

Company: Lamont Doherty

Well: Expedition 321 Site U1338B

Field: PEAT

Rig: JOIDES Resolution Ocean: Pacific

Natural Gamma Spectroscopy

Rig: JOIDES Resolution			
Field: PEAT			
Location: Latitude: N 2° 30.471'			
Well: Expedition 321 Site U1338B			
Company: Lamont Doherty			
LOCATION		Elev.:	K.B. 11.00 m
Latitude: N 2° 30.471'		G.L. -4199.00 m	
Longitude: W 117° 58.162'		D.F. 11.00 m	
Permanent Datum: _____	Mean Sea Level	Elev.:	0.00 m
Log Measured From: _____	Drill Floor	11.00 m above Perm. Datum	
Drilling Measured From: _____	Drill Floor		
API Serial No. _____	N 2° 30.471'	117° 58.162'	

Logging Date		9-Jun-2009		
Run Number		1		
Depth Driller		4626 m		
Schlumberger Depth		4622 m		
Bottom Log Interval		4603 m		
Top Log Interval		4210 m		
Casing Driller Size @ Depth		4.500 in @ 4295 m		
Casing Schlumberger		4289 m		
Bit Size		11.438 in		
Type Fluid In Hole		Seawater Gel		
Density	Viscosity	1.258 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	@ 6	@ 6	@
Maximum Recorded Temperatures		6 degC		
Circulation Stopped	Time	9-Jun-2009	18:00	
Logger On Bottom	Time	9-Jun-2009	see log	
Unit Number	Location	625003	Houston	
Recorded By		K. Swain		
Witnessed By		Alberto Mallinverno, Louise Anderson		

Logging Date					Run 1	Run 2	R
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	Time						
Logger On Bottom	Time						
Unit Number	Location						
Recorded By							
Witnessed By							

DISCLAIMER

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OTHER SERVICES1
 OS1: FMS/HNGS
 OS2: MSS/Caliper/HNGS
 OS3: VSI
 OS4:
 OS5:

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

REMARKS: RUN NUMBER 1
 Logging tools deployed inside drillpipe with wireline.
 BHA consisted of LFV and seal bore collar of 3.80" ID.
 HLDS caliper calibration used 12 inch and 15.19" diameter rings as reference to improve large hole size accuracy.
 Depths referenced from drill floor which is 11m above sea level.
 Pipe depth set at 4210 m approximately for duration of logging.
 Ship heave averaged +0.7m to -0.7 m on average (estimate).
 Tcombo run encountered 3 pulls near pipe depth due to formation sticking.
 FMS (MEST) and VSI runs made with drill pipe lowered to 4353mbrf from 4295mbrf.
 This was to eliminate the sticking problems on these later runs.
 No problems encountered with sticking on the last two runs.

REMARKS: RUN NUMBER 2

RUN 1		
SERVICE ORDER #:		
PROGRAM VERSION:	17C0-154	
FLUID LEVEL:		
LOGGED INTERVAL	START	STOP

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

EQUIPMENT DESCRIPTION


RUN 1


SURFACE EQUIPMENT

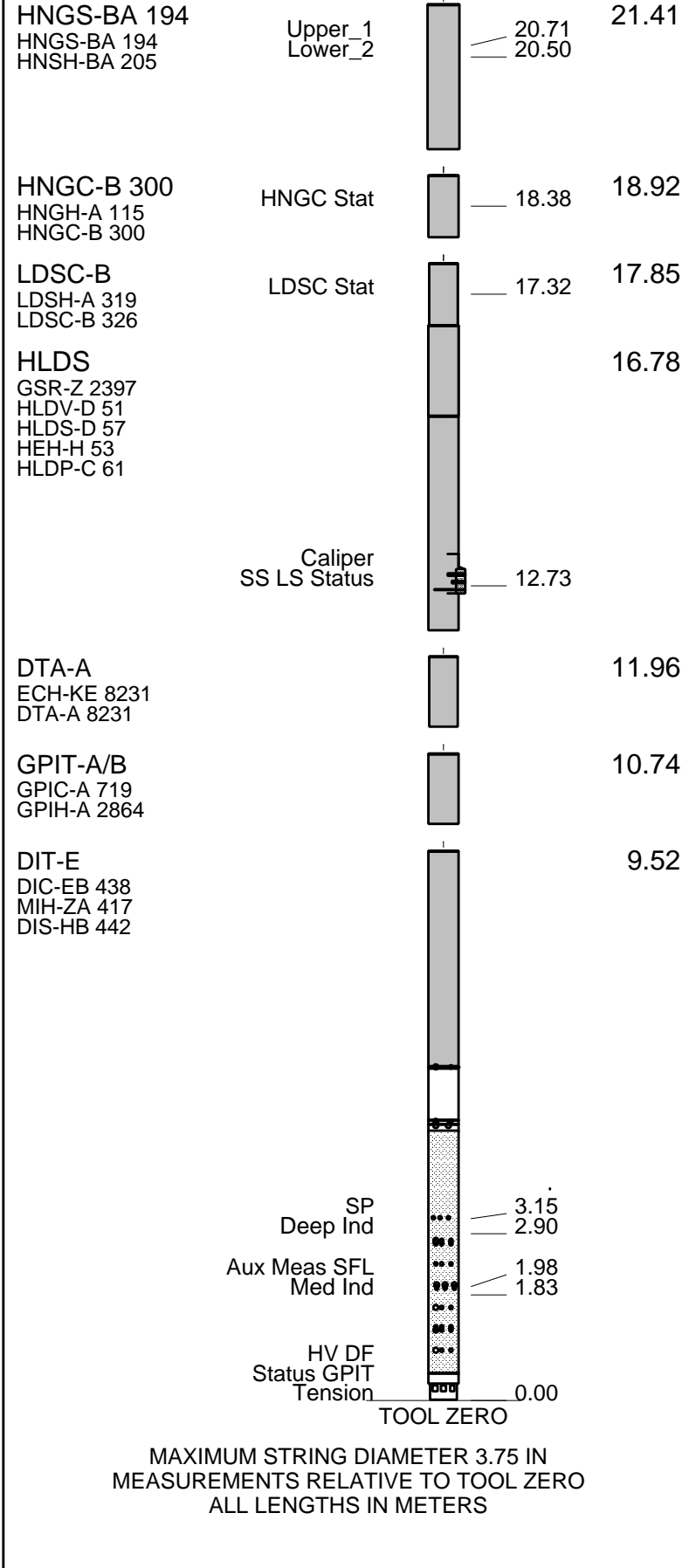
GSR-U 616008
 WITM (DTS)-A

RUN 2

DOWNHOLE EQUIPMENT

LEH-QT 23.22
 LEH-QT 301 

DTC-H 22.05
 ECH-KC 2304 CTEM TelStatus 22.33
 DTCH0-A 8798 ToolStatu 21.41 



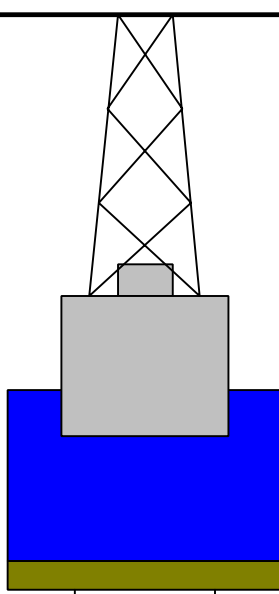
Production String	(in)	(M)	Well Schematic	(M)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation
Derrick Floor Elevation

11.0
11.0

Mean Sea Level

0.0



4210 4.20

Casing String



4210 9.875

Borehole Segment

4353 3.80

Casing Shoe

4626

Input DLIS Files

DEFAULT	PI_LDL_NGS_010LUP	FN:12	PRODUCER	10-Jun-2009 00:26	4622.3 M	4199.2 M
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Output DLIS Files

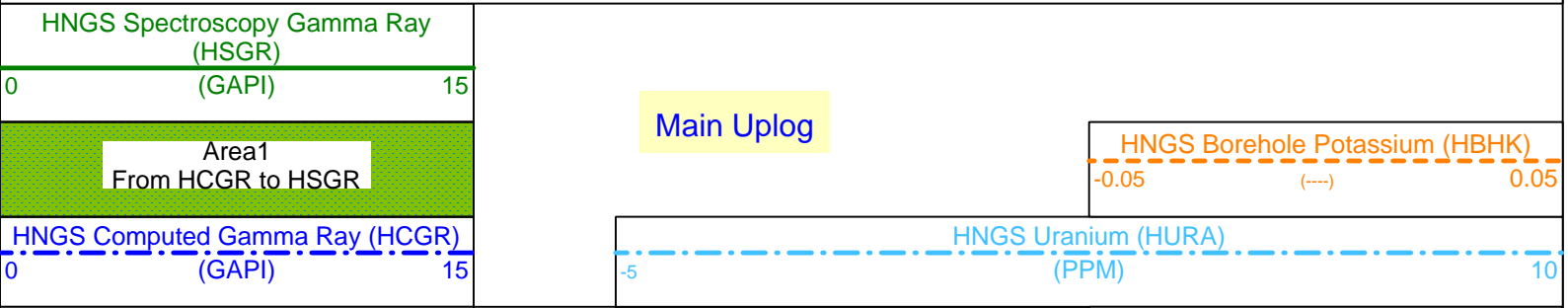
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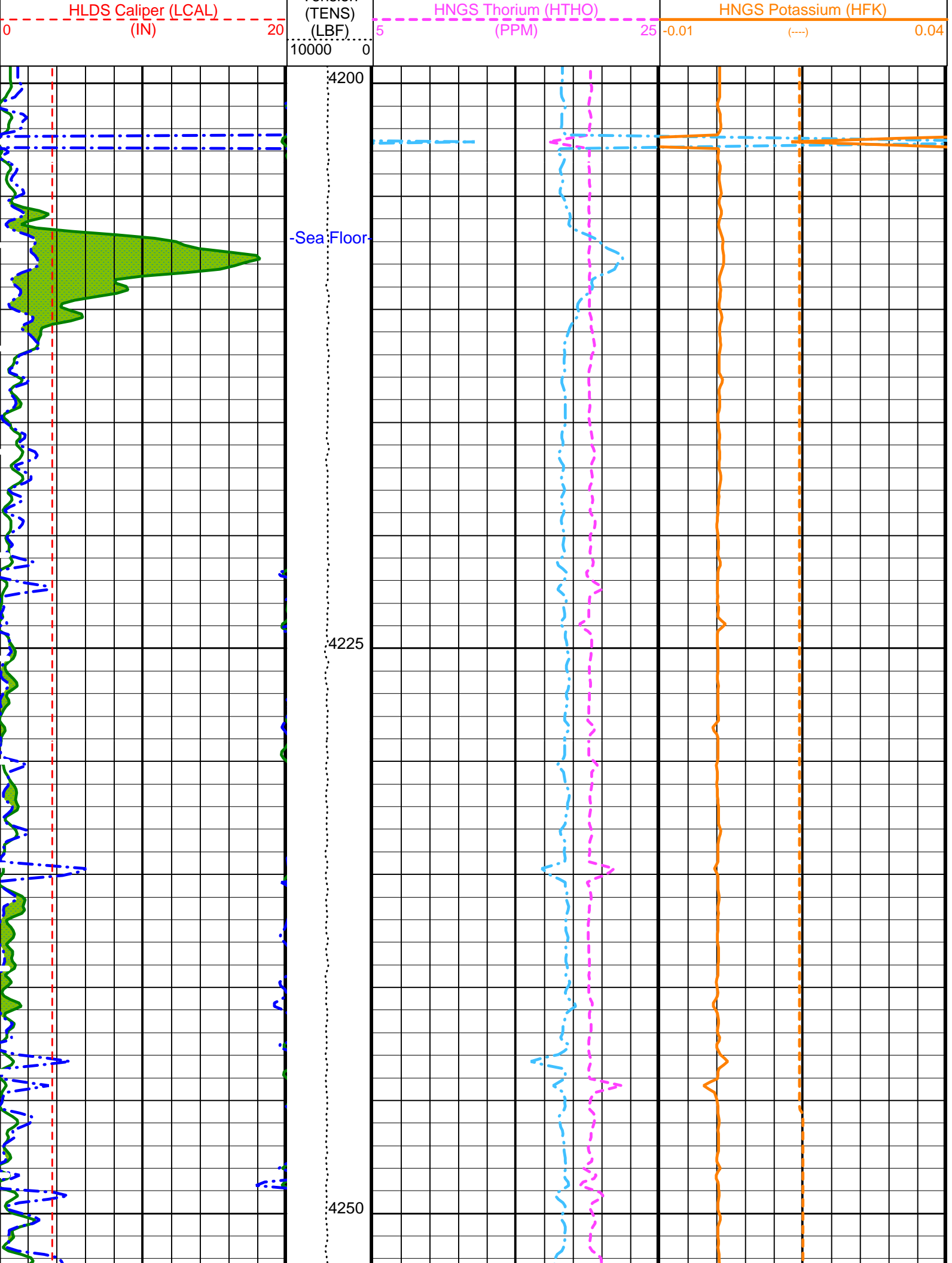
OP System Version: 17C0-154

