

**JOGMEC**

**AURORA/JOGMEC/NRCAN MALLIK 2L-38**

# MALIK

**NWT**

# COMBINABLE MAGNETIC RESONANCE LOG

GRID: 69-30-134-3C

UWID: 302 L38 69-30-134-301

Elev.: K.B. 10.55 m

G.L. 1 m

D.F. 10.25 m

Permanent Datum: GROUND LEVEL

Elev.: 1 m

Log Measured From: KELLY BUSHING 9.6 m above Perm. Datum

Drilling Measured From: KELLY BUSHING

API Serial No.

1163

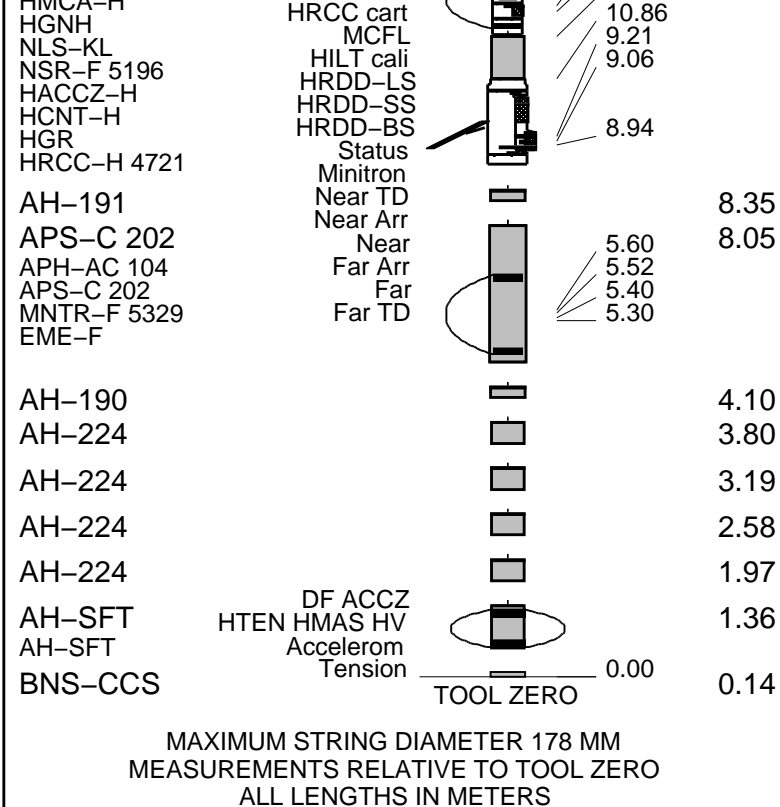
[illegible]

Logging Date	7-Mar-2007			
Run Number	1P-RUN TWO			
Depth Driller	1310 m			
Schlumberger Depth	1296 m			
Bottom Log Interval	1281 m			
Top Log Interval	680 m			
Casing Driller Size @ Depth	339.725 mm @ 677 m			@
Casing Schlumberger	680 m			
Bit Size	361.950 mm			
Type Fluid In Hole	KCL POLYMER			
Density	Viscosity	1115 kg/m3	58 s	
Fluid Loss	PH	5 cm3	8.7	
Source Of Sample	FLOWLINE			
RM @ Measured Temperature	0.107 ohm.m @ 20 degC			@
RMF @ Measured Temperature	0.120 ohm.m @ 19 degC			@
RMF @ Measured Temperature	0.150 ohm.m @ 20 degC			@
Source RMF	RMF @ MRT	PRESS		
RM @ MRT	RMF @ MRT	0.125 @ 14	0.136 @ 14	@
Maximum Recorded Temperatures	14 degC			
Circulation Stopped	Time	5-Mar-2007	16:00	
Logger On Bottom	Time	7-Mar-2007	10:00	
Unit Number	Location	1803	NISKU, AB	
Recorded By	LANNY LAROCHE			
Witnessed By	MAKI MATSUZAWA			

Logging Date					
Run Number					
Depth Driller					
Schlumberger Depth					
Bottom Log Interval					
Top Log Interval					
Casing Driller Size @ Depth		@			
Casing Schlumberger					
Bit Size					
Type Fluid In Hole					
Density	Viscosity				
Fluid Loss	PH				
Source Of Sample					
RM @ Measured Temperature		@			
RMF @ Measured Temperature		@			
RMC @ Measured Temperature		@			
Source RMF	RMC				
RM @ MRT	RMF @ MRT	@		@	
Maximum Recorded Temperatures					
Circulation Stopped	Time				
Logger On Bottom	Time				
Unit Number	Location				
Recorded By					
Witnessed By					

OTHER SERVICES1	OTHER SERVICES2
OS1: 1.ZAIT-HRLT-EMS-GPI	OS1:
OS2: 3.FMI-MSIP-EMS	OS2:
OS3: 4.MRSCANNER	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
APS HAS LARGE HOLE KIT INSTALLED	
TLD HAS LARGE HOLE CALIPER INSTALLED	
HGNS HAS LARGE HOLE KIT INSTALLED	
PPC1 AND PPC2 USED FOR ECCENTRALIZATION AND LARGE HOLE KIT INSTALLED ON BOTH	
BS=9.875" FROM TD-1296M	
BS=14.25" FROM 1296-SC	

HGNSD-H 4730	Neutron N	12.79
HMCA-H	HGNS sens	12.08



**Schlumberger**

## MAIN PASS: CMR LOG

MAXIS Field Log

Company: Well:

### Input DLIS Files

DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
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### Output DLIS Files

DEFAULT	APS_TLD_MCFL_CNL_155PUP	FN:171	PRODUCER	07-Mar-2007 14:06	1295.2 M	628.8 M
CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06	1295.2 M	628.8 M

## CMR DEPTH LOG REPORT

### PARAMETER SUMMARY

Tool Type: CMR-Plus	Cart. Number: 202	Sonde Number: 182
Kit Number: 28	DHC Version : 16.4	DSP Version : 13
Mode: Expert Depth Log - B Mode		LFST Freq(khz) : 2284
		SP Version : 2062001
		LFST Temp(deg) : 13.41

Log Direction: Up	Polarization Correction: On	EPM: Yes	EPM T1/T2: Auto
Despiking: Off	High Res: Off	KBFV: Off	DMRP: Off

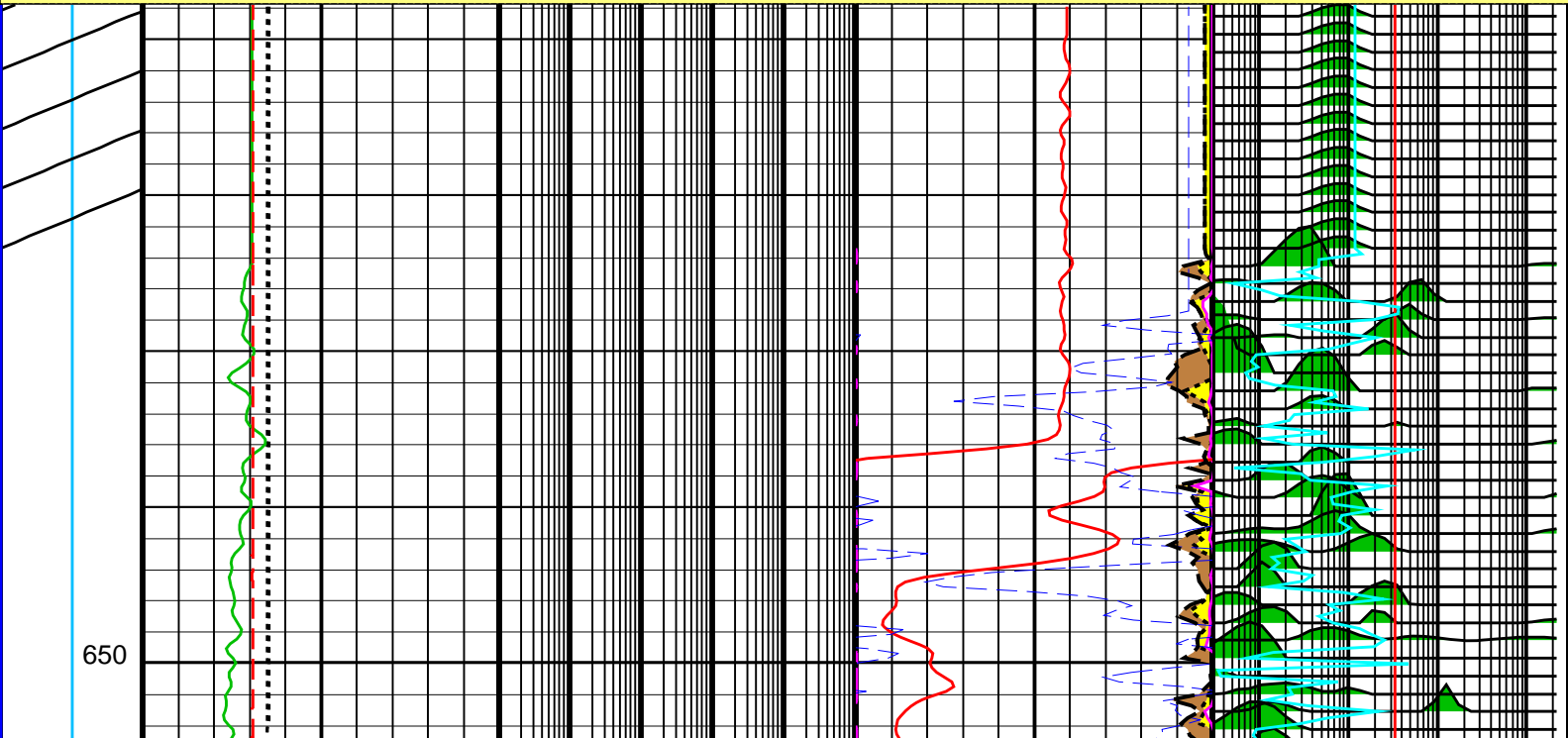
Echo Spacing(us): (200 200)	T1: 1 (2.014 2.02)	T1: 2 (2.014 2.02)	T1: 5 (7.012 2.02)
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Polarization Times(sec) for:	T1=1s: (infinity 0.02 )	T1=3s: (9.214 0.02 )	T1=5s: (7.648 0.02 )
Number of Echoes:	(1800 30)		
Repetition:	(1 10)	Duty Cycle (highest): 0.0282	
Regularization:	Auto		
T2 Min(msec): 0.3	T2 Max(msec): 3000	T2 Cutoff(msec): 33	T1/T2: 2
Number of Components: 30	Downhole Stacking: 3	Uphole Stacking: 1	First Echo Used: No
Multiple T2 Cutoffs(msec):	(0.3 1 3 10 33 100 300 1000 3000)		
Sample Int.(in): 7.5	Req Log Speed (f/h): 900		

PIP SUMMARY			
Time Mark Every 60 S			

(NO_UPDATE_COUNT) 0 (----10			Capillary Bound Fluid Porosity	
			Total CMR Porosity (TCMR) 0.3 (V/V) 0	
			Small Pore Porosity	
			NPOR for SAND (NPOR_SAN) 0.3 (V/V) 0	
Noise Out of Tolerance	Tension (TENS) 25000 (N) 0		DPHI for SAND (DPHI_SAN) 0.3 (V/V) 0	
Caution Moderate Noise	HILT Caliper (HCAL) 275 (MM) 525	Timur/Coates Permeability (KTIM) 0.1 (MD) 10000	CMR 3ms Porosity (CMRP_3MS) 0.3 (V/V) 0	T2 Distribution (T2_DIST_MW) 60 (US) 89
Insuff. WT Flag	Gamma Ray (GR) 0 (GAPI) 150	Std. Res. Invaded Zone Resistivity (RXOZ) 0.1 (OHMM) 10000	Std. Res. Formation Pe (PEFZ) 0 (----) 10	T2 Logarithmic Mean (T2LM) 0.3 (MS) 3000
Bad Hole Flag	Bit Size (BS) 275 (MM) 525	SDR Permeability (KSDR) 0.1 (MD) 10000	CMR Free Fluid Porosity (CMFF) 0.3 (V/V) 0	Bound Fluid Cutoff (T2CUTOFF) 0.3 (MS) 3000

Main Pass: Combinable Magnetic Resonance – Depth Log			
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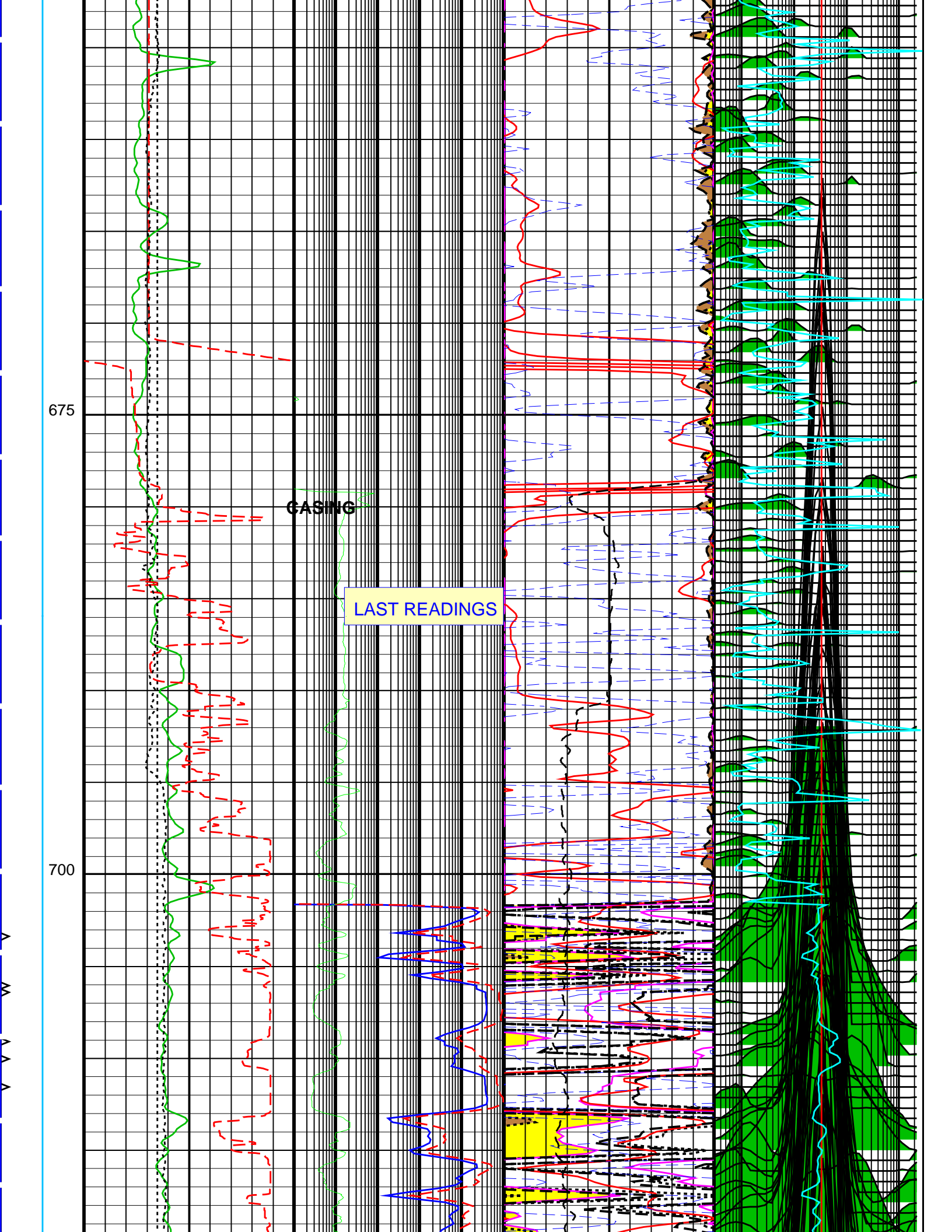


