Schlumberger

Company: **JOGMEC**

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

Province: NWT
Field: MALLIK
Location: GRID: 69−30−134−3(
Well: AURORA/JOGMEC/NRCAN MAL
Company: JOGMEC

PLATFORM EXPRESS:
ARRAY INDUCTION − SP LOG

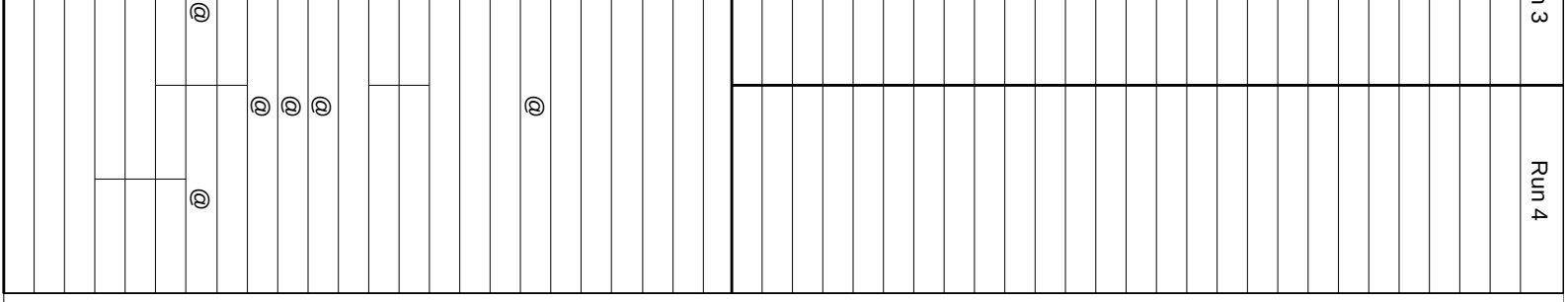
LOCATION

GRID: 69−30−134−3(		Elev.: K.B.	10.55 m
UWID: 302 L38 69−30−134−301		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

	Run 1	Run 2	Run
Logging Date	3−Mar−2007		
Run Number	ONE		
Depth Driller	1147 m		
Schlumberger Depth	1133 m		
Bottom Log Interval	1130.5 m		
Top Log Interval	677 m		
Casing Driller Size @ Depth	339.700 mm @ 677 m	@	
Casing Schlumberger	678 m		
Bit Size	361.950 mm		
Type Fluid In Hole	KCL POLYMER		
MUD Density / Viscosity	1120 kg/m3 / 63 s		
MUD Fluid Loss / PH	5 cm3 / 8.9		
MUD Source Of Sample	FLOWLINE		
RM @ Measured Temperature	0.113 ohm.m @ 21 degC	@	
RMF @ Measured Temperature	0.150 ohm.m @ 22 degC	@	
RMC @ Measured Temperature	0.158 ohm.m @ 21 degC	@	
Source RMF / RMC	PRESS / PRESS		
RM @ MRT / RMF @ MRT	0.154 @ 9 / 0.210 @ 9	@ / @	
Maximum Recorded Temperatures	9 degC		
Circulation Stopped / Time	2−Mar−2007 / 19:00		
Logger On Bottom / Time	3−Mar−2007 / 08:30		
Unit Number / Location	1803 / NISKU, AB		
Recorded By	LANNY LAROCHE		
Witnessed By	TOKUJIRO TAKAYAMA		

	Run 1	Run 2	Run
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@ / @		
Maximum Recorded Temperatures			
Circulation Stopped / Time			
Logger On Bottom / Time			
Unit Number / Location			
Recorded By			
Witnessed By			



DEPTH SUMMARY LISTING

Date Created: 3−MAR−2007 9:28:42

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−46P−XS
Serial Number:	6423	Serial Number:	2565	Serial Number:	−999
Calibration Date:	09−JAN−2007	Calibration Date:	06−FEB−2007	Length:	6399.89 M
Calibrator Serial Number:	4	Calibrator Serial Number:	1111		
Calibration Cable Type:	7−46P−XS	Calibration Gain:	0.84	Conveyance Method:	Wireline
Wheel Correction 1:	−6	Calibration Offset:	−14.00	Rig Type:	LAND
Wheel Correction 2:	−7				

Depth Control Parameters

Log Sequence: First Log In the Well

Stretch Correction: 0.40 M
Tool Zero Check At Surface: 0.20 M

Depth Control Remarks

1. SPEED CORRECTION NOT APPLIED ON WELLSITE
2. UPLOG CORRELATED TO DOWNLOG
3.
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: AIT−TLD−HGNS−CMR−EMS	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
AIT LOGGED WITH 2.5in STANDOFF AND ECCENTERED WITH NON−CONDUCTIVE BOWSPRING	
TLD HAS LARGE HOLE KIT CALIPER INSTALLED	
HGNS HAS LARGE HOLE KIT INSTALLED	
CMR ECCENTERED WITH LARGE HOLE ECCENTRALIZER	
EMS HAS LARGE HOLE KIT INSTALLED	
BS = 12.25" FROM SC−900M	

BS = 14.25" FROM 900−1133M

BS = 9.875" FROM 1133−1147M

SLB ONLY LOGGED DOWN TO 1133M

REPEAT PERFORMED OVER 950−1050M

RIG: AKITA 62

CREW: JAMES MACDONALD / MARK KIMBALL / MIKE KLOC

RUN 1		RUN 2	
SERVICE ORDER #:	11709032	SERVICE ORDER #:	
PROGRAM VERSION:	14C0−302	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

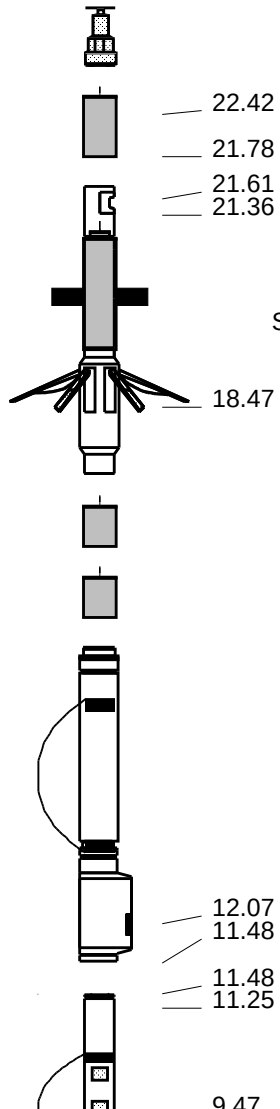
RUN 1 RUN 2

SURFACE EQUIPMENT

GSR−U/Y 6710
NCT−B
CNB−AB
NCS−VB

WITM (DTS)−A

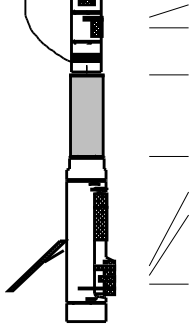
DOWNHOLE EQUIPMENT



NSR−F 5196
HACCZ−H
HCNT−H
HGR
HRCC−H 4721
HRMS−H 4707
HRGD−H 4761
GLS−VJ 1904
MCFL Device−H
HILT Nucl. LS−H
HILT Nucl. SS−H
HILT Nucl. BS−H
BOW−SPR
NPV−N

Neutron N
HGNS sens
HRCC cart
MCFL
HILT cali
HRDD−LS
HRDD−SS
HRDD−BS

9.32
8.61
7.39
5.73
5.59
5.47



AIT−M
AMIS−A 175
AMRM−A

4.88
64 MM
Standoff

Induction
Temperatu
Power Sup
SP SENSOR
DF
Cartridge HV
HTEN HMAS
Accelerom
Mud Resis
Tension

2.41
0.03
0.00

TOOL ZERO

64 MM
Standoff

MAXIMUM STRING DIAMETER 250 MM
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Schlumberger

MAIN PASS: PLATFORM EXPRESS ARRAY INDUCTION

MAXIS Field Log

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_089	FN:1	PRODUCER	03−Mar−2007 11:47	1134.3 M	622.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_091PUP	FN:110	PRODUCER	03−Mar−2007 11:51	1134.3 M	624.7 M
CUST	AIT_TLD_MCFL_CNL_091PUP	FN:111	PRODUCER	03−Mar−2007 11:51	1134.3 M	624.7 M

OP System Version: 14C0−302

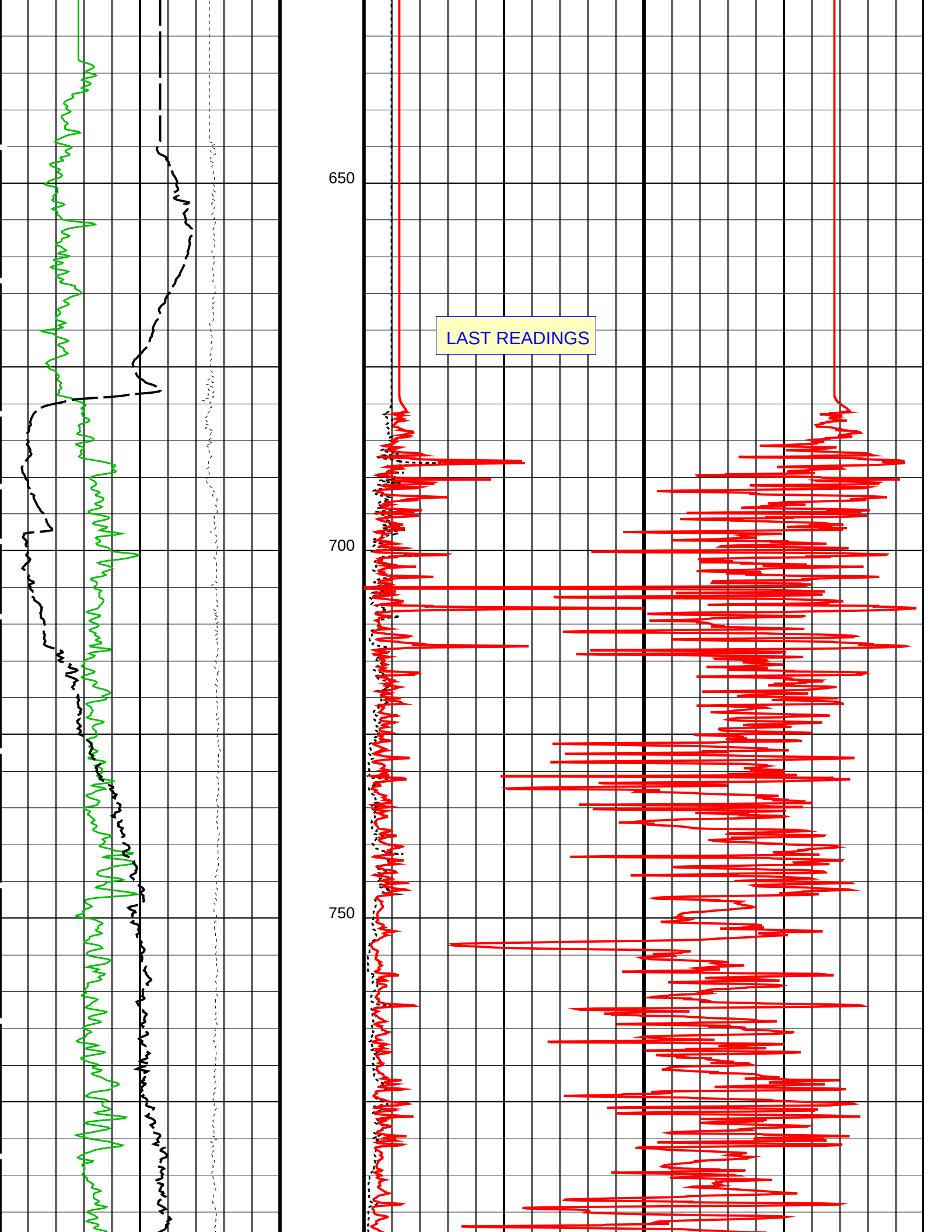
MCM

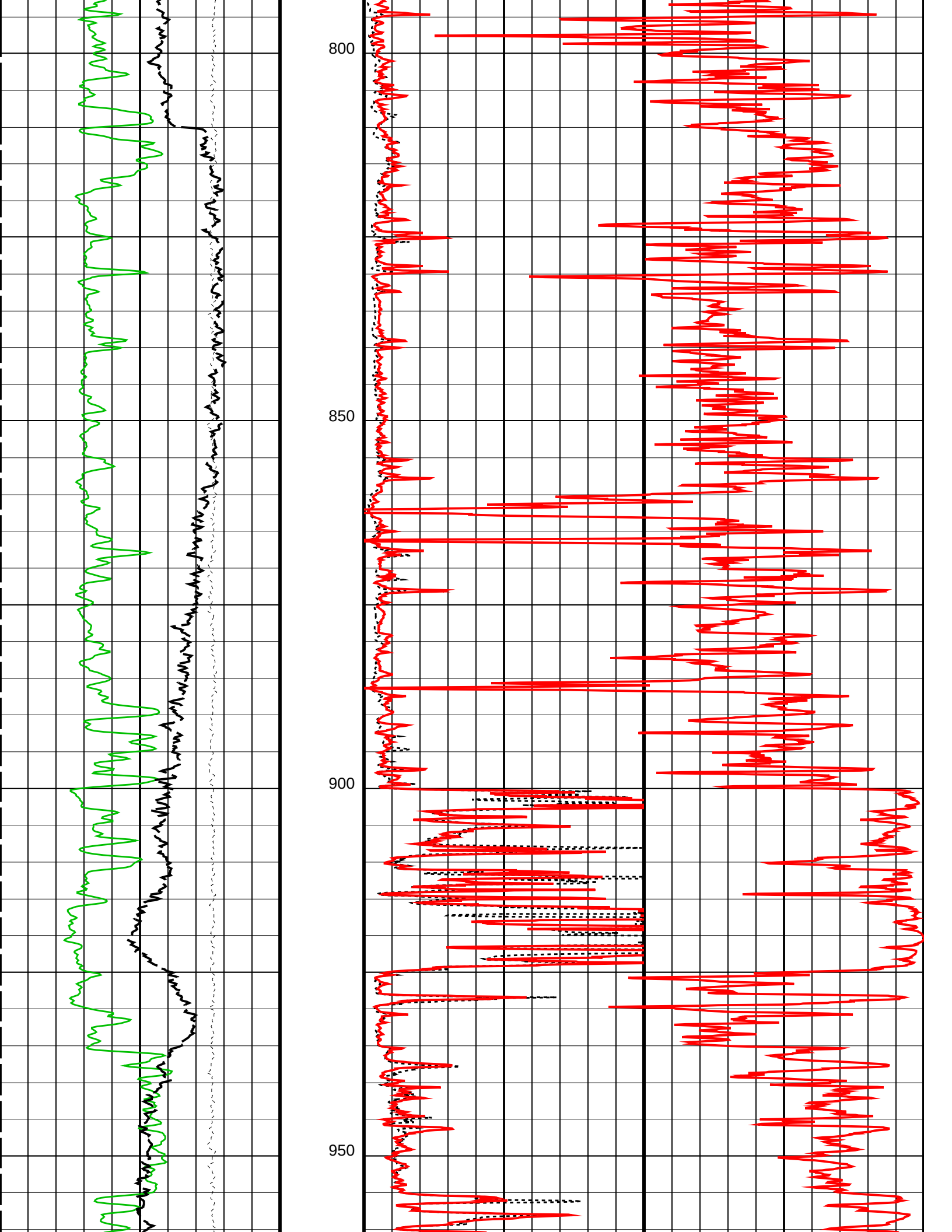
AIT−M	14C0−302	HILTH−FTB	14C0−302
EMS−B	14C0−302	DTC−H	14C0−302