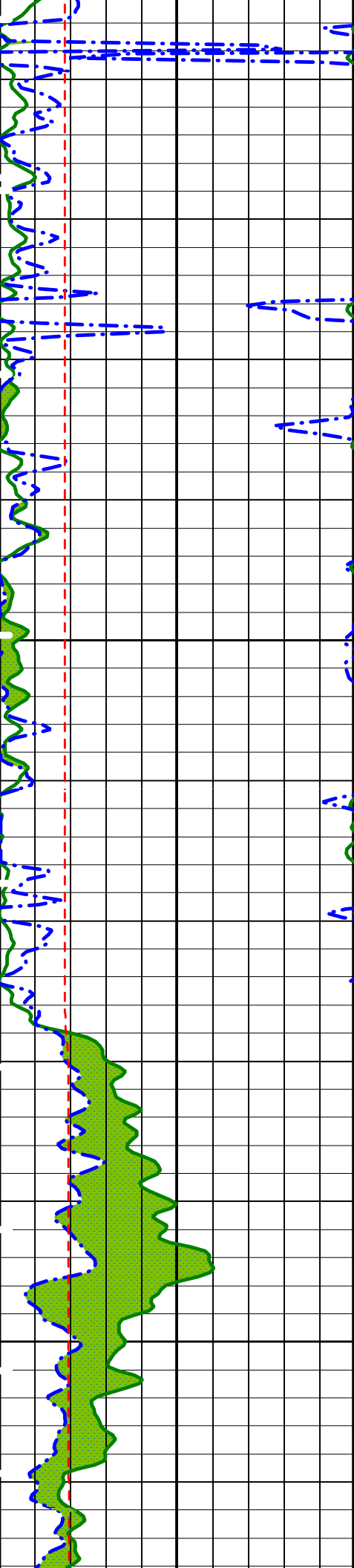
DIT-E	17C0-154	GPIT-A/B	SRPC-3762-Q1_2009_OP17
DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

PIP SUMMARY

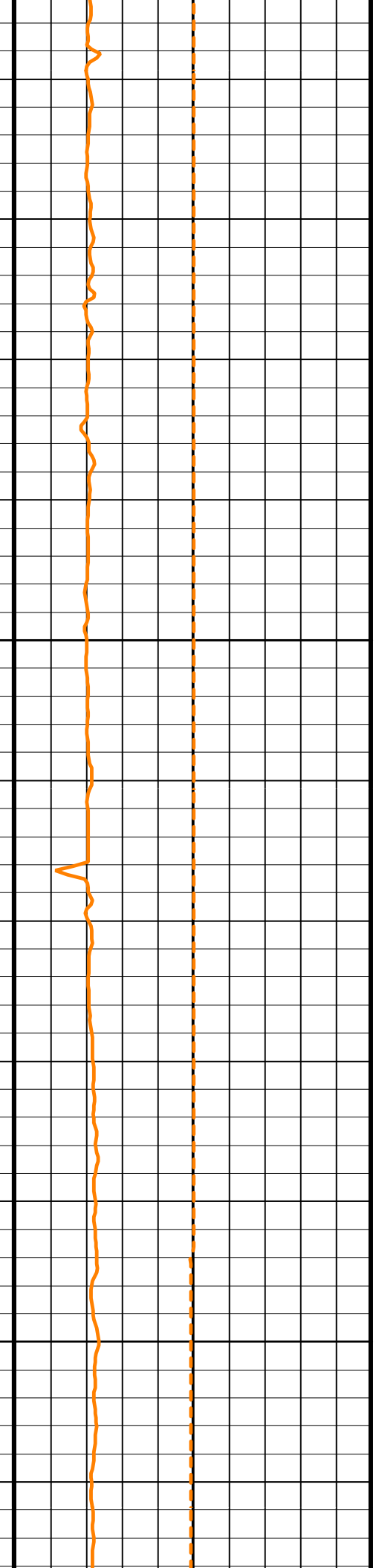
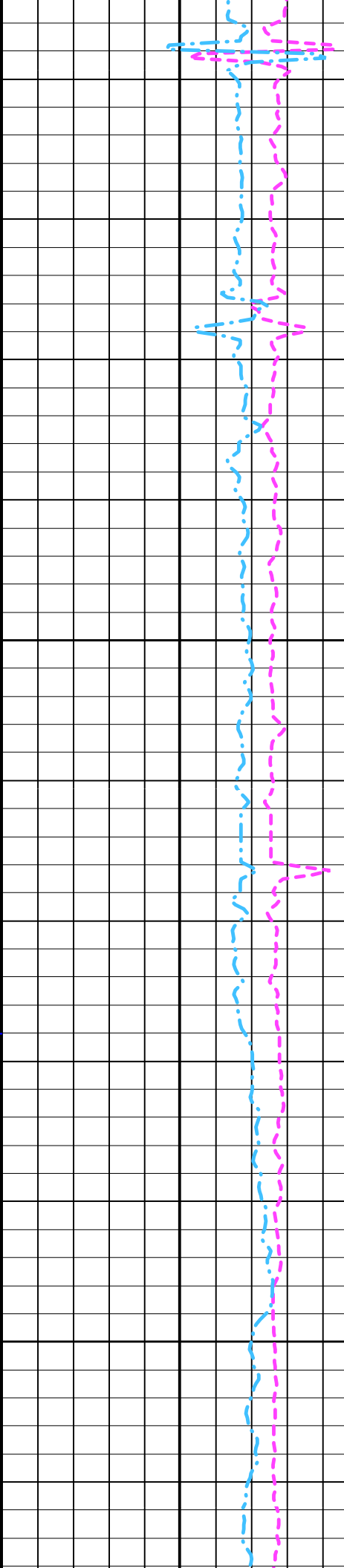
Time Mark Every 60 S

