

**COMPANY: Lamont Doherty**

**WELL: ODP Leg 189, Site 1172D (ETP-2A)**

**FIELD: East Tasmania**

**COUNTRY: Offshore STATE: Pacific Ocean**

**Schlumberger**  
Lower Dipole Shear  
Natural Gamma Ray

COUNTY: Offshore  
Field: East Tasmania  
Location: ODP Leg 189, Site 1172D (ETP-2A)  
Company: Lamont Doherty

LOCATION		Elev.:	K.B.	11.2 m
Permanent Datum:	MSL		G.L.	2621.7 m
Log Measured From:	RKB		D.F.	10.9 m
Drilling Measured From:	RKB	Elev.: 0 ft		
				11.2 m above Perm. Datum
API Serial No.	LATITUDE: 43° 57.5545' S	LONGITUDE: 149° 55.7169' E	RIG:	JOIDES Resolution

Logging Date	Run 1	Run 2	Run
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			
PH			
Source Of Sample			
RM @ Measured Temperature			
RMF @ Measured Temperature			
RMC @ Measured Temperature			
Source RMF			
RM @ MRT			
RMF @ MRT			
Maximum Recorded Temperatures			
Circulation Stopped			
Time			
Logger On Bottom			
Time			
Unit Number			
Location			
Recorded By			
Witnessed By			

Logging Date 2-MAY-2000

Run Number One

Depth Driller 3399.85 m

Schlumberger Depth 3395 m

Bottom Log Interval 3373 m

Top Log Interval 2796 m

Casing Driller Size @ Depth 0.000 in @ 2796 m

Casing Schlumberger 2796 m

Bit Size 9.875 in

Type Fluid In Hole Salt Water Base

Density 8.51234 lbrn/gal

Fluid Loss

PH

Source Of Sample Salt water

RM @ Measured Temperature 0.220 ohm.m @ 58 degF

RMF @ Measured Temperature @ @

RMC @ Measured Temperature @ @

Source RMF RMC @ @

RM @ MRT 0.147 @ 90 @ 90

RMF @ MRT 90 degF @ 90

Maximum Recorded Temperatures 2-MAY-2000 10:00

Circulation Stopped 3-MAY-2000 03:20

Logger On Bottom 99 Houston OS

Time

Unit Number Kerry M. Swain

Location

Recorded By Patrick Fothergill, Ulysses S. Nimmemann

Witnessed By

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO CLAUSE 4 OF OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

OTHER SERVICES1  
 OS1: DITE/HNGS/HLDS/APS  
 OS2: GHMT  
 OS3:  
 OS4:  
 OS5:

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

REMARKS: RUN NUMBER 1  
 Hole cored with RCB.  
 Sea Floor at 2631 mbrf.  
 Log presented in meters below rig floor.  
 Lamont Temperature Tool (TAP) run on DITE/HLDS/APS/HNGS only.  
 Wireline Heave Compensator used on all descents. Wireline heave compensator went out of range due to heavy heave conditions at 3388-3355, 3349-3154, 3144-2953, 2952-2887, 2891-end of log.  
 Sepiolite mud placed in the hole before logging.  
 Drillers TD-3399.85 mbrf.  
 Loggers TD-3395 mbrf.  
 Drill Pipe Logger- 2782 mbrf.  
 Power fluctuation with DSI below 200 v caused absence of data at 2911-2908mbrf.  
 The repeat covers this depth. Low Frequency Dipole provided best shear DT.

REMARKS: RUN NUMBER 2

RUN 1  
 SERVICE ORDER #:  
 PROGRAM VERSION: 9C1-303  
 FLUID LEVEL:

RUN 2  
 SERVICE ORDER #:  
 PROGRAM VERSION:  
 FLUID LEVEL:

LOGGED INTERVAL	START	STOP

LOGGED INTERVAL	START	STOP

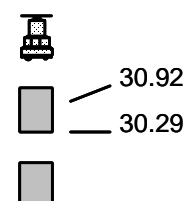
**EQUIPMENT DESCRIPTION**

RUN 1  
**SURFACE EQUIPMENT**  
 GSR-U  
 WITM (DTS)-A

RUN 2

**DOWNHOLE EQUIPMENT**

LEH-QT 32.09  
 LEH-QT  
 DTC-H CTEM 30.92  
 ECH-KC 8253 TelStatus 31.20  
 ToolStatu 30.29  
 AH-CMEAY 30.29  
 AH-CMEAY 765



DSST-B 29.00  
 SPAC-B 18  
 ECH-SD 18  
 SMDR-BD 8070  
 SSIJ-BA 65  
 SMDX-AA 8026

PWF 13.45

AH-CMEAY 13.45  
 AH-CMEAY 764

DTA-A 12.16  
 ECH-KE 8261  
 DTA-A 8261

Detector 10.56 10.94

NGT-C  
 NGD-A 1736  
 NGH-B 3  
 NGC-C 1921  
 NGCH-A 752

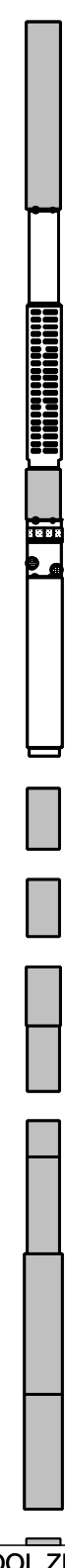
GHMT-A 8.33  
 GHMC-B 701  
 ECH-MBA 701  
 NMTE-C 703  
 SUMS-B 702  
 NMRS-C 702

SUMS 4.08

NMRS 1.07

BNS-CCS 0.14  
 STATUS HV DF  
 Tension  
 TOOL ZERO 0.00

MAXIMUM STRING DIAMETER 4.00 IN  
 MEASUREMENTS RELATIVE TO TOOL ZERO  
 ALL LENGTHS IN METERS



## Output DLIS Files

DEFAULT	GHMT .018	FN:29 PRODUCER	03-May-2000 02:29	3394.1 M	2772.2 M
GHMT_CUST	GHMT .018	FN:30 PRODUCER	03-May-2000 02:29	3394.1 M	2772.2 M

