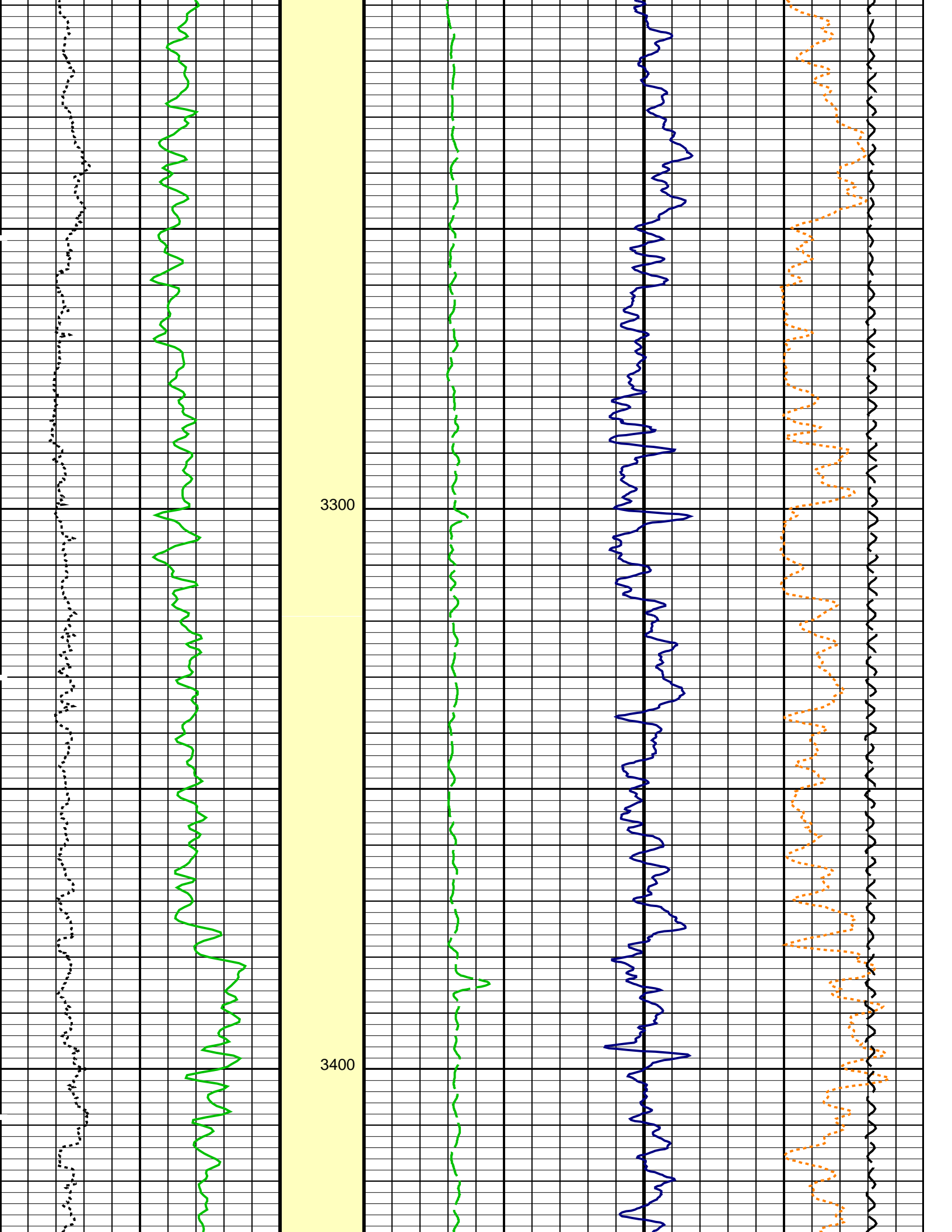
Time Mark Every 60 S					
Caliper (HCAL) (IN)			Tension (TENS) (LBF)		
6	16		10000		0
Gamma Ray (GR) (GAPI)			Std. Res. Formation Density (RHOZ) (G/C3)		
0	200		2		3
Gamma Ray Backup		Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ) (-----)		Density Correction (HDRA) (G/C3)
		0 (F) 50	0	10	-0.25 0.25

