

**Schlumberger**

Company: **JOGMEC**

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

Field: **MALLIK**

Province: **NWT**

Well: AURORA/JOGMEC/NRCAN MALLIK 2L-38  
Field: MALLIK  
Province: NWT

<div> <div>Province: NWT</div> <div>Field: MALLIK</div> <div>Location: GRID: 69-30-134-30</div> <div>Well: AURORA/JOGMEC/NRCAN MALLIK 2L-38</div> <div>Company: JOGMEC</div> </div>				
ELEMENTAL CAPTURE SPECTROSCOPY				
LOCATION				
GRID: 69-30-134-30 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				

Logging Date	7-Mar-2007					
Run Number	1P-RUN TWO					
Depth Driller	1310 m					
Schlumberger Depth	1296 m					
Bottom Log Interval	1273 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			@ 20 degC		@	
RMF @ Measured Temperature	0.120 ohm.m		@ 19 degC		@	
RMC @ Measured Temperature	0.150 ohm.m		@ 20 degC		@	
Source RMF	RMC		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					

[illegible]

## DEPTH SUMMARY LISTING

Date Created: 7-MAR-2007 11:57:50

## Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JA	Type:	CMTD-B/A	Type:	7-46P-XS
Serial Number:	6423	Serial Number:	2565	Serial Number:	0
Calibration Date:	09-JAN-2007	Calibration Date:	06-FEB-2007	Length:	6399.89 M
Calibrator Serial Number:	4	Calibrator Serial Number:	2565	Conveyance Method:	Wireline
Calibration Cable Type:	7-46P-XS	Calibration Gain:	0.84	Rig Type:	LAND
Wheel Correction 1:	-6	Calibration Offset:	-14.00		
Wheel Correction 2:	-7				

## Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	PLATFORM EXPRESS: COMPENSATED NEUTRON-LITHO DENSITY LOG
Reference Log Run Number:	ONE
Reference Log Date:	03-MAR-2007
Subsequent Trip Down Log Correction:	1.37 M


















## Depth Control Remarks

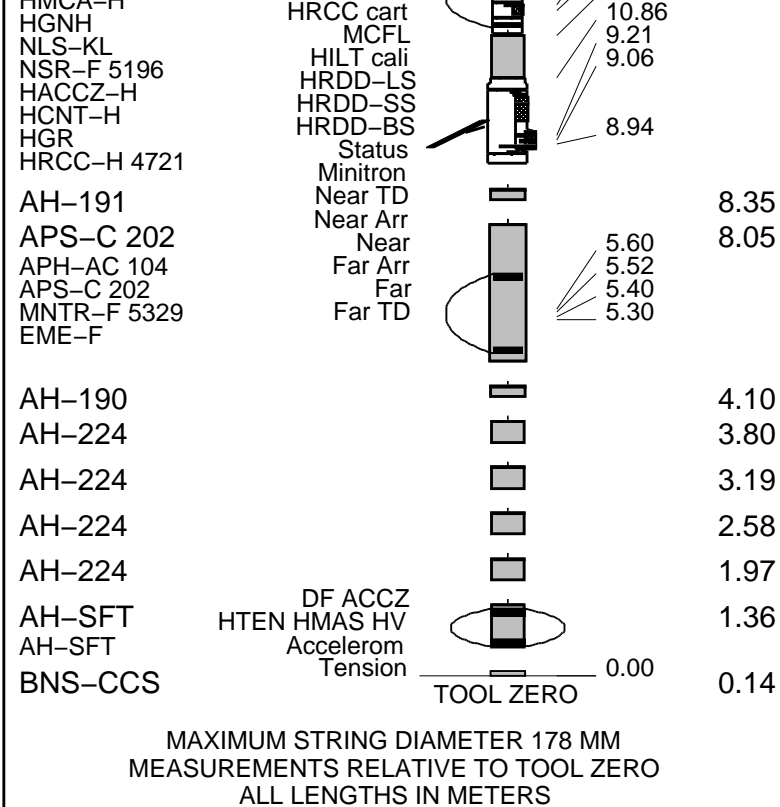
1.	
2.	NO SPEED CORRECTION APPLIED AT WELLSITE
3.	
4.	
5.	
6.	

## DISCLAIMER

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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	

REPEAT PERFORMED OVER 850-1150M					
SLB ONLY LOGGED DOWN TO 1296M					
BOTTOM ADAPATERS USED AS HOLE FINDER					
ECS LOGGED APPROX. 10min INSIDE CASING FOR INCREASED SHIFT FACTOR EVALUATION					
RIG: AKITA 62					
CREW: JAMES MACDONALD / MARK KIMBALL / MIKE KLOC					
RUN 1			RUN 2		
SERVICE ORDER #: 11709034			SERVICE ORDER #:		
PROGRAM VERSION: 14C0-302			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP
EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		
SURFACE EQUIPMENT					
SFT-281 12673 CNB-AB					
SFT-178 53 NCS-VB					
GSR-U/Y 6710 GSR-U 610					
NCT-B WITM (EDTS)-A					
DOWNHOLE EQUIPMENT					
LEH-QT			35.64		
EDTC-B 8265	Mud Tempe		34.75		
EDTH-B 8253	CTEM		33.68	34.75	
EDTC-B	Gamma Ray		33.11		
	EDTCB Ele		32.77		
AH-184			32.77		
AH-224			32.16		
AH-224			31.55		
AH-184			30.94		
PPC1-B 8148	Calipers		29.98	30.33	
PPC1-B			28.35		
PPC_CAL_40EXT	PPC_Cartr		27.65	28.35	
HNGS-BA 163	Upper_1		27.43		
HNGS-BA 163	Lower_2				
HNSH-BA 25					
HNGC-B 405	HNGC Stat		25.31	25.85	
ECC-B	ECC Statu		24.25	24.78	
ECS-A 20	Detector		23.32	23.71	
ECS-A 20					
NSR-F 2671					
PPC2-B 8149	Calipers		21.34	21.69	
PPC2-B			19.70		
PPC_CAL_40EXT	PPC_Cartr				
CMRT-B			19.70		
CMRC-BA 202					
CMRS-BA 182					
	CMR-B Raw		15.54		
	CMR-B Sen		14.95		
	CMR-B Dia		14.95		
	HGNS HTEM		14.72	14.95	
	HMCA		12.95		
	Gamma-Ray		12.79	14.95	
	Neutron F		12.08		
	Neutron N				
	HGNS sens				
HILTH-FTB					
HGNSD-H 4730					
HMCA-H					



**Schlumberger**

## ECS:MAIN PASS SPECTRO-LITH

MAXIS Field Log

### 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

### 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

### PIP SUMMARY

Time Mark Every 60 S

Matrix Density (RHGE\_  
WALK2)

2 (G/C3) 3

Salt

Siderite								
Q-F-M								
Pyrite								
Coal					Dry Wt. Iron			LQC I1---->I3
Carbonate	Tension (TENS) (N) 25000 0				Dry Wt. Excess Iron			error
Clay	Gamma Ray (GR) (GAPI) 0 150	Dry Wt. Aluminum	Dry Wt. Silicon	Dry Wt. Calcium	DWFE (DWFE_ WALK2) 0 (W/W) 0.2	Dry Wt. Sulfur	Dry Wt. Titanium	warning
Anhydrite	Cable Speed (CS) (M/HR) 0 1500	DWAL (DWAL_ WALK2) 0 (W/W) 0.2	DWSI (DWSI_ WALK2) 0 (W/W) 0.5	DWCA (DWCA_ WALK2) 0 (W/W) 0.5	DXFE (DXFE_ WALK2) 0 (W/W) 0.2	DWSU (DWSU_ WALK2) (W/W) 0 0.25	DWTI (DWTI_ WALK2) (W/W) 0 0.05	normal

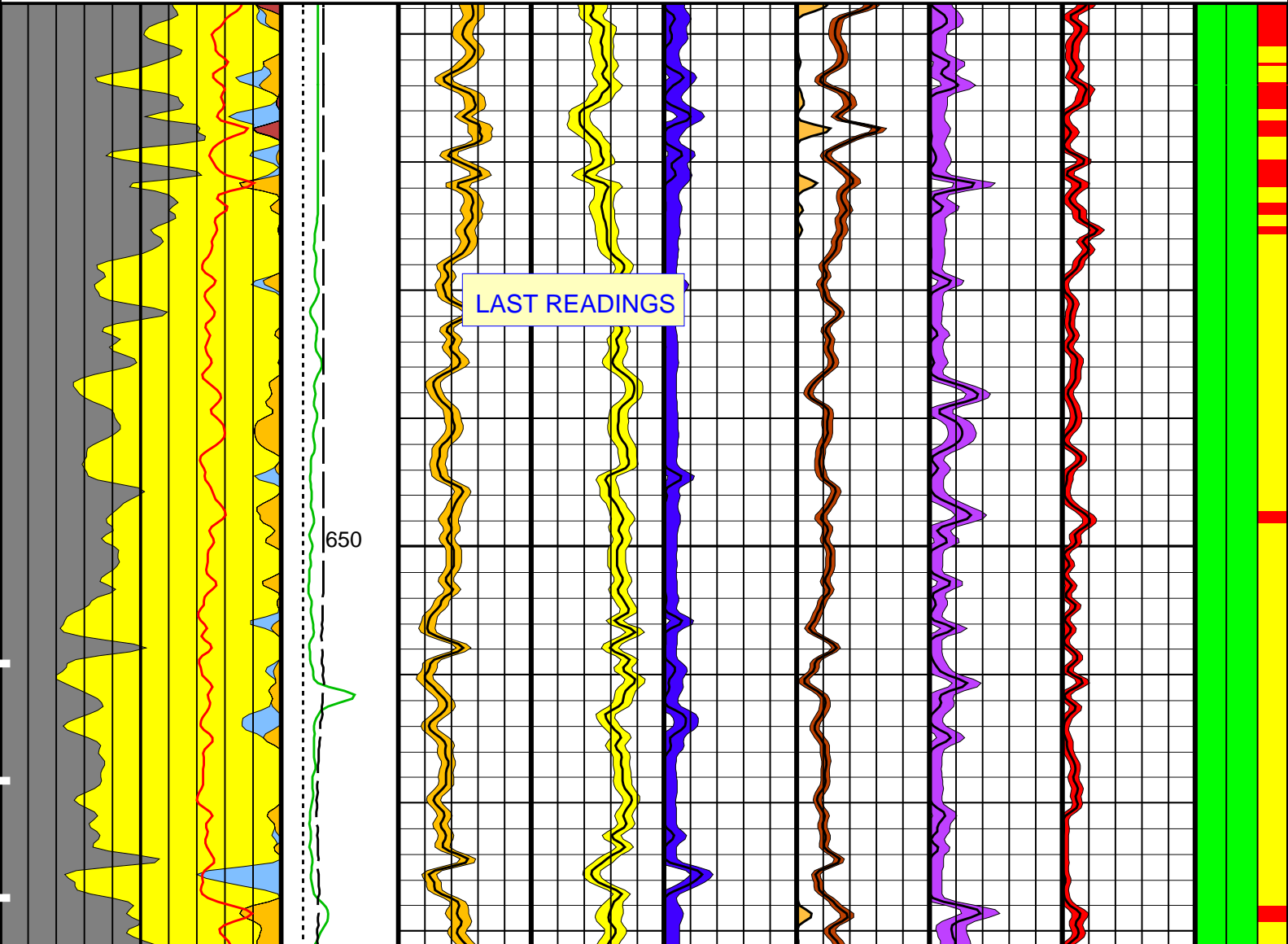
LQC Track

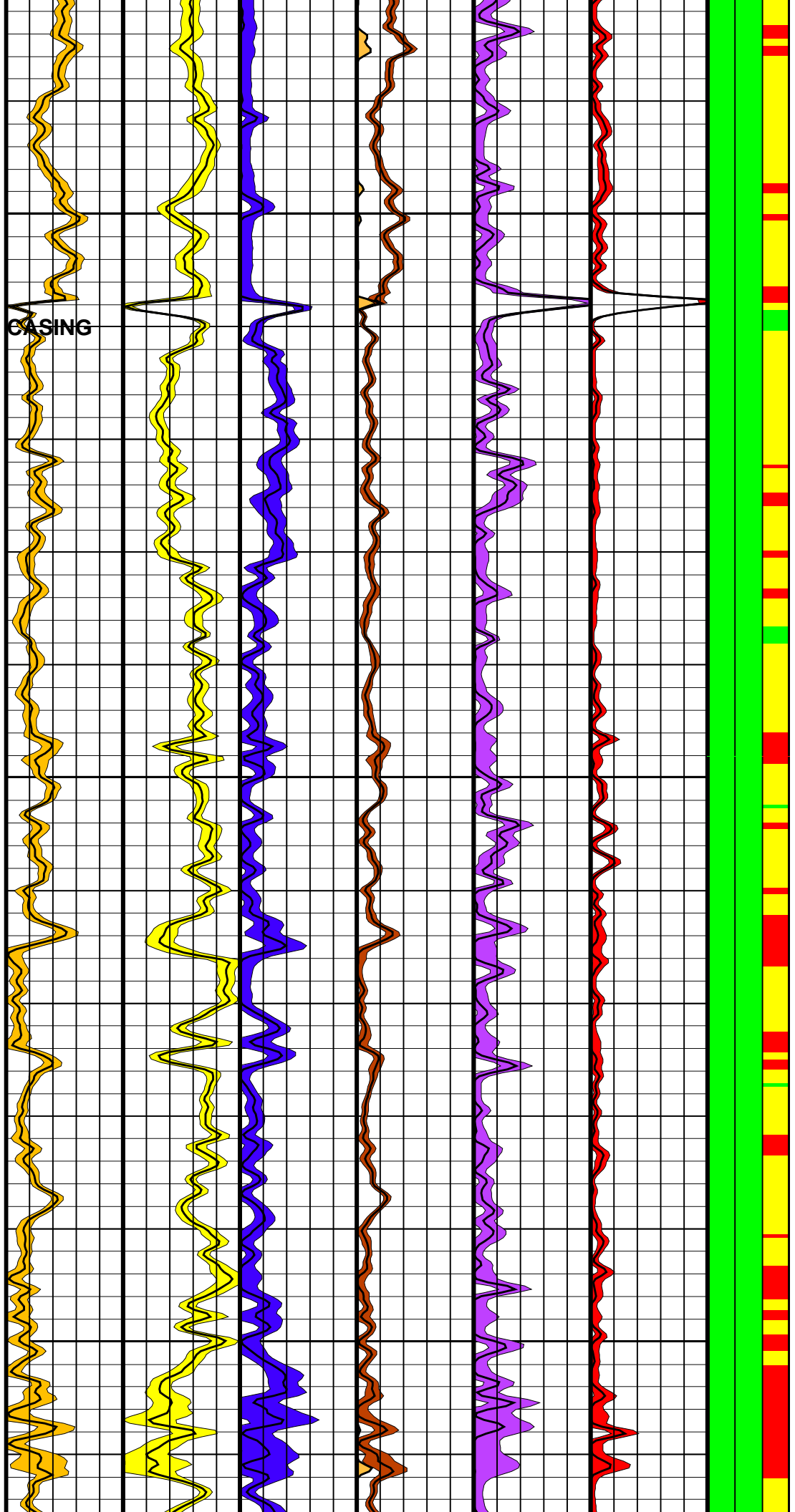
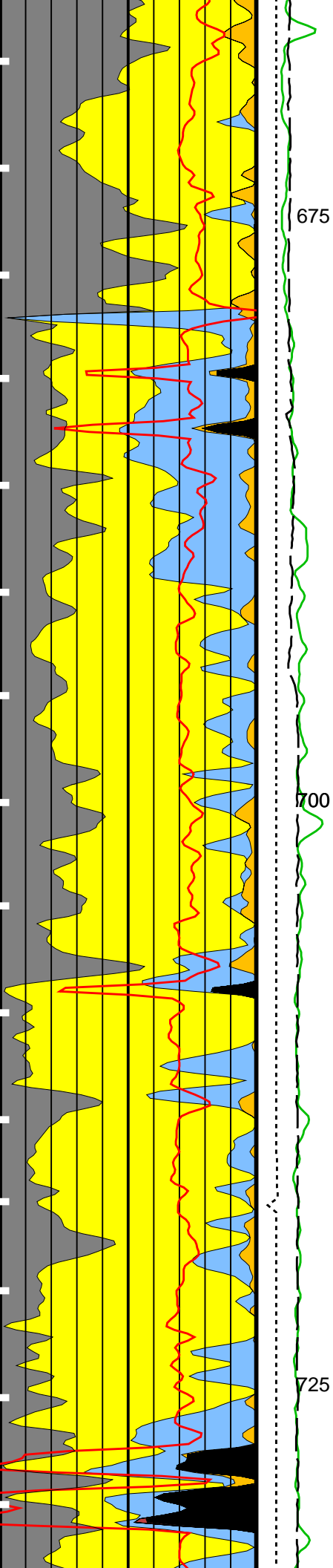
Left(I1) ----> Right(I3)