675

700

CASING

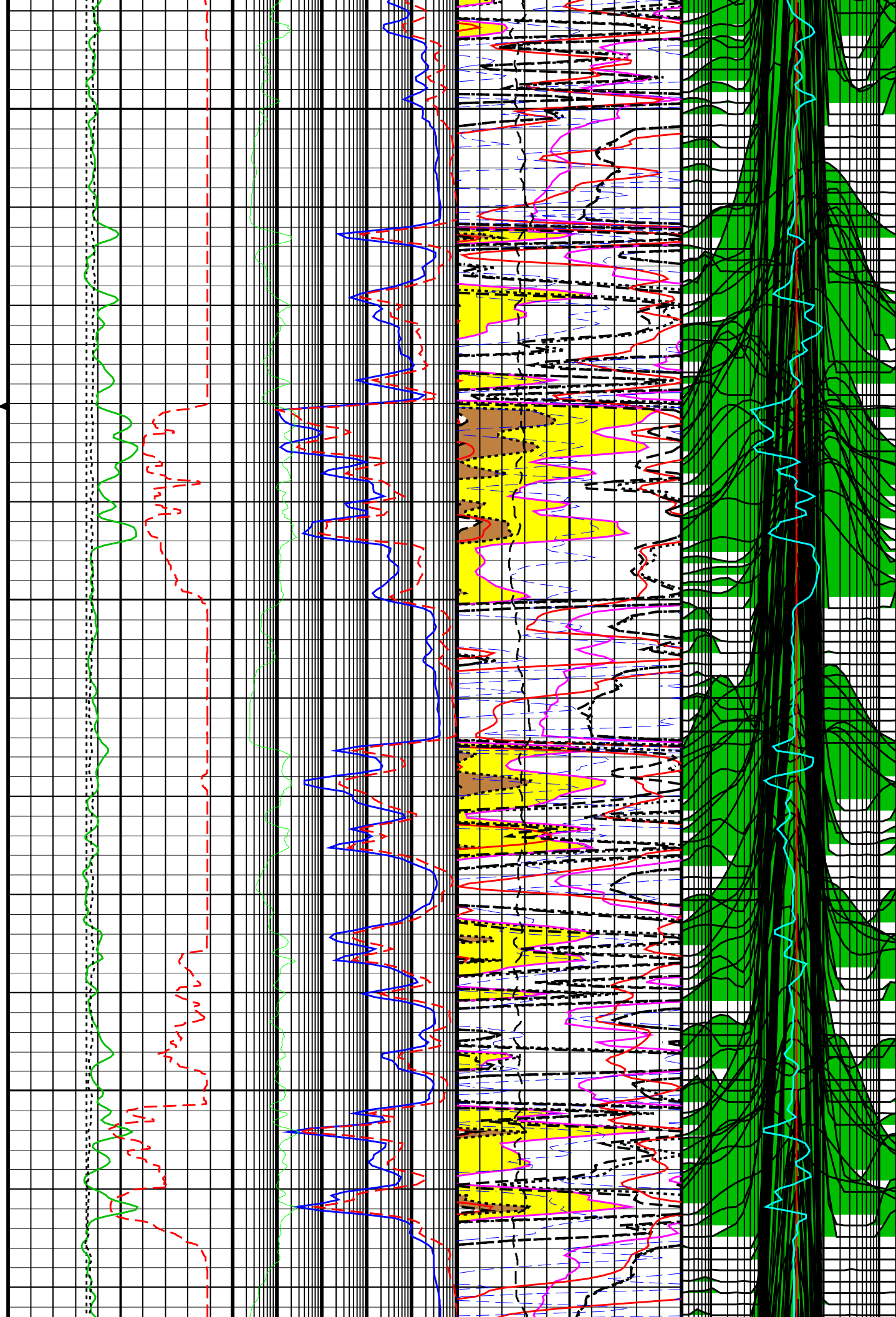
LAST READINGS

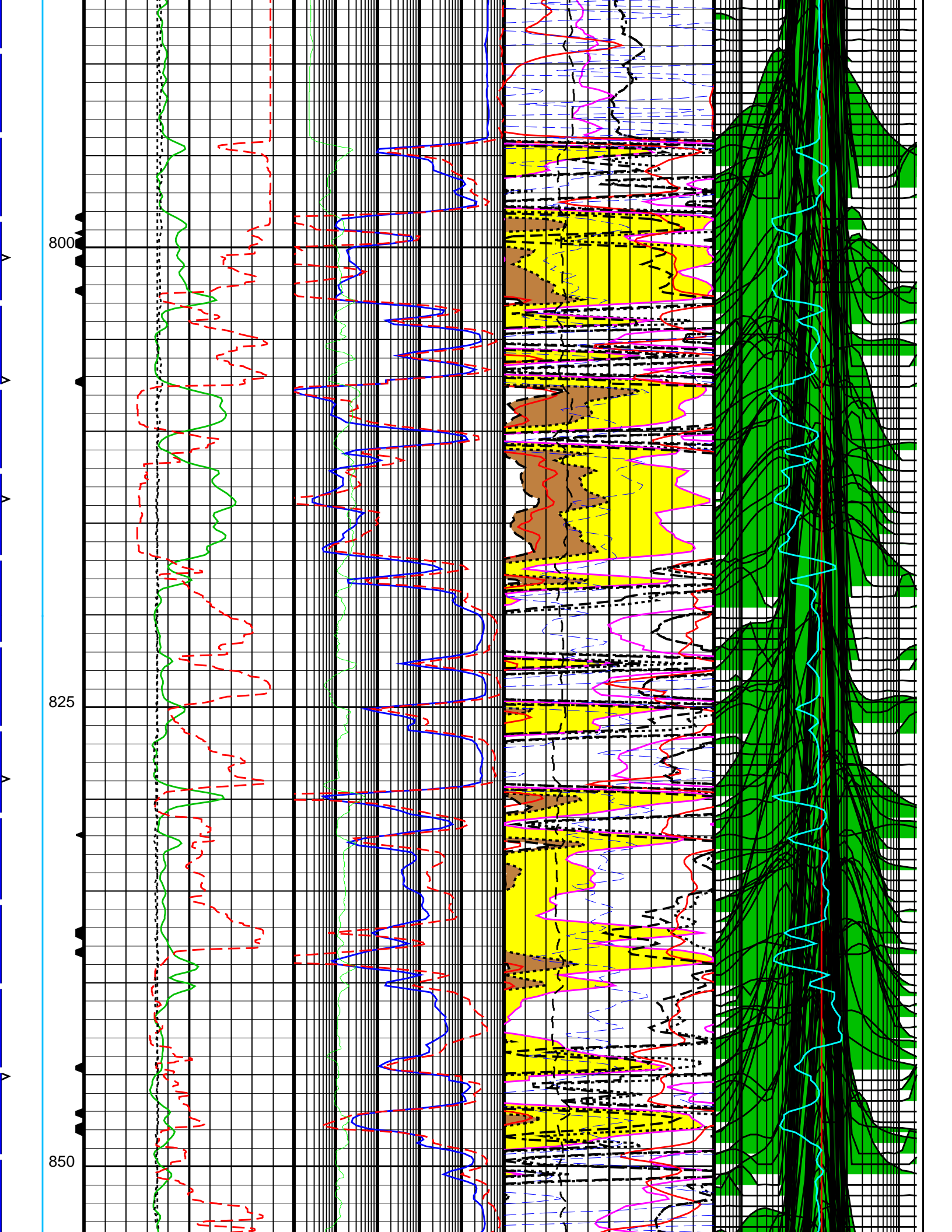


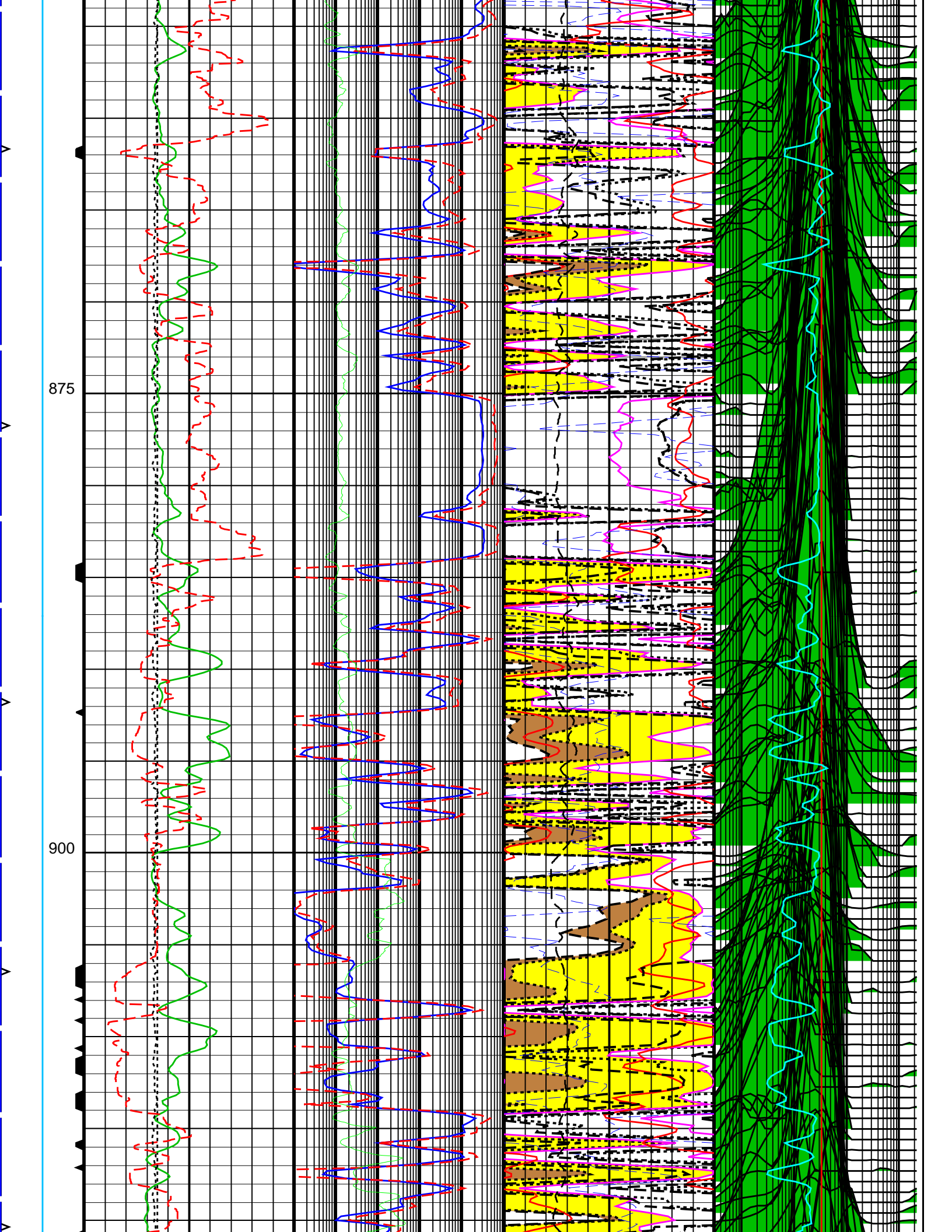
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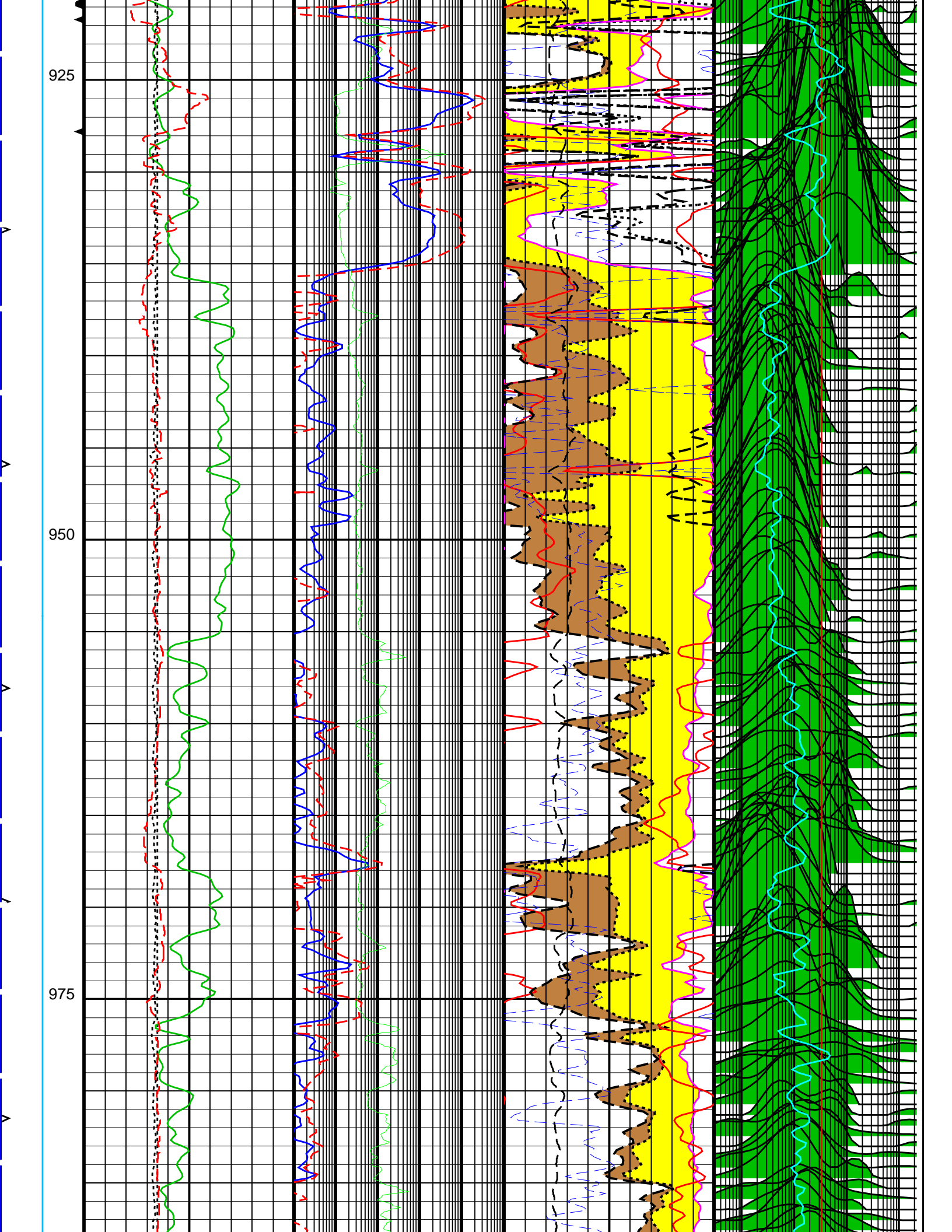
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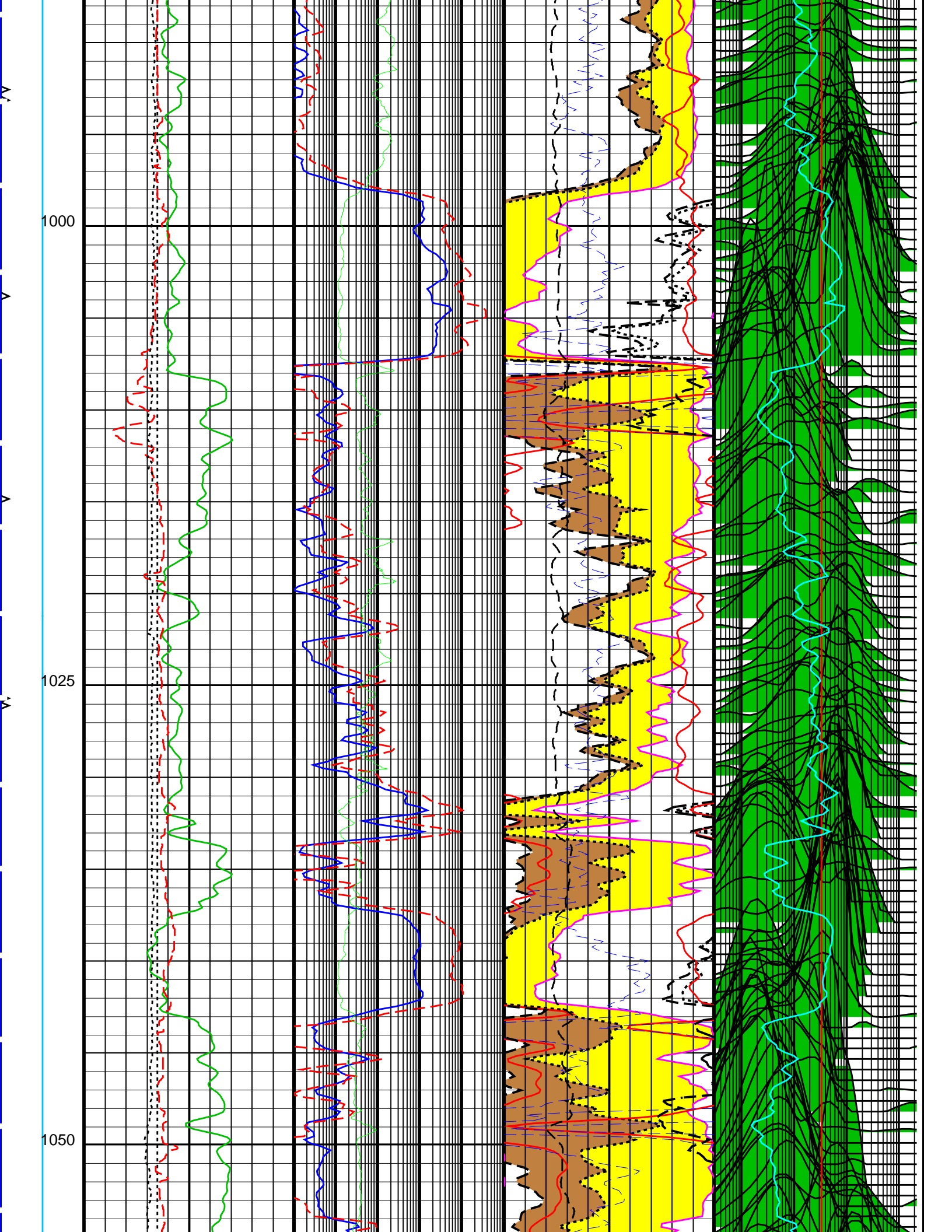
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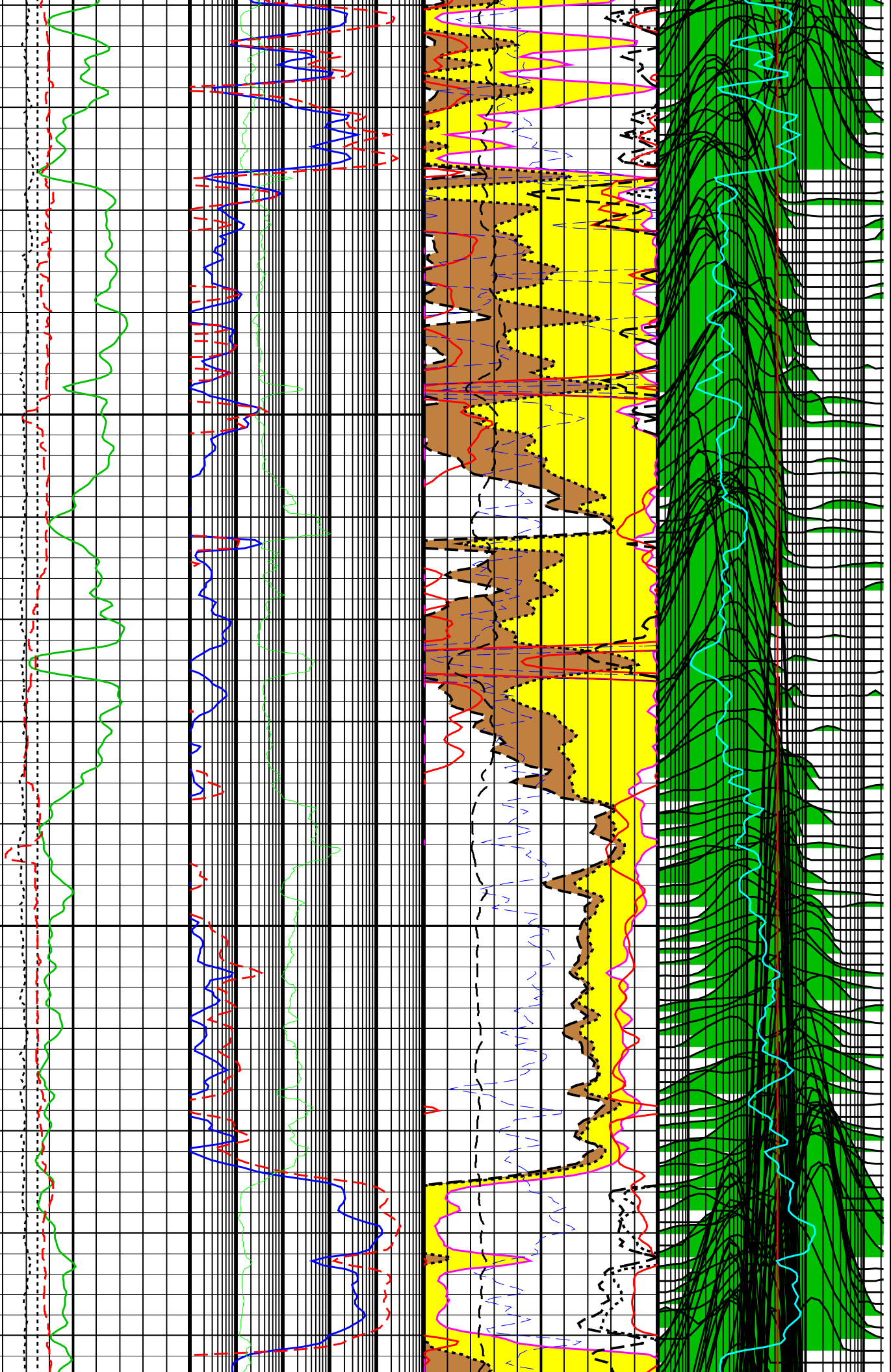






1075

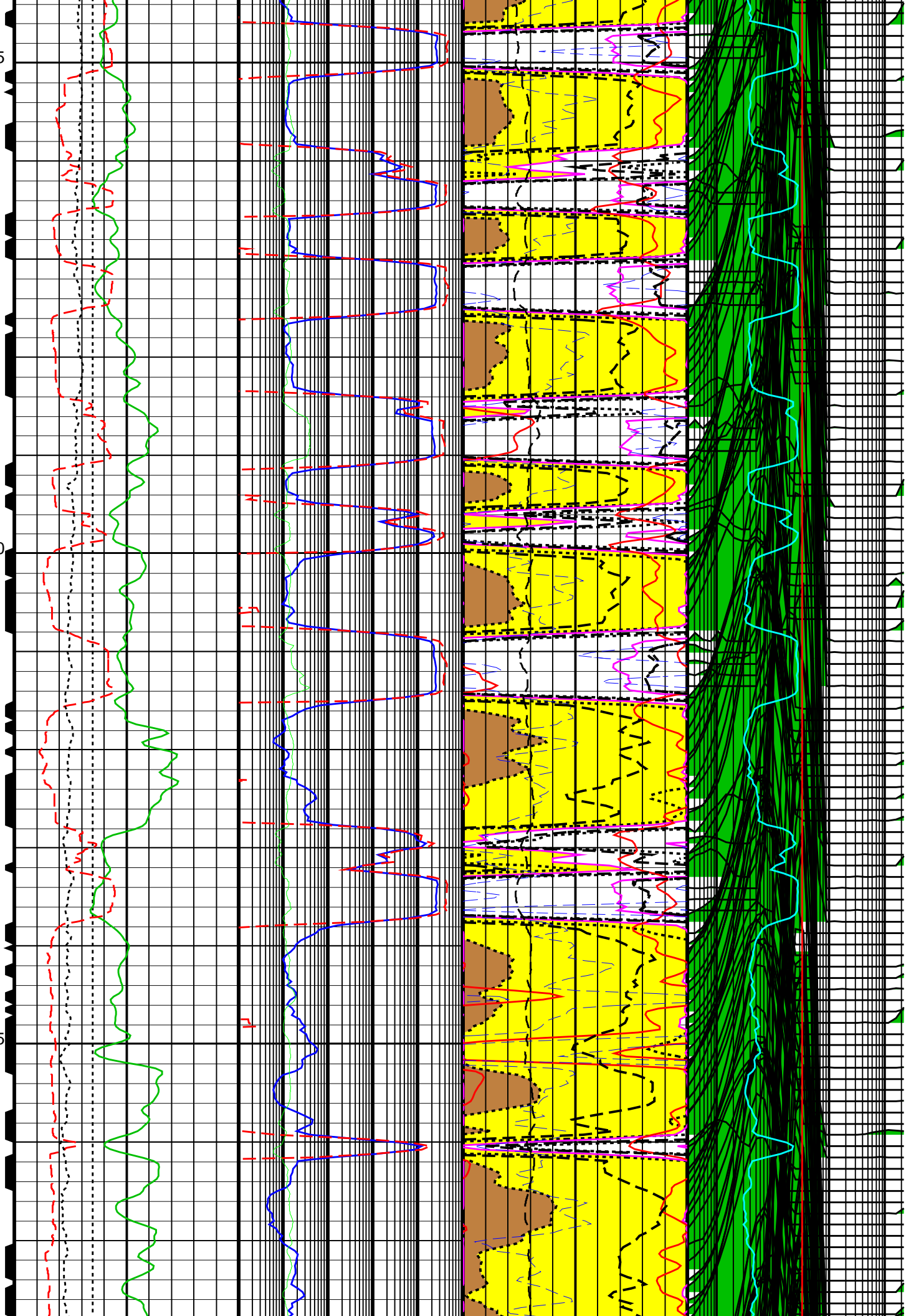
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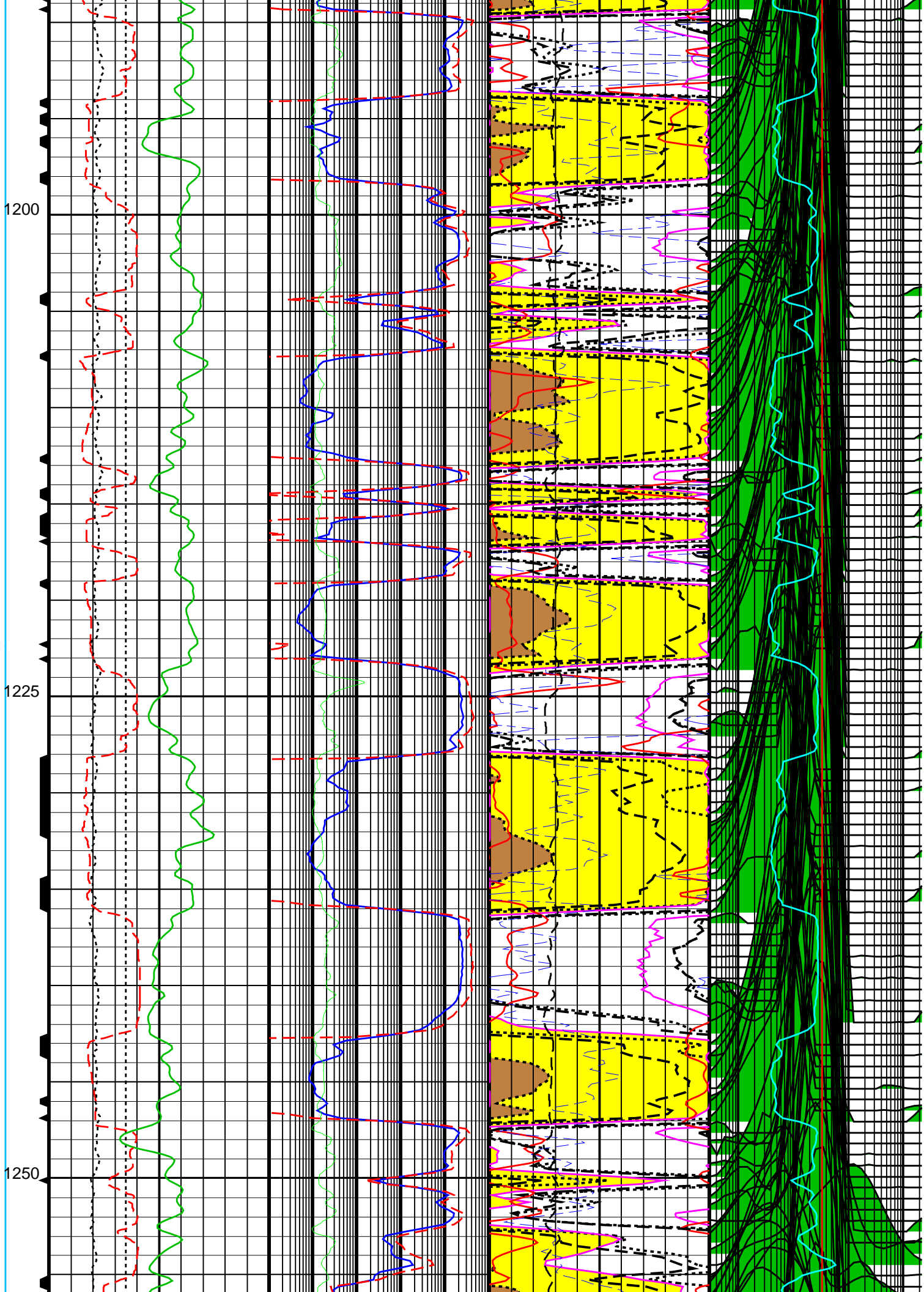


1125

1150

1175







PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
APS-C: Accelerator-Porosity Tool			
BHS	Borehole Status	OPEN	
FSAL	Formation Salinity	-50000	PPM
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1000	K/M3
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HSCO	Hole Size Correction Option	YES	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	VeryHiRes	
NSAR	HRDD Depth Sampling Rate	12.7	MM
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	YES	
CMRT-B: Combinable Magnetic Resonance Tool - B			
BHS	Borehole Status	OPEN	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HNCS-BA: Hostile Natural Gamma Ray Sonde			
BHS	Borehole Status	OPEN	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HSCO	Hole Size Correction Option	YES	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	YES	
STI: Stuck Tool Indicator			
TDL	Total Depth - Logger	1296.00	M
System and Miscellaneous			
BS	Bit Size	361.950	MM
BSAL	Borehole Salinity	-50000.00	PPM
DO	Depth Offset for Playback	1.4	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: CMR\_LOG\_D240

