

Schlumberger

Company: Lamont Doherty
Expedition 339, Site U1386 GC-01A
Mediterranean Outflow (Portugal)
JOIDES Resolution **Ocean: Atlantic**

Rig: JOIDES Resolution
Field: Mediterranean Outflow (Portugal)
Location: Latitude: N 36° 49.69'
Well: Expedition 339, Site U1386 GC-01A
Company: Lamont Doherty

Formation Micro Scanner
Dual Axis Caliper
Gamma Ray

LOCATION		Elev.: K.B. 11.00 m	G.L. -562.20 m D.F. 11.00 m
Latitude: N 36° 49.69'	Longitude: W 7° 45.33'	Elev.: 0.00 m	
Permanent Datum:	Mean Sea Level	Drill Floor	11.00 m above Perm. Datum
Log Measured From:	Drill Floor	Drilling Measured From:	Drill Floor
API Serial No.		Max. Hole Devi. 0 deg	Longitude W 7° 45.33'
7-Dec-2011			Latitude N 36° 49.69'

Logging Date	7-Dec-2011		
Run Number	1		
Depth Driller	526 m		
Schlumberger Depth	523 m		
Bottom Log Interval	523 m		
Top Log Interval	0 m		
Casing Driller Size @ Depth	10.750 in @ 102 m		
Casing Schlumberger	100 m		
Bit Size	9.875 in		
Type Fluid In Hole	Seawater Gel		
Density	1.25 g/cm3		
Fluid Loss	PH		
Source Of Sample	N/A		
RM @ Measured Temperature		@	@
RMF @ Measured Temperature		@	@
RMC @ Measured Temperature		@	@
Source RMF	RMC	N/A	N/A
RM @ MRT	RMF @ MRT	@ 21	@ 21
Maximum Recorded Temperatures	21 degC		
Circulation Stopped	7-Dec-2011	Time	11:00
Logger On Bottom	7-Dec-2011	Time	21:30
Unit Number	625003	Houston	
Recorded By	K. Swain		
Witnessed By	T. Williams, J. Lofi		

	Run 1	Run 2	Run
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			
Fluid Loss			
Source Of Sample			
RM @ Measured Temperature	@	@	
RMF @ Measured Temperature	@	@	
RMC @ Measured Temperature	@	@	
Source RMF	RMC		
RM @ MRT	RMF @ MRT	@	@
Maximum Recorded Temperatures			
Circulation Stopped			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

DISCLAIMER
 THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1
 OS1: DSI
 OS2: VSI
 OS3: HRLT
 OS4: HNGS
 OS5: HLDS/DITE

OTHER SERVICES2
 OS1:
 OS2:
 OS3:
 OS4:
 OS5:

REMARKS: RUN NUMBER 1
 Hole GC-01A Hole C was drilled with a 9 7/8" RCB bit to TDD of 1099mbrf.
 Hole depth referenced from sea floor based on driller measurement is 526m.
 Logs played back with a depth offset to match sea floor at depth = 0m.
 DSI run centralized with 2 MCD centralizers.
 SAM 2=Upper dipole shear
 SAM4=P&S monopole compressional
 SAM1=lower frequency dipole shear

 All logs recorded via wireline thru 5.5" drillpipe and RCB coring BHA.
 consisting of a bit release sub, Kinley sub, drill collars. The rotary coring
 bit was released on bottom prior to logging.
 Tool bridged at 374mbsf and logged up from there.
 1st pass logged from 374 to drill pipe.
 2nd pass logged from 374 to sea floor.

REMARKS: RUN NUMBER 2

RUN 1		
SERVICE ORDER #:		
PROGRAM VERSION:	19C0-187	
FLUID LEVEL:		
LOGGED INTERVAL	START	STOP

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

EQUIPMENT DESCRIPTION


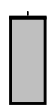
RUN 1

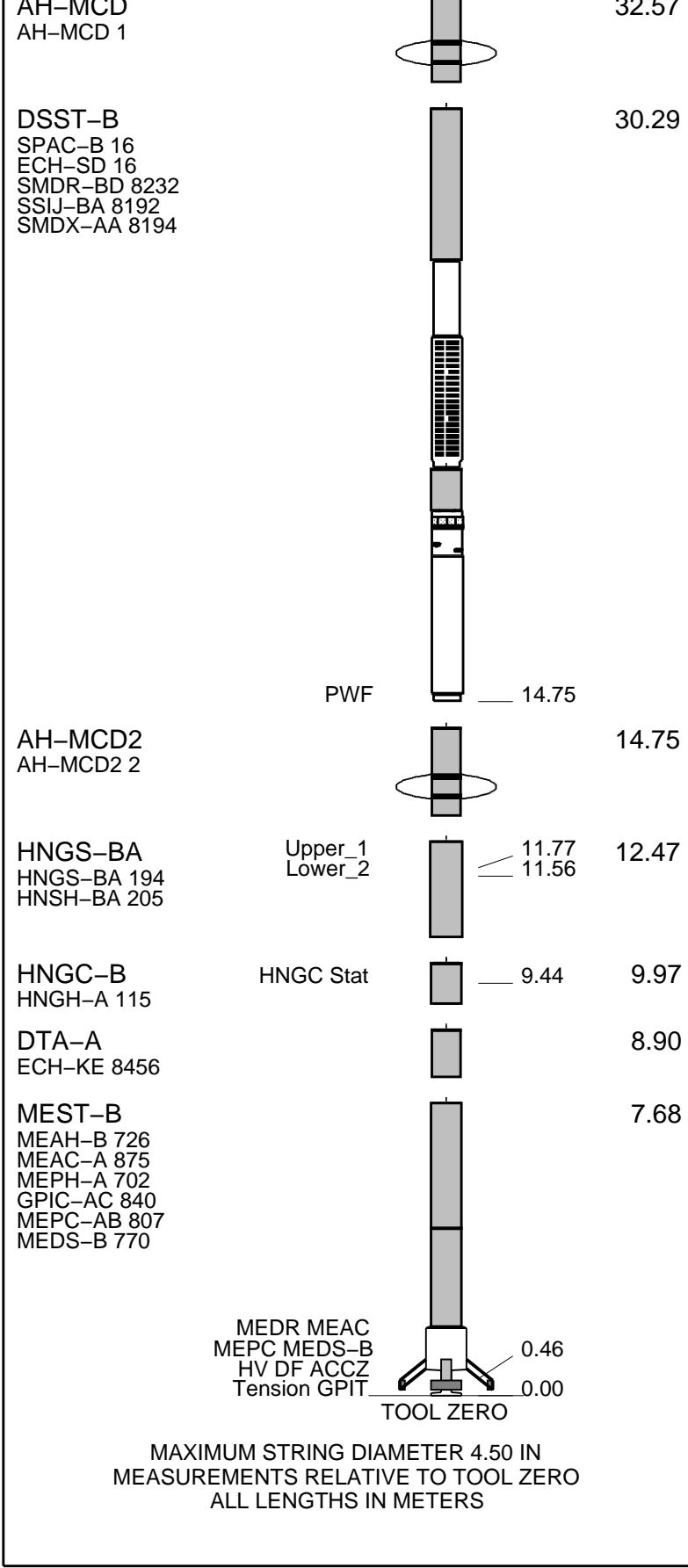
SURFACE EQUIPMENT

GSR-U 616008
 WITM (EDTS)-A

RUN 2

DOWNHOLE EQUIPMENT

LEH-QT	MDSB_EDTC		34.55		35.44
LEH-QT	Mud Tempe		33.49		
	CTEM		32.92		
EDTC-B	Gamma Ray		32.57		
EDTH-B 8528	EFTB DIAG				
EDTC-B 8529	TelStatus				
EDTG-A/B 77693	EDTCB Ele				

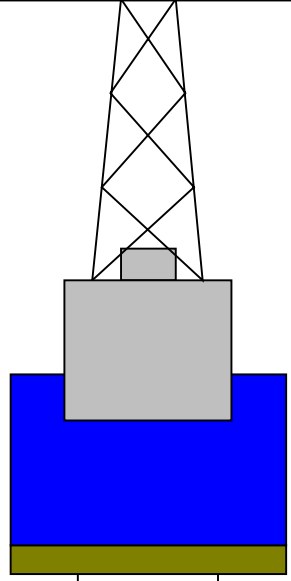


Production String	(in)	(M)	Well Schematic	(M)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation
Derrick Floor Elevation

Mean Sea Level

-573.2
-573.2
-562.2



4.1



0
102
526
3.80
9.875

Sea Floor
Open Hole
Total Depth

Input DLIS Files

DEFAULT FMS_NGS_DSI_019LUP FN:28 PRODUCER 08-Dec-2011 06:28 946.4 M 563.0 M

Output DLIS Files

DEFAULT FMS_NGS_DSI_056PUP FN:22 PRODUCER 31-Dec-2011 09:10 374.1 M -9.0 M

OP System Version: 19C0-187

MEST-B	19C0-187	DTA-A	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
DSST-B	19C0-187	EDTC-B	19C0-187