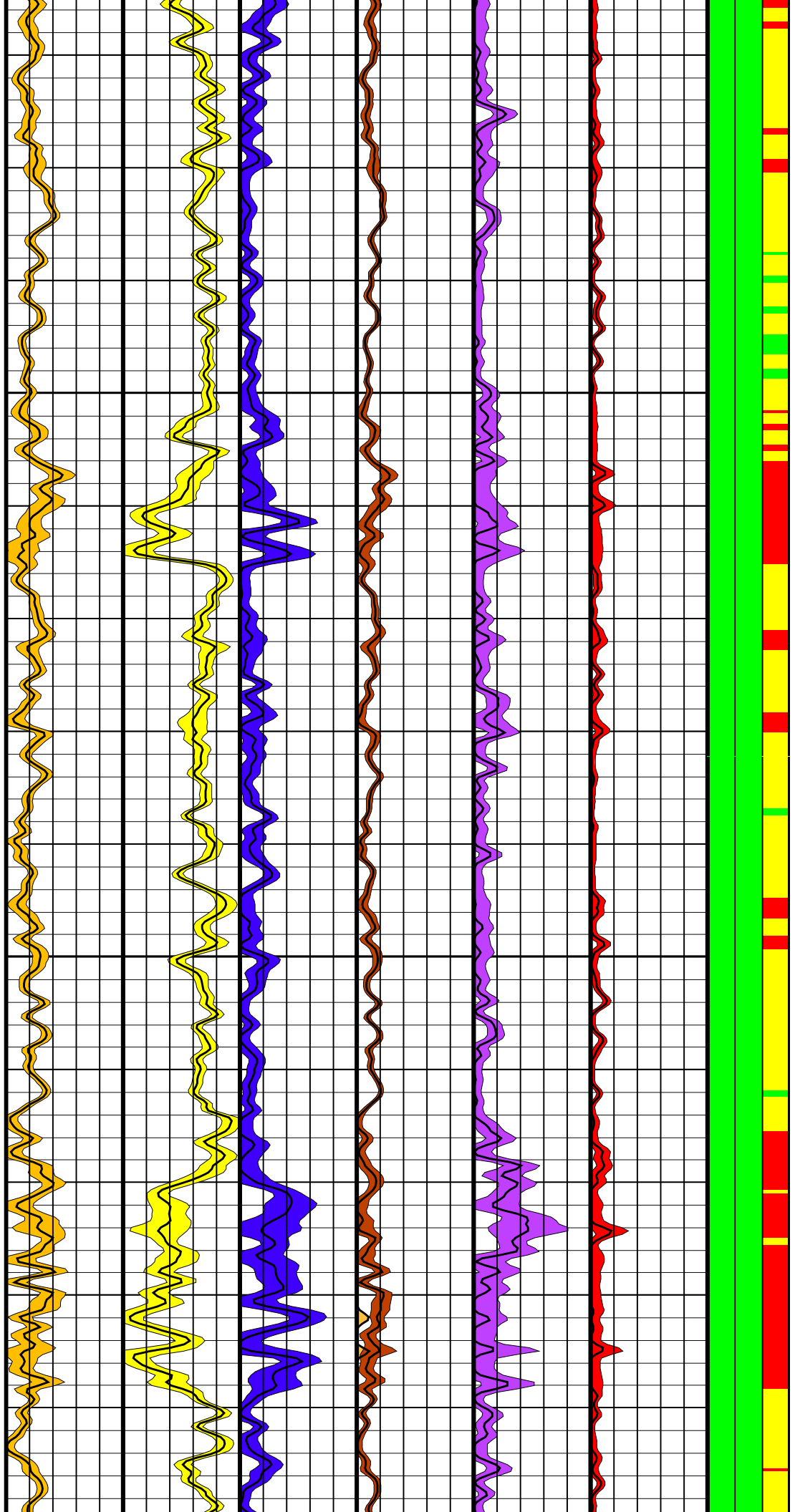
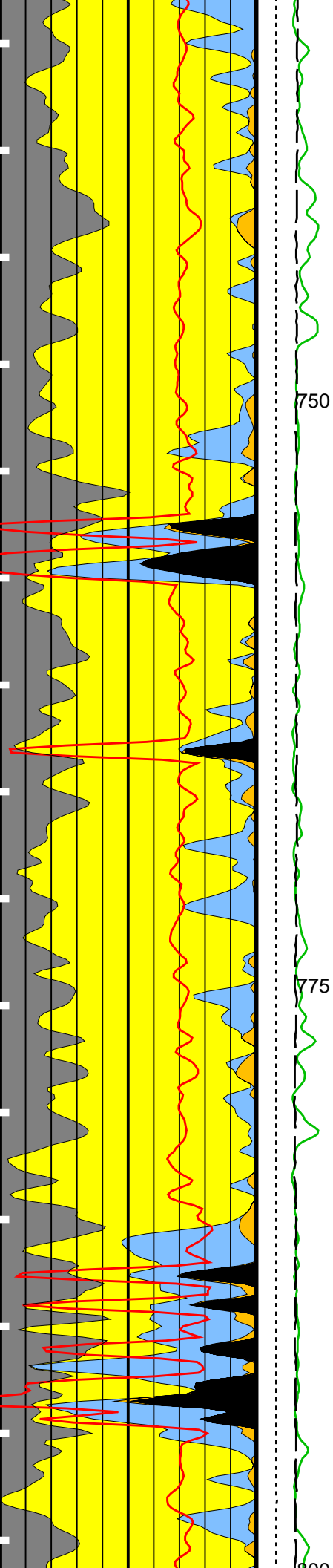
I1: ECS Hardware: Photomultiplier (QC\_PMT)

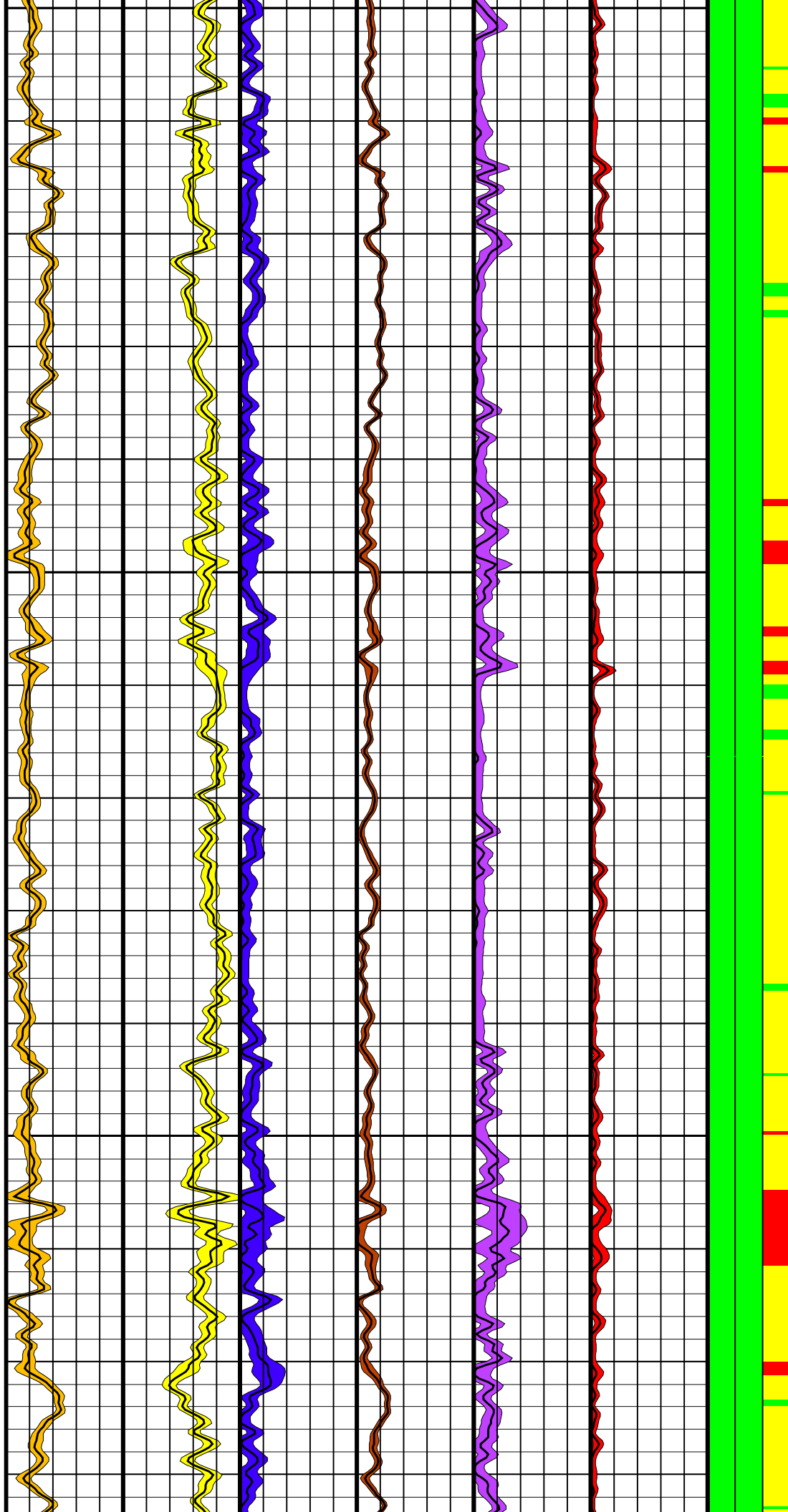
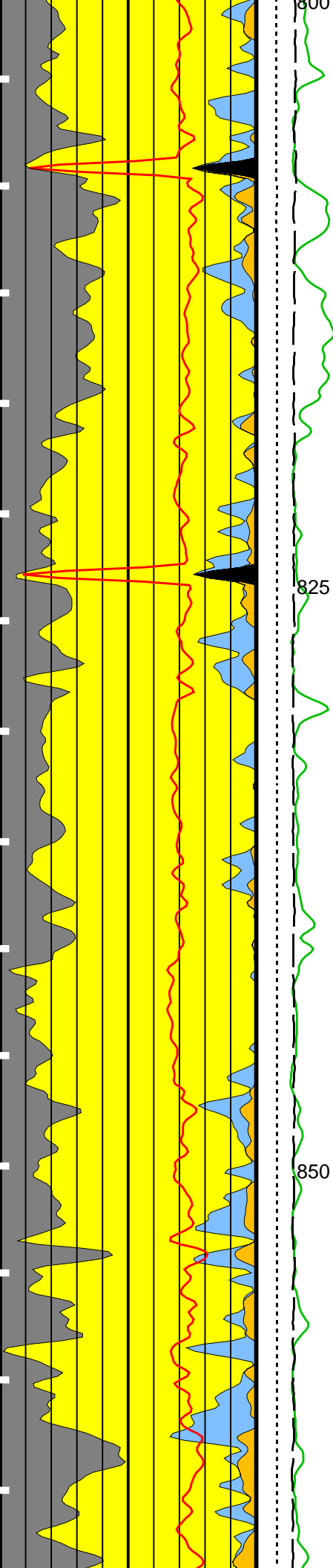
I2: ECS Hardware: BGO Crystal Temperature (ECST)