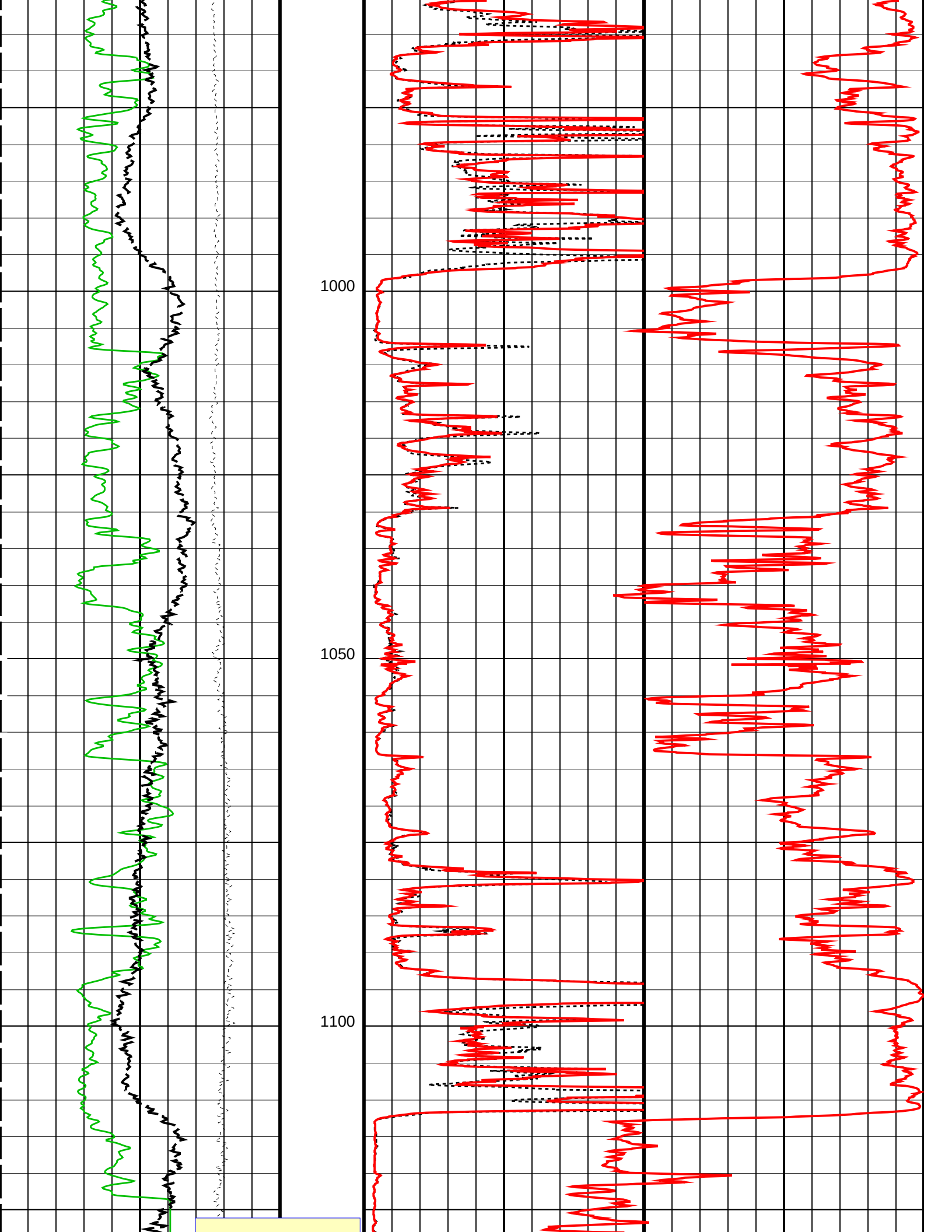
PIP SUMMARY

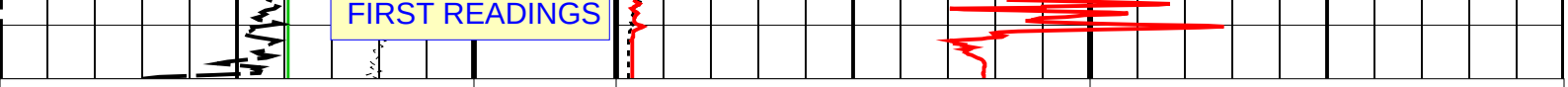
Time Mark Every 60 S

Tension (TENS) 25000 (N) 0		AIT 90 Inch Investigation Conductivity (ATCO90) 1000 (MM/M) 0
SP (SP) −120 (MV) 30		AIT 90 Inch Investigation (AT90) 0 (OHMM) 50
Gamma Ray (GR) 0 (GAPI) 150		AIT 20 Inch Investigation (AT20) 0 (OHMM) 50


650
700
750
LAST READINGS


800
850
900
950


1000
1050
1100



Gamma Ray (GR)			AIT 20 Inch Investigation (AT20)		
0	(GAPI)	150	0	(OHMM)	50
SP (SP)			**AIT 90 Inch Investigation (AT90)**		
−120	(MV)	30	0	(OHMM)	50
Tension (TENS)			**AIT 90 Inch Investigation Conductivity (ATCO90)**		
25000	(N)	0	1000	(MM/M)	0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	AIT−M: Array Induction Tool − M		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
ABHV	Array Induction Borehole Correction Code Version Number	880	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	108	
ACDE	Array Induction Casing Detection Enable	Yes	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
ACSED	Array Induction Casing Shoe Estimated Depth	−50000	M
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
ARFV	Array Induction Radial Profiling Code Version Number	700	
ARPV	Array Induction Radial Parametrization Code Version Number	223	
ASTA	Array Induction Tool Standoff	64	MM
ATRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
SPNV	SP Next Value	0	MV
	HILTH−FTB: High resolution Integrated Logging Tool−DTS		
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
	EMS−B: Environment Measurement Sonde		
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
	System and Miscellaneous		
BS	Bit Size	361.950	MM
DFD	Drilling Fluid Density	1120.00	K/M3
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	20.50	DEGC
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	1147	M

Format: COND−AITM−2FT−CAN **Vertical Scale: 1:60(** **Graphics File Created: 03−Mar−2007 11:51**

OP System Version: 14C0−302

MCM

AIT−M	14C0−302	HILTH−FTB	14C0−302

EMS−B	14C0−302	DTC−H	14C0−302

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_089	FN:1	PRODUCER	03−Mar−2007 11:47	1134.3 M	622.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_091PUP	FN:110	PRODUCER	03−Mar−2007 11:51		
CUST	AIT_TLD_MCFL_CNL_091PUP	FN:111	PRODUCER	03−Mar−2007 11:51		

Schlumberger

MAIN PASS: PLATFORM EXPRESS ARRAY INDUCTION

MAXIS Field Log

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_089	FN:1	PRODUCER	03−Mar−2007 11:47	1134.3 M	622.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_091PUP	FN:110	PRODUCER	03−Mar−2007 11:51	1134.3 M	624.7 M
CUST	AIT_TLD_MCFL_CNL_091PUP	FN:111	PRODUCER	03−Mar−2007 11:51	1134.3 M	624.7 M

OP System Version: 14C0−302

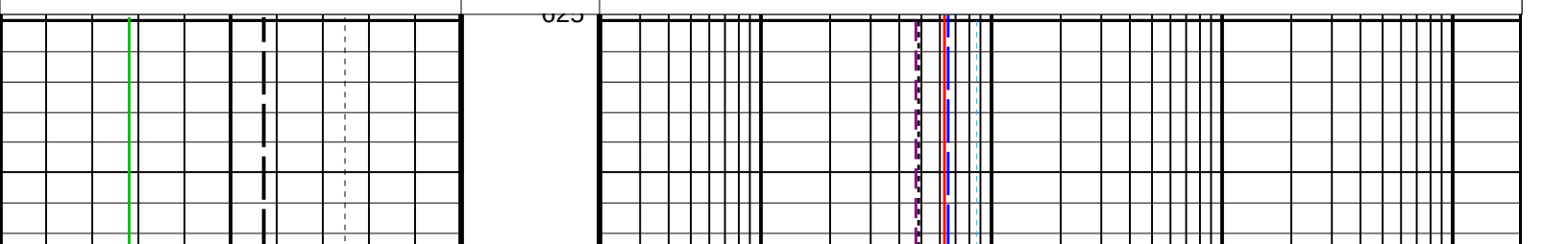
MCM

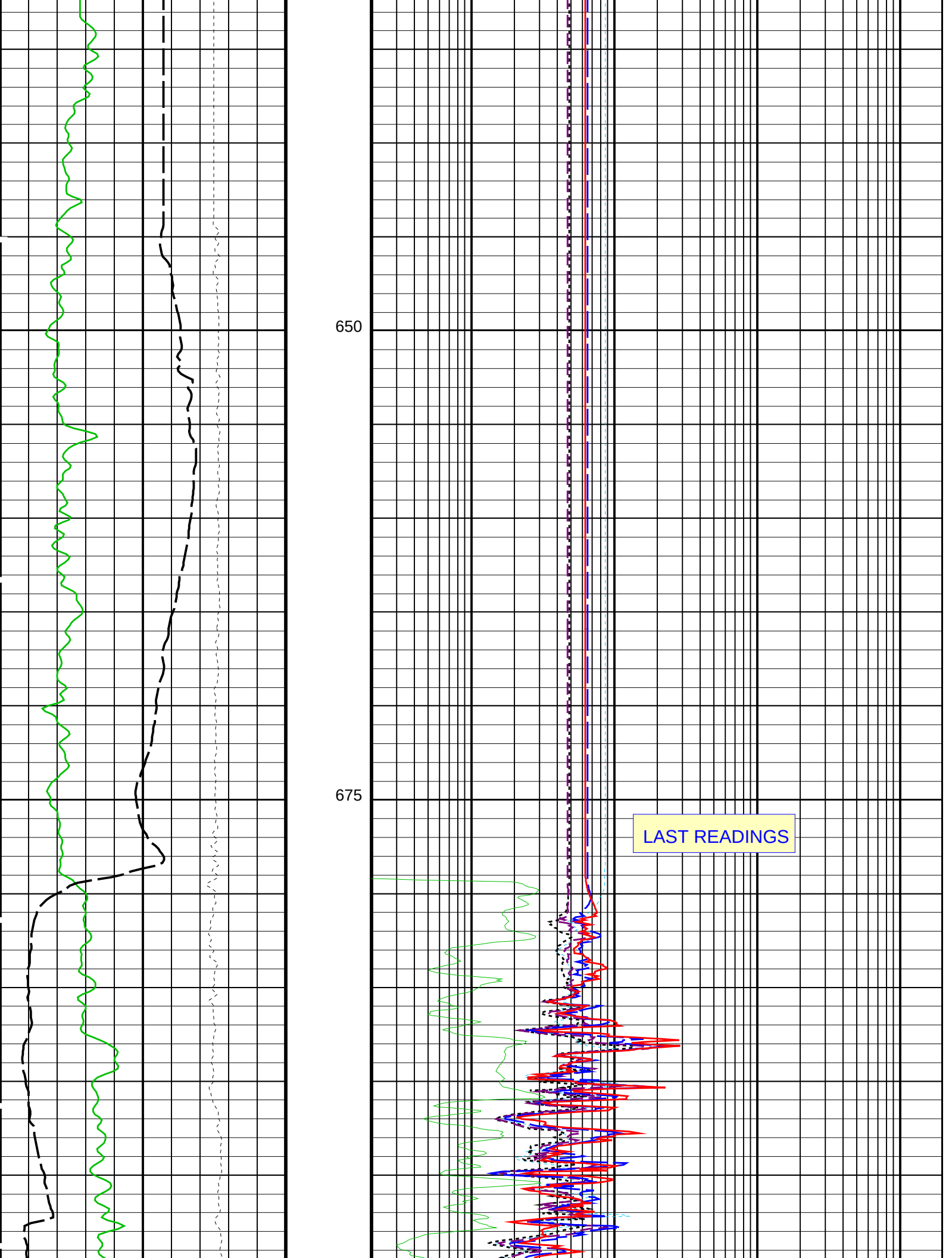
AIT−M	14C0−302	HILTH−FTB	14C0−302
EMS−B	14C0−302	DTC−H	14C0−302

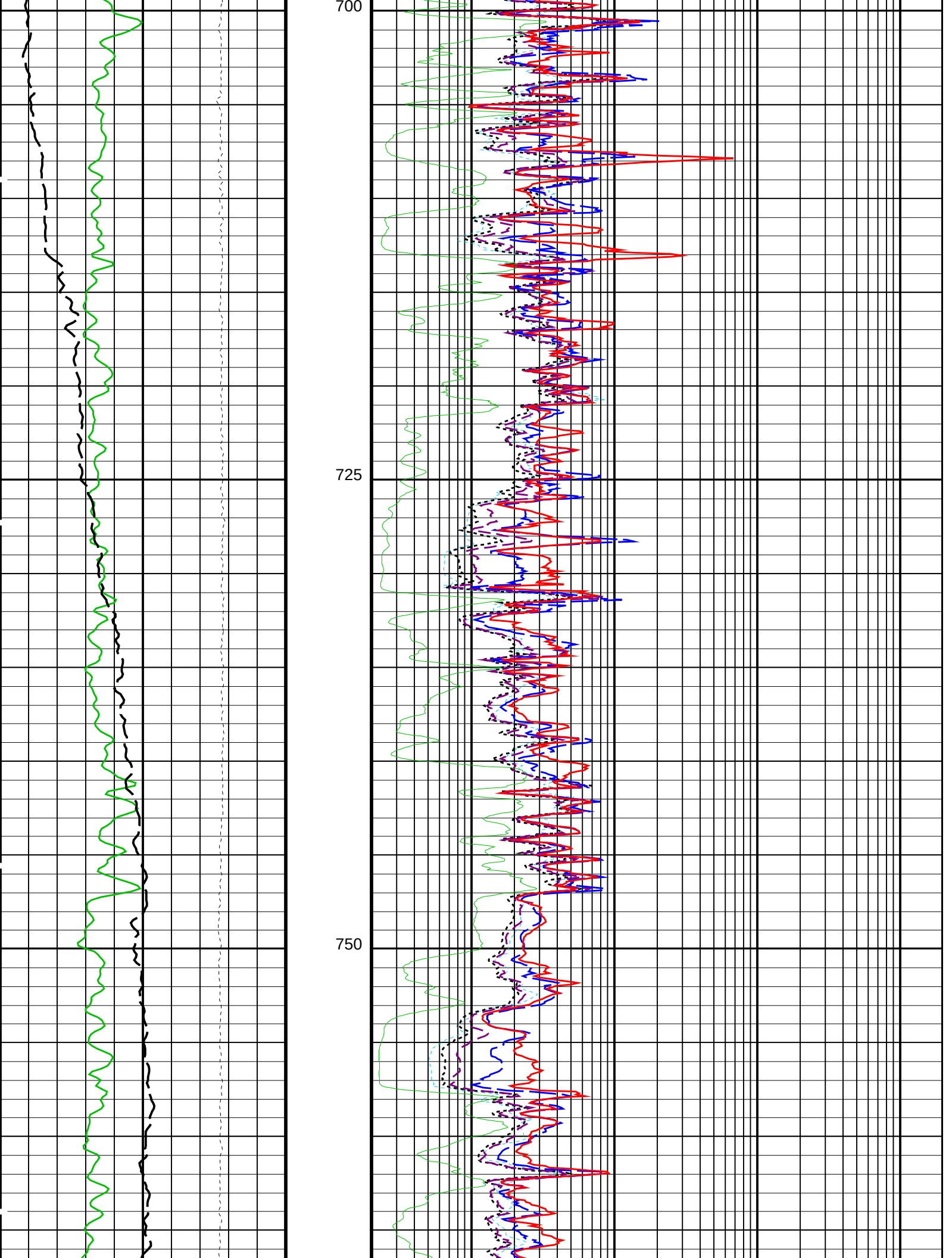
PIP SUMMARY

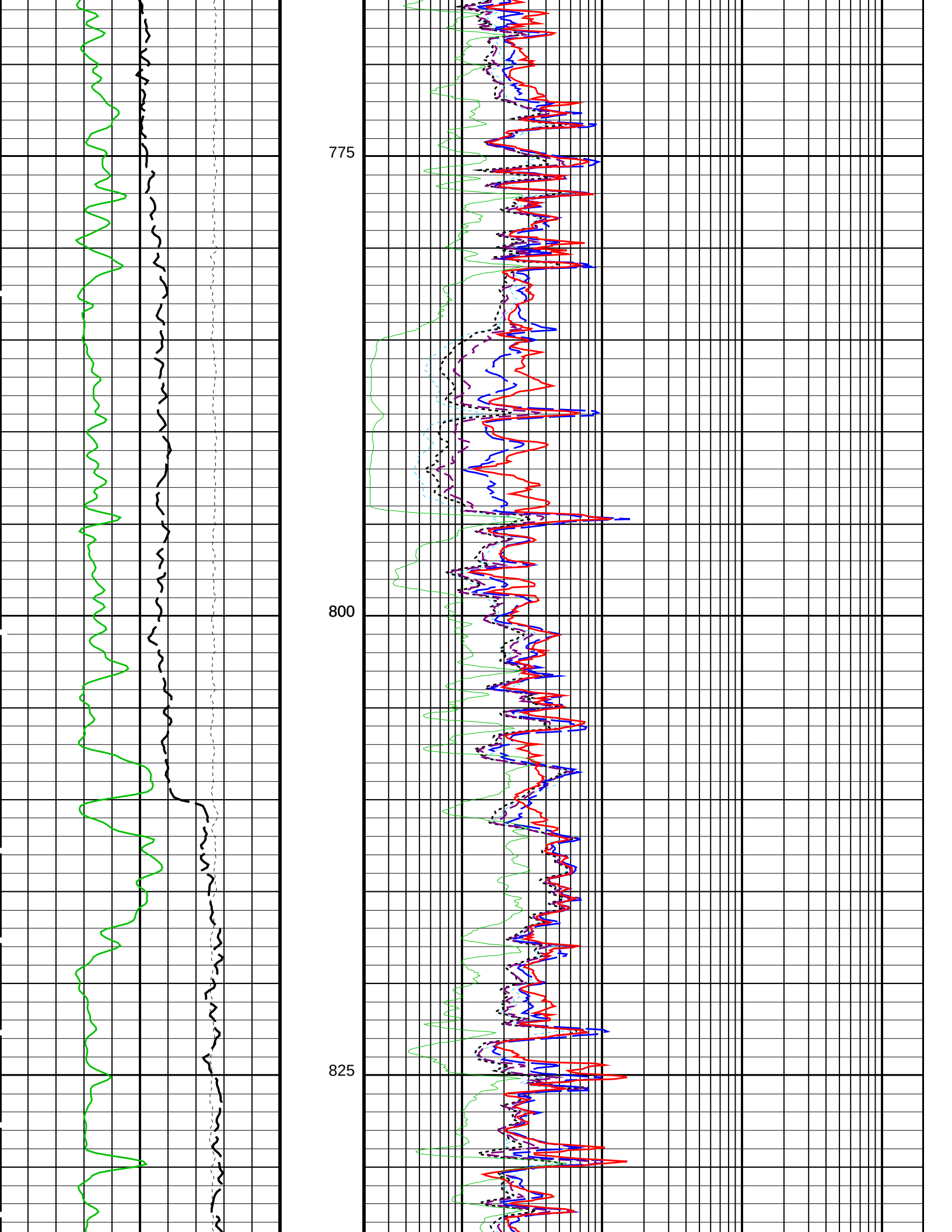
Time Mark Every 60 S

	AIT 90 Inch Investigation (AT90)	
	0.2 (OHMM)	2000
	AIT 60 Inch Investigation (AT60)	
	0.2 (OHMM)	2000
	Std. Res. Invaded Zone Resistivity (RXOZ)	
	0.2 (OHMM)	2000
Tension (TENS)	AIT 30 Inch Investigation (AT30)	
25000 (N) 0	0.2 (OHMM)	2000
SP (SP)	AIT 20 Inch Investigation (AT20)	
−120 (MV) 30	0.2 (OHMM)	2000
Gamma Ray (GR)	AIT 10 Inch Investigation (AT10)	
0 (GAPI) 150	0.2 (OHMM)	2000