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

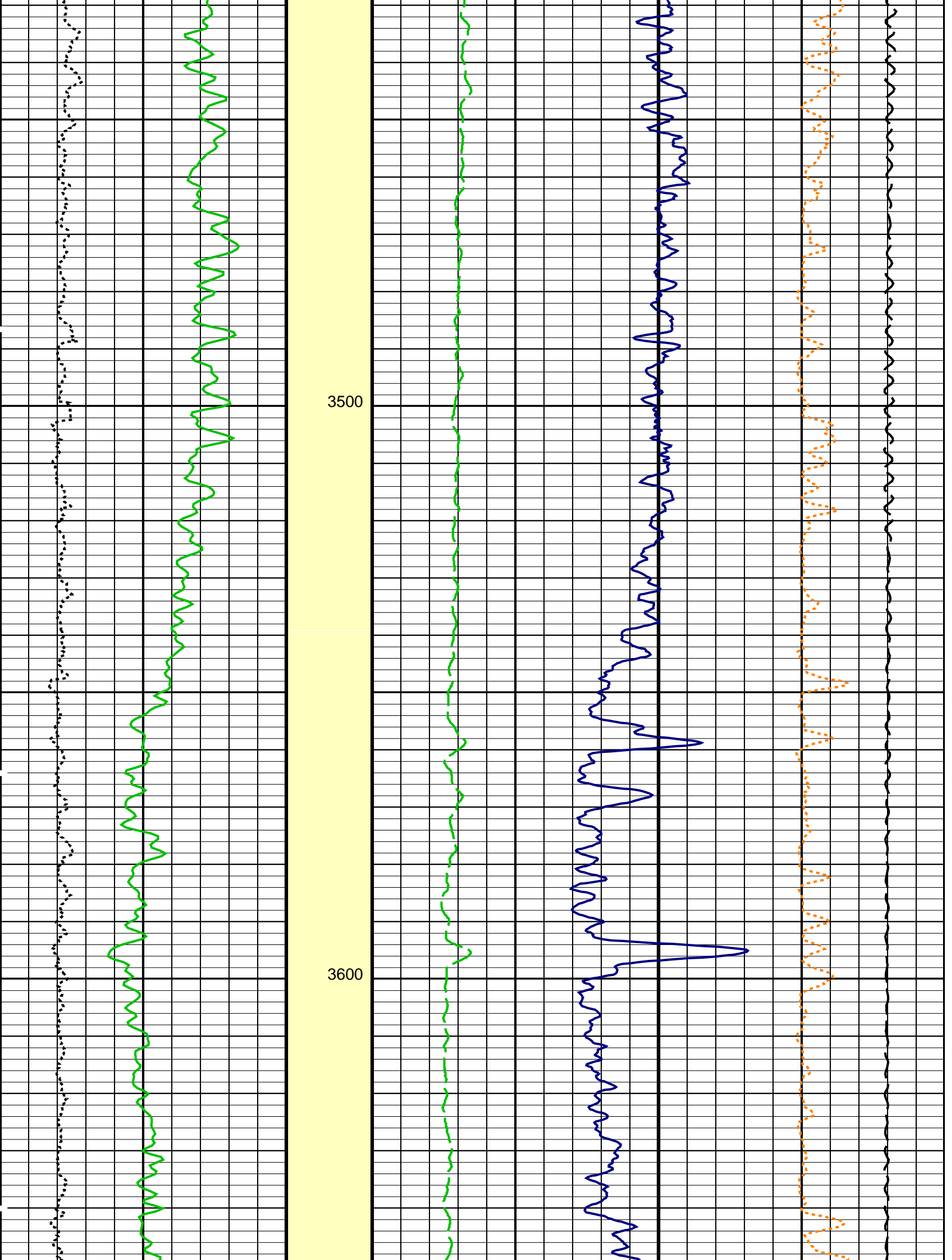


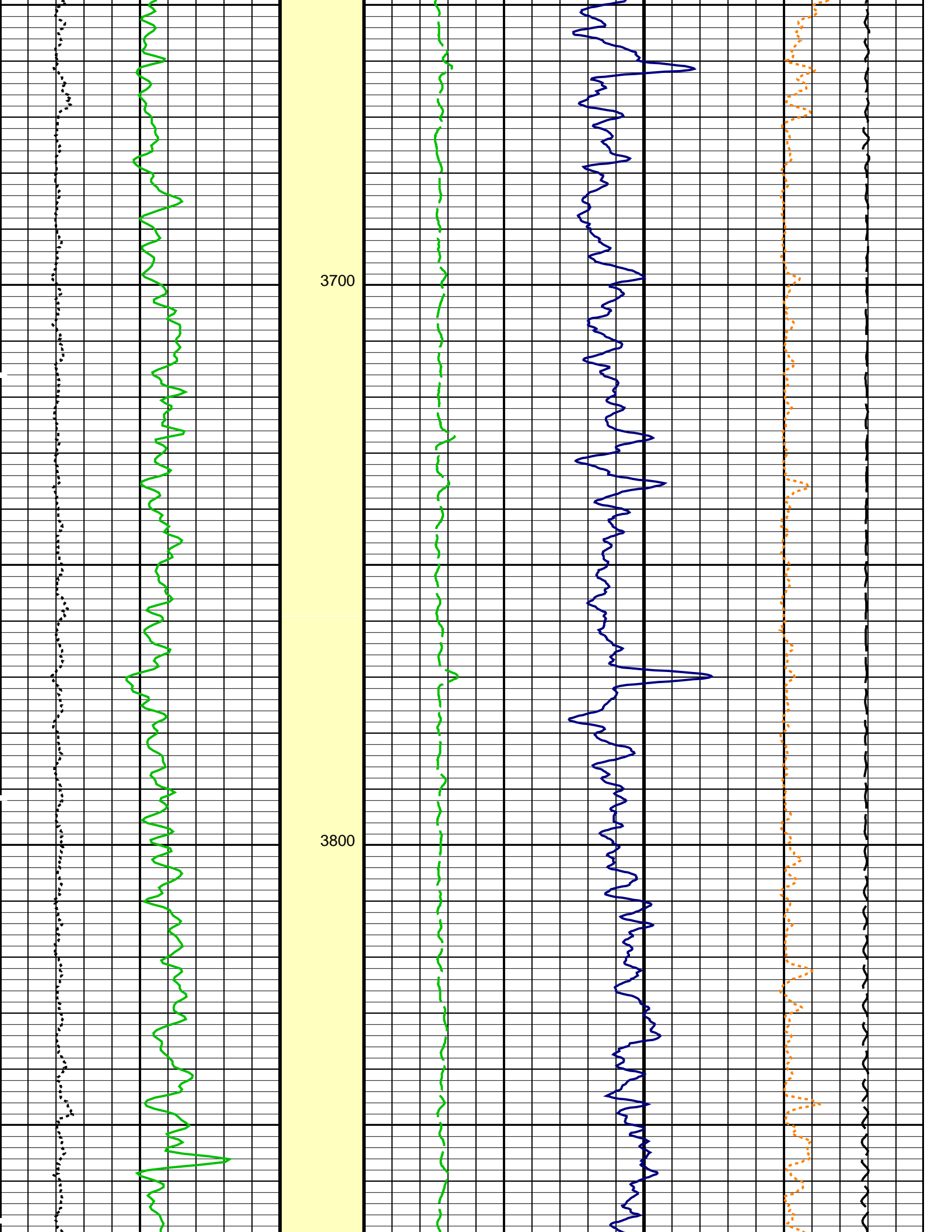


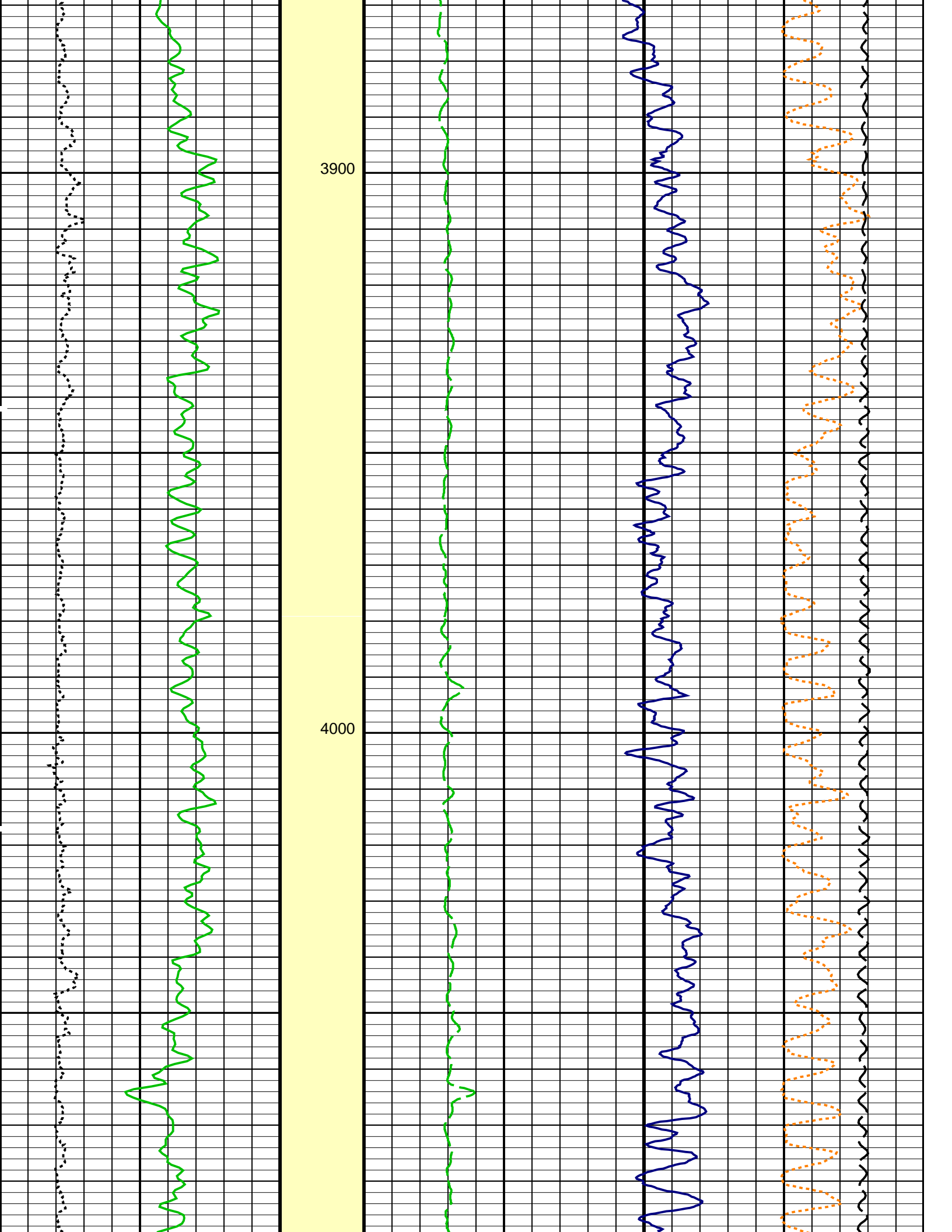


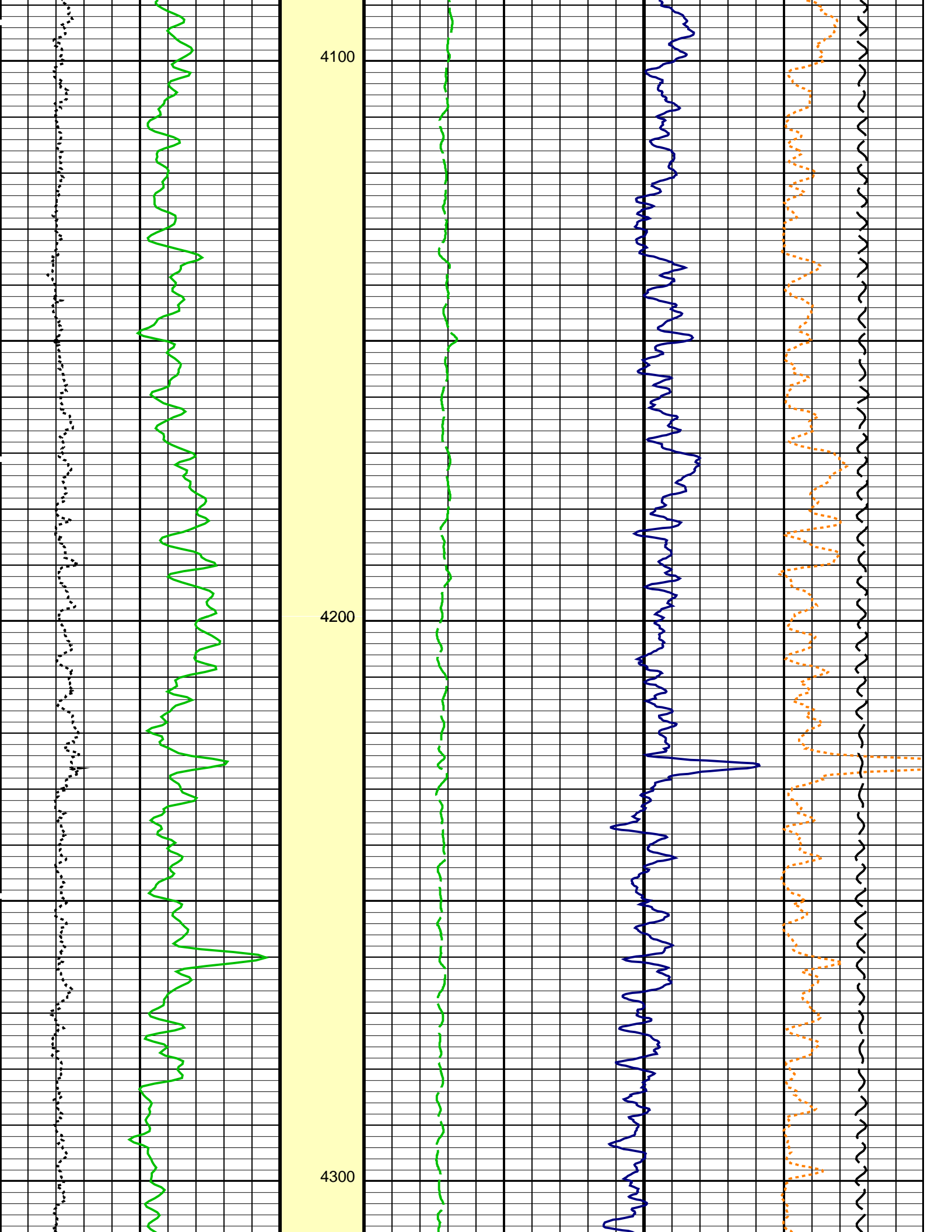


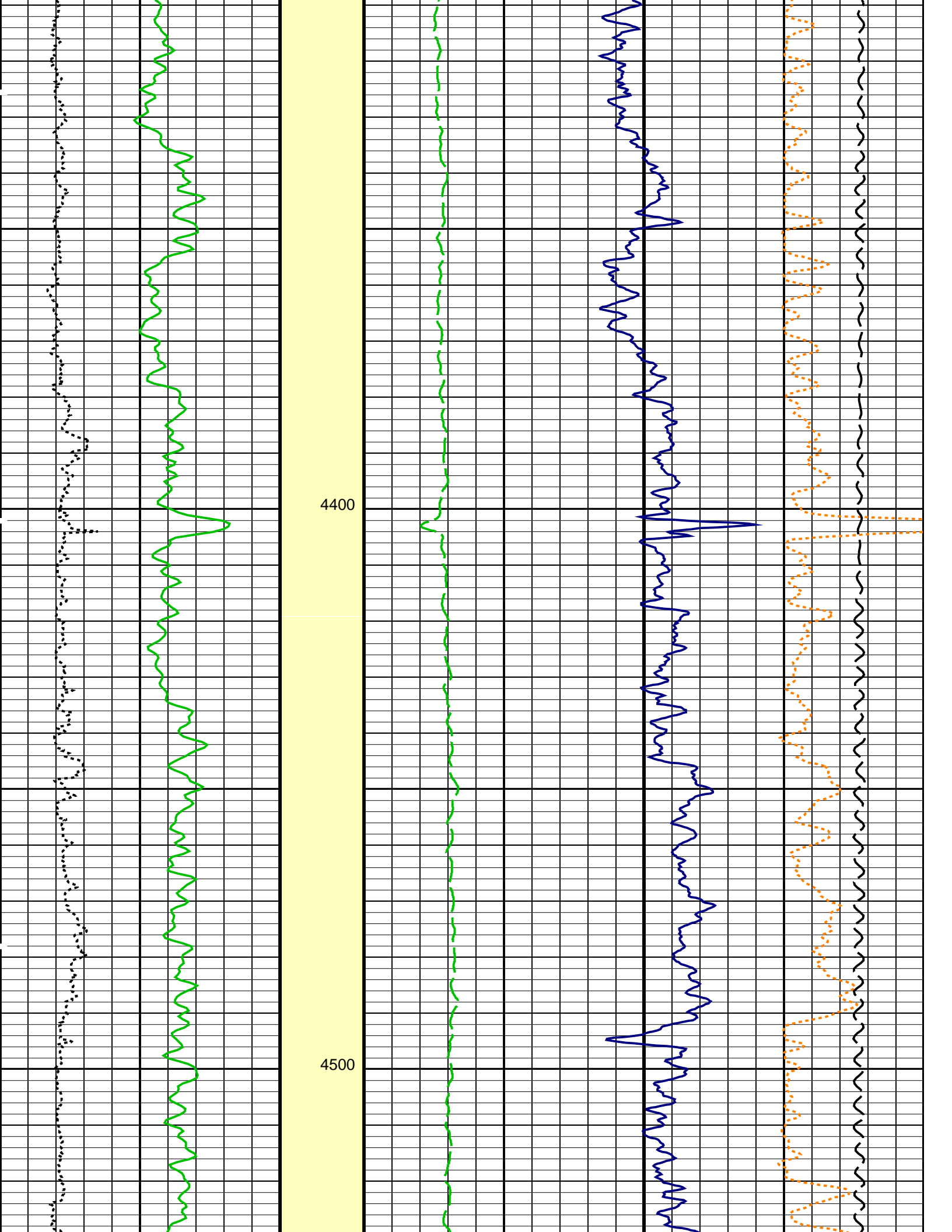


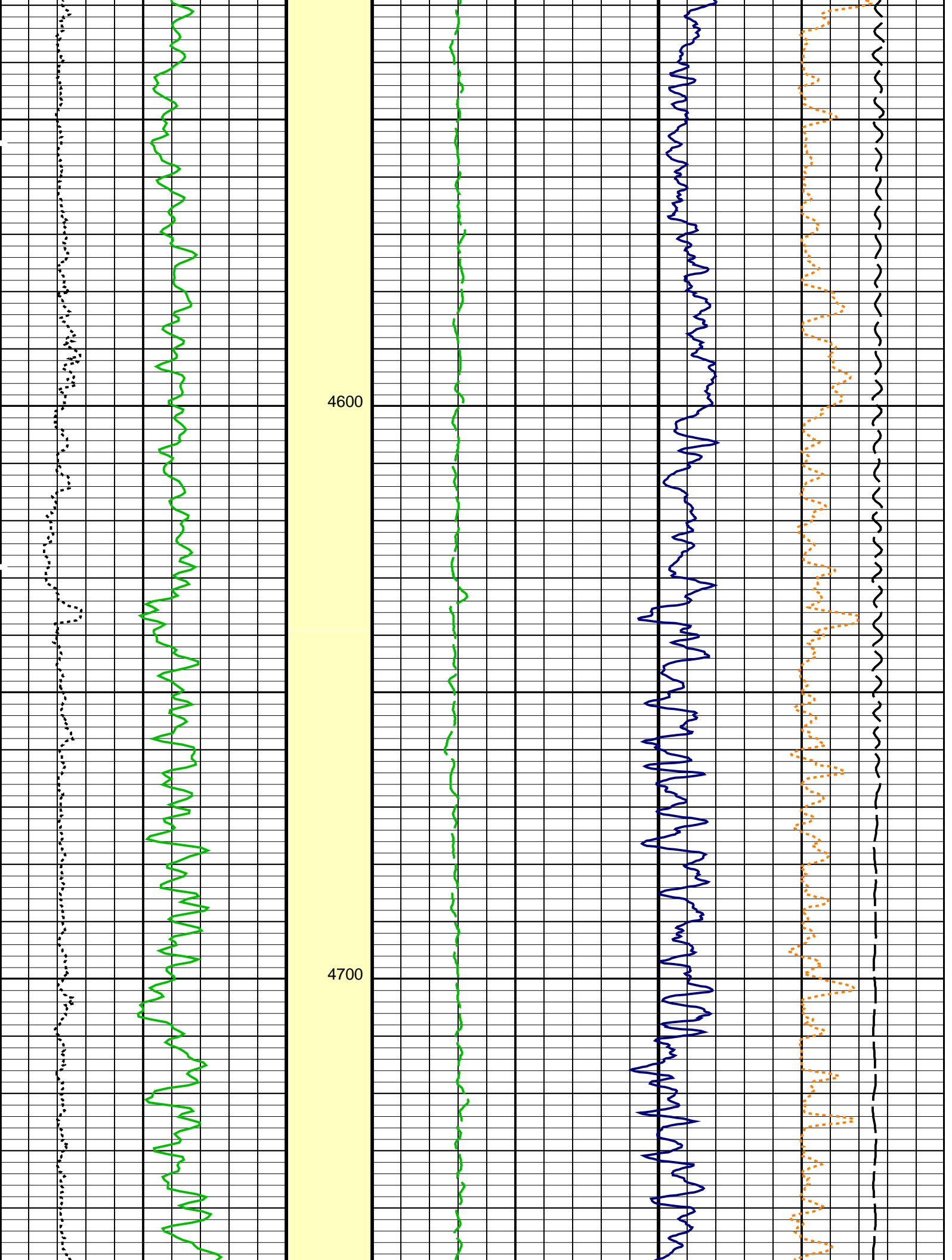


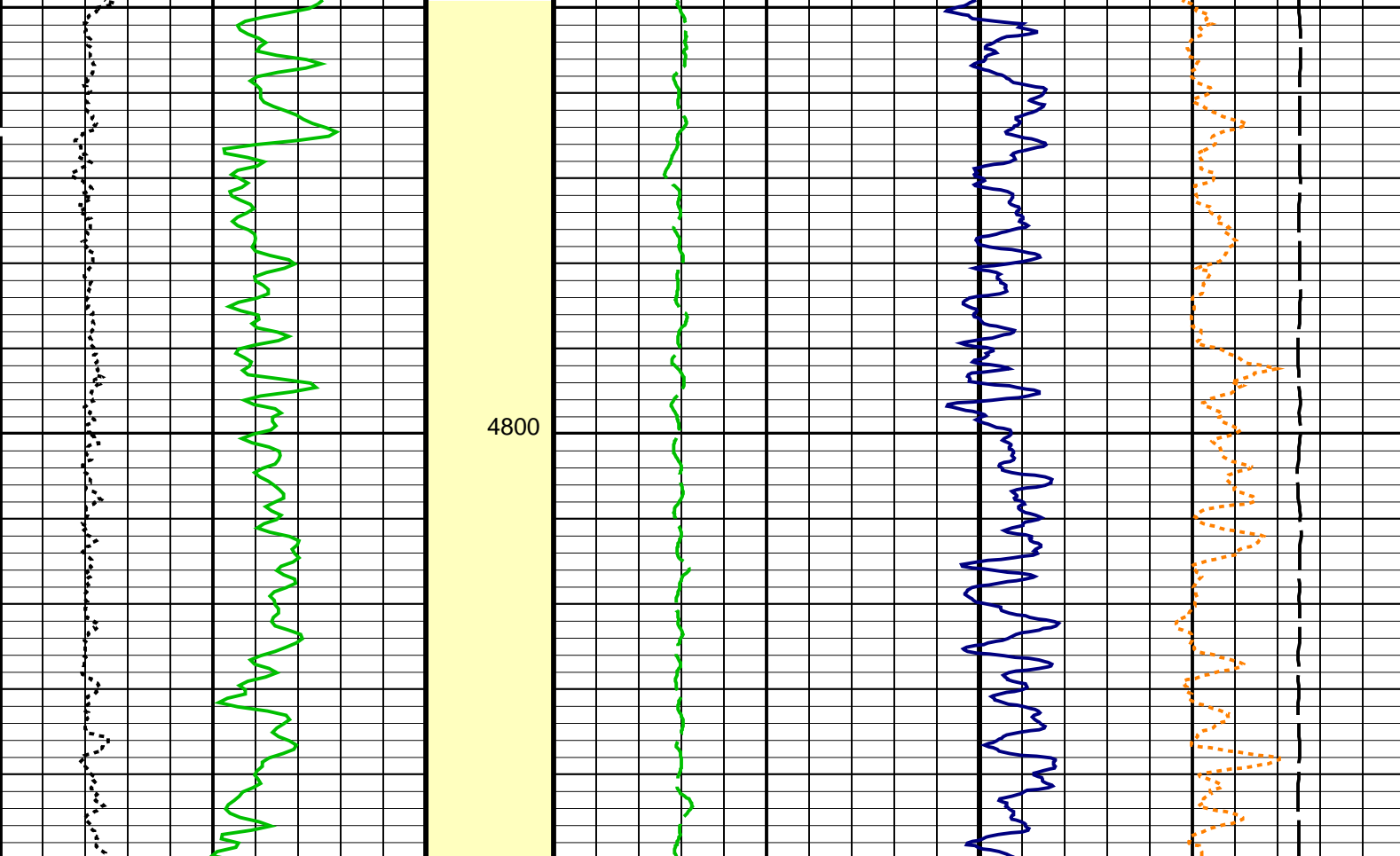