Vertical Scale: 1:240

Graphics File Created: 07-Mar-2007 14:06

OP System Version: 14C0-302

MCM

APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302

PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB
<b>Input DLIS Files</b> DEFAULT      APS_TLD_MCFL_CNL_128LUP      FN:145    PRODUCER    07-Mar-2007 09:56    1293.9 M      621.0 M			
<b>Output DLIS Files</b> DEFAULT      APS_TLD_MCFL_CNL_155PUP      FN:171    PRODUCER    07-Mar-2007 14:06 CUST          APS_TLD_MCFL_CNL_155PUP      FN:172    PRODUCER    07-Mar-2007 14:06			



## REPEAT PASS: CMR LOG

MAXIS Field Log

Company: \_\_\_\_\_ Well: \_\_\_\_\_

<b>Input DLIS Files</b> DEFAULT      APS_TLD_MCFL_CNL_119LUP      FN:135    PRODUCER    07-Mar-2007 06:12    1172.7 M      779.1 M					
<b>Output DLIS Files</b> DEFAULT      APS_TLD_MCFL_CNL_154PUP      FN:170    PRODUCER    07-Mar-2007 13:59    1172.7 M      784.3 M					

### CMR DEPTH LOG REPORT

#### PARAMETER SUMMARY

Tool Type: CMR-Plus	Cart. Number: 202	Sonde Number: 182	
Kit Number: 28	DHC Version : 16.4	DSP Version : 13	SP Version : 2062001
Mode: Expert Depth Log – B Mode		LFST Freq(khz) : 2279	LFST Temp(degc) : 11.37
Log Direction: Up	Polarization Correction: On	EPM: Yes	EPM T1/T2: Auto
Despiking: Off	High Res: Off	KBFV: Off	DMRP: Off
Echo Spacing(us):	(200 200)		
Polarization Times(sec) for:	T1=1s: (infinity 0.02 )	T1=3s: (9.214 0.02 )	T1=5s: (7.648 0.02 )
Number of Echoes:	(1800 30)		
Repetition:	(1 10)	Duty Cycle (highest): 0.0282	
Regularization:	Auto		
T2 Min(msec): 0.3	T2 Max(msec): 3000	T2 Cutoff(msec): 33	T1/T2: 2
Number of Components: 30	Downhole Stacking: 3	Uphole Stacking: 1	First Echo Used: No
Multiple T2 Cutoffs(msec):	(0.3 1 3 10 33 100 300 1000 3000)		
Sample Int.(in): 7.5	Req Log Speed (f/h): 900		

#### PIP SUMMARY

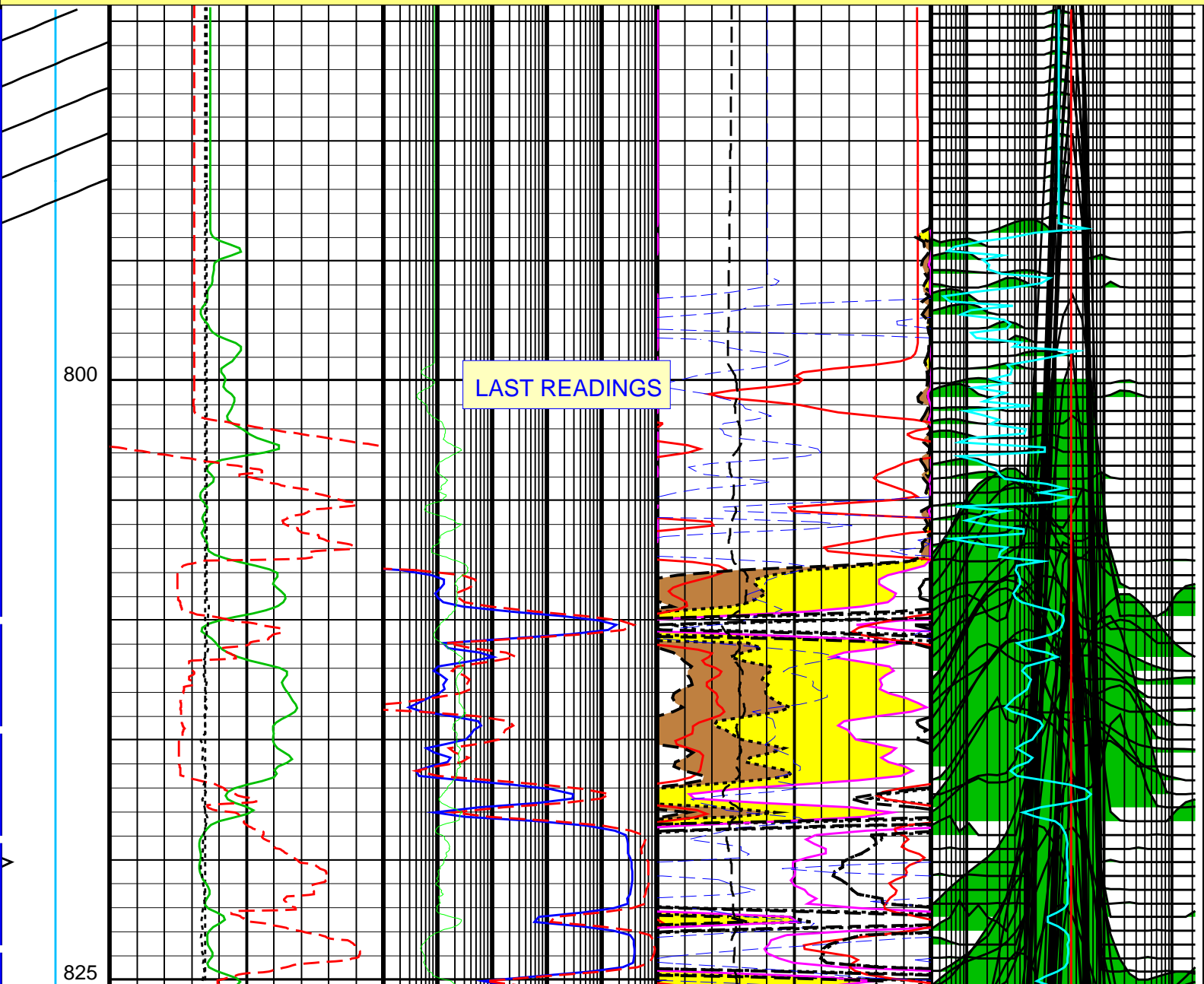
☐ Time Mark Every 60 S

Capillary Bound Fluid  
Porosity

Total CMR Porosity (TCMR)

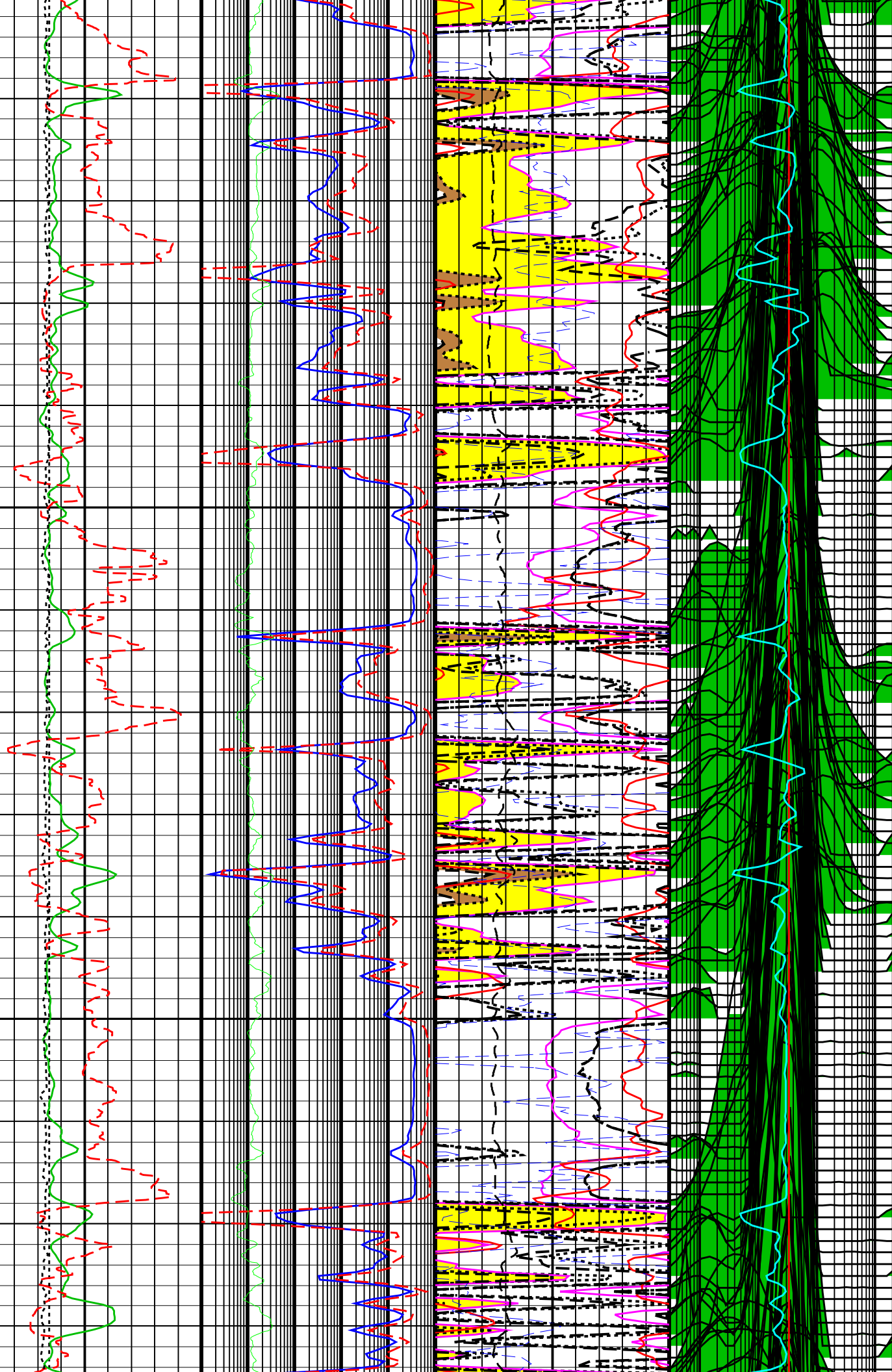
(NO_UPDATE_COUNT) 0 (----10)			0.3 (V/V) 0	
			Small Pore Porosity	
Noise Out of Tolerance	Tension (TENS) 25000 (N) 0		NPOR for SAND (NPOR_SAN) 0.3 (V/V) 0	
			DPHI for SAND (DPHI_SAN) 0.3 (V/V) 0	
Caution Moderate Noise	HILT Caliper (HCAL) 275 (MM) 525		CMR 3ms Porosity (CMRP_3MS) 0.3 (V/V) 0	
	Timur/Coates Permeability (KTIM) 0.1 (MD) 10000		T2 Distribution (T2_DIST_MW) 60 (US) 89	
Insuff. WT Flag	Gamma Ray (GR) 0 (GAPI) 150		Std. Res. Formation Pe (PEFZ) 0 (----) 10	
	Std. Res. Invaded Zone Resistivity (RXOZ) 0.1 (OHMM) 10000		T2 Logarithmic Mean (T2LM) 0.3 (MS) 3000	
Bad Hole Flag	Bit Size (BS) 275 (MM) 525		CMR Free Fluid Porosity (CMFF) 0.3 (V/V) 0	
	SDR Permeability (KSDR) 0.1 (MD) 10000		Bound Fluid Cutoff (T2CUTOFF) 0.3 (MS) 3000	

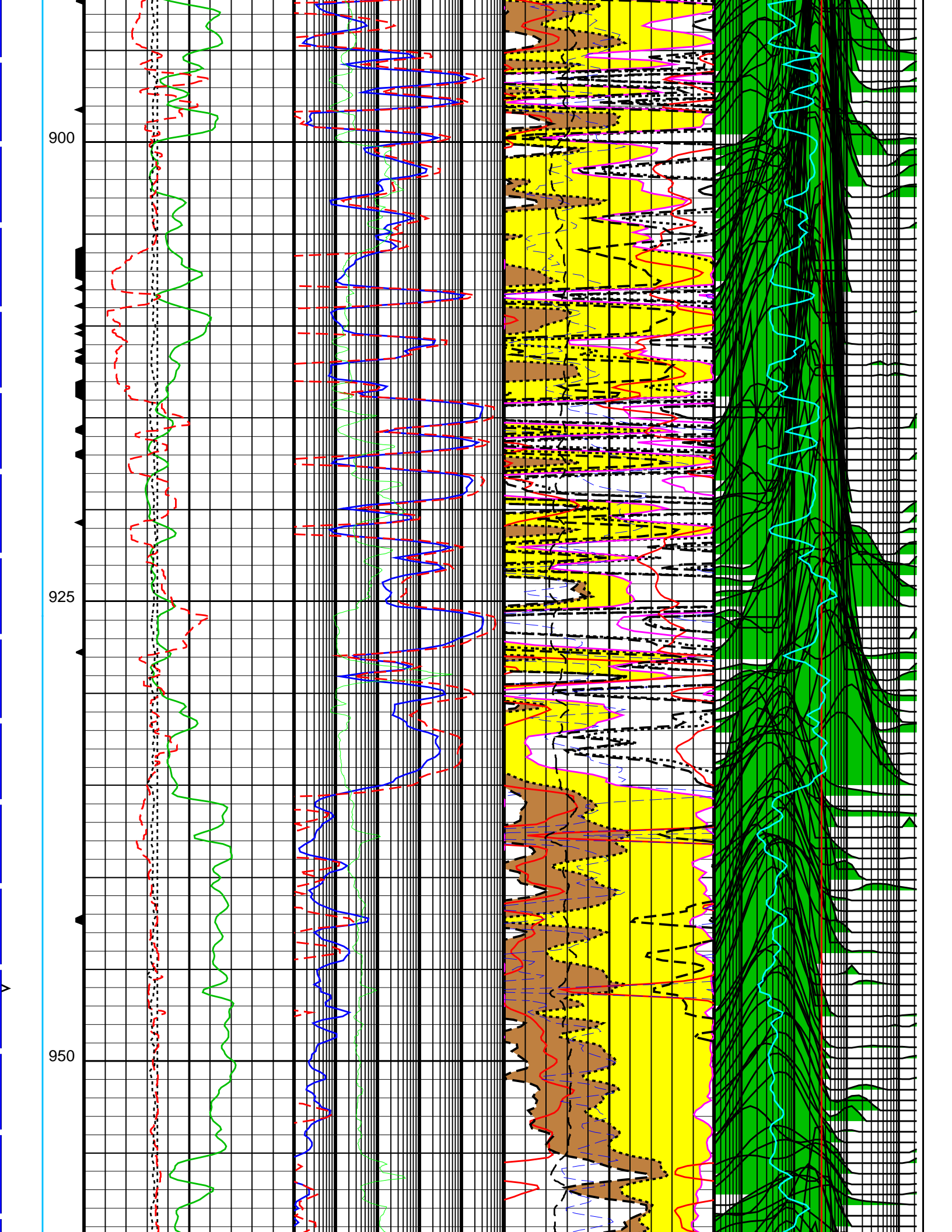
Main Pass: Combinable Magnetic Resonance – Depth Log