650
675
LAST READINGS


700
725
750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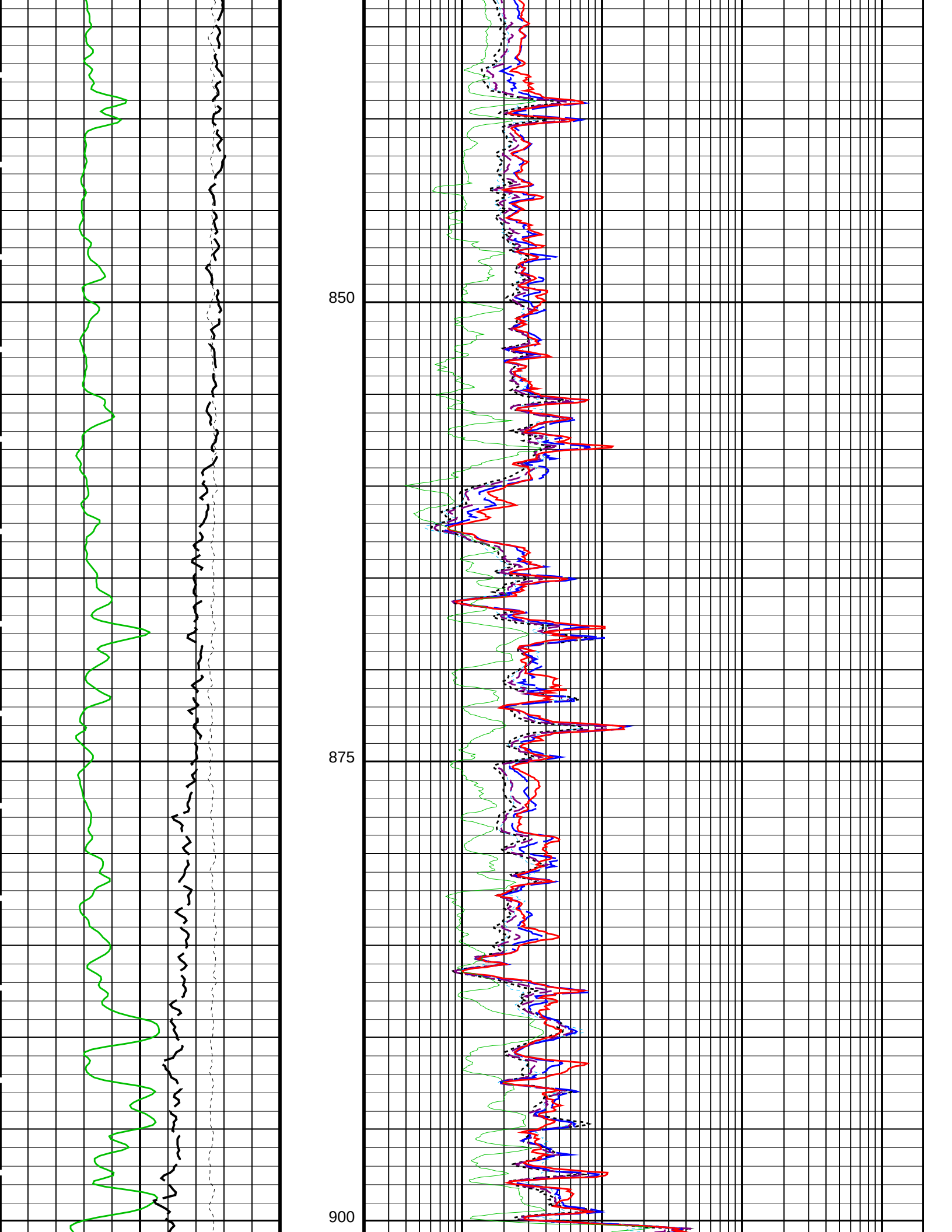
800
825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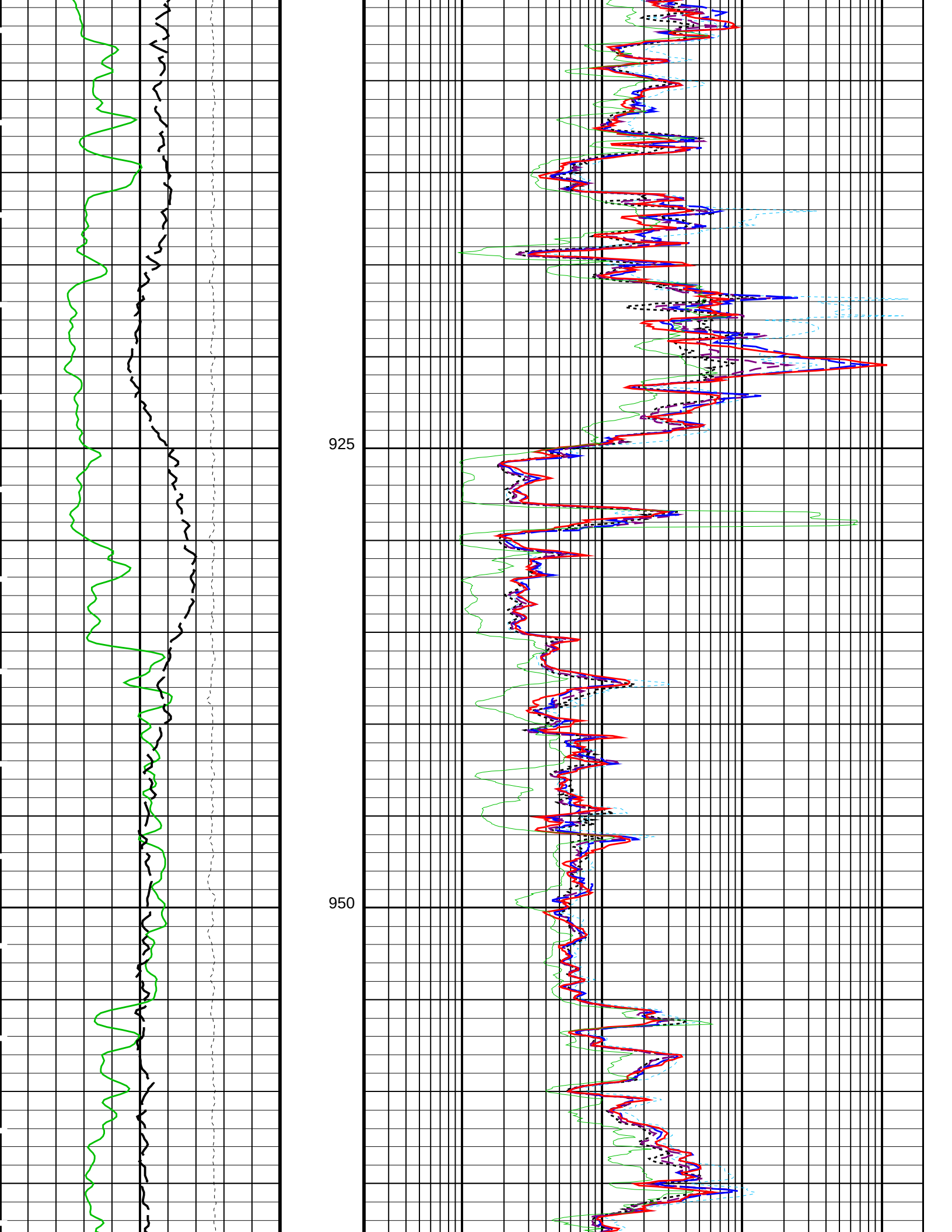
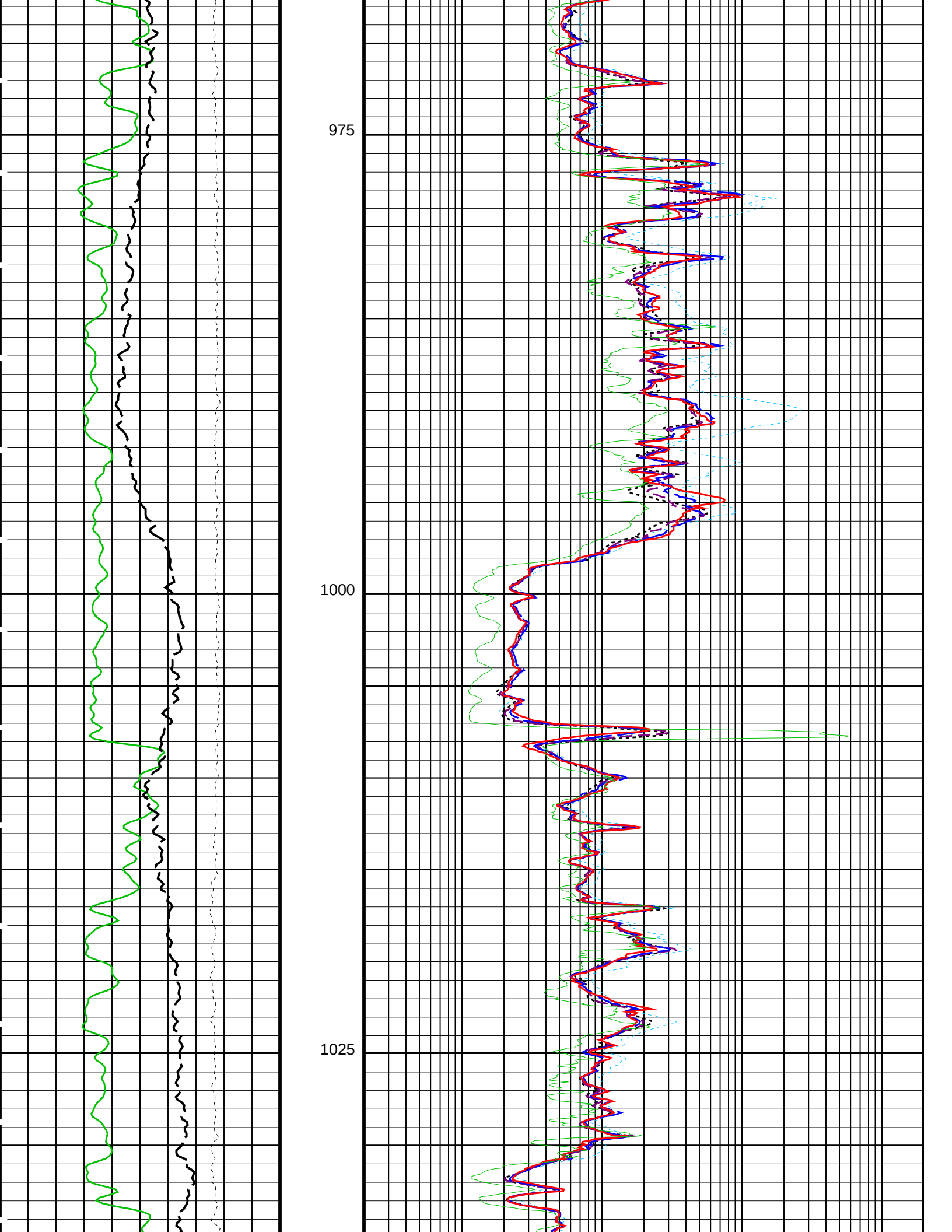
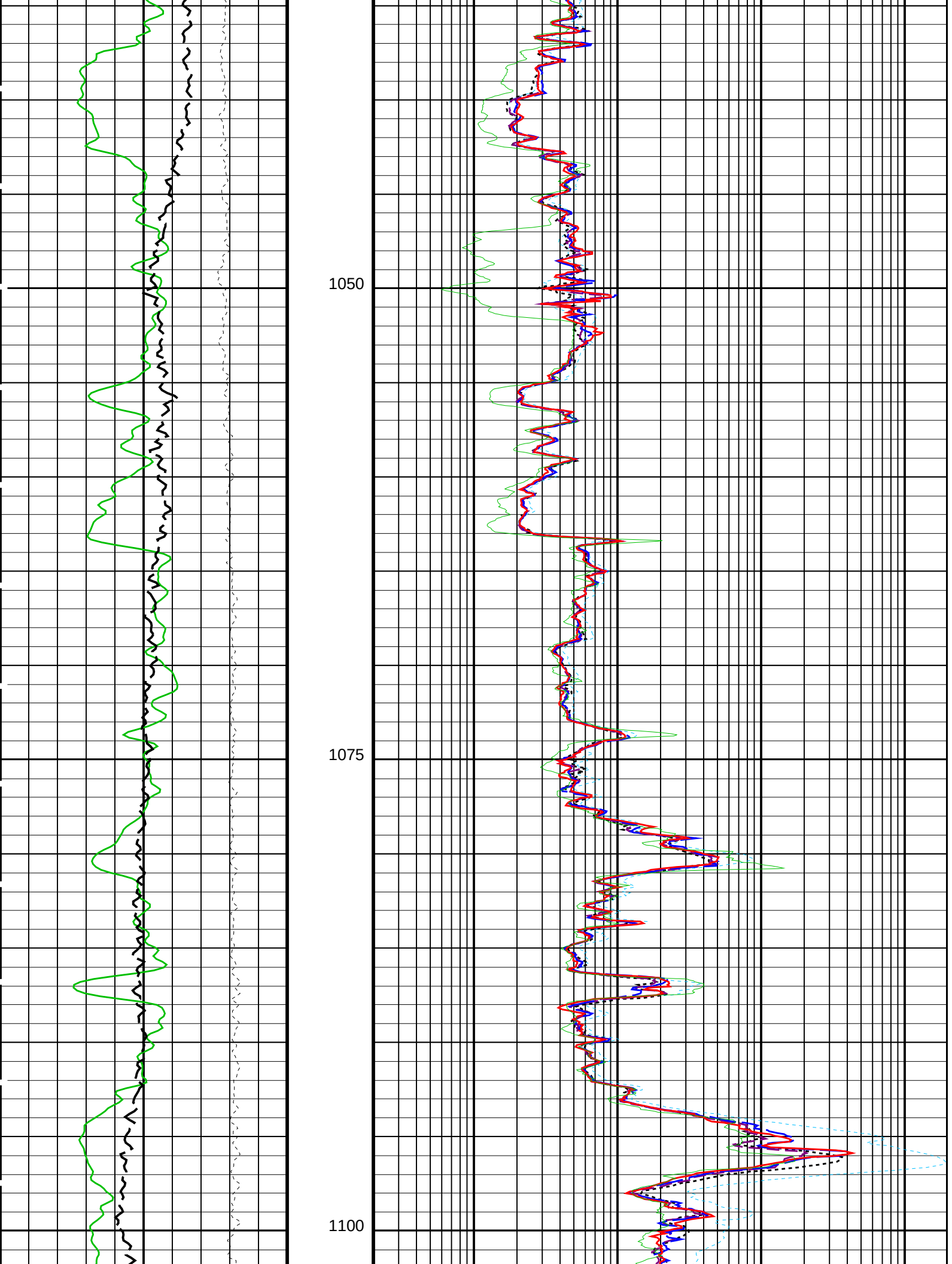
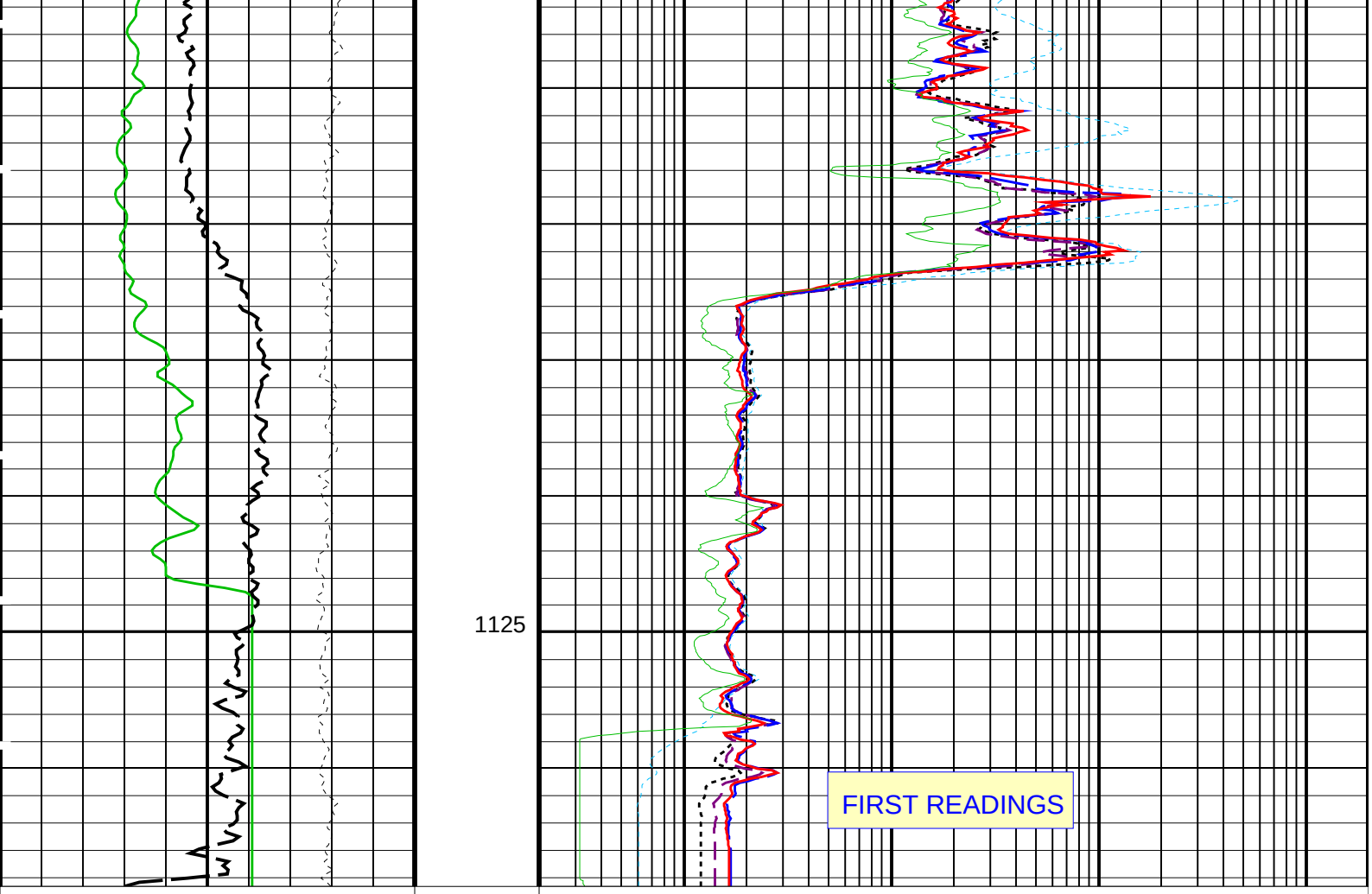
875
900