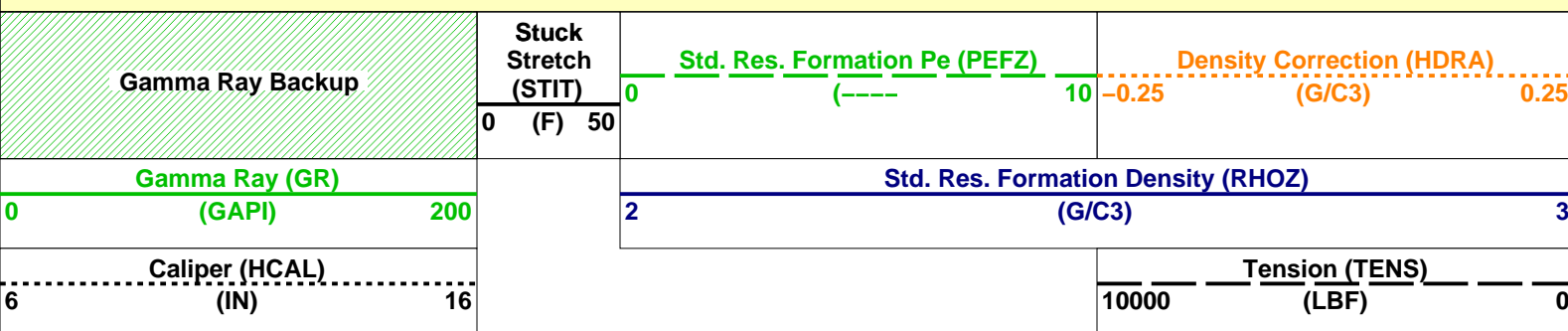








MAIN PASS: \*\*\* PLATFORM EXPRESS - LITHOLOGY DENSITY \*\*\*



#### PIP SUMMARY

Time Mark Every 60 S

#### Parameters

DLIS Name	Description	Value
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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
STI: Stuck Tool Indicator		
STKT	STI Stuck Threshold	2.500 ft
TDD	Total Depth - Driller	7405.0 ft