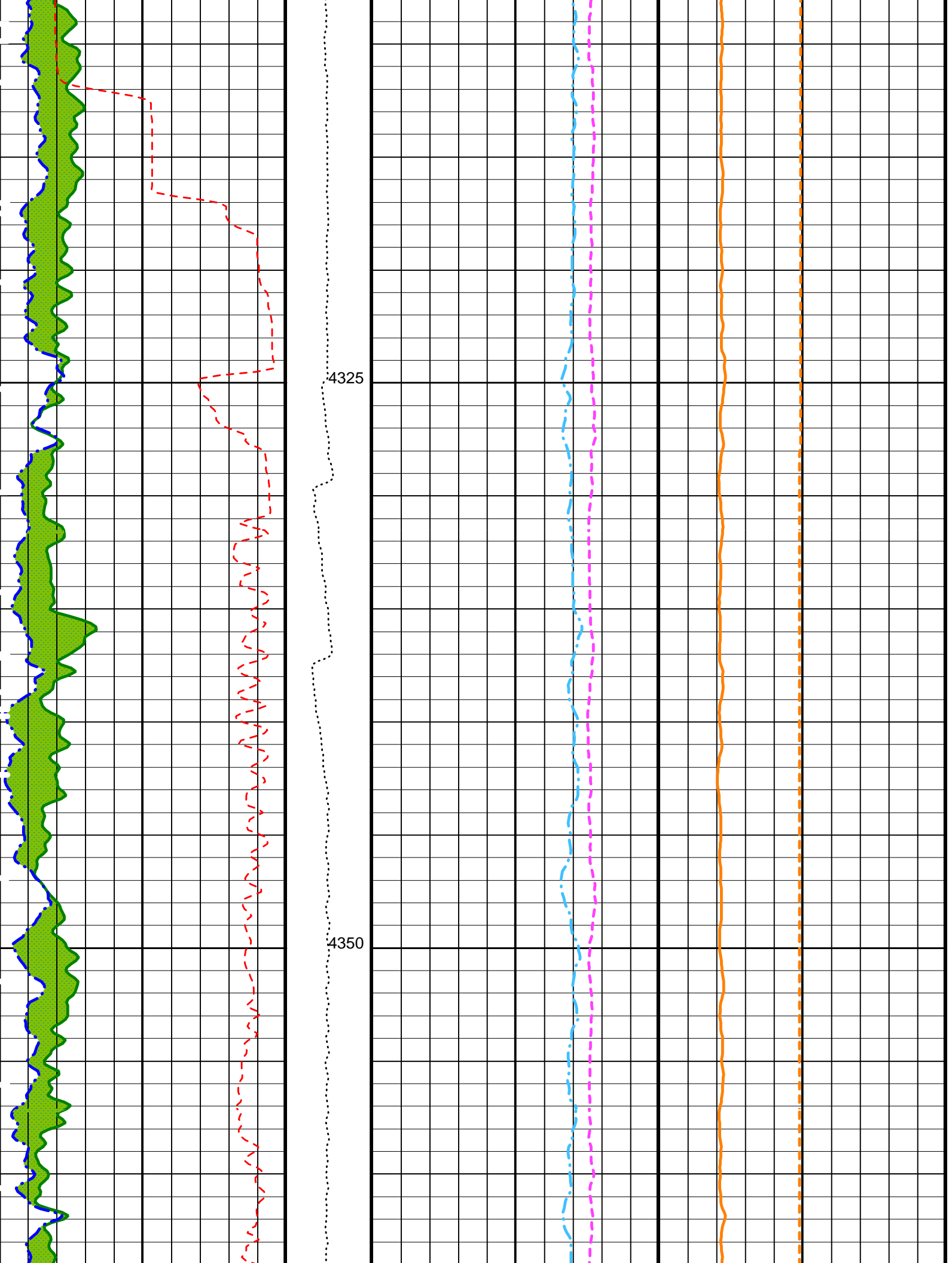


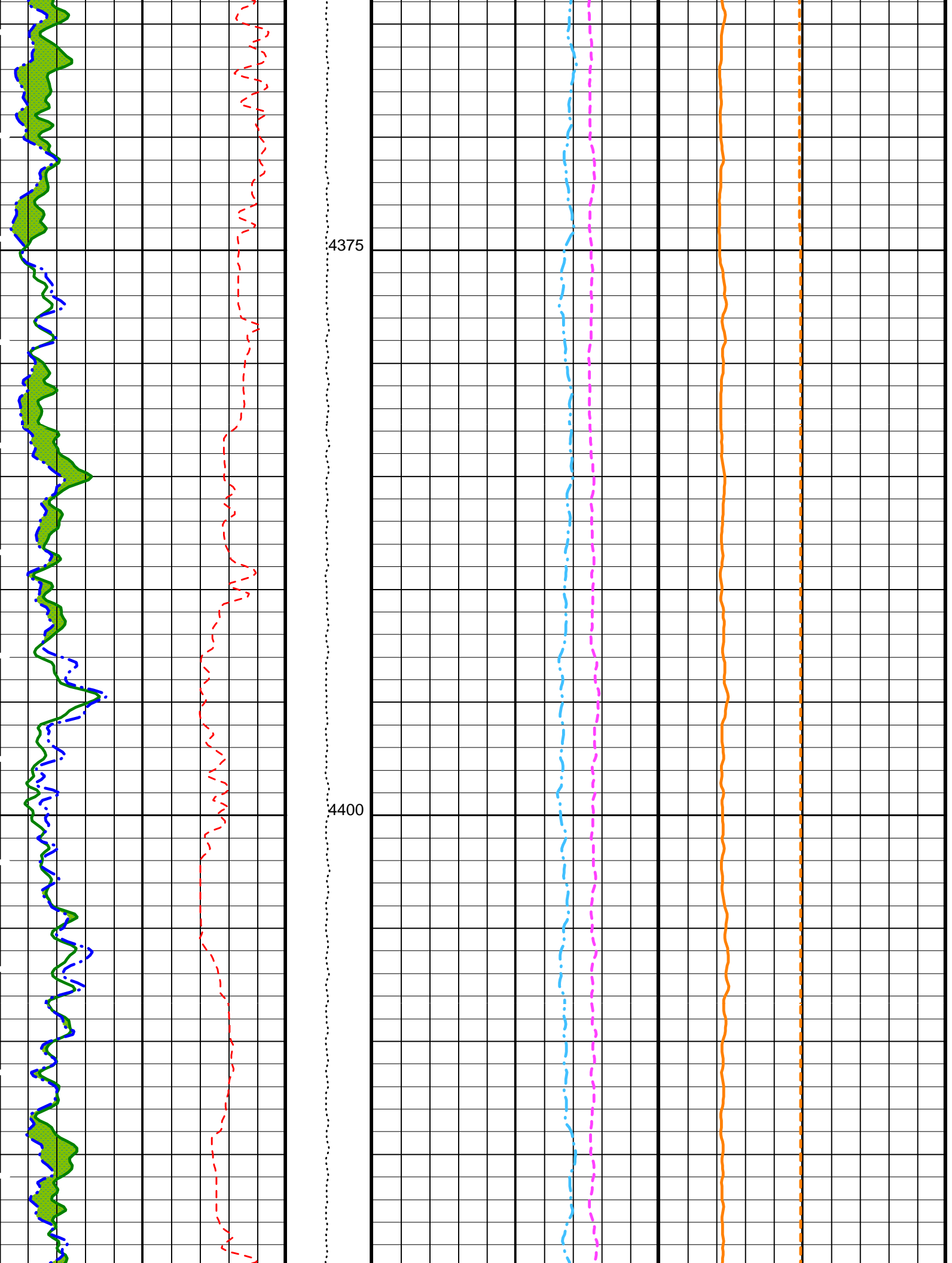


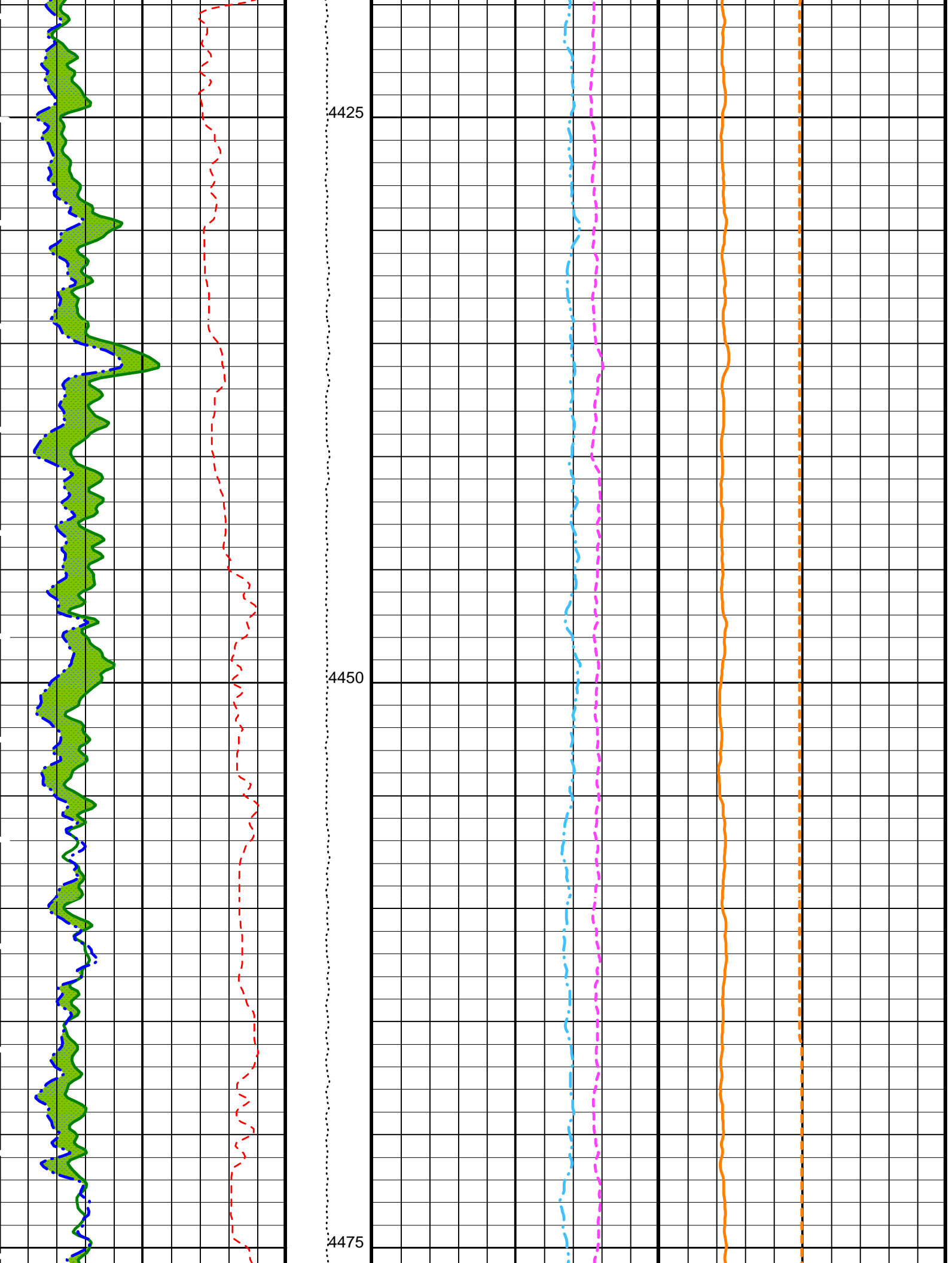


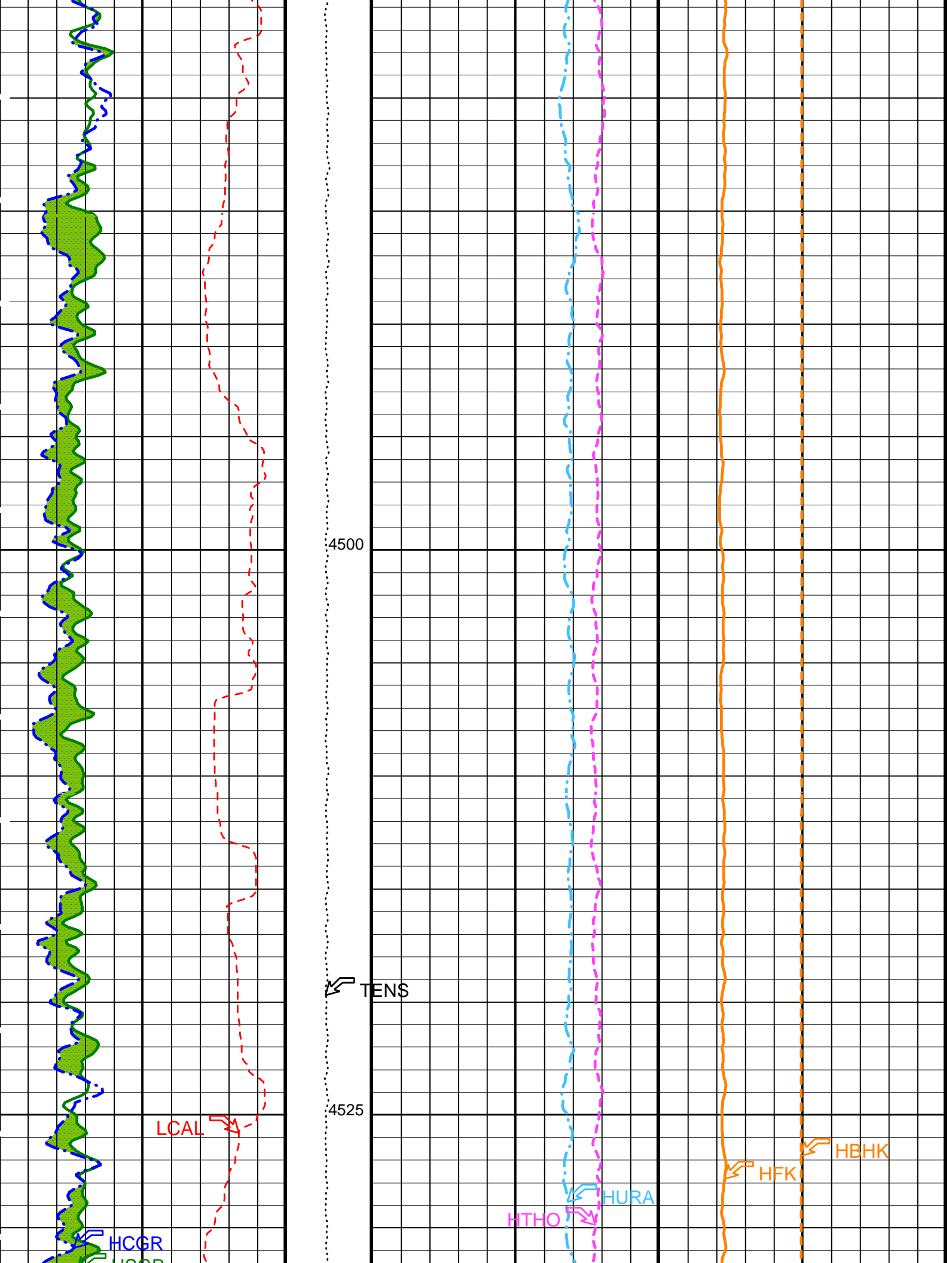
4275
-Drill Pipe
4300

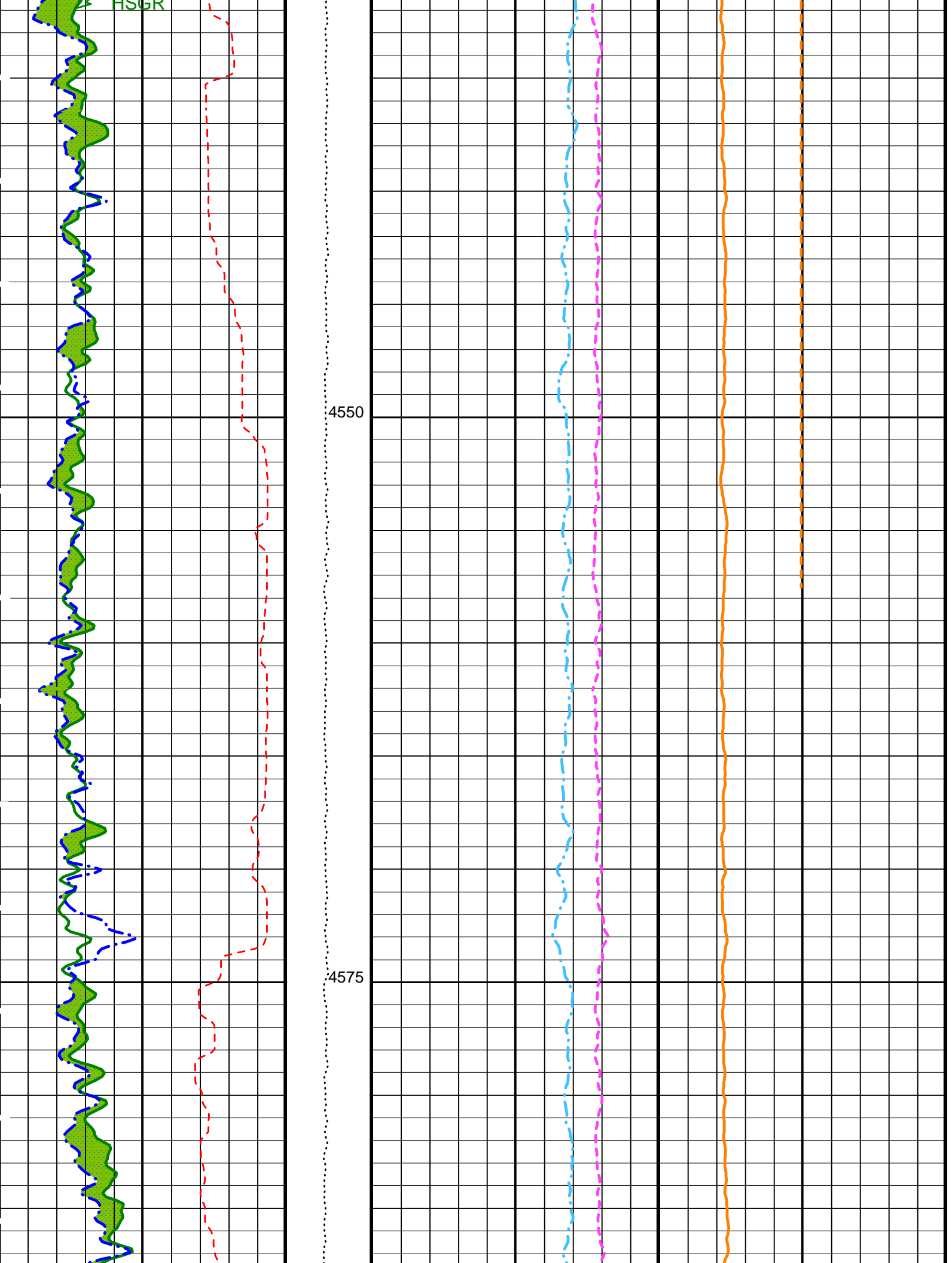


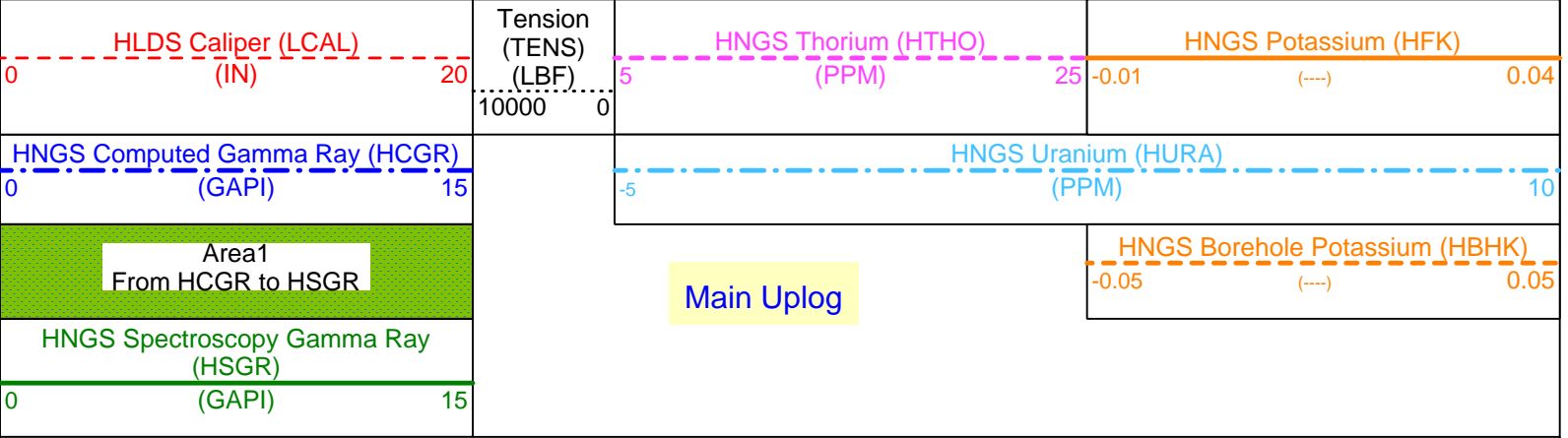
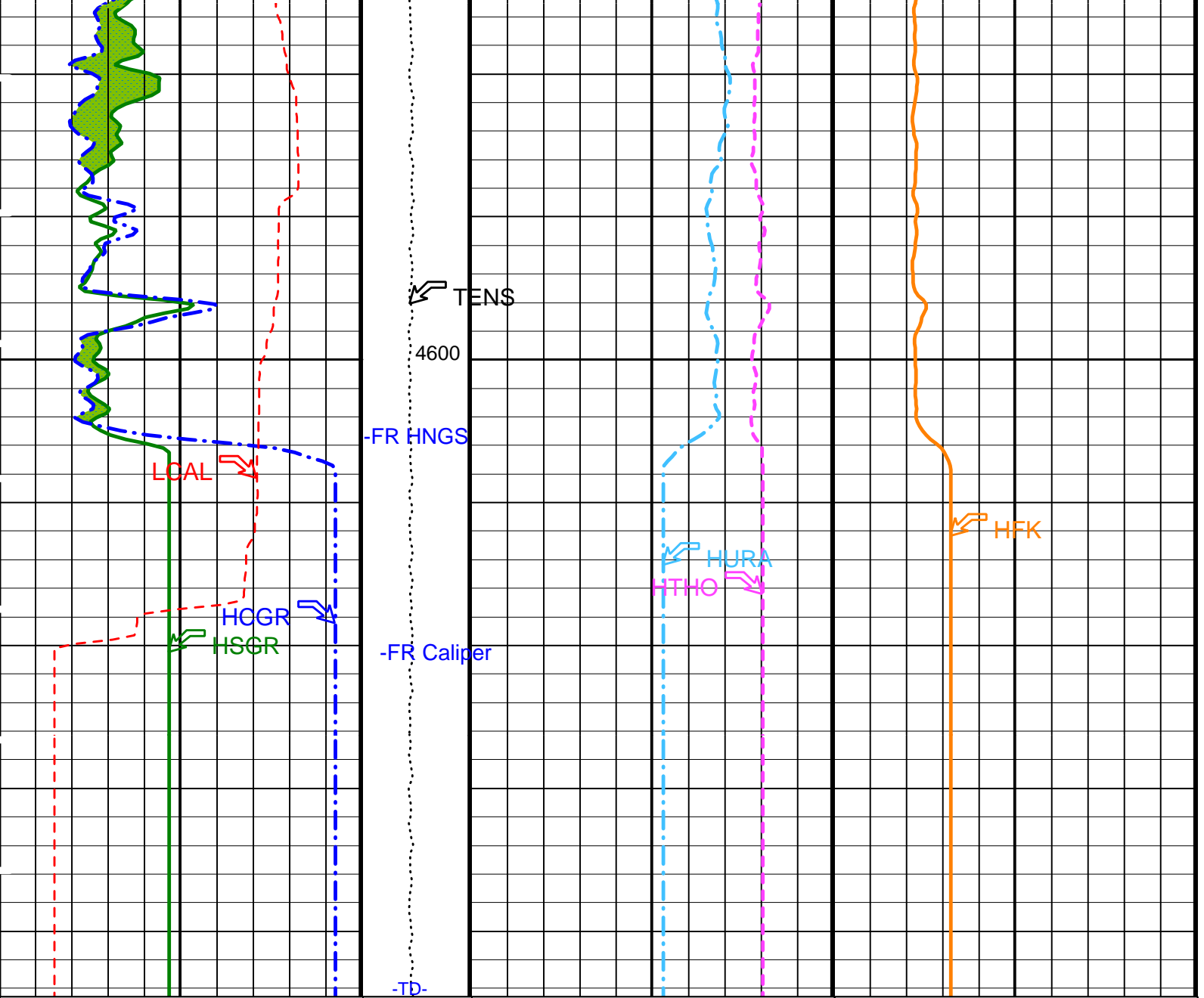












PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DIT-E	Dual Induction - E	
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	60 DEG F
DGF1	Deep 10 kHz Gain Factor	0.968036
DGF2	Deep 20 kHz Gain Factor	0.981641

DGF4	Deep 40 kHz Gain Factor	1.00354	
DPH1	Deep 10 kHz Phase Shift	0.519505	DEG
DPH2	Deep 20 kHz Phase Shift	0.58231	DEG
DPH4	Deep 40 kHz Phase Shift	-0.0231022	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	47.0269	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	16.7871	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.70109	MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT-E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	100.491	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	62.191	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	44.6702	MM/M
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	NOBARITE	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	1.00192	
MGF2	Medium 20 kHz Gain Factor	1.01122	
MGF4	Medium 40 kHz Gain Factor	1.04786	
MPH1	Medium 10 kHz Phase Shift	0.190245	DEG
MPH2	Medium 20 kHz Phase Shift	-0.139176	DEG
MPH4	Medium 40 kHz Phase Shift	-1.01614	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	17.1122	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	-2.07993	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	-9.895	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	-94.7355	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-32.0861	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	12.9006	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	68	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