925
950


975
1000
1025


1050
1075
1100



Gamma Ray (GR)
0 (GAPI) 150

SP (SP)
−120 (MV) 30

Tension (TENS)
25000 (N) 0

AIT 10 Inch Investigation (AT10)
0.2 (OHMM) 2000

AIT 20 Inch Investigation (AT20)
0.2 (OHMM) 2000

AIT 30 Inch Investigation (AT30)
0.2 (OHMM) 2000

Std. Res. Invaded Zone Resistivity (RXOZ)
0.2 (OHMM) 2000

AIT 60 Inch Investigation (AT60)
0.2 (OHMM) 2000

AIT 90 Inch Investigation (AT90)
0.2 (OHMM) 2000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	AIT−M: Array Induction Tool − M		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
ABHV	Array Induction Borehole Correction Code Version Number	880	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	108	
ACDE	Array Induction Casing Detection Enable	Yes	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
ACSED	Array Induction Casing Shoe Estimated Depth	−50000	M
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	

ARFV	Array Induction Radial Profiling Code Version Number	700	
ARPV	Array Induction Radial Parametrization Code Version Number	223	
ASTA	Array Induction Tool Standoff	64	MM
ATRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
SPNV	SP Next Value	0	MV
HILTH−FTB: High resolution Integrated Logging Tool−DTS			
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MPOF	MCFL Processing Operation Mode	ON	
SHT	Surface Hole Temperature	0	DEGC
EMS−B: Environment Measurement Sonde			
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
System and Miscellaneous			
BS	Bit Size	361.950	MM
DFD	Drilling Fluid Density	1120.00	K/M3
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	20.50	DEGC
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	1147	M

Format: AITM−2FT−CAN Vertical Scale: 1:240 Graphics File Created: 03−Mar−2007 11:51

OP System Version: 14C0−302

MCM

AIT−M	14C0−302	HILTH−FTB	14C0−302
EMS−B	14C0−302	DTC−H	14C0−302

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_089	FN:1	PRODUCER	03−Mar−2007 11:47	1134.3 M	622.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_091PUP	FN:110	PRODUCER	03−Mar−2007 11:51
CUST	AIT_TLD_MCFL_CNL_091PUP	FN:111	PRODUCER	03−Mar−2007 11:51

Schlumberger

HIRES: PLATFORM EXPRESS ARRAY INDUCTION

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_048LUP	FN:55	PRODUCER	03−Mar−2007 08:10	1133.9 M	781.5 M

DEFAULT	AIT_TLD_MCFL_CNL_048LUP	FN:55	PRODUCER	03−Mar−2007 08:10	1133.9 M	781.5 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_065PUP	FN:74	PRODUCER	03−Mar−2007 10:31	1134.3 M	760.5 M
CUST	AIT_TLD_MCFL_CNL_065PUP	FN:75	PRODUCER	03−Mar−2007 10:31	1134.3 M	760.5 M

OP System Version: 14C0−302

MCM

AIT−M	14C0−302	HILTH−FTB	14C0−302
CMRT−B	SPC−3239−CMR	EMS−B	14C0−302
DTC−H	14C0−302		

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)
25000 (N) 0

SP (SP)
−120 (MV) 30

Hi−res Gamma−ray (HGR)
0 (GAPI) 150

AIT 90 Inch Investigation (AO90)
0.2 (OHMM) 2000

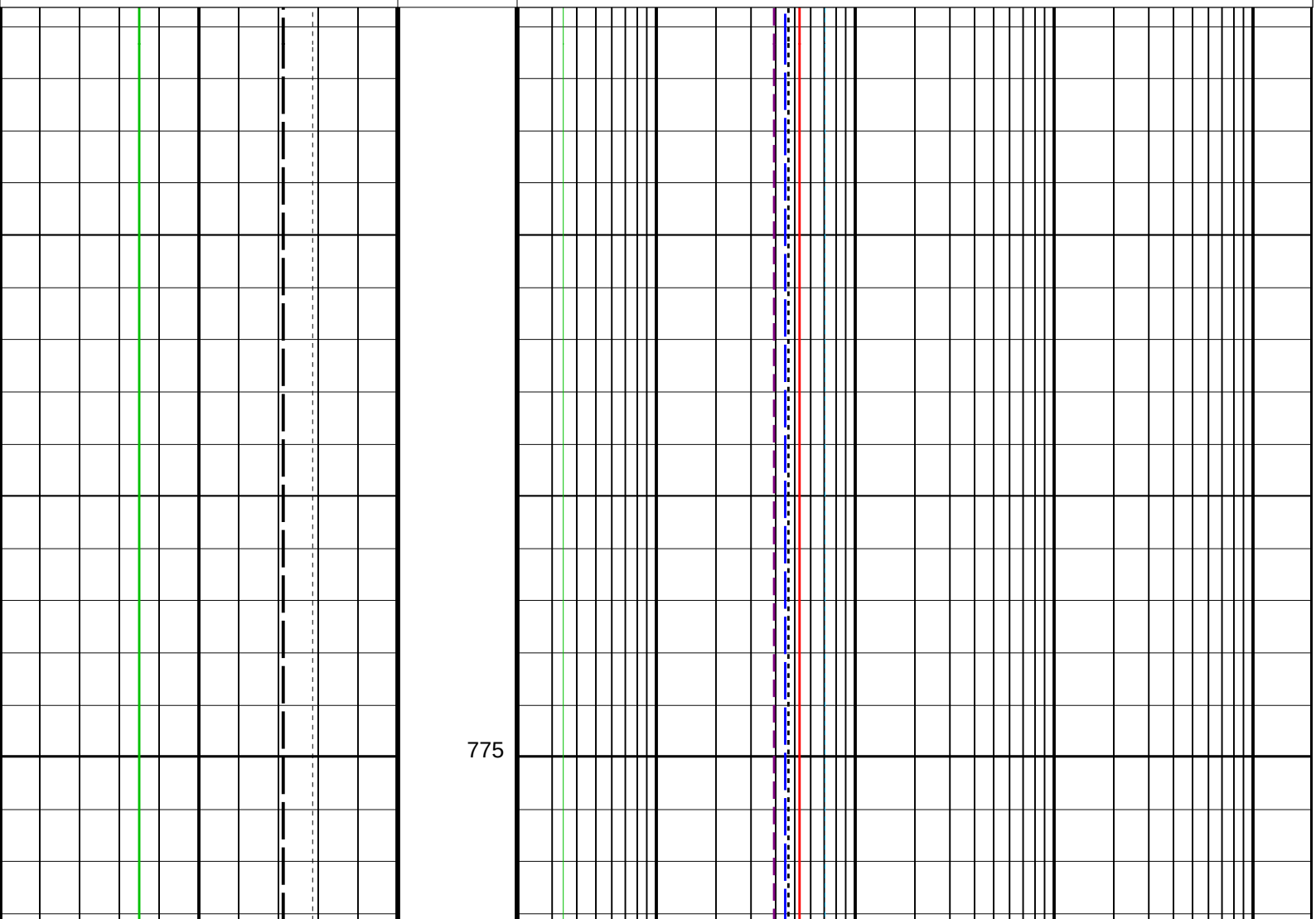
AIT 60 Inch Investigation (AO60)
0.2 (OHMM) 2000

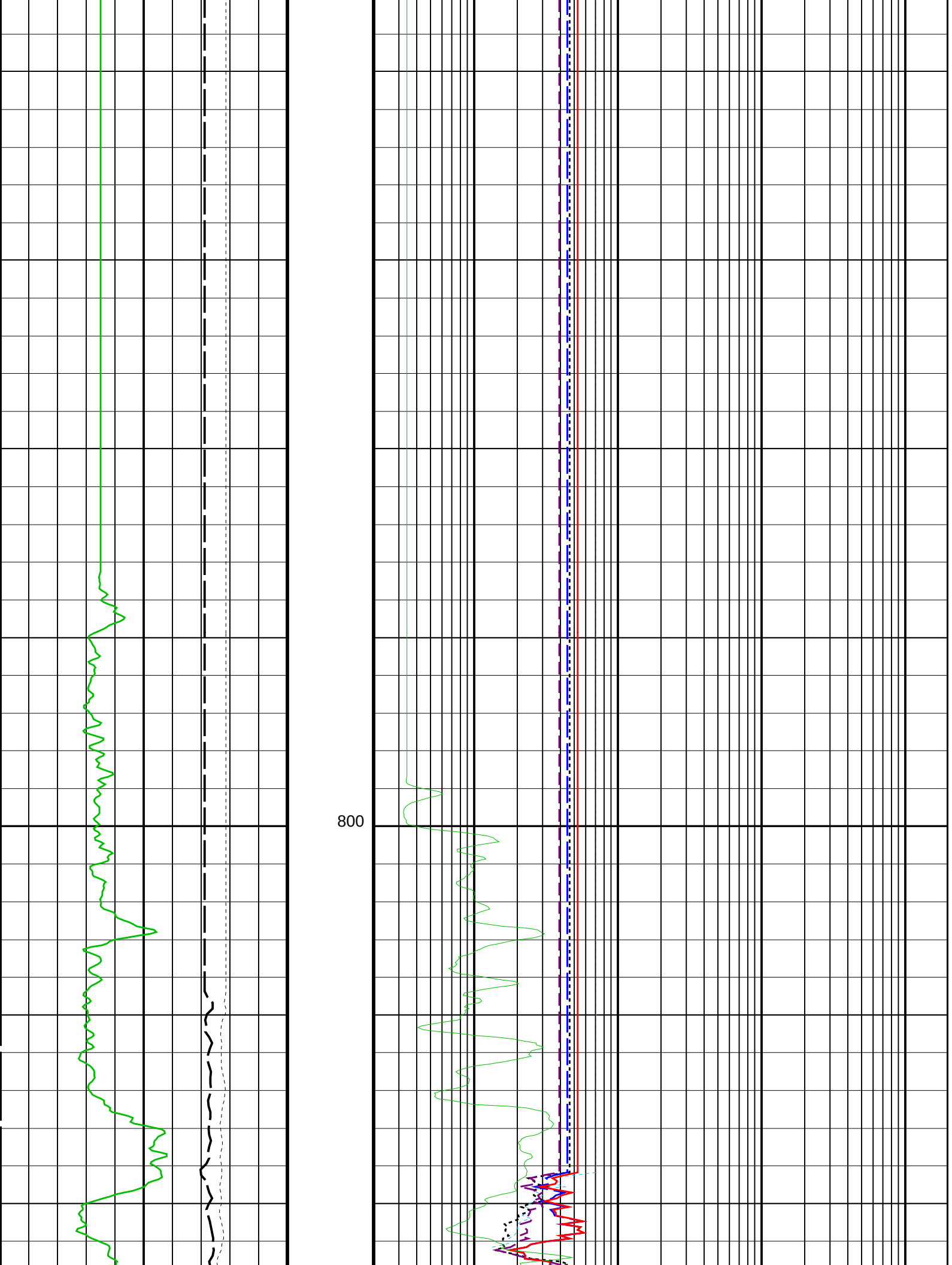
H. Res. Invaded Zone Resistivity (RXO8)
0.2 (OHMM) 2000