TDL	Total Depth - Logger	7385.0 ft
System and Miscellaneous		
BS	Bit Size	7.875 in
DFD	Drilling Fluid Density	8.200 lbm/gal

Format: UPPER\_DENS

Vertical Scale: 5" per 100'

Graphics File Created: 07-Apr-2010 18:01

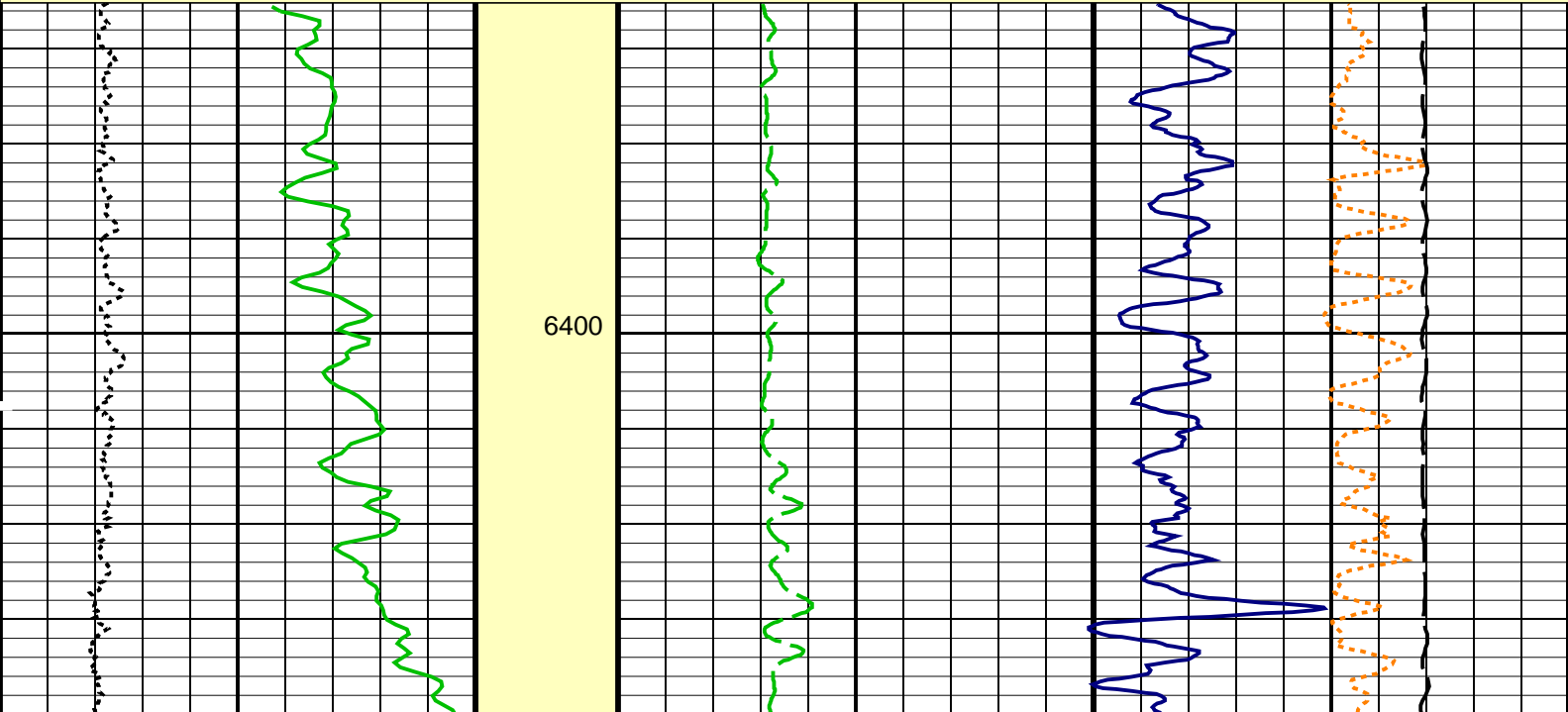
OP System Version: 17C0-154

Schlumberger

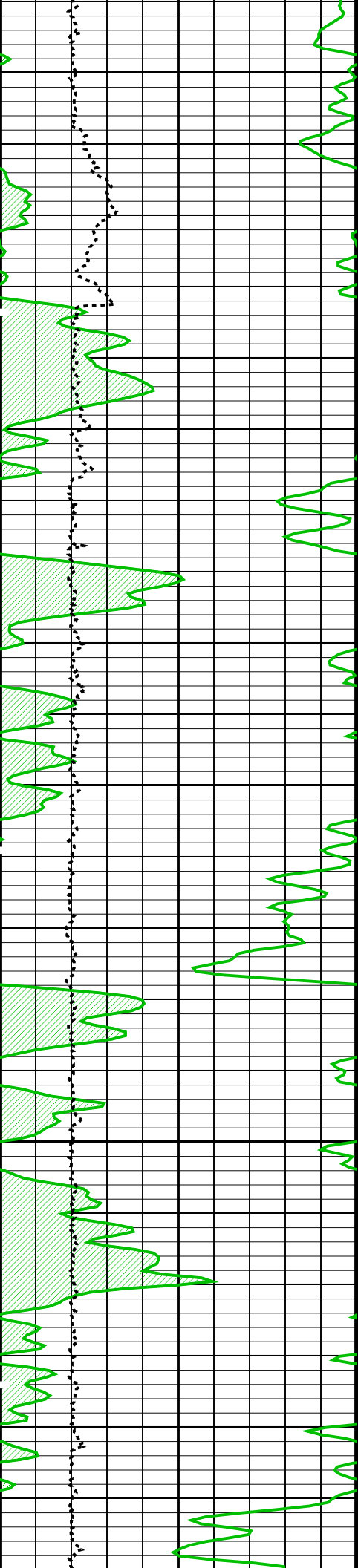
LOWER DENSITY LOG 5" = 100'