	GPIT-A/B: General Purpose Inclinometer		
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	8.89719	DEG
MRTE	Magneto Reference Temperature	23	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U-GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC-3098-FEB_2006_C) ?	NO	
	HLDS: Hostile Litho-Density Sonde		
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	OFF	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
	HNGS-BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	60	DEGF

CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GRGR	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.0012723	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.22479	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.853849	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	4650	M
TDD	Total Depth - Driller	4626.00	M
TDL	Total Depth - Logger	4622.00	M
TWS	Temperature of Connate Water Sample	7.00	DEGC

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 21-Jun-2009 17:13

OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3762-Q1_2009_OP17
DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

Input DLIS Files

DEFAULT	PI_LDL_NGS_010LUP	FN:12	PRODUCER	10-Jun-2009 00:26	4622.3 M	4199.2 M
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Output DLIS Files

DEFAULT	PI_LDL_NGS_040PUP	FN:53	PRODUCER	21-Jun-2009 17:13		
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Input DLIS Files

DEFAULT	Flip_PI_LDL_NGS_037LUP		PRODUCER	21-Jun-2009 16:51	4623.8 M	4169.7 M
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Output DLIS Files

DEFAULT	PI_LDL_NGS_038PUP	FN:51	PRODUCER	21-Jun-2009 16:53	4623.8 M	4169.7 M
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OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3762-Q1_2009_OP17
DTA-A	17C0-154	HLDS	17C0-154