AIT 30 Inch Investigation (AO30)
0.2 (OHMM) 2000

AIT 20 Inch Investigation (AO20)
0.2 (OHMM) 2000

AIT 10 Inch Investigation (AO10)
0.2 (OHMM) 2000

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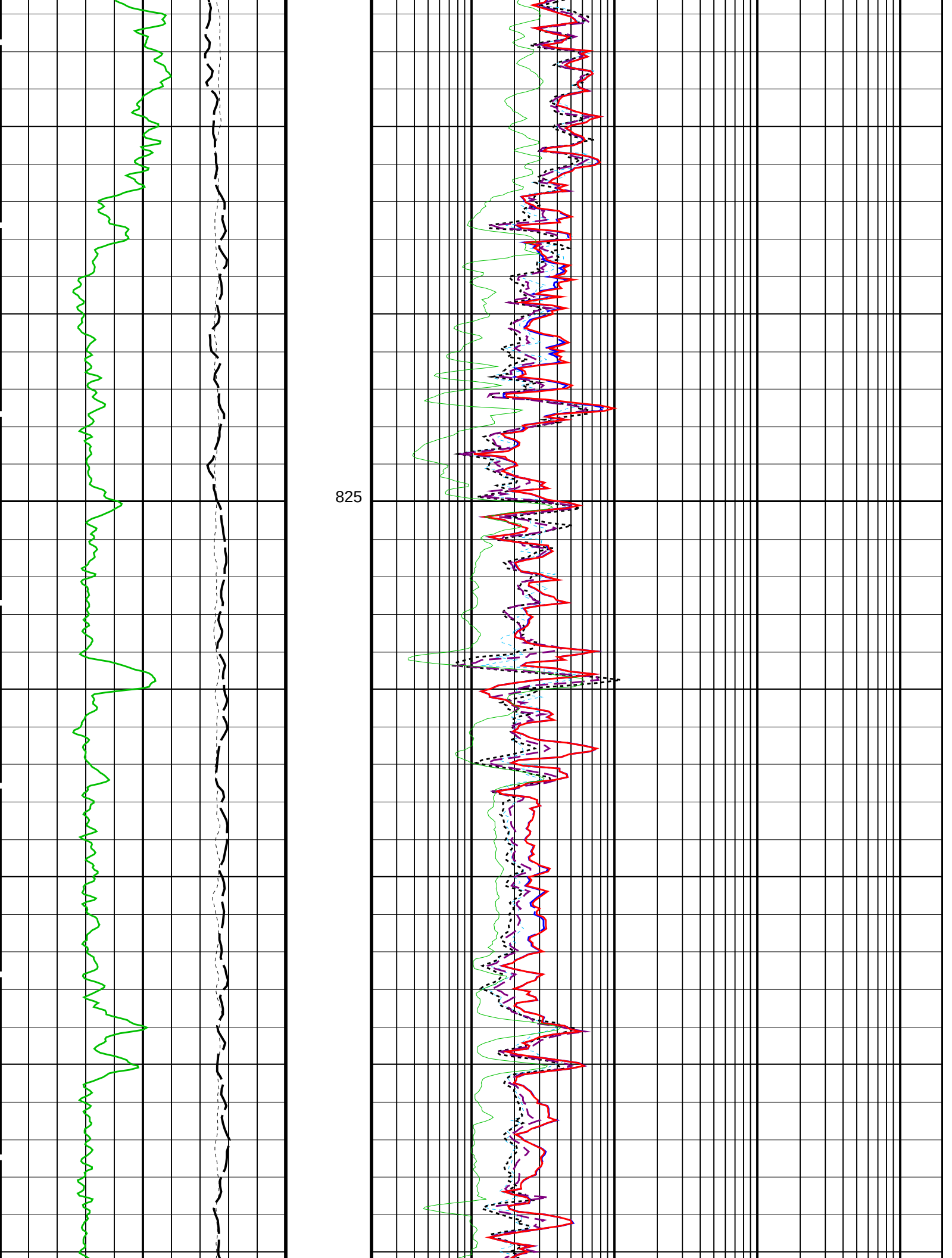
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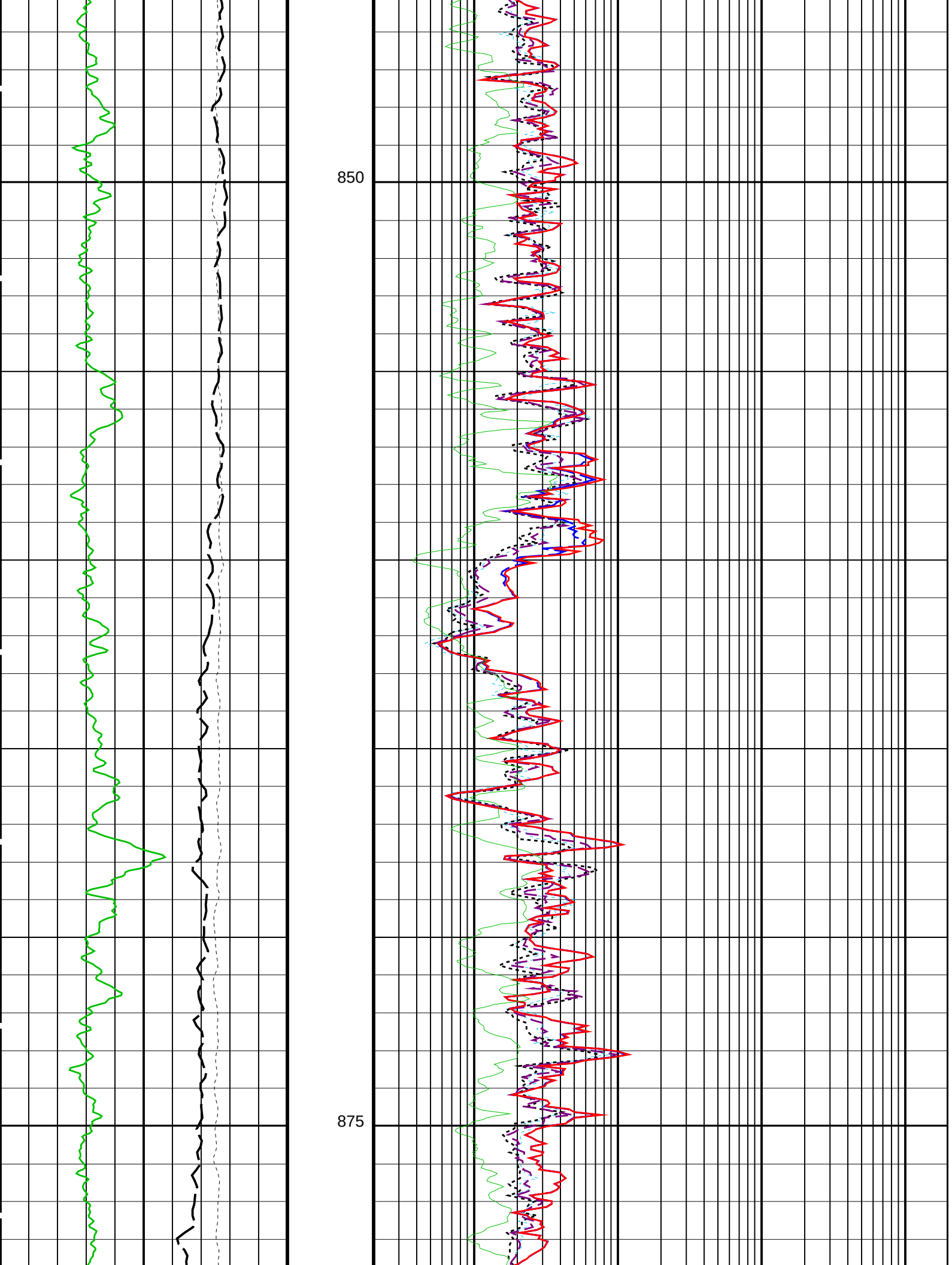
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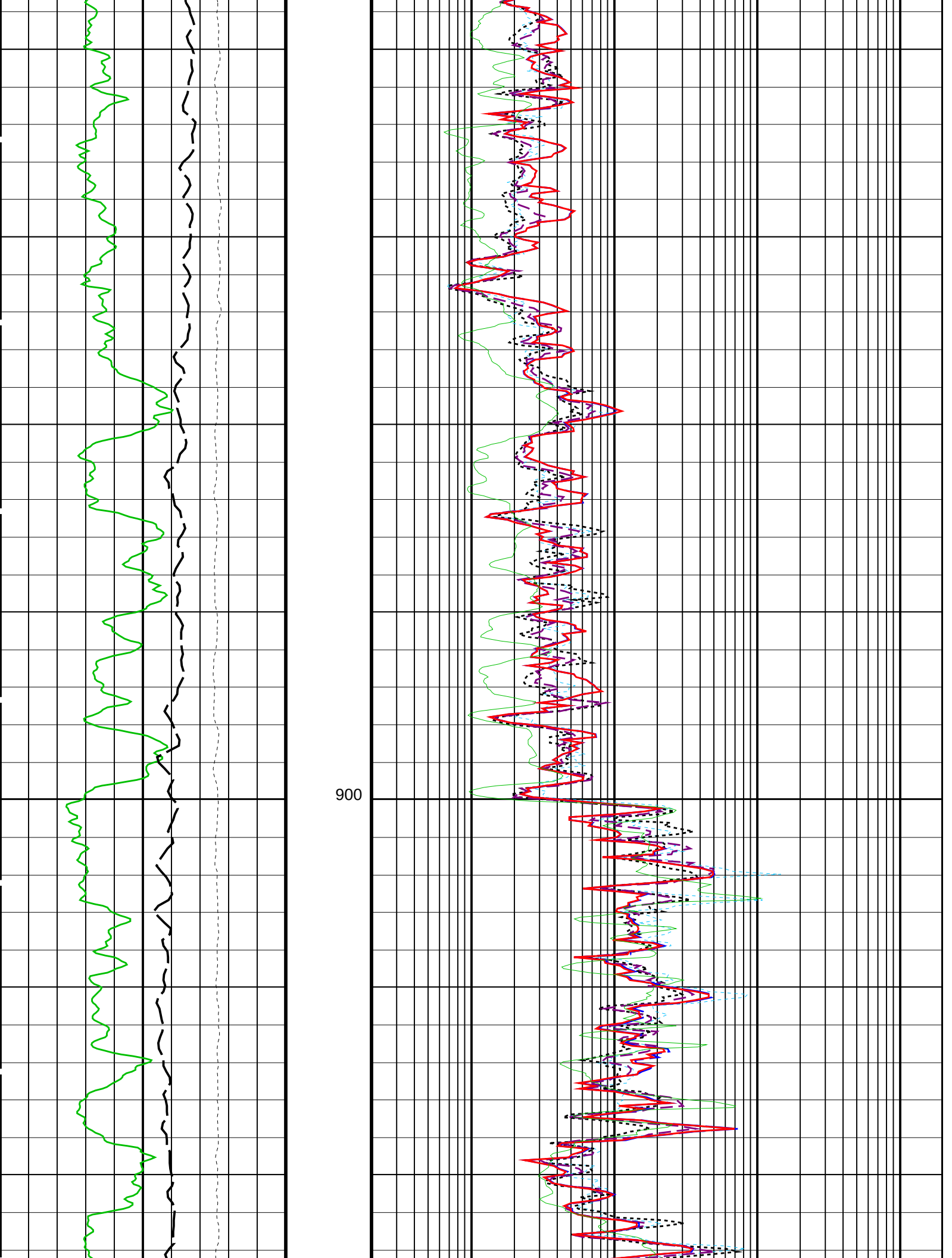
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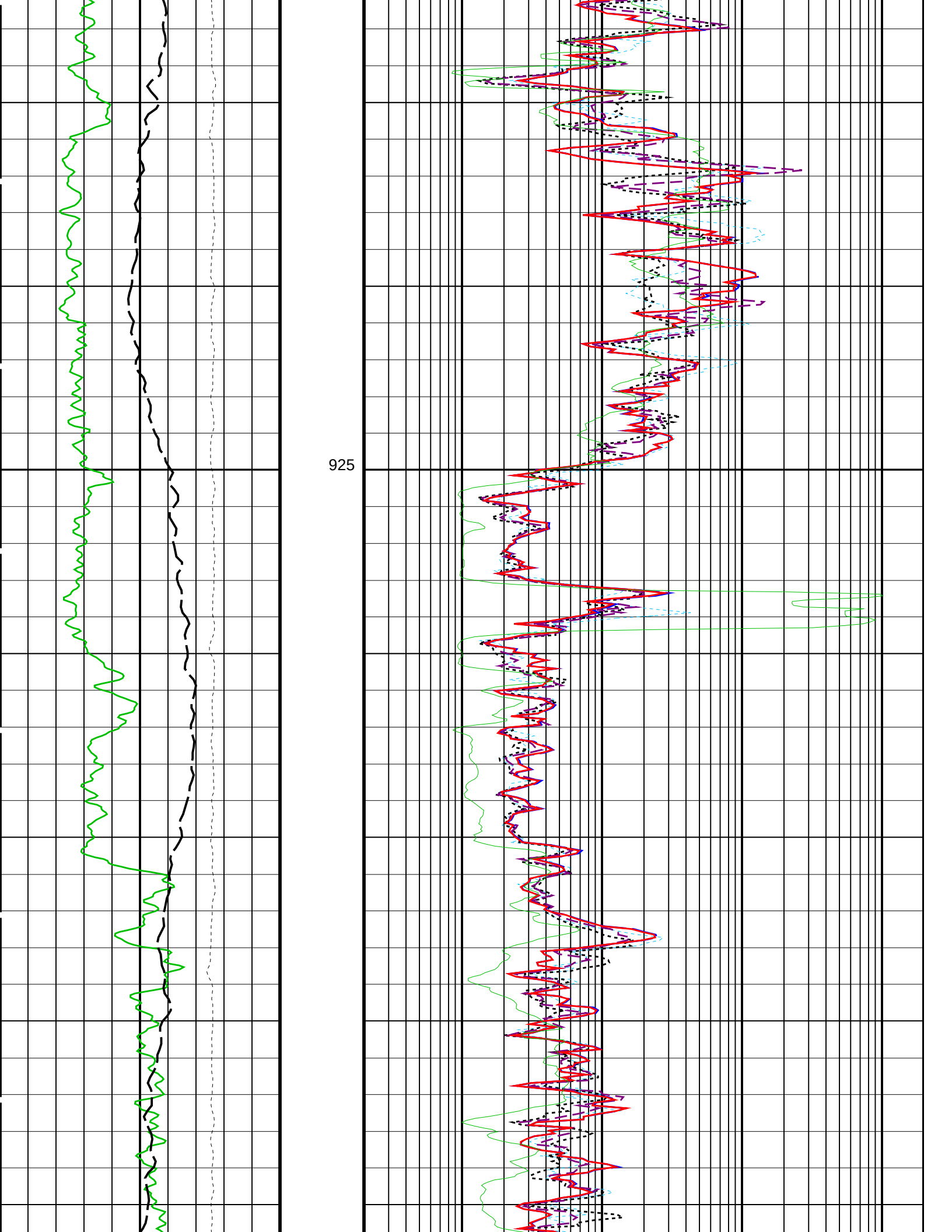
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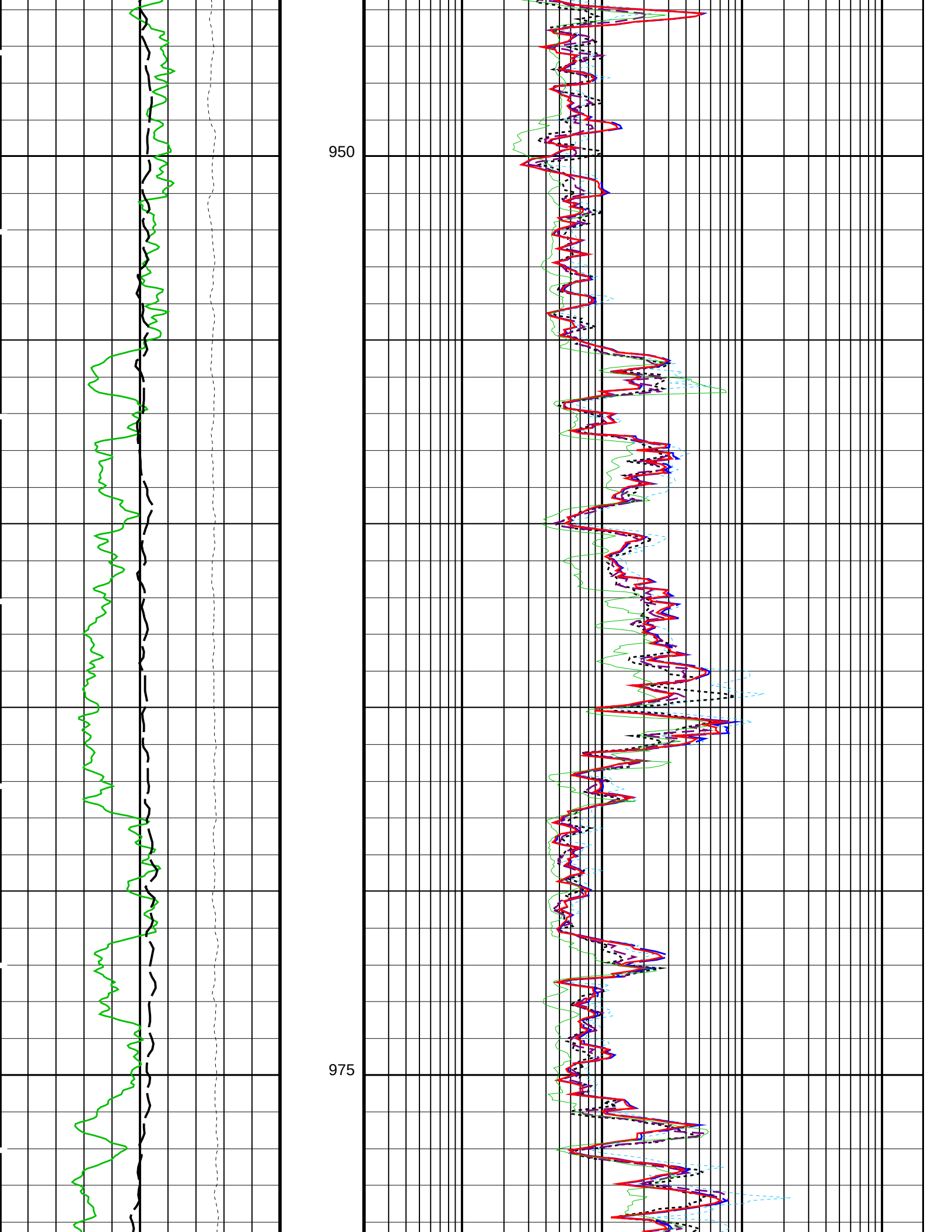
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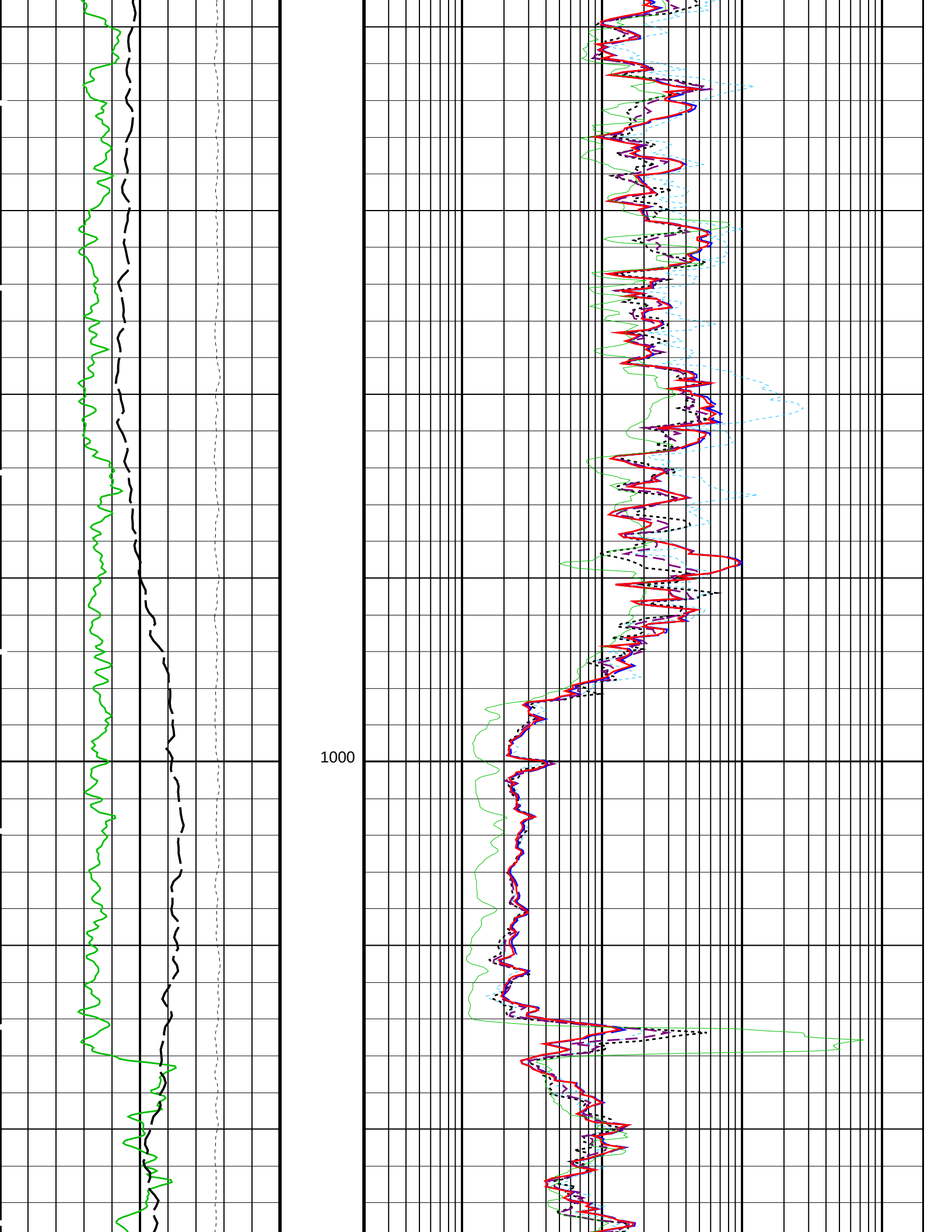
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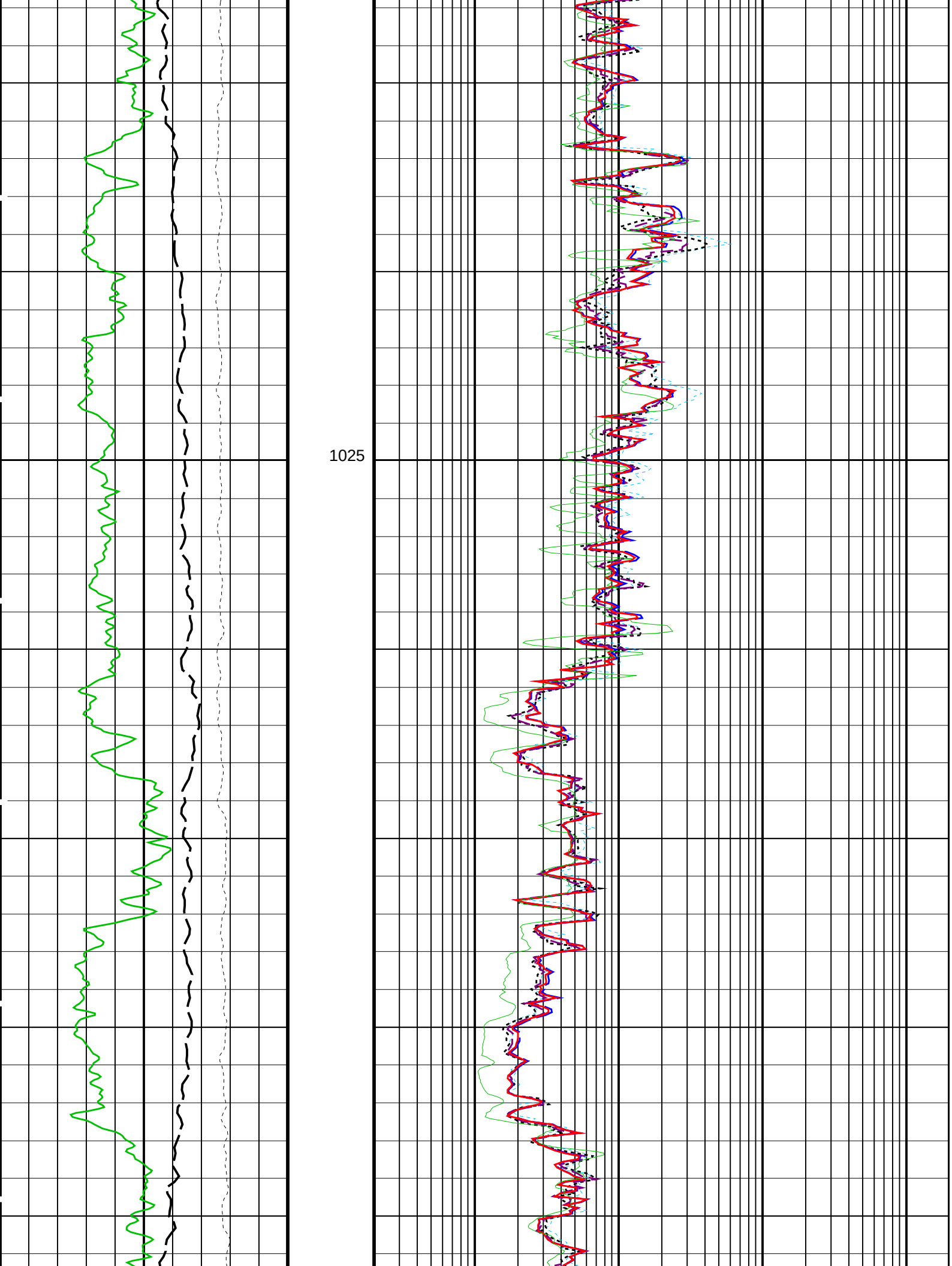
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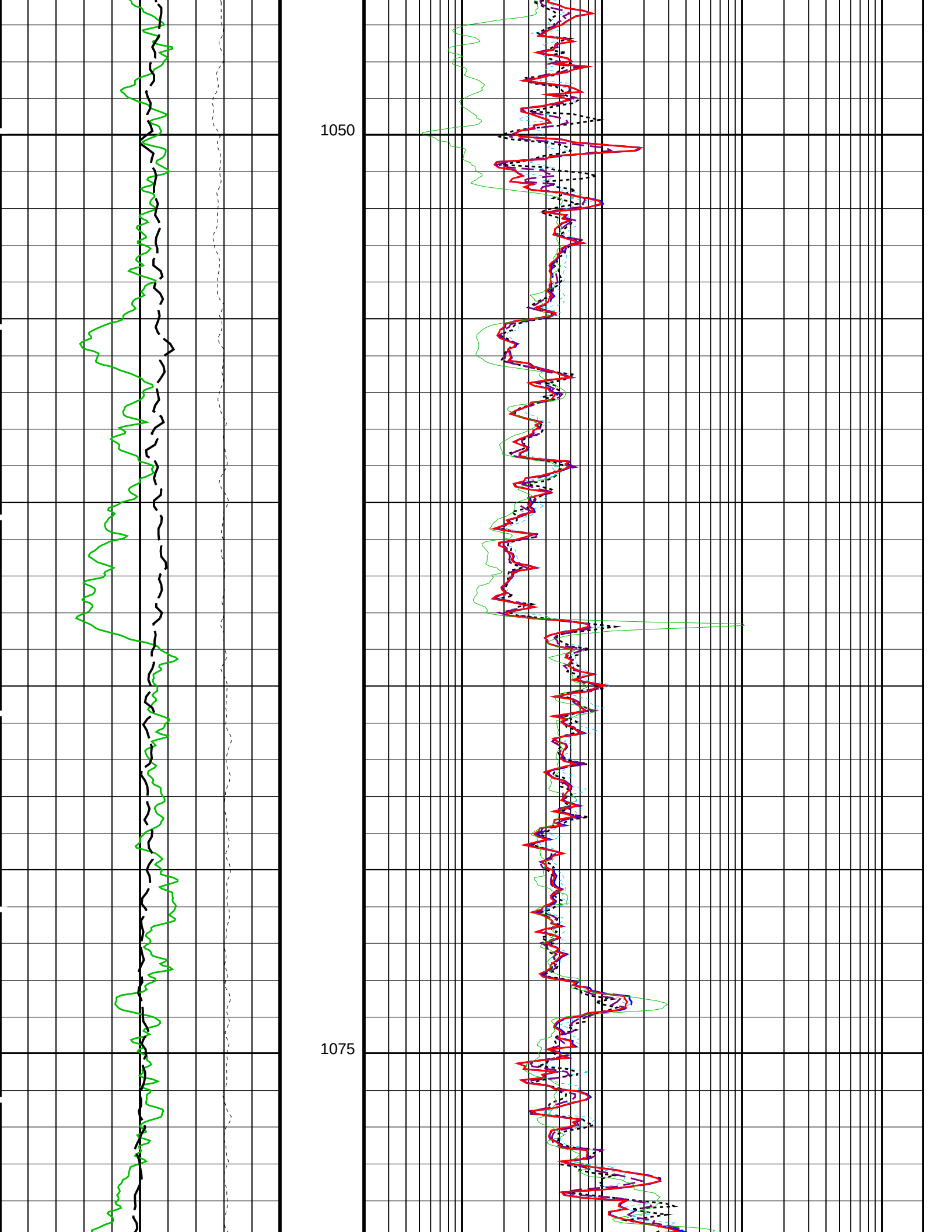
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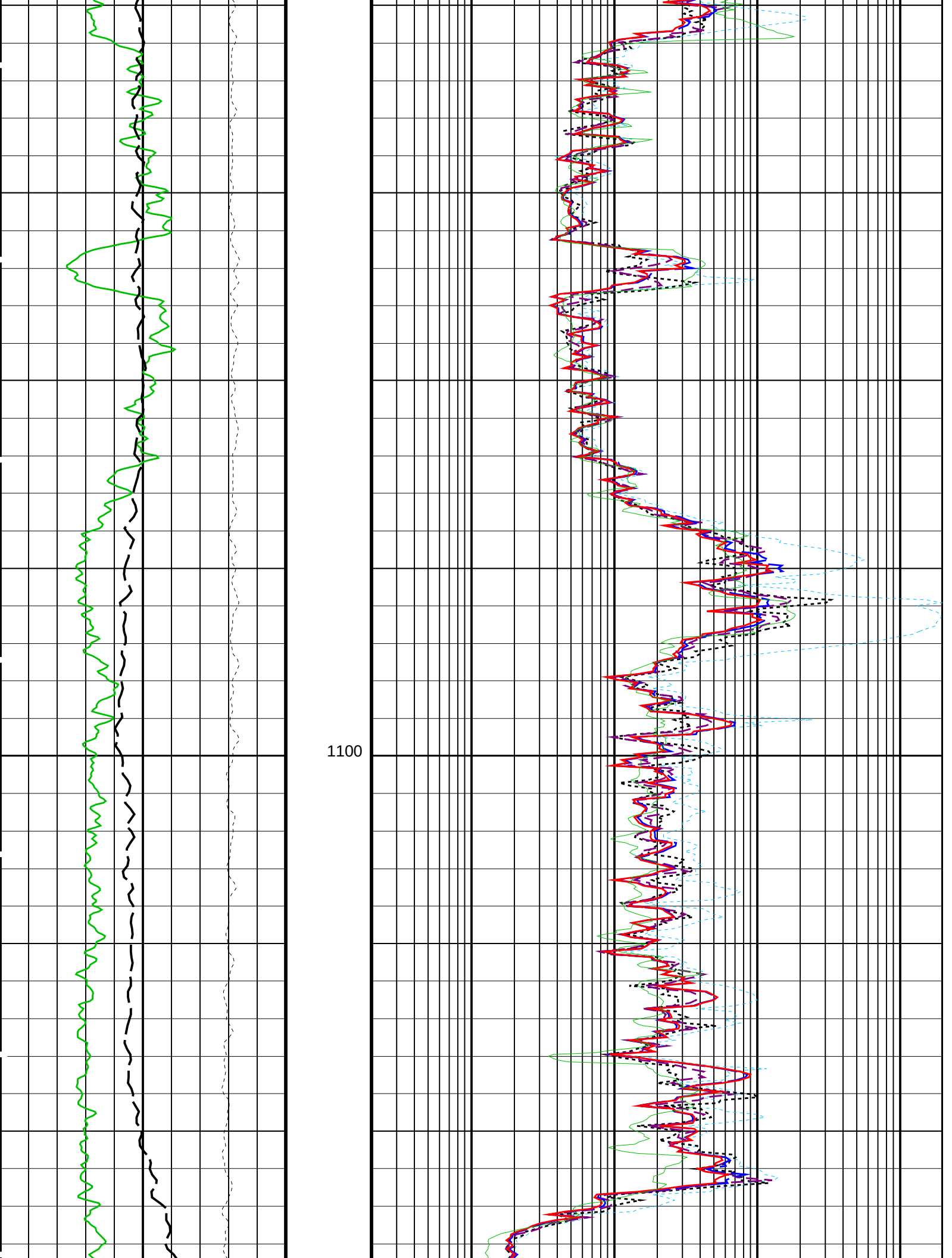
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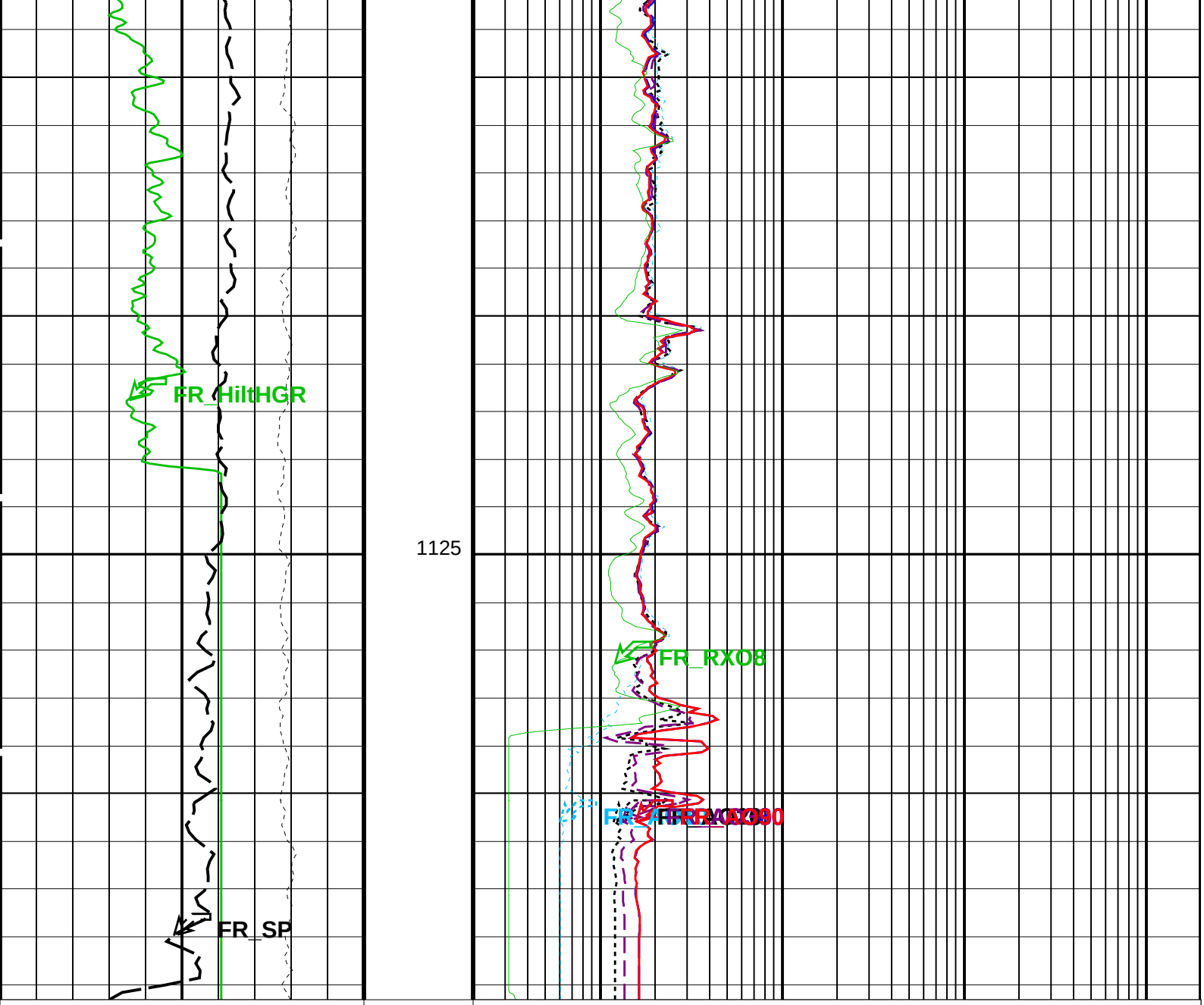