PIP SUMMARY

Time Mark Every 60 S

		Area From BS to BS_1		Area From BS_3 to BS_2	
		Area From C1 to BS	Area From BS_1 to C1_1	Area From C2 to BS_3	Area From BS_2 to C2_1
		Caliper 1 (C1)	Caliper 1 (C1)	Caliper 2 (C2)	Caliper 2 (C2)
		20 (IN)	0 0 (IN)	20 (IN)	0 0 (IN)
Gamma Ray (GR_EDTC)	Tension (TENS)	Bit Size (BS)	Bit Size (BS)	Bit Size (BS)	Bit Size (BS)

(GAPI)

75

(LBF)

20

(IN)

0 0

(IN)

20 20

(IN)

0 0

(IN)

20

10000

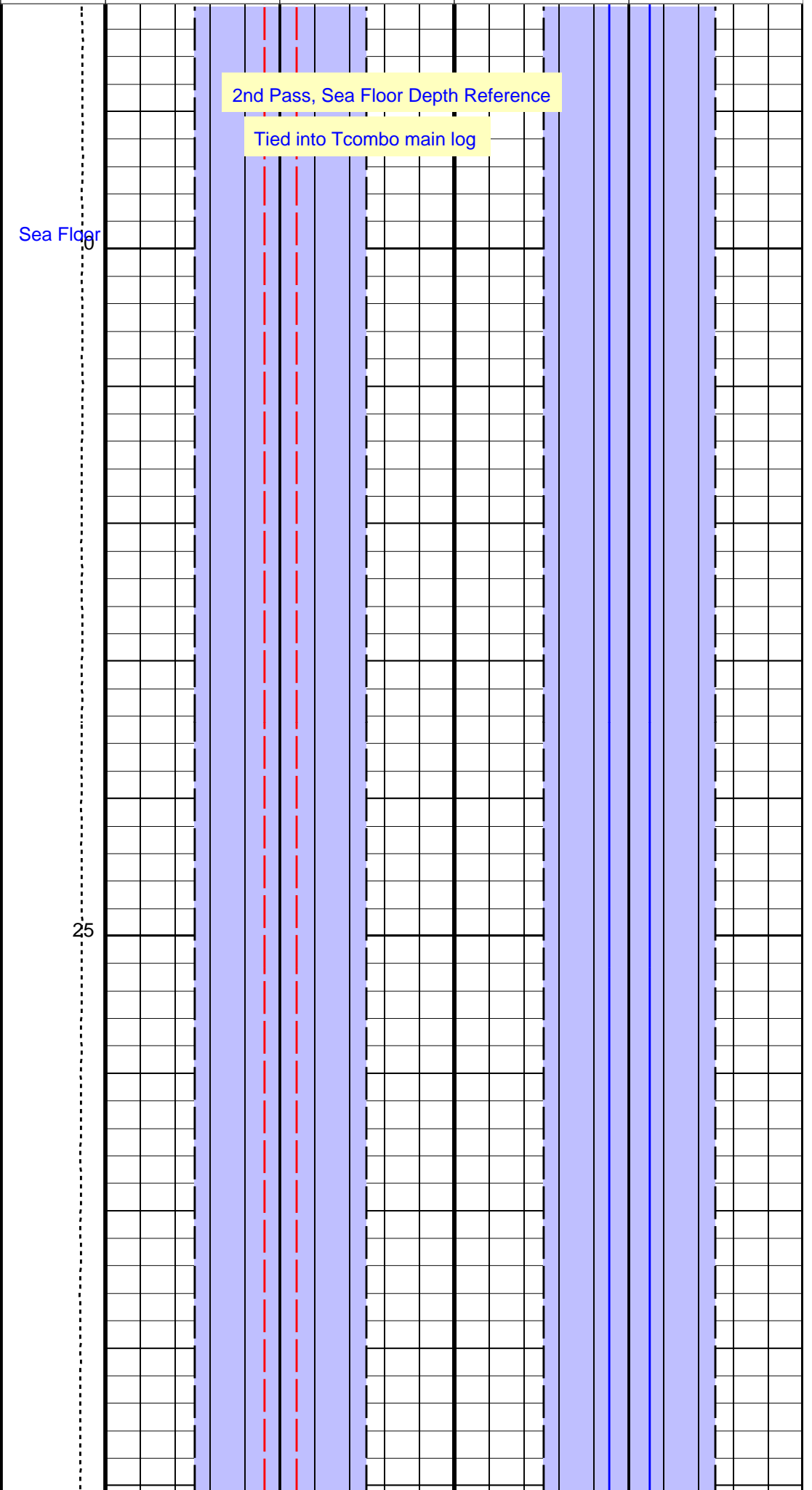
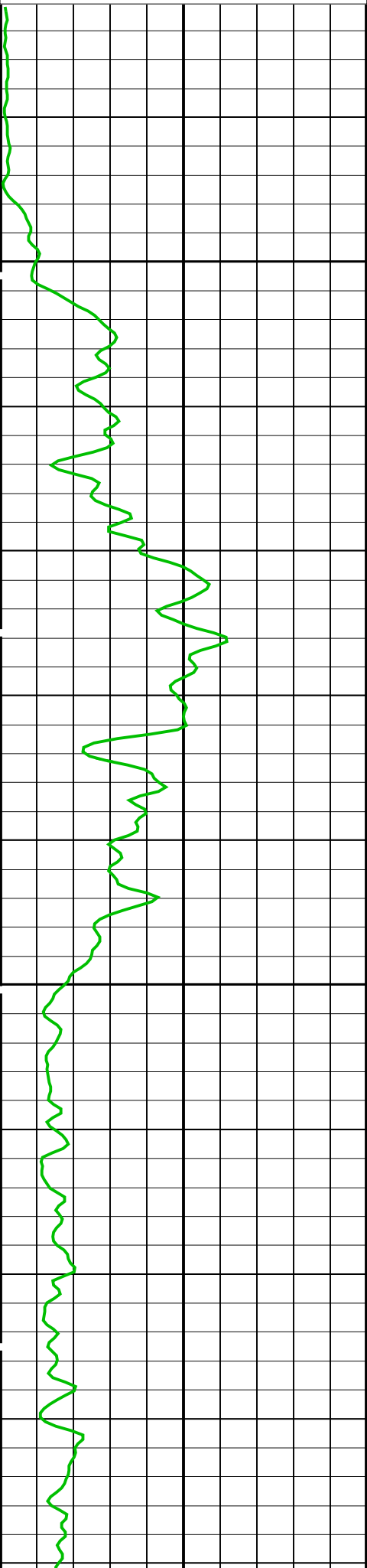
0