MAXIS Field Log

PIP SUMMARY					
Time Mark Every 60 S					
Caliper (HCAL) (IN)				Tension (TENS) (LBF)	
6 16				10000 0	
Gamma Ray (GR) (GAPI)		Std. Res. Formation Density (RHOZ)			
0 200		2 (G/C3) 3			
Gamma Ray Backup		Stuck Stretch (STIT)		Std. Res. Formation Pe (PEFZ)	
		0 (F) 50		Density Correction (HDRA) (G/C3)	
				-0.25 0.25	

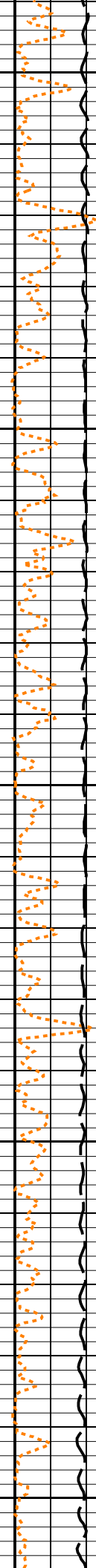
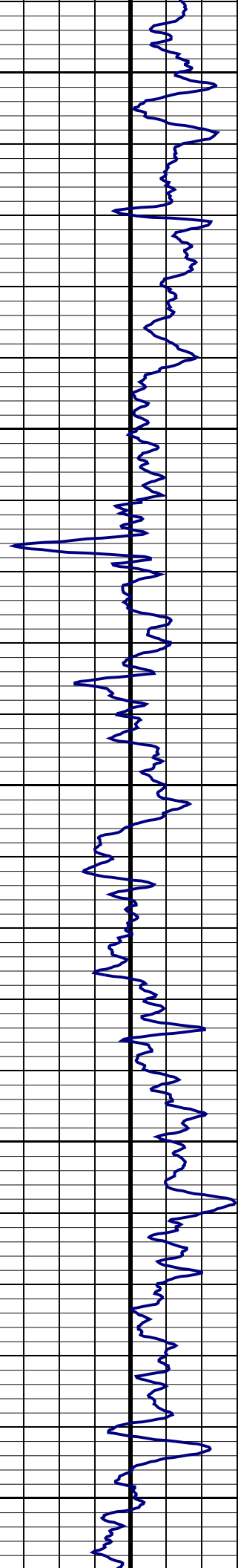
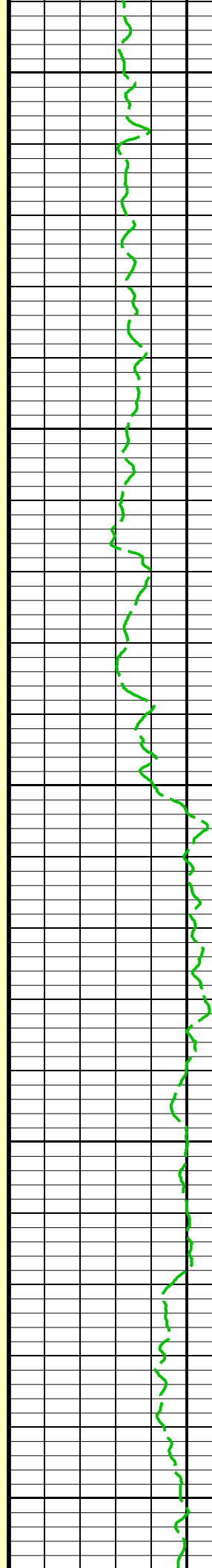


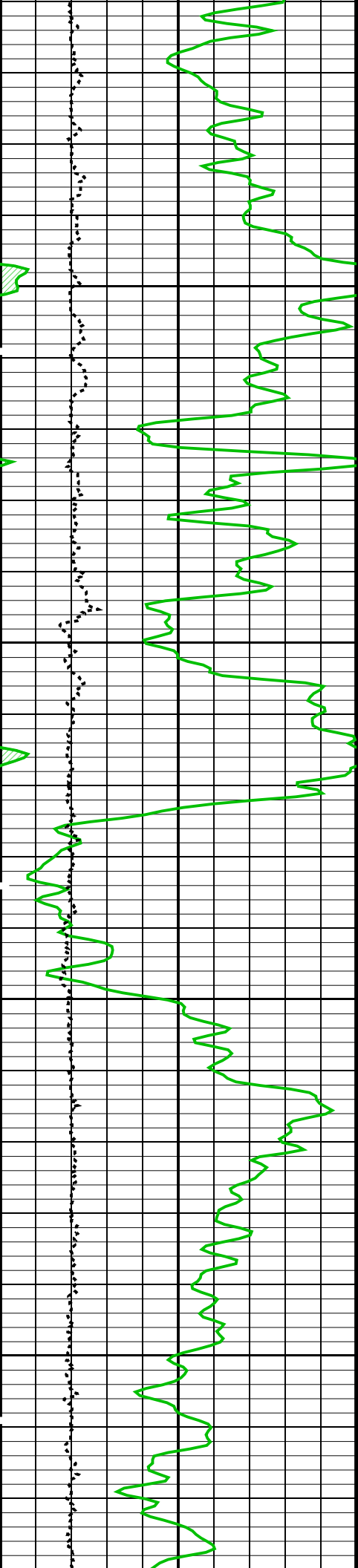




6500

6600

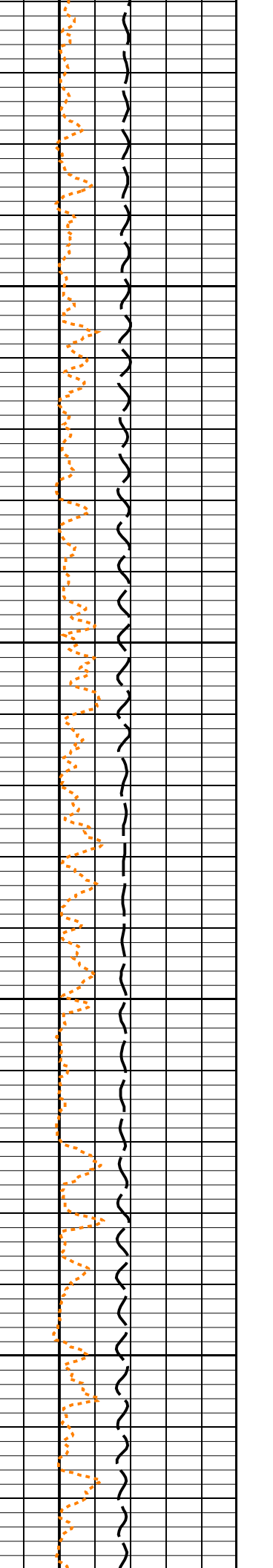
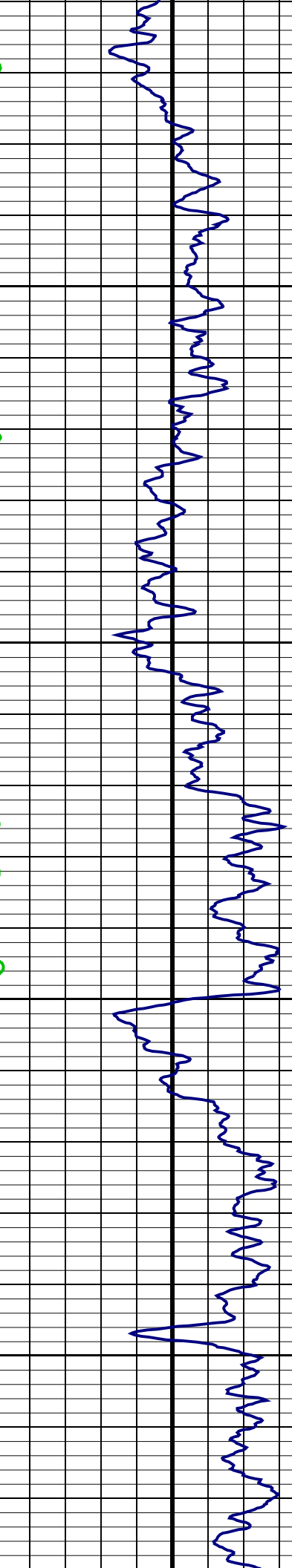
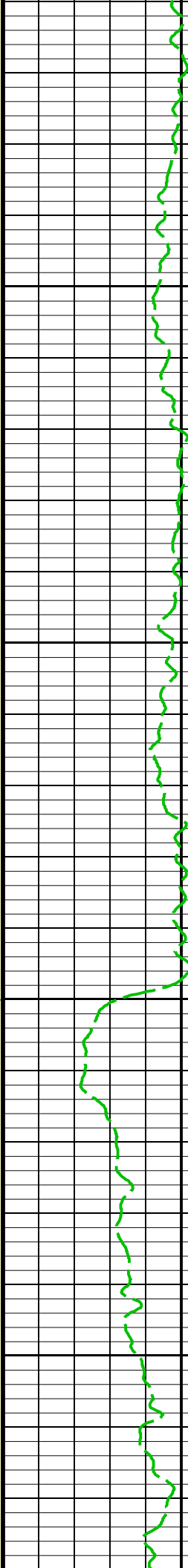