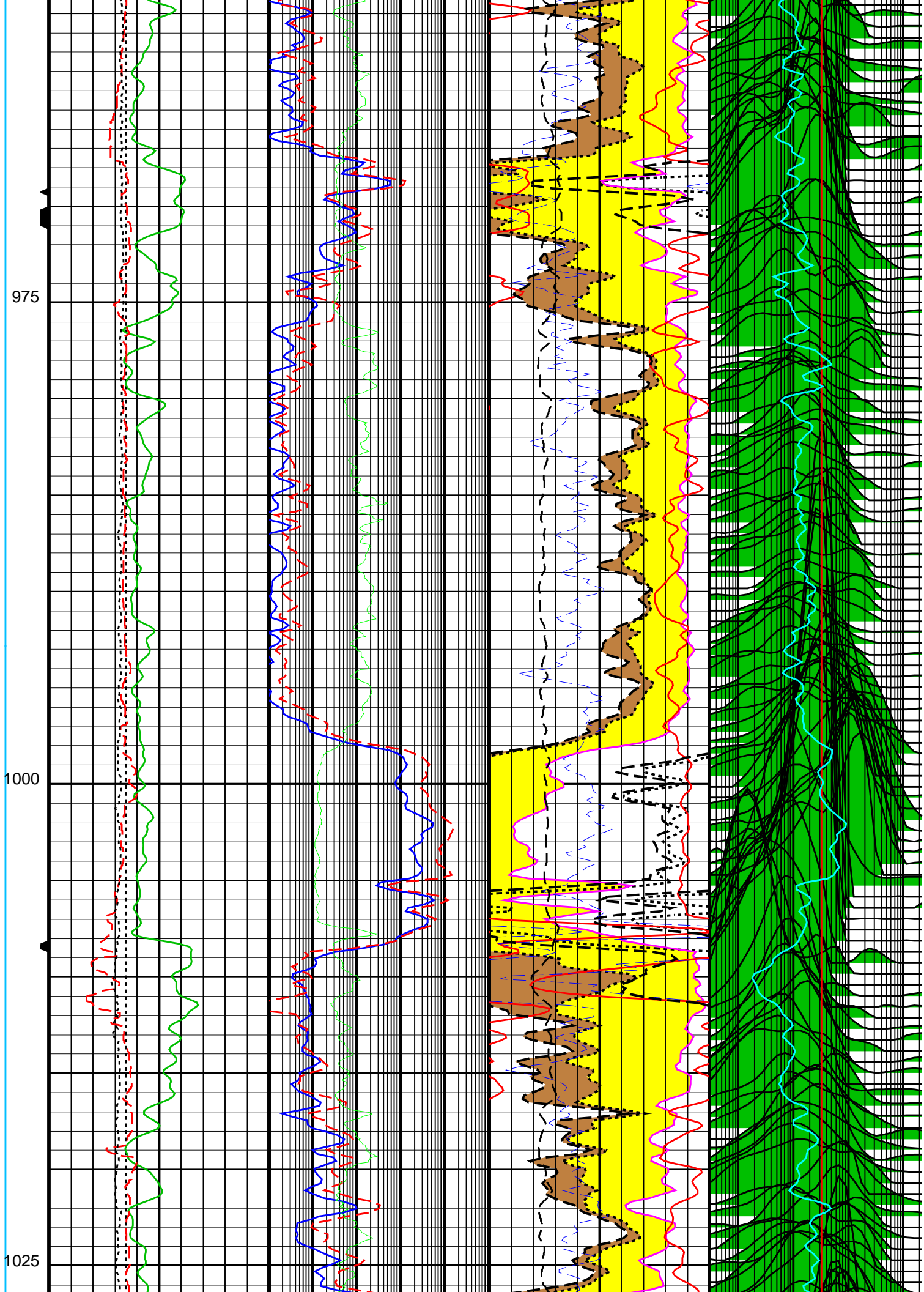


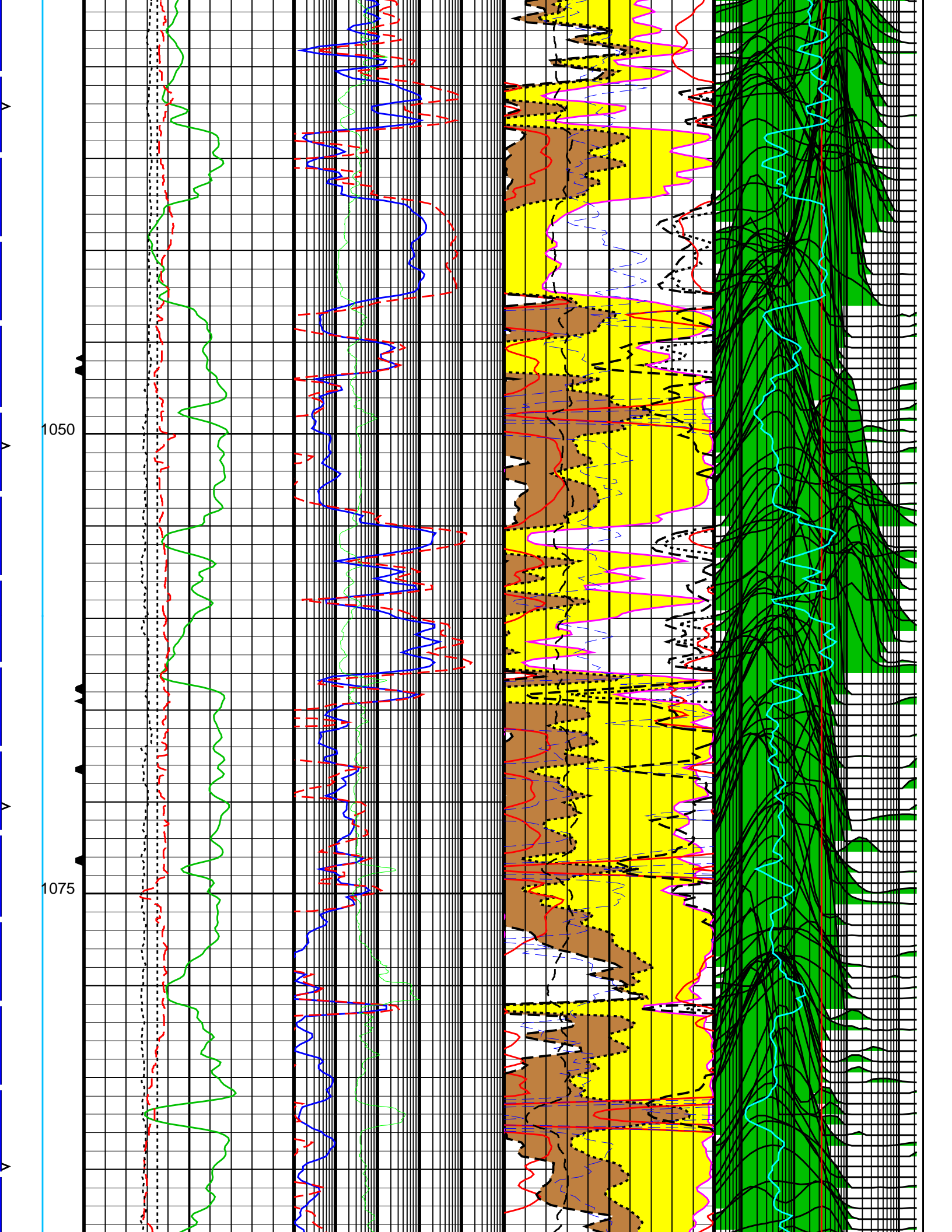
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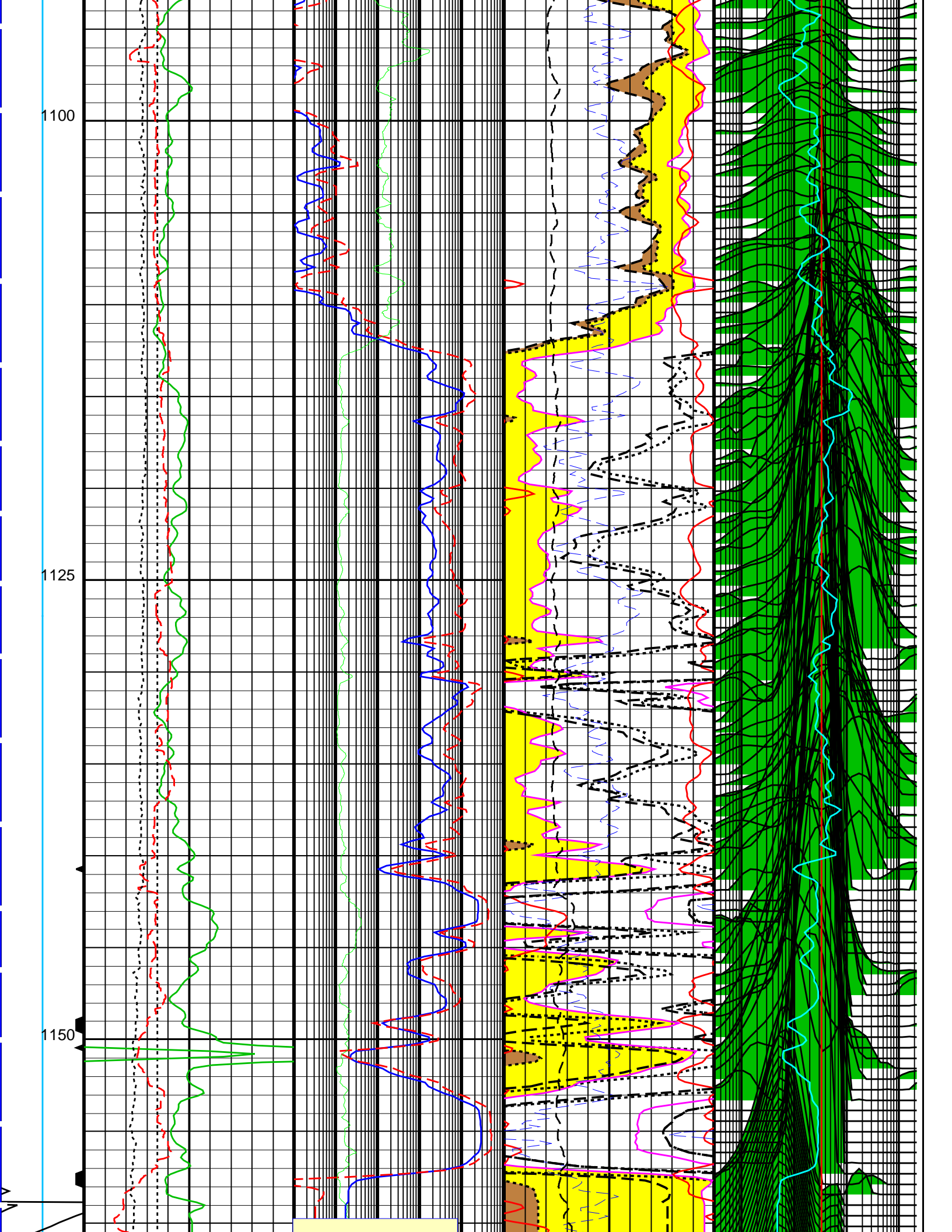
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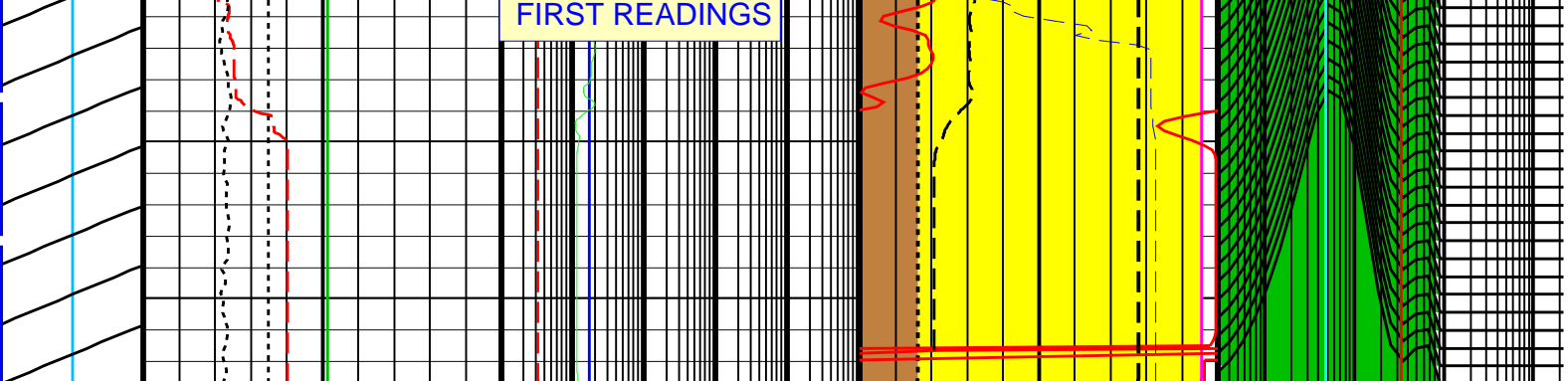








# FIRST READINGS



## Main Pass: Combinable Magnetic Resonance – Depth Log

Bad Hole Flag	Bit Size (BS)		SDR Permeability (KSDR)		CMR Free Fluid Porosity (CMFF)		Bound Fluid Cutoff (T2CUTOFF)	
	275	525	0.1	10000	0.3	0	0.3	3000
Insuff. WT Flag	Gamma Ray (GR)		Std. Res. Invaded Zone Resistivity (RXOZ)		Std. Res. Formation Pe (PEFZ)		T2 Logarithmic Mean (T2LM)	
	0	150	0.1	10000	0	10	0.3	3000
Caution Moderate Noise	HILT Caliper (HCAL)		Timur/Coates Permeability (KTIM)		CMR 3ms Porosity (CMRP_3MS)		T2 Distribution (T2_DIST_MW)	
	275	525	0.1	10000	0.3	0	60	89
Noise Out of Tolerance	Tension (TENS)				DPHI for SAND (DPHI_SAN)			
	25000	0			0.3	0		
(NO_UPDATE_COUNT)					NPOR for SAND (NPOR_SAN)			
					0.3	0		
0 (----10)					Small Pore Porosity			
					Total CMR Porosity (TCMR)			
					0.3	0		
					Capillary Bound Fluid Porosity			

## PIP SUMMARY

Time Mark Every 60 S

## Parameters

DLIS Name	Description	Value	
APS-C: Accelerator-Porosity Tool			
BHS	Borehole Status	OPEN	
FSAL	Formation Salinity	-50000	PPM
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1000	K/M3
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HSCO	Hole Size Correction Option	YES	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	NO	

NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	VeryHiRes	
NSAR	HRDD Depth Sampling Rate	12.7	MM
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	YES	
CMRT-B: Combinable Magnetic Resonance Tool - B			
BHS	Borehole Status	OPEN	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HNCS-BA: Hostile Natural Gamma Ray Sonde			
BHS	Borehole Status	OPEN	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HSCO	Hole Size Correction Option	YES	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	YES	
STI: Stuck Tool Indicator			
TDL	Total Depth - Logger	1296.00	M
System and Miscellaneous			
BS	Bit Size	361.950	MM
BSAL	Borehole Salinity	-50000.00	PPM
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	

Format: CMR\_LOG\_D240    Vertical Scale: 1:240    Graphics File Created: 07-Mar-2007 13:59

## OP System Version: 14C0-302

MCM

APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNCS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

## Input DLIS Files

DEFAULT	APS_TLD_MCFL_CNL_119LUP	FN:135	PRODUCER	07-Mar-2007 06:12	1172.7 M	779.1 M
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## Output DLIS Files

DEFAULT	APS_TLD_MCFL_CNL_154PUP	FN:170	PRODUCER	07-Mar-2007 13:59		
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**Schlumberger**

**MAIN PASS:  
LQC CMR**

MAXIS Field Log

Company: \_\_\_\_\_ Well: \_\_\_\_\_

## Input DLIS Files

DEFAULT	APS TLD MCFL CNL 128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
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# Output DLIS Files

DEFAULT	APS_TLD_MCFL_CNL_155PUP	FN:171	PRODUCER	07-Mar-2007 14:06	1295.2 M	628.9 M
CUST	APS_TLD_MCFL_CNL_155PUP	FN:172	PRODUCER	07-Mar-2007 14:06	1295.2 M	628.9 M

## CMR DEPTH LOG REPORT

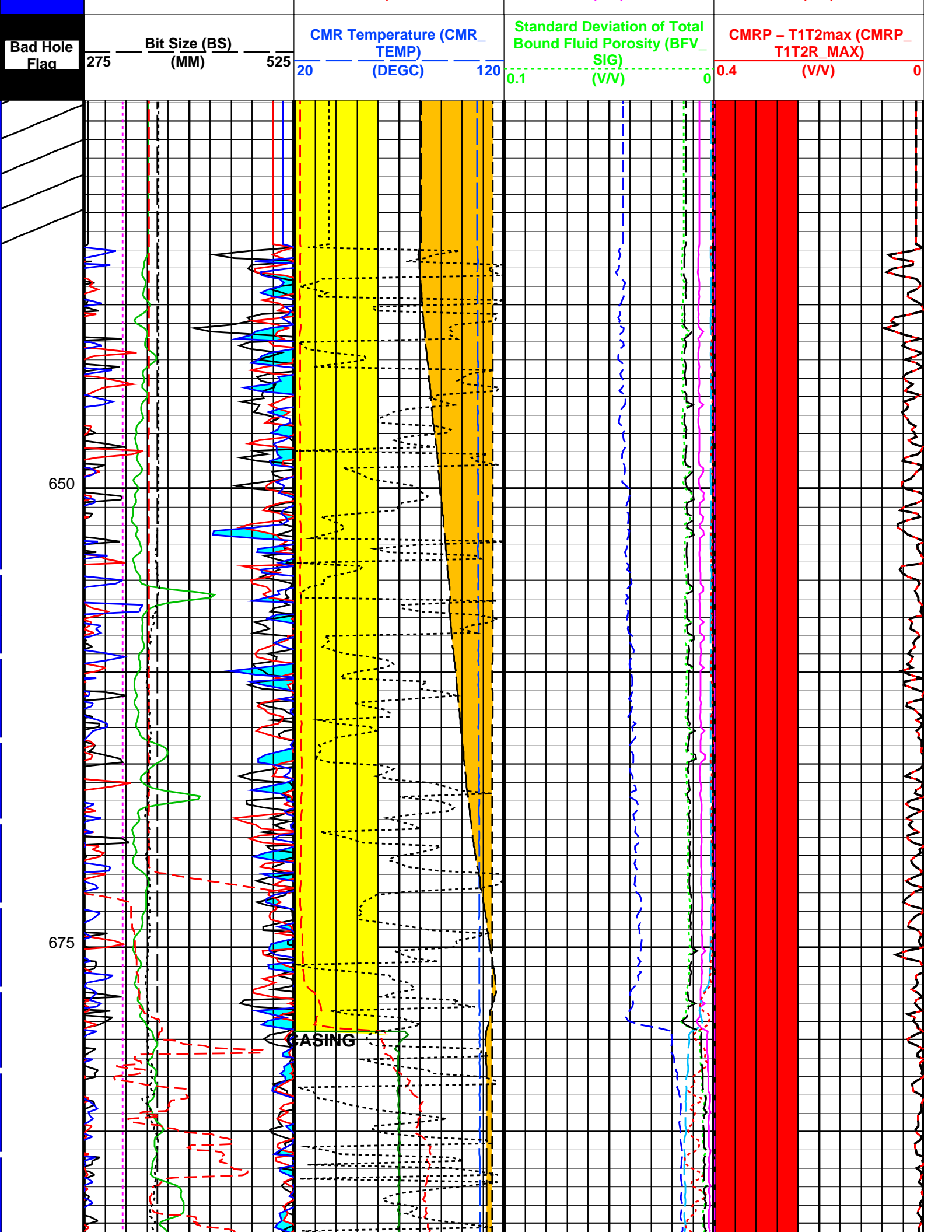
### PARAMETER SUMMARY

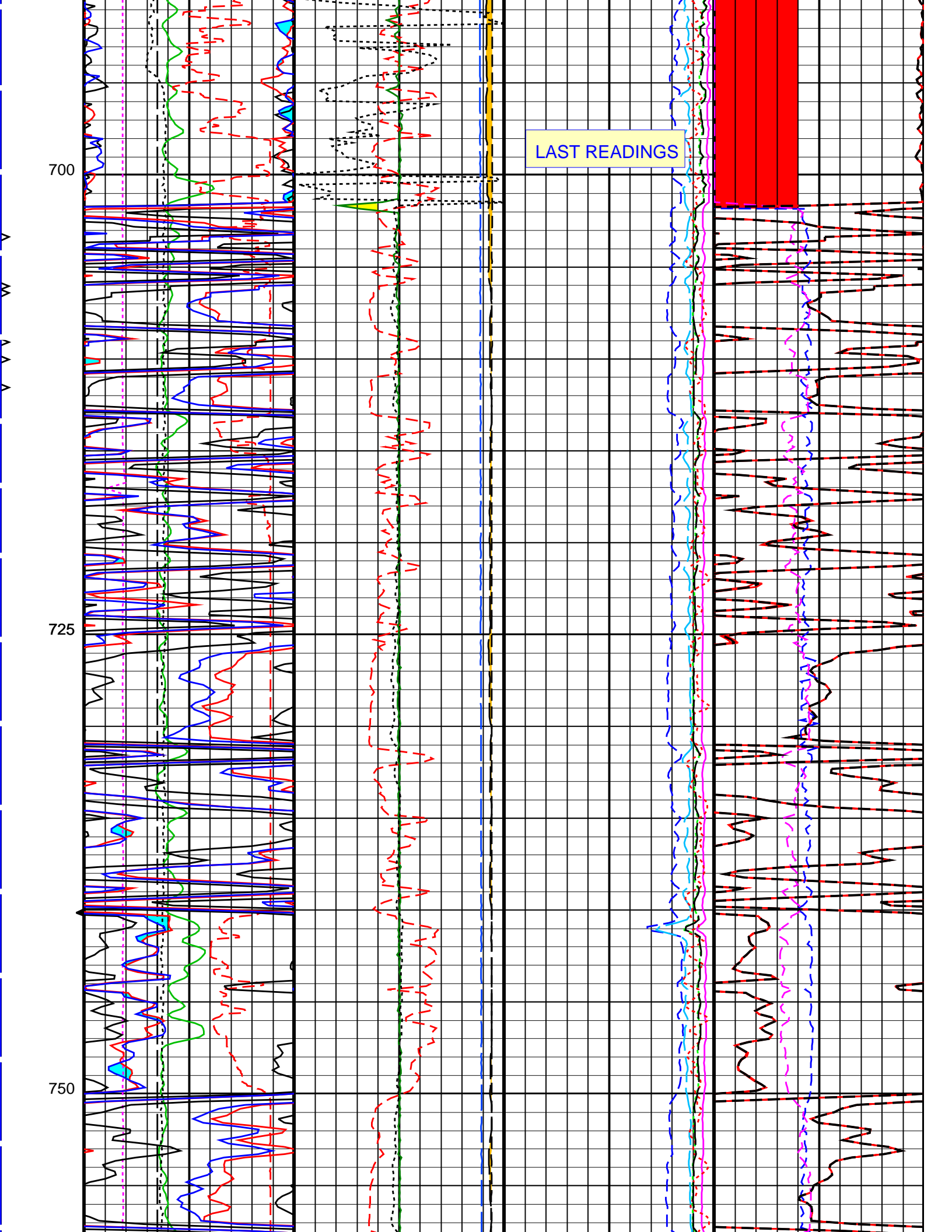
Tool Type: CMR-Plus	Cart. Number: 202	Sonde Number: 182	
Kit Number: 28	DHC Version : 16.4	DSP Version : 13	SP Version : 2062001
Mode: Expert Depth Log – B Mode		LFST Freq(khz) : 2284	LFST Temp(degc) : 13.41
Log Direction: Up	Polarization Correction: On	EPM: Yes	EPM T1/T2: Auto
Despiking: Off	High Res: Off	KBFV: Off	DMRP: Off
Echo Spacing(us):	(200 200)		
Polarization Times(sec) for:	T1=1s: (infinity 0.02 )	T1=3s: (9.214 0.02 )	T1=5s: (7.648 0.02 )
Number of Echoes:	(1800 30)		
Repetition:	(1 10)	Duty Cycle (highest): 0.0282	
Regularization:	Auto		
T2 Min(msec): 0.3	T2 Max(msec): 3000	T2 Cutoff(msec): 33	T1/T2: 2
Number of Components: 30	Downhole Stacking: 3	Uphole Stacking: 1	First Echo Used: No
Multiple T2 Cutoffs(msec):	(0.3 1 3 10 33 100 300 1000 3000)		
Sample Int.(in): 7.5	Req Log Speed (f/h): 900		