## OP System Version: 9C1-303

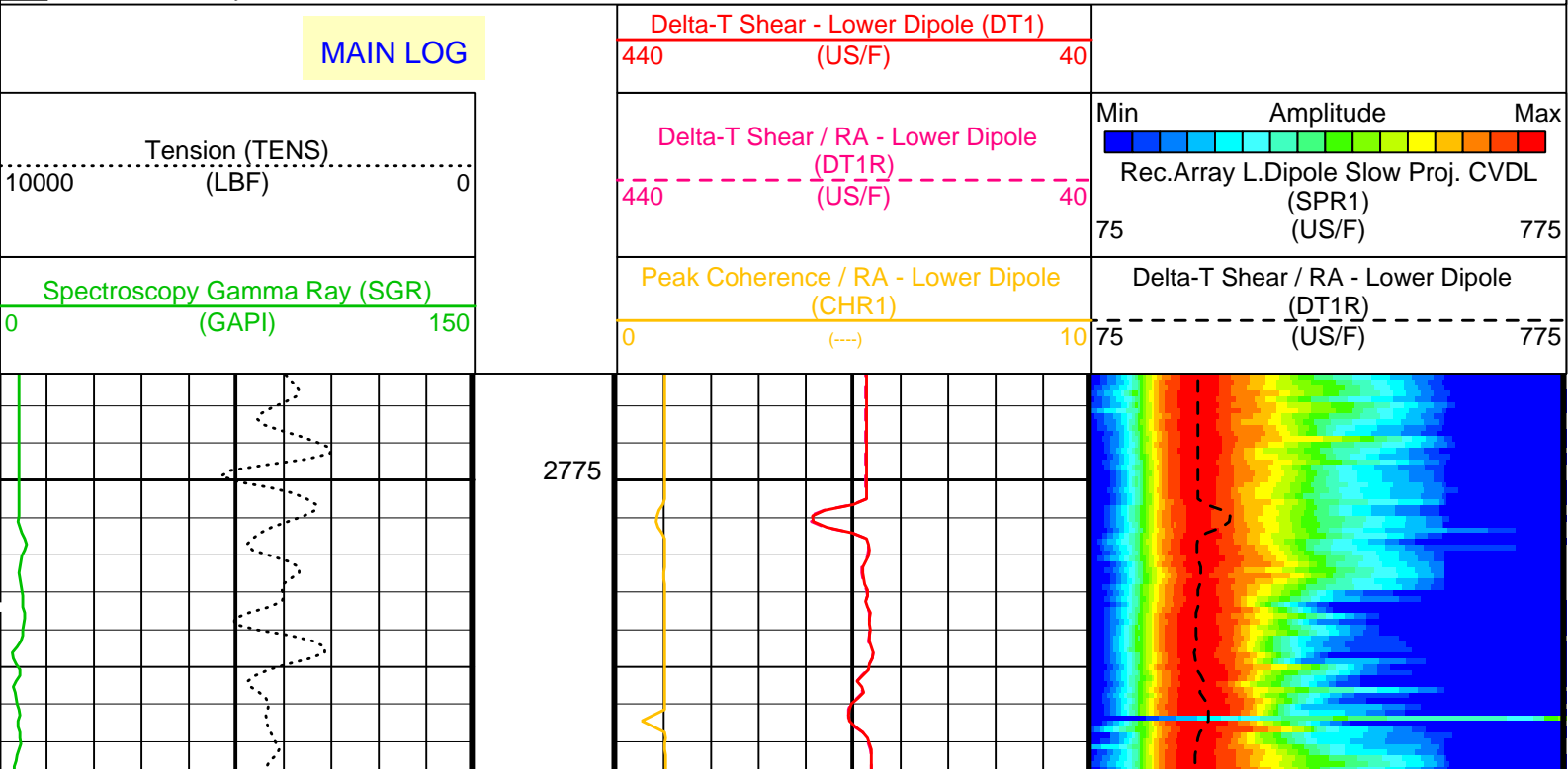
MCM

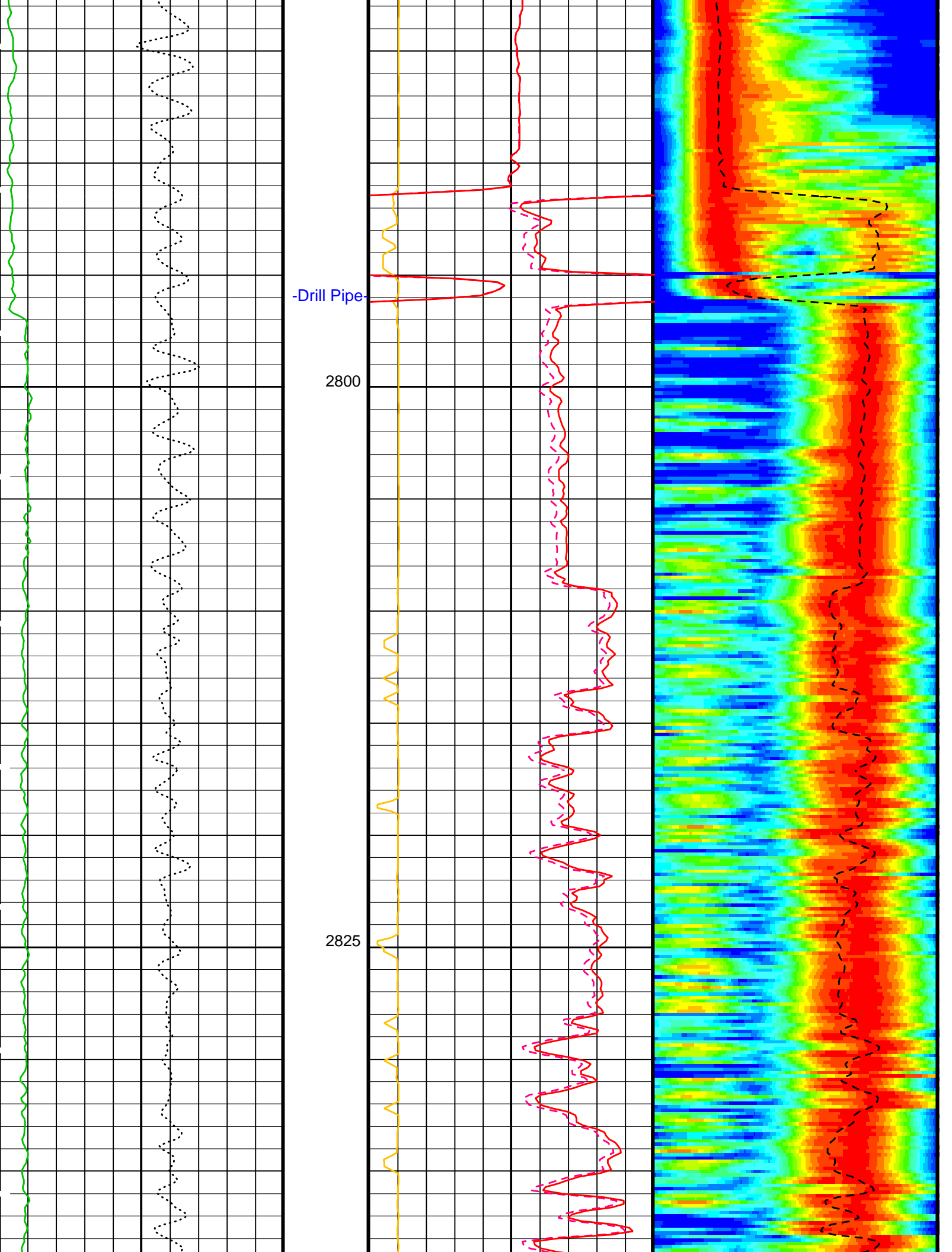
GHMT-A	9C1-303	NGT-C	9C1-303
DTA-A	9C1-303	DSST-B	9C1-303
DTC-H	9C1-303		

