Schlumberger

Company: **Lamont Doherty**

Well: **Expedition 324 Site U1347A**

Field: **Shatsky Rise**

Rig: **JOIDES Resolution** Ocean: **Pacific**

Rig: JOIDES Resolution
Field: Shatsky Rise
Location: Latitude: N 32* 30.477'
Well: Expedition 324 Site U1347A
Company: Lamont Doherty

Natural Gamma Ray Spectroscopy (HNGS)

LOCATION

Latitude: N 32* 30.477'	Elev.:	K.B.	11.00 m
Longitude: E 159* 14.077'		G.L.	−3461.00 m
		D.F.	11.00 m

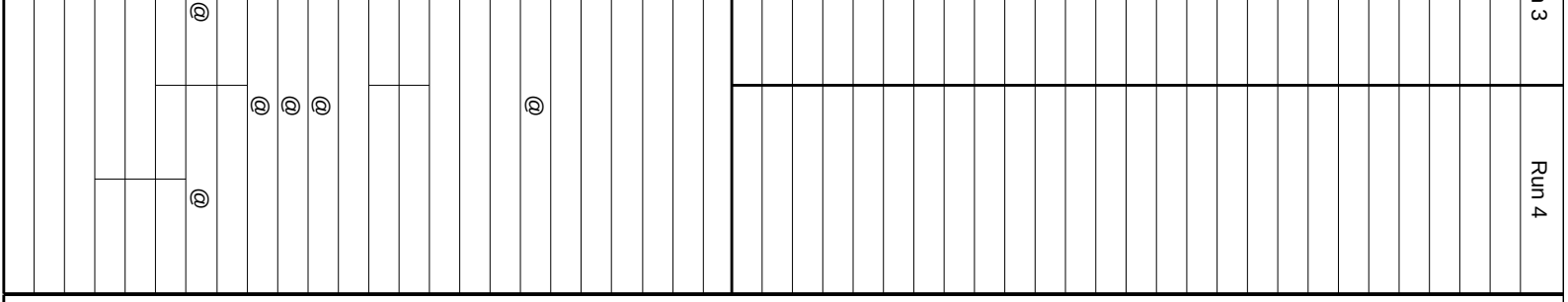
Permanent Datum:	Mean Sea Level	Elev.:	0.00 m
Log Measured From:	Drill Floor	11.00 m	above Perm. Datum
Drilling Measured From:	Drill Floor		

API Serial No.	Max. Hole Devi. 0 deg	Longitude	Latitude

	Run 1	Run 2	Run

Logging Date	1−Oct−2009			
Run Number	1			
Depth Driller	3778.5 m			
Schlumberger Depth	3775 m			
Bottom Log Interval	3775 m			
Top Log Interval	3461 m			
Casing Driller Size @ Depth	4.500 in	@ 3592.5 m	@	
Casing Schlumberger	3589 m			
Bit Size	9.875 in			
Type Fluid In Hole	Seawater Gel			
MUD Density / Viscosity	1.258 g/cm3			
MUD Fluid Loss / PH				
MUD 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	@ 4	@ 4	@	@
Maximum Recorded Temperatures	4 degC			
Circulation Stopped / Time	18−Sep−2009	18:00		
Logger On Bottom / Time	1−Oct−2009	1:00		
Unit Number / Location	625003	Houston		
Recorded By	K. Swain			
Witnessed By	Gerardo Iturrino, Helen Evans			

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				
MUD Density / Viscosity				
MUD Fluid Loss / PH				
MUD 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				



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OTHER SERVICES1	OTHER SERVICES2
OS1: DITE	OS1:
OS2: GPIT	OS2:
OS3: HLDS/APS	OS3:
OS4: FMS/DSI	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Logging tools deployed inside drillpipe with wireline.	
BHA consisted of RCB Drilling Bit and collars with mechanical bit release.	
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 3593 mbsf approximately for duration of logging.	
Ship heave averaged +0.5m to −0.5 m on average (estimate) with occasional	
peaks to +/−1m (2mpeak to peak).	
Downlog used as Repeat.	
See report filed for logging for further explanation.	

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

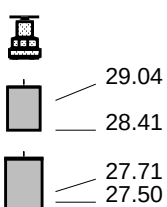
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

SFT−281 2
SFT−178 2
GSR−U 616008
WITM (DTS)−A

DOWNHOLE EQUIPMENT



LEH−QT 30.21
LEH−QT 301

CTEM
DTC−H TelStatus 29.32
ECH−mca 1777 ToolStatu

HNGS−BA 194 Upper_1 28.41
HNGS−BA 194 Lower_2

HNSH−BA 205

HNGC−B 300
HNGH−A 115

HNGC Stat — 25.38 — 25.91

ILE−D
ILE−D 25 — 24.84

AH−178 — Status — 22.41

Minitron

APS−C
APH−AC 22
APS−C 22
MNTR−F 5589

Near TD
Near Arr
Near — 19.65
Far Arr — 19.58
Far — 19.45
Far TD — 19.35
22.10

AH−190 — 18.15

LDSC−B
LDSH−A 319

LDSC Stat — 17.32 — 17.85

HLDS
GSR−Z 2397
HLDV−D 51
HLDS−D 57
HEH−H 53
HLDP−C 61

16.78

Caliper
SS LS Status — 12.73

DTA−A
ECH−KE 8231 — 11.96

GPIT−A/B
GPIC−A 840 — 10.74

DIT−E
DIC−EB 171
MIH−ZA 342
DIS−HB 129 — 9.52

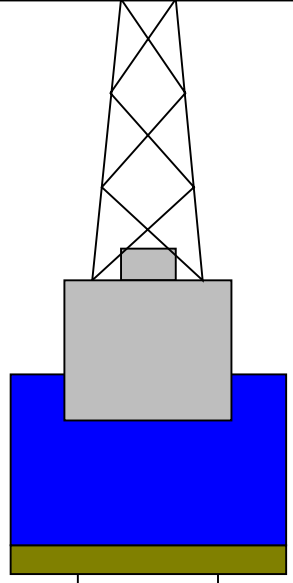
SP — 3.15
Deep Ind — 2.90
Aux Meas SFL — 1.98
Med Ind — 1.83

HV DF
Status GPIT
Tension — 0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 3.75 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

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

Kelly Bushing Elevation		11.0				
Derrick Floor Elevation		11.0				
Mean Sea Level		0.0				
				3461	4.20	Sea Floor
				3461	9.875	Borehole Segment
				3592.5	3.80	Open Hole
				3778.5		

Input DLIS Files

DEFAULT	FLIP_PI_LDL_APS_NGS_010L		PRODUCER	01−Oct−2009 02:48	3750.0 M	3424.4 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_011PUP	FN:13	PRODUCER	01−Oct−2009 02:50	3750.0 M	3424.6 M
BACKUPDLIS	PI_LDL_APS_NGS_011PUP	FN:14	PRODUCER	01−Oct−2009 01:51	3750.0 M	3424.6 M

OP System Version: 17C0−154

DIT−E	17C0−154	GPIT−A/B	SRPC−3870_Q3_2009_OP17_V3_b
DTA−A	17C0−154	HLDS	17C0−154
LDSC−B	17C0−154	APS−C	17C0−154
HNGC−B	17C0−154	HNGS−BA	17C0−154
DTC−H	17C0−154		

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)

0 (GAPI) 100

Area1
From HCGR to HSGR

HNGS Computed Gamma Ray (HCGR)