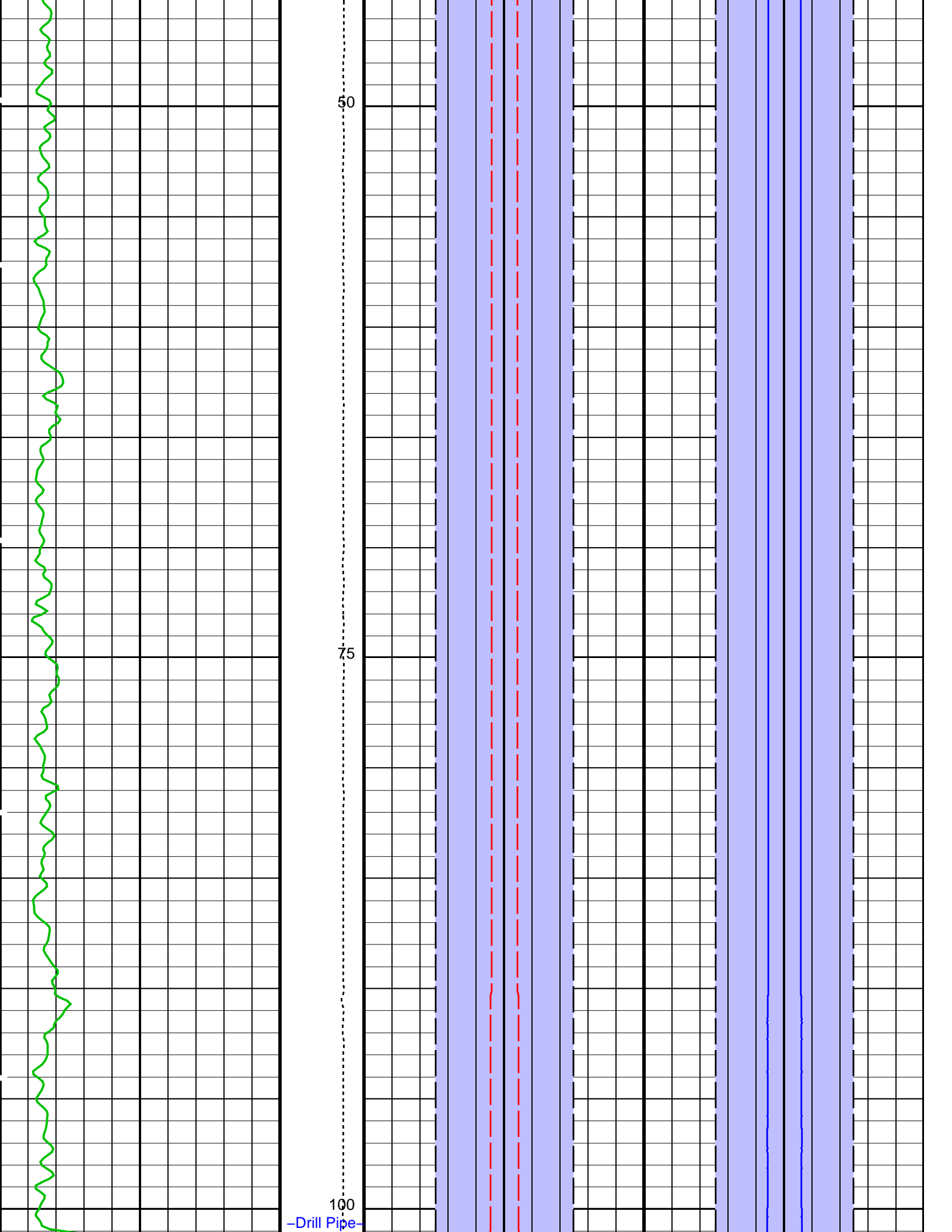
Sea Floor

25

2nd Pass, Sea Floor Depth Reference

Tied into Tcombo main log



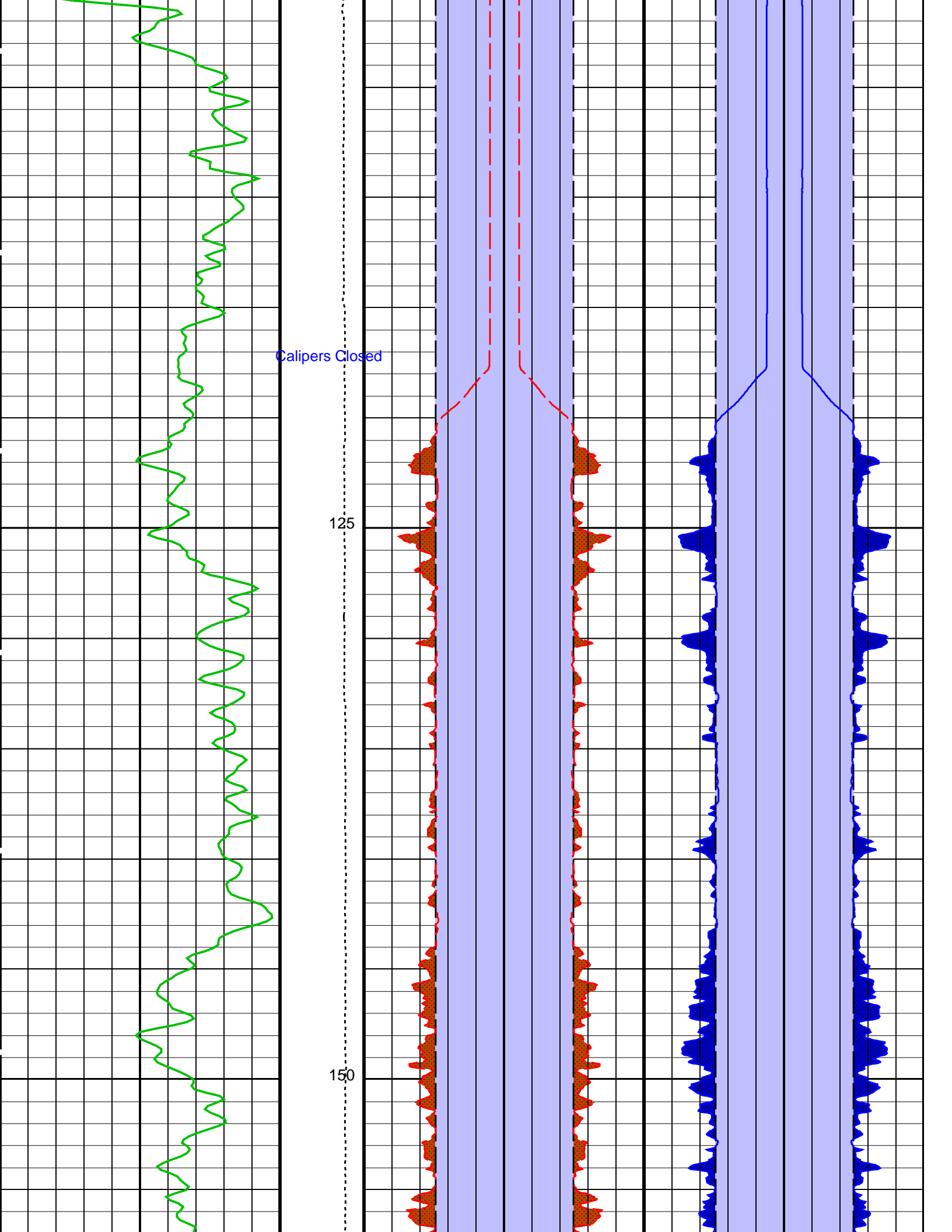


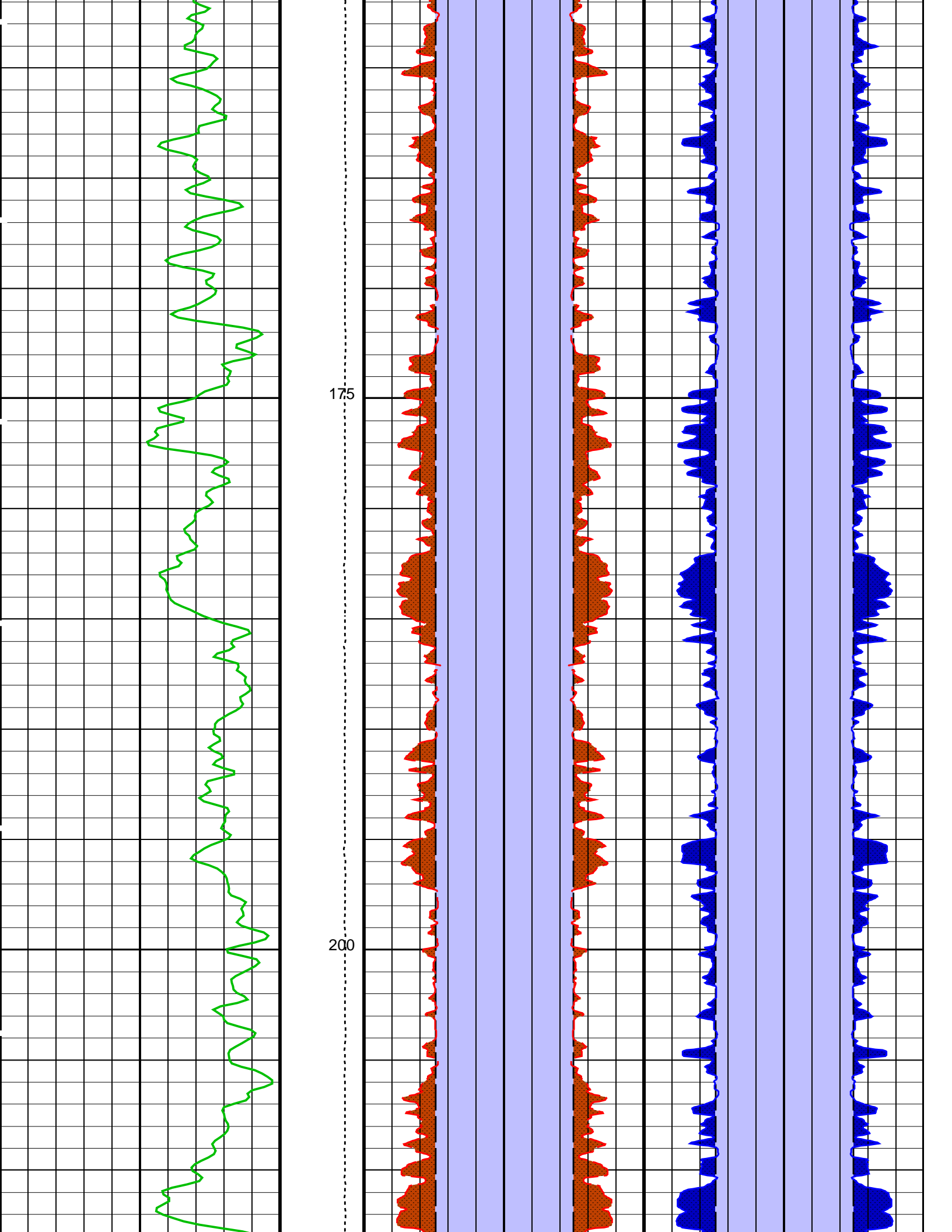
50

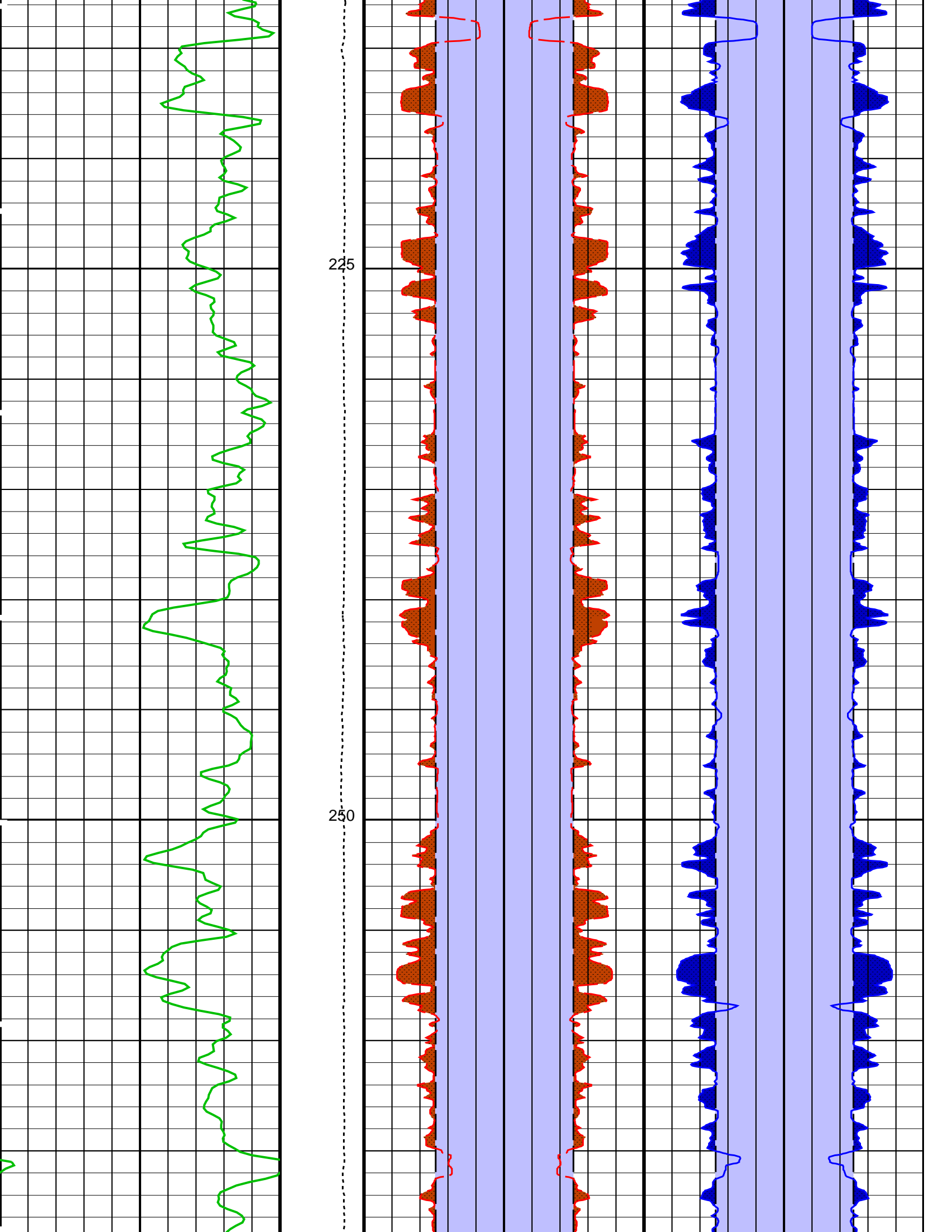
75

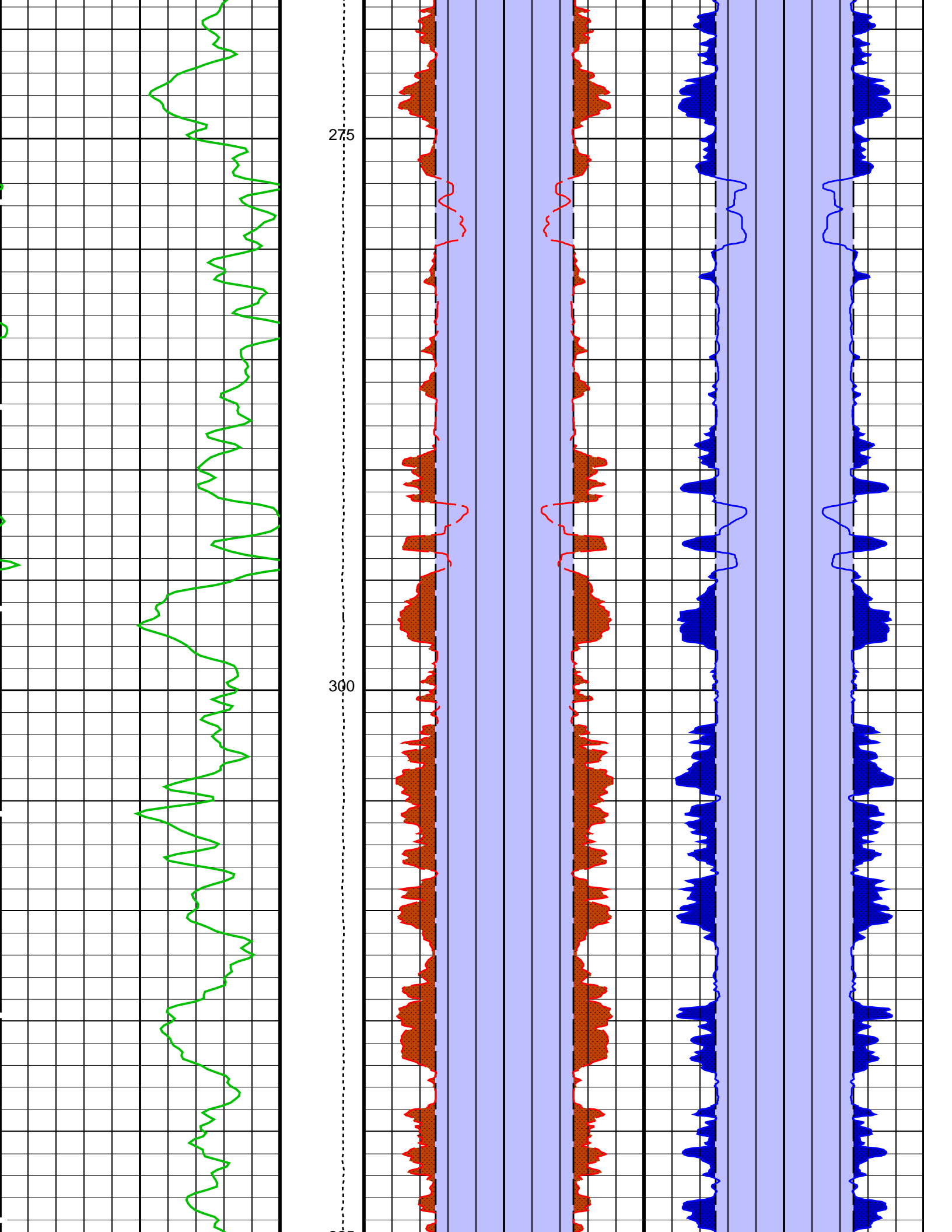
100

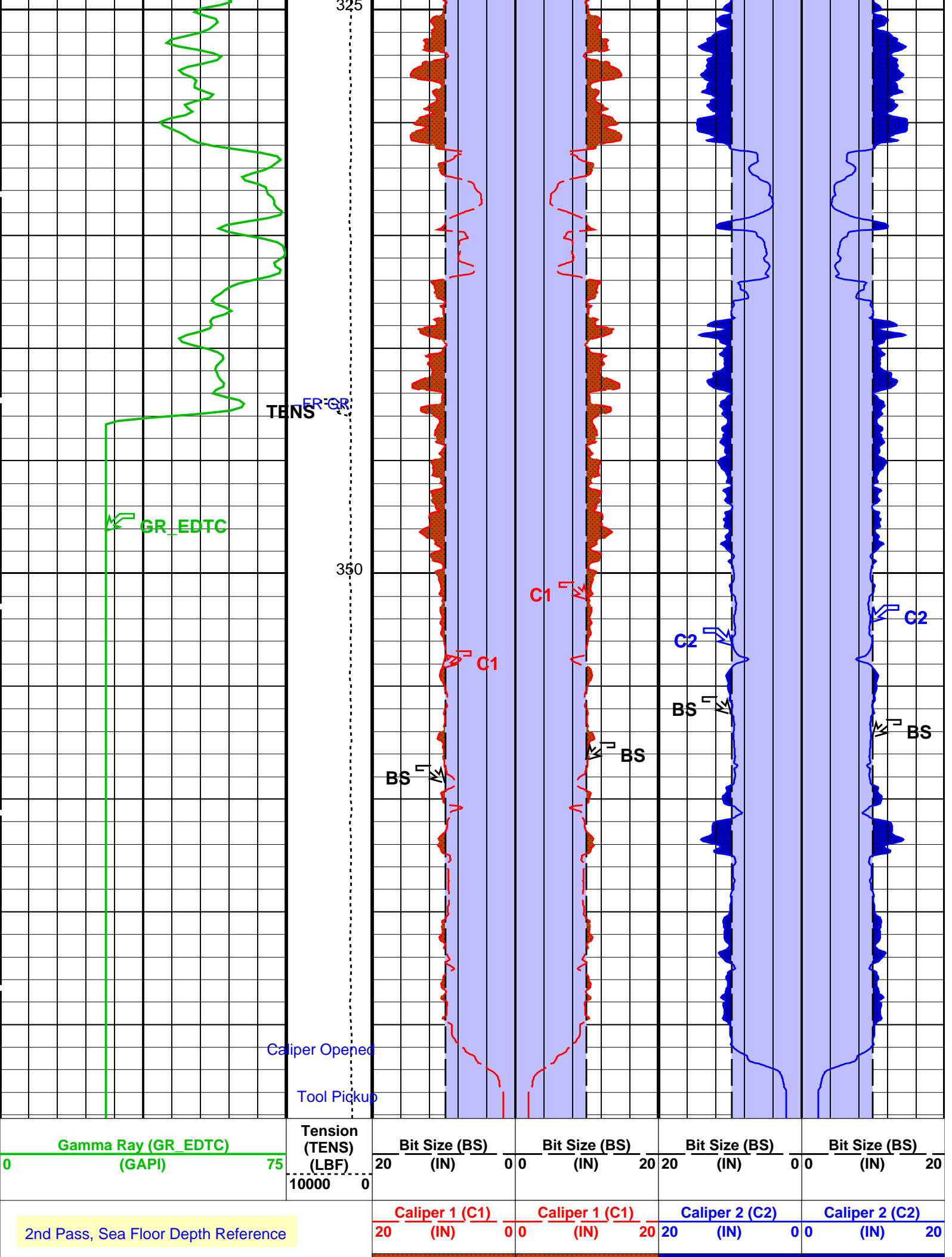
-Drill Pipe-











Tied into Tcombo main log

Area From C1 to BS	Area From BS_1 to C1_1	Area From C2 to BS_3	Area From BS_2 to C2_1
Area From BS to BS_1		Area From BS_3 to BS_2	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
BS	System and Miscellaneous Bit Size	9.875 IN
DO	Depth Offset for Playback	-572.0 M
PP	Playback Processing	NORMAL

Format: BHP Vertical Scale: 1:200 Graphics File Created: 31-Dec-2011 09:10

OP System Version: 19C0-187

MEST-B	19C0-187	DTA-A	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
DSST-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

DEFAULT	FMS_NGS_DSI_019LUP	FN:28	PRODUCER	08-Dec-2011 06:28	946.4 M	563.0 M
---------	--------------------	-------	----------	-------------------	---------	---------

Output DLIS Files

DEFAULT	FMS_NGS_DSI_056PUP	FN:22	PRODUCER	31-Dec-2011 09:10
---------	--------------------	-------	----------	-------------------

Input DLIS Files

DEFAULT	FMS_NGS_DSI_018LUP	FN:26	PRODUCER	08-Dec-2011 05:43	944.1 M	668.7 M
---------	--------------------	-------	----------	-------------------	---------	---------

Output DLIS Files

DEFAULT	FMS_NGS_DSI_057PUP	FN:23	PRODUCER	31-Dec-2011 09:13	372.6 M	96.8 M
---------	--------------------	-------	----------	-------------------	---------	--------