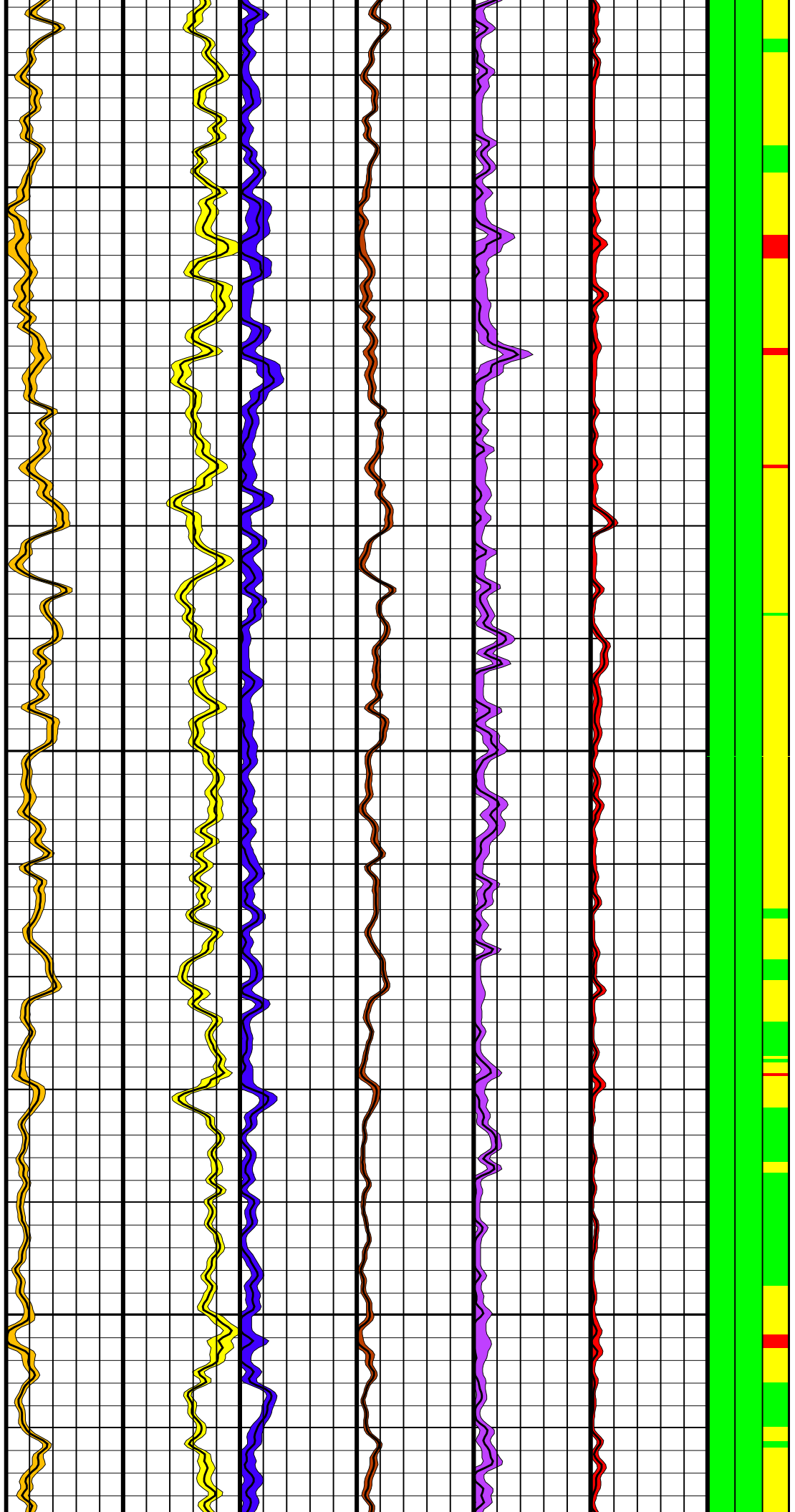
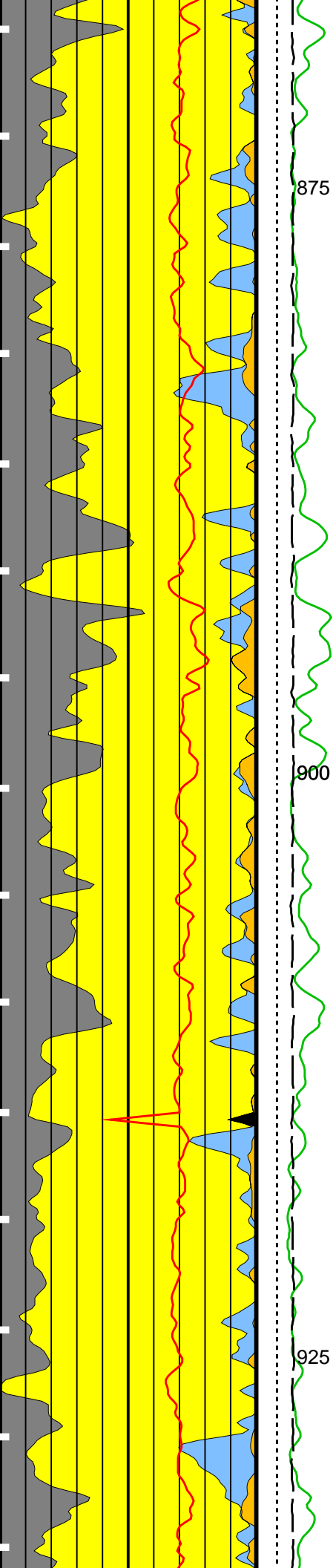
I3: ECS Data Quality: Elemental Statistical Uncertainty (ESUF\_WALK2)

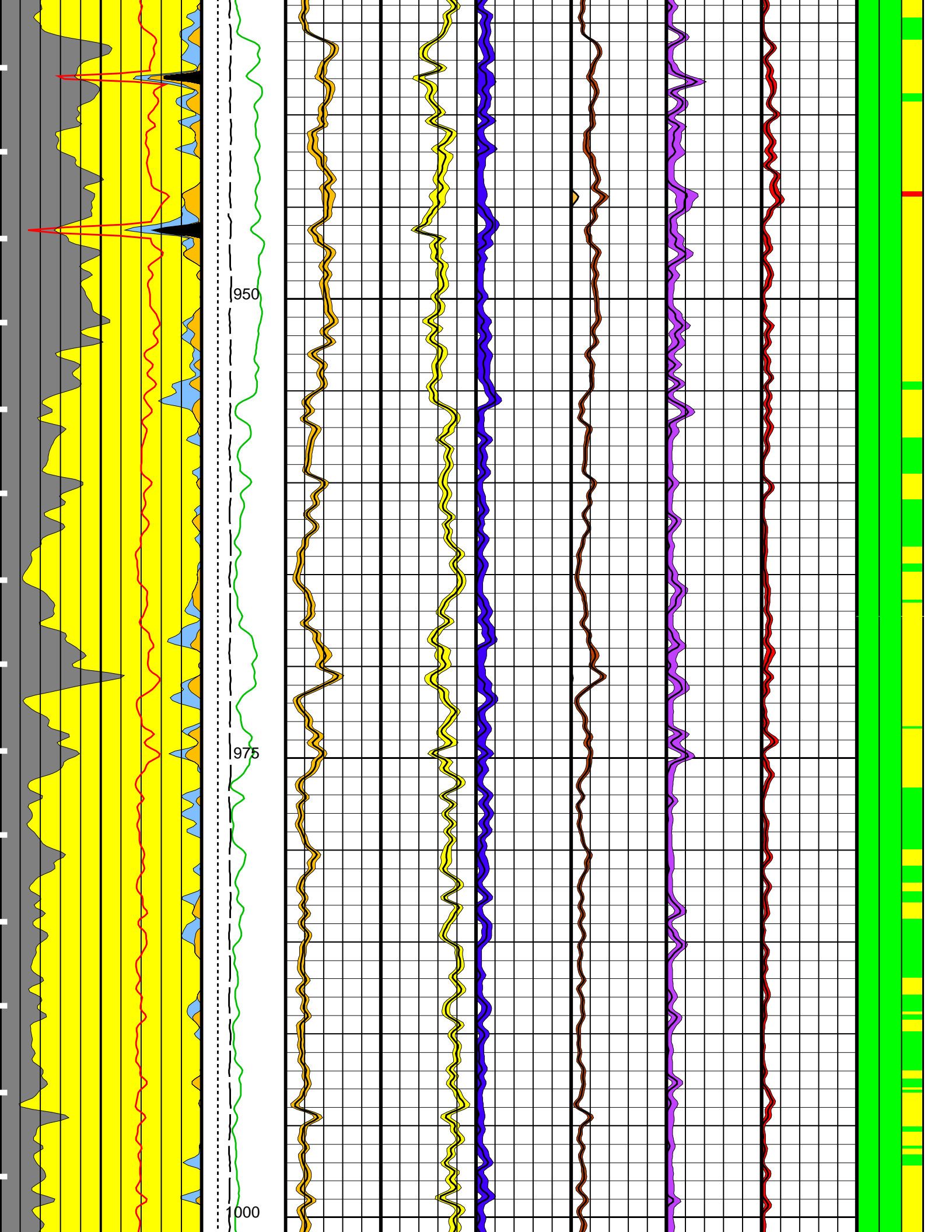


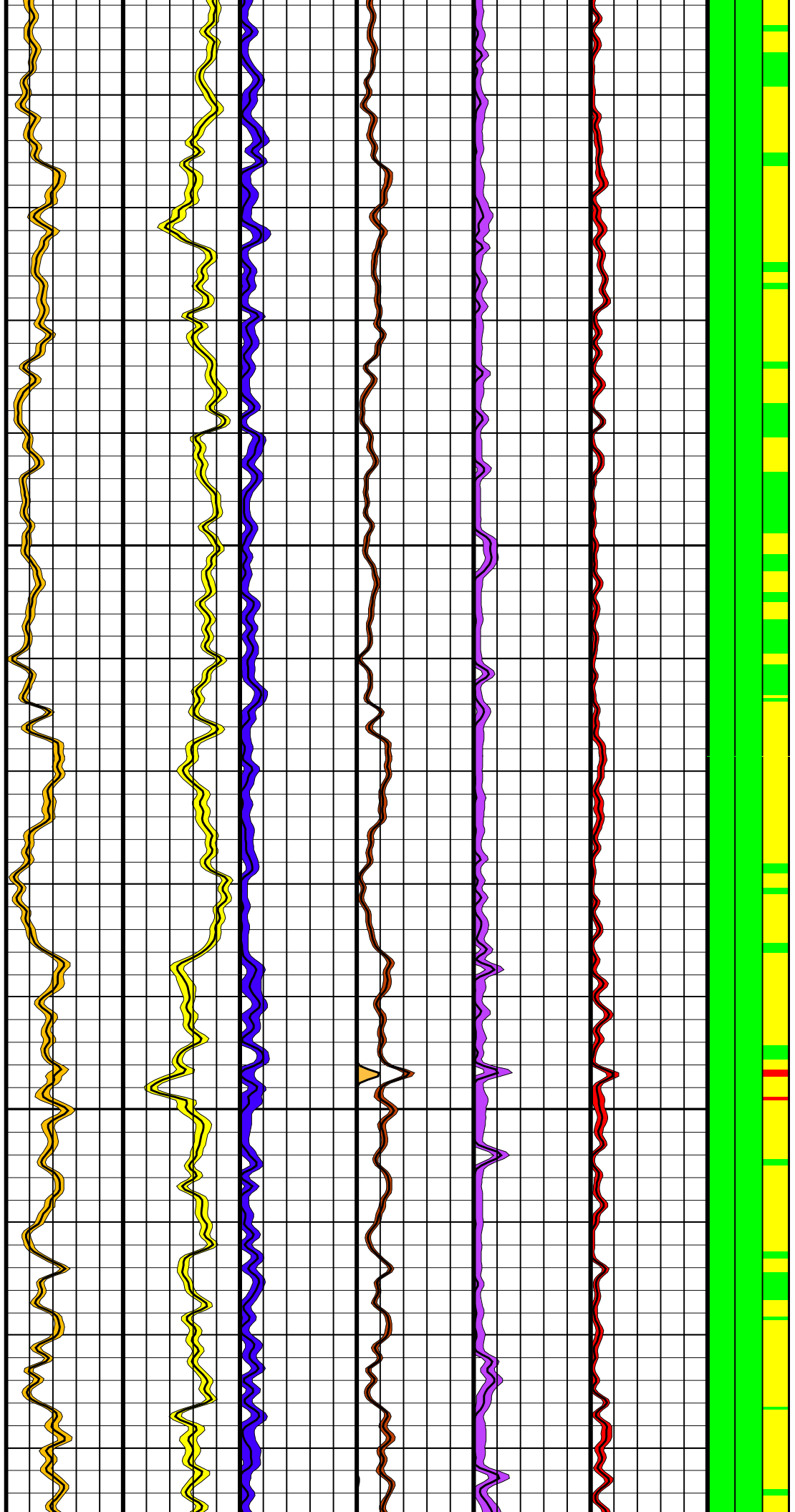
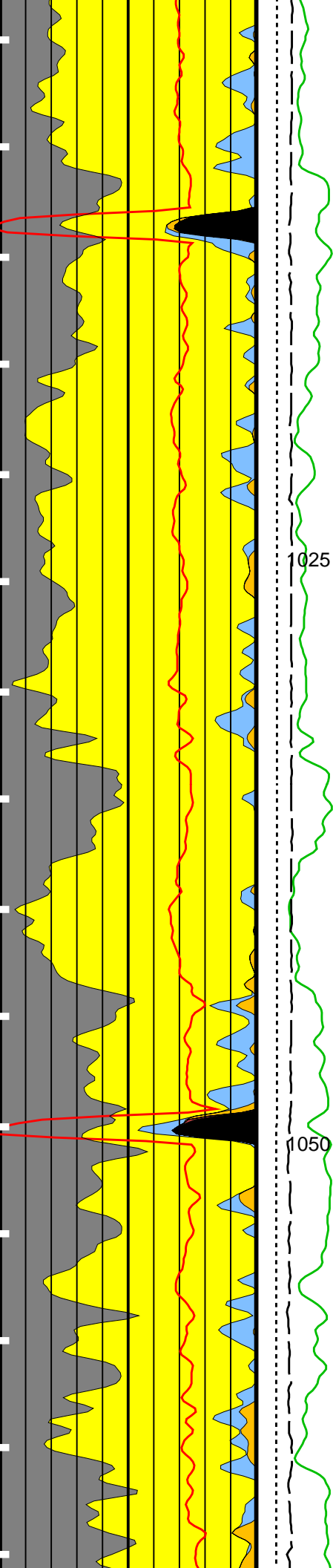