0 (GAPI) 100

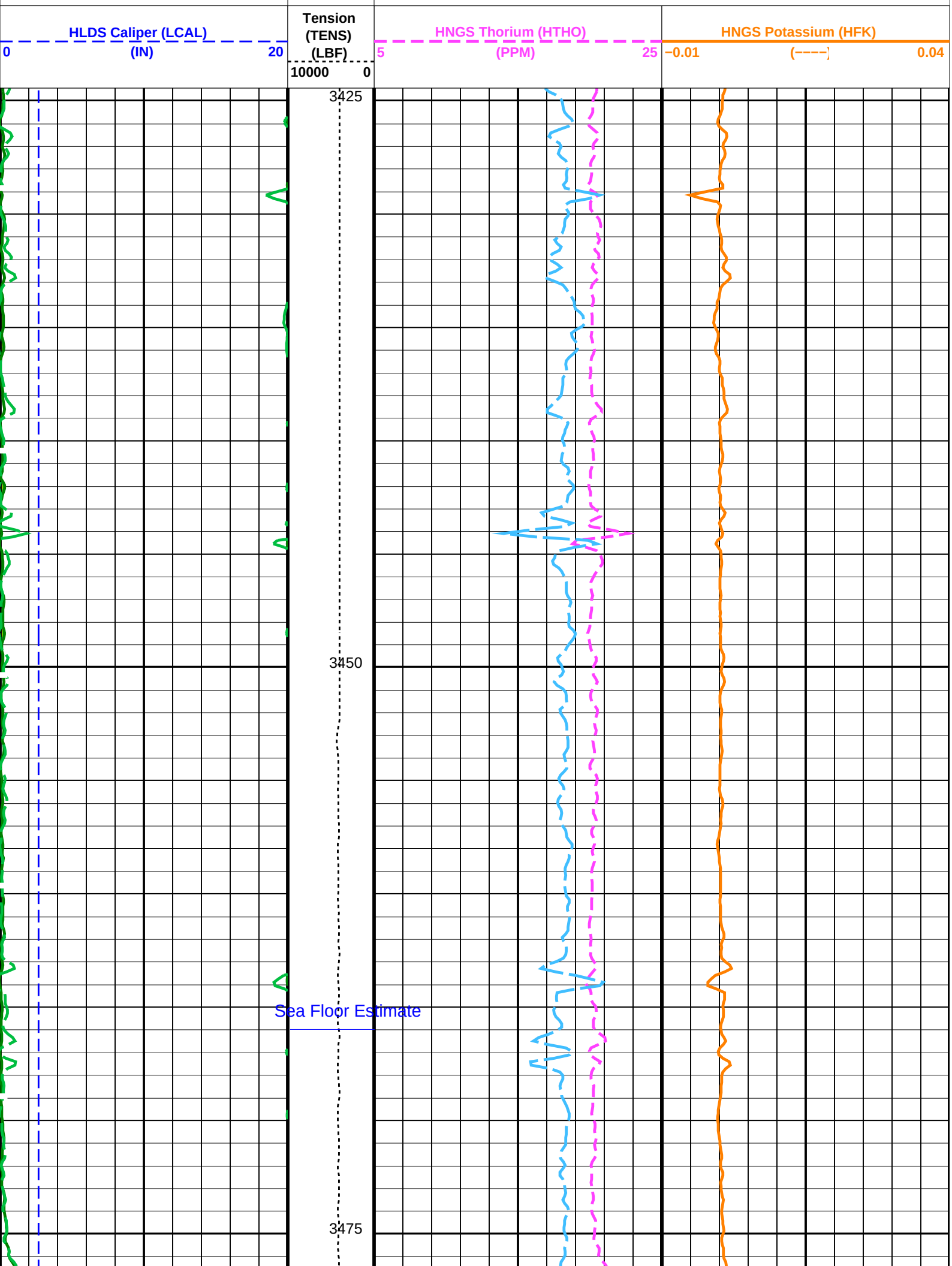
Flipped Downlog −Caliper Closed

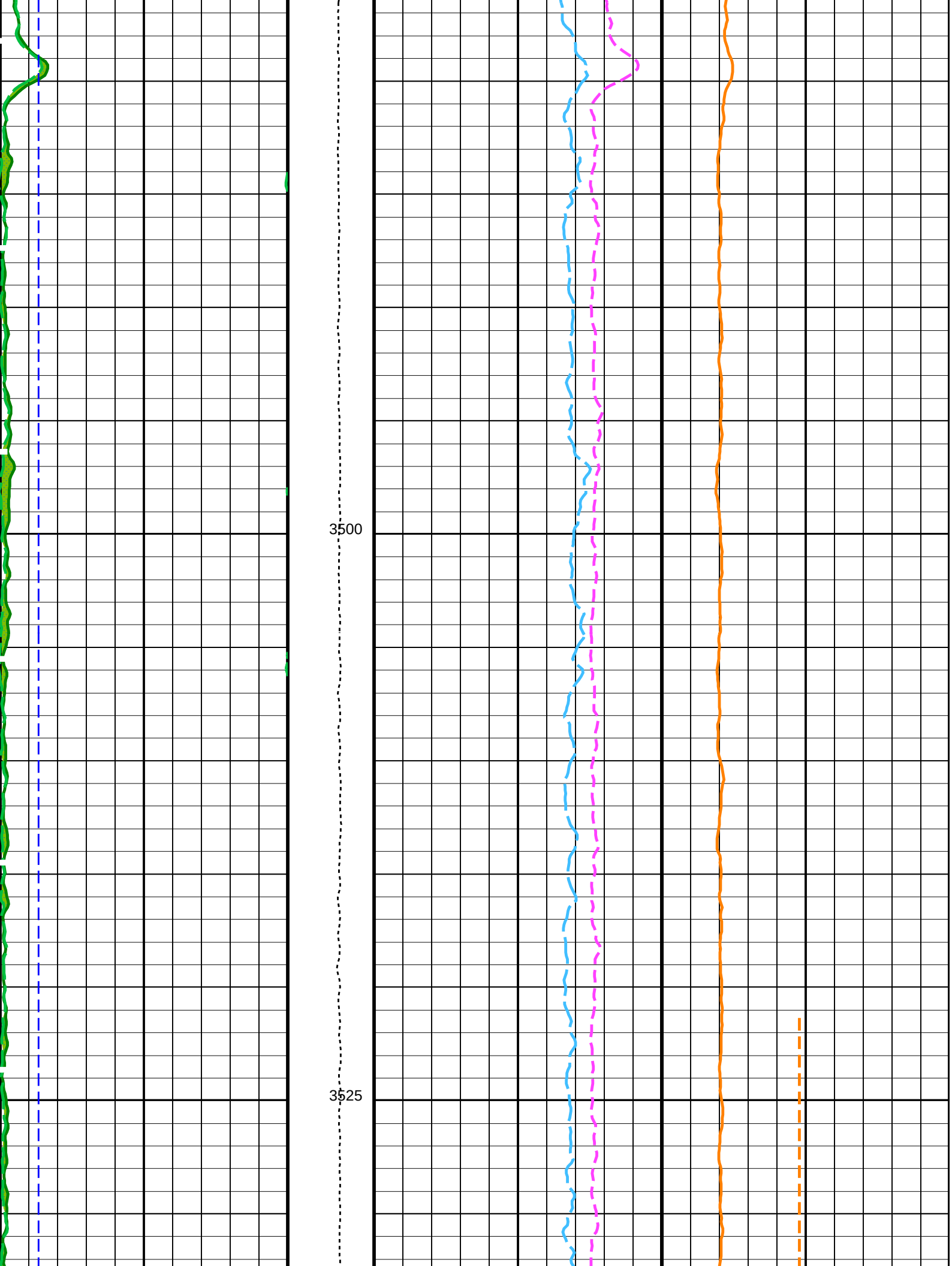
HNGS Borehole Potassium (HBHK)