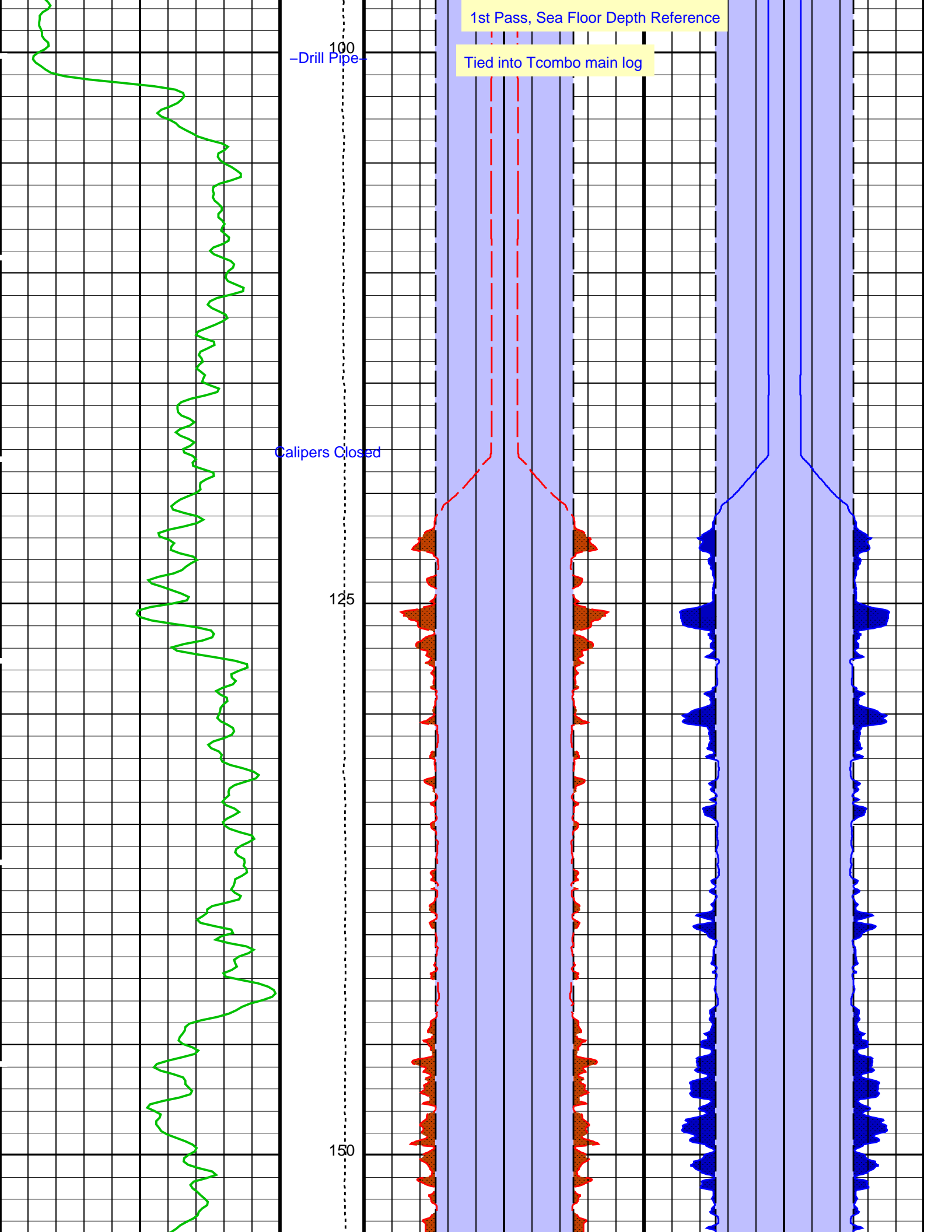
OP System Version: 19C0-187

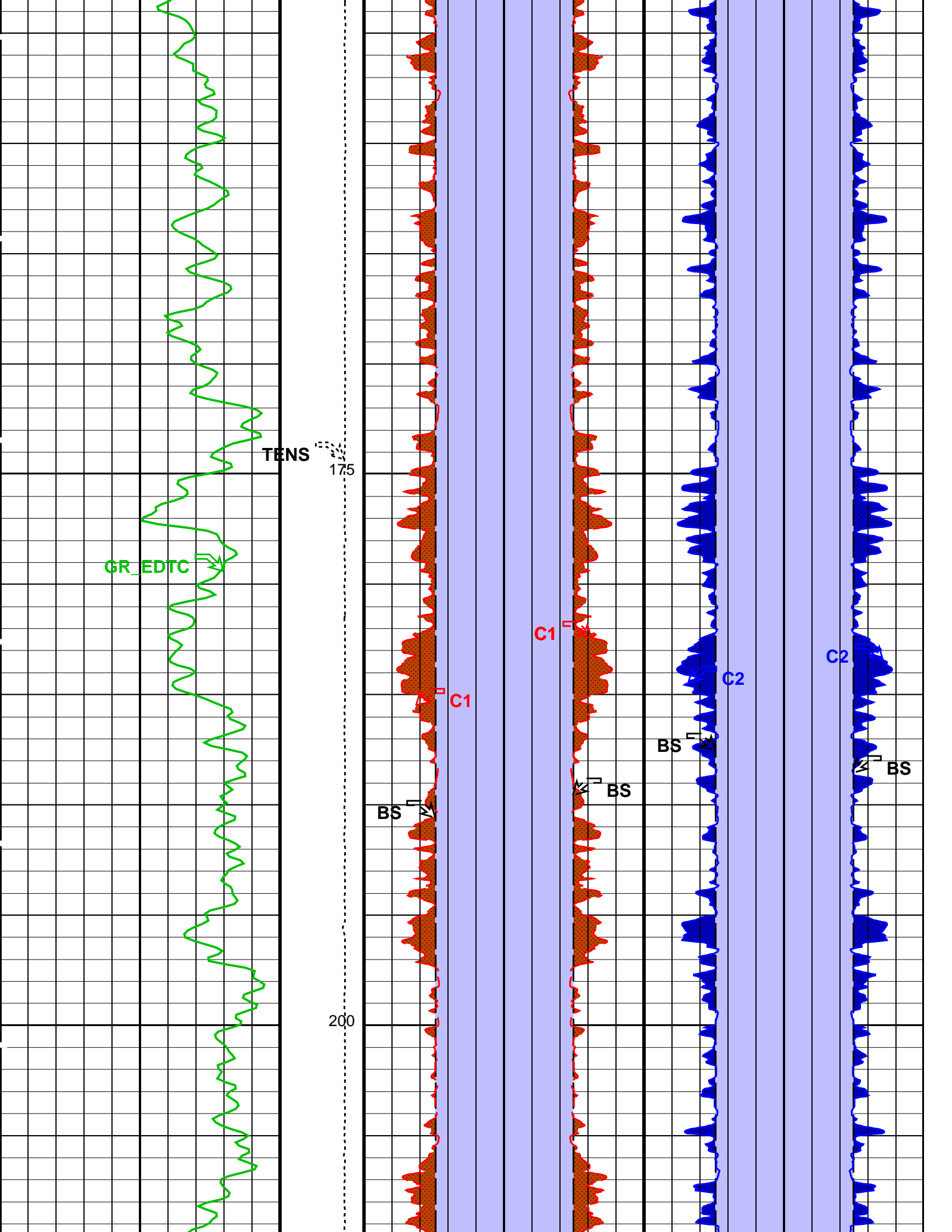
MEST-B	19C0-187	DTA-A	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
DSST-B	19C0-187	EDTC-B	19C0-187

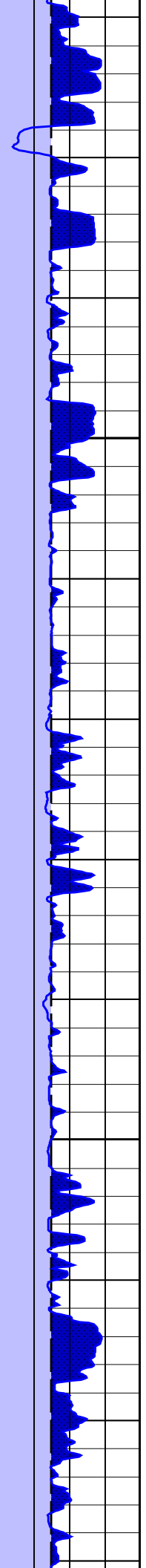
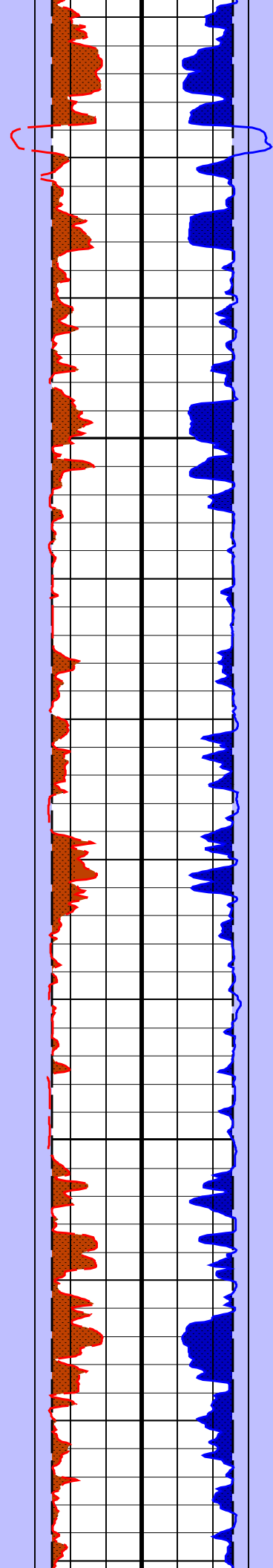
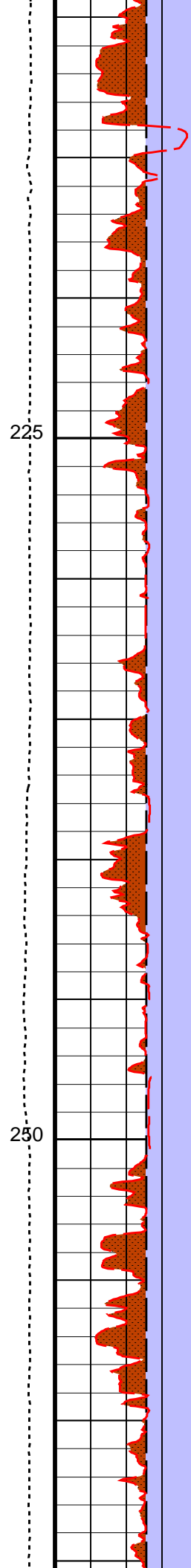
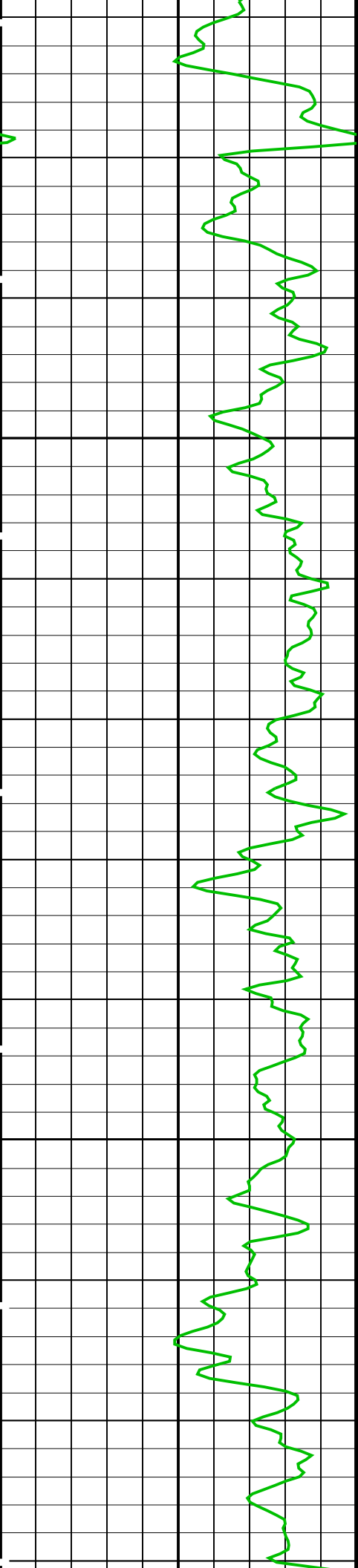
PIP SUMMARY