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
(GAPI) 0 15

Area1
From HCGR to HSGR

HNGS Computed Gamma Ray (HCGR)
(GAPI) 0 15

HLDS Caliper (LCAL)
(IN) 0 20

Tension (TENS)
(LBF) 10000 0

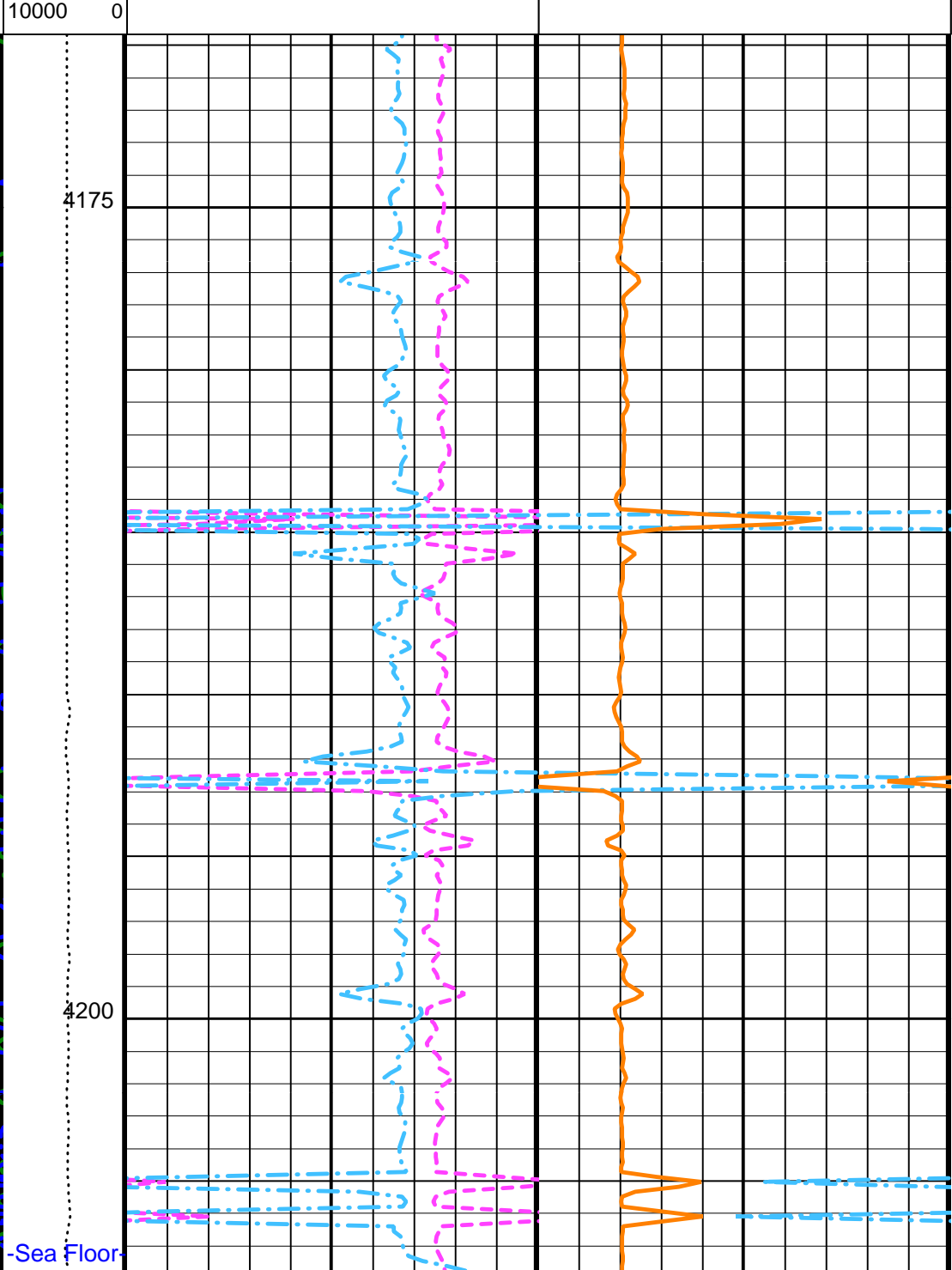
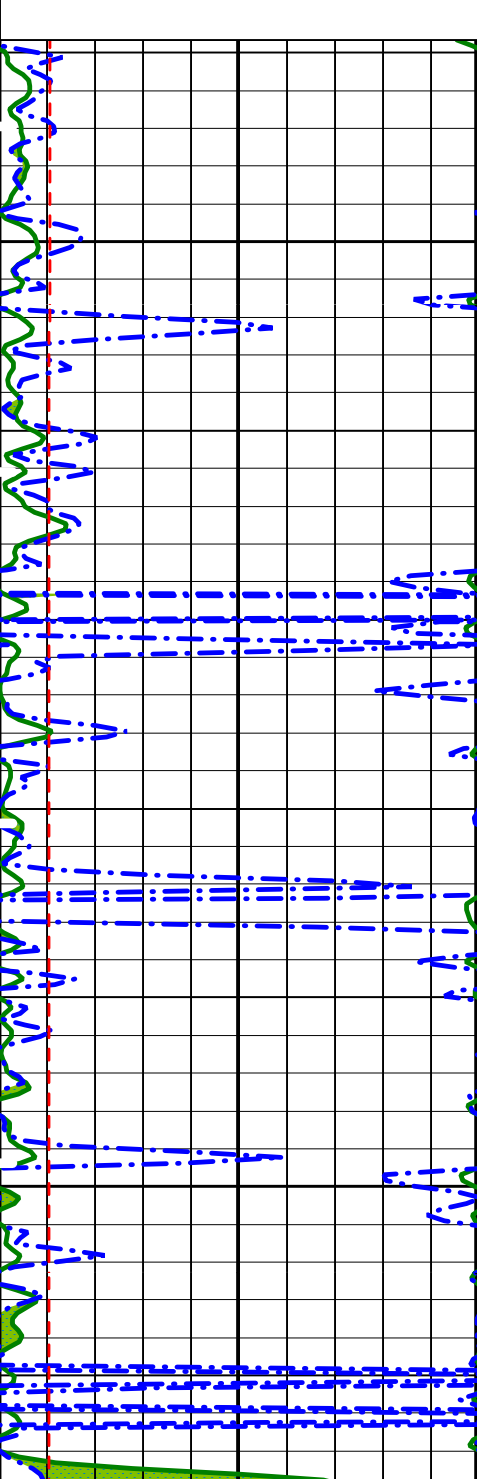
Downlog