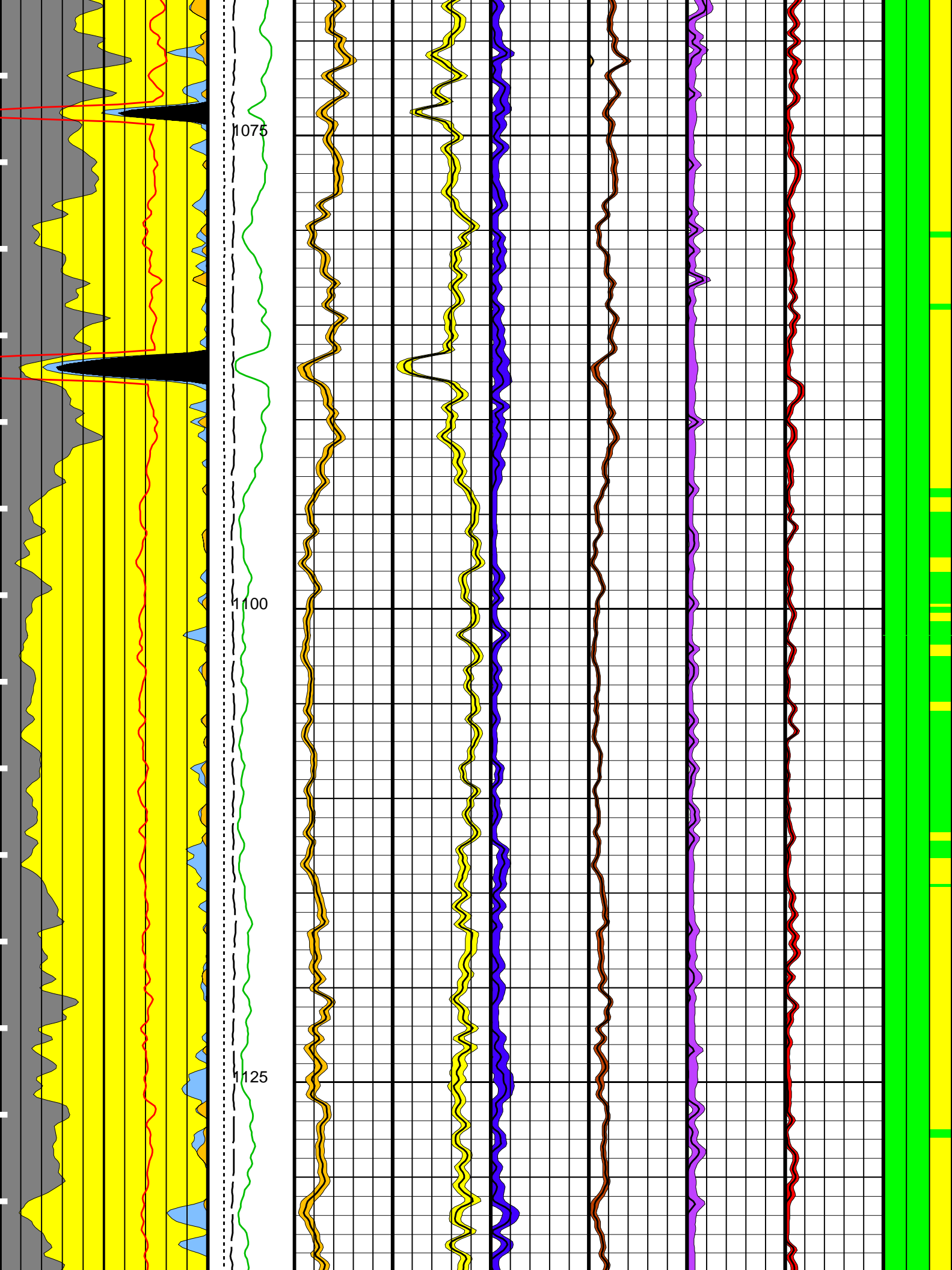


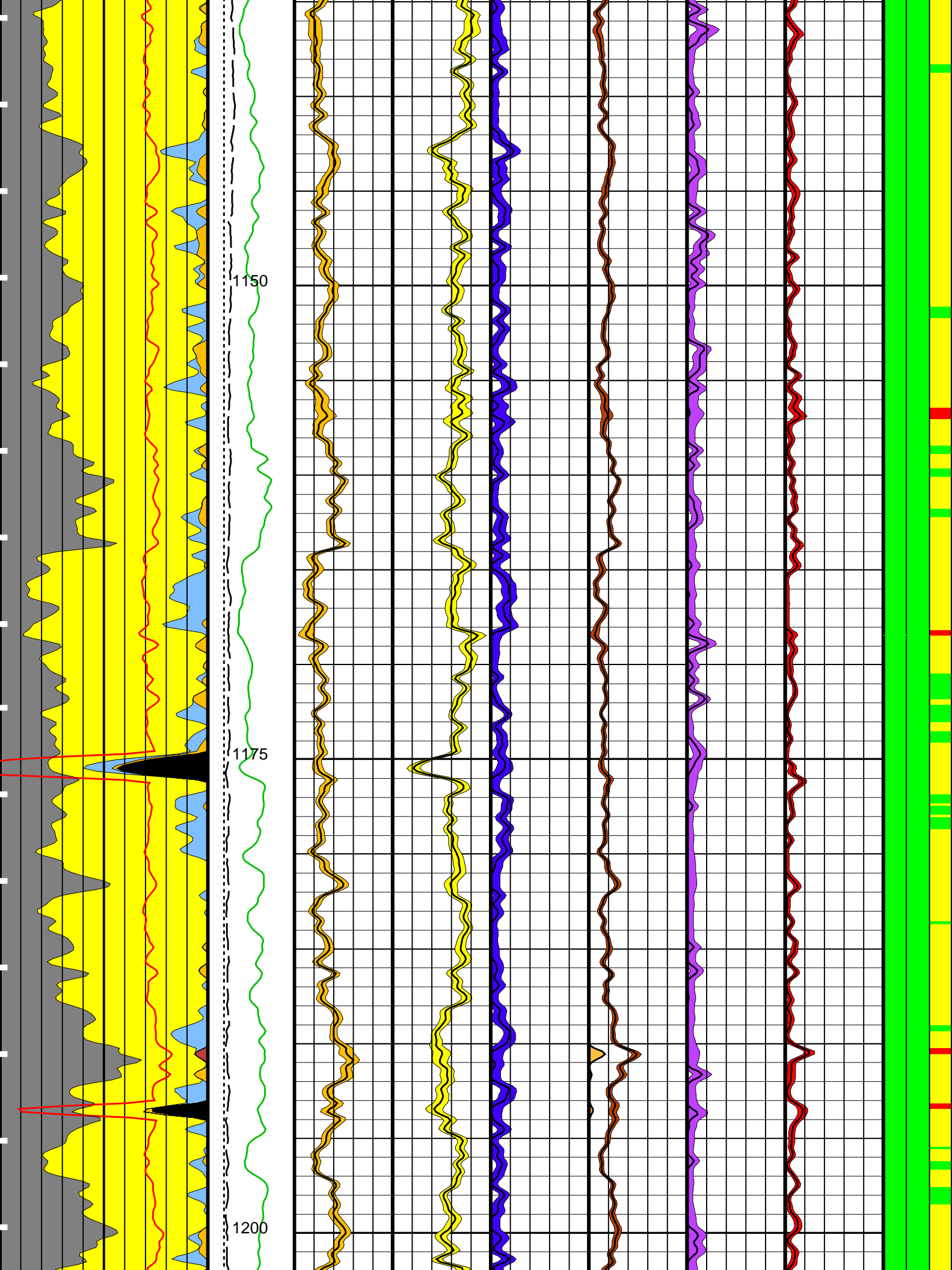


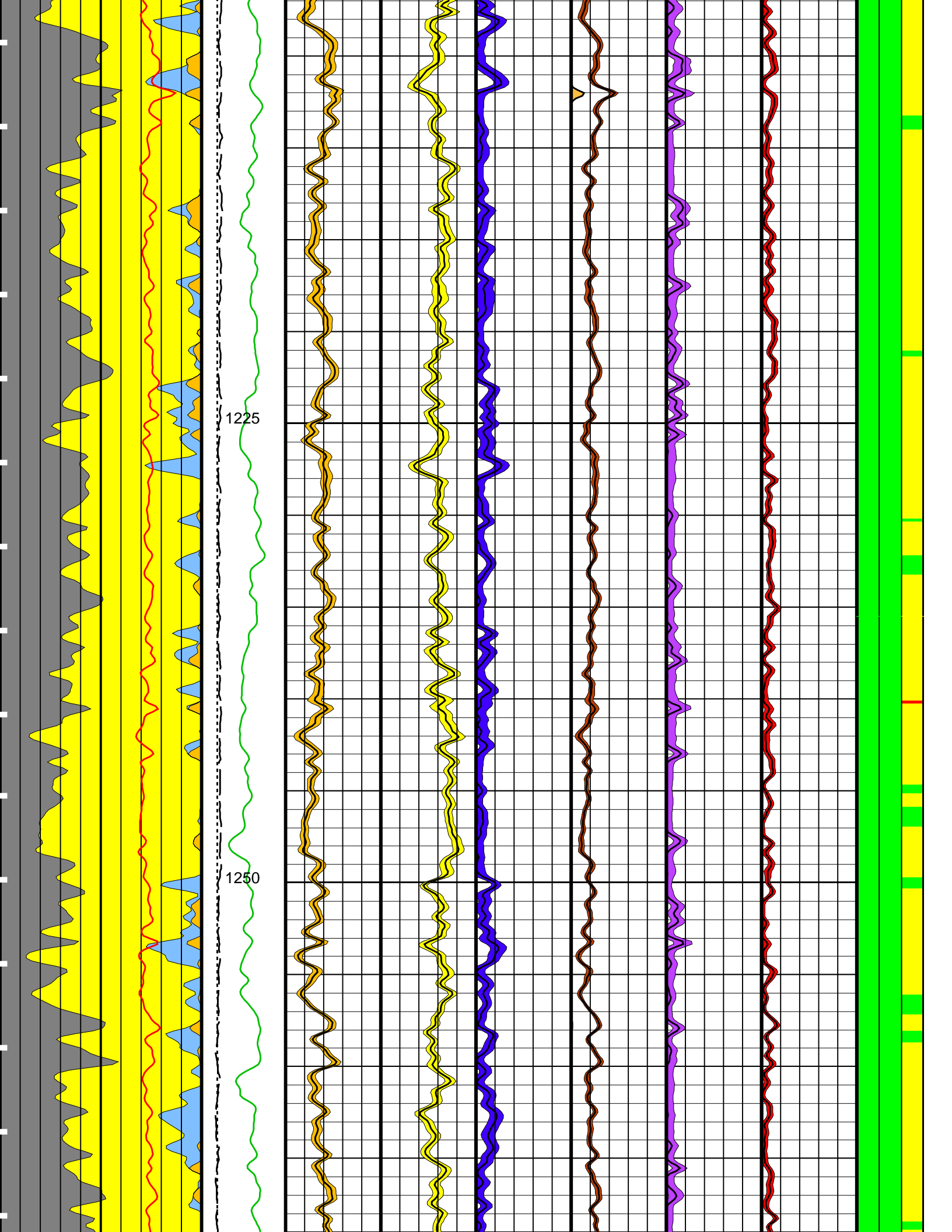


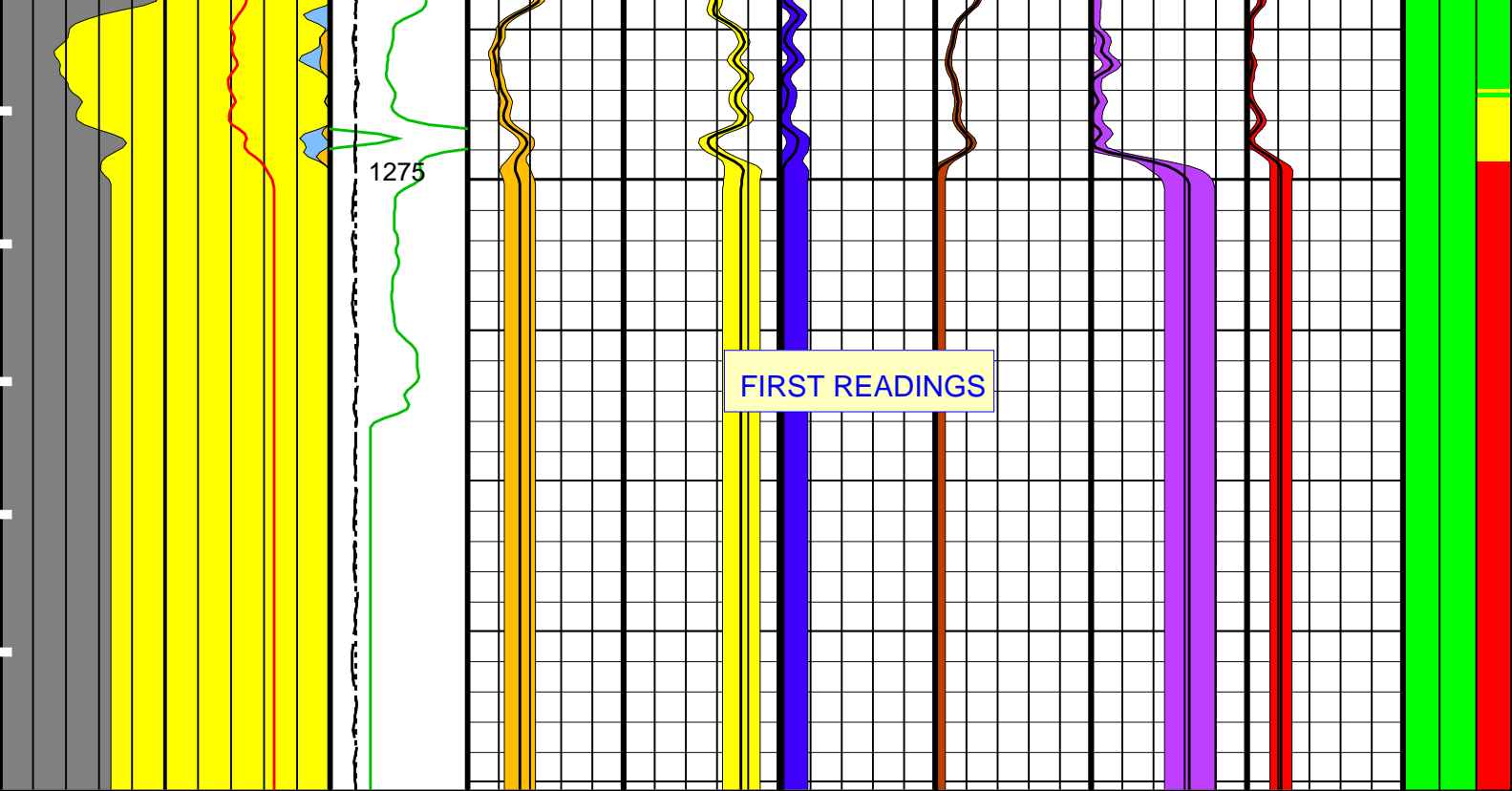












LQC Track

Left(I1) ----> Right(I3)

I1: ECS Hardware: Photomultiplier (QC\_PMT)

I2: ECS Hardware: BGO Crystal Temperature (ECST)

I3: ECS Data Quality: Elemental Statistical Uncertainty (ESUF\_WALK2)

Anhydrite	<div>Cable Speed (CS) (M/HR)<div>01500</div></div>	<div>DWAL (DWAL_WALK2)<div>0(W/W) 0.2</div></div>	<div>DWSI (DWSI_WALK2)<div>0(W/W) 0.5</div></div>	<div>DWCA (DWCA_WALK2)<div>0(W/W) 0.5</div></div>	<div>DXFE (DXFE_WALK2)<div>0(W/W) 0.2</div></div>	<div>DWSU (DWSU_WALK2) (W/W)<div>00.25</div></div>	<div>DWTI (DWTI_WALK2) (W/W)<div>00.05</div></div>	normal
Clay	<div>Gamma Ray (GR) (GAPI)<div>0150</div></div>	Dry Wt. Aluminum	Dry Wt. Silicon	Dry Wt. Calcium	<div>DWFE (DWFE_WALK2)<div>0(W/W) 0.2</div></div>	Dry Wt. Sulfur	Dry Wt. Titanium	warning
Carbonate	<div>Tension (TENS) (N)<div>250000</div></div>				Dry Wt. Excess Iron			error
Coal					Dry Wt. Iron			LQC I1---->I3
Pyrite								
Q-F-M								
Siderite								
Salt								
Matrix Density (RHGE_WALK2) (G/C3)	23							