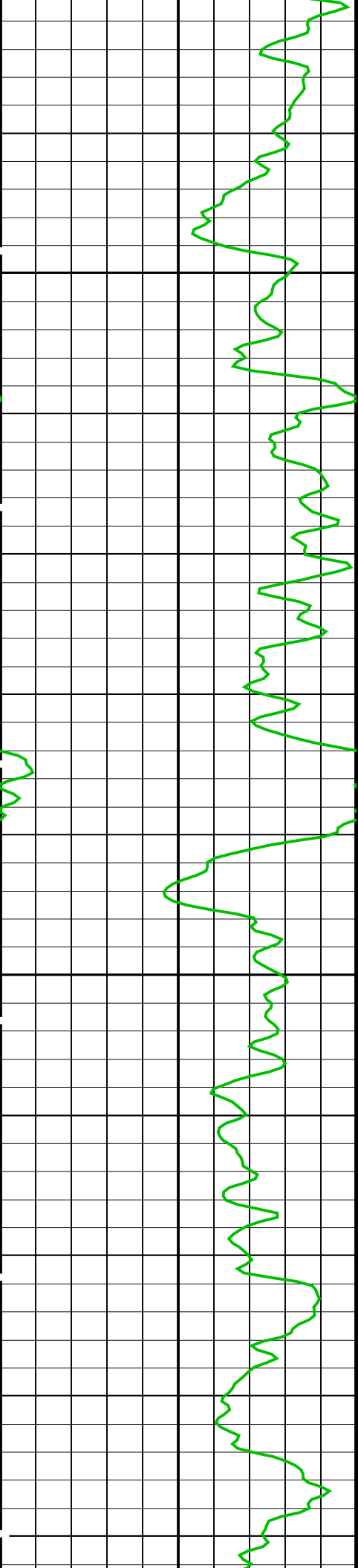
Time Mark Every 60 S

		Area From BS to BS_1		Area From BS_3 to BS_2	
		Area From C1 to BS	Area From BS_1 to C1_1	Area From C2 to BS_3	Area From BS_2 to C2_1
		Caliper 1 (C1)	Caliper 1 (C1)	Caliper 2 (C2)	Caliper 2 (C2)
		20 (IN)	0 0 (IN) 20	20 (IN)	0 0 (IN) 20
Gamma Ray (GR_EDTC)	Tension (TENS) (LBF)	Bit Size (BS)	Bit Size (BS)	Bit Size (BS)	Bit Size (BS)
0 (GAPI) 75	10000 0	20 (IN)	0 0 (IN) 20	20 (IN)	0 0 (IN) 20



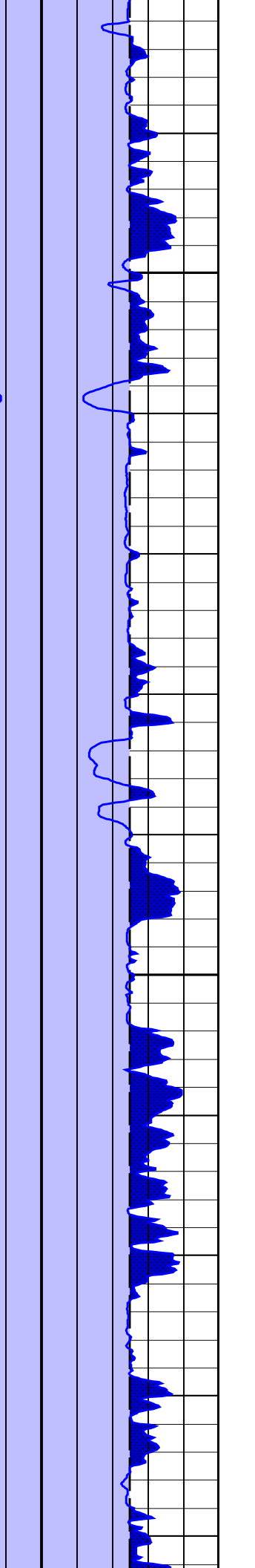
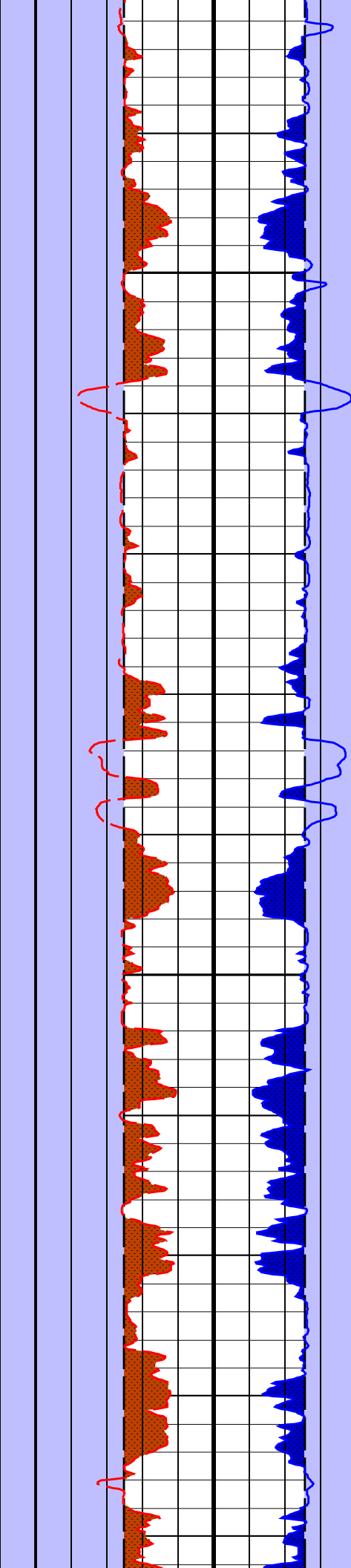
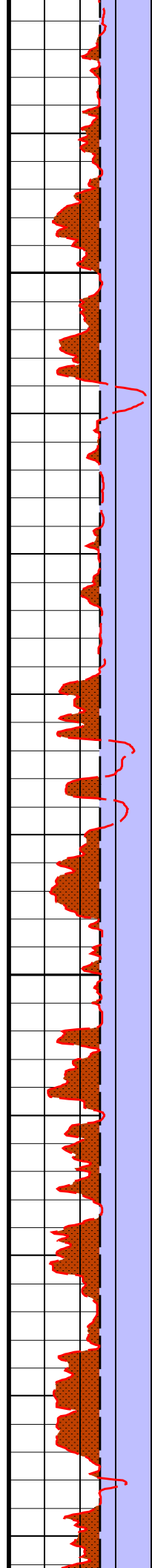


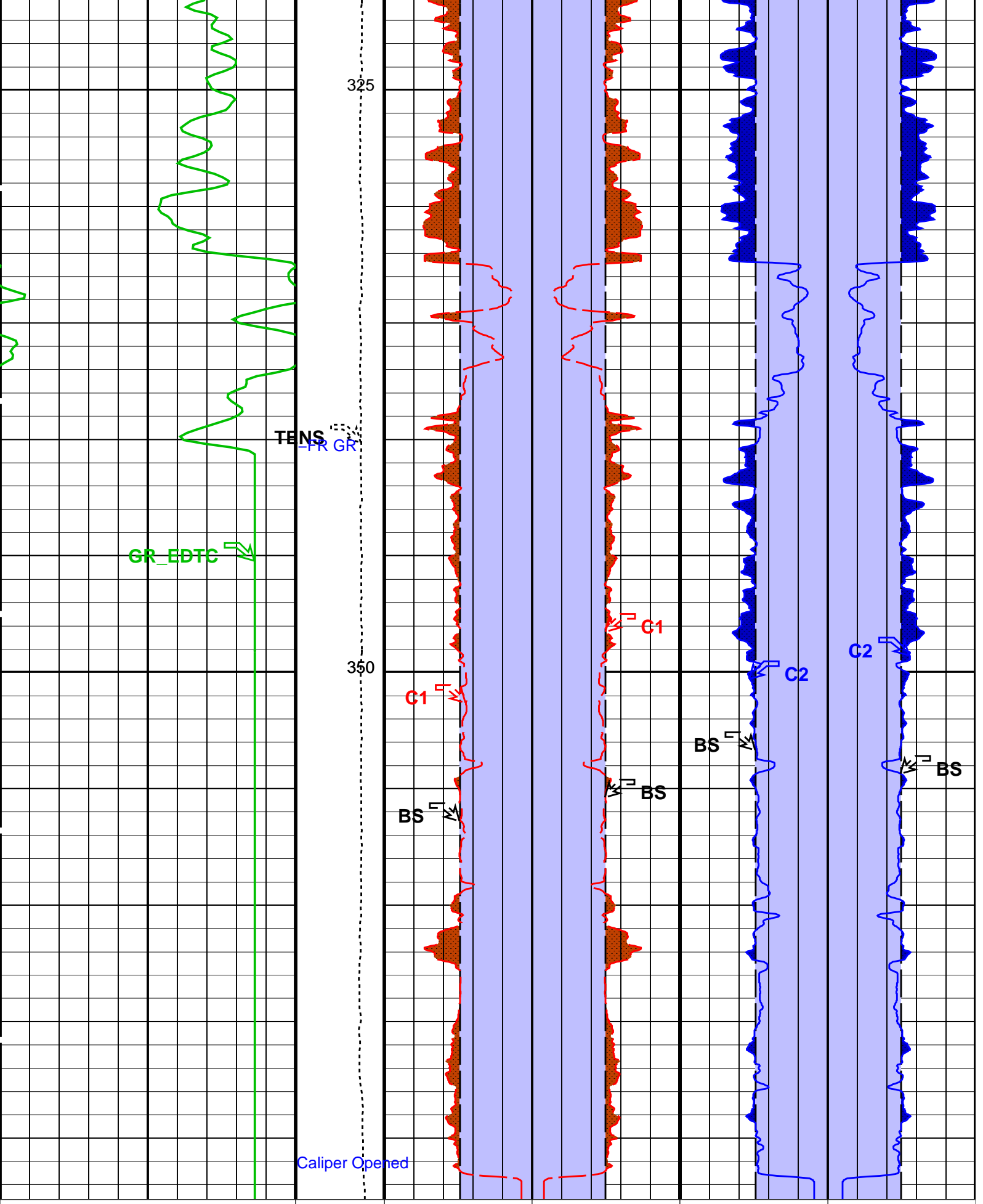




275

300





Gamma Ray (GR_EDTC) (GAPI)	Tension (TENS) (LBF)	Bit Size (BS) (IN)	Bit Size (BS) (IN)	Bit Size (BS) (IN)	Bit Size (BS) (IN)
0 75	10000 0	20 0 0	0 20	20 0 0	0 20
		Caliper 1 (C1)	Caliper 1 (C1)	Caliper 2 (C2)	Caliper 2 (C2)