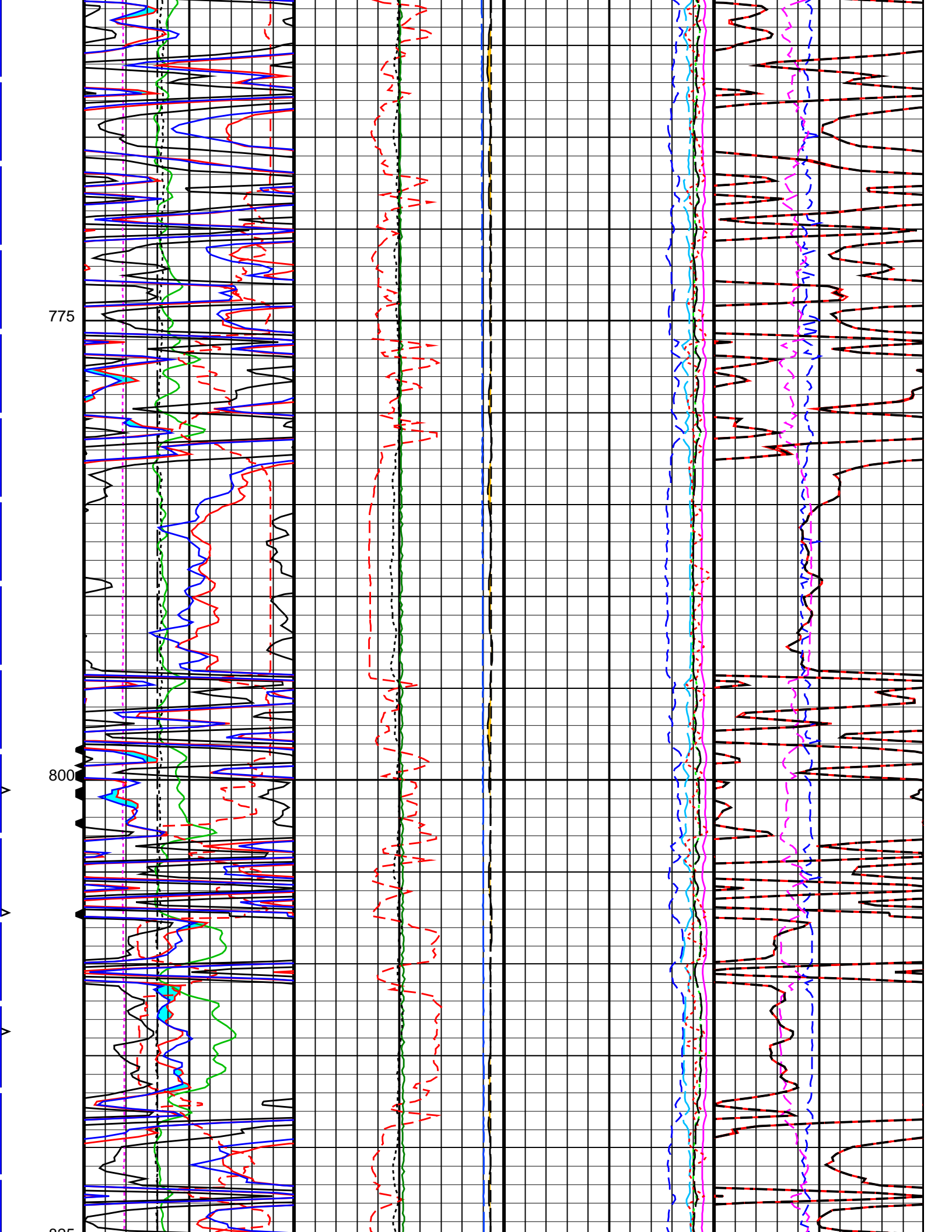
### PIP SUMMARY

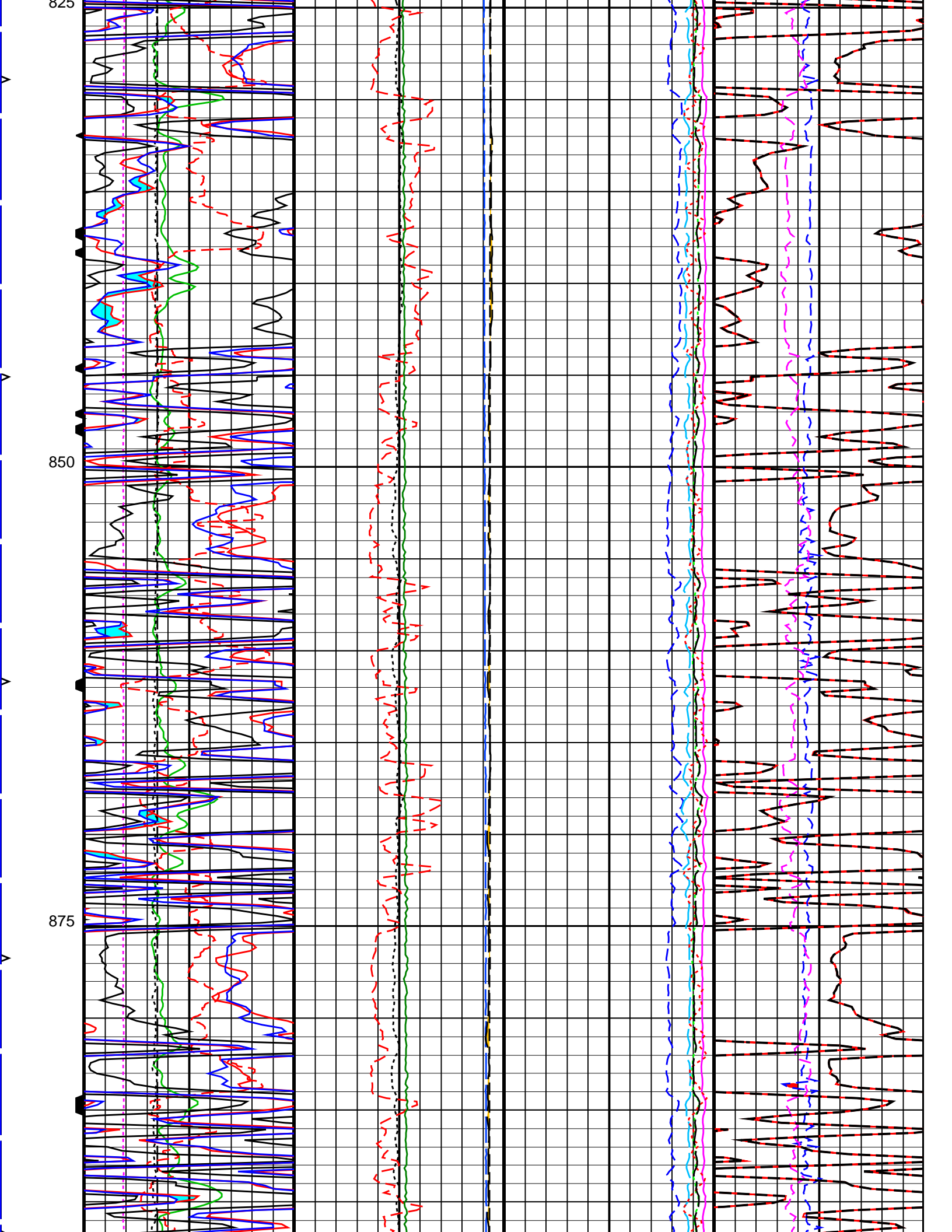
Time Mark Every 60 S

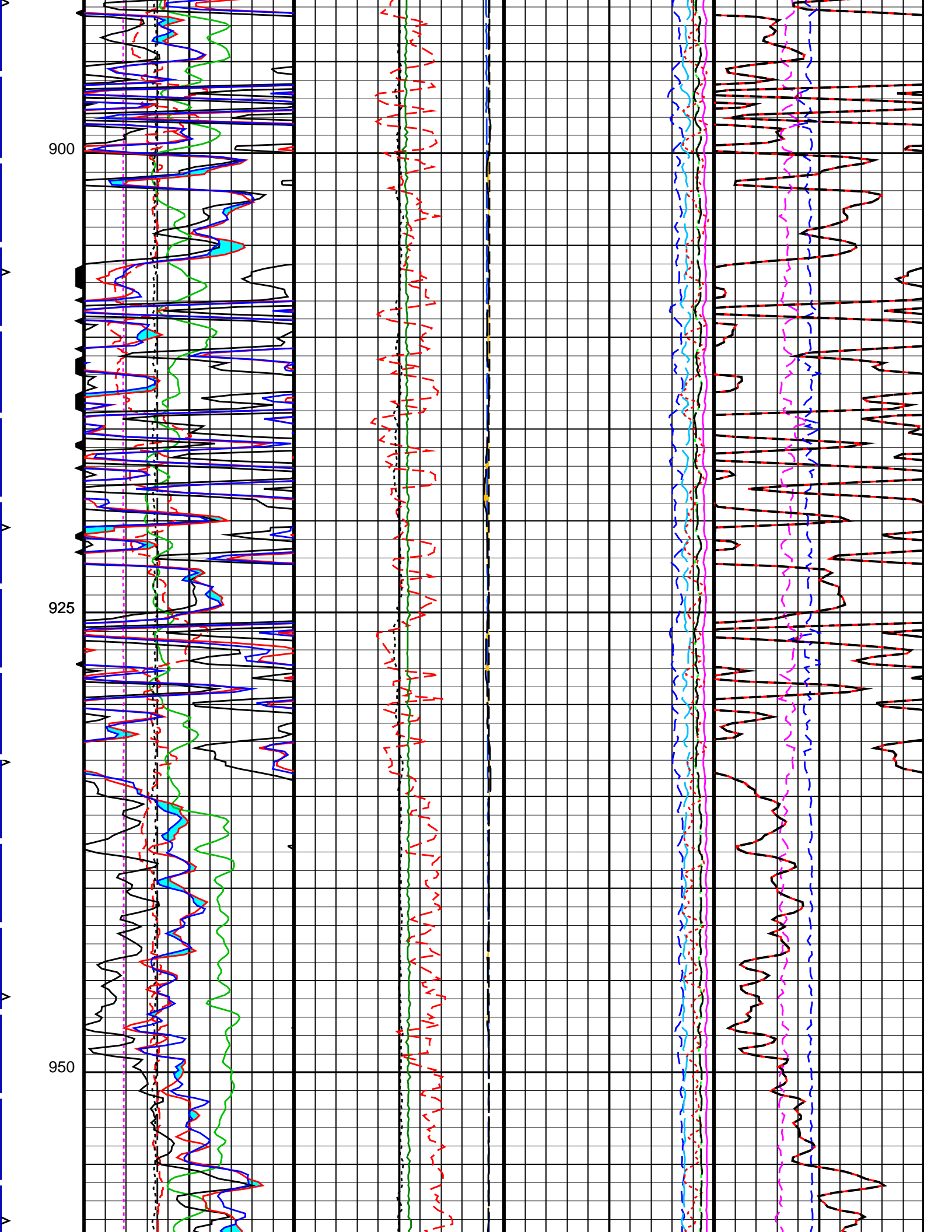
	Window Porosity 3 (CMR_RAW_PHI[2]) 0.4 (V/V) 0			
	Window Porosity 2 (CMR_RAW_PHI[1]) 0.4 (V/V) 0	Delta B0 Caution	Noise Out of Tolerance	
	Window Porosity 1 (CMR_RAW_PHI[0]) 0.4 (V/V) 0	ALF Frequency Correction	Caution Moderate Noise	CMRP max to min
	Tension (TENS) 25000 (N) 0	Operating Frequency (FREQ_OP) 2100 (KHZ) 2300	Standard Deviation of Total CMR Porosity (TCMR_SIG) 0.1 (V/V) 0	HV Loaded Below Limit
	Window Porosity 2 to 3	Signal Phase (SPHASE[0]) -180 (DEG) 180	Tool WSUM Noise (NOISE_TOOL_WSUM[0]) 0.1 (V/V) 0	Total CMR Porosity from WT1 (TCMR_MW[0]) 0.4 (V/V) 0
Tuning Mode (TUNING_MODE) -1 (---- 3)	HILT Caliper (HCAL) 275 (MM) 525	Frequency without ALF (FREQ_WO_ALF) 2100 (KHZ) 2300	Tool Hardware Noise (NOISE_TOOL[0]) 0.1 (V/V) 0	High Voltage Peak Current (HV_PEAK_CUR) 0 (MA) 10000
(NO_UPDATE_COUNT) 0 (----10)	Gamma Ray (GR) 0 (GAPI) 150	Delta B0 (DELTA_B0) -0.5 (MTES) 0.5	Noise per Echo (NOISE_ENV[0]) 0.1 (V/V) 0	High Voltage When Loaded (HV_LOADED) 220 (V) 270
Insuff. WT Flag	Cable Speed (CS) 0 (M/HR) 1500	CMR System Gain (CMR_GAIN) 0 (---- 1	Standard Deviation of Free Fluid Porosity (CMFF_SIG) 0.1 (V/V) 0	CMRP – T1T2min (CMRP_T1T2R_MIN) 0.4 (V/V) 0