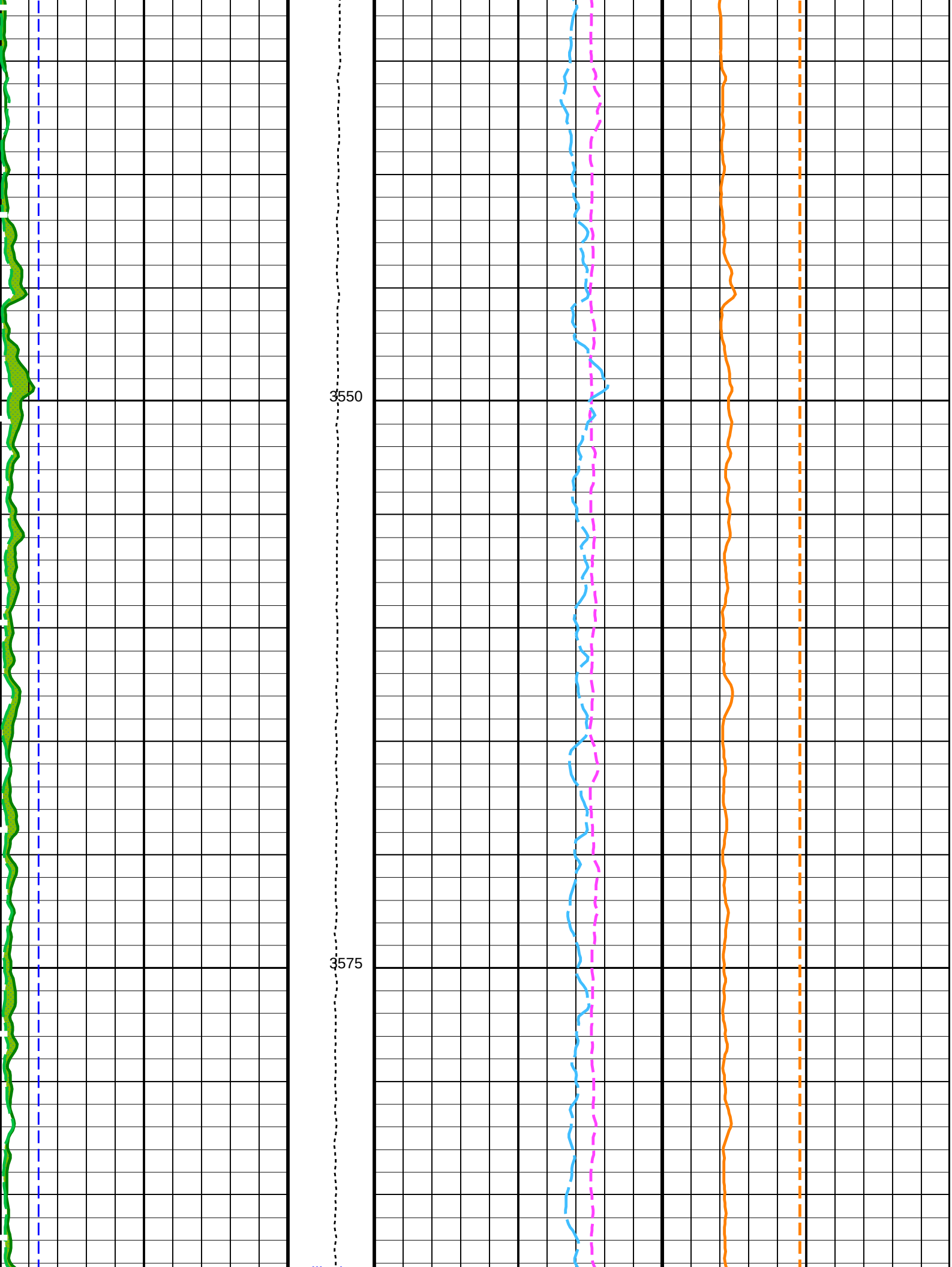
−0.05 (−−−−) 0.05

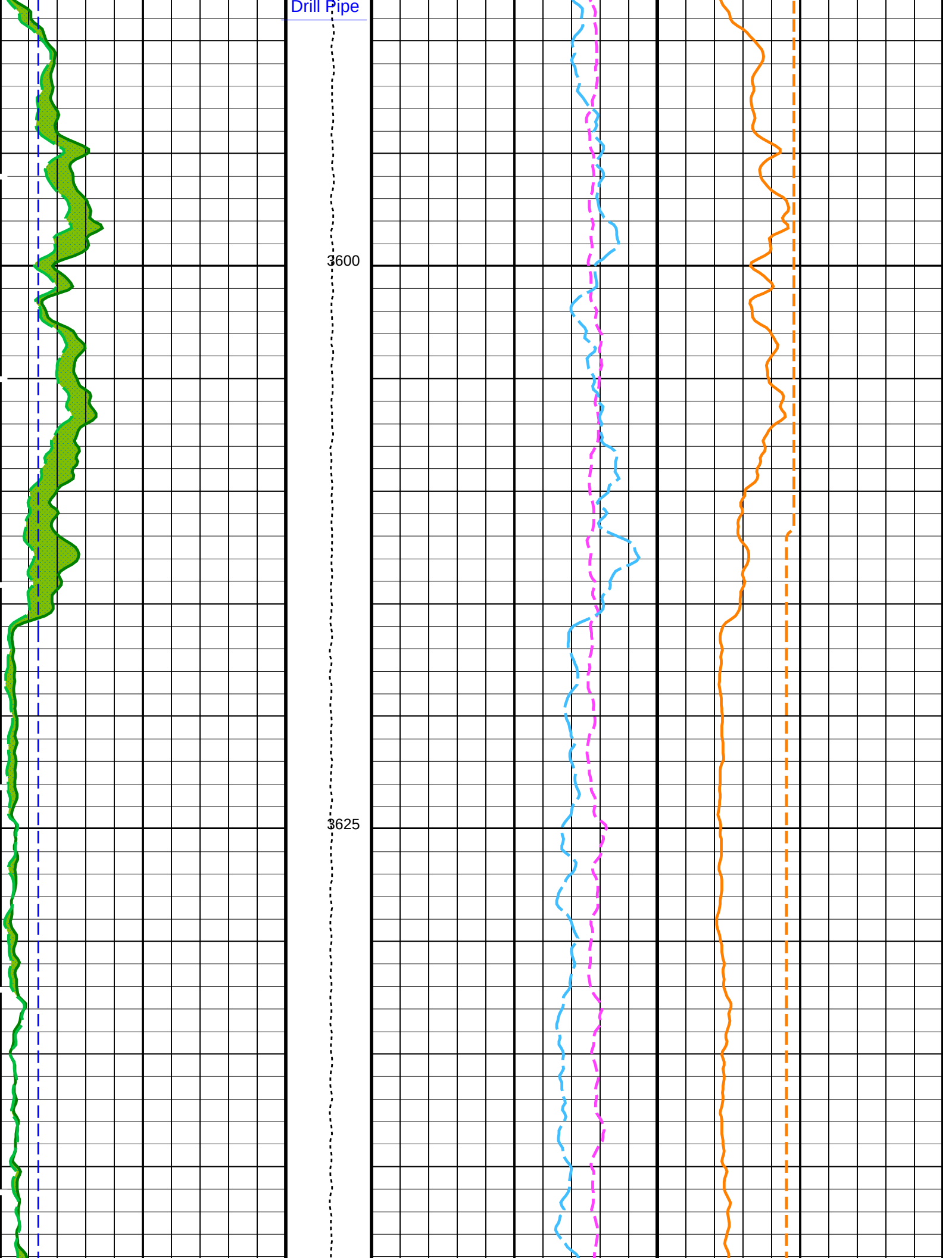
HNGS Uranium (HURA)