1st Pass, Sea Floor Depth Reference

Tied into Tcombo main log

20	(IN)	0	0	(IN)	20	20	(IN)	0	0	(IN)	20
Area From C1 to BS			Area From BS_1 to C1_1			Area From C2 to BS_3			Area From BS_2 to C2_1		
Area From BS to BS_1						Area From BS_3 to BS_2					

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
System and Miscellaneous		
BS	Bit Size	9.875 IN
DO	Depth Offset for Playback	-572.0 M
PP	Playback Processing	NORMAL

Format: BHP Vertical Scale: 1:200 Graphics File Created: 31-Dec-2011 09:13

OP System Version: 19C0-187

MEST-B	19C0-187	DTA-A	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
DSST-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

DEFAULT	FMS_NGS_DSI_018LUP	FN:26	PRODUCER	08-Dec-2011 05:43	944.1 M	668.7 M
---------	--------------------	-------	----------	-------------------	---------	---------

Output DLIS Files

DEFAULT	FMS_NGS_DSI_057PUP	FN:23	PRODUCER	31-Dec-2011 09:13
---------	--------------------	-------	----------	-------------------

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
-------------	---------	--------	--------	-------	--------	-------	-------

Micro Electrical Scanner - B (Slim) Wellsite Calibration - Caliper Calibration

Before: Calibration out of date 27-Nov-2011 1:38

Caliper 1 Zero Measurement	11.88	N/A	11.99	N/A	N/A	N/A	IN
Caliper 2 Zero Measurement	11.88	N/A	12.02	N/A	N/A	N/A	IN
Caliper 1 Plus Measurement	15.19	N/A	15.16	N/A	N/A	N/A	IN
Caliper 2 Plus Measurement	15.19	N/A	15.32	N/A	N/A	N/A	IN

Micro Electrical Scanner - B (Slim) Wellsite Calibration - CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY

Before: 8-Dec-2011 3:59

TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	99	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	3	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	743	N/A	N/A	N/A	

Micro Electrical Scanner - B (Slim) Wellsite Calibration - CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY

Before: 8-Dec-2011 3:59

TEMPERATURE REFERENCE :	N/A	N/A	23	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	3	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	9	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	507	N/A	N/A	N/A	

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: 17-Nov-2011 7:57 Before: 26-Nov-2011 0:21

Na 511 Peak Loc	40.00	39.70	39.69	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.50	15.07	N/A	N/A	2.000	%
High Voltage	1150	1176	1168	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.1	141.8	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.309	8.731	N/A	N/A	2.000	%
Temperature	15.50	29.76	21.55	N/A	N/A	N/A	DEGC

Na Count Rate	45.00	20.77	21.01	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check							
Master: 17–Nov–2011 7:57 Before: 26–Nov–2011 0:21							
Na 511 Peak Loc	40.00	39.60	39.49	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.99	15.91	N/A	N/A	2.000	%
High Voltage	1150	1109	1091	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.6	142.3	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	9.914	8.591	N/A	N/A	2.000	%
Temperature	15.50	29.91	21.84	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	21.44	20.97	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2							
Master: 17–Nov–2011 7:57 Before: 26–Nov–2011 0:21							
Coincidence Count Rate Ratio	1.000	0.9705	1.004	N/A	N/A	0.05000	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration							
Master: 17–Nov–2011 7:52							
Na 511 Peak Set Point	40.00	41.00	---	---	---	---	
Th Peak Loc	209.6	210.8	---	---	---	---	
Th Peak Res	7.000	6.865	---	---	---	---	%
Background Count Rate	142.5	24.91	---	---	---	---	CPS
Gain Ratio	1.000	1.010	---	---	---	---	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration							
Master: 17–Nov–2011 7:52							
Na 511 Peak Set Point	40.00	41.00	---	---	---	---	
Th Peak Loc	209.6	208.5	---	---	---	---	
Th Peak Res	7.000	6.879	---	---	---	---	%
Background Count Rate	142.5	24.15	---	---	---	---	CPS
Gain Ratio	1.000	1.001	---	---	---	---	
Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration							
Before: 7–Dec–2011 19:06							
EDTC Z–Axis Acceleration	9.810	N/A	9.822	N/A	N/A	N/A	M/S2
Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration							
Before: Calibration out of date 26–Nov–2011 0:18							
Gamma Ray (Jig – Bkg)	163.8	N/A	163.8	N/A	N/A	14.89	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	N/A	N/A	15.00	GAPI

Micro Electrical Scanner – B (Slim) / Equipment Identification

Primary Equipment:

MEST Sonde – B	MEDS – B	770
MEST Preamplifier Cartridge – AB	MEPC – AB	807
GPIT Cartridge – AC	GPIC – AC	840
MEST Acquisition Cartridge – A	MEAC – A	875

Auxiliary Equipment:

MEST–B Preamplifier Cartridge Housing	MEPH – A	702
MEST Acquisition Cartridge Housing (Slim)	MEAH – B	726

Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

Primary Equipment:

HNGC Cartridge	HNGC – B	300
----------------	----------	-----

Auxiliary Equipment:

HNGC Housing	HNGH – A	115
--------------	----------	-----

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:

HNGS Sonde	HNGS – BA	194
------------	-----------	-----

Auxiliary Equipment:

HNGS Sonde Housing	HNSH – BA	205
Gamma Source Radioactive	GSR – U	616008

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		39.70	Master		15.50	Master		1176
Before		39.69	Before		15.07	Before		1168
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		142.1	Master		8.309	Master		29.76
Before		141.8	Before		8.731	Before		21.55
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	
Phase	Na Count Rate CPS	Value						
Master		20.77						
Before		21.01						
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							
Master: 17-Nov-2011 7:57			Before: 26-Nov-2011 0:21					

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		39.60	Master		16.99	Master		1109
Before		39.49	Before		15.91	Before		1091
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		142.6	Master		9.914	Master		29.91
Before		142.3	Before		8.591	Before		21.84
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	
Phase	Na Count Rate CPS	Value						
Master		21.44						
Before		20.97						
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							
Master: 17-Nov-2011 7:57			Before: 26-Nov-2011 0:21					

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9705
Before		1.004
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	
Master: 17-Nov-2011 7:57		
Before: 26-Nov-2011 0:21		

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		210.8	Master		6.865
	38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)			201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)			5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value			
Master		24.91	Master		1.010			
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)				
Master: 17-Nov-2011 7:52								

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		208.5	Master		6.879
	38.00 (Minimum)	40.00 (Nominal)	43.00 (Maximum)		201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)	
Phase	Background Count Rate CPS		Value	Phase	Gain Ratio		Value	
Master			24.15	Master			1.001	
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)	

Master: 17-Nov-2011 7:52

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:

EDTC Gamma Ray Detector
Enhanced DTS Cartridge

EDTG - A/B 77693
EDTC - B 8529

Auxiliary Equipment:

EDTC Housing

EDTH - B 8528

Enhanced DTS Cartridge Wellsite Calibration		
EDTC Accelerometer Calibration		
Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		9.822
	9.610 (Minimum)	9.810 (Nominal)
		10.01 (Maximum)

Before: 7-Dec-2011 19:06

Enhanced DTS Cartridge Wellsite Calibration									
Detector Calibration									
Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value	
Before		9.201	Before		163.8	Before		164.0	
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		148.9 (Minimum)	163.8 (Nominal)	178.7 (Maximum)		

Before: Calibration out of date 26-Nov-2011 0:18

Company: **Lamont Doherty**

Schlumberger

Well: **Expedition 339, Site U1386 GC-01A**

Field: **Mediterranean Outflow (Portugal)**

Rig: **JOIDES Resolution**

Ocean: **Atlantic**

Formation Micro Scanner

Dual Axis Caliper

Gamma Ray