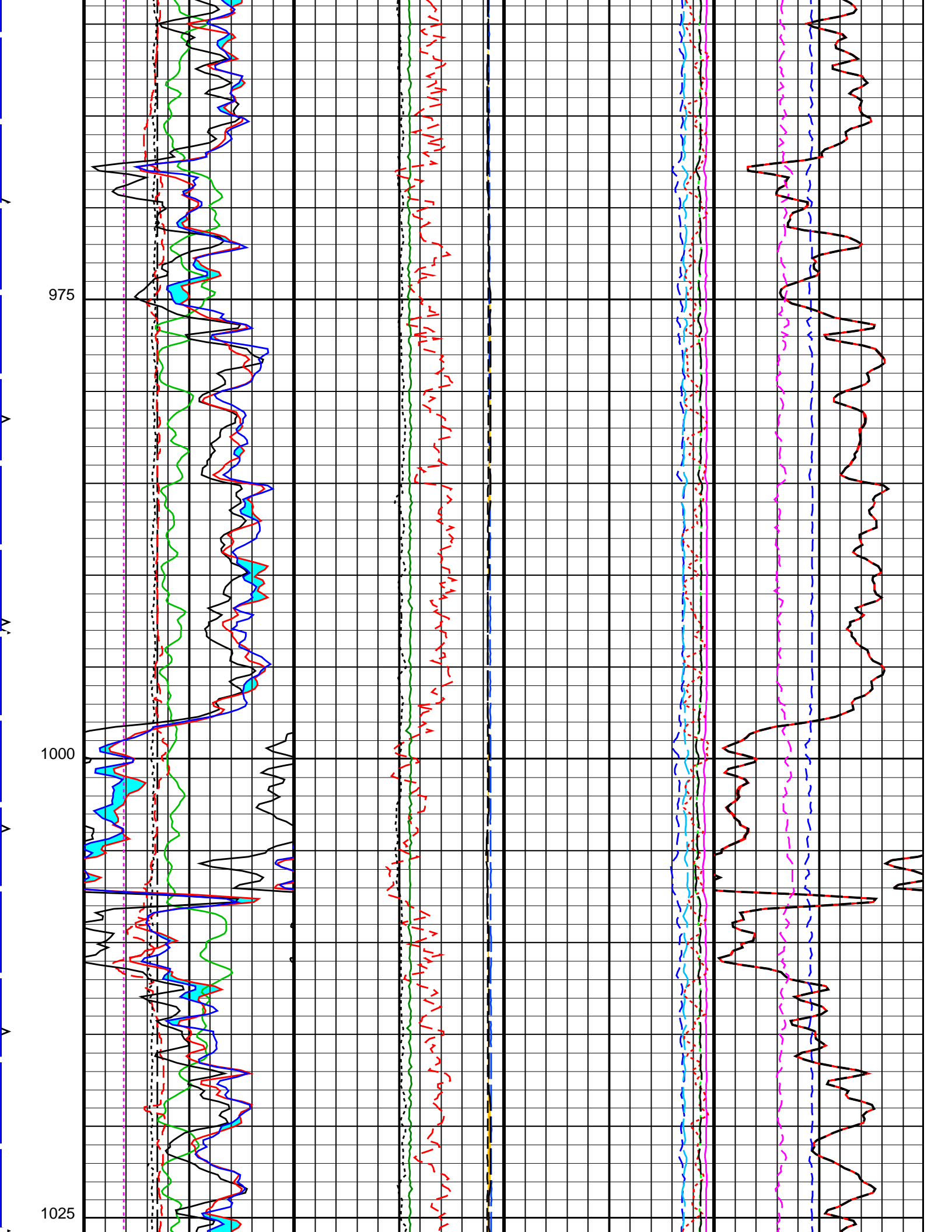






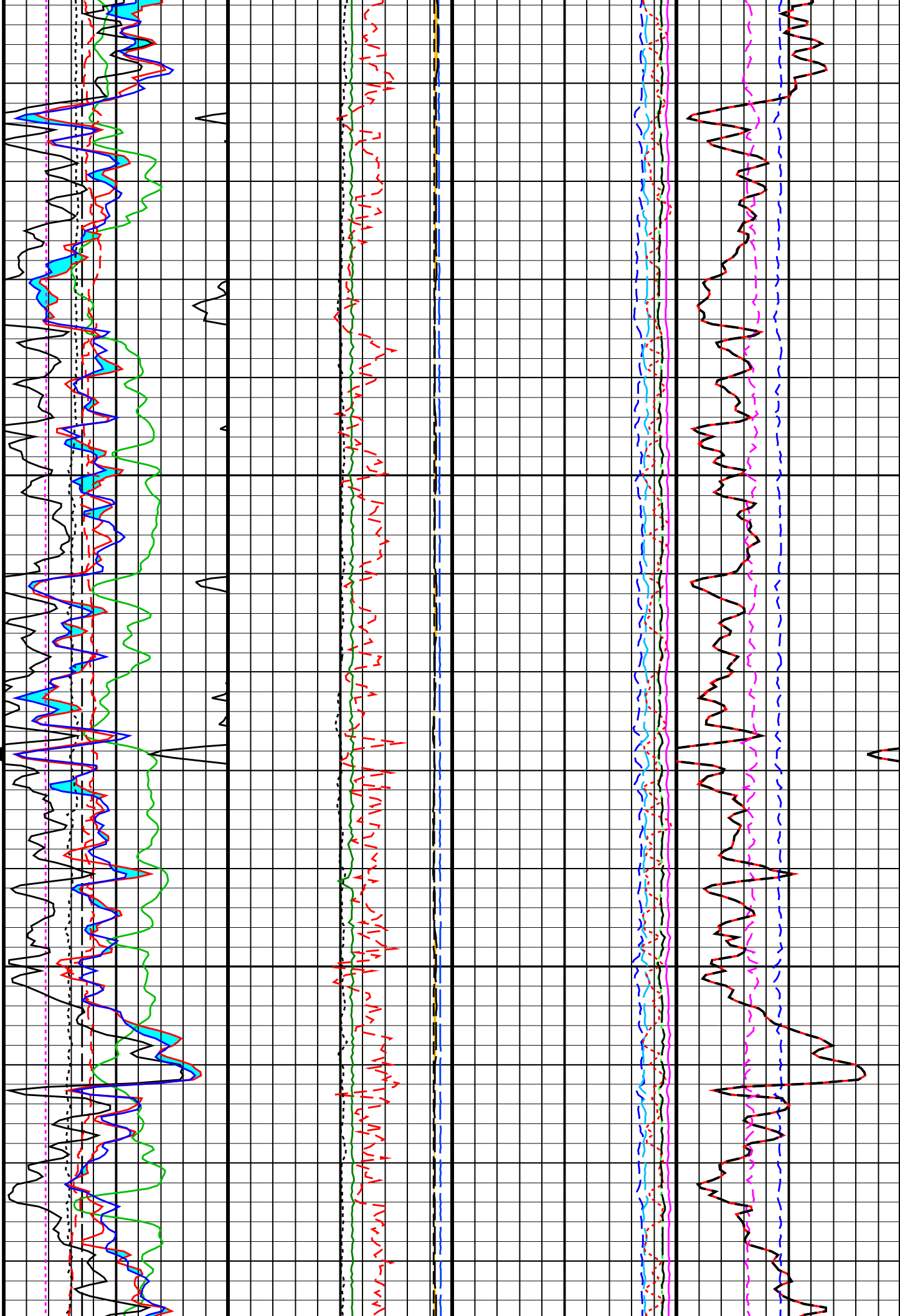






1050

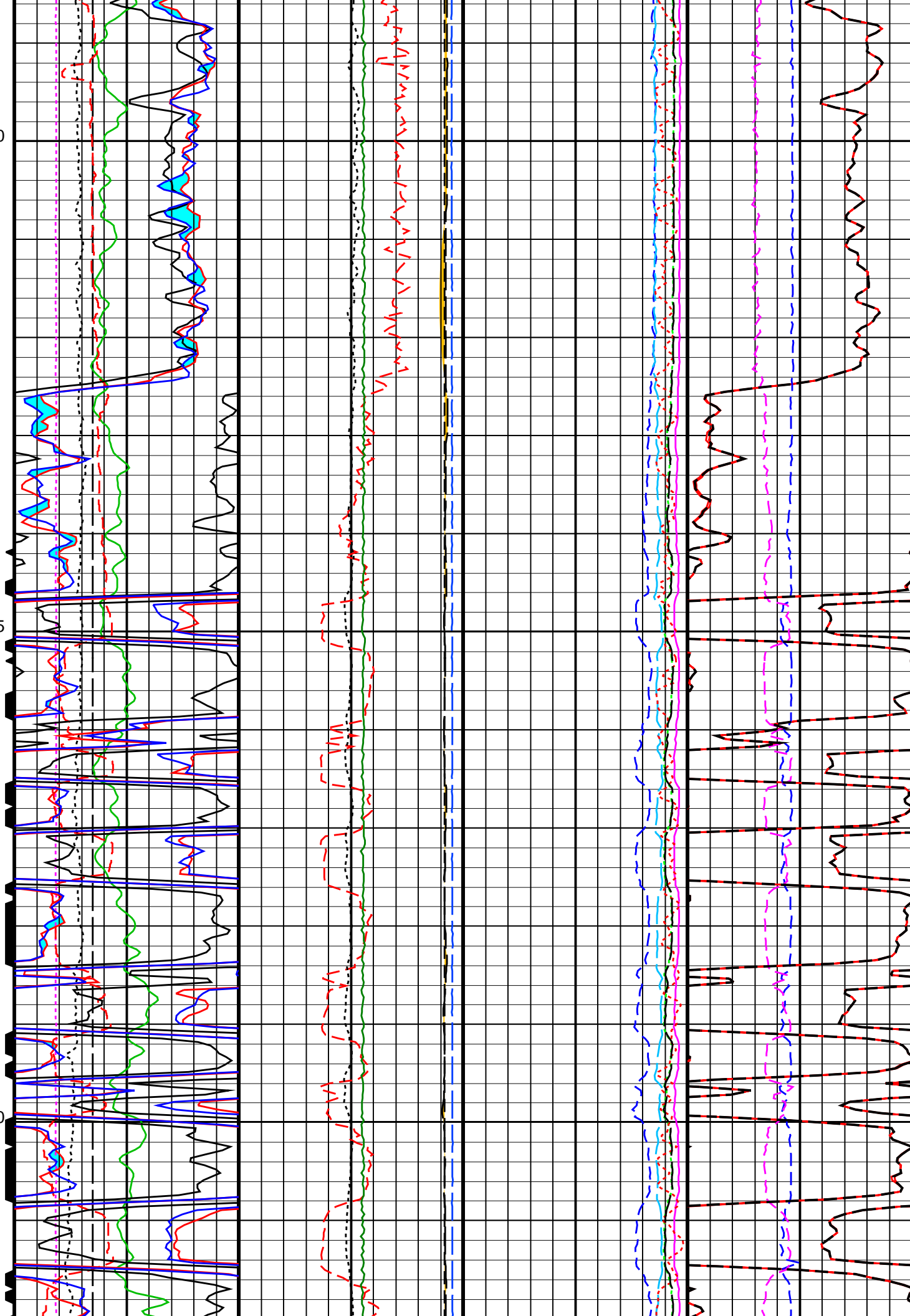
1075

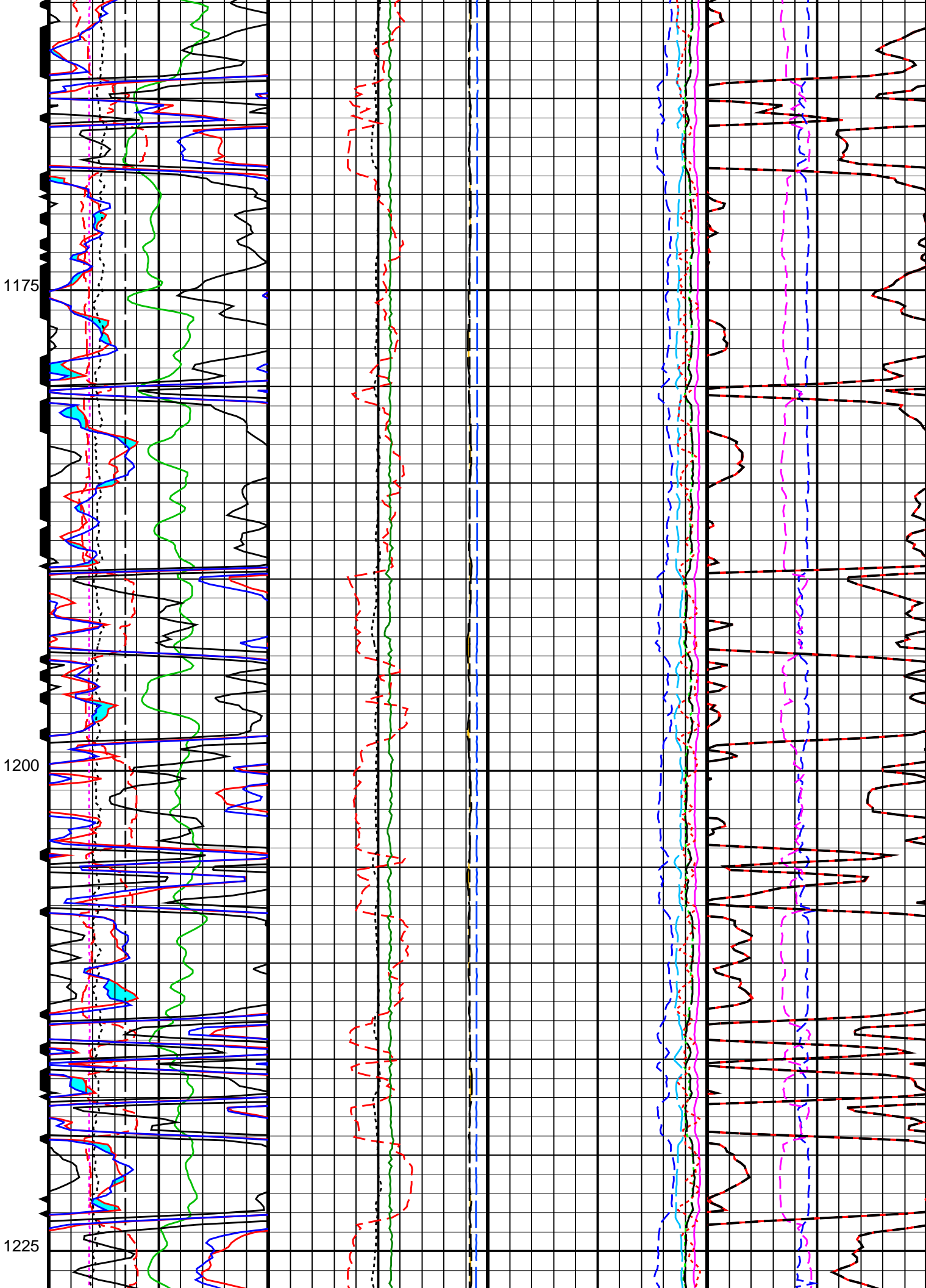


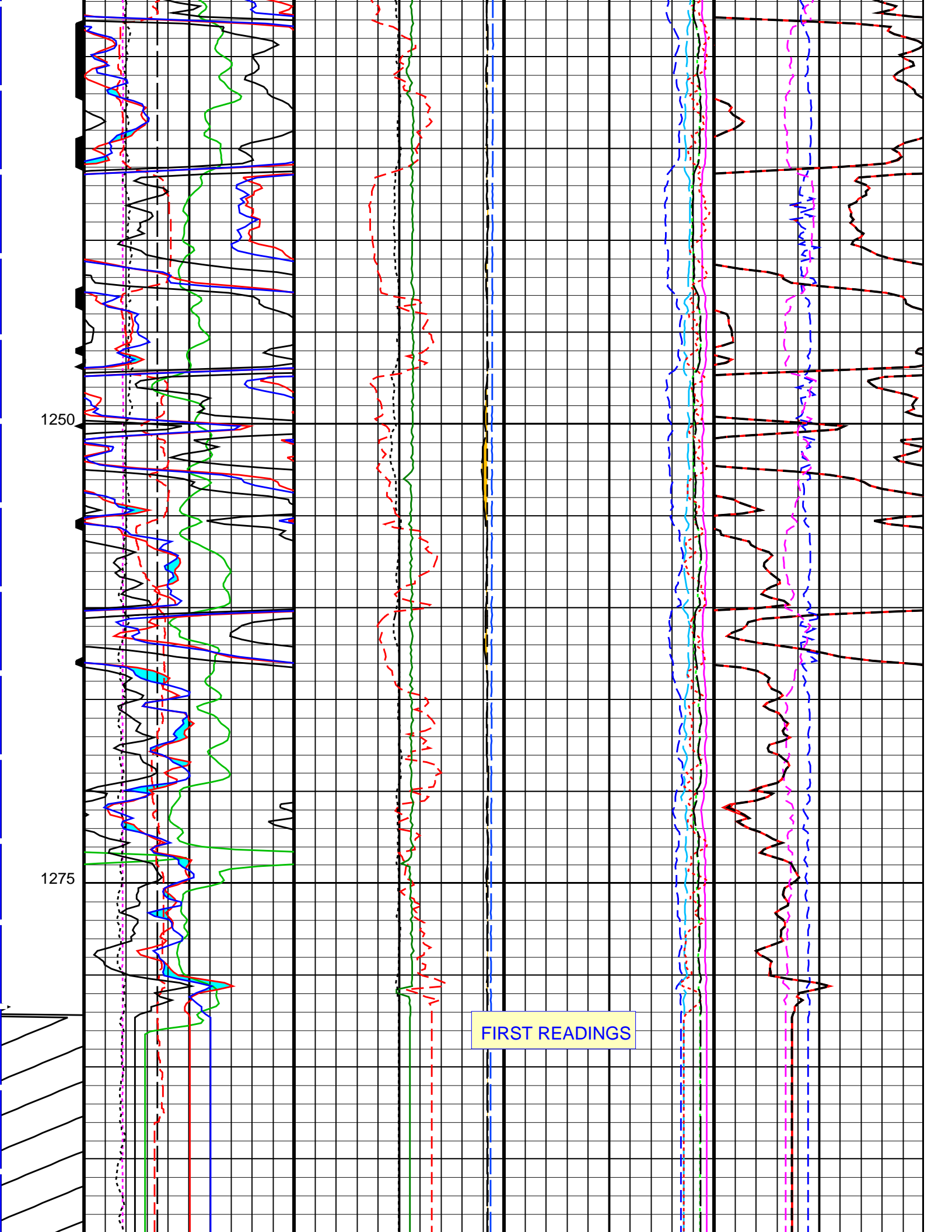
1100

1125

1150







Bad Hole Flag	Bit Size (BS) (MM)		CMR Temperature (CMR_TEMP) (DEGC)		Standard Deviation of Total Bound Fluid Porosity (BFV_SIG) (V/V)		CMRP - T1T2max (CMRP_T1T2R_MAX) (V/V)	
	275	525	20	120	0.1	0	0.4	0
Insuff. WT Flag	Cable Speed (CS) (M/HR)		CMR System Gain (CMR_GAIN) (-----)		Standard Deviation of Free Fluid Porosity (CMFF_SIG) (V/V)		CMRP - T1T2min (CMRP_T1T2R_MIN) (V/V)	
	0	1500	0	1	0.1	0	0.4	0
(NO_UPDATE_COUNT) 0 (-----10)	Gamma Ray (GR) (GAPI)		Delta B0 (DELTA_B0) (MTES)		Noise per Echo (NOISE_ENV[0]) (V/V)		High Voltage When Loaded (HV_LOADED) (V)	
	0	150	-0.5	0.5	0.1	0	220	270
Tuning Mode (TUNING_MODE) -1 (-----3)	HILT Caliper (HCAL) (MM)		Frequency without ALF (FREQ_WO_ALF) (KHZ)		Tool Hardware Noise (NOISE_TOOL[0]) (V/V)		High Voltage Peak Current (HV_PEAK_CUR) (MA)	
	275	525	2100	2300	0.1	0	0	10000
	Window Porosity 2 to 3		Signal Phase (SPHASE[0]) (DEG)		Tool WSUM Noise (NOISE_TOOL_WSUM[0]) (V/V)		Total CMR Porosity from WT1 (TCMR_MW[0]) (V/V)	
			-180		0.1		0.4	
	Tension (TENS) (N)		Operating Frequency (FREQ_OP) (KHZ)		Standard Deviation of Total CMR Porosity (TCMR_SIG) (V/V)		HV Loaded Below Limit	
	25000		0		0.1		0	
	Window Porosity 1 (CMR_RAW_PHI[0]) (V/V)		ALF Frequency Correction		Caution Moderate Noise		CMRP max to min	
	0.4		0					
	Window Porosity 2 (CMR_RAW_PHI[1]) (V/V)		Delta B0 Caution		Noise Out of Tolerance			
	0.4		0					
	Window Porosity 3 (CMR_RAW_PHI[2]) (V/V)							
		0.4						

PIP SUMMARY								
Time Mark Every 60 S								

Parameters		
DLIS Name	Description	Value
System and Miscellaneous		
BS	Bit Size	361.950 MM
DO	Depth Offset for Playback	1.4 M
DORL	Depth Offset for Repeat Analysis	0.0 M
PP	Playback Processing	RECOMPUTE

Format: CMRT_LQC_DEPTH_LOG	Vertical Scale: 1:240	Graphics File Created: 07-Mar-2007 14:06
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OP System Version: 14C0-302			
MCM			
APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

Input DLIS Files						
DEFAULT	APS_TLD_MCFL_CNL_128LUP	FN:145	PRODUCER	07-Mar-2007 09:56	1293.9 M	621.0 M
Output DLIS Files						
DEFAULT	APS TLD MCFL CNL 155PUP	FN:171	PRODUCER	07-Mar-2007 14:06		

Schlumberger

REPEAT PASS:  
LQC CMR

MAXIS Field Log

Company:

Well:

Input DLIS Files						
DEFAULT	APS_TLD_MCFL_CNL_119LUP	FN:135	PRODUCER	07-Mar-2007 06:12	1172.7 M	779.1 M
Output DLIS Files						
DEFAULT	APS_TLD_MCFL_CNL_154PUP	FN:170	PRODUCER	07-Mar-2007 13:59	1172.7 M	784.3 M

CMR DEPTH LOG REPORT

PARAMETER SUMMARY

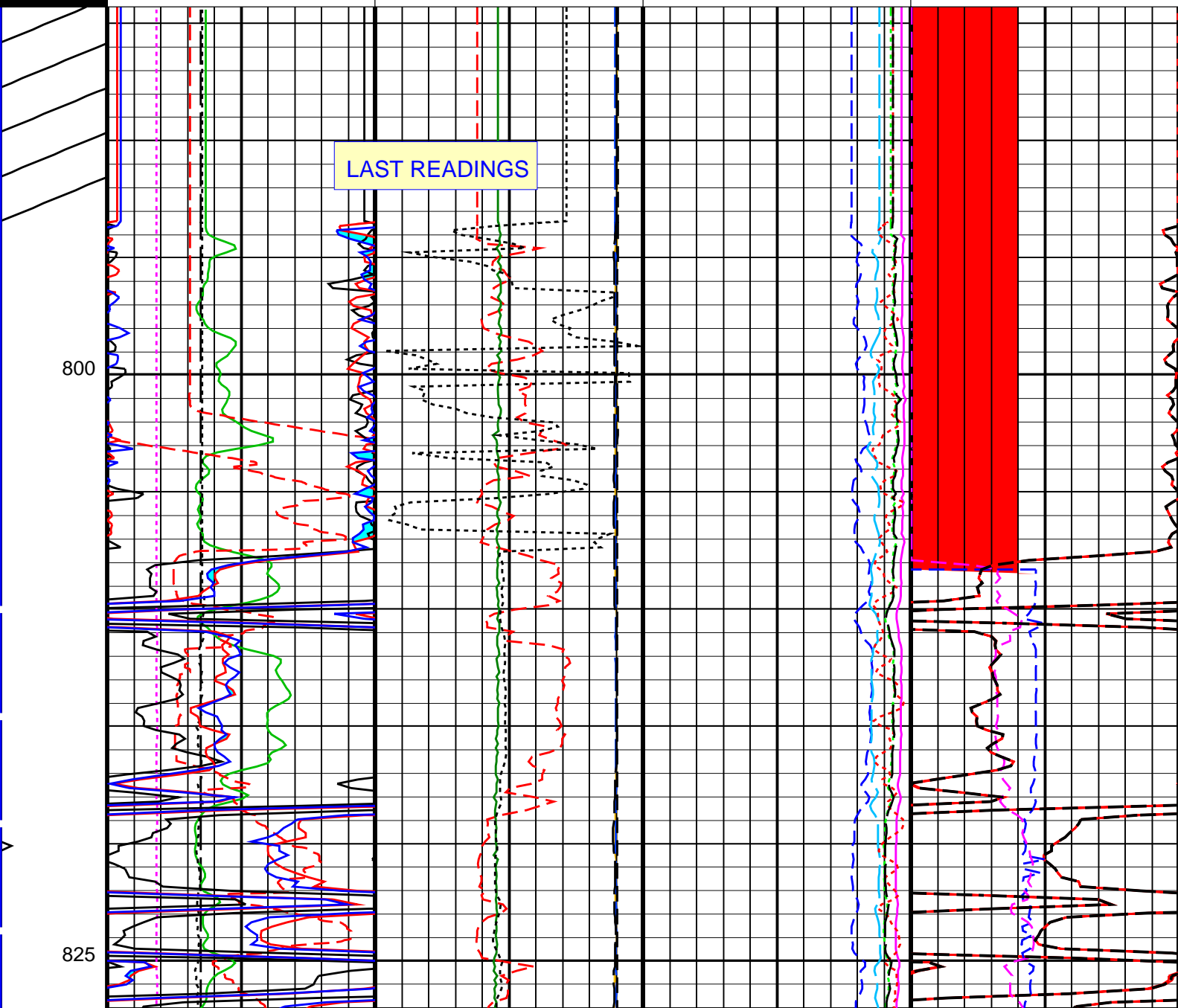
Tool Type: CMR-Plus	Cart. Number: 202	Sonde Number: 182	
Kit Number: 28	DHC Version : 16.4	DSP Version : 13	SP Version : 2062001
Mode: Expert Depth Log – B Mode		LFST Freq(khz) : 2279	LFST Temp(degc) : 11.37
Log Direction: Up	Polarization Correction: On	EPM: Yes	EPM T1/T2: Auto
Despiking: Off	High Res: Off	KBFV: Off	DMRP: Off
Echo Spacing(us):	(200 200)		
Polarization Times(sec) for:	T1=1s: (infinity 0.02 )	T1=3s: (9.214 0.02 )	T1=5s: (7.648 0.02 )
Number of Echoes:	(1800 30)		
Repetition:	(1 10)	Duty Cycle (highest): 0.0282	
Regularization:	Auto		
T2 Min(msec): 0.3	T2 Max(msec): 3000	T2 Cutoff(msec): 33	T1/T2: 2
Number of Components: 30	Downhole Stacking: 3	Uphole Stacking: 1	First Echo Used: No
Multiple T2 Cutoffs(msec):	(0.3 1 3 10 33 100 300 1000 3000)		
Sample Int.(in): 7.5	Req Log Speed (f/h): 900		

PIP SUMMARY

Time Mark Every 60 S

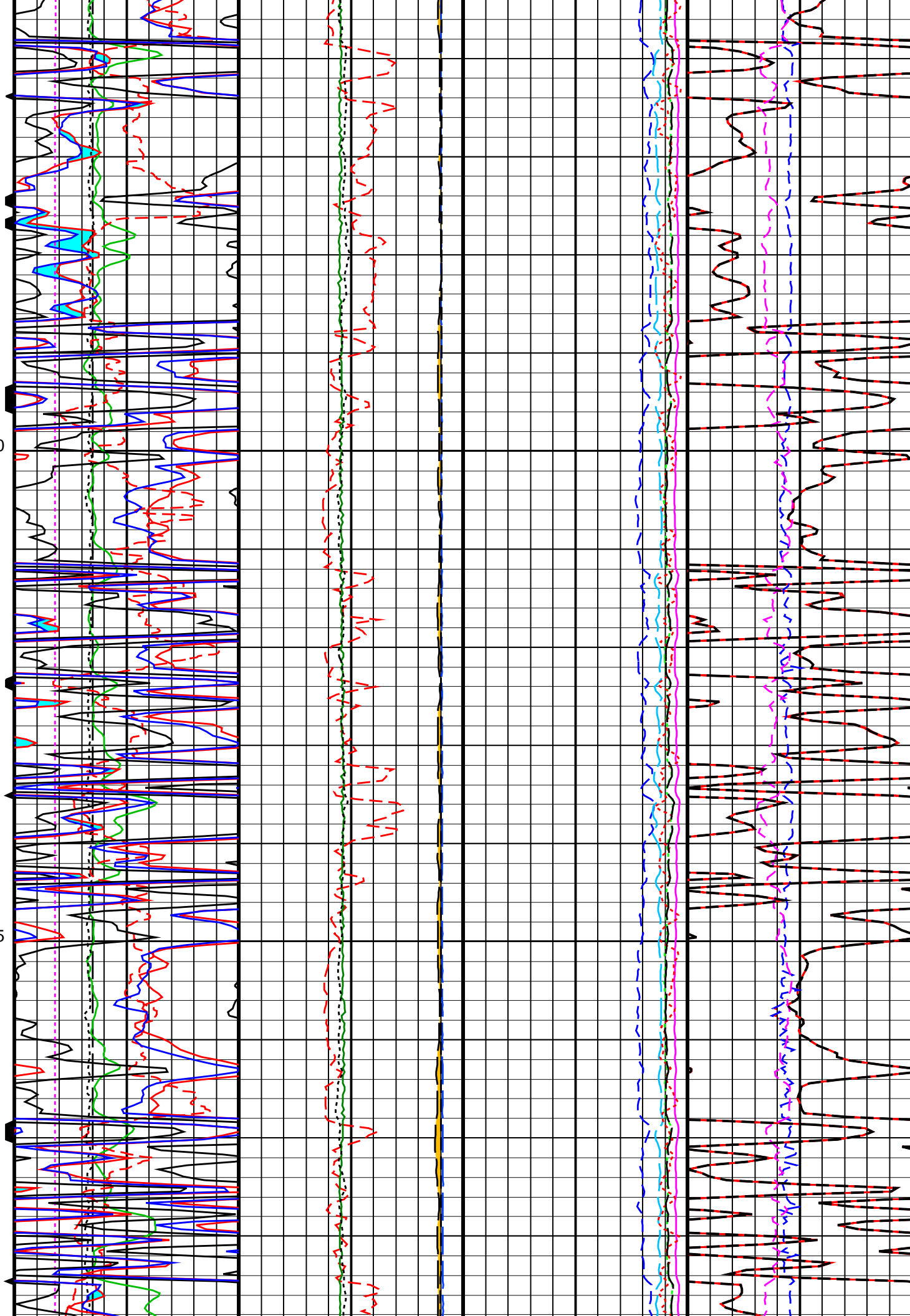
Window Porosity 3 (CMR_RAW_PHI[2])			
0.4 (V/V) 0			
Window Porosity 2 (CMR_RAW_PHI[1])	Delta B0 Caution	Noise Out of Tolerance	
0.4 (V/V) 0			
Window Porosity 1 (CMR_RAW_PHI[0])	ALF Frequency Correction	Caution Moderate Noise	CMRP max to min
0.4 (V/V) 0			
Tension (TENS)	Operating Frequency (FREQ_OP)	Standard Deviation of Total CMR Porosity (TCMR_SIG)	HV Loaded Below Limit

	25000 (N)	2100 (KHZ)	2300 (V/V)	0
	Window Porosity 2 to 3	Signal Phase (SPHASE[0]) (DEG)	Tool WSUM Noise (NOISE_TOOL_WSUM[0]) (V/V)	Total CMR Porosity from WT1 (TCMR_MW[0]) (V/V)
		-180 180	0.1 0	0.4 0
Tuning Mode (TUNING_MODE) -1 (---- 3)	HILT Caliper (HCAL) (MM) 275 525	Frequency without ALF (FREQ_WO_ALF) (KHZ) 2100 2300	Tool Hardware Noise (NOISE_TOOL[0]) (V/V) 0.1 0	High Voltage Peak Current (HV_PEAK_CUR) (MA) 0 10000
(NO_UPDATE_COUNT) 0 (----10)	Gamma Ray (GR) (GAPI) 0 150	Delta B0 (DELTA_B0) (MTES) -0.5 0.5	Noise per Echo (NOISE_ENV[0]) (V/V) 0.1 0	High Voltage When Loaded (HV_LOADED) (V) 220 270
Insuff. WT Flag	Cable Speed (CS) (M/HR) 0 1500	CMR System Gain (CMR_GAIN) (----) 0 1	Standard Deviation of Free Fluid Porosity (CMFF_SIG) (V/V) 0.1 0	CMRP - T1T2min (CMRP_T1T2R_MIN) (V/V) 0.4 0
Bad Hole Flag	Bit Size (BS) (MM) 275 525	CMR Temperature (CMR_TEMP) (DEGC) 20 120	Standard Deviation of Total Bound Fluid Porosity (BFV_SIG) (V/V) 0.1 0	CMRP - T1T2max (CMRP_T1T2R_MAX) (V/V) 0.4 0