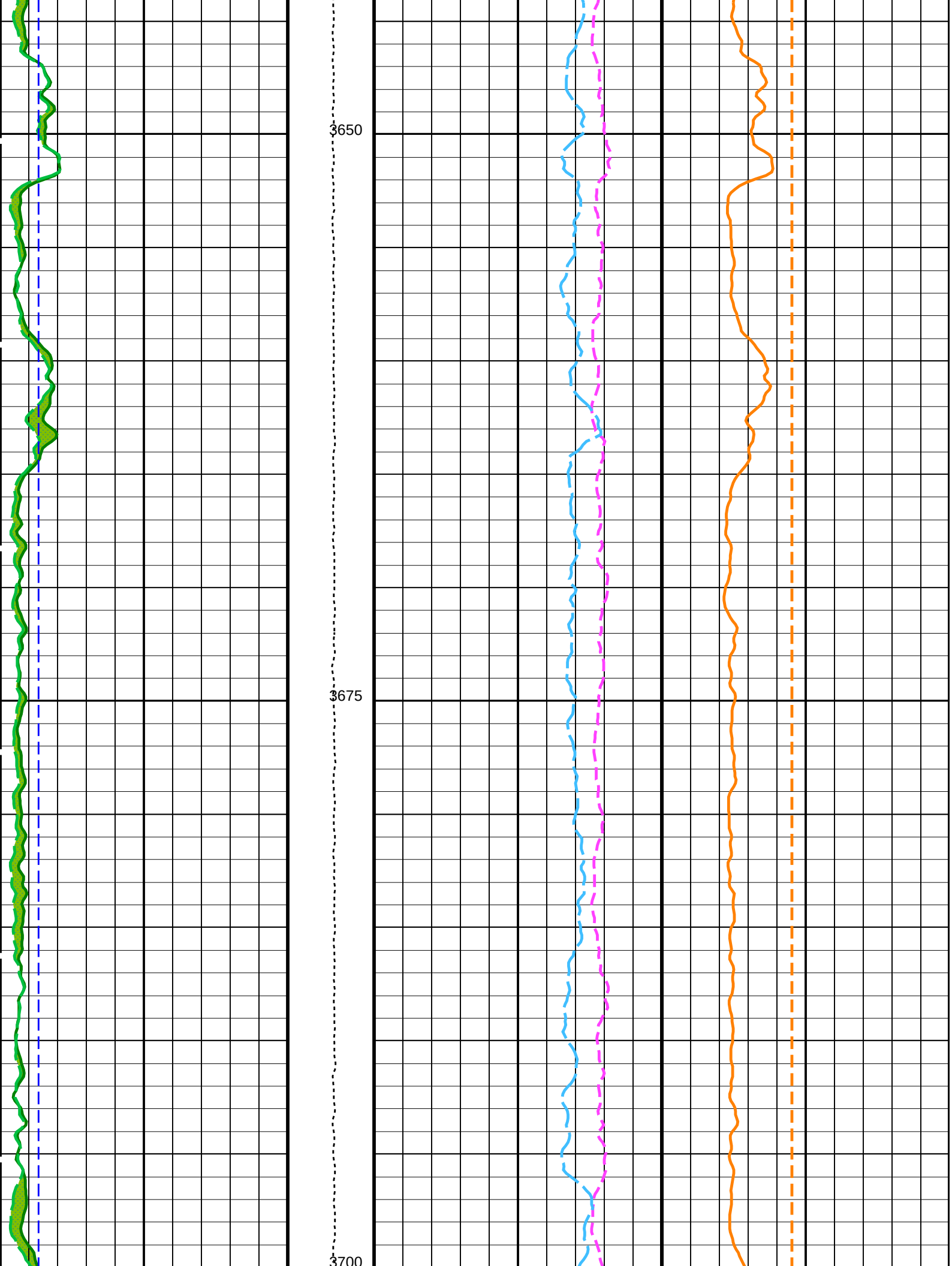
−5 (PPM) 10

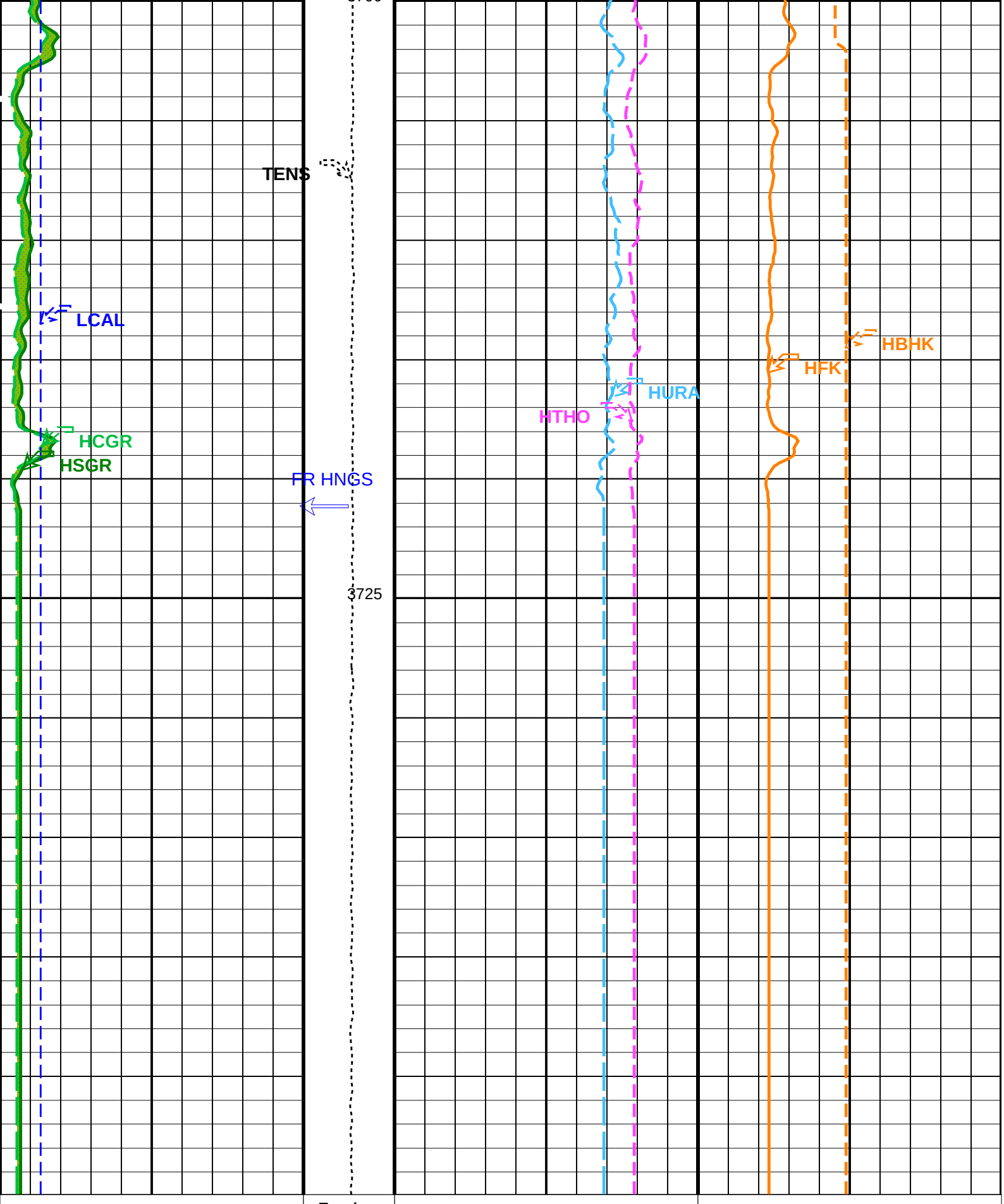

HLDS Caliper (LCAL)
0
(IN)
20
Tension
(TENS)
(LBF)
10000
0
HNGS Thorium (HTHO)
5
(PPM)
25
HNGS Potassium (HFK)
-0.01
0.04
3425
3450
Sea Floor Estimate
3475


3500
3525


3550
3575


Drill Pipe
3600
3625


3650
3675
3700



HLDS Caliper (LCAL)
0 (IN) 20

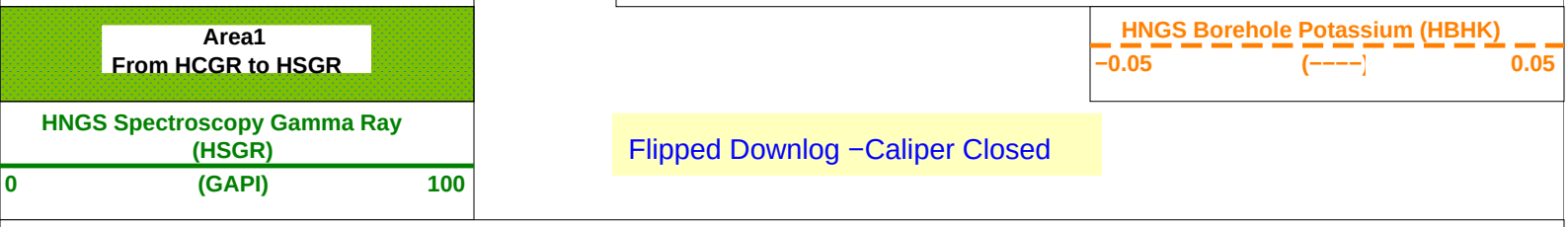
Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

HNGS Uranium (HURA)
−5 (PPM) 10



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)	45	DEGF
DGF1	Deep 10 kHz Gain Factor	0.968645	
DGF2	Deep 20 kHz Gain Factor	0.979119	
DGF4	Deep 40 kHz Gain Factor	0.990252	
DPH1	Deep 10 kHz Phase Shift	0.26358	DEG
DPH2	Deep 20 kHz Phase Shift	0.0159963	DEG
DPH4	Deep 40 kHz Phase Shift	−1.11256	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	39.5751	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.0457	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.15121	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	245.841	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	136.154	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	78.4516	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	0.969585	
MGF2	Medium 20 kHz Gain Factor	0.974788	
MGF4	Medium 40 kHz Gain Factor	0.999842	
MPH1	Medium 10 kHz Phase Shift	0.0787021	DEG
MPH2	Medium 20 kHz Phase Shift	−0.199528	DEG
MPH4	Medium 40 kHz Phase Shift	−0.885081	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	31.1041	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	11.3259	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	3.5782	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	328.09	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	172.606	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	112.808	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	HAMMING	
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	−0.649944	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	ON	
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	
APS−C: Accelerator−Porosity Tool			
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1968.76	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2108.58	V
AHCS	APS Holesize Correction Source	BS	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1736.91	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	ON	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGF
BSCO_APS	APS TNPH Borehole Salinity Correction Option	YES	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source	COMPUTED	
FSAL	Formation Salinity	−50000	PPM
FSCO_APS	APS TNPH Formation Salinity Correction Option	NO	
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	
HSCO_APS	APS TNPH Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	YES	
MCOR_APS	APS TNPH Mud Correction	NATU	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.06221	
NFRC	APS Near/Far Calibration Ratio	0.888507	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	YES	
SHT	Surface Hole Temperature	68	DEGF
TNCO_APS	APS TNPH Computation Option	NO	
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)	45	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	−0.00240846	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
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	1.04355	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.03383	
System and Miscellaneous			

System and Miscellaneous

ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	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	12417	FT
TDD	Total Depth − Driller	3822.00	M
TDL	Total Depth − Logger	3811.00	M
TWS	Temperature of Connate Water Sample	7.00	DEGC

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 01−Oct−2009 02:50

OP System Version: 17C0−154

DIT−E	17C0−154	GPIT−A/B	SRPC−3870_Q3_2009_OP17_V3_b
DTA−A	17C0−154	HLDS	17C0−154
LDSC−B	17C0−154	APS−C	17C0−154
HNGC−B	17C0−154	HNGS−BA	17C0−154
DTC−H	17C0−154		

Input DLIS Files

DEFAULT	FLIP_PI_LDL_APS_NGS_010L	PRODUCER	01−Oct−2009 02:48	3750.0 M 3424.4 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_011PUP	FN:13	PRODUCER	01−Oct−2009 02:50
BACKUPDLIS	PI_LDL_APS_NGS_011PUP	FN:14	PRODUCER	01−Oct−2009 01:51

Output DLIS Files

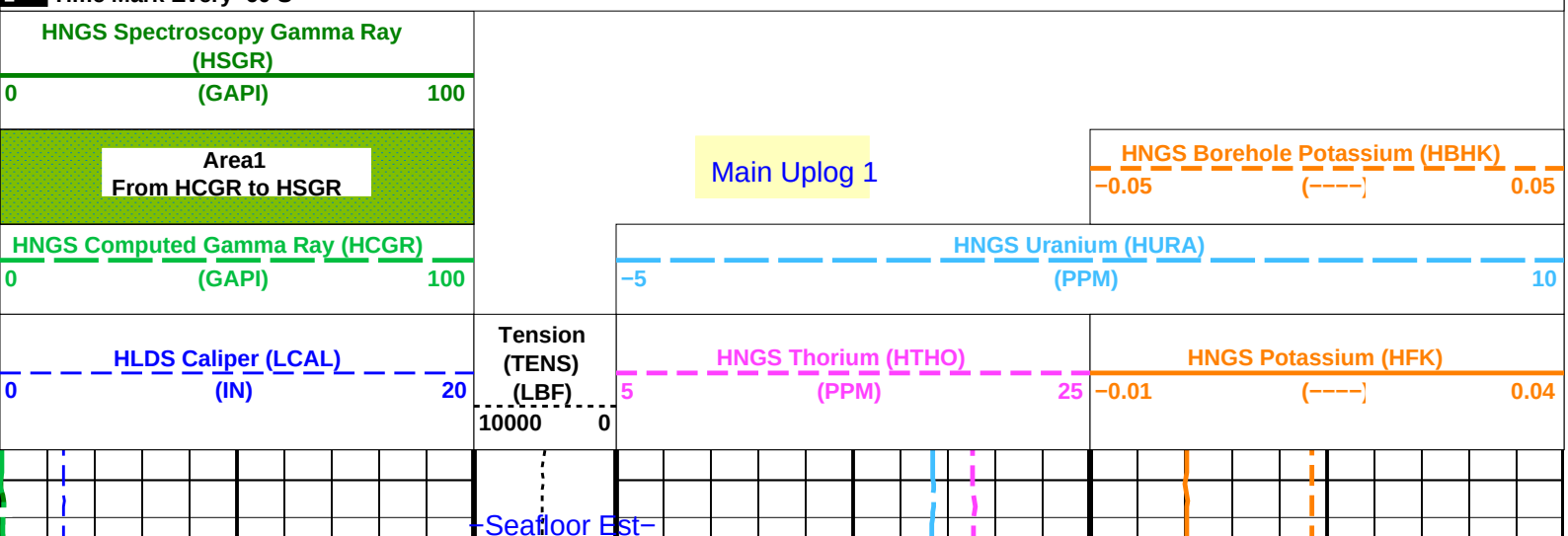
DEFAULT	PI_LDL_APS_NGS_007LUP	FN:8	PRODUCER	01−Oct−2009 00:52
BACKUPDLIS	PI_LDL_APS_NGS_007LUP	FN:9	PRODUCER	30−Sep−2009 23:53