Hi−res Gamma−ray (HGR)
0 (GAPI) 150

SP (SP)
−120 (MV) 30

Tension (TENS)
25000 (N) 0

AIT 10 Inch Investigation (AO10)
0.2 (OHMM) 2000

AIT 20 Inch Investigation (AO20)
0.2 (OHMM) 2000

AIT 30 Inch Investigation (AO30)
0.2 (OHMM) 2000

H. Res. Invaded Zone Resistivity (RXO8)
0.2 (OHMM) 2000

AIT 60 Inch Investigation (AO60)
0.2 (OHMM) 2000

AIT 90 Inch Investigation (AO90)
0.2 (OHMM) 2000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	AIT−M: Array Induction Tool − M	
ABHM	Array Induction Borehole Correction Mode	2, ComputeStandoff

ABHM	Array Induction Borehole Correction Mode	2_ComputeStandon	
ABHV	Array Induction Borehole Correction Code Version Number	880	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	108	
ACDE	Array Induction Casing Detection Enable	Yes	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
ACSED	Array Induction Casing Shoe Estimated Depth	678.485	M
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
ARFV	Array Induction Radial Profiling Code Version Number	700	
ARPV	Array Induction Radial Parametrization Code Version Number	223	
ASTA	Array Induction Tool Standoff	64	MM
ATRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
SPNV	SP Next Value	0	MV
	HILTH−FTB: High resolution Integrated Logging Tool−DTS		
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MPOF	MCFL Processing Operation Mode	ON	
SHT	Surface Hole Temperature	0	DEGC
	CMRT−B: Combinable Magnetic Resonance Tool − B		
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	1.524	M
TDD	Total Depth − Driller	1147.00	M
TDL	Total Depth − Logger	1133.00	M
	System and Miscellaneous		
BS	Bit Size	361.950	MM
DFD	Drilling Fluid Density	1120.00	K/M3
DO	Depth Offset for Playback	0.4	M
MST	Mud Sample Temperature	20.50	DEGC
PP	Playback Processing	NORMAL	
TD	Total Depth	1147	M

Format: HIRS−AITH−1FT−CAN Vertical Scale: 1:12(Graphics File Created: 03−Mar−2007 10:31

OP System Version: 14C0−302

MCM

AIT−M	14C0−302	HILTH−FTB	14C0−302
CMRT−B	SPC−3239−CMR	EMS−B	14C0−302
DTC−H	14C0−302		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_048LUP	FN:55	PRODUCER	03−Mar−2007 08:10	1133.9 M	781.5 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_065PUP	FN:74	PRODUCER	03−Mar−2007 10:31
CUST	AIT_TLD_MCFL_CNL_065PUP	FN:75	PRODUCER	03−Mar−2007 10:31

Schlumberger

REPEAT ANALYSIS: PLATFORM EXPRESS ARRAY INDUCTION

MAXIS Field Log

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_089	FN:1	PRODUCER	03−Mar−2007 11:47	1134.3 M	622.9 M
DEFAULT	AIT_TLD_MCFL_CNL_067PUP	FN:78	PRODUCER	03−Mar−2007 10:38	1050.0 M	928.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_091PUP	FN:110	PRODUCER	03−Mar−2007 11:51
CUST	AIT_TLD_MCFL_CNL_091PUP	FN:111	PRODUCER	03−Mar−2007 11:51