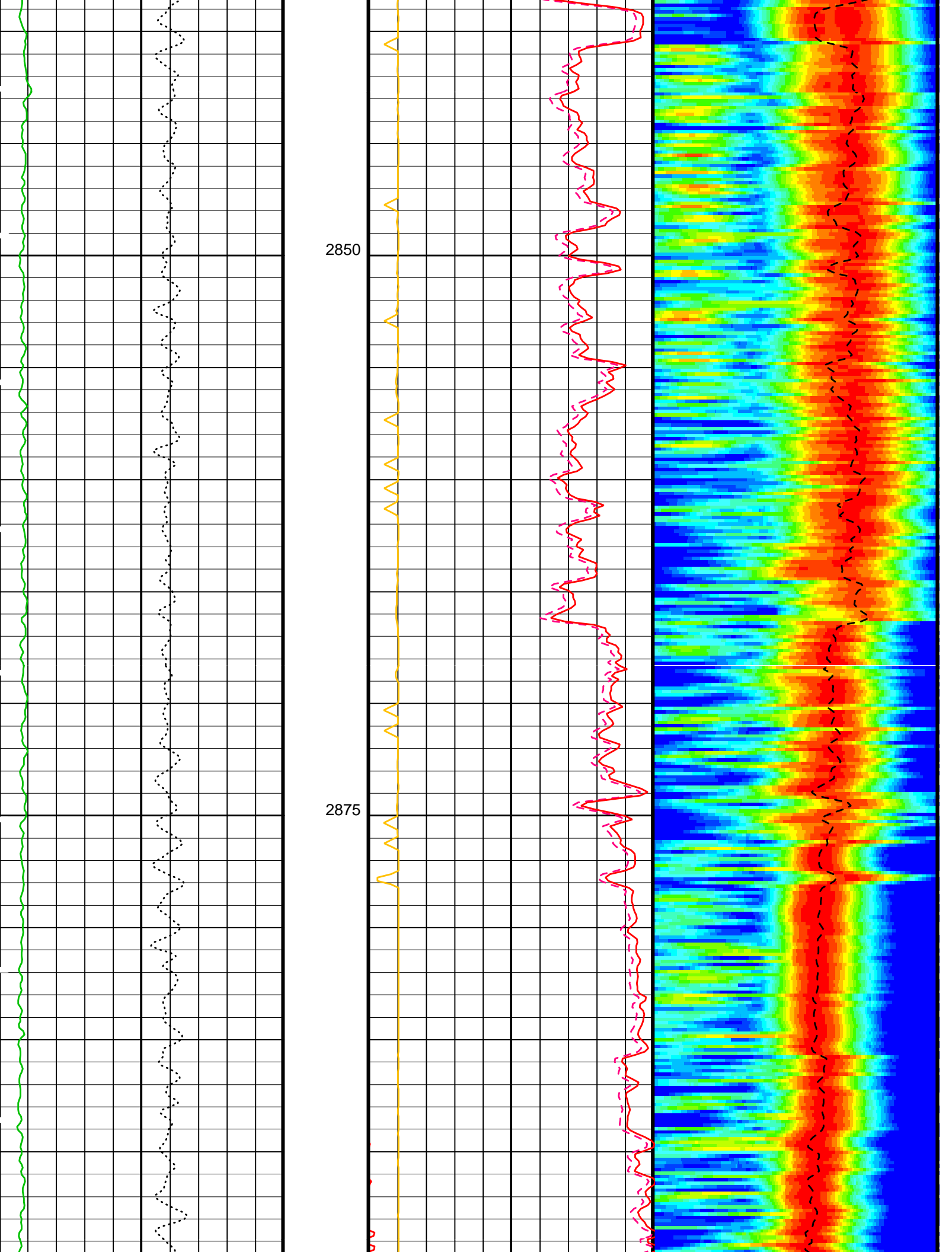
### PIP SUMMARY

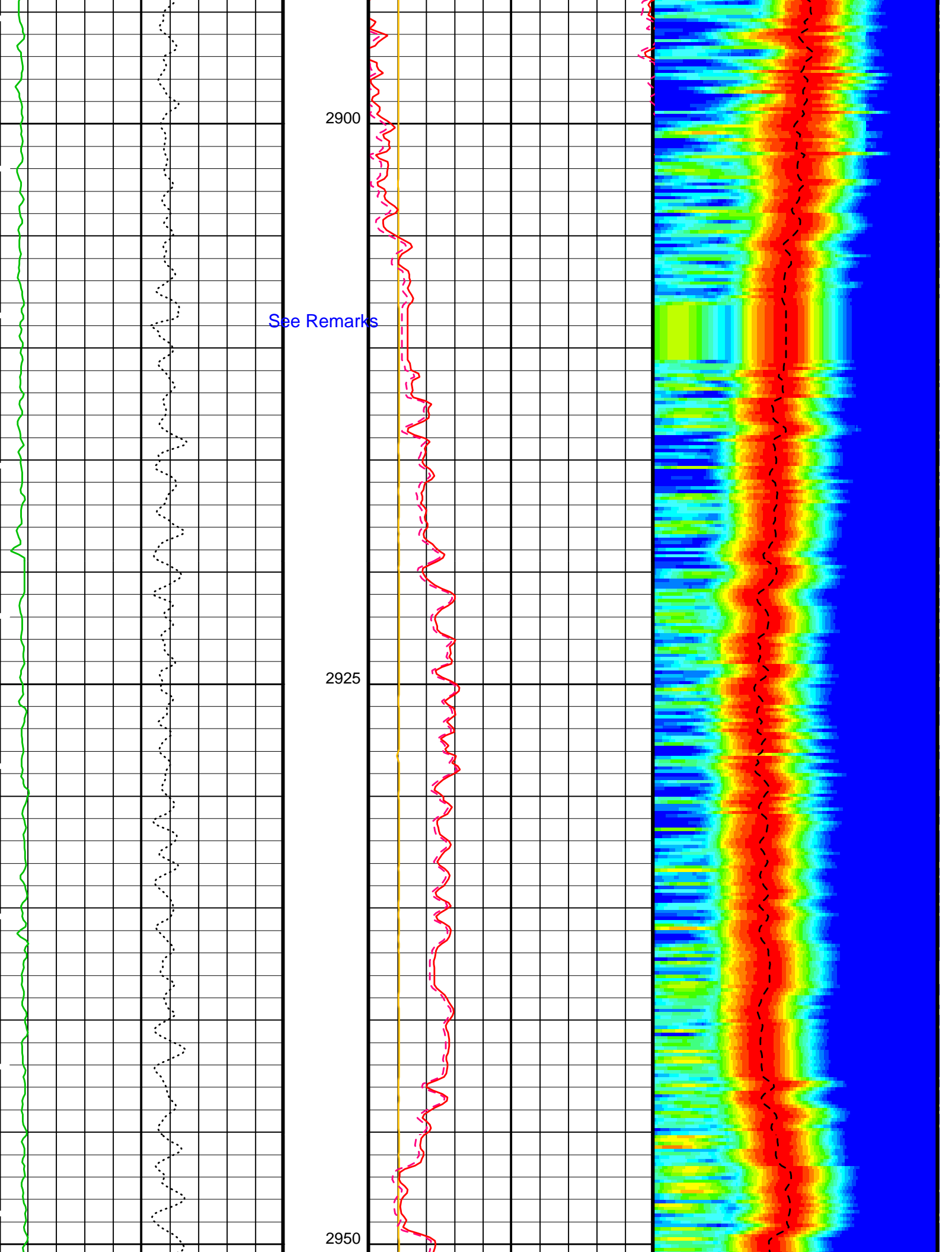
Lower Dipole, Low Frequency, Shear

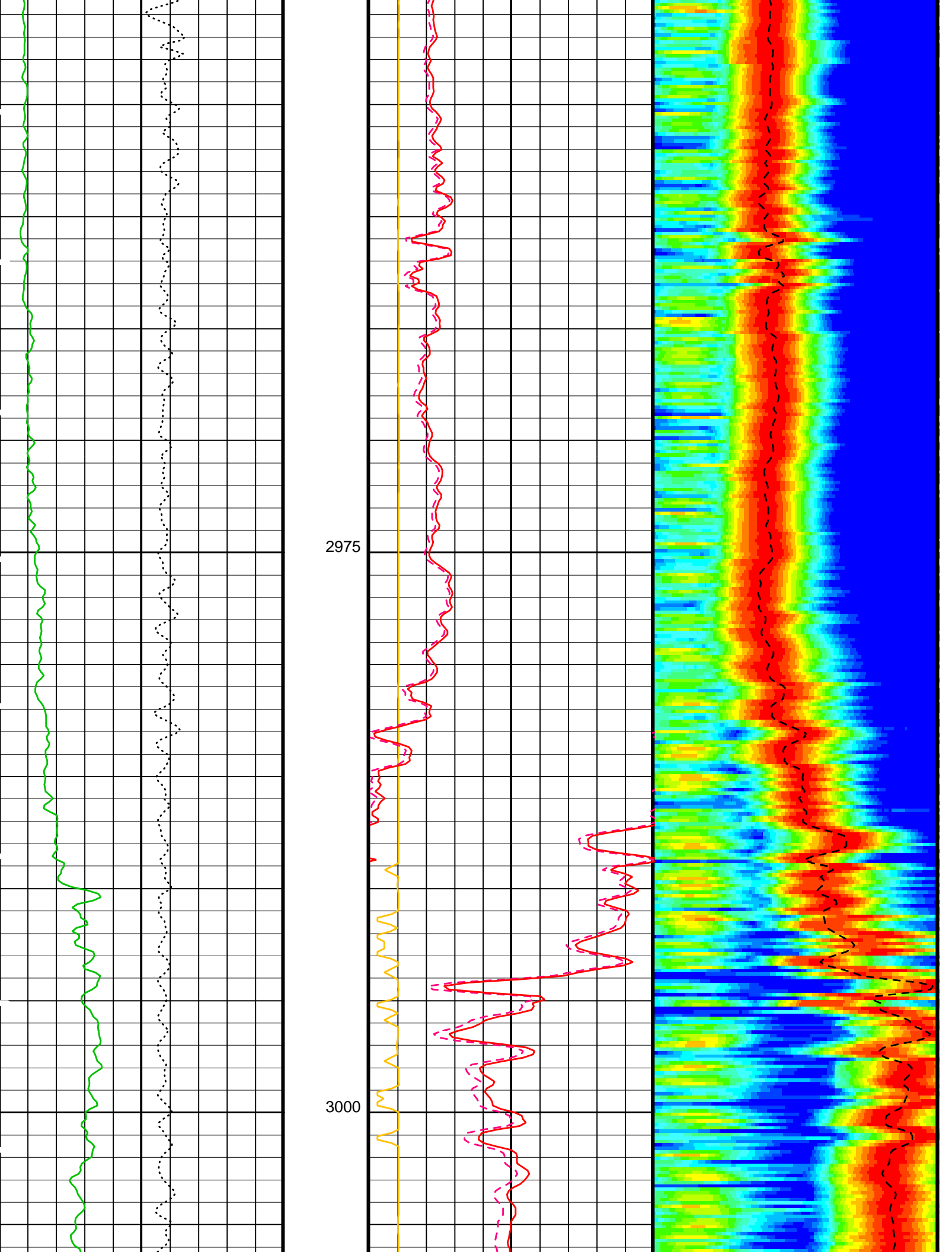
Time Mark Every 60 S



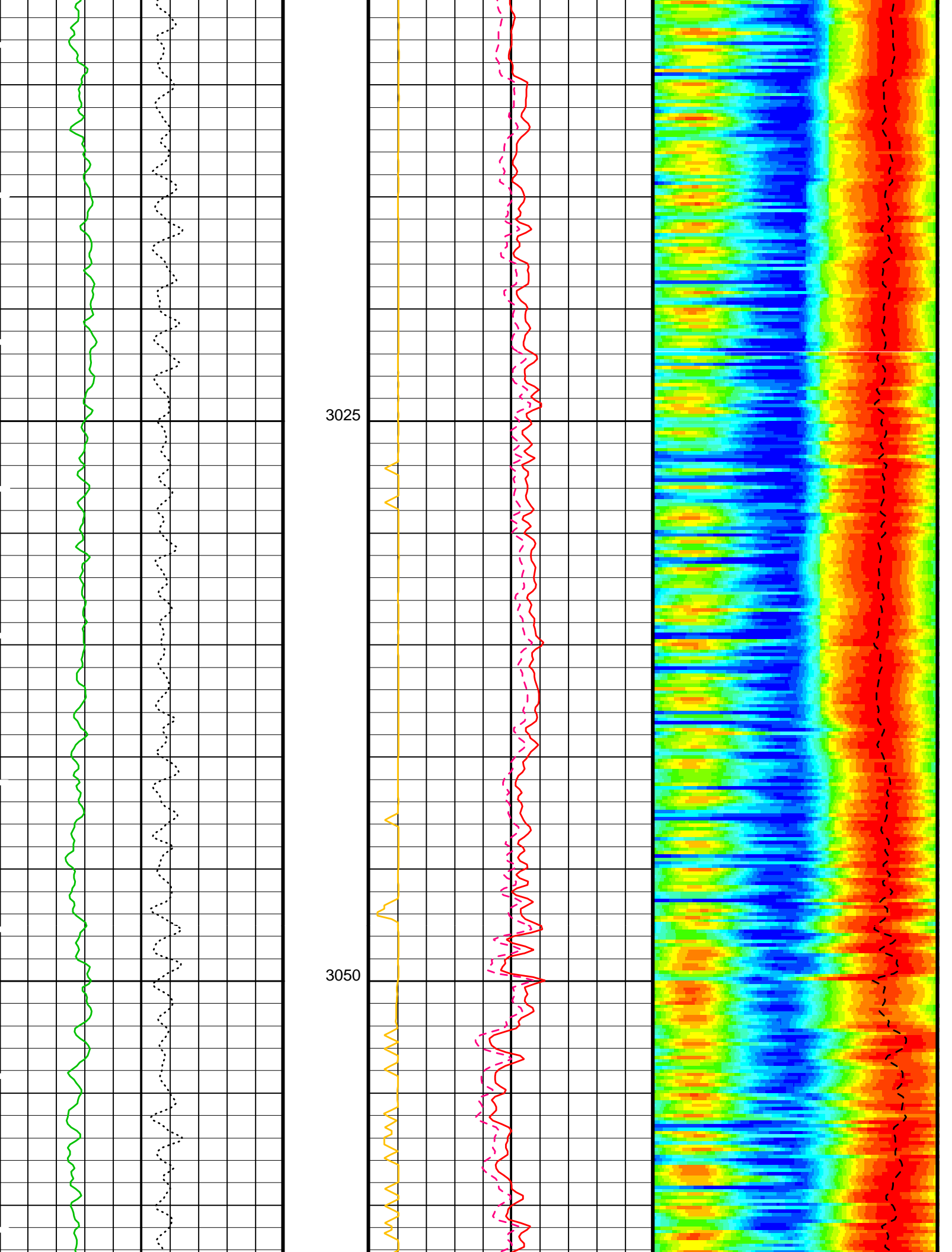


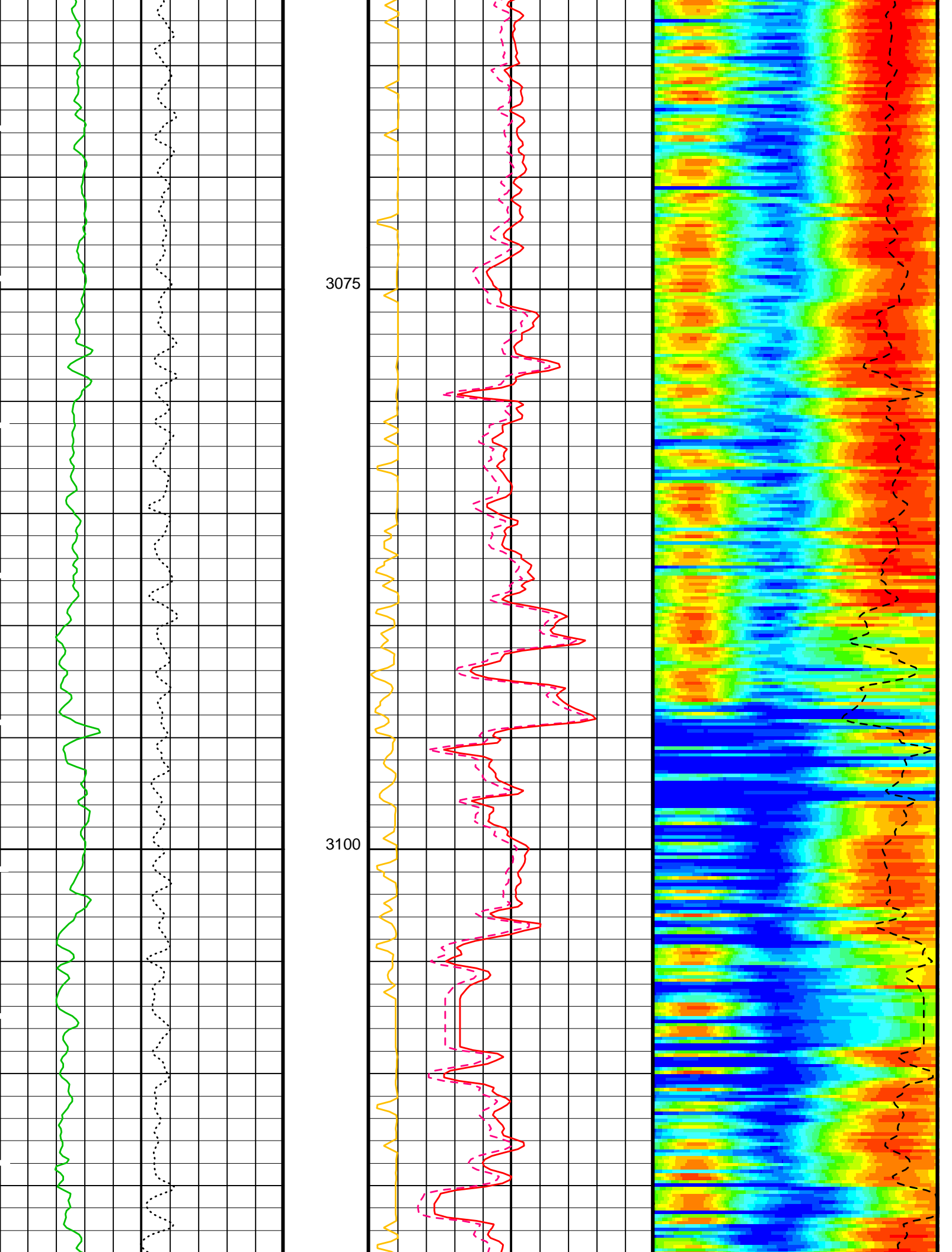


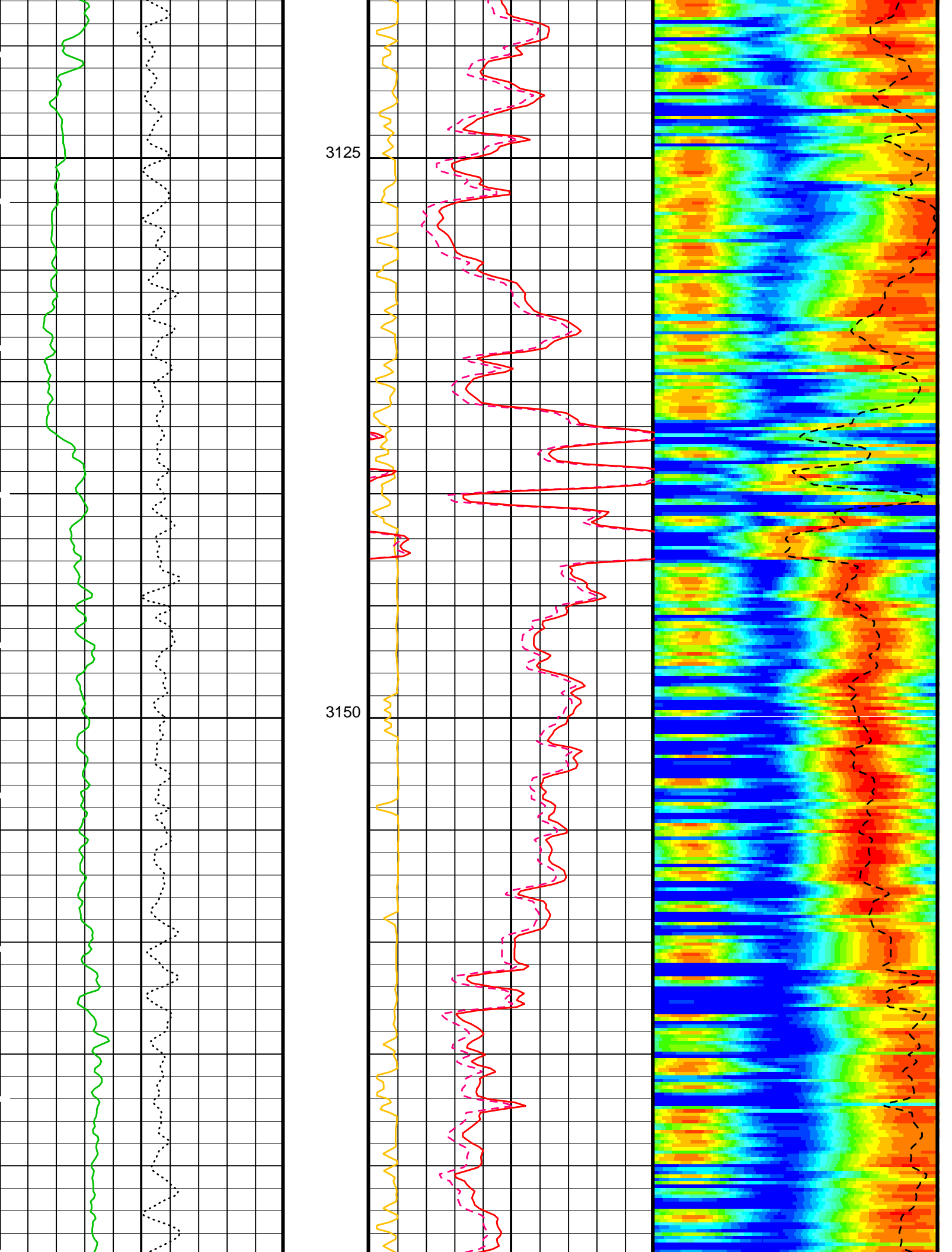


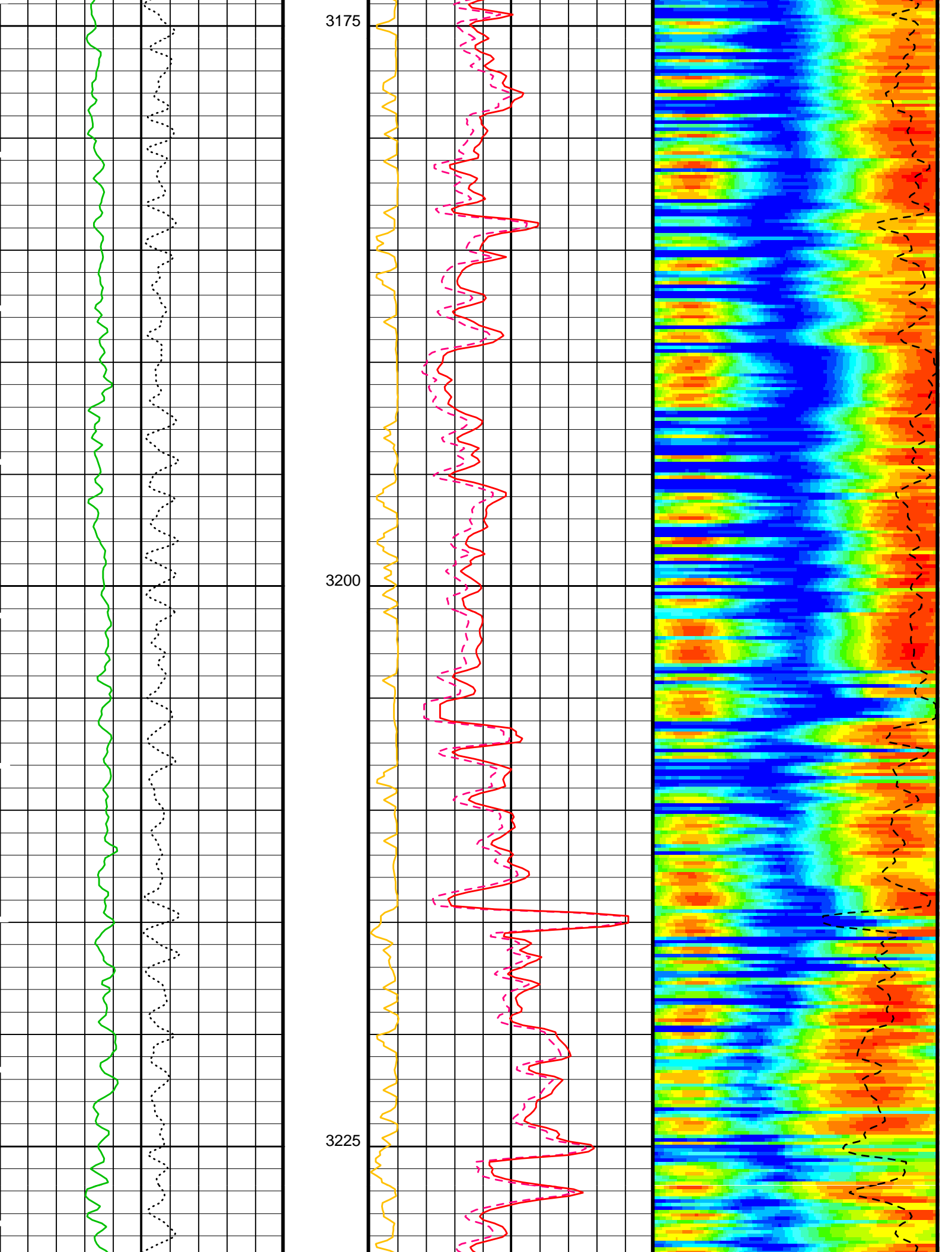


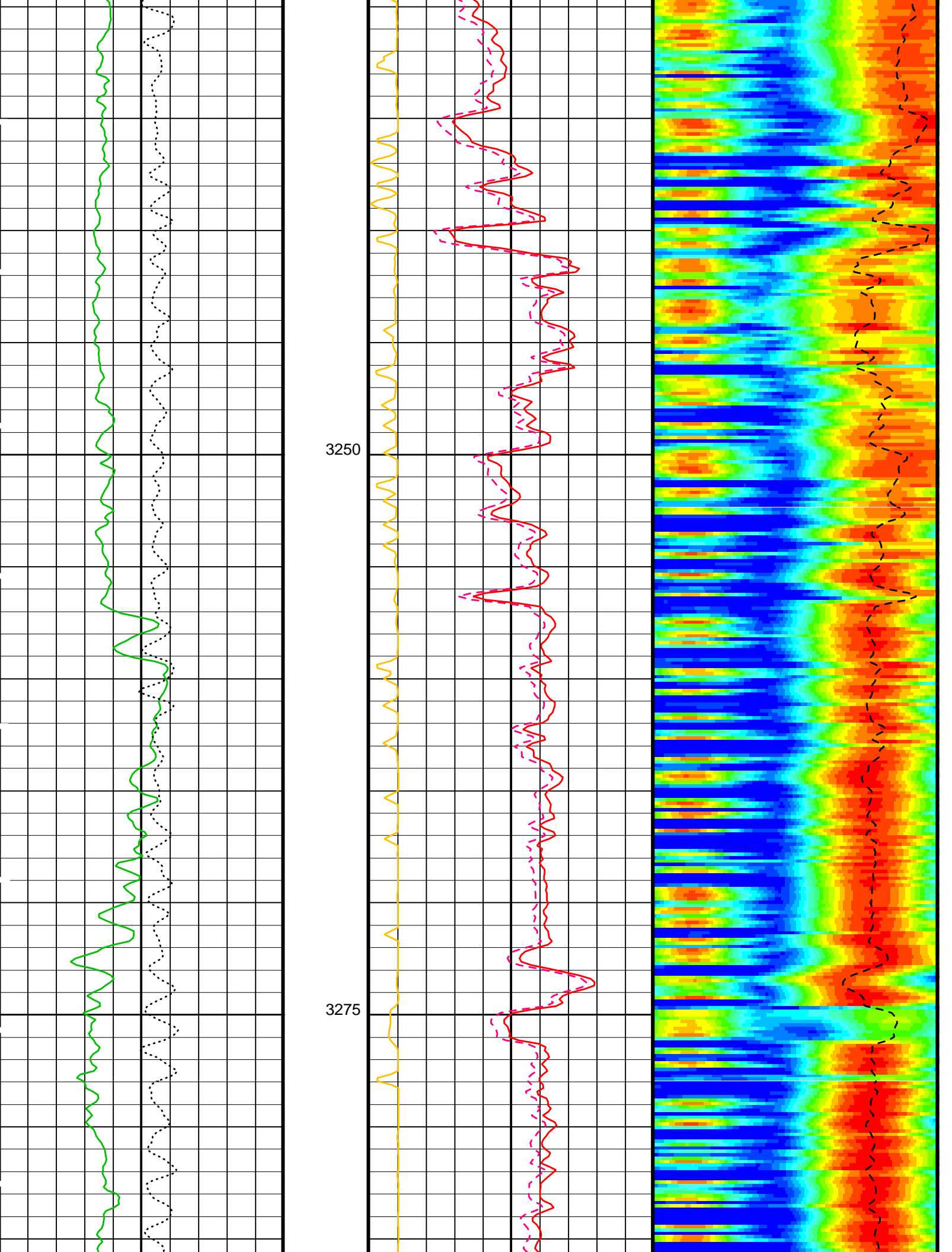


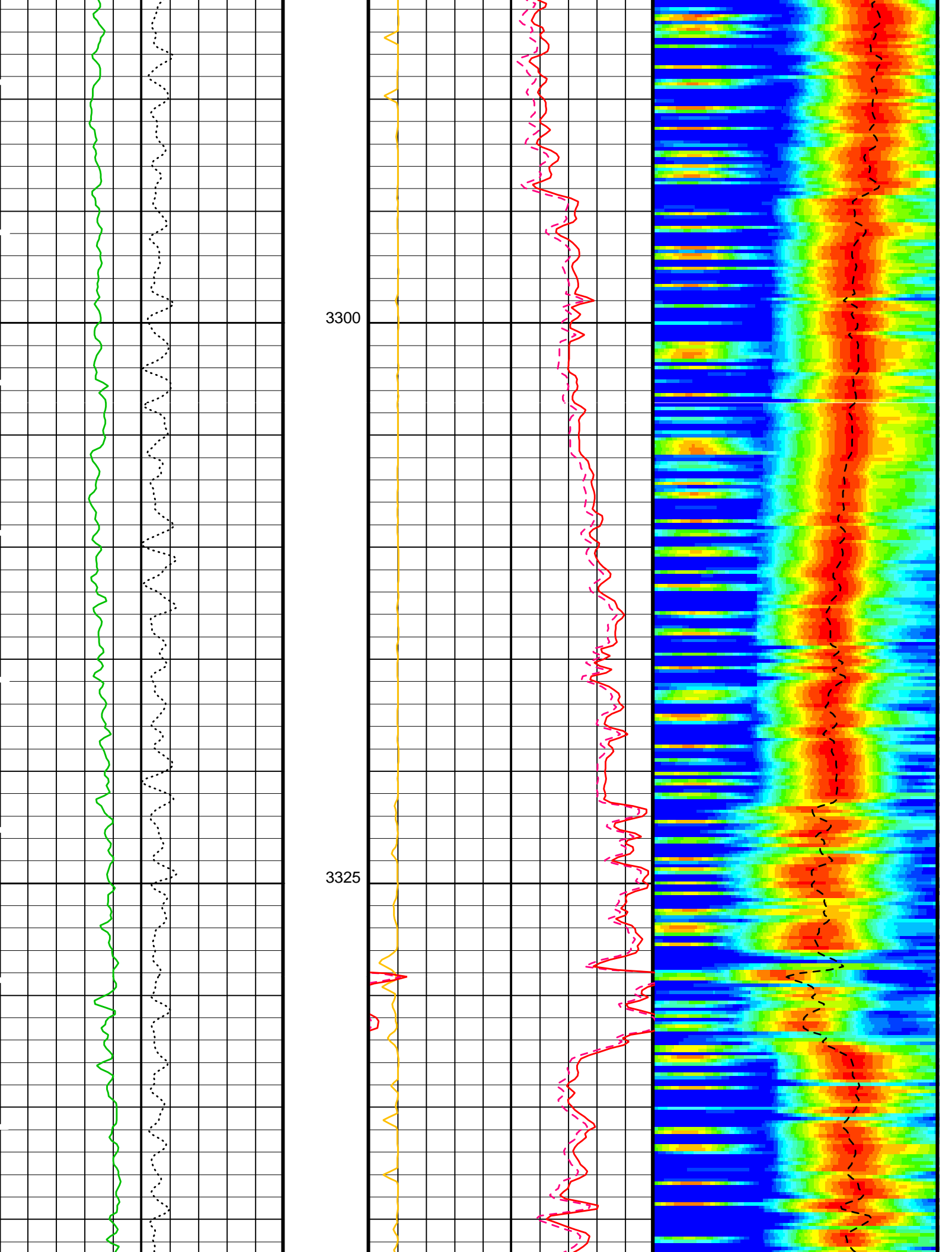


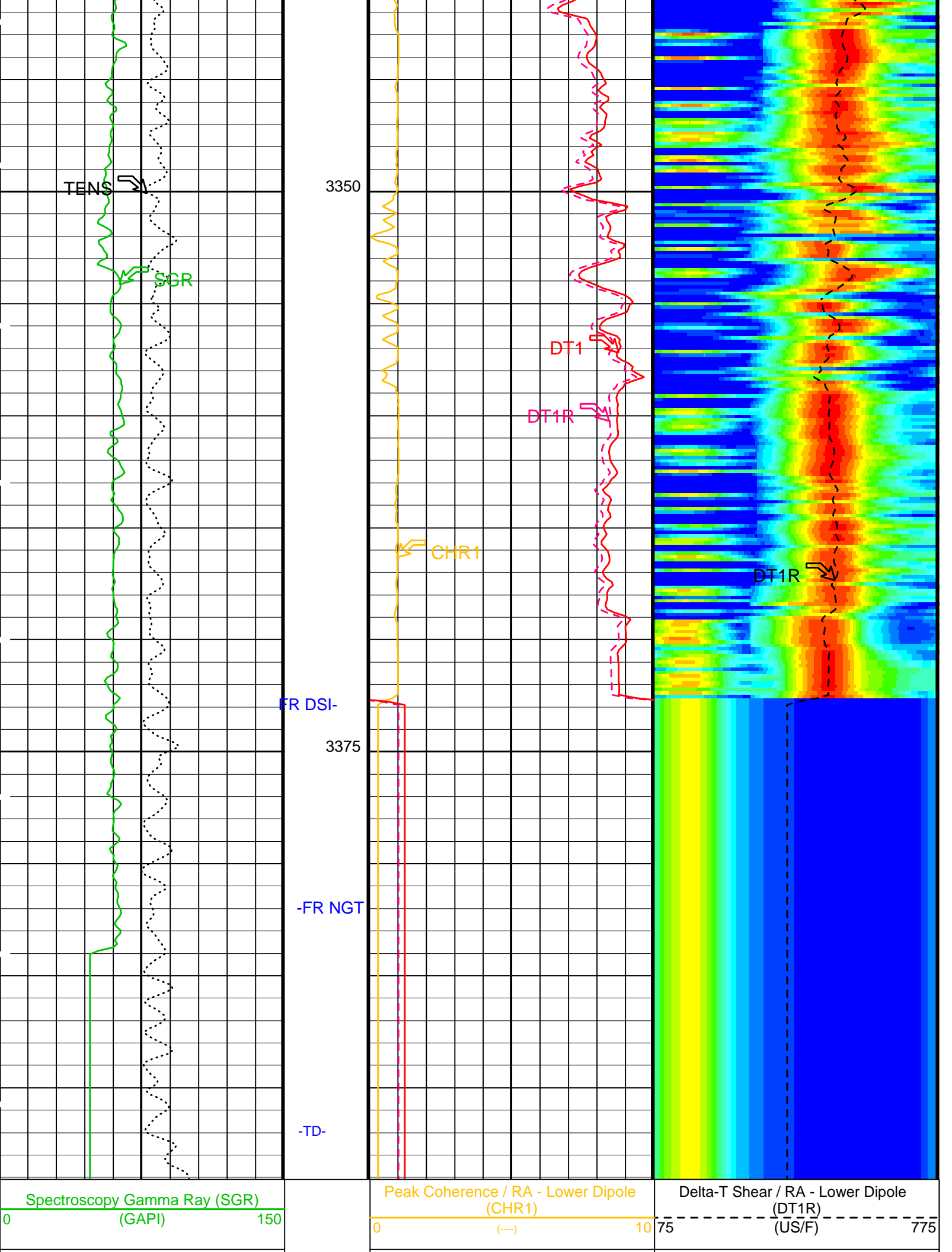


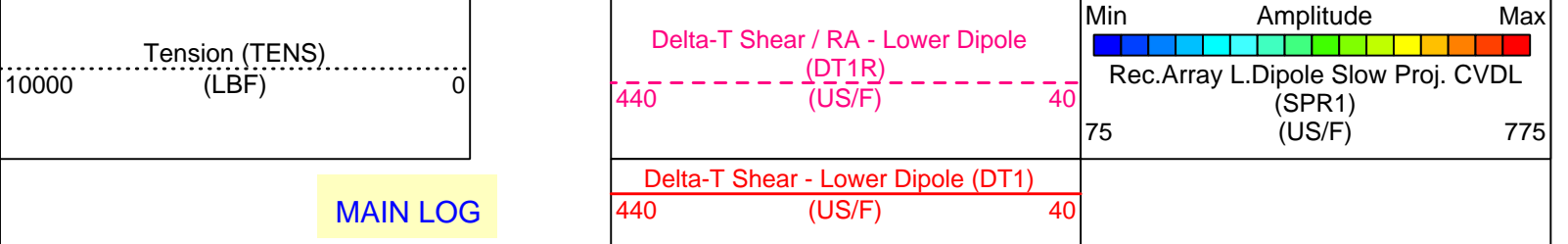












MAIN LOG

PIP SUMMARY

Lower Dipole, Low Frequency, Shear

Time Mark Every 60 S

### Parameters

DLIS Name	Description	Value	
BS	Bit Size	9.875	IN
CBAR	Constant Barite	1	
CGMI	Spectro Computed Gamma Ray Minimum	0	GAPI