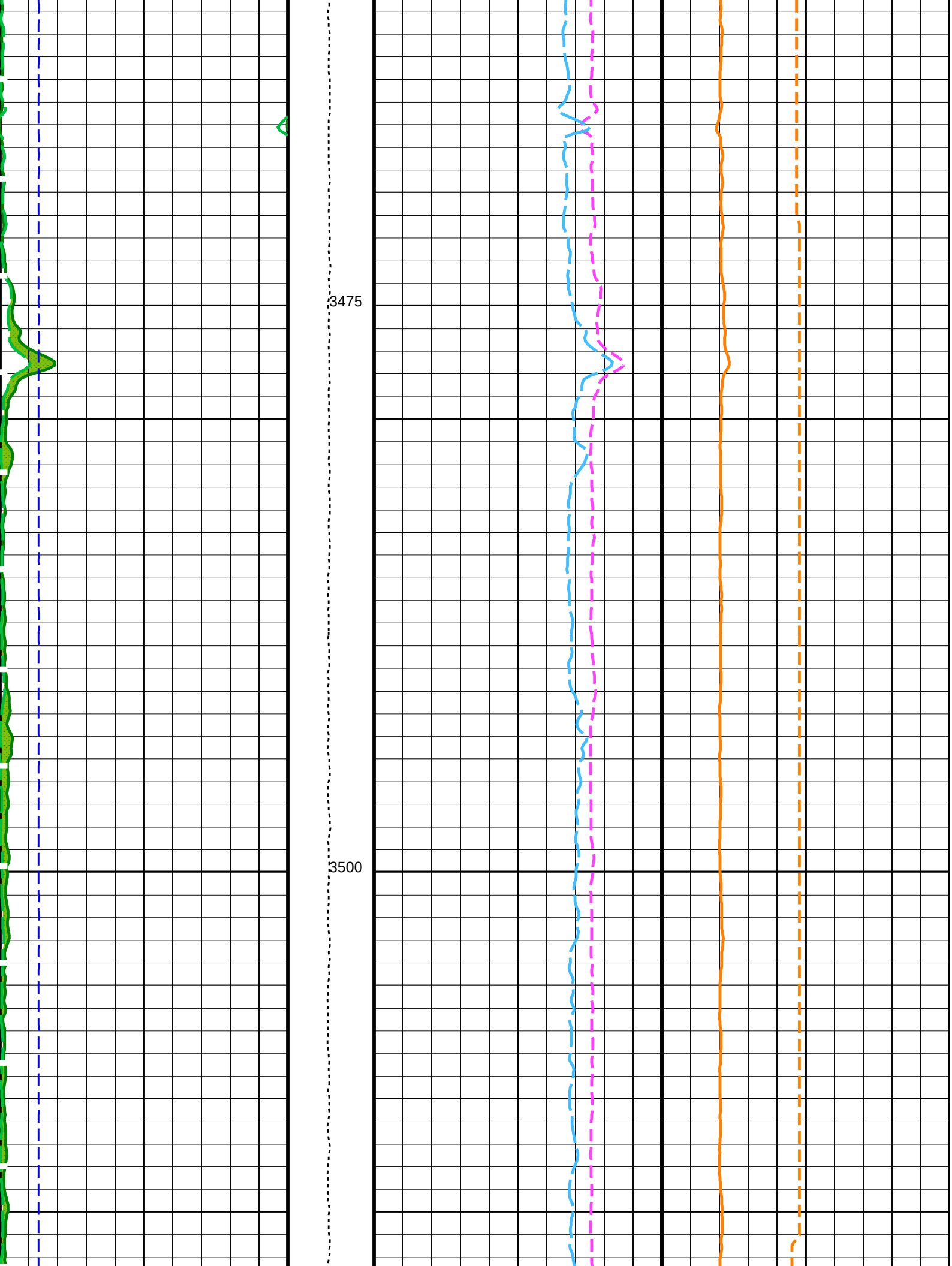
OP System Version: 17C0−154

DIT−E	17C0−154	GPIT−A/B	SRPC−3870_Q3_2009_OP17_V3_b
DTA−A	17C0−154	HLDS	17C0−154
LDSC−B	17C0−154	APS−C	17C0−154
HNGC−B	17C0−154	HNGS−BA	17C0−154
DTC−H	17C0−154		