HNGS Borehole Potassium (HBHK)
-0.05 (---) 0.05

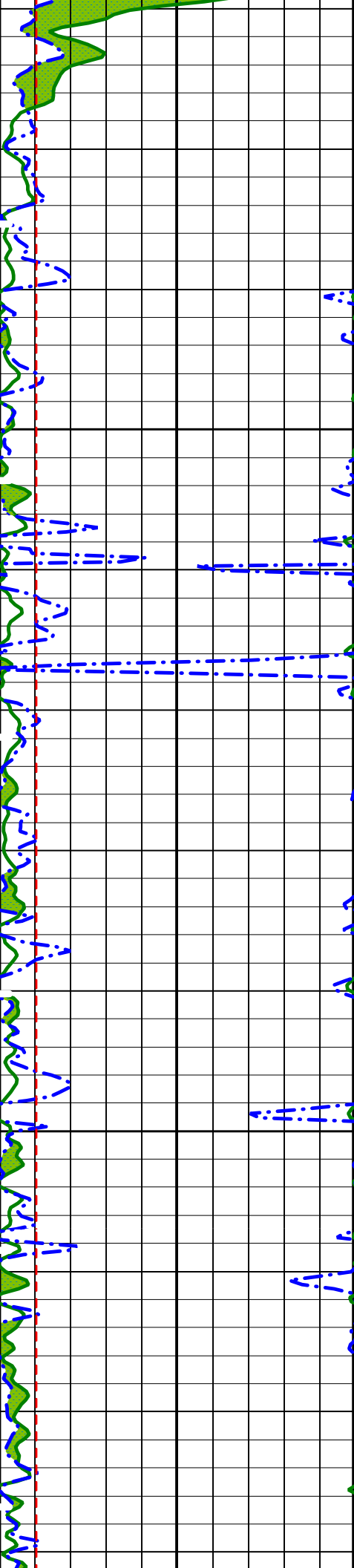
HNGS Uranium (HURA)
(PPM) -5 10

HNGS Thorium (HTHO)
(PPM) 5 25

HNGS Potassium (HFK)
-0.01 (---) 0.04

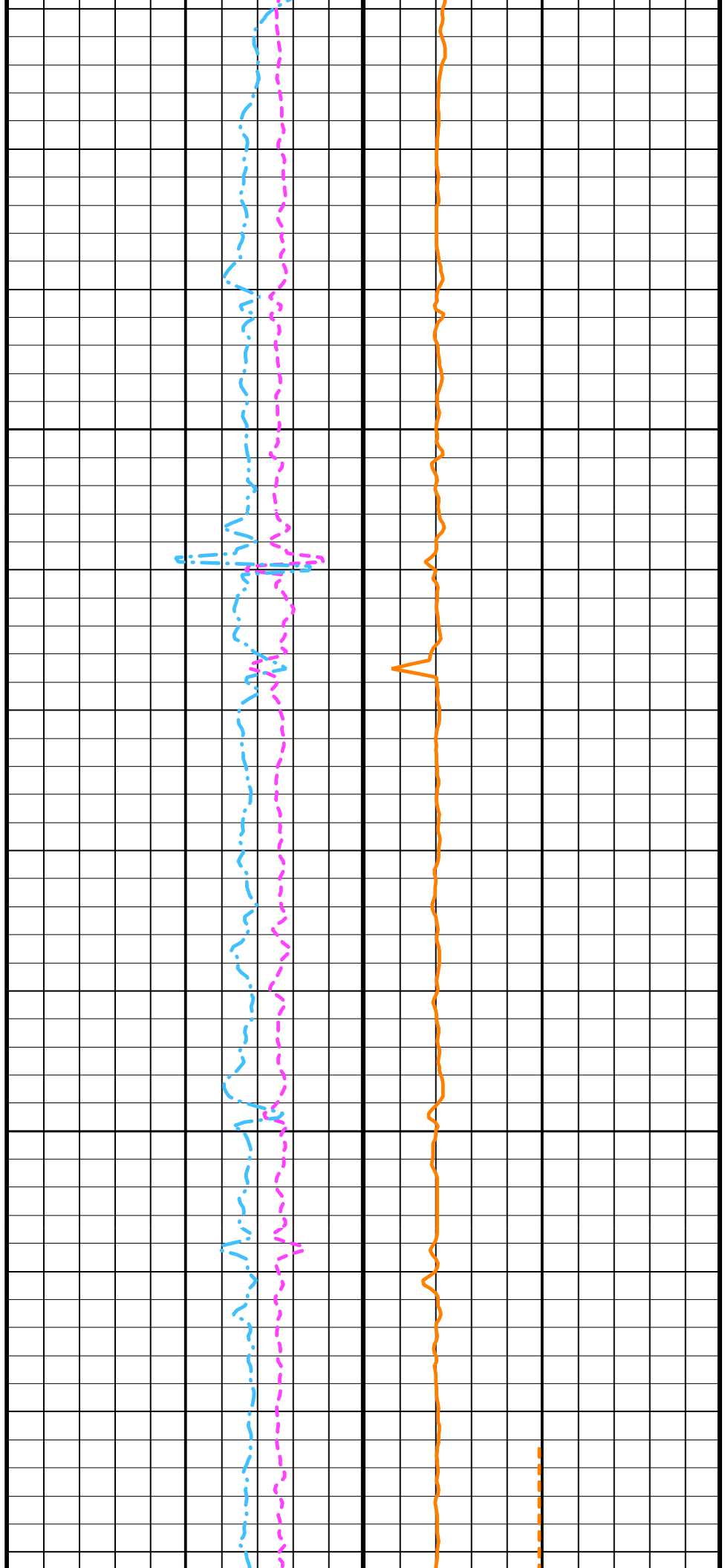


-Sea Floor

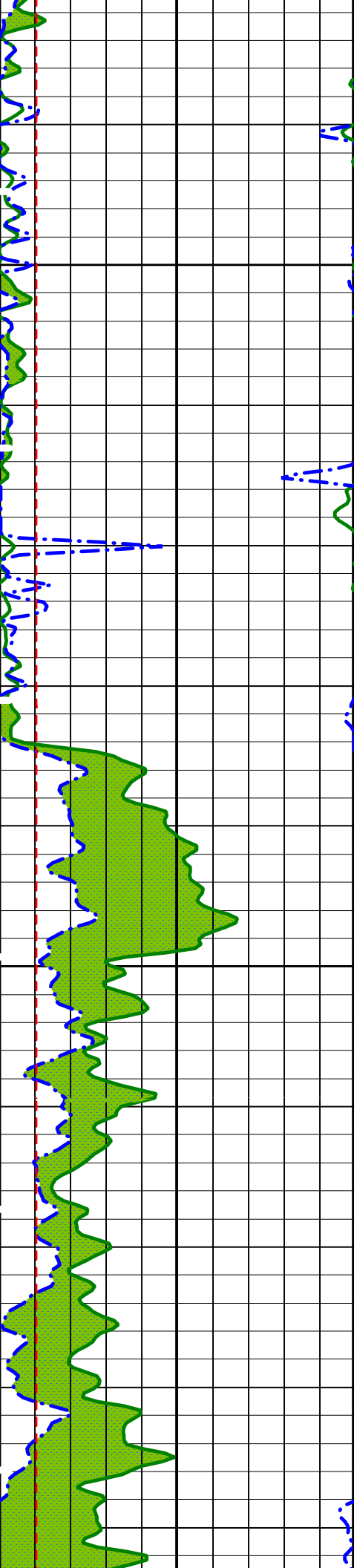


4225

4250



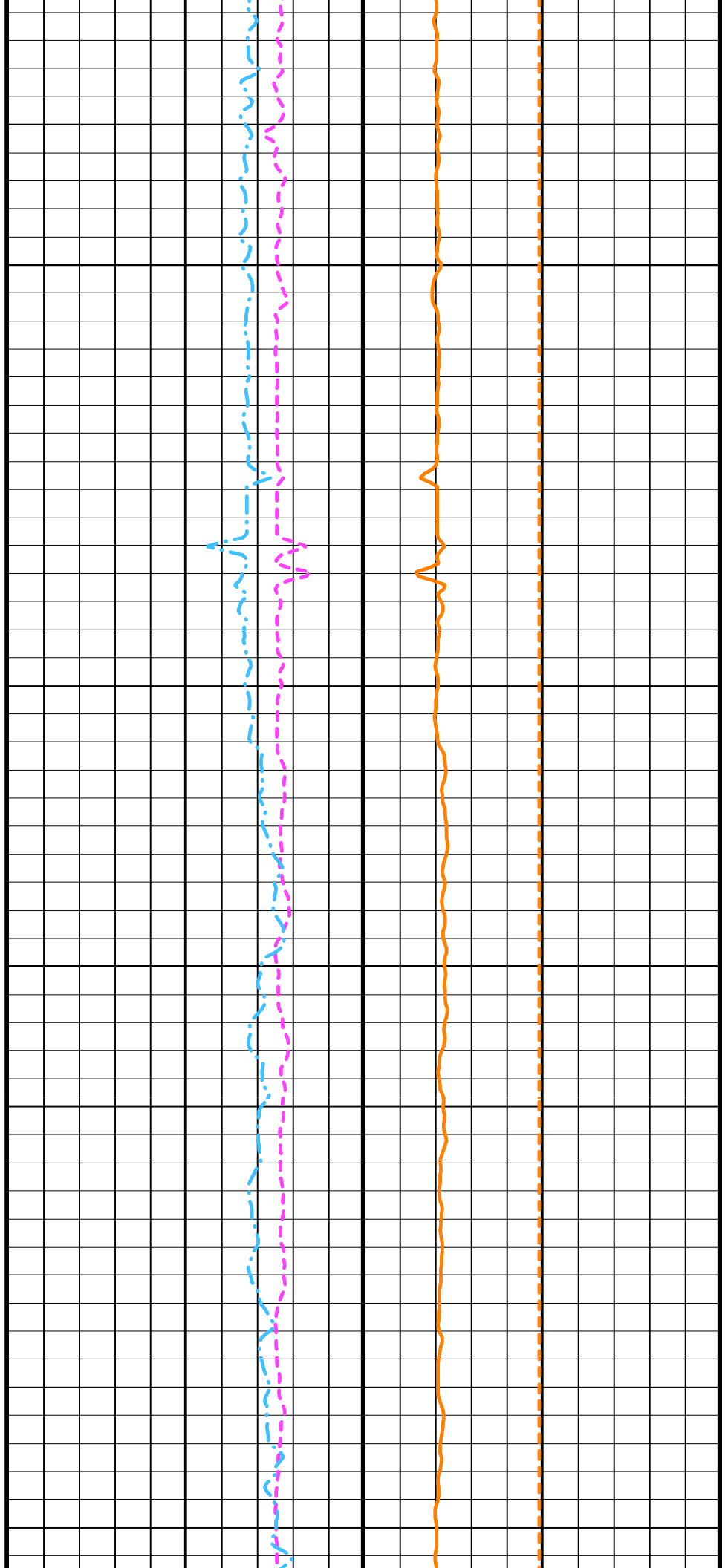
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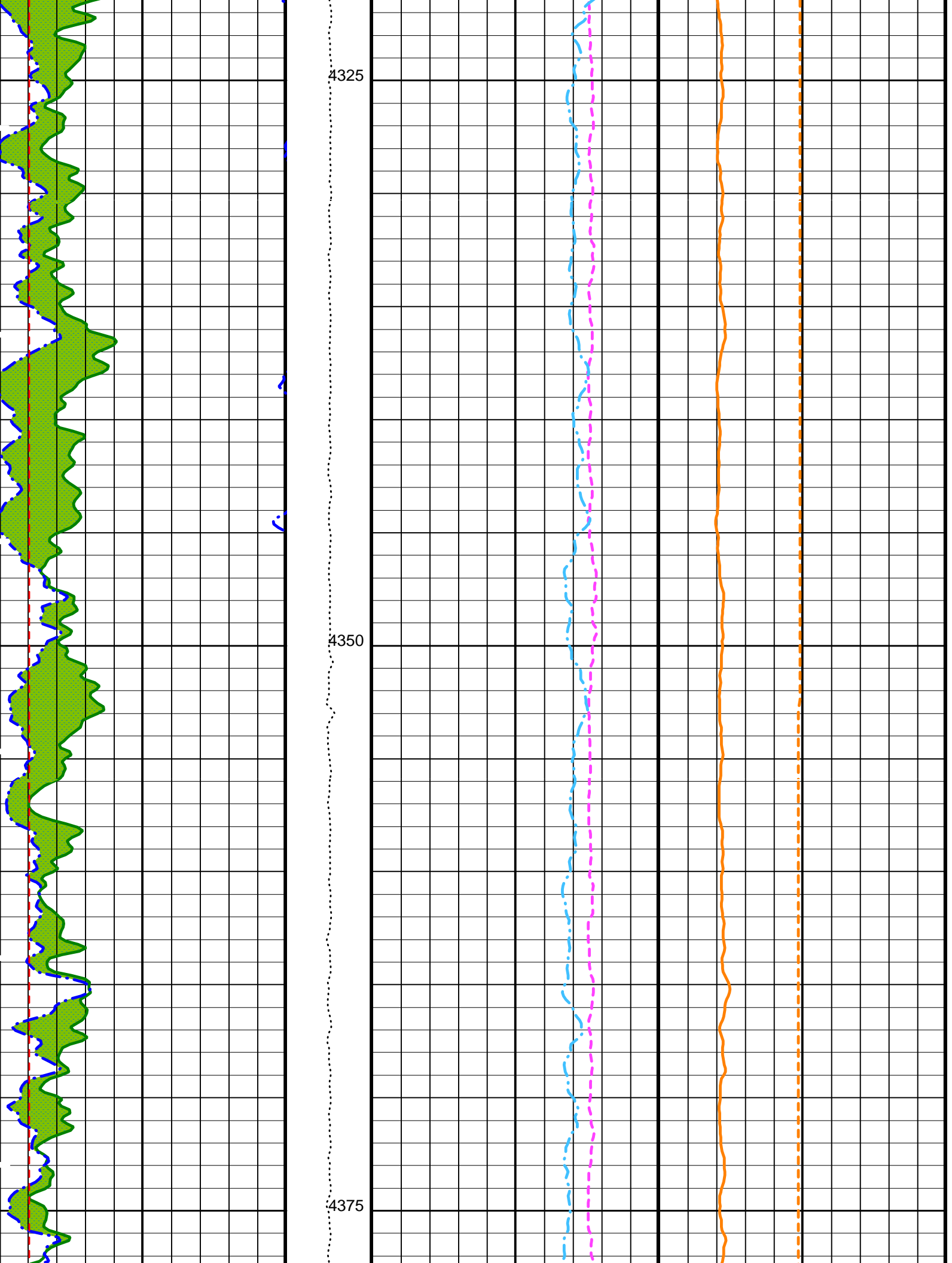


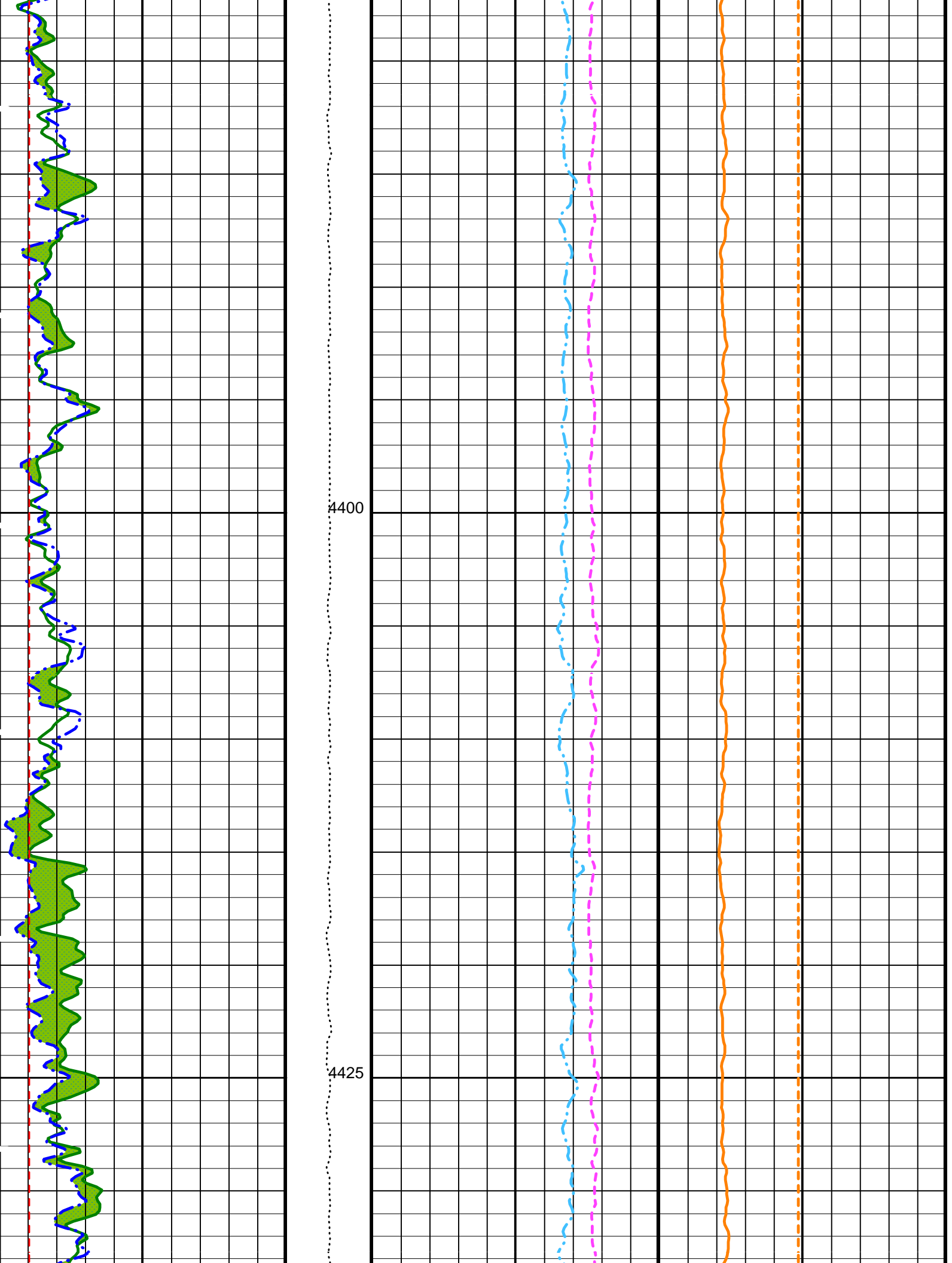
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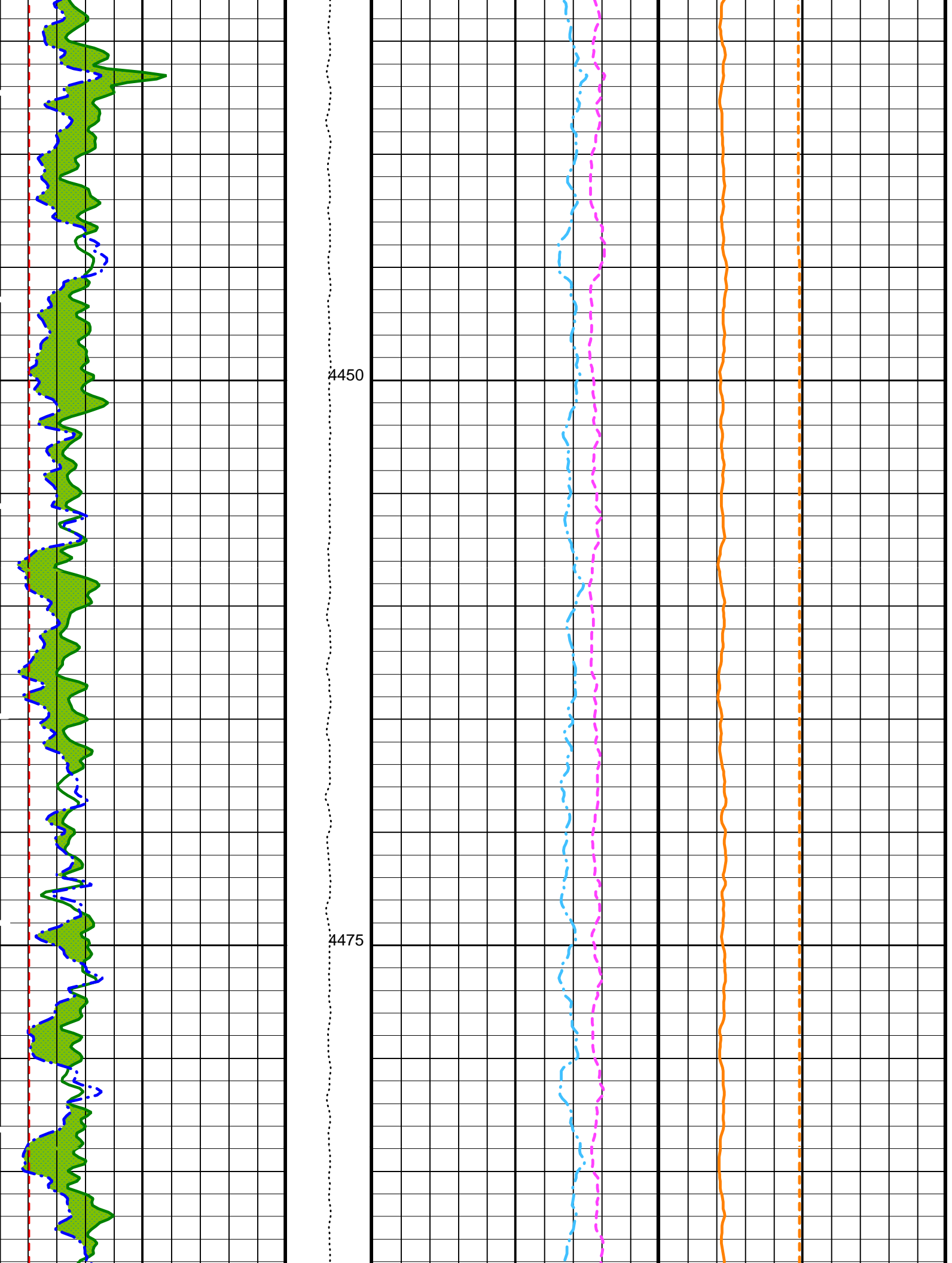
Drill Pipe