CGSH	Spectro Computed Gamma Ray Shale	100	GAPI
DDE1	Digitizing Delay 1	0	US
DDEX	Digitizing Delay X	0	US
DFD	Drilling Fluid Density	8.51	LB/G
DLCS	Label Compressional Source - Dipole Shear	USE	
DSHL	Label Slowness Lower Limit - Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit - Dipole Shear	775	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta-T Source for DTCO Channel	PS_COMP	
DWC1	Digitizer Word Count 1	512	
DWCX	Digitizer Word Count X	512	
KMIN	Potassium Minimum	0	
KSHA	Potassium Shale	0.02	
LTXG	Lower Dipole Transmitter Geometry	156	IN
NFO	NGT Filtering Option	KALMAN	
PMUD	Potassium Mud	0	%
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 - Lower Dipole Mode	LFD_EVEN	
SAMX	DSST Sonic Acquisition Mode X - Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status - Lower Dipole	255	
SBO1	STC Search Band Offset - Lower Dipole	3000	US
SBW1	STC Search Bandwidth - Lower Dipole	8000	US
SFC1	STC Formation Character - Lower Dipole	SELECTABLE	
SFM1	STC Filter - Lower Dipole	B.3-1.5K	
SGMI	Spectro Gamma Ray Minimum	0	GAPI
SGSH	Spectro Gamma Ray Shale	100	GAPI
SLL1	STC Slowness Lower Limit - Lower Dipole	75	US/F
SST1	STC Slowness Step - Lower Dipole	4	US/F
SSW1	STC Source Waveform - Lower Dipole	WF_SAM1	
SUL1	STC Slowness Upper Limit - Lower Dipole	775	US/F
SWD1	STC Slowness Width - Lower Dipole	40	US/F
TBF1	STC Time for Baseline Fill - Lower Dipole	0	US
TLL1	STC Time Lower Limit - Lower Dipole	600	US
TMIN	Thorium Minimum	0	PPM
TSHA	Thorium Shale	12	PPM
TST1	STC Time Step - Lower Dipole	200	US
TUL1	STC Time Upper Limit - Lower Dipole	15912.5	US
TWD1	STC Time Width - Lower Dipole	2000	US
TWI1	STC Integration Time Window - Lower Dipole	1600	US
TWSX	Transmitter Waveform Select X	0	
UMIN	Uranium Minimum	0	PPM
USHA	Uranium Shale	3	PPM

Format: DSST\_LOWER\_DIPOLE\_VDL\_COLOR Vertical Scale: 1:200 Graphics File Created: 03-May-2000 02:29

### OP System Version: 9C1-303 MCM

GHMT-A	9C1-303	NGT-C	9C1-303
DTA-A	9C1-303	DSST-B	9C1-303
DTC-H	9C1-303		

Output DLIS Files



# Output DLIS Files

DEFAULT	GHMT .018	FN:29 PRODUCER	03-May-2000 02:29
GHMT_CUST	GHMT .018	FN:30 PRODUCER	03-May-2000 02:29

## Output DLIS Files

DEFAULT	GHMT .020	FN:33 PRODUCER	03-May-2000 05:14	3010.1 M	2889.5 M
GHMT_CUST	GHMT .020	FN:34 PRODUCER	03-May-2000 05:14	3010.1 M	2889.5 M