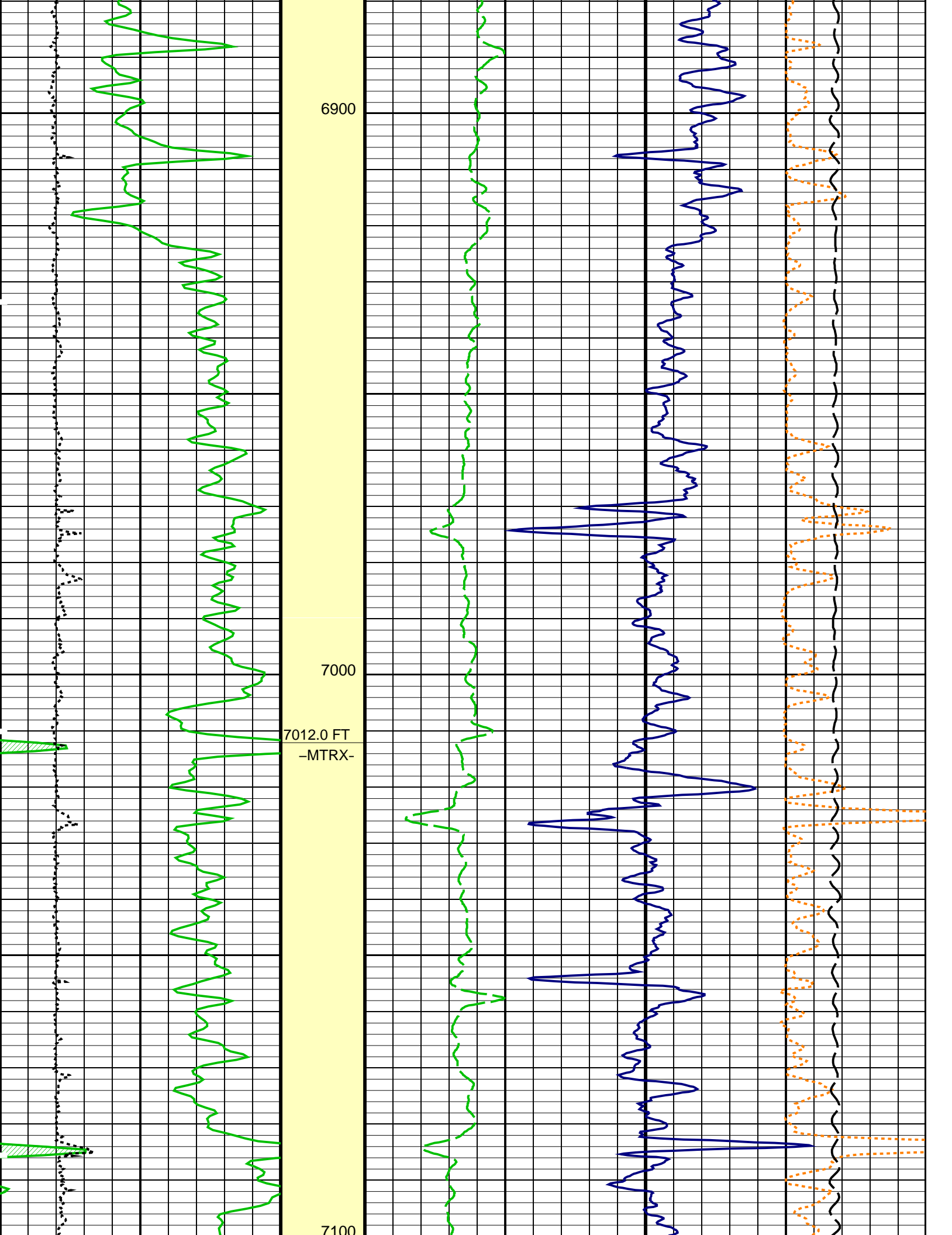


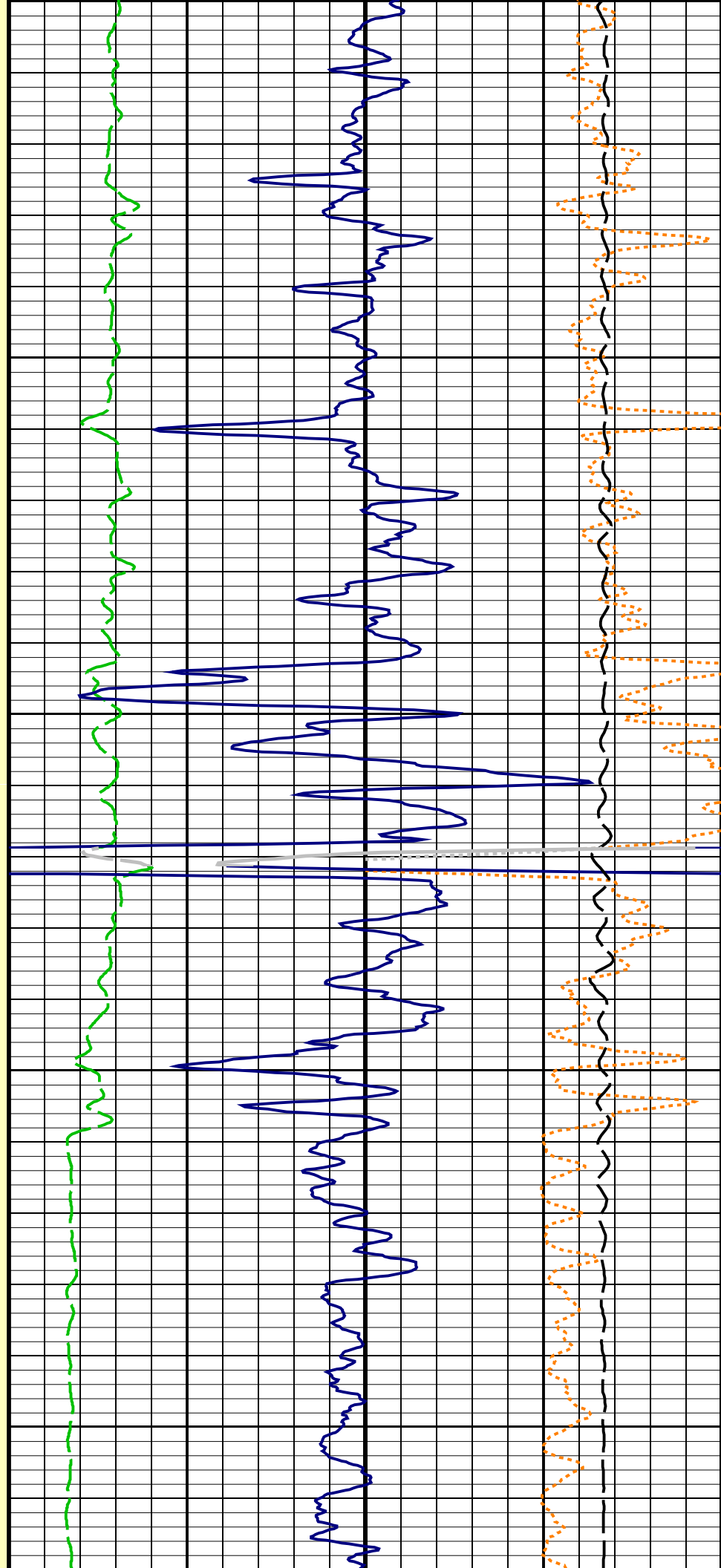
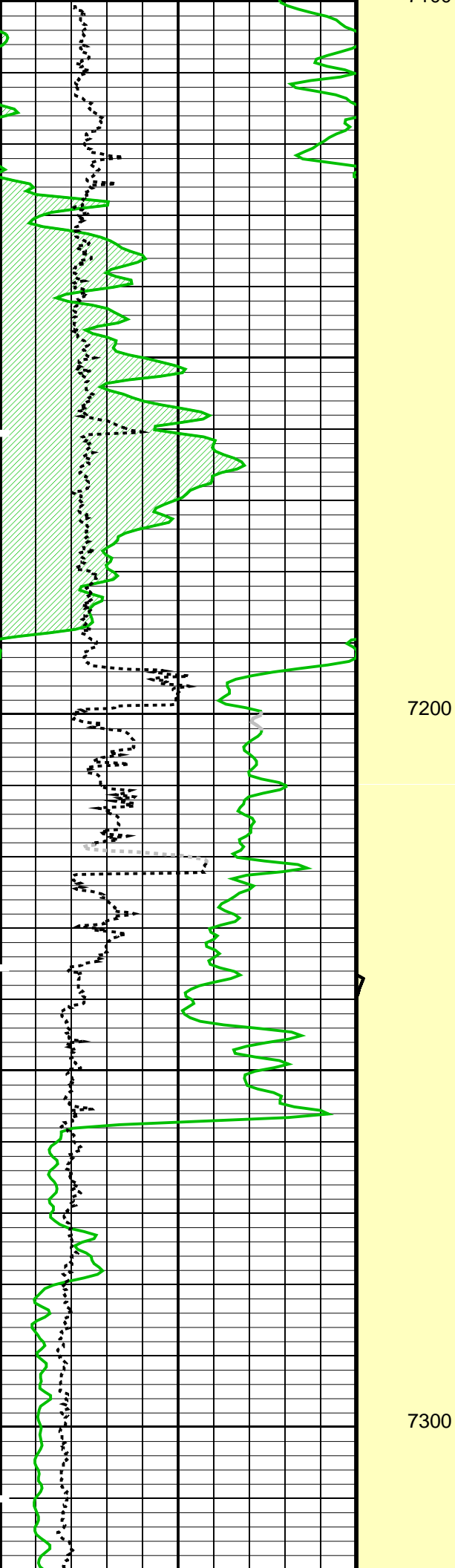
6700