PIP SUMMARY

☐ Time Mark Every 60 S

Parameters

2	(G/C3)	3

Salt									
Siderite									
Q-F-M									
Pyrite									
Coal									
					Dry Wt. Iron				LQC I1---->I3
Carbonate	Tension (TENS) (N) <div> <div>25000</div> <div>0</div> </div>				Dry Wt. Excess Iron				error
Clay	Gamma Ray (GR) (GAPI) <div> <div>0</div> <div>150</div> </div>	Dry Wt. Aluminum	Dry Wt. Silicon	Dry Wt. Calcium	DWFE (DWFE_WALK2) <div> <div>0</div> <div>(W/W) 0.2</div> </div>	Dry Wt. Sulfur	Dry Wt. Titanium		warning
Anhydrite	Cable Speed (CS) (M/HR) <div> <div>0</div> <div>1500</div> </div>	DWAL (DWAL_WALK2) <div> <div>0</div> <div>(W/W) 0.2</div> </div>	DWSI (DWSI_WALK2) <div> <div>0</div> <div>(W/W) 0.5</div> </div>	DWCA (DWCA_WALK2) <div> <div>0</div> <div>(W/W) 0.5</div> </div>	DXFE (DXFE_WALK2) <div> <div>0</div> <div>(W/W) 0.2</div> </div>	DWSU (DWSU_WALK2) (W/W) <div> <div>0</div> <div>0.25</div> </div>	DWTI (DWTI_WALK2) (W/W) <div> <div>0</div> <div>0.05</div> </div>		normal

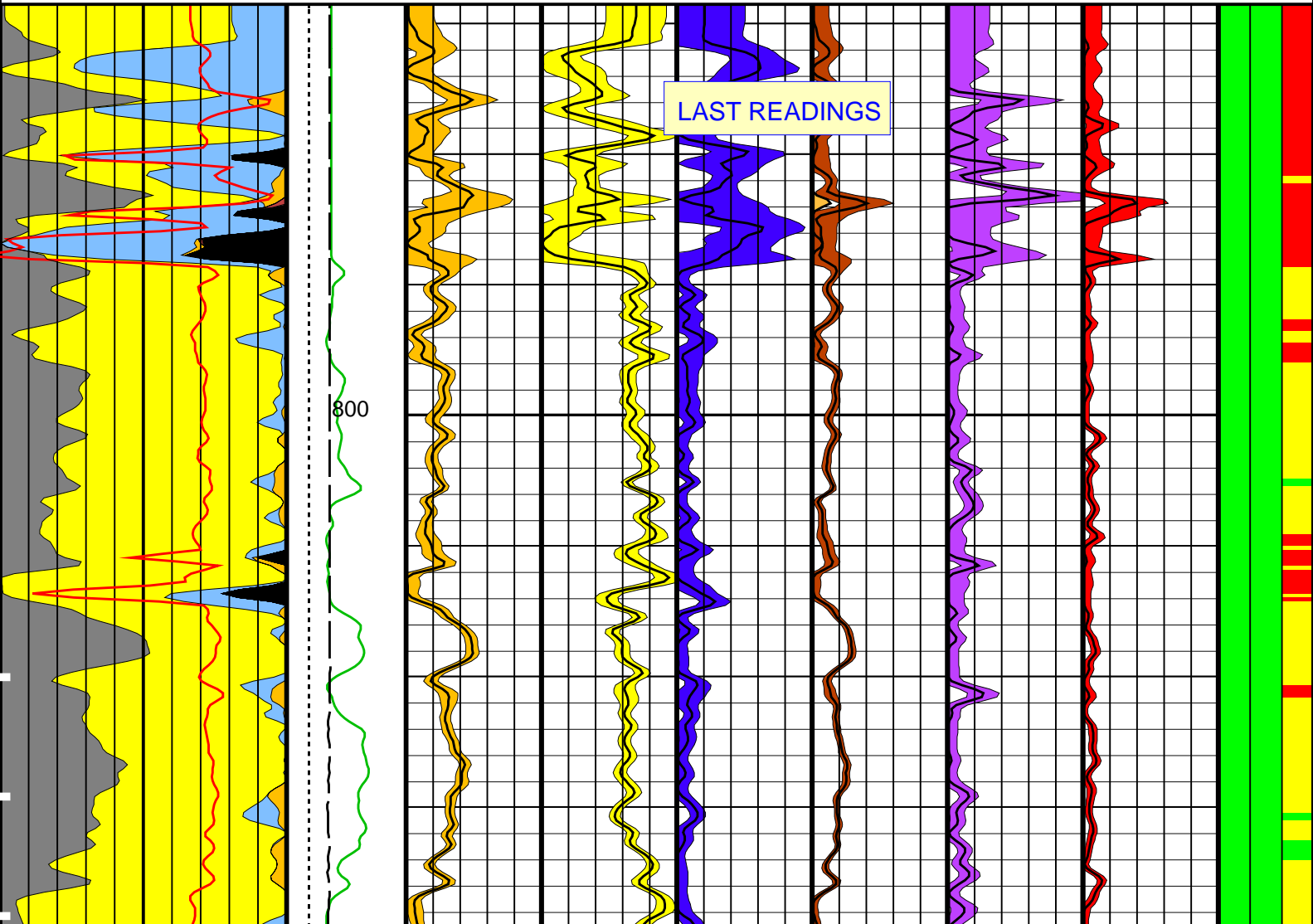
LQC Track

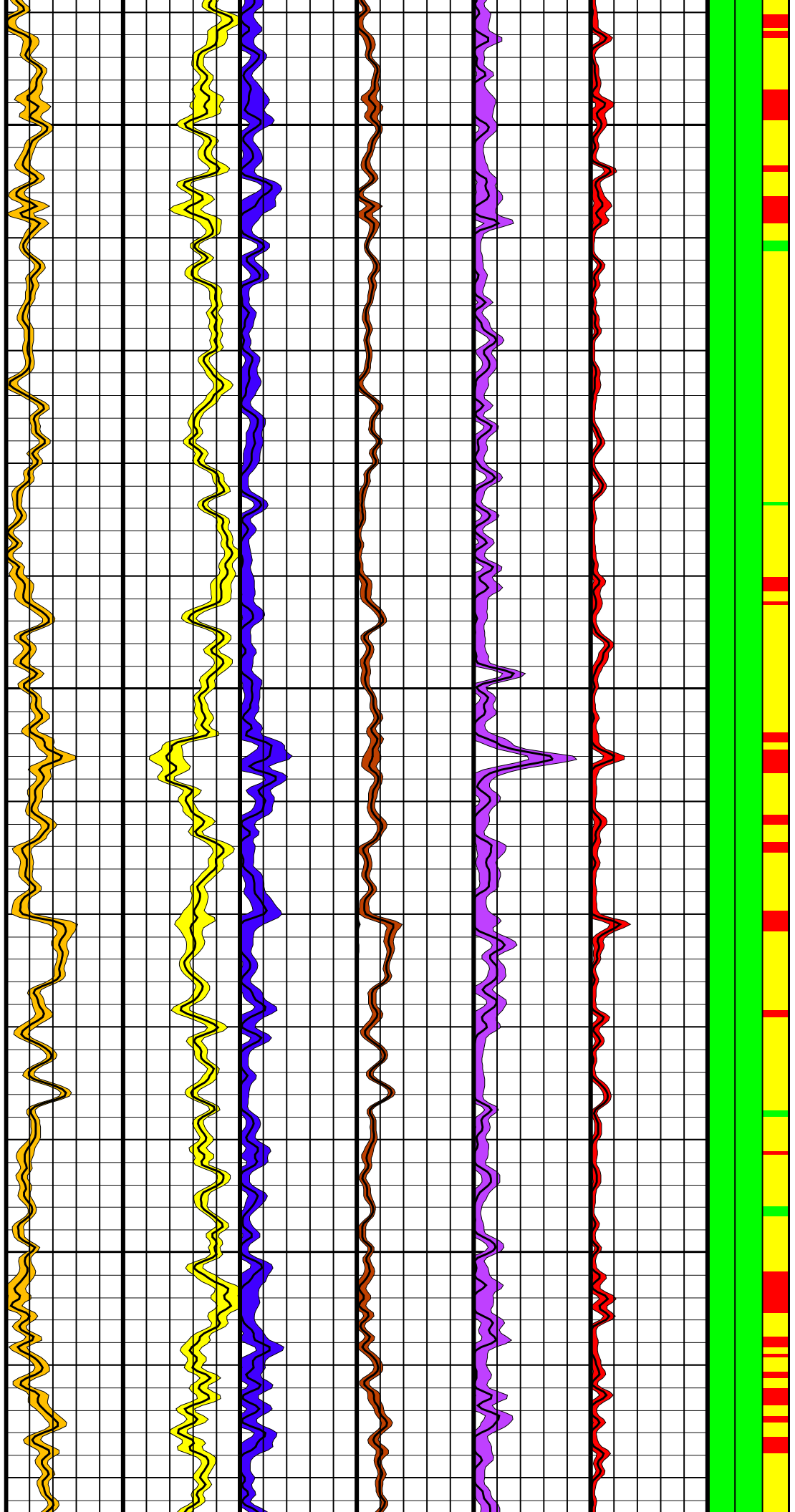
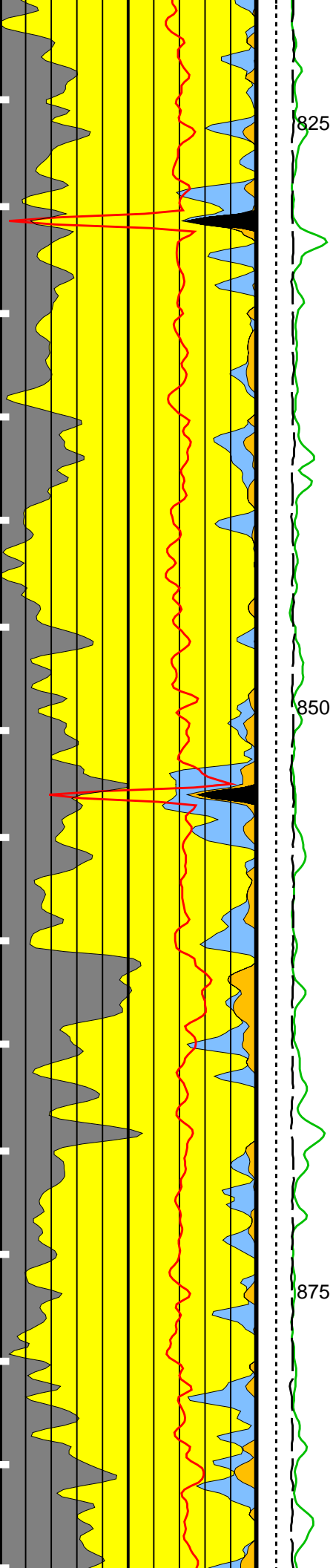
Left(I1) ----> Right(I3)

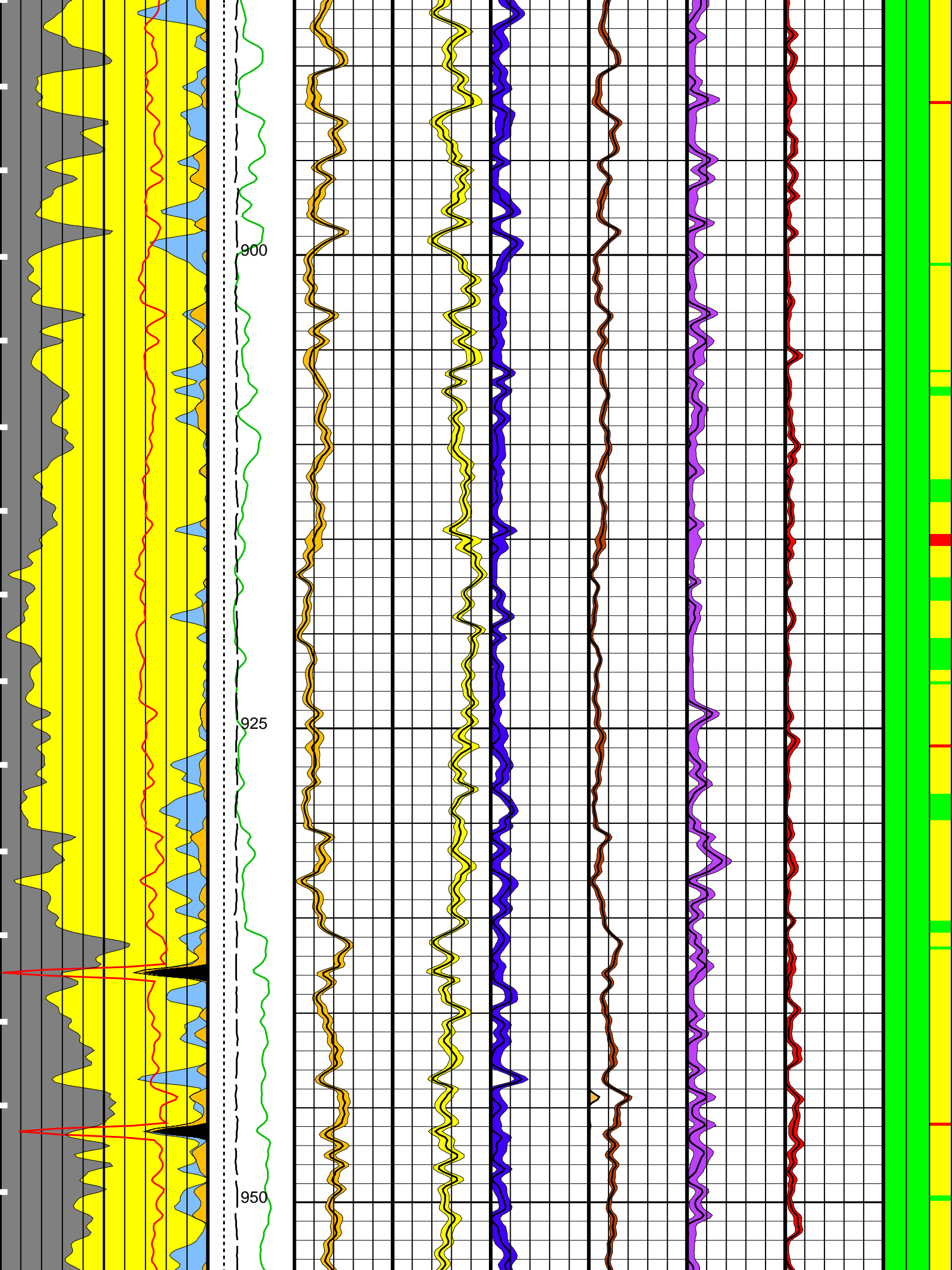
I1: ECS Hardware: Photomultiplier (QC\_PMT)