PIP SUMMARY

Time Mark Every 60 S

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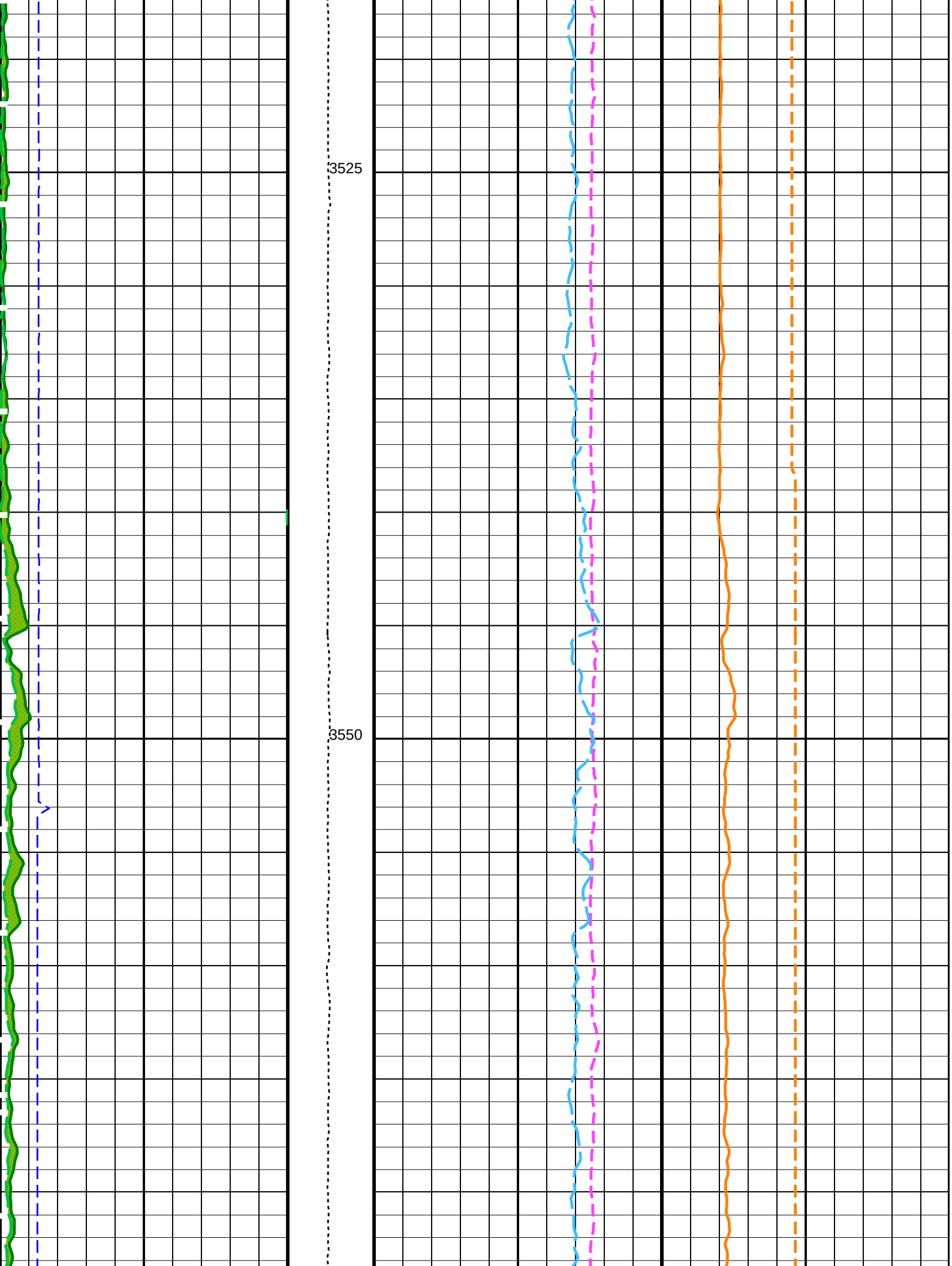
3500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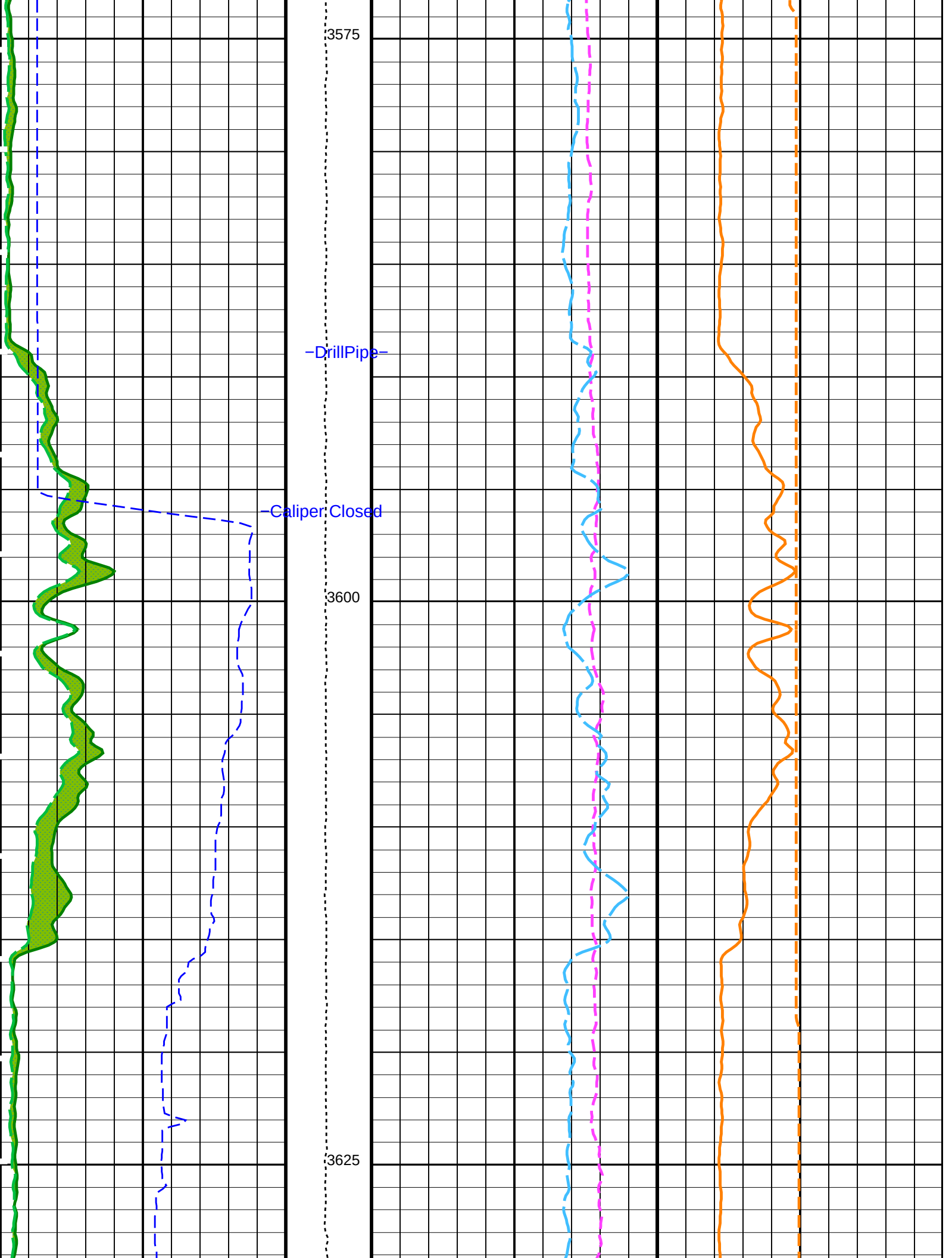
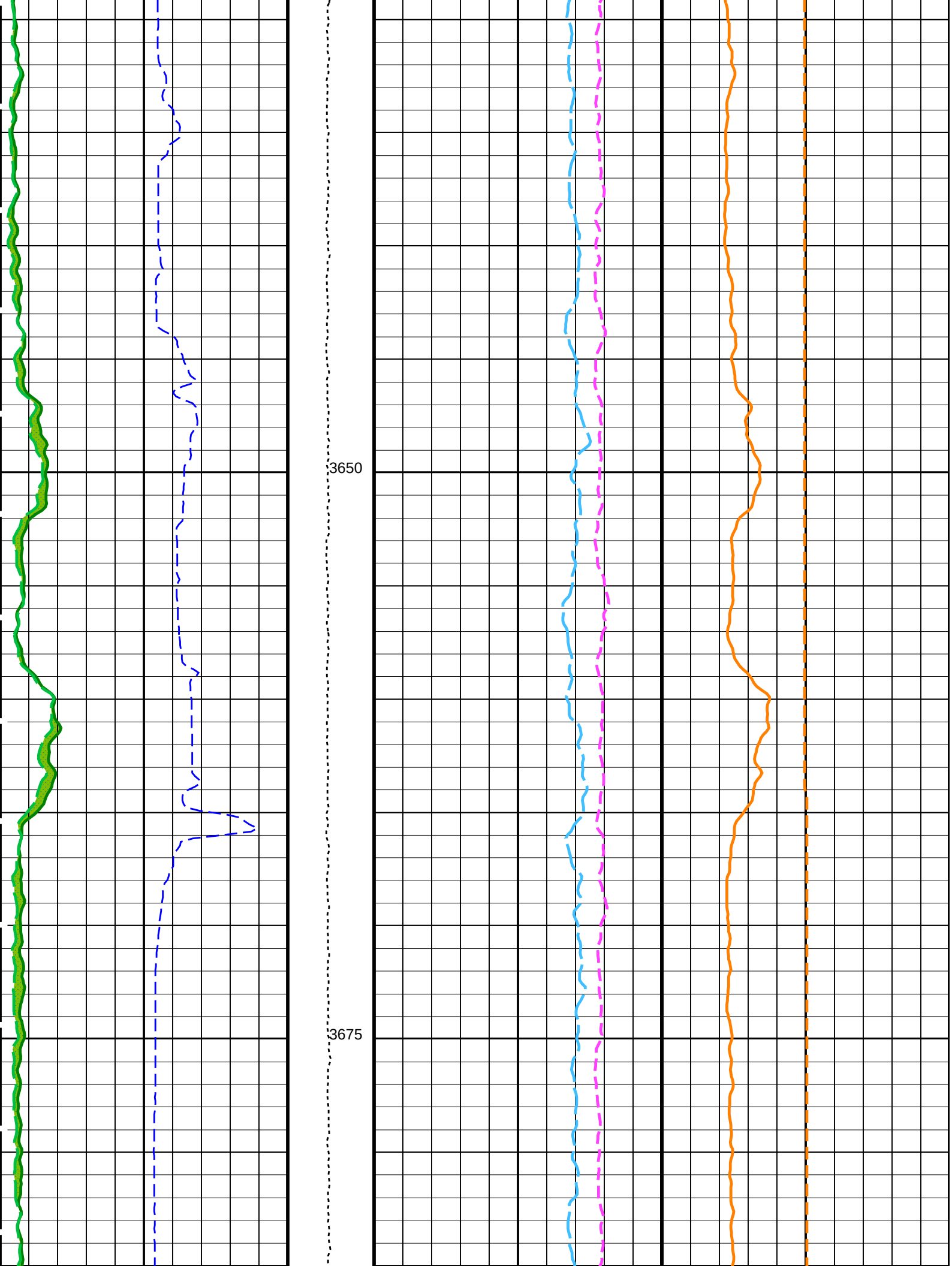
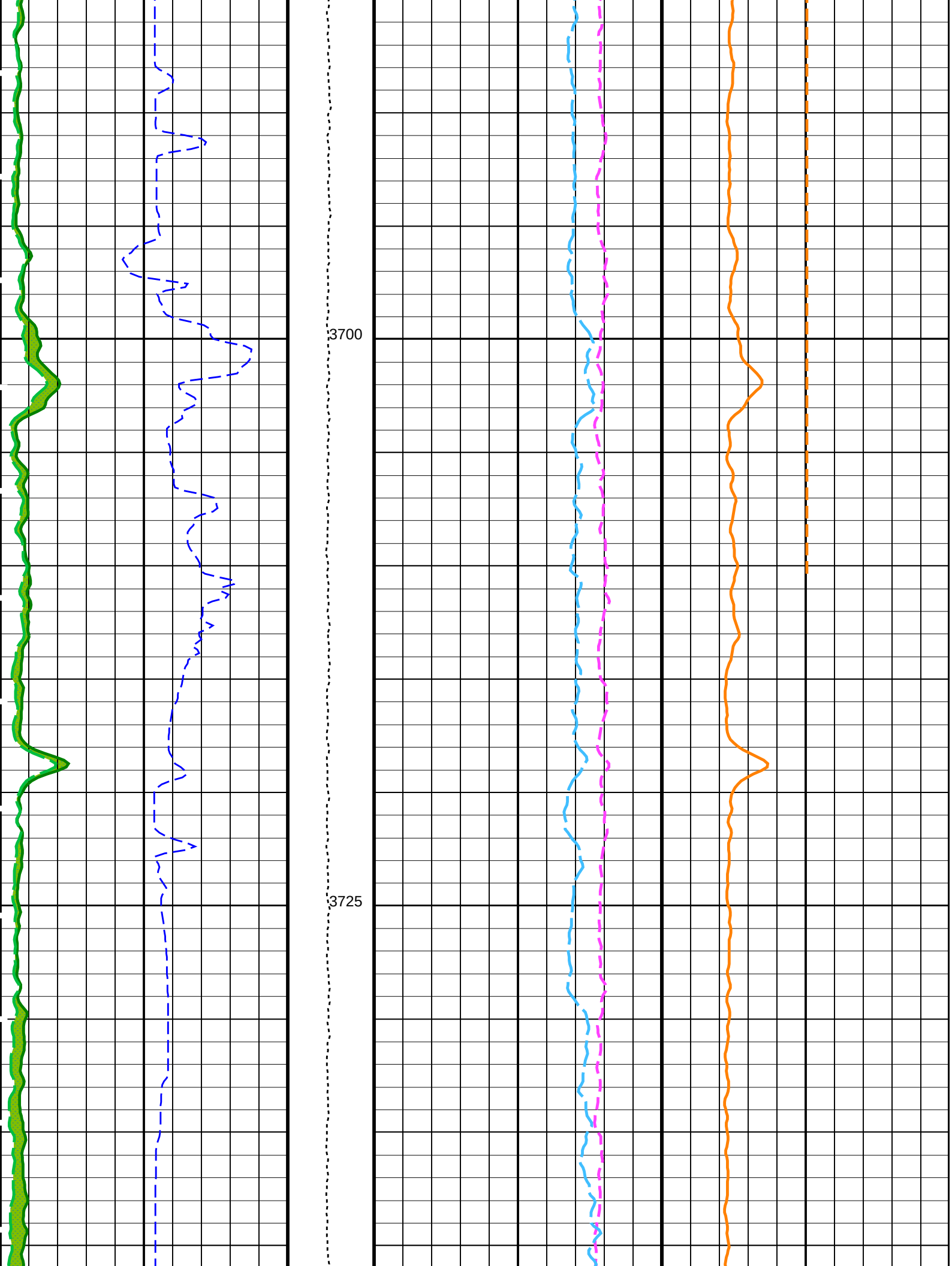
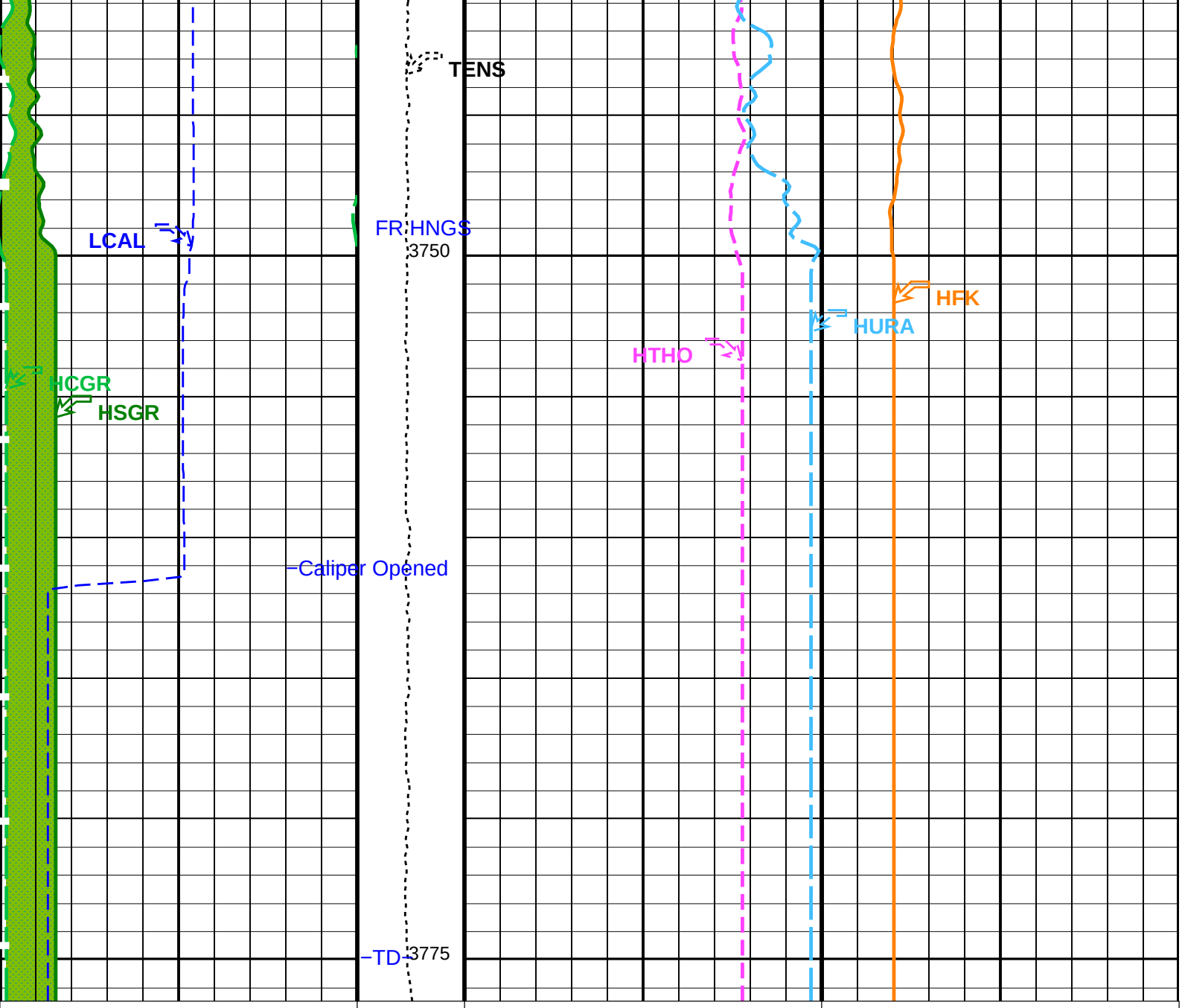