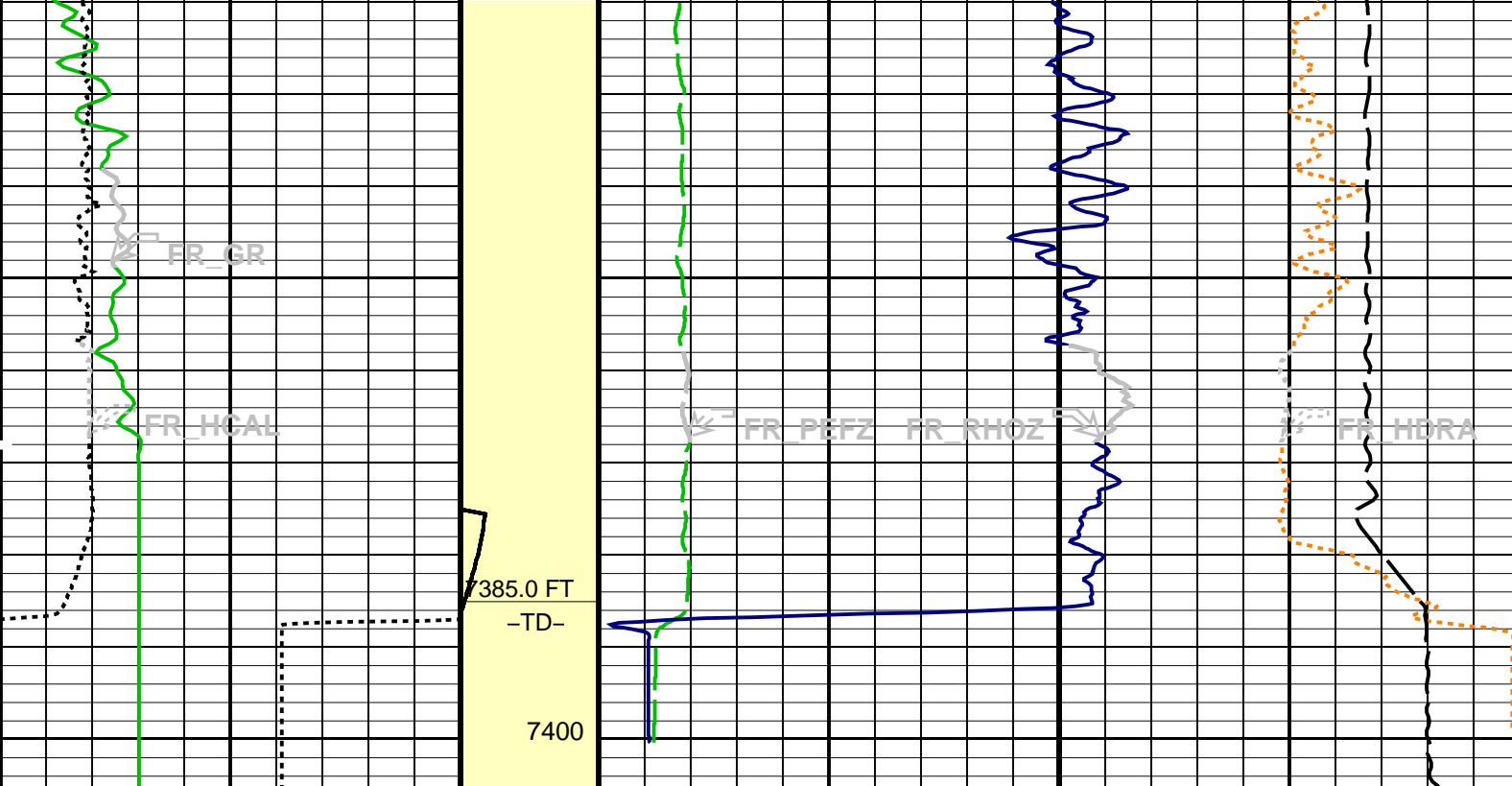
6800.0500

-MTRX-









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

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

## 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 IN
STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL
STKT	STI Stuck Threshold	2.5 FT
TDD	Total Depth - Driller	7405.00 FT
TDL	Total Depth - Logger	7385.00 FT
System and Miscellaneous		
BS	Bit Size	7.875 IN
DFD	Drilling Fluid Density	8.20 LB/G
DORL	Depth Offset for Repeat Analysis	0.0 FT

Format: LOWER\_DENS Vertical Scale: 5" per 100' Graphics File Created: 07-Apr-2010 17:12

OP System Version: 17C0-154

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



## BEFORE CALIBRATIONS

## MAXIS Field Log

## 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. &amp; Phase

Master: 17-Mar-2010 8:50 Before: 7-Apr-2010 9:08

Thru Cal Magnitude – 0	0	0.6194	0.6193	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.269	1.269	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6307	0.6306	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7118	0.7118	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.332	1.332	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.950	1.950	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.946	1.946	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.418	1.417	N/A	N/A	N/A	V
Thru Cal Phase – 0	0	180.0	179.9	N/A	N/A	N/A	DEG
Thru Cal Phase – 1	0	178.9	178.8	N/A	N/A	N/A	DEG
Thru Cal Phase – 2	0	175.3	175.2	N/A	N/A	N/A	DEG
Thru Cal Phase – 3	0	174.6	174.5	N/A	N/A	N/A	DEG
Thru Cal Phase – 4	0	168.4	168.3	N/A	N/A	N/A	DEG
Thru Cal Phase – 5	0	166.7	166.6	N/A	N/A	N/A	DEG
Thru Cal Phase – 6	0	166.8	166.7	N/A	N/A	N/A	DEG
Thru Cal Phase – 7	0	165.9	165.8	N/A	N/A	N/A	DEG

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

Master: 17-Mar-2010 8:50 Before: 7-Apr-2010 9:08

Array Induction SPA Plus	991.0	983.6	983.5	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	-0.2001	-0.1952	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9170	0.9114	0.9113	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	-0.0002014	-0.0001927	N/A	N/A	N/A	V

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

Master: 17-Mar-2010 8:50

Test Loop Gain Correctio – 0	0	1.015	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 1	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 2	0	1.016	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 3	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 4	0	0.9937	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 5	0	0.9890	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 6	0	0.9937	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 7	0	1.006	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 0	0	0.3332	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 1	0	0.6161	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 2	0	0.1287	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 3	0	0.1700	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 4	0	0.1124	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 5	0	-0.06042	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 6	0	0.2973	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 7	0	-0.06541	N/A	N/A	N/A	N/A	DEG

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

Master: 17-Mar-2010 8:50

R Sonde Error Correction – 0	0	-65.75	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	176.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	119.4	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	66.51	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	27.71	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	12.62	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	2.488	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	0.000	N/A	N/A	N/A	N/A	MM/M

R Sonde Error Correction – 6	0	9.430	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-1.425	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	-316.9	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	108.6	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	44.39	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	-31.03	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	20.82	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	-16.06	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	-4.953	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	-11.76	N/A	N/A	N/A	N/A	MM/M

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

Master: 17-Mar-2010 8:50

Coarse – Mag, Real, Imag – 0	0	0.8486	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 1	0	0.8487	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 2	0	0.8487	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 0	0	0.8511	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 1	0	0.8512	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 2	0	0.8512	N/A	N/A	N/A	N/A	

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

Before: 7-Apr-2010 9:03

BS Window Ratio	0.7392	N/A	0.7359	N/A	N/A	N/A	
BS Window Sum	10690	N/A	10680	N/A	N/A	N/A	CPS
SS Window Ratio	0.4732	N/A	0.4728	N/A	N/A	N/A	
SS Window Sum	10190	N/A	10170	N/A	N/A	N/A	CPS
LS Window Ratio	0.2975	N/A	0.3001	N/A	N/A	N/A	
LS Window Sum	1166	N/A	1162	N/A	N/A	N/A	CPS

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

Before: 7-Apr-2010 9:03

BS PM High Voltage (Command)	1509	N/A	1515	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1777	N/A	1780	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1896	N/A	1900	N/A	N/A	N/A	V

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

Before: 7-Apr-2010 9:03

BS Crystal Resolution	11.23	N/A	11.17	N/A	N/A	N/A	%
SS Crystal Resolution	11.03	N/A	11.14	N/A	N/A	N/A	%
LS Crystal Resolution	9.873	N/A	9.879	N/A	N/A	N/A	%

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

Before: 7-Apr-2010 9:08

Raw B0 Resistivity	3875	N/A	3857	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3810	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3826	N/A	N/A	N/A	OHMM

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

Before: 7-Apr-2010 8:57

HILT Caliper Zero Measurement	8.000	N/A	9.771	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	13.89	N/A	N/A	N/A	IN

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration

Before: 7-Apr-2010 8:54

Gamma Ray Background	30.00	N/A	79.26	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	148.5	N/A	148.5	N/A	N/A	13.50	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: 20-Mar-2010 17:38 Before: 7-Apr-2010 9:12

CNTC Background	28.30	28.30	28.36	N/A	N/A	4.245	CPS
CFTC Background	26.92	26.92	28.76	N/A	N/A	4.038	CPS

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement

Master: 20-Mar-2010 17:38

Thermal Near Corr. (Tank)	5800	5716	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2390	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.392	N/A	N/A	N/A	N/A	

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration

Before: 7-Apr-2010 16:38

Z-Axis Acceleration	32.19	N/A	31.77	N/A	N/A	N/A	F/S2
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#### High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results

Master: 22-Mar-2010 21:20

Rho Aluminum	2.596	2.602	--	--	--	--	G/C3
Rho Magnesium	1.686	1.688	--	--	--	--	G/C3
Pe Aluminum	2.570	2.565	--	--	--	--	
Pe Magnesium	2.650	2.609	--	--	--	--	

#### High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary

Master: 22-Mar-2010 21:20

BS Average Deviation	0	0.3292	--	--	--	--	%
BS Max Deviation	0	0.6568	--	--	--	--	%
SS Average Deviation	0	0.4057	--	--	--	--	%
SS Max Deviation	0	1.954	--	--	--	--	%
LS Average Deviation	0	0.8119	--	--	--	--	%
LS Max Deviation	0	1.606	--	--	--	--	%

The GLS-VJ source activity is acceptable.