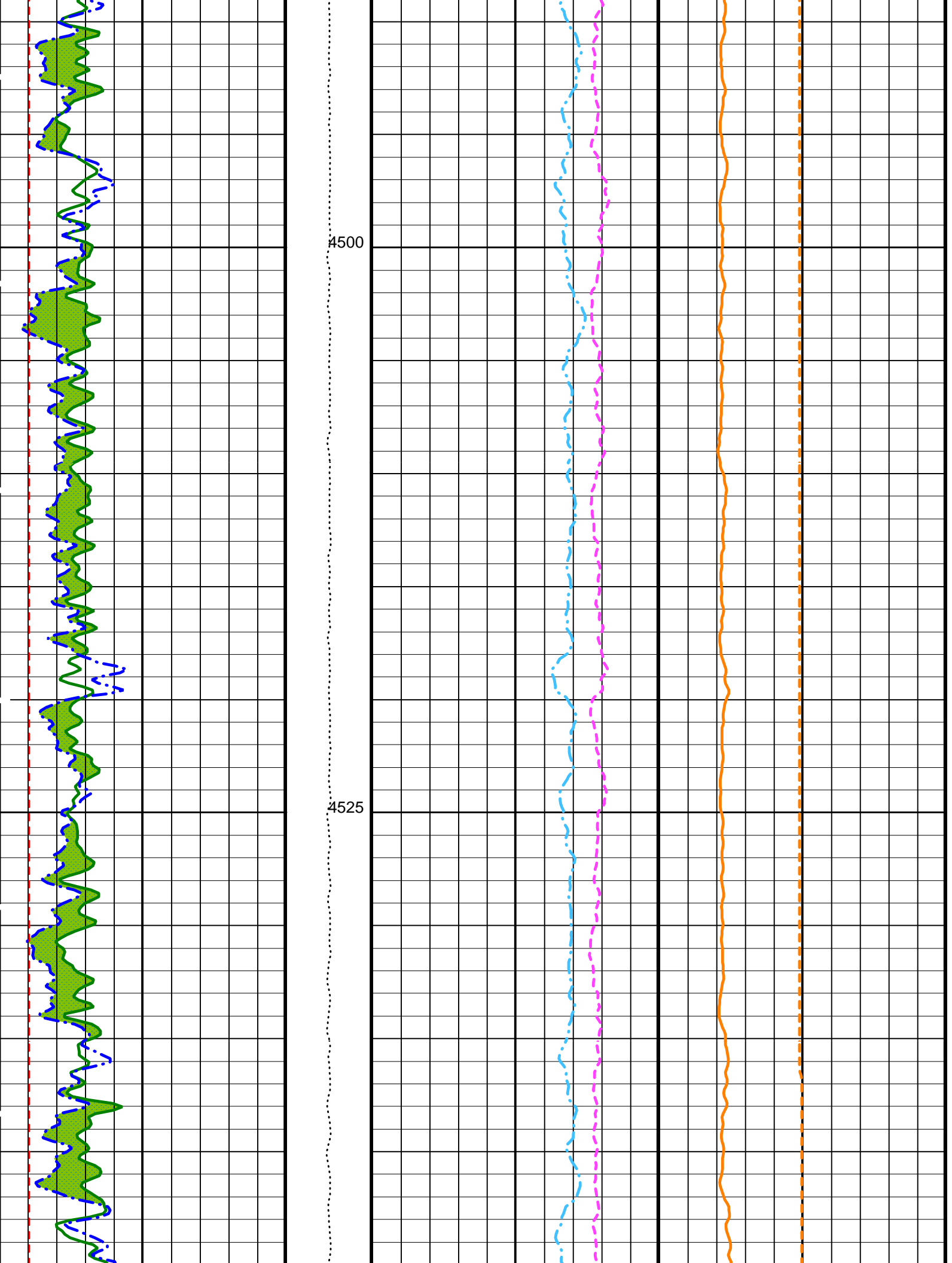
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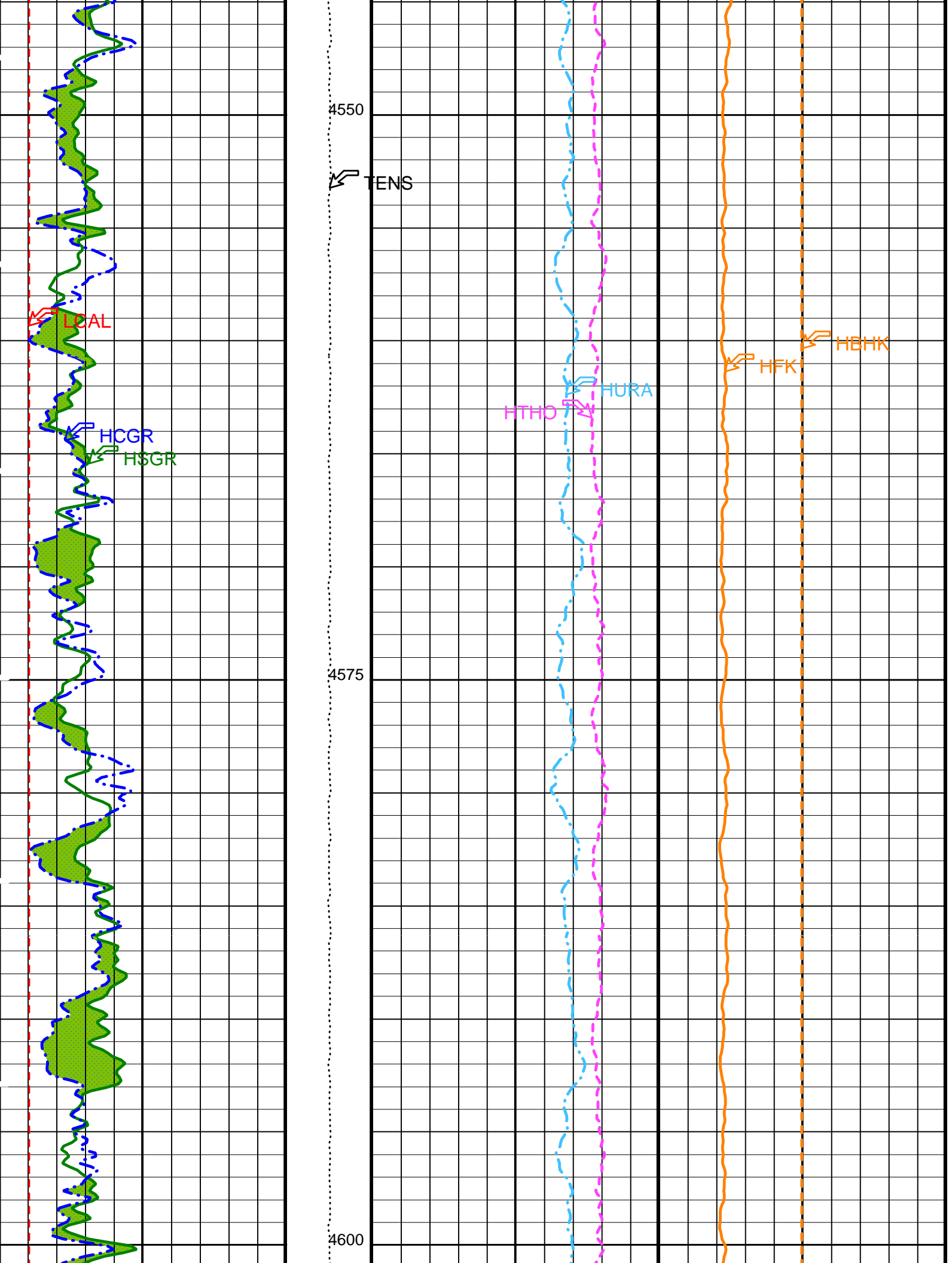