850

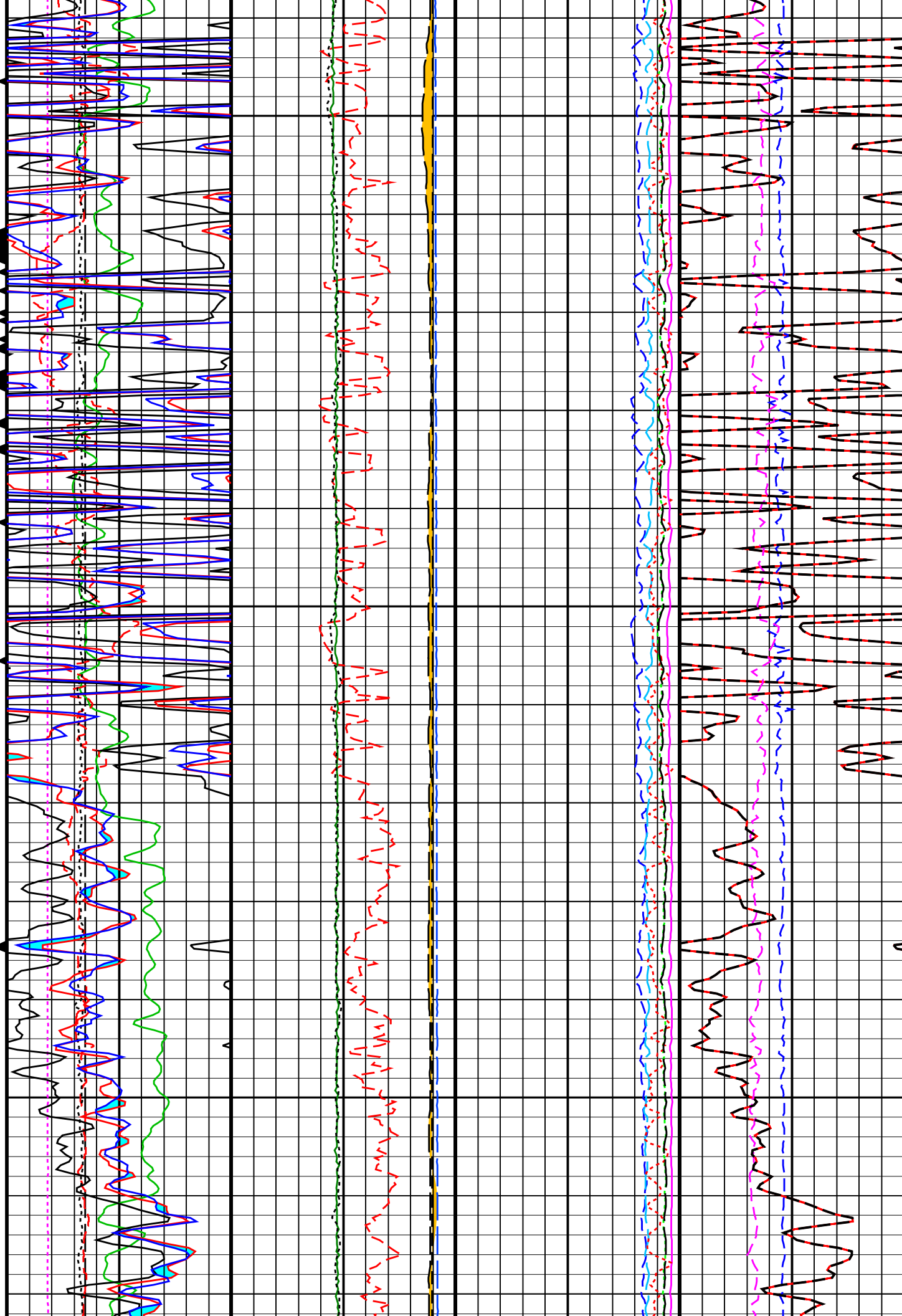
875

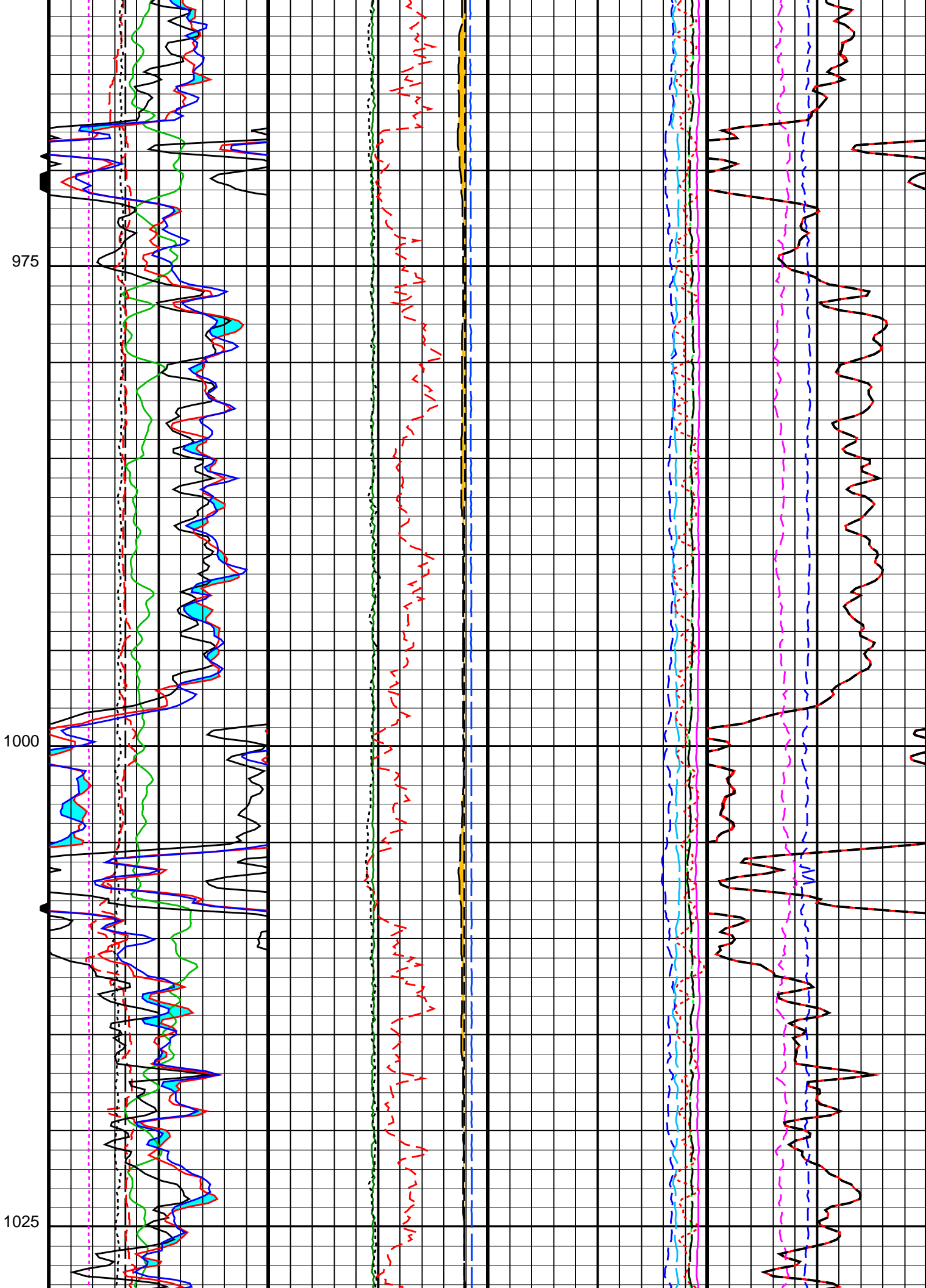


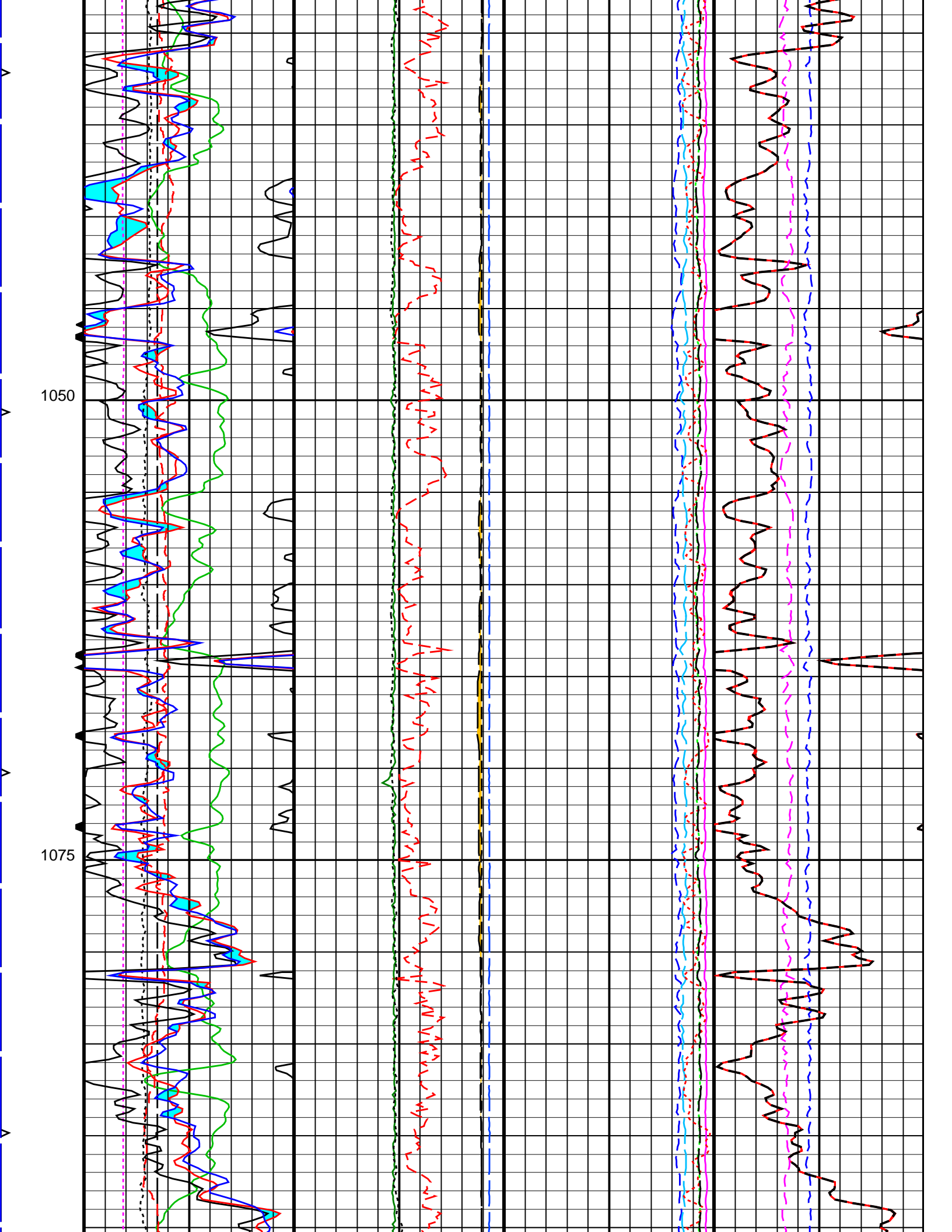
900

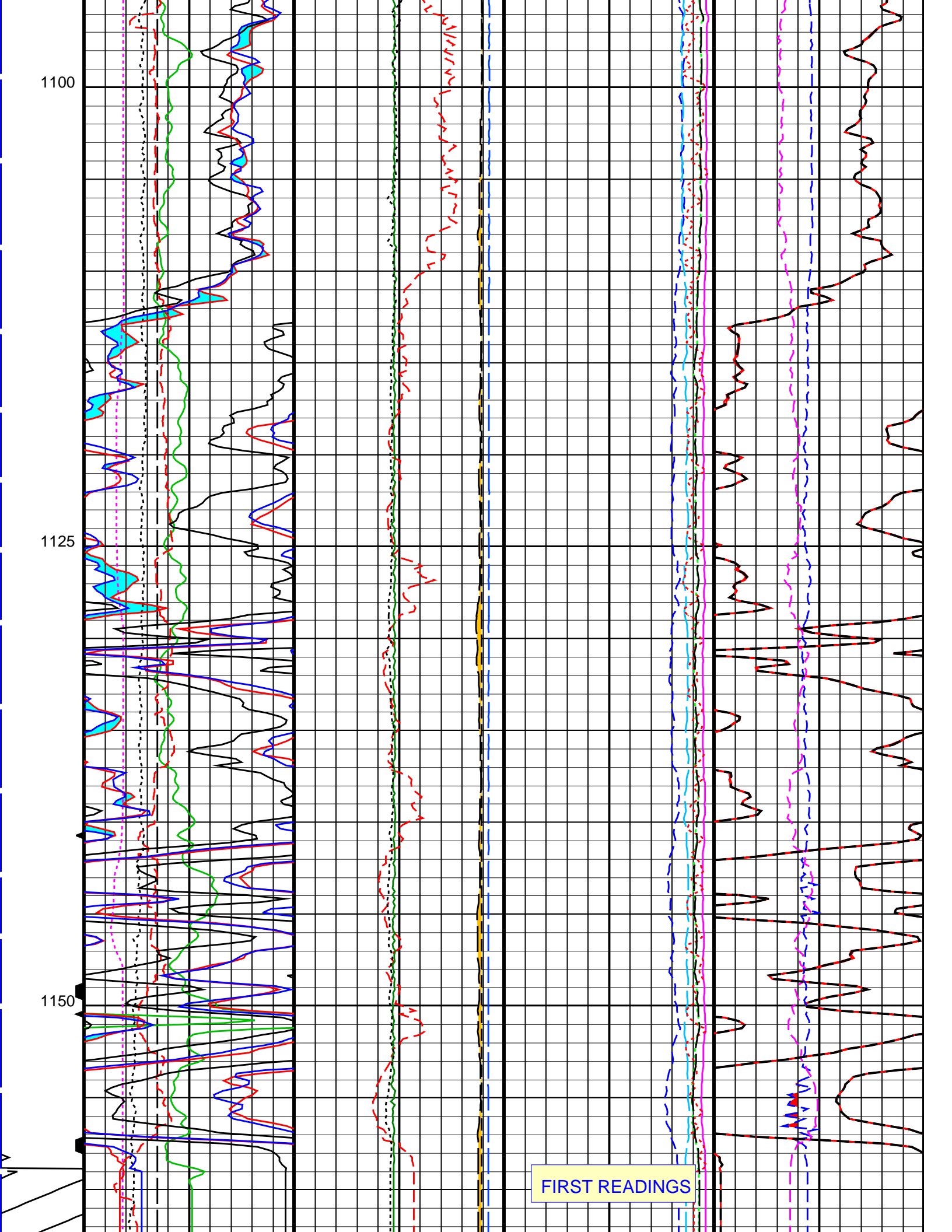
925

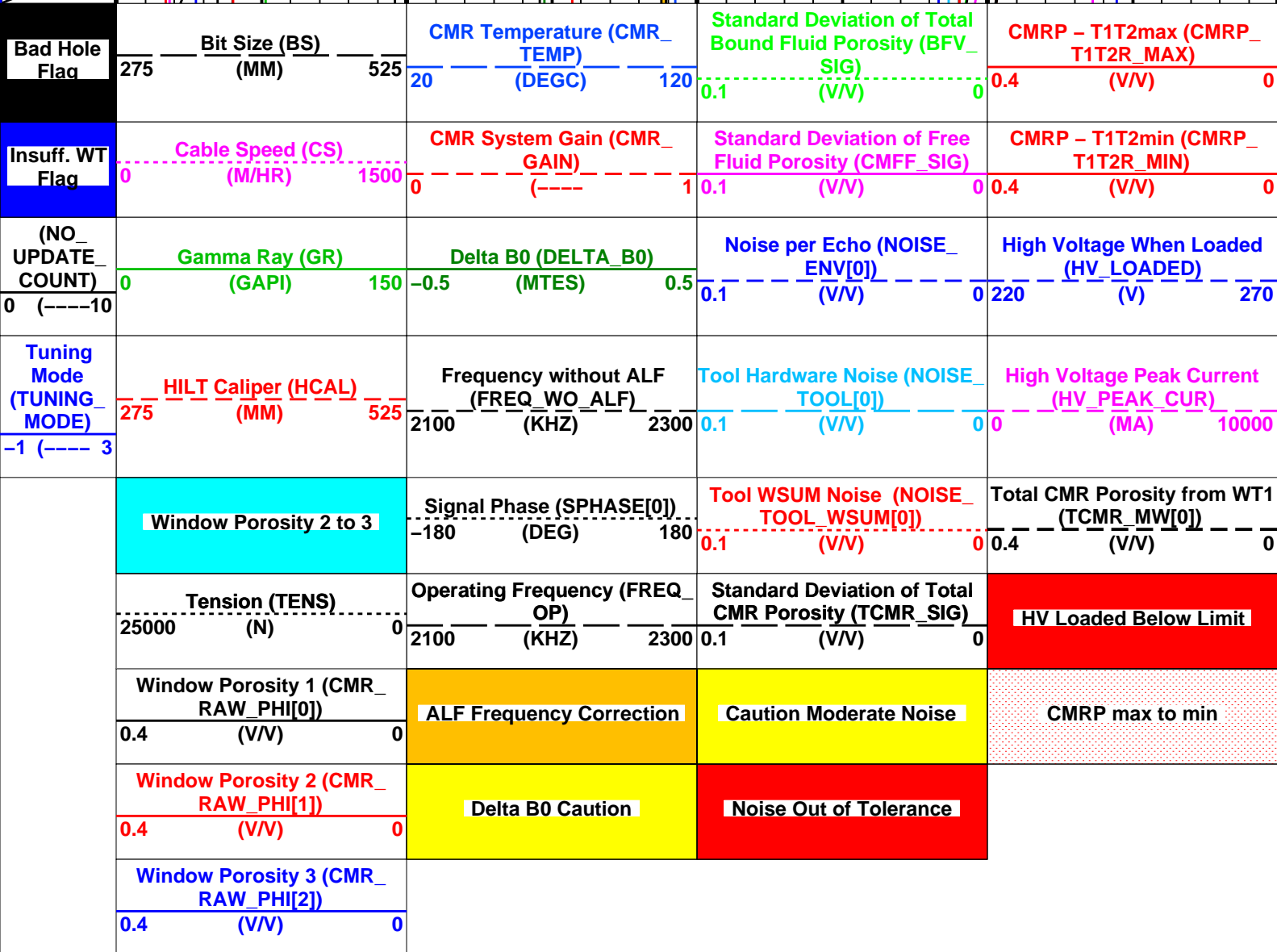
950











**Time Mark Every 60 S**

Format: CMRT\_LQC\_DEPTH\_LOG      Vertical Scale: 1:240      Graphics File Created: 07-Mar-2007 13:59

APS-C	14C0-302	HILTH-FTB	14C0-302
CMRT-B	14C0-302	PPC2-B	SKK-3060-PPCB
ECS-A	14C0-302	ECC-B	14C0-302
HNGC-B	14C0-302	HNGS-BA	14C0-302
PPC1-B	SKK-3060-PPCB	EDTC-B	SKK-3066-EDTCB

## Input DLIS Files

DEFAULT APS\_TLD\_MCFL\_CNL\_119LUP FN:135 PRODUCER 07-Mar-2007 06:12 1172.7 M 779.1 M

## Output DLIS Files

DEFAULT APS\_TLD\_MCFL\_CNL\_154PUP FN:170 PRODUCER 07-Mar-2007 13:59

**Schlumberger**

## TUNE WORD LFST PLOTS

MAXIS Field Log

### CMRT LARMOR FREQUENCY SEARCH REPORT – Wed Mar 07 09:44:14 2007

#### Search Accepted

ALF Offset: value, std dev (deg): 18.3 , 0.19  
Offset relative to master value (deg): 4.7

#### Search Results:

Larmor Frequency (kHz): **2284**  
Temperature (degc): **13.4**

#### Search Parameters:

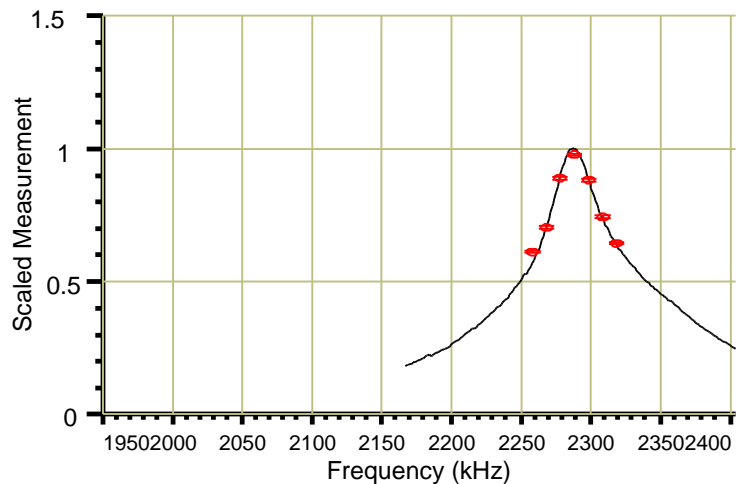
Central Frequency (kHz): 2285  
Central Frequency Selection: Current Freq  
Echo Count Used: 71

#### Measured Data:

Frequency	Amplitude	RMS Noise	Std Deviation
2255	248.00	4.27	3.9841
2265	285.00	3.23	3.9731
2275	360.00	3.40	3.9678
2285	396.00	3.84	3.9620
2295	357.00	4.17	3.9716
2305	301.00	3.51	3.9751
2315	261.00	5.07	3.9745

#### Related Data:

Depth(m): 1138.2  
Average Cable Speed (ft/h): 89.1  
Delta Temperature (degc): 0.1  
Measurement Time (sec): 32.0  
HV Peak Current (mA): 3465.5  
Previous LFST Freq (at Temp): 2270  
Frequency Std Deviation (kHz): 0.27  
Number of Echoes: 300  
Polarization Time (sec): 0.400



Freq estimate from Temp (kHz): 2253  
Tune Table Offset (kHz): 2.9  
Sonde Number: 182  
Cartridge Number: 202

#### Calibration and Check Summary

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

Master: 12-Jan-2007 20:56		Before: 6-Mar-2007 16:13						
Near Det Bkg Cntrate	30.00	25.72	25.63	N/A	N/A	N/A	CPS	
Far Det Bkg Cntrate	30.00	26.28	26.00	N/A	N/A	N/A	CPS	
Array-1 Det Bkg Cntrate	30.00	26.42	26.99	N/A	N/A	N/A	CPS	
Array-2 Det Bkg Cntrate	30.00	27.96	27.50	N/A	N/A	N/A	CPS	
Array Therm Det Bkg Cntrate	30.00	24.23	25.50	N/A	N/A	N/A	CPS	
Accelerator-Porosity Tool Wellsite Calibration – Calibration Ratios								
Master: 12-Jan-2007 20:56								
Near/Far Calibration Ratio	0.9250	0.9516	N/A	N/A	N/A	N/A		
Near/Array Calibration Ratio	1.030	0.9853	N/A	N/A	N/A	N/A		
Near/Array Cal Ratio Up/Down	1.000	1.016	N/A	N/A	N/A	N/A		
Accelerator-Porosity Tool Wellsite Calibration – Tank Check								
Master: 12-Jan-2007 20:56								
Array-1 Standoff Porosity	0.1175	0.1131	N/A	N/A	N/A	N/A	V/V	
Array-2 Standoff Porosity	0.1175	0.1119	N/A	N/A	N/A	N/A	V/V	
Average Slowing Down Time	6.000	5.884	N/A	N/A	N/A	N/A	US	
Array-1 SDT Ratio Up/Down	1.000	0.9832	N/A	N/A	N/A	N/A		
Array-2 SDT Ratio Up/Down	1.000	0.9667	N/A	N/A	N/A	N/A		
Sigma Formation	2.750	2.710	N/A	N/A	N/A	N/A	M-1	
Accelerator-Porosity Tool Wellsite Calibration – CCR7 signal boxes								
Master: 12-Jan-2007 20:56								
Near Detector Plateau Setting	1650	1743	N/A	N/A	N/A	N/A	V	
Far Detector Plateau Setting	2000	2079	N/A	N/A	N/A	N/A	V	
Array Detector Plateau Setting	2000	1972	N/A	N/A	N/A	N/A	V	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Stab Measurement Summary								
Before: 2-Mar-2007 21:28								
BS Window Ratio	0.7427	N/A	0.7435	N/A	N/A	N/A		
BS Window Sum	29280	N/A	29240	N/A	N/A	N/A	CPS	
SS Window Ratio	0.4849	N/A	0.4833	N/A	N/A	N/A		
SS Window Sum	13080	N/A	13060	N/A	N/A	N/A	CPS	
LS Window Ratio	0.3035	N/A	0.2974	N/A	N/A	N/A		
LS Window Sum	1545	N/A	1536	N/A	N/A	N/A	CPS	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Photo-multiplier High Voltages Calibrations								
Before: 2-Mar-2007 21:28								
BS PM High Voltage (Command)	1376	N/A	1352	N/A	N/A	N/A	V	
SS PM High Voltage (Command)	1421	N/A	1410	N/A	N/A	N/A	V	
LS PM High Voltage (Command)	1301	N/A	1310	N/A	N/A	N/A	V	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Crystal Quality Resolutions Calibration								
Before: 2-Mar-2007 21:28								
BS Crystal Resolution	10.78	N/A	10.84	N/A	N/A	N/A	%	
SS Crystal Resolution	8.916	N/A	8.780	N/A	N/A	N/A	%	
LS Crystal Resolution	8.952	N/A	9.048	N/A	N/A	N/A	%	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – MCFL Calibration								
Before: 2-Mar-2007 21:29								
Raw B0 Resistivity	3875	N/A	3870	N/A	N/A	N/A	OHMM	
Raw B1 Resistivity	3830	N/A	3819	N/A	N/A	N/A	OHMM	
Raw B2 Resistivity	3830	N/A	3828	N/A	N/A	N/A	OHMM	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – HILT Caliper Calibration								
Before: 2-Mar-2007 21:51								
HILT Caliper Zero Measurement	254.0	N/A	199.8	N/A	N/A	N/A	MM	
HILT Caliper Plus Measurement	508.0	N/A	382.4	N/A	N/A	N/A	MM	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Detector Calibration								
Before: 2-Mar-2007 21:25								
Gamma Ray Background	30.00	N/A	23.72	N/A	N/A	N/A	GAPI	
Gamma Ray (Jig – Bkg)	185.1	N/A	185.1	N/A	N/A	16.83	GAPI	
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Zero Measurement								
Master: 10-Jan-2007 15:23 Before: 2-Mar-2007 21:23								
CNTC Background	26.53	26.53	26.48	N/A	N/A	3.980	CPS	
CFTC Background	29.66	29.66	29.06	N/A	N/A	4.449	CPS	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Ratio Measurement								
Master: 10-Jan-2007 15:23								
Thermal Near Corr. (Tank)	6031	6292	N/A	N/A	N/A	N/A	CPS	
Thermal Far Corr. (Tank)	2793	2647	N/A	N/A	N/A	N/A	CPS	
CNTC/CFTC (Tank)	2.159	2.377	N/A	N/A	N/A	N/A		
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Accelerometer Calibration								
Before: 3-Mar-2007 6:35								
Z-Axis Acceleration	9.810	N/A	9.812	N/A	N/A	N/A	M/S2	
High resolution Integrated Logging Tool-DTS Wellsite Calibration – Temperature Calibration								
Before: 3-Mar-2007 6:35								
Temperature	25.00	25.00	25.00	N/A	N/A	N/A	°C	

## High resolution Integrated Logging Tool-DTS Master Calibration - Inversion results

Master: 14-Feb-2007 15:55

Rho Aluminum	2596	2599	--	--	--	--	K/M3
Rho Magnesium	1686	1686	--	--	--	--	K/M3
Pe Aluminum	2.570	2.556	--	--	--	--	
Pe Magnesium	2.650	2.631	--	--	--	--	

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

Master: 14-Feb-2007 15:55

BS Average Deviation	0	0.2316	--	--	--	--	%
BS Max Deviation	0	0.7406	--	--	--	--	%
SS Average Deviation	0	0.2254	--	--	--	--	%
SS Max Deviation	0	1.106	--	--	--	--	%
LS Average Deviation	0	0.6026	--	--	--	--	%
LS Max Deviation	0	1.170	--	--	--	--	%

## Combinable Magnetic Resonance Tool - B Master Calibration - Date of Master Calibration: 14-Feb-2007

Master: 7-Mar-2007 4:45

Tool Temperature MCAL	27.00	25.19	--	--	--	--	DEGC
LOOP Measurement MCAL	2300	1870	--	--	--	--	
Hall Probe B0 MCAL	52.00	52.68	--	--	--	--	MTES
Cal. Fixture Amplitude MCAL	37.50	28.32	--	--	--	--	%