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

NCT-B Water Temperature 61.6 DEGF.  
Thermal Housing Size 3.380 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	0.6194		0.6100	180.0		197.0
	Before	0.6193			179.9		
1	Master	1.269		1.270	178.9		196.0
	Before	1.269			178.8		
2	Master	0.6307		0.6200	175.3		192.0
	Before	0.6306			175.2		
3	Master	0.7118		0.7000	174.6		191.0
	Before	0.7118			174.5		
4	Master	1.332		1.340	168.4		185.0
	Before	1.332			168.3		
5	Master	1.950		1.960	166.7		182.0
	Before	1.950			166.6		
6	Master	1.946		1.960	166.8		181.0
	Before	1.946			166.7		
7	Master	1.418		1.410	165.9		175.0
	Before	1.417			165.8		
		60.00 % (Minimum)	140.0 % (Maximum)		Nom -60.00 (Minimum)	Nom + 60.00 (Maximum)	
Master: 17-Mar-2010 8:50				Before: 7-Apr-2010 9:08			

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		983.6	Master		-0.2001
Before		983.5	Before		-0.1952
	941.0 (Minimum)	991.0 (Nominal)		-50.00 (Minimum)	0 (Nominal)
		1040 (Maximum)			50.00 (Maximum)
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.9114	Master		0.0002014





Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	0.8486				0.8511			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.8487				0.8512			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.8487				0.8512			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 17-Mar-2010 8:50

Array Induction Tool – M Master Calibration									
Electronics Calibration Check – Thru Cal Mag. & Phase									
Idx	Phase	Value	Thru Cal Magnitude V		Nominal	Value	Thru Cal Phase DEG		Nominal
0	Master	0.6194			0.6100	180.0			197.0
1	Master	1.269			1.270	178.9			196.0
2	Master	0.6307			0.6200	175.3			192.0
3	Master	0.7118			0.7000	174.6			191.0
4	Master	1.332			1.340	168.4			185.0
5	Master	1.950			1.960	166.7			182.0
6	Master	1.946			1.960	166.8			181.0
7	Master	1.418			1.410	165.9			175.0
		60.00 % (Minimum)	(Nominal)		140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)		Nom + 60.00 (Maximum)
Master: 17-Mar-2010 8:50									

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>			983.6	Master	<div><div></div></div>			−0.2001
	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>			0.9114	Master	<div><div></div></div>			−0.0002014
	0.8710 (Minimum)	0.9170 (Nominal)	0.9630 (Maximum)			−0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)	
Master: 17–Mar–2010 8:50									

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		
0	1.015				0.3332			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.012				0.6161			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.016				0.1287			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.012				0.1700			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9937				0.1124			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9890				-0.06042			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	0.9937				0.2973			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)
7	1.006				-0.06541			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

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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	-65.75				-316.9			
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	176.6				108.6			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	119.4				44.39			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	66.51				-31.03			
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	27.71				20.82			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	12.62				-16.06			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.430				-4.953			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-1.425				-11.76			
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 17-Mar-2010 8:50

Array Induction Tool – M Master Calibration								
Mud Gain Correction								
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	0.8486	<div><div></div></div>			0.8511	<div><div></div></div>		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.8487	<div><div></div></div>			0.8512	<div><div></div></div>		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.8487	<div><div></div></div>			0.8512	<div><div></div></div>		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 17-Mar-2010 8:50

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

#### Primary Equipment:

HILT high–Resolution Mechanical Sonde  
HILT Rxo Gamma–ray Device  
HILT Micro Cylindrically Focused Log Dev  
GR Logging Source  
HILT High Res. Control Cartridge  
HILT Gamma–Ray Neutron Sonde–DTS  
HGNS Gamma–Ray Device  
HGNS Neutron Detector with Alpha Source

HRMS – B  
HRGD – B  
MCFL –  
GLS – VJ  
HRCC – B  
HGNS – B  
HGR –  
HCNT –







5416




#### Auxiliary Equipment:




Neutron Calibration Tank  
Gamma Source Radioactive  
HGNS Housing




NCT – B  
GSR – U/Y  
HGNH –



## High resolution Integrated Logging Tool-DTS Wellsite Calibration




Stab Measurement Summary														
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value
Before				0.7359	Before				0.4728	Before				0.3001
	0.7022 (Minimum)	0.7392 (Nominal)	0.7762 (Maximum)		0.4496 (Minimum)	0.4732 (Nominal)	0.4969 (Maximum)			0.2827 (Minimum)	0.2975 (Nominal)	0.3124 (Maximum)		
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value
Before				10680	Before				10170	Before				1162
	10160 (Minimum)	10690 (Nominal)	11230 (Maximum)		9680 (Minimum)	10190 (Nominal)	10700 (Maximum)			1108 (Minimum)	1166 (Nominal)	1224 (Maximum)		
Before: 7-Apr-2010 9:03														





High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Photo-multiplier High Voltages Calibrations											
Phase	BS PM High Voltage (Command) V		Value	Phase	SS PM High Voltage (Command) V		Value	Phase	LS PM High Voltage (Command) V		Value
Before			1515	Before			1780	Before			1900
	1409 (Minimum)	1509 (Nominal)	1609 (Maximum)		1677 (Minimum)	1777 (Nominal)	1877 (Maximum)		1796 (Minimum)	1896 (Nominal)	1996 (Maximum)
Before: 7-Apr-2010 9:03											




High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Crystal Quality Resolutions Calibration											
Phase	BS Crystal Resolution %		Value	Phase	SS Crystal Resolution %		Value	Phase	LS Crystal Resolution %		Value
Before			11.17	Before			11.14	Before			9.879
	10.23 (Minimum)	11.23 (Nominal)	12.23 (Maximum)		10.03 (Minimum)	11.03 (Nominal)	12.03 (Maximum)		8.873 (Minimum)	9.873 (Nominal)	10.87 (Maximum)
Before: 7-Apr-2010 9:03											

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				3857	Before				3810	Before				3826
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)			
Before: 7-Apr-2010 9:08														


High resolution Integrated Logging Tool-DTS Wellsite Calibration							
HILT Caliper Calibration							
Phase	HILT Caliper Zero Measurement IN		Value	Phase	HILT Caliper Plus Measurement IN		Value
Before			9.771	Before			13.89
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 7-Apr-2010 8:57							





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			79.26	Before			148.5	Before			165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		135.0 (Minimum)	148.5 (Nominal)	162.0 (Maximum)		150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)
Before: 7-Apr-2010 8:54											

High resolution Integrated Logging Tool-DTS Wellsite Calibration							
Zero Measurement							
Phase	CNTC Background CPS		Value	Phase	CFTC Background CPS		Value
Master			28.30	Master			26.92
Before			28.36	Before			28.76
5.000 (Minimum)			28.30 (Nominal)	40.00 (Maximum)			
Master: 20-Mar-2010 17:38				Before: 7-Apr-2010 9:12			



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			5716	Master			2390	Master			2.392




4700 (Minimum)	5800 (Nominal)	6900 (Maximum)	1900 (Minimum)	2400 (Nominal)	2900 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)
Master: 20-Mar-2010 17:38								

High resolution Integrated Logging Tool-DTS Wellsite Calibration			
Accelerometer Calibration			
Phase	Z-Axis Acceleration F/S2	Value	
Before		31.77	
	31.53 (Minimum)	32.19 (Nominal)	32.84 (Maximum)
Before: 7-Apr-2010 16:38			

High resolution Integrated Logging Tool-DTS Master Calibration							
Inversion results							
Phase	Rho Aluminum G/C3		Value	Phase	Rho Magnesium G/C3		Value
Master			2.602	Master			1.688
	2.586 (Minimum)	2.596 (Nominal)			2.606 (Maximum)	1.676 (Minimum)	
Phase	Pe Aluminum		Value	Phase	Pe Magnesium		Value
Master			2.565	Master			2.609
	2.470 (Minimum)	2.570 (Nominal)			2.670 (Maximum)	2.550 (Minimum)	
Master: 22-Mar-2010 21:20							

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>		0.3292	Master	<div><div></div></div>		0.4057	Master	<div><div></div></div>		0.8119
	–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	<div><div></div></div>		0.6568	Master	<div><div></div></div>		1.954	Master	<div><div></div></div>		1.606
	–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: 22–Mar–2010 21:20											

High resolution Integrated Logging Tool-DTS Master Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				28.30	Master				26.92
	5.000 (Minimum)	28.30 (Nominal)	40.00 (Maximum)			5.000 (Minimum)	26.92 (Nominal)	40.00 (Maximum)	
Master: 20-Mar-2010 17:38									

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			5716	Master			2390	Master			2.392
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)
Master: 20–Mar–2010 17:38											

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:	KCB 17-14	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Platform Express Compensated Neutron Density Lithology		