3575
DrillPipe
Caliper Closed
3600
3625


3650
3675


3700
3725



HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
−0.01 (−−−−) 0.04

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

HNGS Uranium (HURA)
−5 (PPM) 10

Area1
From HCGR to HSGR

Main Uplog 1

HNGS Borehole Potassium (HBHK)
−0.05 (−−−−) 0.05

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

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)	45	DEGF
DGF1	Deep 10 kHz Gain Factor	0.968645	

DGF2	Deep 20 kHz Gain Factor	0.979119	
DGF4	Deep 40 kHz Gain Factor	0.990252	
DPH1	Deep 10 kHz Phase Shift	0.26358	DEG
DPH2	Deep 20 kHz Phase Shift	0.0159963	DEG
DPH4	Deep 40 kHz Phase Shift	−1.11256	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	39.5751	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.0457	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.15121	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	245.841	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	136.154	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	78.4516	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	0.969585	
MGF2	Medium 20 kHz Gain Factor	0.974788	
MGF4	Medium 40 kHz Gain Factor	0.999842	
MPH1	Medium 10 kHz Phase Shift	0.0787021	DEG
MPH2	Medium 20 kHz Phase Shift	−0.199528	DEG
MPH4	Medium 40 kHz Phase Shift	−0.885081	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	31.1041	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	11.3259	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	3.5782	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	328.09	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	172.606	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	112.808	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	HAMMING	
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	−0.649944	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	ON	
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	
	APS−C: Accelerator−Porosity Tool		
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1968.76	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2108.58	V

AHCS	APS Holesize Correction Source	BS	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1736.91	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature−Pressure−Salinity Correction Switch	ON	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	45	DEGF
BSCO_APS	APS TNPH Borehole Salinity Correction Option	YES	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source	COMPUTED	
FSAL	Formation Salinity	−50000	PPM
FSCO_APS	APS TNPH Formation Salinity Correction Option	NO	
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	
HSCO_APS	APS TNPH Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	YES	
MCOR_APS	APS TNPH Mud Correction	NATU	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.06221	
NFRC	APS Near/Far Calibration Ratio	0.888507	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	YES	
SHT	Surface Hole Temperature	68	DEGF
TNCO_APS	APS TNPH Computation Option	NO	
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)	45	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	−0.00109838	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
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	1.03065	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.98053	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	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
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	−50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	12417	FT
TDD	Total Depth − Driller	3822.00	M
TDL	Total Depth − Logger	3811.00	M
TWS	Temperature of Connate Water Sample	7.00	DEGC

OP System Version: 17C0−154

DIT−E	**17C0−154**	**GPIT−A/B**	**SRPC−3870_Q3_2009_OP17_V3_b**
DTA−A	**17C0−154**	**HLDS**	**17C0−154**
LDSC−B	**17C0−154**	**APS−C**	**17C0−154**
HNGC−B	**17C0−154**	**HNGS−BA**	**17C0−154**
DTC−H	**17C0−154**		