OP System Version: 14C0−302

MCM

AIT−M	14C0−302	HILTH−FTB	14C0−302
EMS−B	14C0−302	DTC−H	14C0−302

PIP SUMMARY

Time Mark Every 60 S

TENS_REP Curve (TENS_REP)
25000 (N) 0

SP_REP Curve (SP_REP)
−120 (MV) 30

GR_REP Curve (GR_REP)
0 (GAPI) 150

RXOZ_REP Curve (RXOZ_REP)
0.2 (OHMM) 2000

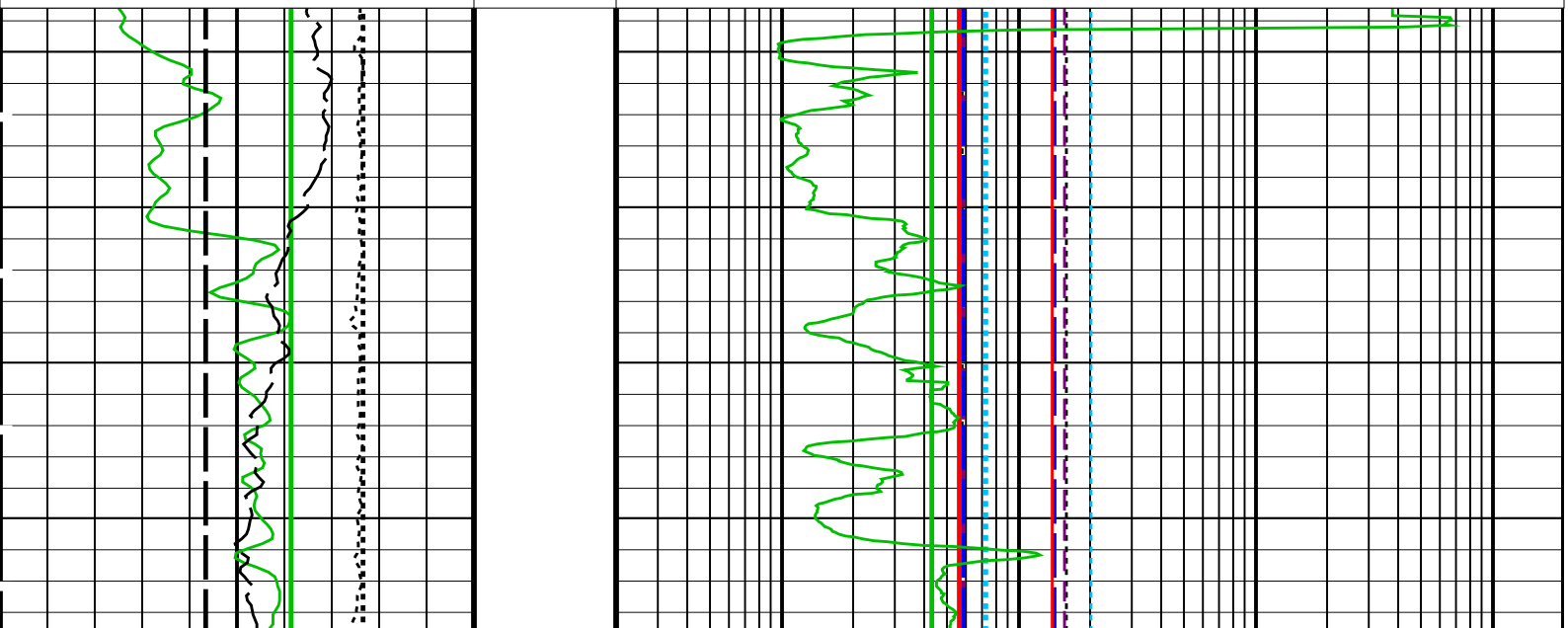
AT90_REP Curve (AT90_REP)
0.2 (OHMM) 2000

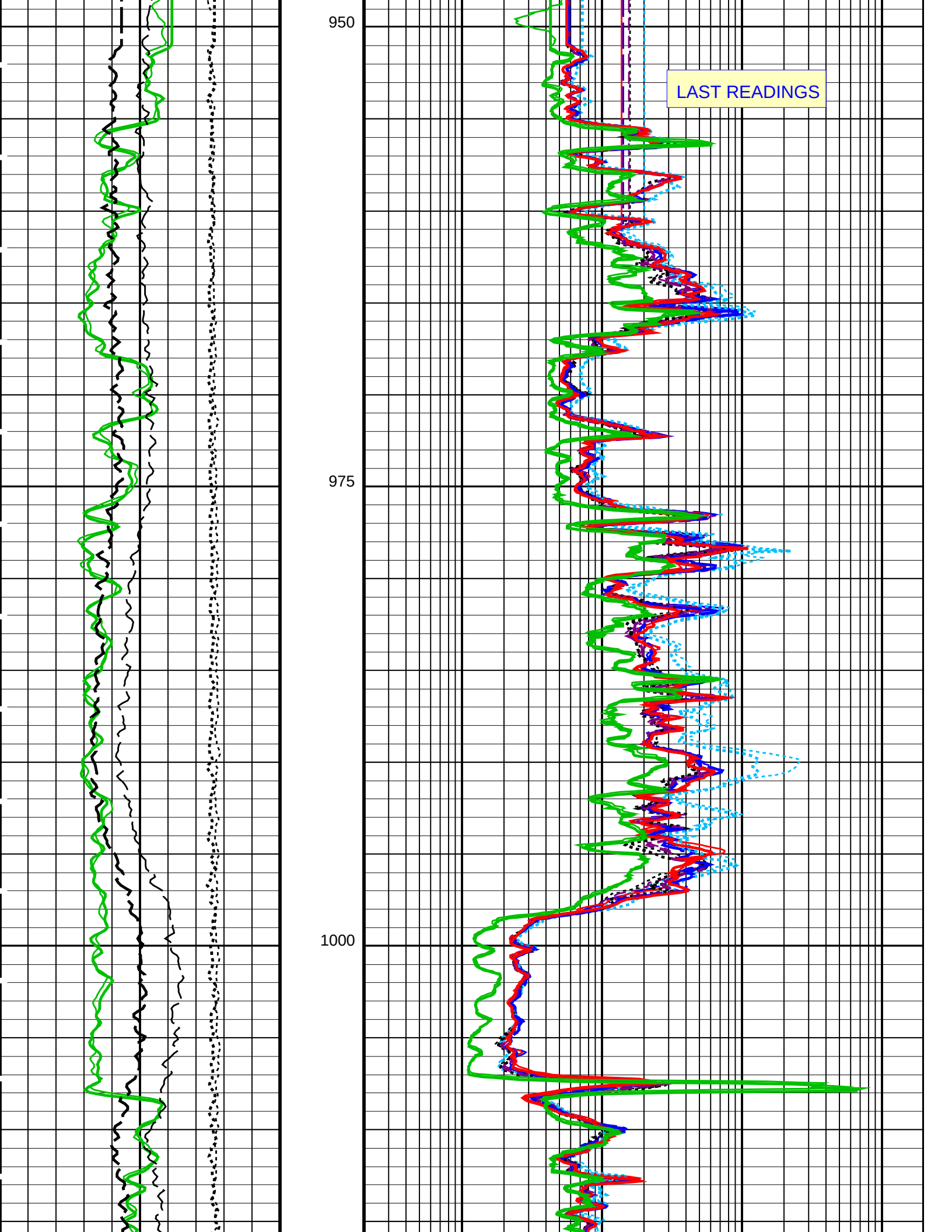
AT60_REP Curve (AT60_REP)
0.2 (OHMM) 2000

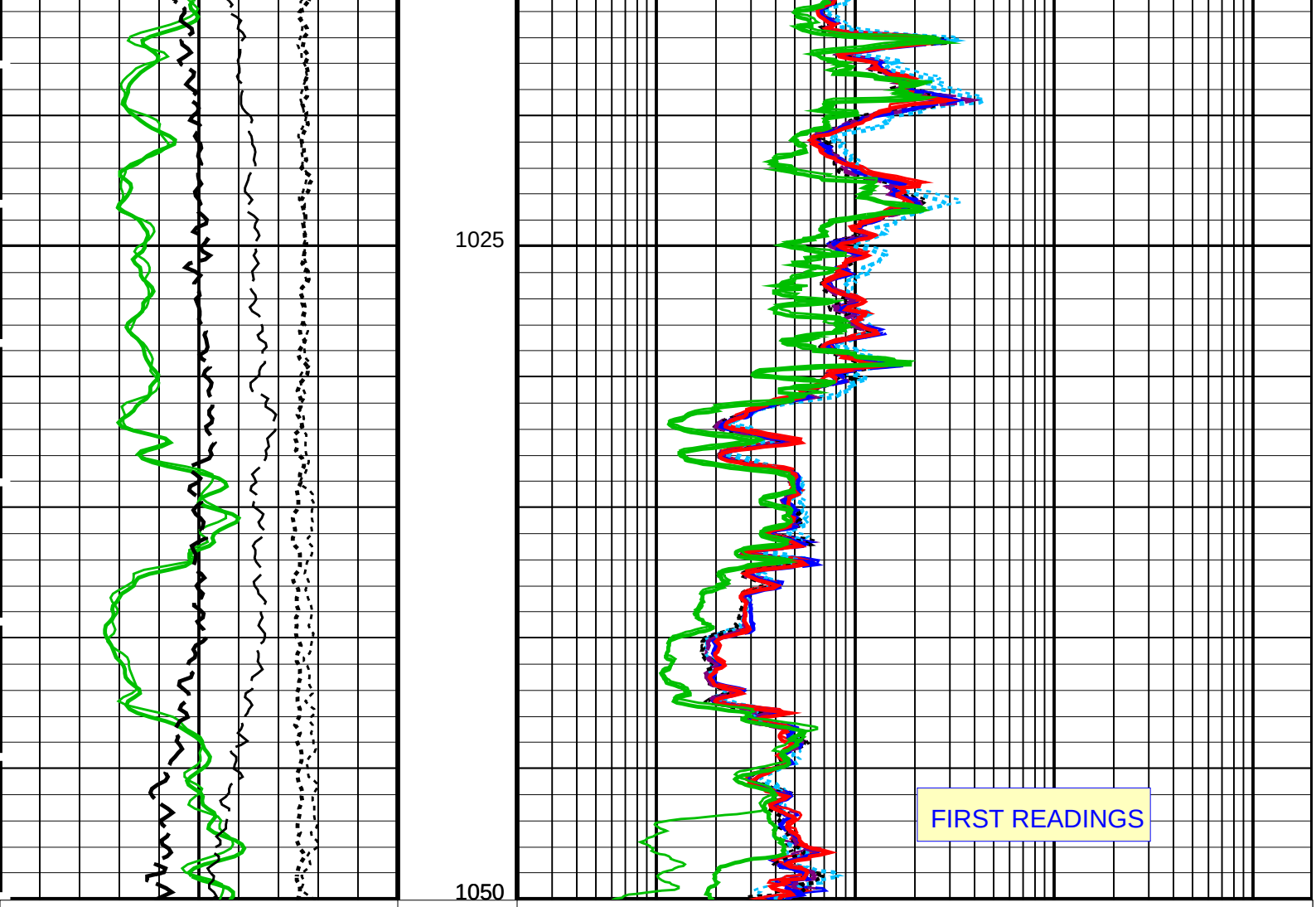
AT30_REP Curve (AT30_REP)
0.2 (OHMM) 2000

AT20_REP Curve (AT20_REP)
0.2 (OHMM) 2000

AT10_REP Curve (AT10_REP)
0.2 (OHMM) 2000




950
975
1000
LAST READINGS



GR_REP Curve (GR_REP)
0 (GAPI) 150

SP_REP Curve (SP_REP)
−120 (MV) 30

TENS_REP Curve (TENS_REP)
25000 (N) 0

AT10_REP Curve (AT10_REP)
0.2 (OHMM) 2000

AT20_REP Curve (AT20_REP)
0.2 (OHMM) 2000

AT30_REP Curve (AT30_REP)
0.2 (OHMM) 2000

AT60_REP Curve (AT60_REP)
0.2 (OHMM) 2000

AT90_REP Curve (AT90_REP)
0.2 (OHMM) 2000

RXOZ_REP Curve (RXOZ_REP)
0.2 (OHMM) 2000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	AIT−M: Array Induction Tool − M		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
ABHV	Array Induction Borehole Correction Code Version Number	880	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	108	
ACDE	Array Induction Casing Detection Enable	Yes	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
ACSED	Array Induction Casing Shoe Estimated Depth	−50000	M
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	

AFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
ARFV	Array Induction Radial Profiling Code Version Number	700	
ARPV	Array Induction Radial Parametrization Code Version Number	223	
ASTA	Array Induction Tool Standoff	64	MM
ATRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
SPNV	SP Next Value	0	MV
HILTH−FTB: High resolution Integrated Logging Tool−DTS			
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MPOF	MCFL Processing Operation Mode	ON	
SHT	Surface Hole Temperature	0	DEGC
EMS−B: Environment Measurement Sonde			
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
System and Miscellaneous			
BS	Bit Size	361.950	MM
DFD	Drilling Fluid Density	1120.00	K/M3
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	20.50	DEGC
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	1147	M

Format: AITM−2FT−CAN_REP Vertical Scale: 1:240 Graphics File Created: 03−Mar−2007 11:51

OP System Version: 14C0−302

MCM

AIT−M	14C0−302	HILTH−FTB	14C0−302
EMS−B	14C0−302	DTC−H	14C0−302

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_089	FN:1	PRODUCER	03−Mar−2007 11:47	1134.3 M	622.9 M
DEFAULT	AIT_TLD_MCFL_CNL_067PUP	FN:78	PRODUCER	03−Mar−2007 10:38	1050.0 M	928.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_091PUP	FN:110	PRODUCER	03−Mar−2007 11:51
CUST	AIT_TLD_MCFL_CNL_091PUP	FN:111	PRODUCER	03−Mar−2007 11:51

Schlumberger

MAIN PASS: LOG QUALITY IMAGE

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_089	FN:1	PRODUCER	03−Mar−2007 11:47	1134.3 M	622.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_091PUP	FN:110	PRODUCER	03−Mar−2007 11:51	1134.3 M	624.7 M
CUST	AIT_TLD_MCFL_CNL_091PUP	FN:111	PRODUCER	03−Mar−2007 11:51	1134.3 M	624.7 M

HRDD Processing Flags Statistical Analysis:

Percentages computed on interval 3678.7 to 2241.7 ft (1121.3 to 683.3 m)

Pef Flags Up	10.5 %
Density Flags Up	4.5 %

	Window 1	Window 2	Window 3	Window 4
BS Average Reconstruction Error	2.50 %	1.65 %	0.83 %	
SS Average Reconstruction Error	−0.49 %	−0.38 %	−0.53 %	0.54 %
LS Average Reconstruction Error	2.34 %	1.10 %	−0.22 %	−0.42 %

OP System Version: 14C0−302

MCM

AIT−M	14C0−302	HILTH−FTB	14C0−302
EMS−B	14C0−302	DTC−H	14C0−302

PIP SUMMARY

Time Mark Every 60 S

AIT Mud Full Cal (AMF)
0.02 (OHMM) 200

Std. Res. Resistivity Standoff (RSOZ)
65 (MM) 0

Gamma Ray (GR)
0 (GAPI) 150

Bit Size (BS)
300 (MM) 550

AIT Input Bhole Diameter (AIBD)
300 (MM) 550

AIT Bhole/Form Signal Ratio (ABFR)
0 (−−−− 25

HGNS Deviation (GDEV)
−5 (DEG) 45

Tension (TENS) (N)
25000 0

AIT QC Fully Calibrated A2 Signal (AQABN[1])
2 (MM/M) 20000

AIT QC Fully Calibrated A3 Signal (AQABN[2])
2 (MM/M) 20000

AIT QC Fully Calibrated A4 Signal (AQABN[3])
2 (MM/M) 20000

AIT QC Fully Calibrated A5 Signal (AQABN[4])
2 (MM/M) 20000

AIT QC Fully Calibrated A6 Signal (AQABN[5])
2 (MM/M) 20000

AIT QC Fully Calibrated A7 Signal (AQABN[6])
2 (MM/M) 20000

AIT QC Fully Calibrated A8 Signal (AQABN[7])
2 (MM/M) 20000

AIT QC Fully Calibrated A1 Signal (AQABN[0])
2 (MM/M) 20000

BS Delta Rho (HDRB)
−0.5 (G/C3) 0.5

Delta Neutron Porosity (DNPH)
−0.1 (V/V) 0.1

GR Borehole Correction Factor (CFGR)
0.5 (−−−− 1.5

*** Flag Tracks ***

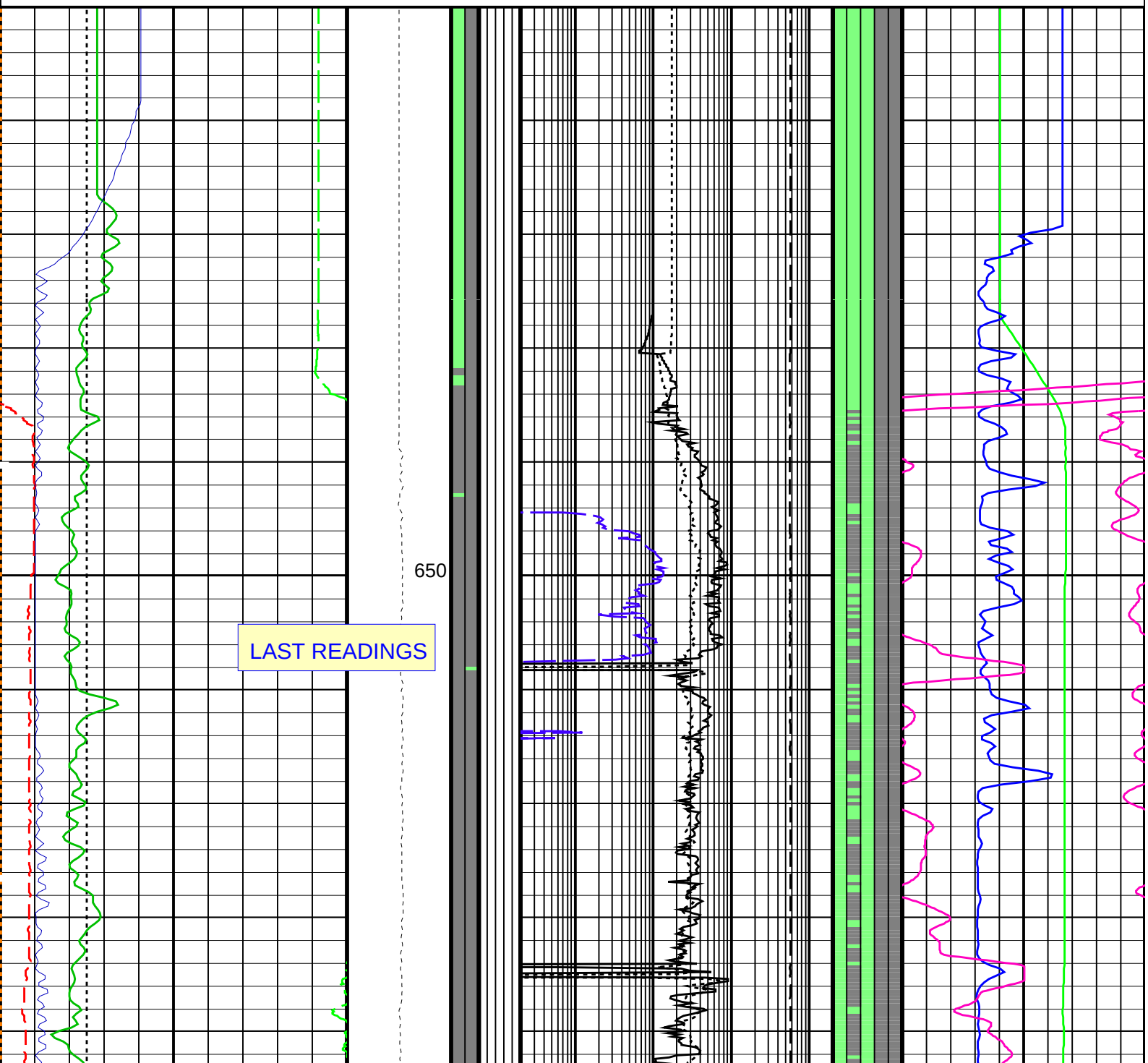
White = Absent Green = Good Yellow = Warn Red/Black = Bad