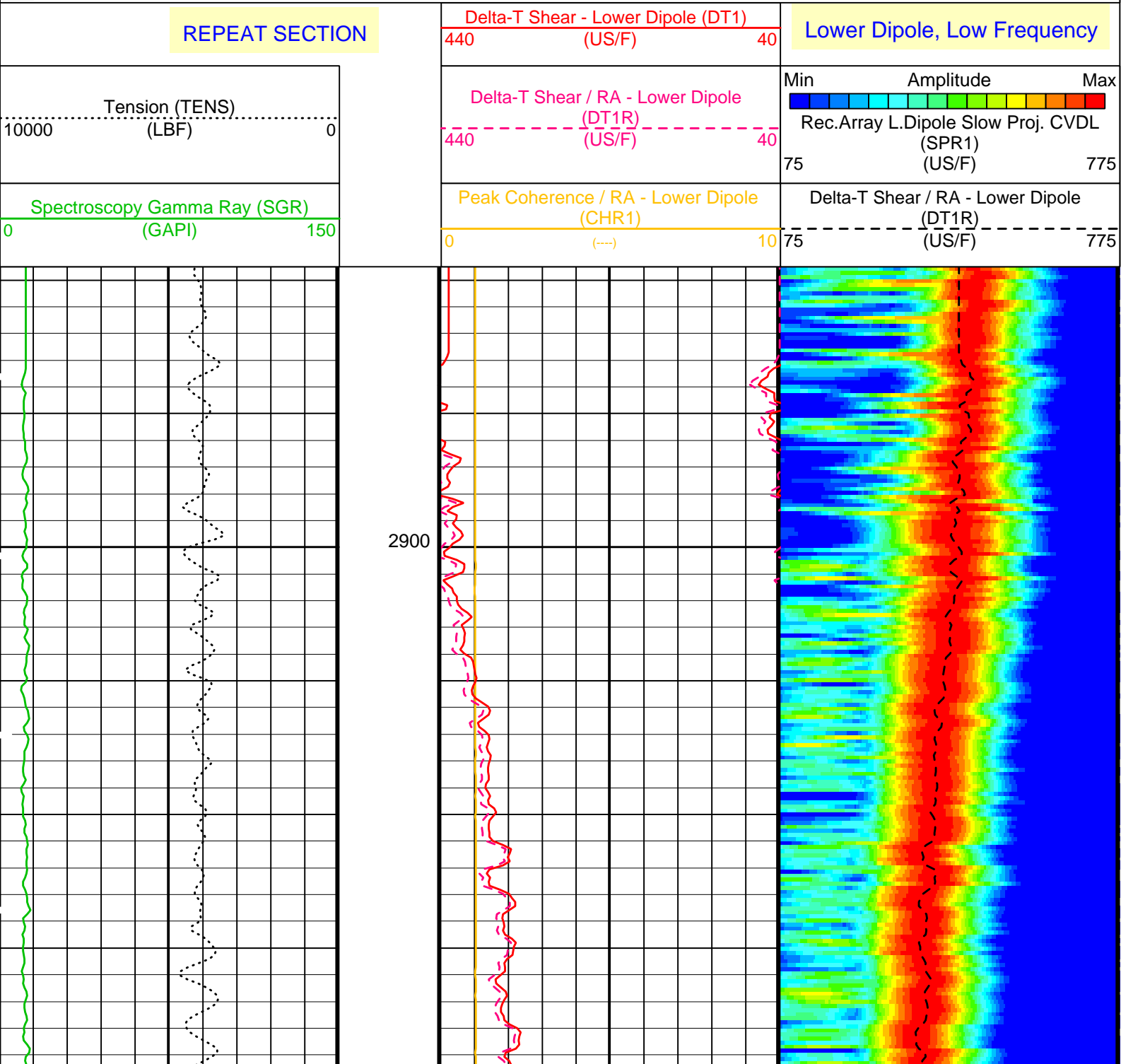
## OP System Version: 9C1-303

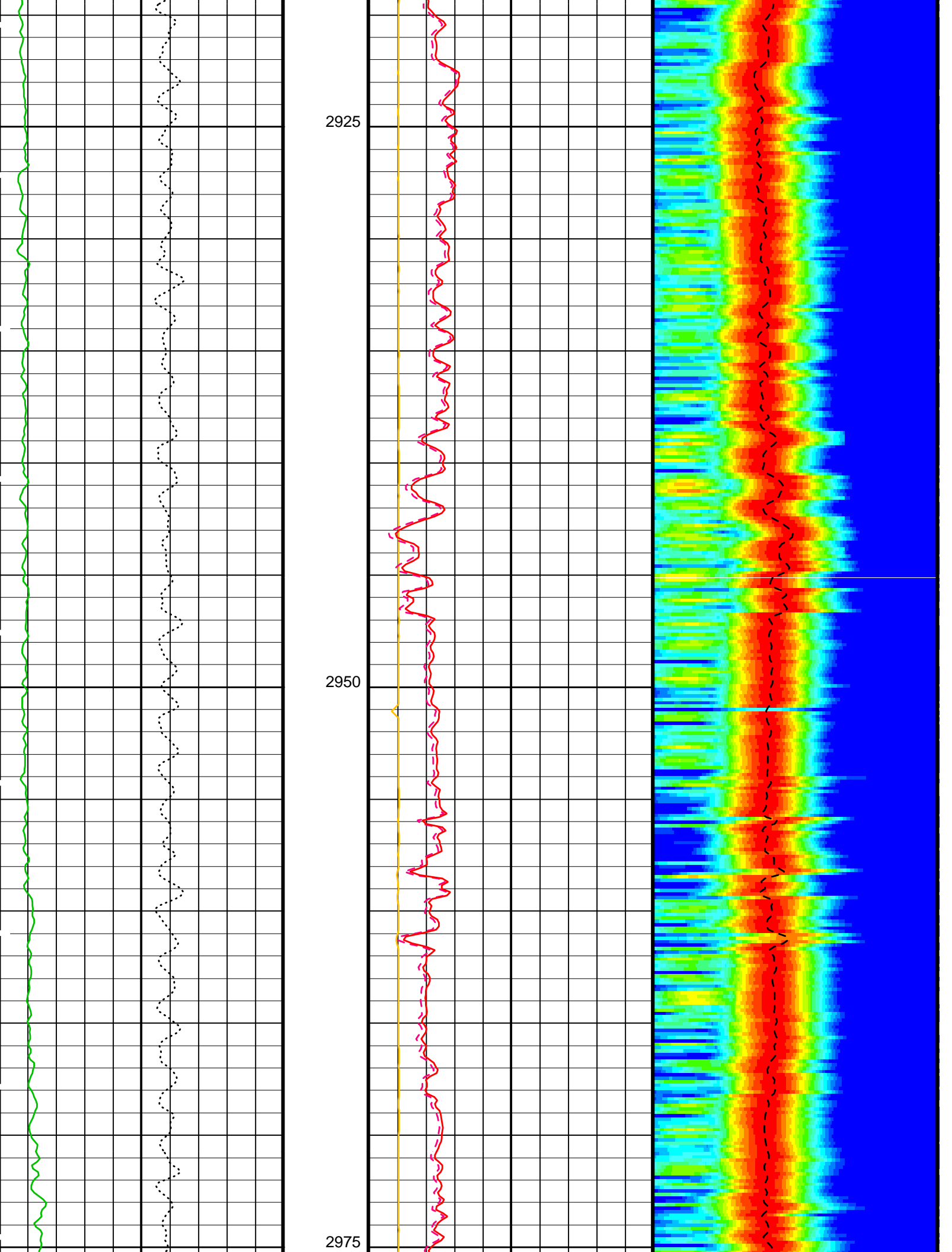
MCM

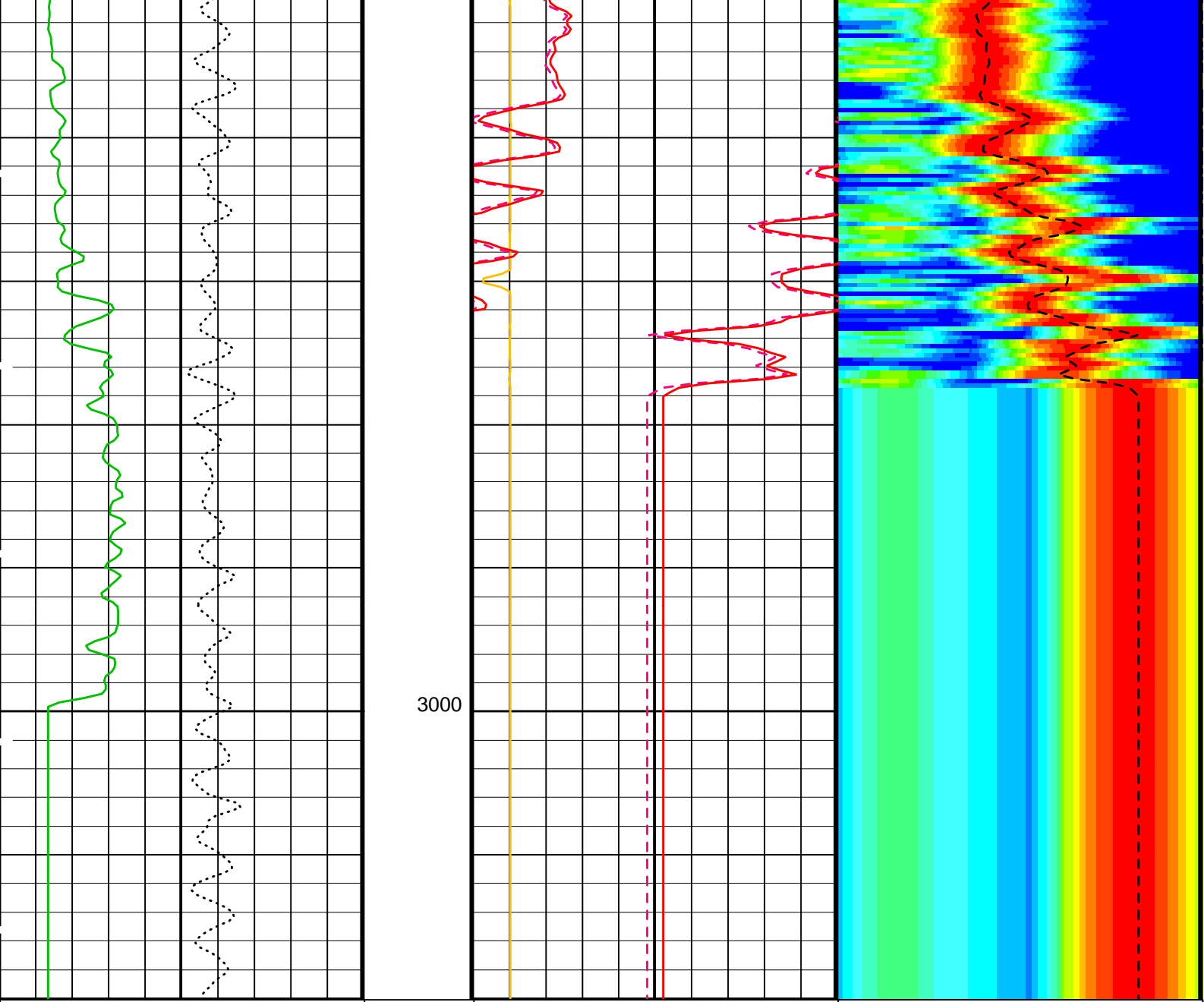
GHMT-A	9C1-303	NGT-C	9C1-303
DTA-A	9C1-303	DSST-B	9C1-303
DTC-H	9C1-303		

### PIP SUMMARY

Time Mark Every 60 S







<p>Spectroscopy Gamma Ray (SGR) (GAPI) 0 150</p>	<p>Peak Coherence / RA - Lower Dipole (CHR1) 0 10</p>	<p>Delta-T Shear / RA - Lower Dipole (DT1R) 75 775</p>
<p>Tension (TENS) (LBF) 10000 0</p>	<p>Delta-T Shear / RA - Lower Dipole (DT1R) 440 40</p>	<p>Min Amplitude Max Rec.Array L.Dipole Slow Proj. CVDL (SPR1) 75 775</p>
<p>REPEAT SECTION</p>	<p>Delta-T Shear - Lower Dipole (DT1) (US/F) 440 40</p>	<p>Lower Dipole, Low Frequency</p>

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
BS	Bit Size	9.875 IN
CBAR	Constant Barite	1
CGMI	Spectro Computed Gamma Ray Minimum	0 GAPI
CGSH	Spectro Computed Gamma Ray Shale	100 GAPI
DDE1	Digitizing Delay 1	0 US
DDEX	Digitizing Delay X	0 US
DFD	Drilling Fluid Density	8.51 LB/G
DLCS	Label Compressional Source - Dipole Shear	USE