Output DLIS Files

DEFAULT	**PI_LDL_APS_NGS_007LUP**	**FN:8**	**PRODUCER**	**01−Oct−2009 00:52**
BACKUPDLIS	**PI_LDL_APS_NGS_007LUP**	**FN:9**	**PRODUCER**	**30−Sep−2009 23:53**

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
General Purpose Inclinometer Wellsite Calibration − CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: Calibration out of date 18−Sep−2009 12:20							
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 Inclinometer Wellsite Calibration − CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: Calibration out of date 18−Sep−2009 12:20							
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: 3−Sep−2009 17:44 Before: 3−Sep−2009 18:17 After: 1−Oct−2009 4:20							
SS Cs Resolution Bkg	9.000	7.746	7.730	7.713	−0.01698	1.800	%
LS Cs Resolution Bkg	9.000	8.108	8.054	8.075	0.02159	1.800	%
LSW1 Background	100.0	93.25	92.32	93.01	0.6932	0.03000	CPS
LSW2 Background	100.0	84.64	83.60	83.76	0.1644	0.03000	CPS
LSW3 Background	200.0	190.6	188.9	188.6	−0.2676	0.03000	CPS
LSW4 Background	250.0	236.5	235.1	232.9	−2.262	0.03000	CPS
LSW5 Background	600.0	546.1	545.4	546.5	1.088	0.03000	CPS
SSW1 Background	100.0	89.81	90.04	89.24	−0.7969	0.03000	CPS
SSW2 Background	200.0	154.2	155.8	154.6	−1.209	0.03000	CPS
SSW3 Background	500.0	432.1	434.0	431.5	−2.587	0.03000	CPS
SSW4 Background	270.0	230.2	231.3	231.5	0.1576	0.03000	CPS
SSW5 Background	200.0	165.4	164.8	163.5	−1.245	0.03000	CPS
Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement							
Master: 3−Sep−2009 22:04							
LSW1 Aluminum	600.0	571.6	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	821.3	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	980.0	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	485.4	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	446.8	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2506	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6921	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9688	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4004	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	483.9	N/A	N/A	N/A	N/A	CPS
Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement							
Master: 3−Sep−2009 21:28							
LSW1 Iron	400.0	381.3	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	656.8	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	863.7	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	449.5	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	404.3	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1830	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5778	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8866	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3644	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	430.1	N/A	N/A	N/A	N/A	CPS
Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration							
Before: 3−Sep−2009 18:07							
HLDS Caliper Small Ring	12.00	N/A	13.29	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	16.79	N/A	N/A	N/A	IN

Accelerator−Porosity Tool Wellsite Calibration − Detector Background
Master: 4−Sep−2009 10:19 Before: 15−Sep−2009 4:03 After: 1−Oct−2009 2:29

Near Det Bkg Cntrate	30.00	32.55	31.78	31.13	−0.6498	N/A	CPS
Far Det Bkg Cntrate	30.00	32.82	33.98	31.99	−1.995	N/A	CPS
Array−1 Det Bkg Cntrate	30.00	29.79	29.03	28.70	−0.3379	N/A	CPS
Array−2 Det Bkg Cntrate	30.00	30.52	31.38	29.38	−1.999	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	33.60	32.56	30.11	−2.443	N/A	CPS

Accelerator−Porosity Tool Wellsite Calibration − Calibration Ratios
Master: 4−Sep−2009 10:19

Near/Far Calibration Ratio	0.9250	0.8885	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.062	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.010	N/A	N/A	N/A	N/A	

Accelerator−Porosity Tool Wellsite Calibration − Tank Check
Master: 4−Sep−2009 10:19

Array−1 Standoff Porosity	11.75	11.58	N/A	N/A	N/A	N/A	PU
Array−2 Standoff Porosity	11.75	11.38	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.850	N/A	N/A	N/A	N/A	US
Array−1 SDT Ratio Up/Down	1.000	0.9839	N/A	N/A	N/A	N/A	
Array−2 SDT Ratio Up/Down	1.000	0.9757	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.81	N/A	N/A	N/A	N/A	CU

Accelerator−Porosity Tool Wellsite Calibration − CCR7 signal boxes
Master: 4−Sep−2009 10:19

Near Detector Plateau Setting	1650	1737	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2109	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1969	N/A	N/A	N/A	N/A	V

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check
Master: 5−Sep−2009 7:01 Before: 13−Sep−2009 22:15 After: 1−Oct−2009 4:22

Na 511 Peak Loc	40.00	39.55	39.60	39.61	0.009148	1.000	
Na 511 Peak Res	15.50	15.65	16.19	15.16	−1.036	2.000	%
High Voltage	1150	1146	1180	1180	0.6639	N/A	V
Na 1785 Peak Loc	142.6	142.8	142.7	142.0	−0.6621	7.000	
Na 1785 Peak Res	8.500	7.849	8.372	8.836	0.4647	2.000	%
Temperature	15.50	14.91	32.53	31.35	−1.177	N/A	DEGC
Na Count Rate	45.00	36.92	35.51	34.86	−0.6483	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check
Master: 5−Sep−2009 7:01 Before: 13−Sep−2009 22:15 After: 1−Oct−2009 4:22

Na 511 Peak Loc	40.00	39.62	39.55	39.69	0.1409	1.000	
Na 511 Peak Res	15.50	15.06	16.55	15.47	−1.088	2.000	%
High Voltage	1150	1080	1113	1114	0.8286	N/A	V
Na 1785 Peak Loc	142.6	141.3	142.3	142.2	−0.06085	7.000	
Na 1785 Peak Res	8.500	8.437	9.484	8.489	−0.9953	2.000	%
Temperature	15.50	15.08	32.86	33.16	0.3056	N/A	DEGC
Na Count Rate	45.00	36.97	36.00	35.17	−0.8337	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2
Master: 5−Sep−2009 7:01 Before: 13−Sep−2009 22:15 After: 1−Oct−2009 4:22

Coincidence Count Rate Ratio	1.000	0.9992	0.9853	0.9937	0.008377	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 1 Calibration
Master: 5−Sep−2009 7:01

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	210.4	−−	−−	−−	−−	
Th Peak Res	7.000	6.417	−−	−−	−−	−−	%
Background Count Rate	142.5	18.75	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.012	−−	−−	−−	−−	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 2 Calibration
Master: 5−Sep−2009 7:01

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	209.5	−−	−−	−−	−−	
Th Peak Res	7.000	7.001	−−	−−	−−	−−	%
Background Count Rate	142.5	18.87	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.006	−−	−−	−−	−−	

Accelerator−Porosity Tool − Detector Plateau Settings :

Near Detector Plateau Setting 1737 V
Far Detector Plateau Setting 2109 V
Array Detector Plateau Setting 1969 V

Dual Induction − E / Equipment Identification

Primary Equipment:		
Dual Induction Sonde	DIS − HB	129
Dual Induction Cartridge	DIC − EB	171
Auxiliary Equipment:		
Mass Isolated Housing	MIH − ZA	342

General Purpose Inclinometer / Equipment Identification

Primary Equipment:		
GPIT Cartridge − A	GPIC − A	840
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

Accelerator−Porosity Tool / Equipment Identification

Primary Equipment:		
Accelerator−Porosity Sonde	APS − C	22
APS Minitron	MNTR − F	5589
Auxiliary Equipment:		
Accelerator−Porosity Housing	APH − AC	22
APS Calibration Water Tank	SFT − 178	2
APS Aluminum Calibrator Sleeve	SFT − 281	2

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
Master		39.55
Before		39.60
After		39.61
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		15.65
Before		16.19
After		15.16
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1146
Before		1180
After		1180
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		142.8
Before		142.7
After		142.0
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		7.849
Before		8.372
After		8.836
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		14.91
Before		32.53
After		31.35
	−28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		36.92
Before		35.51
After		34.86
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 5−Sep−2009 7:01 Before: 13−Sep−2009 22:15 After: 1−Oct−2009 4:22

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.62
Before		39.55
After		**39.69**
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		15.06
Before		16.55
After		**15.47**
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1080
Before		1113
After		**1114**
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		141.3
Before		142.3
After		142.2
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		8.437
Before		9.484
After		8.489
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		15.08
Before		32.86
After		33.16
	−28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		36.97
Before		36.00
After		35.17
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 5−Sep−2009 7:01 Before: 13−Sep−2009 22:15 After: 1−Oct−2009 4:22

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9992
Before		0.9853
After		0.9937
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

Master: 5−Sep−2009 7:01
Before: 13−Sep−2009 22:15
After: 1−Oct−2009 4:22

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		210.4	Master		6.417
	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		18.75	Master		1.012
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 5−Sep−2009 7:01

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		209.5	Master		7.001
	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		18.87	Master		1.006
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 5−Sep−2009 7:01

DTS Telemetry Tool / Equipment Identification

Primary Equipment:		
DTC−H Auxiliary Cartridge	DTCH − A	8798
DTC−H Telemetry Cartridge	DTCH − A	8798
Auxiliary Equipment:		
DTCH Telemetry Cartridge Housing	ECH − mca	1777

Company: **Lamont Doherty**

Schlumberger

Well: **Expedition 324 Site U1347A**

Field: **Shatsky Rise**

Rig: **JOIDES Resolution**

Ocean: **Pacific**

Natural Gamma Ray Spectroscopy (HNGS)