## Powered Positioning Device/Caliper 2 Wellsite Calibration - PPC2 Caliper Calibration

Before: 5-Mar-2007 19:34

PPC2 Radius 1 Raw Small Radius	88.90	N/A	139.6	N/A	N/A	12.70	MM
PPC2 Radius 1 Raw Large Radius	203.2	N/A	245.1	N/A	N/A	12.70	MM
PPC2 Radius 2 Raw Small Radius	88.90	N/A	59.05	N/A	N/A	12.70	MM
PPC2 Radius 2 Raw Large Radius	203.2	N/A	169.2	N/A	N/A	12.70	MM
PPC2 Radius 3 Raw Small Radius	88.90	N/A	135.0	N/A	N/A	12.70	MM
PPC2 Radius 3 Raw Large Radius	203.2	N/A	242.2	N/A	N/A	12.70	MM
PPC2 Radius 4 Raw Small Radius	88.90	N/A	75.27	N/A	N/A	12.70	MM
PPC2 Radius 4 Raw Large Radius	203.2	N/A	186.6	N/A	N/A	12.70	MM

## Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: 9-Jan-2007 19:28 Before: 5-Mar-2007 16:58

Na 511 Peak Loc	40.00	39.72	39.61	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.36	15.93	N/A	N/A	2.000	%
High Voltage	1150	1250	1238	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	143.5	143.5	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	7.630	8.646	N/A	N/A	2.000	%
Temperature	15.50	19.48	13.14	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	46.07	43.11	N/A	N/A	8.000	CPS

## Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: 9-Jan-2007 19:28 Before: 5-Mar-2007 16:58

Na 511 Peak Loc	40.00	39.67	39.53	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.21	15.54	N/A	N/A	2.000	%
High Voltage	1150	1270	1257	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.2	142.7	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.889	8.350	N/A	N/A	2.000	%
Temperature	15.50	18.64	12.45	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	46.16	43.06	N/A	N/A	8.000	CPS

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

Master: 9-Jan-2007 19:28 Before: 5-Mar-2007 16:58

Coincidence Count Rate Ratio	1.000	0.9985	1.002	N/A	N/A	0.05000	
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## Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration

Master: 9-Jan-2007 19:28

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.5	--	--	--	--	
Th Peak Res	7.000	6.885	--	--	--	--	%
Background Count Rate	142.5	97.39	--	--	--	--	CPS
Gain Ratio	1.000	1.013	--	--	--	--	

## Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration

Master: 9-Jan-2007 19:28

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.7	--	--	--	--	
Th Peak Res	7.000	6.455	--	--	--	--	%
Background Count Rate	142.5	99.08	--	--	--	--	CPS
Gain Ratio	1.000	1.015	--	--	--	--	











## Powered Positioning Device/Caliper 1 Wellsite Calibration - PPC1 Caliper Calibration




Before: 6-Mar-2007 4:43




PPC1 Radius 1 Raw Small Radius	88.90	N/A	137.5	N/A	N/A	12.70	MM
PPC1 Radius 1 Raw Large Radius	203.2	N/A	244.4	N/A	N/A	12.70	MM
PPC1 Radius 2 Raw Small Radius	88.90	N/A	55.65	N/A	N/A	12.70	MM
PPC1 Radius 2 Raw Large Radius	203.2	N/A	168.8	N/A	N/A	12.70	MM
PPC1 Radius 3 Raw Small Radius	88.90	N/A	136.3	N/A	N/A	12.70	MM
PPC1 Radius 3 Raw Large Radius	203.2	N/A	244.0	N/A	N/A	12.70	MM




PPC1 Radius 4 Raw Small Radius	88.90	N/A	63.71	N/A	N/A	12.70	MM
PPC1 Radius 4 Raw Large Radius	203.2	N/A	178.0	N/A	N/A	12.70	MM
Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration							
Before: 6–Mar–2007 10:05							
Gamma Ray (Jig – Bkg)	159.1	N/A	159.1	N/A	N/A	14.47	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration							
Before: 6–Mar–2007 9:11							
EDTC Z–Axis Acceleration	9.810	N/A	9.805	N/A	N/A	N/A	M/S2
Accelerator–Porosity Tool – Detector Plateau Settings :							
Near Detector Plateau Setting	1743 V						
Far Detector Plateau Setting	2079 V						
Array Detector Plateau Setting	1972 V						
The GLS–VJ source activity is acceptable.							
The HGNS Neutron Master Calibration was done with the following parameters :							
NCT–B Water Temperature	18.0	DEGC.					
Thermal Housing Size	85.725	MM.					
NSR–F serial number	5196						

Accelerator–Porosity Tool / Equipment Identification				
Primary Equipment:				
Accelerator–Porosity Sonde	APS – C	202	202	
APS Minitron	MNTR – F	5329	5890	
Auxiliary Equipment:				
Accelerator–Porosity Housing	APH – AC	104	104	
APS Calibration Water Tank	SFT – 178	53	53	
APS Aluminum Calibrator Sleeve	SFT – 281	12673	12673	




Accelerator–Porosity Tool Wellsite Calibration														
Detector Background														
Phase	Near Det Bkg Cntrate CPS			Value	Phase	Far Det Bkg Cntrate CPS			Value	Phase	Array–1 Det Bkg Cntrate CPS			Value
Master				25.72	Master				26.28	Master				26.42
Before				25.63	Before				26.00	Before				26.99
1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)					1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)					1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)				
Phase	Array–2 Det Bkg Cntrate CPS			Value	Phase	Array Therm Det Bkg Cntrate CPS			Value					
Master				27.96	Master				24.23					
Before				27.50	Before				25.50					
1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)					1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)									
Master: 12–Jan–2007 20:56					Before: 6–Mar–2007 16:13									

Accelerator–Porosity Tool Wellsite Calibration											
Calibration Ratios											
Phase	Near/Far Calibration Ratio		Value	Phase	Near/Array Calibration Ratio		Value	Phase	Near/Array Cal Ratio Up/Down		Value
Master			0.9516	Master			0.9853	Master			1.016
0.8000		0.9250	1.050	0.9000		1.030	1.170	0.9700		1.000	1.030
(Minimum)		(Nominal)	(Maximum)	(Minimum)		(Nominal)	(Maximum)	(Minimum)		(Nominal)	(Maximum)
Master: 12–Jan–2007 20:56											







Accelerator–Porosity Tool Wellsite Calibration											
Tank Check											
Phase	Array–1 Standoff Porosity V/V		Value	Phase	Array–2 Standoff Porosity V/V		Value	Phase	Average Slowing Down Time US	Value	
Master			0.1131	Master			0.1119	Master		5.884	
	0.09900	0.1175	0.1360		0.09900	0.1175	0.1360		5.500	6.000	6.250

(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)					
Phase	Array-1 SDT Ratio Up/Down		Value	Phase	Array-2 SDT Ratio Up/Down		Value	Phase	Sigma Formation M-1		Value
Master			0.9832	Master			0.9667	Master			2.710
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		2.000 (Minimum)	2.750 (Nominal)	3.500 (Maximum)

Master: 12-Jan-2007 20:56

Accelerator-Porosity Tool Master Calibration											
Detector Calibration											
Phase	Near/Far Calibration Ratio		Value	Phase	Near/Array Calibration Ratio		Value	Phase	Near/Array Cal Ratio Up/Down		Value
Master			0.9516	Master			0.9853	Master			1.016
	0.8000 (Minimum)	0.9250 (Nominal)	1.050 (Maximum)		0.9000 (Minimum)	1.030 (Nominal)	1.170 (Maximum)		0.9700 (Minimum)	1.000 (Nominal)	1.030 (Maximum)

Master: 12-Jan-2007 20:56

Accelerator-Porosity Tool Master Calibration											
Tank Check											
Phase	Array-1 Standoff Porosity V/V		Value	Phase	Array-2 Standoff Porosity V/V		Value	Phase	Average Slowing Down Time US		Value
Master			0.1131	Master			0.1119	Master			5.884
	0.09900 (Minimum)	0.1175 (Nominal)	0.1360 (Maximum)		0.09900 (Minimum)	0.1175 (Nominal)	0.1360 (Maximum)		5.500 (Minimum)	6.000 (Nominal)	6.250 (Maximum)
Phase	Array-1 SDT Ratio Up/Down		Value	Phase	Array-2 SDT Ratio Up/Down		Value	Phase	Sigma Formation M-1		Value
Master			0.9832	Master			0.9667	Master			2.710
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		2.000 (Minimum)	2.750 (Nominal)	3.500 (Maximum)

Master: 12-Jan-2007 20:56







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

#### Primary Equipment:




HILT high-Resolution Mechanical Sonde	HRMS - H	4707
HILT Rxo Gamma-ray Device	HRGD - H	4761
HILT Micro Cylindrically Focused Log Dev	MCFL - H	
GR Logging Source	GLS - VJ	1904
HILT High Res. Control Cartridge	HRCC - H	4721
HILT Gamma-Ray Neutron Sonde-DTS	HGNS - H	4730
HILT Gamma-Ray Device	HGR -	
HILT Neutron Detector with Alpha Source	HCNT - H	

#### Auxiliary Equipment:

Neutron Calibration Tank	NCT - B	
Gamma Source Radioactive	GSR - U/Y	6710




High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Stab Measurement Summary											
Phase	BS Window Ratio		Value	Phase	SS Window Ratio		Value	Phase	LS Window Ratio		Value
Before			0.7435	Before			0.4833	Before			0.2974
	0.7056 (Minimum)	0.7427 (Nominal)	0.7799 (Maximum)		0.4606 (Minimum)	0.4849 (Nominal)	0.5091 (Maximum)		0.2883 (Minimum)	0.3035 (Nominal)	0.3186 (Maximum)
Phase	BS Window Sum CPS		Value	Phase	SS Window Sum CPS		Value	Phase	LS Window Sum CPS		Value
Before			29240	Before			13060	Before			1536
	27820 (Minimum)	29280 (Nominal)	30740 (Maximum)		12430 (Minimum)	13080 (Nominal)	13740 (Maximum)		1468 (Minimum)	1545 (Nominal)	1622 (Maximum)




Before: 2-Mar-2007 21:28

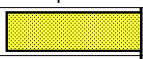
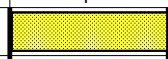
High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Photo-multiplier High Voltages Calibrations											
Phase	BS PM High Voltage (Command) V		Value	Phase	SS PM High Voltage (Command) V		Value	Phase	LS PM High Voltage (Command) V		Value
Before			1352	Before			1410	Before			1310
	1276 (Minimum)	1376 (Nominal)	1476 (Maximum)		1321 (Minimum)	1421 (Nominal)	1521 (Maximum)		1201 (Minimum)	1301 (Nominal)	1401 (Maximum)




Before: 2-Mar-2007 21:28





High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Crystal Quality Resolutions Calibration											
Phase	BS Crystal Resolution %		Value	Phase	SS Crystal Resolution %		Value	Phase	LS Crystal Resolution %		Value




Before		10.84	Before		8.780	Before		9.048
9.775 (Minimum)	10.78 (Nominal)	11.78 (Maximum)	7.916 (Minimum)	8.916 (Nominal)	9.916 (Maximum)	7.952 (Minimum)	8.952 (Nominal)	9.952 (Maximum)
Before: 2-Mar-2007 21:28								


High resolution Integrated Logging Tool-DTS Wellsite Calibration											
MCFL Calibration											
Phase	Raw B0 Resistivity OHMM		Value	Phase	Raw B1 Resistivity OHMM		Value	Phase	Raw B2 Resistivity OHMM		Value
Before			3870	Before			3819	Before			3828
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)
Before: 2-Mar-2007 21:29											





High resolution Integrated Logging Tool-DTS Wellsite Calibration									
HILT Caliper Calibration									
Phase	HILT Caliper Zero Measurement MM			Value	Phase	HILT Caliper Plus Measurement MM			Value
Before				199.8	Before				382.4
190.5 (Minimum)		254.0 (Nominal)		317.5 (Maximum)	381.0 (Minimum)		508.0 (Nominal)		635.0 (Maximum)
Before: 2-Mar-2007 21:51									

High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Detector Calibration											
Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig – Bkg) GAPI		Value	Phase	Gamma Ray (Calibrated) GAPI		Value
Before			23.72	Before			185.1	Before			165.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		168.3 (Minimum)	185.1 (Nominal)	201.9 (Maximum)		150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)	
Before: 2-Mar-2007 21:25											

High resolution Integrated Logging Tool–DTS Wellsite Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				26.53	Master				29.66
Before				26.48	Before				29.06
5.000 (Minimum)				26.53 (Nominal)	40.00 (Maximum)				
Master: 10–Jan–2007 15:23					Before: 2–Mar–2007 21:23				

High resolution Integrated Logging Tool–DTS Wellsite Calibration														
Ratio Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				6292	Master				2647	Master				2.377
5000 (Minimum)			6031 (Nominal)	7200 (Maximum)	2075 (Minimum)			2793 (Nominal)	3125 (Maximum)	2.120 (Minimum)			2.159 (Nominal)	2.540 (Maximum)
Master: 10–Jan–2007 15:23														



High resolution Integrated Logging Tool-DTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration M/S2	Value
Before		9.812
9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)
Before: 3-Mar-2007 6:35		

High resolution Integrated Logging Tool—DTS Master Calibration									
Inversion results									
Phase	Rho Aluminum K/M3			Value	Phase	Rho Magnesium K/M3			Value
Master				2599	Master				1686
	2586 (Minimum)	2596 (Nominal)	2606 (Maximum)	1676 (Minimum)		1686 (Nominal)	1696 (Maximum)		
Phase	Pe Aluminum			Value	Phase	Pe Magnesium			Value
Master				2.556	Master				2.631
	2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)	2.550 (Minimum)		2.650 (Nominal)	2.750 (Maximum)		

Master: 14-Feb-2007 15:55

High resolution Integrated Logging Tool—DTS Master Calibration														
Deviation Summary														
Phase	BS Average Deviation %			Value	Phase	SS Average Deviation %			Value	Phase	LS Average Deviation %			Value
Master				0.2316	Master				0.2254	Master				0.6026
	-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)		-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)			-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)		
Phase	BS Max Deviation %			Value	Phase	SS Max Deviation %			Value	Phase	LS Max Deviation %			Value
Master				0.7406	Master				1.106	Master				1.170
	-1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)		-2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)			-3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)		
Master: 14—Feb—2007 15:55														

Master: 14-Feb-2007 15:55

High resolution Integrated Logging Tool-DTS Master Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				26.53	Master				29.66
	5.000 (Minimum)	26.53 (Nominal)	40.00 (Maximum)			5.000 (Minimum)	29.66 (Nominal)	40.00 (Maximum)	
Master: 10-Jan-2007 15:23									

Master: 10-Jan-2007 15:23

High resolution Integrated Logging Tool–DTS Master Calibration														
Tank Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				6292	Master				2647	Master				2.377
	5000 (Minimum)	6031 (Nominal)	7200 (Maximum)			2075 (Minimum)	2793 (Nominal)	3125 (Maximum)			2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)	
Master: 10–Jan–2007 15:23														



Master: 10-Jan-2007 15:23

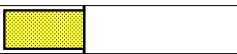
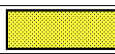




Combinable Magnetic Resonance Tool – B / Equipment Identification		
Primary Equipment:		
CMR-B Sonde	CMRS – BA	182
CMR Cartridge	CMRC – BA	202
Auxiliary Equipment:		

Combinable Magnetic Resonance Tool – B Master Calibration														
Date of Master Calibration: 14–Feb–2007														
Phase	Tool Temperature MCAL DEGC			Value	Phase	LOOP Measurement MCAL			Value	Phase	Hall Probe B0 MCAL MTES			Value
Master	<div><div></div></div>			25.19	Master	<div><div></div></div>			1870	Master	<div><div></div></div>			52.68
	10.00 (Minimum)	27.00 (Nominal)	44.00 (Maximum)		1500 (Minimum)	2300 (Nominal)	2900 (Maximum)			50.00 (Minimum)	52.00 (Nominal)	55.00 (Maximum)		
Phase	Cal. Fixture Amplitude MCAL %			Value										
Master	<div><div></div></div>			28.32										
	25.00 (Minimum)	37.50 (Nominal)	50.00 (Maximum)											
Master: 7–Mar–2007 4:45														

Master: 7-Mar-2007 4:45

Powered Positioning Device/Caliper 2 / Equipment Identification		
Primary Equipment:		
PPC Powered Positioning Device/Caliper	PPC2 – B	
PPC2 Caliper 40 Extension	PPC_ –	
Auxiliary Equipment:		

Powered Positioning Device/Caliper 2 Wellsite Calibration									
PPC2 Caliper Calibration									
Phase	PPC2 Radius 1 Raw Small Radius MM			Value	Phase	PPC2 Radius 1 Raw Large Radius MM			Value
Before				139.6	Before				245.1
	30.48	88.90	142.2		154.9	203.2	246.4		

(Minimum)	(Nominal)	(Maximum)				(Minimum)	(Nominal)	(Maximum)			
PhasePPC2 Radius 2 Raw Small Radius MM			Value			PhasePPC2 Radius 2 Raw Large Radius MM			Value		
Before			59.05			Before			169.2		
30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)				154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)			
PhasePPC2 Radius 3 Raw Small Radius MM			Value			PhasePPC2 Radius 3 Raw Large Radius MM			Value		
Before			135.0			Before			242.2		
30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)				154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)			
PhasePPC2 Radius 4 Raw Small Radius MM			Value			PhasePPC2 Radius 4 Raw Large Radius MM			Value		
Before			75.27			Before			186.6		
30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)				154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)			
Before: 5-Mar-2007 19:34											

#### Elemental Capture Spectroscopy Tool / Equipment Identification

##### Primary Equipment:



ECS Sonde	ECS – A	20	20
ECS Detector Package	ECSD – A	20	20
ECS AmBe Source	NSR – F	2671	2671

##### Auxiliary Equipment:

ECS Sonde Housing	ECSH – A	20	20
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

#### Elemental Capture Spectroscopy Tool Wellsite Calibration

##### ECS Calibration Check

Phase	Detector Resolution(20 Degc) %	Value	Phase	Spectral Shift Factor	Value
Master		13.34	Master		0.8834
11.20 (Minimum)	13.00 (Nominal)	14.00 (Maximum)	-1.000 (Minimum)	1.000 (Nominal)	2.000 (Maximum)
Master: Calibration out of date 11-Jan-2007 13:41					

#### Elemental Capture Spectroscopy Tool Master Calibration

##### NO SUB TITLE1

Phase	Detector Resolution(20 Degc) %	Value	Phase	Spectral Shift Factor	Value
Master		13.34	Master		0.8834
11.20 (Minimum)	13.00 (Nominal)	14.00 (Maximum)	-1.000 (Minimum)	1.000 (Nominal)	2.000 (Maximum)
Master: Calibration out of date 11-Jan-2007 13:41					

#### Elemental Capture Cartridge – B / Equipment Identification

##### Primary Equipment:

ECC Cartridge	ECC – B
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##### Auxiliary Equipment:

ECC Housing	ECH – A
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#### Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

##### Primary Equipment:

HNGC Cartridge	HNGC – B	405	405
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##### Auxiliary Equipment:

HNGC Housing	HNGH – A	346	346
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






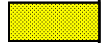






#### Hostile Natural Gamma Ray Sonde / Equipment Identification















##### Primary Equipment:



HNGS Sonde	HNGS – BA	163	163
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##### Auxiliary Equipment:






HNGS Sonde Housing	HNSH – BA	25	25
Gamma Source Radioactive	GSR – U	610	610

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				39.72	Master				15.36	Master				1250
Before				39.61	Before				15.93	Before				1238
37.50 (Minimum) 40.00 (Nominal) 42.50 (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				143.5	Master				7.630	Master				19.48
Before				143.5	Before				8.646	Before				13.14
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				46.07										
Before				43.11										
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)														
Master: 9-Jan-2007 19:28					Before: 5-Mar-2007 16:58									

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			39.67	Master			15.21	Master			1270					
Before			39.53	Before			15.54	Before			1257					
37.50 (Minimum)			40.00 (Nominal)	42.50 (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			142.2	Master			8.889	Master			18.64					
Before			142.7	Before			8.350	Before			12.45					
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			46.16													
Before			43.06													
10.00 (Minimum)			45.00 (Nominal)									100.0 (Maximum)				
Master: 9-Jan-2007 19:28												Before: 5-Mar-2007 16:58				

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9985
Before		1.002
<div>0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)</div>		
Master: 9-Jan-2007 19:28		
Before: 5-Mar-2007 16:58		

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	<div><div></div></div>		41.00	Master	<div><div></div></div>		211.5	Master	<div><div></div></div>		6.885
	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	<div><div></div></div>		97.39	Master	<div><div></div></div>		1.013				
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				

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				211.7	Master				6.455
	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				99.08	Master				1.015					
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)							
Master: 9-Jan-2007 19:28														

Master: 9-Jan-2007 19:28

## Powered Positioning Device/Caliper 1 / Equipment Identification

Primary Equipment:









PPC Powered Positioning Device/Caliper

PPC1 Caliper 40 Extension

PPC1 - B

PPC\_ -

Auxiliary Equipment:

Powered Positioning Device/Caliper 1 Wellsite Calibration									
PPC1 Caliper Calibration									
Phase	PC1 Radius 1 Raw Small Radius MM			Value	Phase	PC1 Radius 1 Raw Large Radius MM			Value
Before				137.5	Before				244.4
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)			154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)	
Phase	PC1 Radius 2 Raw Small Radius MM			Value	Phase	PC1 Radius 2 Raw Large Radius MM			Value
Before				55.65	Before				168.8
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)			154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)	
Phase	PC1 Radius 3 Raw Small Radius MM			Value	Phase	PC1 Radius 3 Raw Large Radius MM			Value
Before				136.3	Before				244.0
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)			154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)	
Phase	PC1 Radius 4 Raw Small Radius MM			Value	Phase	PC1 Radius 4 Raw Large Radius MM			Value
Before				63.71	Before				178.0
	30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)			154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)	
Before: 6-Mar-2007 4:43									

Before: 6-Mar-2007 4:43

## Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:

Enhanced DTS Cartridge

EDTC - B




Auxiliary Equipment:

EDTC Housing


EDTH - B

8253

8253

Enhanced DTS Cartridge Wellsite Calibration														
Detector Calibration														
Phase	Gamma Ray Background GAPI			Value	Phase	Gamma Ray (Jig – Bkg) GAPI			Value	Phase	Gamma Ray (Calibrated) GAPI			Value
Before				5.155	Before				159.1	Before				165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		144.7 (Minimum)	159.1 (Nominal)	173.6 (Maximum)			150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)		
Before: 6-Mar-2007 10:05														

Before: 6-Mar-2007 10:05

Enhanced DTS Cartridge Wellsite Calibration		
EDTC Accelerometer Calibration		
Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		9.805
	9.610                      9.810                      10.01	

Company: **JOGMEC**

**Schlumberger**

Well: **AURORA/JOGMEC/NRCAN MALLIK 2L-38**

Field: **MALLIK**

Province: **NWT**

COMBINABLE MAGNETIC  
RESONANCE LOG