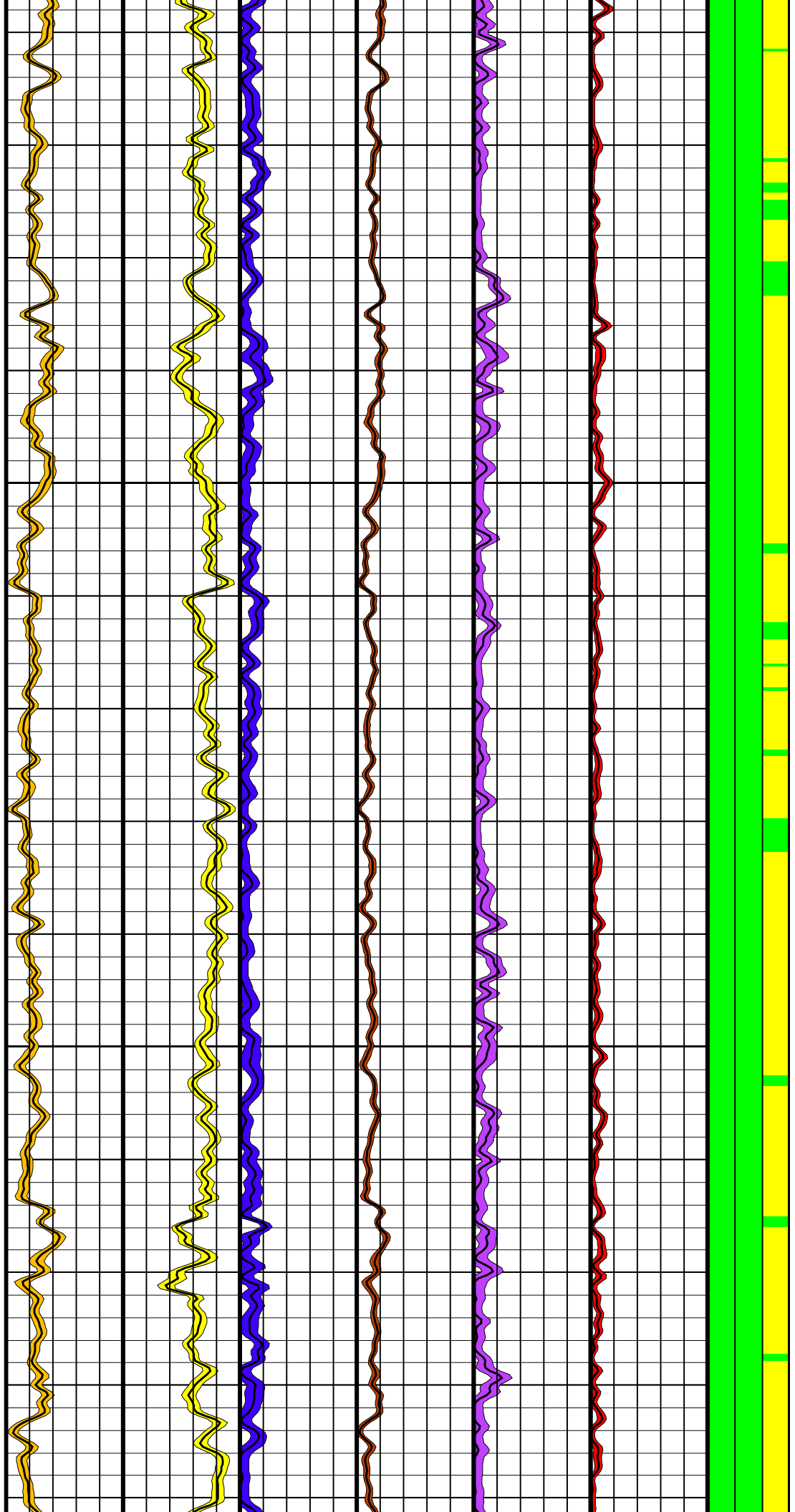
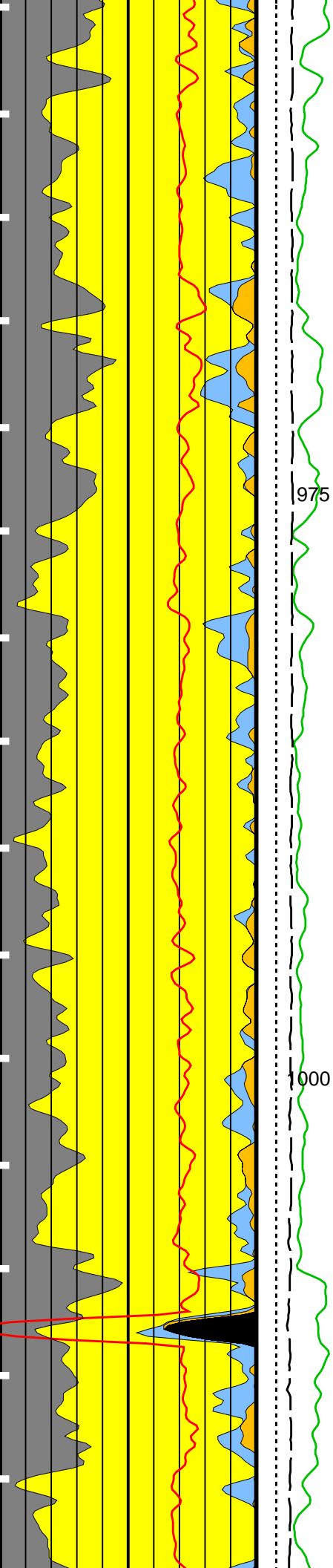
I2: ECS Hardware: BGO Crystal Temperature (ECST)

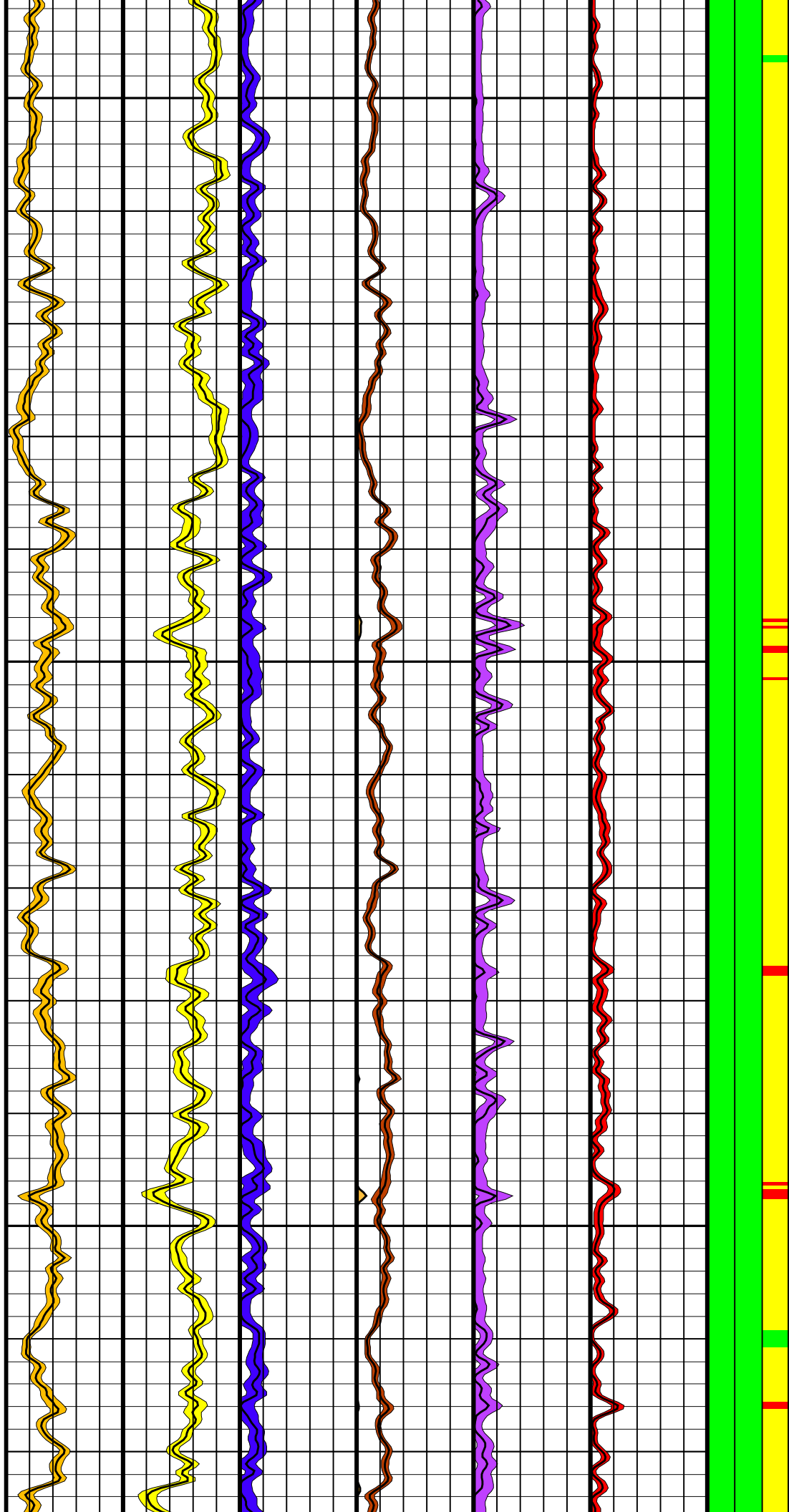
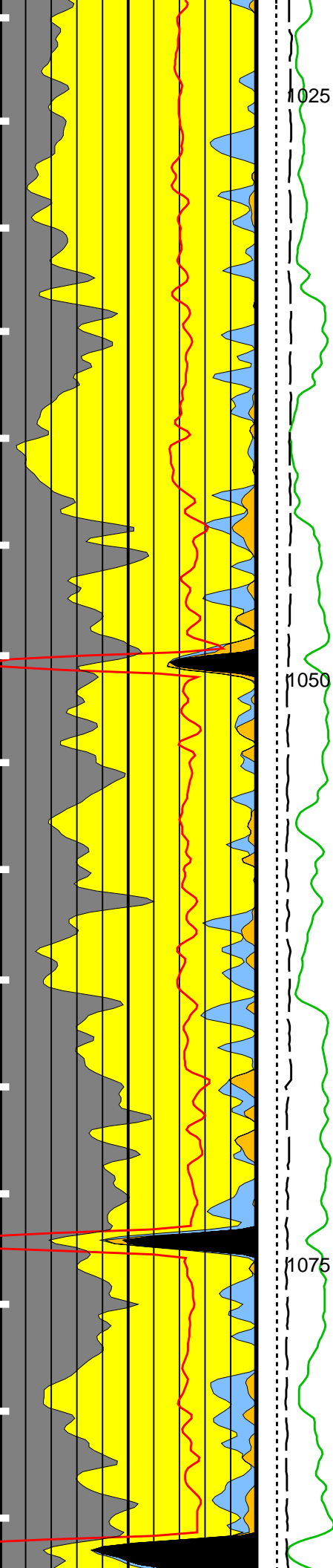
I3: ECS Data Quality: Elemental Statistical Uncertainty (ESUF\_WALK2)