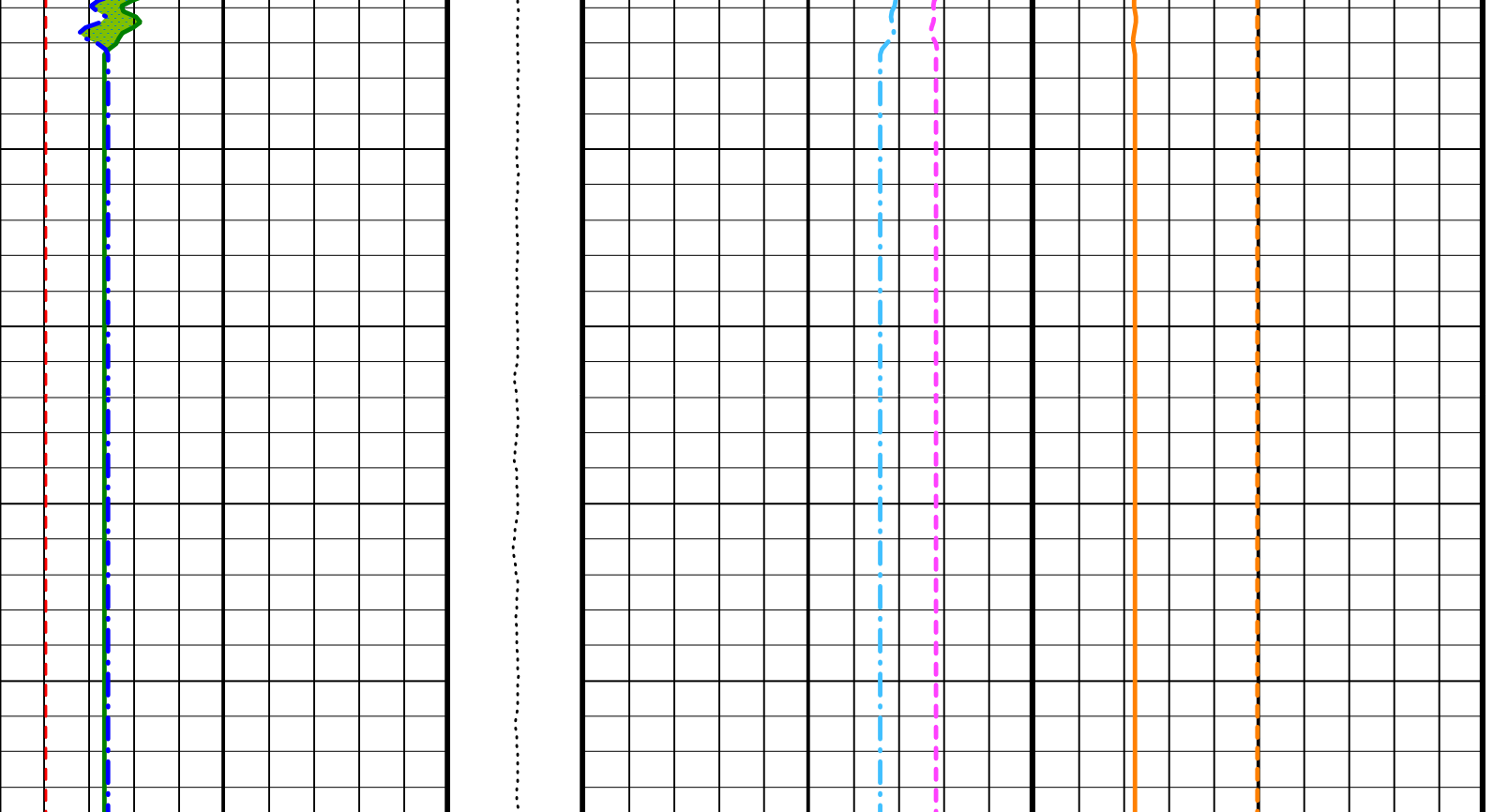












HLDS Caliper (LCAL) (IN)	0	20	Tension (TENS) (LBF)	10000	0	HNGS Thorium (HTHO) (PPM)	5	25	HNGS Potassium (HFK)	-0.01	(----	0.04	
HNGS Computed Gamma Ray (HCGR) (GAPI)	0	15			HNGS Uranium (HURA) (PPM)		-5	10					
Area1 From HCGR to HSGR									HNGS Borehole Potassium (HBHK)		-0.05	(----	0.05
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)													

[Download](#)

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
DIT-E: Dual Induction - E			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	60	DEGF
DGF1	Deep 10 kHz Gain Factor	0.968036	
DGF2	Deep 20 kHz Gain Factor	0.981641	
DGF4	Deep 40 kHz Gain Factor	1.00354	
DPH1	Deep 10 kHz Phase Shift	0.519505	DEG
DPH2	Deep 20 kHz Phase Shift	0.58231	DEG
DPH4	Deep 40 kHz Phase Shift	-0.0231022	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	47.0269	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	16.7871	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.70109	MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT-E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	100.491	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	62.191	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	44.6702	MM/M
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F

GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	NOBARITE	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	1.00192	
MGF2	Medium 20 kHz Gain Factor	1.01122	
MGF4	Medium 40 kHz Gain Factor	1.04786	
MPH1	Medium 10 kHz Phase Shift	0.190245	DEG
MPH2	Medium 20 kHz Phase Shift	-0.139176	DEG
MPH4	Medium 40 kHz Phase Shift	-1.01614	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	17.1122	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	-2.07993	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	-9.895	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	-94.7355	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-32.0861	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	12.9006	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	68	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
GPIT-A/B: General Purpose Inclinometer			
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	8.89719	DEG
MRTE	Magneto Reference Temperature	23	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U-GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC-3098-FEB_2006_C) ?	NO	
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	OFF	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	60	DEGF
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.0012723	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	

MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.22479	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.853849	
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	4650	M
TDD	Total Depth - Driller	4626.00	M
TDL	Total Depth - Logger	4622.00	M
TWS	Temperature of Connate Water Sample	7.00	DEGC

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 21-Jun-2009 16:53

OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3762-Q1_2009_OP17
DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

Input DLIS Files

DEFAULT	Flip_PI_LDL_NGS_037LUP	PRODUCER	21-Jun-2009 16:51	4623.8 M	4169.7 M
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Output DLIS Files

DEFAULT	PI_LDL_NGS_038PUP	FN:51	PRODUCER	21-Jun-2009 16:53
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Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
General Purpose Inclinerometer Wellsite Calibration - CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 9-Jun-2009 20:05							
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	
General Purpose Inclinerometer Wellsite Calibration - CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 9-Jun-2009 20:05							
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 Litho-Density Sonde Wellsite Calibration - Background Measurement							
Master: 22-Apr-2009 13:53 Before: 16-May-2009 7:00 After: 10-Jun-2009 4:52							
SS Cs Resolution Bkg	9.000	7.759	7.744	7.707	-0.03621	1.800	%
LS Cs Resolution Bkg	9.000	8.110	8.072	8.047	-0.02563	1.800	%
LSW1 Background	100.0	93.49	92.71	92.99	0.2837	0.03000	CPS
LSW2 Background	100.0	85.73	84.14	84.25	0.1052	0.03000	CPS
LSW3 Background	200.0	192.7	191.4	190.3	-1.137	0.03000	CPS
LSW4 Background	250.0	235.8	233.7	234.6	0.8759	0.03000	CPS
LSW5 Background	600.0	552.3	550.2	548.9	-1.330	0.03000	CPS
SSW1 Background	100.0	90.71	90.74	89.98	-0.7586	0.03000	CPS
SSW2 Background	200.0	156.2	156.2	156.1	-0.1726	0.03000	CPS
SSW3 Background	500.0	436.6	432.7	434.3	1.601	0.03000	CPS

SSW5 Background	660.0	576.2	N/A	N/A	N/A	N/A	CPS
SSW4 Background	270.0	234.8	232.3	232.7	0.4607	0.03000	CPS
SSW5 Background	200.0	168.2	167.2	164.3	-2.829	0.03000	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement

Master: 22-Apr-2009 14:54

LSW1 Aluminum	600.0	576.2	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	831.7	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	999.8	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	502.6	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	456.4	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2571	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	7074	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9869	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4093	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	501.7	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement

Master: 22-Apr-2009 14:47

LSW1 Iron	400.0	396.8	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	672.9	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	883.7	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	454.8	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	415.6	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1882	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5884	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8992	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3724	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	443.2	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration

Before: 3-Jun-2009 11:40

HLDS Caliper Small Ring	12.00	N/A	14.14	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	17.61	N/A	N/A	N/A	IN

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 10-Jun-2009 4:53

Na 511 Peak Loc	40.00	39.63	39.53	39.69	0.1590	1.000	
Na 511 Peak Res	15.50	14.89	16.37	14.99	-1.379	2.000	%
High Voltage	1150	1168	1179	1180	1.091	N/A	V
Na 1785 Peak Loc	142.6	142.1	141.7	141.8	0.1085	7.000	
Na 1785 Peak Res	8.500	8.613	9.055	9.382	0.3269	2.000	%
Temperature	15.50	27.34	32.56	31.21	-1.341	N/A	DEGC
Na Count Rate	45.00	41.11	38.79	37.71	-1.087	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 10-Jun-2009 4:53

Na 511 Peak Loc	40.00	39.72	39.75	39.58	-0.1694	1.000	
Na 511 Peak Res	15.50	15.49	15.15	16.32	1.176	2.000	%
High Voltage	1150	1102	1113	1114	0.6743	N/A	V
Na 1785 Peak Loc	142.6	142.7	142.3	142.0	-0.2681	7.000	
Na 1785 Peak Res	8.500	7.944	8.759	9.052	0.2937	2.000	%
Temperature	15.50	27.88	33.15	32.73	-0.4194	N/A	DEGC
Na Count Rate	45.00	41.22	39.43	38.09	-1.336	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2

Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 10-Jun-2009 4:53

Coincidence Count Rate Ratio	1.000	0.9971	0.9835	0.9891	0.005594	0.05000	
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Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration

Master: Calibration out of date 12-Mar-2009 20:35

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.0	--	--	--	--	
Th Peak Res	7.000	6.897	--	--	--	--	%
Background Count Rate	142.5	19.53	--	--	--	--	CPS
Gain Ratio	1.000	1.013	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration

Master: Calibration out of date 12-Mar-2009 20:35

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	208.9	--	--	--	--	
Th Peak Res	7.000	7.130	--	--	--	--	%
Background Count Rate	142.5	20.80	--	--	--	--	CPS
Gain Ratio	1.000	1.001	--	--	--	--	

Dual Induction - E / Equipment Identification

Primary Equipment:

Dual Induction Sonde

DIS HP

442

Dual Induction Sonde	DIC - EB	438
Dual Induction Cartridge		
Auxiliary Equipment:		
Mass Isolated Housing	MIH - ZA	417

General Purpose Inclinator / Equipment Identification		
Primary Equipment:		
GPIT Cartridge - A	GPIC - A	719
Auxiliary Equipment:		
GPIT Housing	GPIH - A	2864

Hostile Litho-Density Sonde / Equipment Identification		
Primary Equipment:		
Hostile Litho Density Sonde	HLDS - D	57
Hostile Litho Density High Voltage	HLDV - D	51
Gamma Source Radioactive	GSR - Z	2397
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP - C	61
Hostile Litho Density High Voltage Housi	HEH - H	53

Litho-Density Spectroscopy Cartridge - B / Equipment Identification		
Primary Equipment:		
LDSC Cartridge	LDSC - B	326
Auxiliary Equipment:		
LDSC Housing	LDSH - A	319

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		39.63	Master		14.89	Master		1168
Before		39.53	Before		16.37	Before		1179
After		39.69	After		14.99	After		1180
	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		8.613	Master		27.34
Before		141.7	Before		9.055	Before		32.56




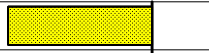

After		141.8	After		9.382	After		31.21			
	135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)		7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)		-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)
Phase	Na Count Rate CPS		Value								
Master			41.11								
Before			38.79								
After			37.71								
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)								
Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 10-Jun-2009 4:53											

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			39.72	Master			15.49	Master			1102
Before			39.75	Before			15.15	Before			1113
After			39.58	After			16.32	After			1114
	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			142.7	Master			7.944	Master			27.88
Before			142.3	Before			8.759	Before			33.15
After			142.0	After			9.052	After			32.73
	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			41.22								
Before			39.43								
After			38.09								
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)								
Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 10-Jun-2009 4:53											

Hostile Natural Gamma Ray Sonde Wellsite Calibration			
Ratio Of Detector 1 To Detector 2			
Phase	Coincidence Count Rate Ratio	Value	
Master		0.9971	
Before		0.9835	
After		0.9891	
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)
Master: Calibration out of date 12-Mar-2009 20:35			
Before: 16-May-2009 19:11			
After: 10-Jun-2009 4:53			

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			211.0	Master			6.897
	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			19.53	Master			1.013				
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				
Master: Calibration out of date 12-Mar-2009 20:35											

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		208.9	Master		7.130
	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		20.80	Master		1.001			
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)				
Master: Calibration out of date 12-Mar-2009 20:35								

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge
DTC-H Telemetry Cartridge

DTCH - A
DTCH - A 8798

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing

ECH - KC 2304

Company: Lamont Doherty

Schlumberger

Well: Expedition 321 Site U1338B

Field: PEAT

Rig: JOIDES Resolution

Ocean: Pacific

Natural Gamma
Spectroscopy