DSHL	Label Slowness Lower Limit - Dipole Shear	75	US/F
DSHU	Label Slowness Upper Limit - Dipole Shear	775	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta-T Source for DTCS Channel	PS_COMP	
DWC1	Digitizer Word Count 1	512	
DWCX	Digitizer Word Count X	512	
KMIN	Potassium Minimum	0	
KSHA	Potassium Shale	0.02	
LTXG	Lower Dipole Transmitter Geometry	156	IN
NFO	NGT Filtering Option	KALMAN	
PMUD	Potassium Mud	0	%
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 - Lower Dipole Mode	LFD_EVEN	
SAMX	DSST Sonic Acquisition Mode X - Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status - Lower Dipole	255	
SBO1	STC Search Band Offset - Lower Dipole	3000	US
SBW1	STC Search Bandwidth - Lower Dipole	8000	US
SFC1	STC Formation Character - Lower Dipole	SELECTABLE	
SFM1	STC Filter - Lower Dipole	B.3-1.5K	
SGMI	Spectro Gamma Ray Minimum	0	GAPI
SGSH	Spectro Gamma Ray Shale	100	GAPI
SLL1	STC Slowness Lower Limit - Lower Dipole	75	US/F
SST1	STC Slowness Step - Lower Dipole	4	US/F
SSW1	STC Source Waveform - Lower Dipole	WF_SAM1	
SUL1	STC Slowness Upper Limit - Lower Dipole	775	US/F
SWD1	STC Slowness Width - Lower Dipole	40	US/F
TBF1	STC Time for Baseline Fill - Lower Dipole	0	US
TLL1	STC Time Lower Limit - Lower Dipole	600	US
TMIN	Thorium Minimum	0	PPM
TSHA	Thorium Shale	12	PPM
TST1	STC Time Step - Lower Dipole	200	US
TUL1	STC Time Upper Limit - Lower Dipole	15912.5	US
TWD1	STC Time Width - Lower Dipole	2000	US
TWI1	STC Integration Time Window - Lower Dipole	1600	US
TWSX	Transmitter Waveform Select X	0	
UMIN	Uranium Minimum	0	PPM
USHA	Uranium Shale	3	PPM

Format: DSST\_LOWER\_DIPOLE\_VDL\_COLOR    Vertical Scale: 1:200    Graphics File Created: 03-May-2000 05:14

**OP System Version: 9C1-303**  
MCM

GHMT-A	9C1-303	NGT-C	9C1-303
DTA-A	9C1-303	DSST-B	9C1-303
DTC-H	9C1-303		

**Output DLIS Files**

DEFAULT	GHMT .020	FN:33 PRODUCER	03-May-2000 05:14
GHMT_CUST	GHMT .020	FN:34 PRODUCER	03-May-2000 05:14

**Calibration and Check Summary**

Measurement	Nominal	Master	Before	After	Change	Limit	Units
<b>Natural Gamma Spectroscopy - C Wellsite Calibration - Background Measurement</b>							
Master: 16-APR-2000 21:24    Before: 16-APR-2000 21:30							
WINDOW 1 Background	100.0	9.898	9.716	N/A	N/A	100.0	CPS
WINDOW 2 Background	50.00	2.920	2.836	N/A	N/A	50.00	CPS
WINDOW 3 Background	10.00	0.6604	0.7863	N/A	N/A	10.00	CPS
WINDOW 4 Background	6.000	0.3249	0.2437	N/A	N/A	6.000	CPS
WINDOW 5 Background	10.00	0.5101	0.4025	N/A	N/A	10.00	CPS
SGR Background	30.00	3.745	3.658	N/A	N/A	N/A	GAPI

<b>Natural Gamma Spectroscopy - C Wellsite Calibration - Normalized Jig Measurement</b>							
Master: 16-APR-2000 21:18    Before: 16-APR-2000 21:37							
WINDOW 1 Jig	376.0	386.3	387.2	N/A	N/A	22.56	CPS

WINDOW 2 Jig	167.0	170.1	170.1	N/A	N/A	10.02	CPS
WINDOW 3 Jig	24.00	24.62	23.87	N/A	N/A	1.440	CPS
WINDOW 4 Jig	14.00	14.45	13.95	N/A	N/A	2.800	CPS
WINDOW 5 Jig	22.50	22.01	23.06	N/A	N/A	4.500	CPS
SGR Jig	160.0	159.8	160.0	N/A	N/A	7.000	GAPI

Natural Gamma Spectroscopy - C Master Calibration - Master Quality Control Values

Master: 16-APR-2000 21:13

Photomultiplier Res. CARC3	8.000	9.461	--	--	--	--	
APU WINDOW Jig	1350	964.6	--	--	--	--	CPS
APL WINDOW Jig	1350	964.2	--	--	--	--	CPS

The NGT PCSL Value is set to 83.674 KEV

Natural Gamma Spectroscopy - C / Equipment Identification

Primary Equipment:

NGT Cartridge	NGC - C	1921
NGT Sonde	NGD - A	1736

Auxiliary Equipment:

NGT Cartridge Housing	NGCH - A	752
NGT Sonde Housing	NGH - B	3
Gamma Source Radioactive	GSR - U	

Natural Gamma Spectroscopy - C Wellsite Calibration

Background Measurement

Phase	WINDOW 1 Background CPS	Value	Phase	WINDOW 2 Background CPS	Value	Phase	WINDOW 3 Background CPS	Value
Master		9.898	Master		2.920	Master		0.6604
Before		9.716	Before		2.836	Before		0.7863
	0 (Minimum) 100.0 (Nominal) 400.0 (Maximum)			0 (Minimum) 50.00 (Nominal) 200.0 (Maximum)			0 (Minimum) 10.00 (Nominal) 40.00 (Maximum)	
Phase	WINDOW 4 Background CPS	Value	Phase	WINDOW 5 Background CPS	Value	Phase	SGR Background GAPI	Value
Master		0.3249	Master		0.5101	Master		3.745
Before		0.2437	Before		0.4025	Before		3.658
	0 (Minimum) 6.000 (Nominal) 24.00 (Maximum)			0 (Minimum) 10.00 (Nominal) 40.00 (Maximum)			0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)	
Master: 16-APR-2000 21:24			Before: 16-APR-2000 21:30					

Natural Gamma Spectroscopy - C Wellsite Calibration


Normalized Jig Measurement

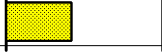
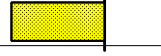
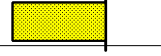

Phase	WINDOW 1 Jig CPS	Value	Phase	WINDOW 2 Jig CPS	Value	Phase	WINDOW 3 Jig CPS	Value
Master		386.3	Master		170.1	Master		24.62
Before		387.2	Before		170.1	Before		23.87
	354.0 (Minimum) 376.0 (Nominal) 398.0 (Maximum)			155.0 (Minimum) 167.0 (Nominal) 179.0 (Maximum)			21.50 (Minimum) 24.00 (Nominal) 26.50 (Maximum)	
Phase	WINDOW 4 Jig CPS	Value	Phase	WINDOW 5 Jig CPS	Value	Phase	SGR Jig GAPI	Value
Master		14.45	Master		22.01	Master		159.8
Before		13.95	Before		23.06	Before		160.0
	12.50 (Minimum) 14.00 (Nominal) 15.50 (Maximum)			20.00 (Minimum) 22.50 (Nominal) 25.00 (Maximum)			148.0 (Minimum) 160.0 (Nominal) 172.0 (Maximum)	
Master: 16-APR-2000 21:18			Before: 16-APR-2000 21:37					

Natural Gamma Spectroscopy - C Wellsite Calibration

Quality Control Values

Phase	DHVV Jig V	Value	Phase	Quality Windows Ratio Jig	Value
Master		1515	Master		2.271
Before		1514	Before		2.277
	1088 (Minimum) 1450 (Nominal) 1813 (Maximum)			2.150 (Minimum) 2.240 (Nominal) 2.330 (Maximum)	
Master: 16-APR-2000 21:18			Before: 16-APR-2000 21:37		

Natural Gamma Spectroscopy - C Wellsite Calibration		
Quality Control Values Check		
Phase	Thorium peak Form Factor Jig	Value
Before		0.01462
	-0.2000 (Minimum)	0 (Nominal)
		0.2000 (Maximum)
Before: 16-APR-2000 21:37		

Natural Gamma Spectroscopy - C Master Calibration											
Master Quality Control Values											
Phase	Photomultiplier Res. CARC3		Value	Phase	APU WINDOW Jig CPS		Value	Phase	APL WINDOW Jig CPS		Value
Master			9.461	Master			964.6	Master			964.2
	4.500 (Minimum)	8.000 (Nominal)	11.50 (Maximum)		700.0 (Minimum)	1350 (Nominal)	1600 (Maximum)		700.0 (Minimum)	1350 (Nominal)	1600 (Maximum)
Phase	Thorium peak Form Factor Jig		Value								
Master			-0.02200								
	-0.1000 (Minimum)	0 (Nominal)	0.1000 (Maximum)								
Master: 16-APR-2000 21:13											

<b>COMPANY:</b>	<b>Lamont Doherty</b>	<b>BOTTOM LOG INTERVAL</b>	3373 m
<b>WELL:</b>	<b>ODP Leg 189, Site 1172D (ETP-2A)</b>	<b>SCHLUMBERGER DEPTH</b>	3395 m
<b>FIELD:</b>	<b>East Tasmania</b>	<b>DEPTH DRILLER</b>	3399.85 m
<b>COUNTY:</b>	<b>Offshore</b>	<b>KELLY BUSHING</b>	11.2 m
<b>STATE:</b>	<b>Pacific Ocean</b>	<b>DRILL FLOOR</b>	10.9 m
		<b>GROUND LEVEL</b>	2621.7 m



Lower Dipole Shear  
Natural Gamma Ray