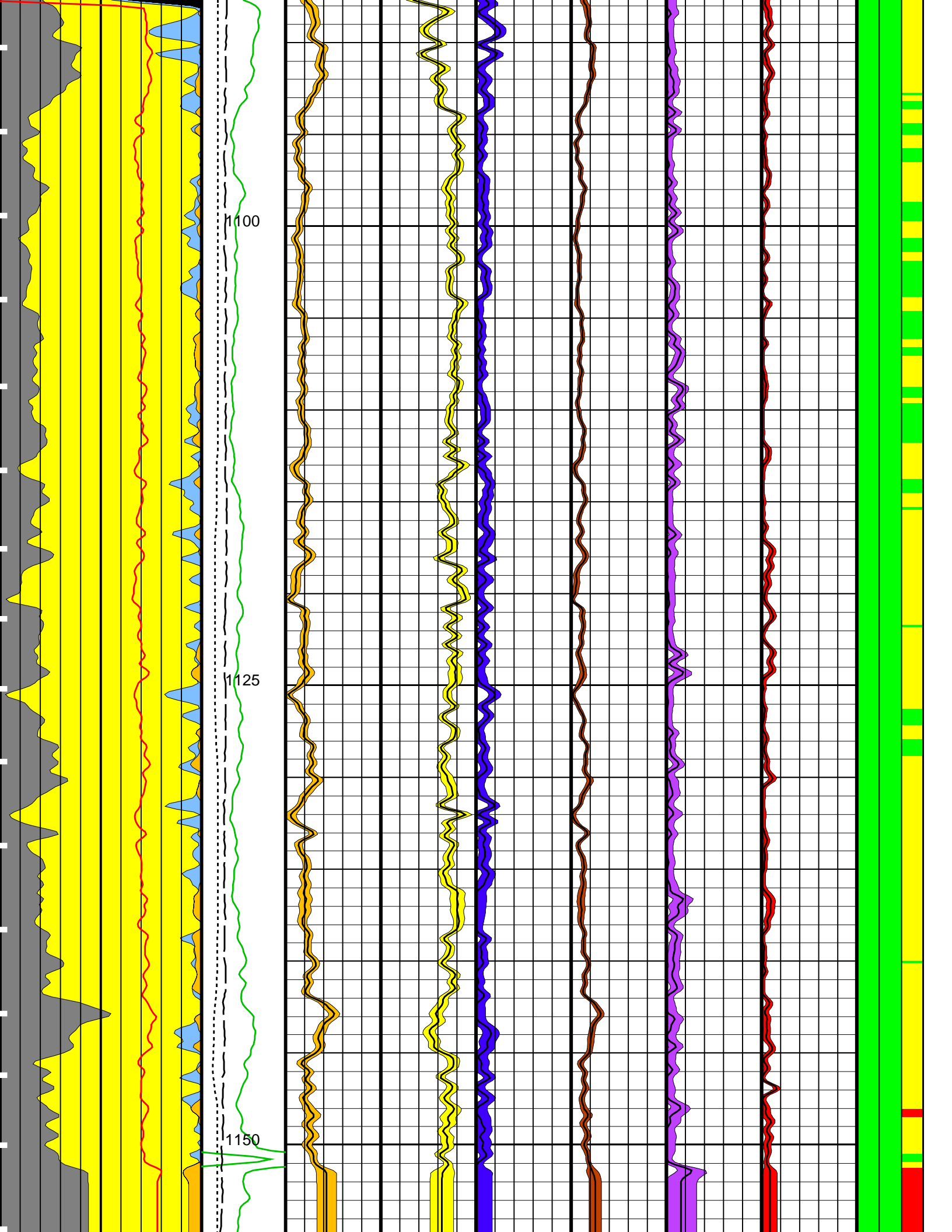


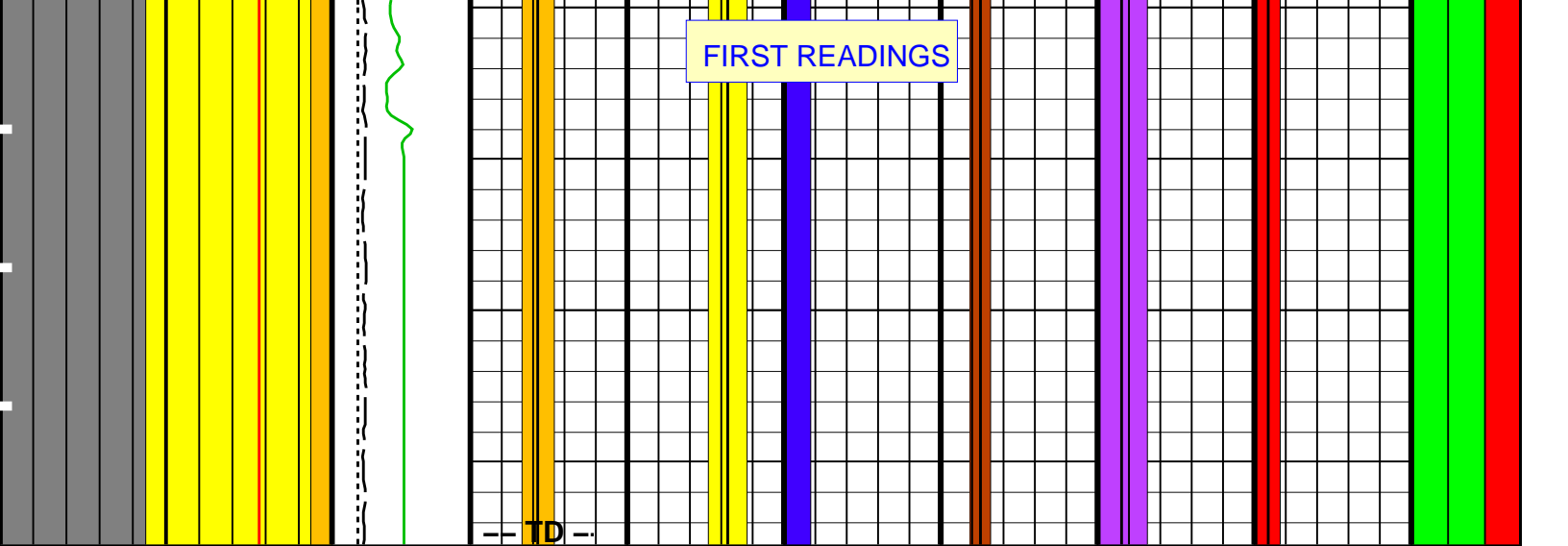












LQC Track  
Left(I1) ----> Right(I3)  
I1: ECS Hardware: Photomultiplier (QC\_PMT)  
I2: ECS Hardware: BGO Crystal Temperature (ECST)  
I3: ECS Data Quality: Elemental Statistical Uncertainty (ESUF\_WALK2)

Anhydrite	Cable Speed (CS) (M/HR)	DWAL (DWAL_ WALK2)	DWSI (DWSI_ WALK2)	DWCA (DWCA_ WALK2)	DXFE (DXFE_ WALK2)	DWSU (DWSU_ WALK2)	DWTI (DWTI_ WALK2)	normal
	01500	0 (W/W) 0.2	0 (W/W) 0.5	0 (W/W) 0.5	0 (W/W) 0.2	00.25	00.05	
Clay	Gamma Ray (GR) (GAPI)	Dry Wt. Aluminum	Dry Wt. Silicon	Dry Wt. Calcium	DWFE (DWFE_ WALK2)	Dry Wt. Sulfur	Dry Wt. Titanium	warning
	0150				0 (W/W) 0.2			
Carbonate	Tension (TENS) (N)					Dry Wt. Excess Iron		error
	250000					Dry Wt. Iron		LQC I1---->I3
Coal								
Pyrite								
Q-F-M								
Siderite								
Salt								
Matrix Density (RHGE_ WALK2)								
2 (G/C3) 3								

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
ECS-A: Elemental Capture Spectroscopy Tool		
SPEC_BARITE_MUD_FLAG	Barite Mud Flag for Spectroscopy Processing	On
SPEC_CSG_DEPTH	Casing Depth for Spectroscopy Processing	-999.25 M
SPEC_ELE_STD_SHFT_FAC	Calibration Factor for Elemental Spectral Standards	0.88338
SPL_CLAY_MODEL	SpectroLith Clay Model	Arenite
SPL_SULFUR_MINERAL	SpectroLith Sulfur Mineral Option	Pyrite
System and Miscellaneous		
DO	Depth Offset for Block and	0.0 M

DO PP	Depth Offset for Playback Playback Processing	0.0 M	RECOMPUTE
Format: ECS_SpectroLith_PB		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	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



ECS:  
LQC YIELDS

MAXIS Field Log

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	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
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			

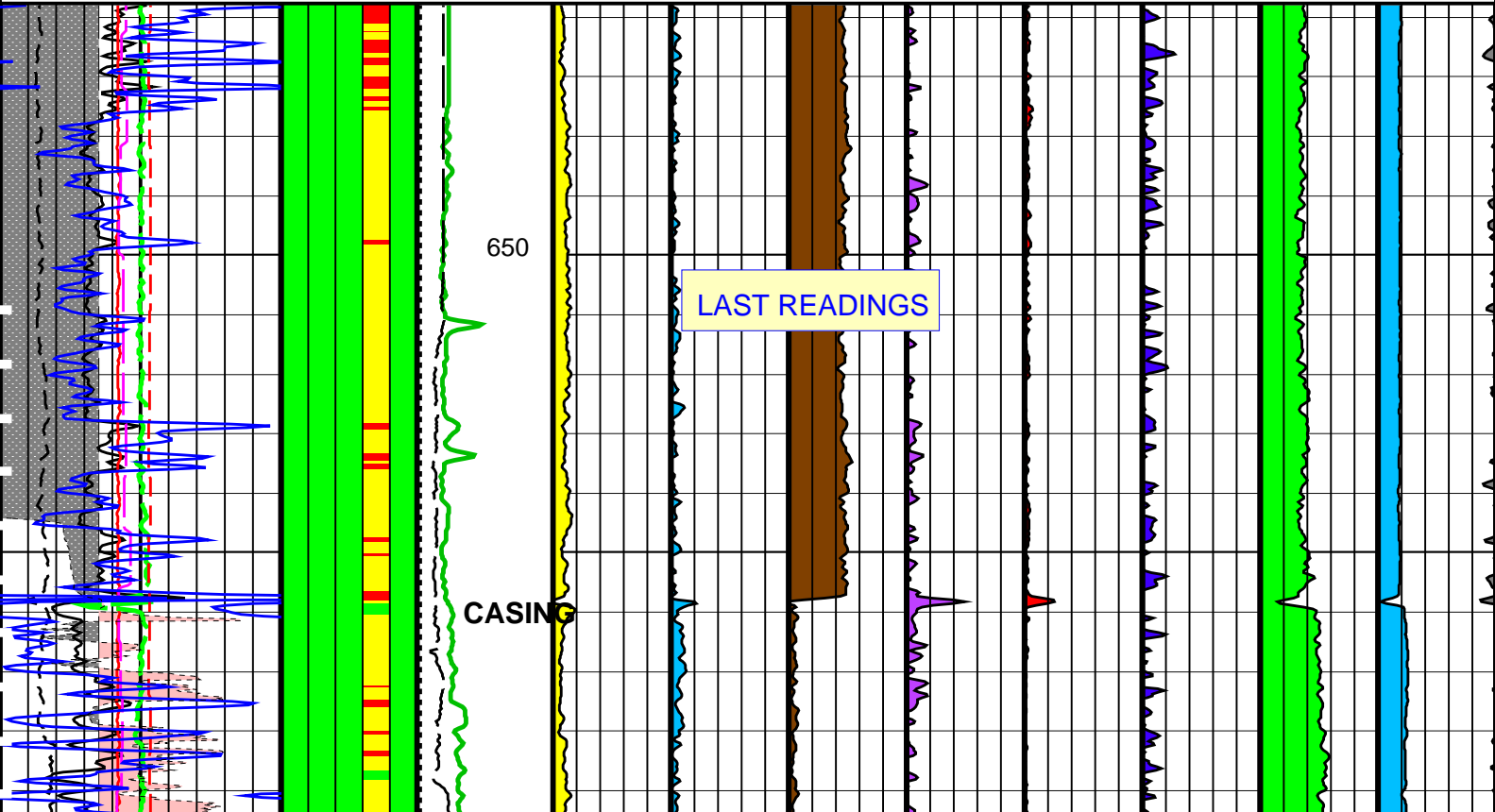
PIP SUMMARY	
Time Mark Every 60 S	

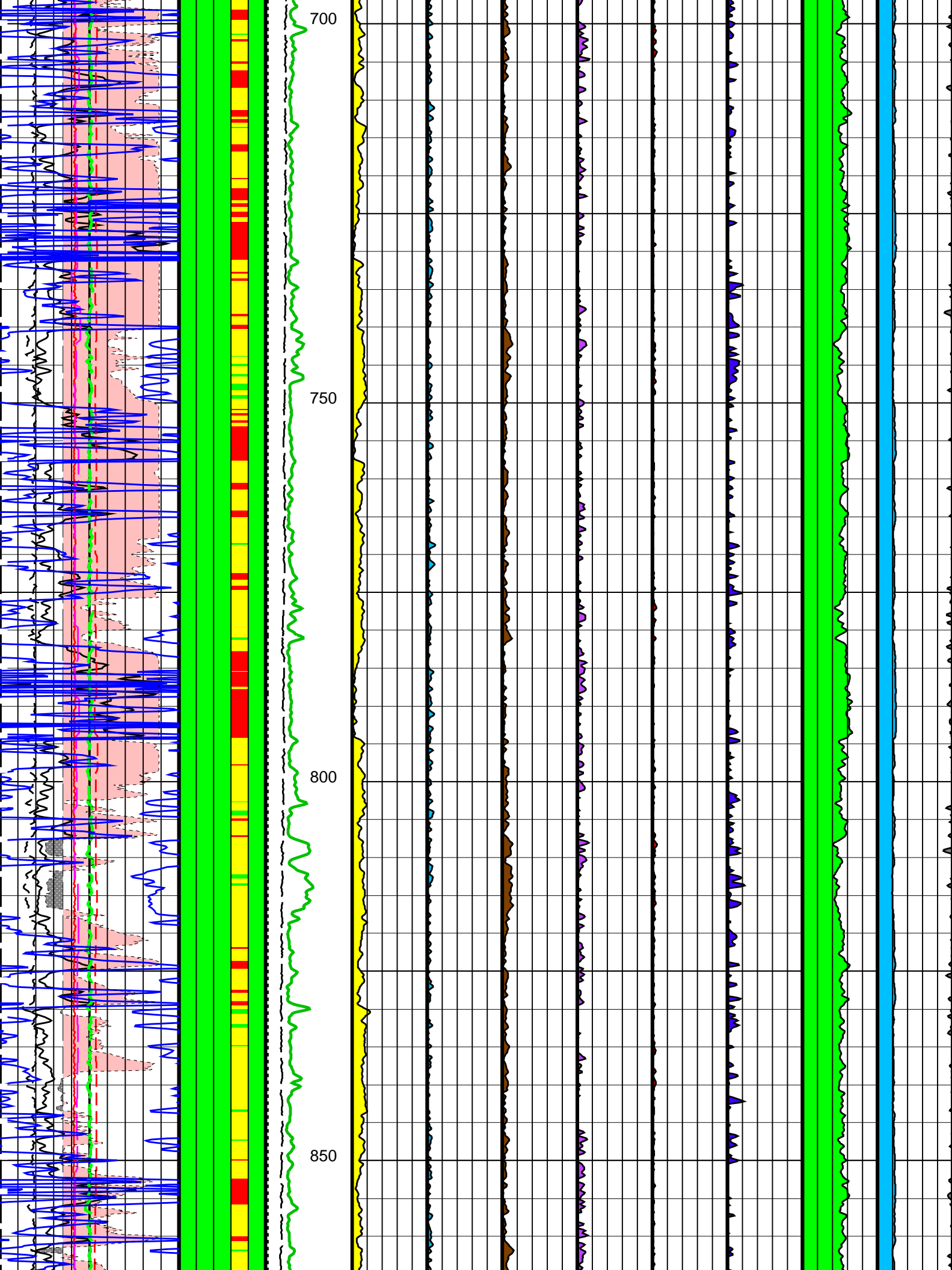
Oxides Closure Normalization Factor (FY2W_WALK2)	
0 (---- 5	
Elemental Statistical Uncertainty Factor (ESUF_WALK2)	
0 (---- 5	
ECS Marquardt Gain (ECMG_20)	
0.95 (---- 1.05	

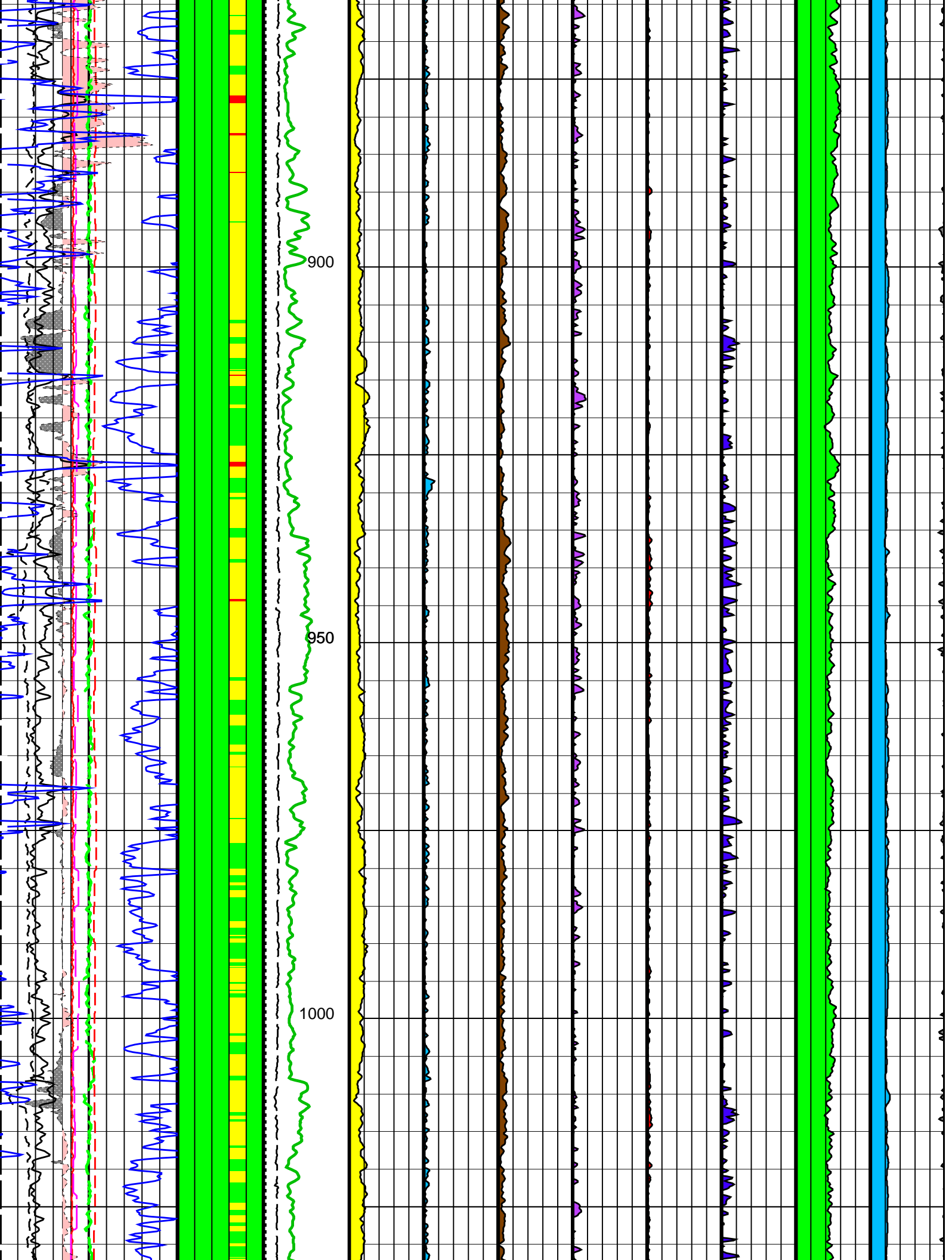
Spectral Count Rate (ch.40-240) (ESSR_20)		
10000	(CPS)	30000
Offset Correction Factor (EOCF_20)		
-5	(----	5
ECS Temperature (ECST)		
-20	(DEGF)	130

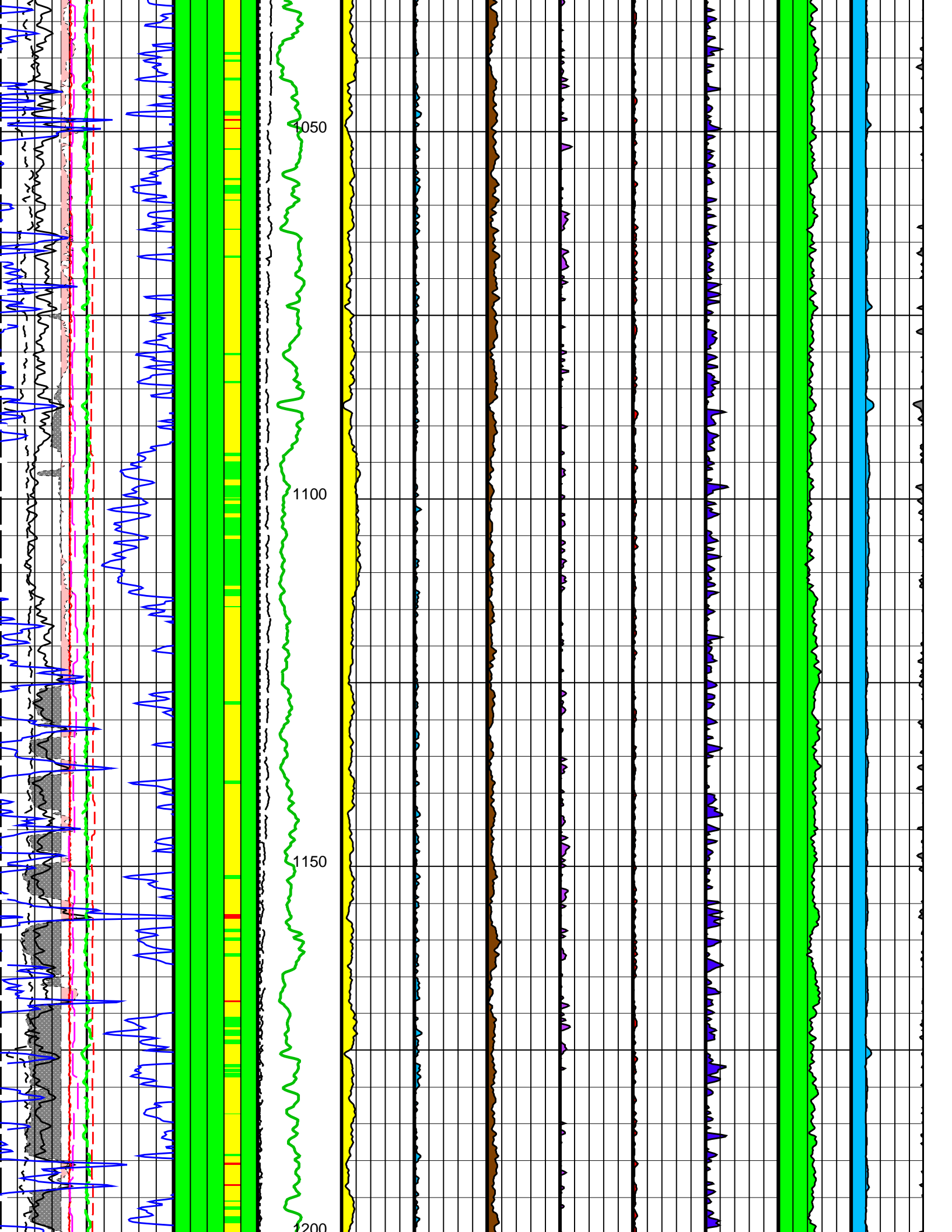
RDF (ERDF_20) 0 (-----) 10		LQC I1---->I5											
(HCAL) 275 (MM) 525		manual											IC
Bit Size (BS) 275 (MM) 525		error	Gamma Ray (GR) (GAPI) 0 200									CHY	
Washout		warning	Tension (TENS) (N) 20000 0	CSI	CCA	CFE	CSUL	CTI	CGD	CCHL	IC (IC_WALK2) (----- 0.25 0		
MudCake		normal	Cable Speed (CS) (M/HR) 0 15000	CSI (CSI_WALK2) (----- 0 0.5	CCA (CCA_WALK2) (----- 0 0.5	CFE (CFE_WALK2) (----- 0 0.5	CSUL (CSUL_WALK2) (----- 0 0.25	CTI (CTI_WALK2) (----- 0 0.5	CGD (CGD_WALK2) (----- 0 0.5	CCHL (CCHL_WALK2) (----- 0 (-----1	CHY (CHY_WALK2) (----- 0 (-----1		

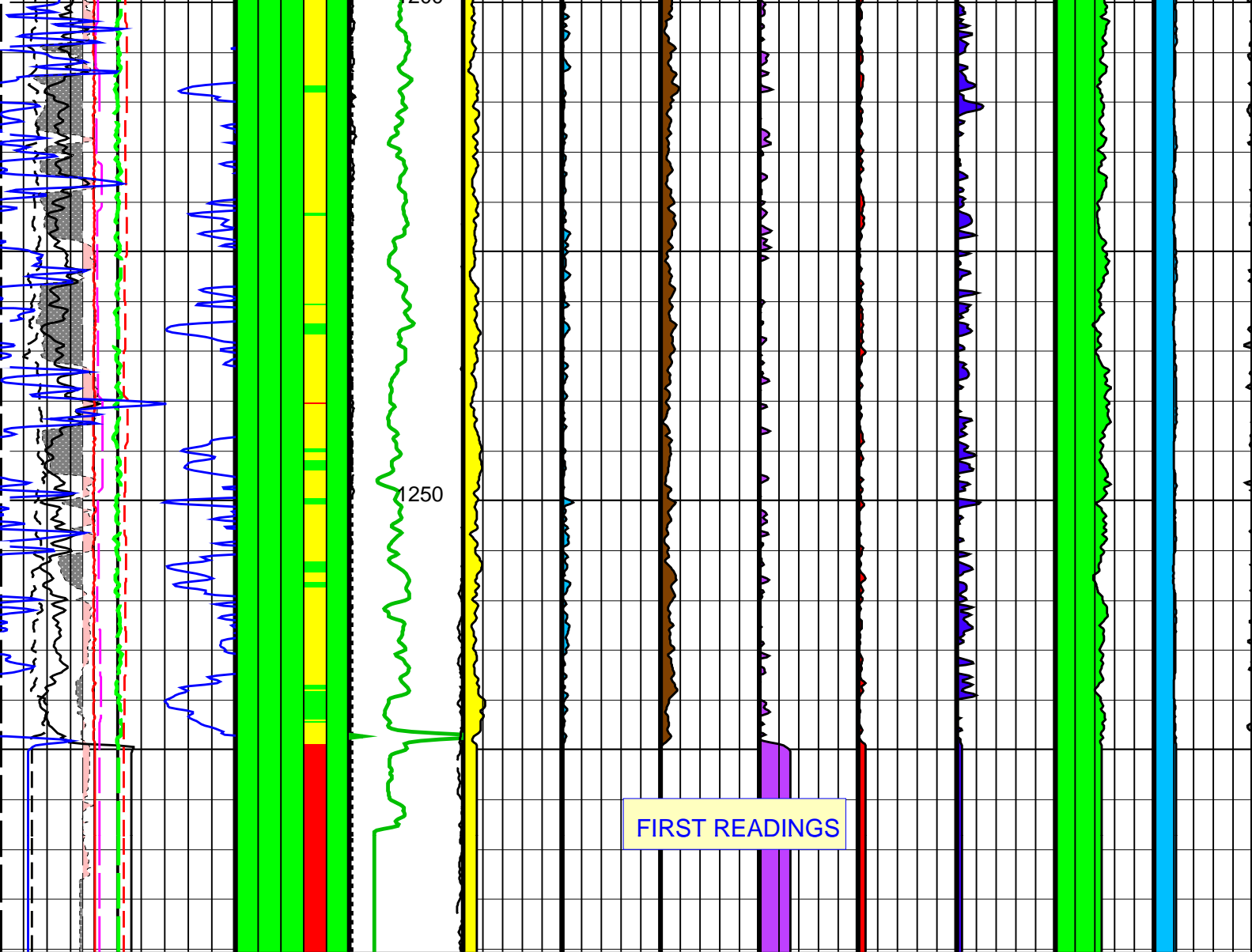
LQC Track  
 Left(I1) ----> Right(I5)  
 I1: ECS Hardware: Photomultiplier (QC\_PMT)  
 I2: ECS Hardware: BGO Crystal Temperature (ECST)  
 I3: ECS Hardware: Control Loop (HV Loop OR PSC LOOP)  
 I4: ECS Data Quality: Elemental Statistical Uncertainty (ESUF\_WALK2)  
 I5: ECS Data Quality: Marquardt Chisq (EMC2)











FIRST READINGS

LQC Track  
Left(I1) ----> Right(I5)  
I1: ECS Hardware: Photomultiplier (QC\_PMT)  
I2: ECS Hardware: BGO Crystal Temperature (ECST)  
I3: ECS Hardware: Control Loop (HV Loop OR PSC LOOP)  
I4: ECS Data Quality: Elemental Statistical Uncertainty (ESUF\_WALK2)  
I5: ECS Data Quality: Marquardt Chisq (EMC2)

MudCake	normal	Cable Speed (CS) (M/HR) 0 15000	CSI (CSI_WALK2) (----) 0 0.5	CCA (CCA_WALK2) (----) 0 0.5	CFE (CFE_WALK2) (----) 0 0.5	CSUL (CSUL_WALK2) (----) 0 0.25	CTI (CTI_WALK2) (----) 0 0.5	CGD (CGD_WALK2) (----) 0 0.5	CCHL (CCHL_WALK2) (----) 0 (----) 1	CHY (CHY_WALK2) (----) 0 (----) 1
Washout	warning	Tension (TENS) (N) 20000 0	CSI	CCA	CFE	CSUL	CTI	CGD	CCHL	IC (IC_WALK2) (----) 0.25 0
Bit Size (BS) (MM) 275 525	error	Gamma Ray (GR) (GAPI) 0 200								CHY
(HCAL) (MM) 275 525	manual									IC

RDF (ERDF\_20) (----) 10  
LQC I1---->I5

Calibration and Check Summary							
Measurement	Nominal	Master	Before	After	Change	Limit	Units

Accelerator–Porosity Tool Wellsite Calibration – Detector Background							
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 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 Deveice/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	

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 Deveice/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	136.2	N/A	N/A	12.70	MM
PPC1 Radius 3 Raw Large Radius	203.2	N/A	242.2	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	

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											




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									
Photo-multiplier High Voltages Calibrations									
Phase	BS PM High Voltage (Command) V			Value	Phase	SS PM High Voltage (Command) V			Value
	1276 (Minimum)	1376 (Nominal)	1476 (Maximum)			1201 (Minimum)	1301 (Nominal)	1401 (Maximum)	
Before				1352	Before				1410
After				1376	After				1301



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)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)
Before: 2–Mar–2007 21:29															





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									

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											

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)					5.000 (Minimum)                      29.66 (Nominal)                      40.00 (Maximum)				
Master: 10–Jan–2007 15:23					Before: 2–Mar–2007 21:23				

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														

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

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														

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									



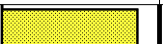
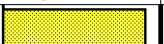


High resolution Integrated Logging Tool-DTS Master Calibration														
Tank Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				6292	Master				2647	Master				2.377
	5000 (Minimum)	6031 (Nominal)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

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														

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	PC2 Radius 1 Raw Small Radius	MM	Value	Phase	PC2 Radius 1 Raw Large Radius	MM	Value		
Before			139.6	Before			245.1		

30.48 (Minimum)	88.90 (Nominal)	142.2 (Maximum)		154.9 (Minimum)	203.2 (Nominal)	246.4 (Maximum)	
PhasePC2 Radius 2 Raw Small Radius	MM	Value		PhasePC2 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)	
PhasePC2 Radius 3 Raw Small Radius	MM	Value		PhasePC2 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)	
PhasePC2 Radius 4 Raw Small Radius	MM	Value		PhasePC2 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:	HNSH – BA	25	25
HNGS Sonde Housing	GSR – U	610	610
Gamma Source Radioactive			

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
0.9500 (Minimum)		1.000 (Nominal)
		1.050 (Maximum)
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				142.5	265.0	0.9400									1.000	1.060	

20.00 (Minimum)	42.00 (Nominal)	200.0 (Maximum)	0.0-400 (Minimum)	1.000 (Nominal)	1.000 (Maximum)
Master: 9-Jan-2007 19:28					


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	<div><div></div></div>			41.00	Master	<div><div></div></div>			211.7	Master	<div><div></div></div>			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	<div><div></div></div>			99.08	Master	<div><div></div></div>			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														

Powered Positioning Device/Caliper 1 / Equipment Identification	
Primary Equipment:	
PPC Powered Positioning Device/Caliper	PPC1 - B
PPC1 Caliper 40 Extension	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	<div><div></div></div>			137.5	Before	<div><div></div></div>			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	<div><div></div></div>			55.65	Before	<div><div></div></div>			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	<div><div></div></div>			136.3	Before	<div><div></div></div>			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	<div><div></div></div>			63.71	Before	<div><div></div></div>			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									

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											

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

9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)
Before: 6-Mar-2007 9:11		

Company: **JOGMEC**

**Schlumberger**

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

Field: **MALLIK**

Province: **NWT**

ELEMENTAL CAPTURE SPECTROSCOPY