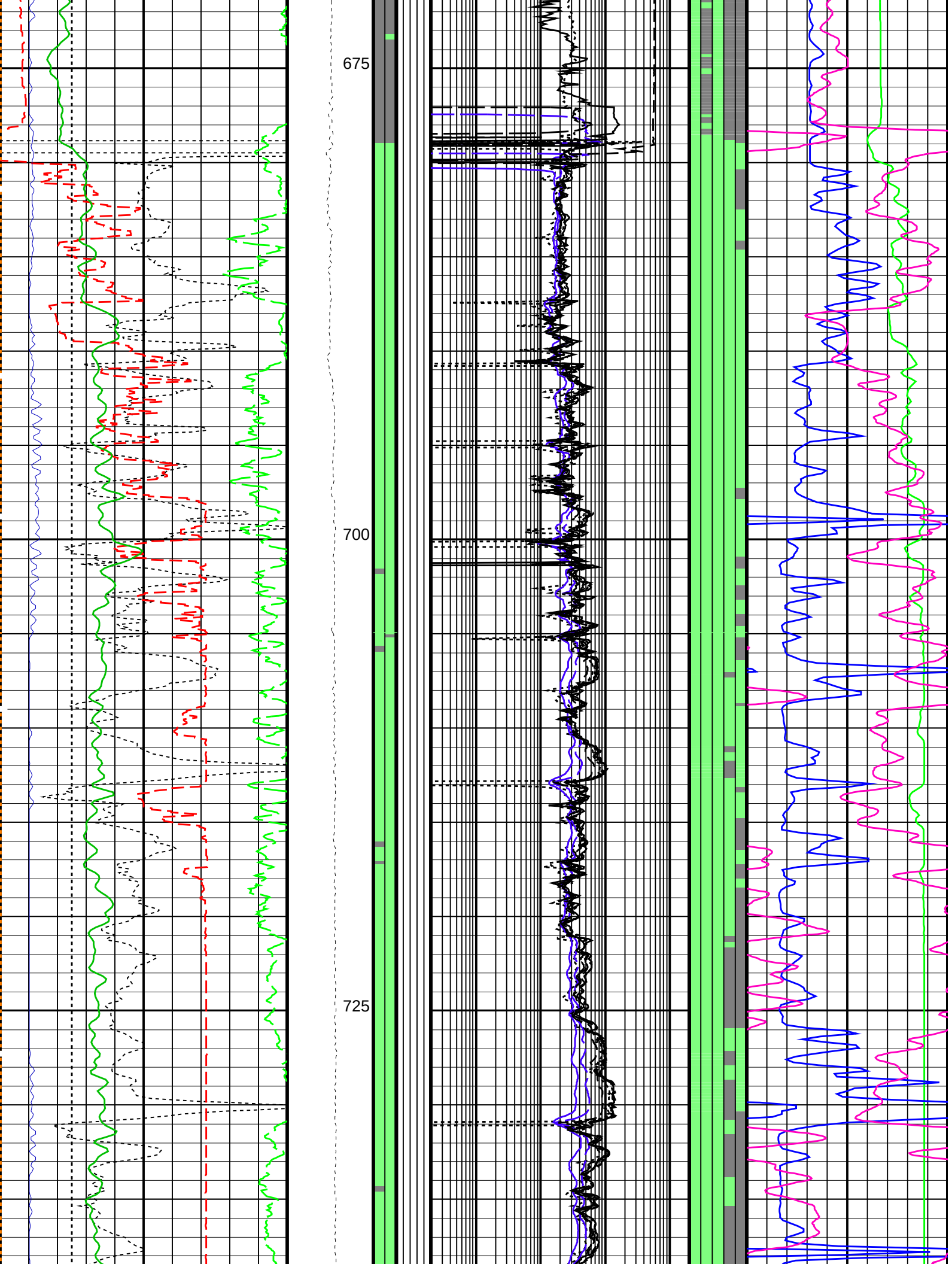
RESISTIVITY TRACK :

1. MCFL Hardware
2. RXO Processing
3. HAIT Hardware
4. HAIT Array[1−2]
5. HAIT Array[3−4]
6. HAIT Array[5−6]
7. HAIT Array[7−8]

NUCLEAR TRACK :

1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation

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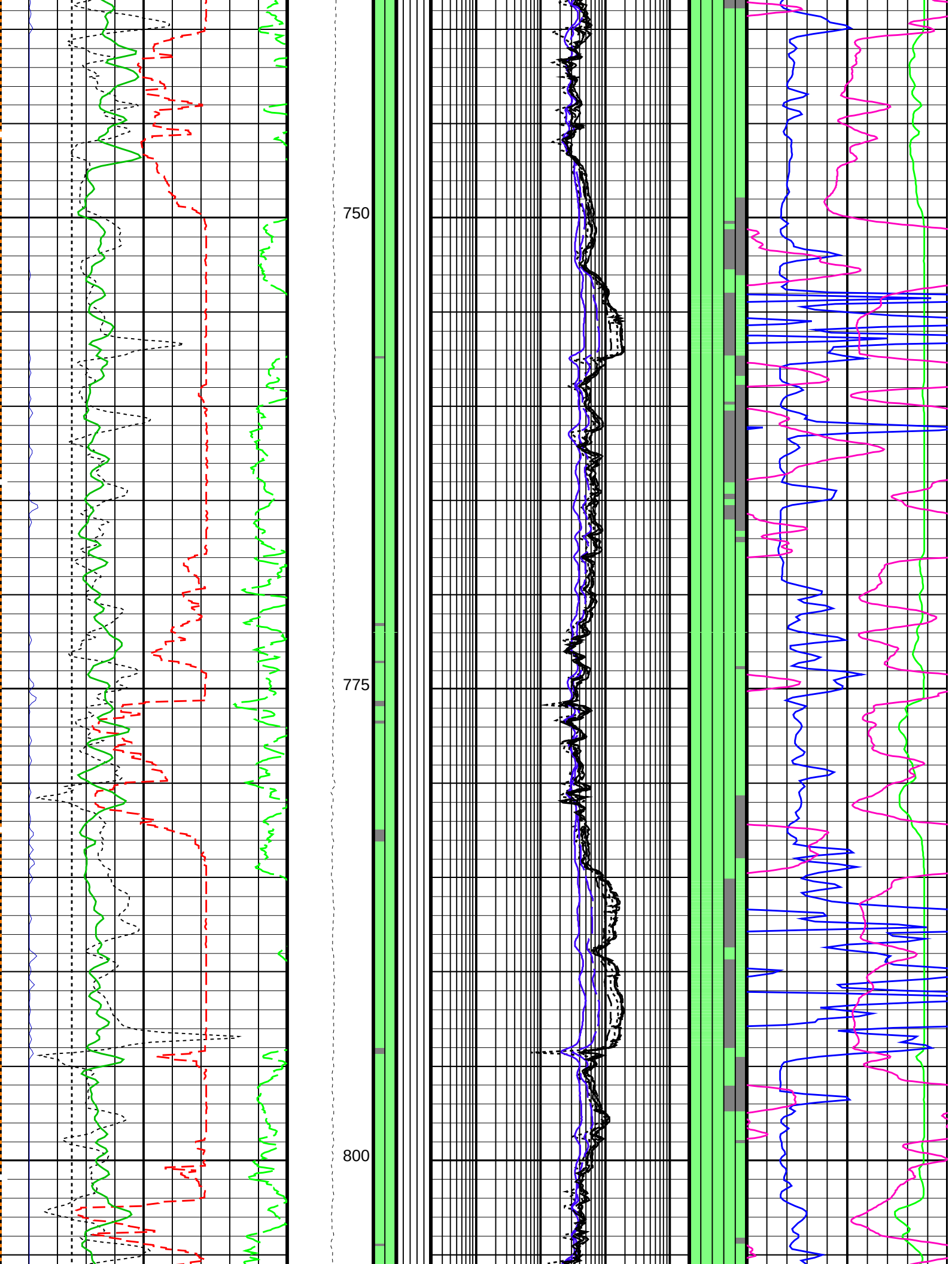
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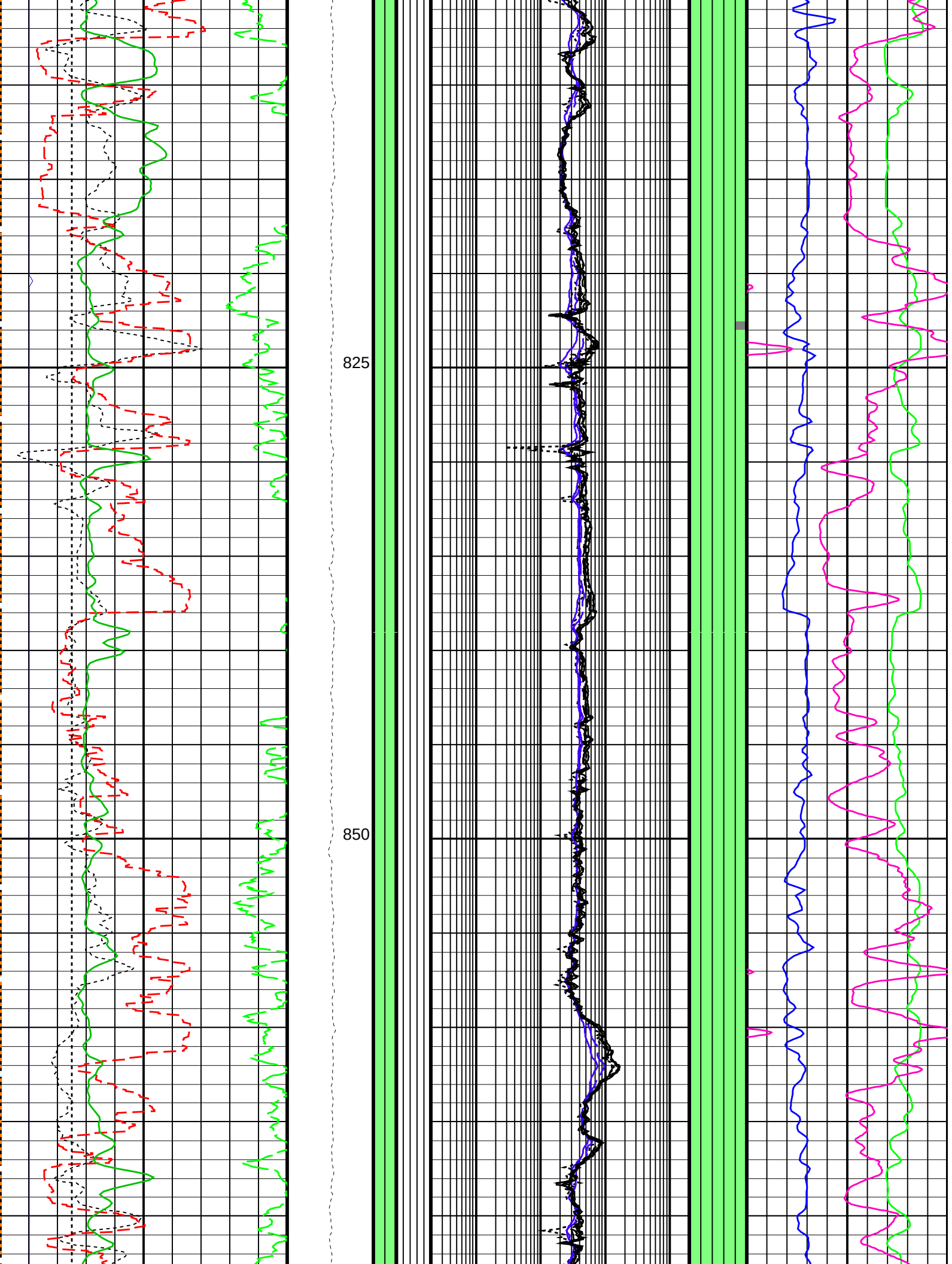
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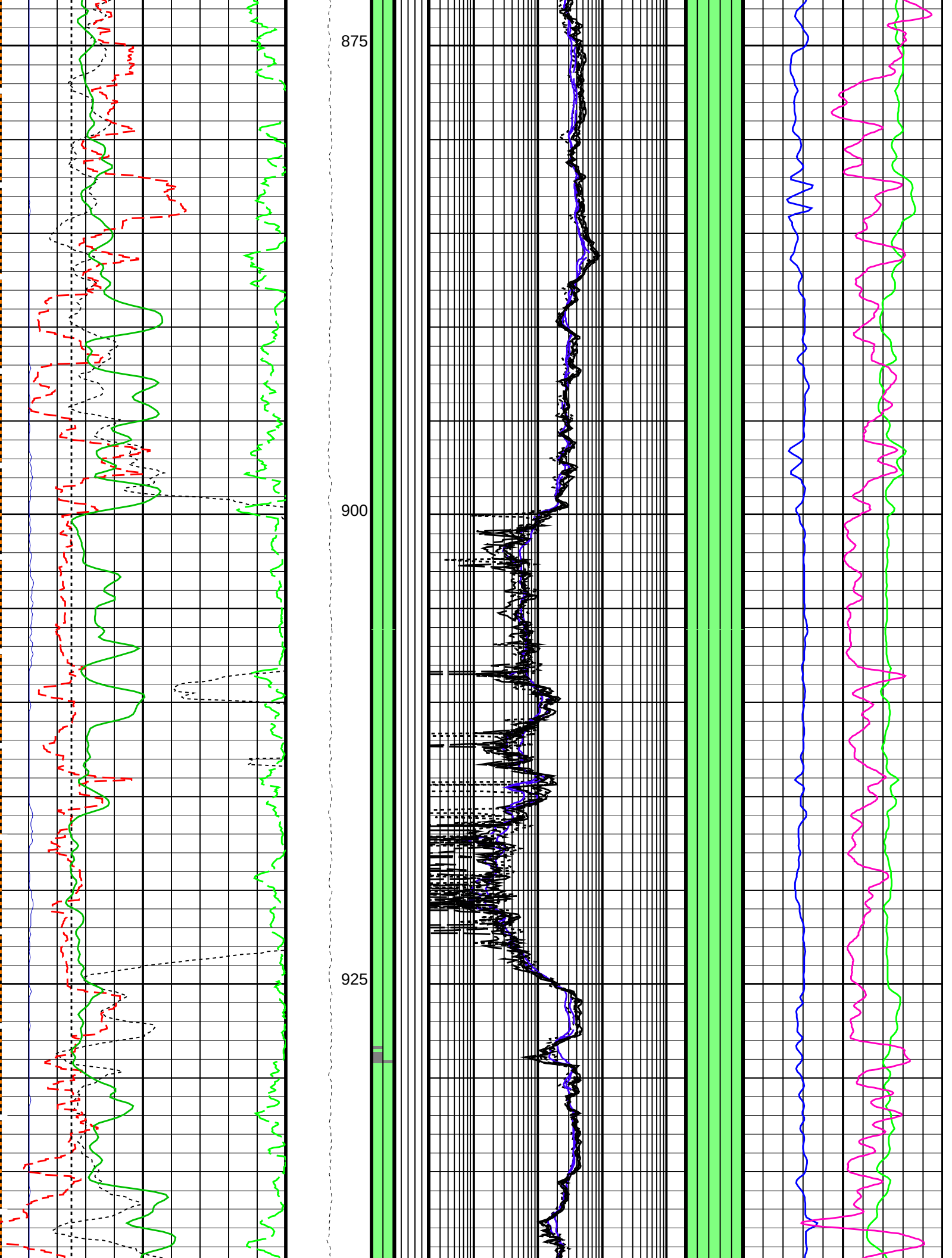
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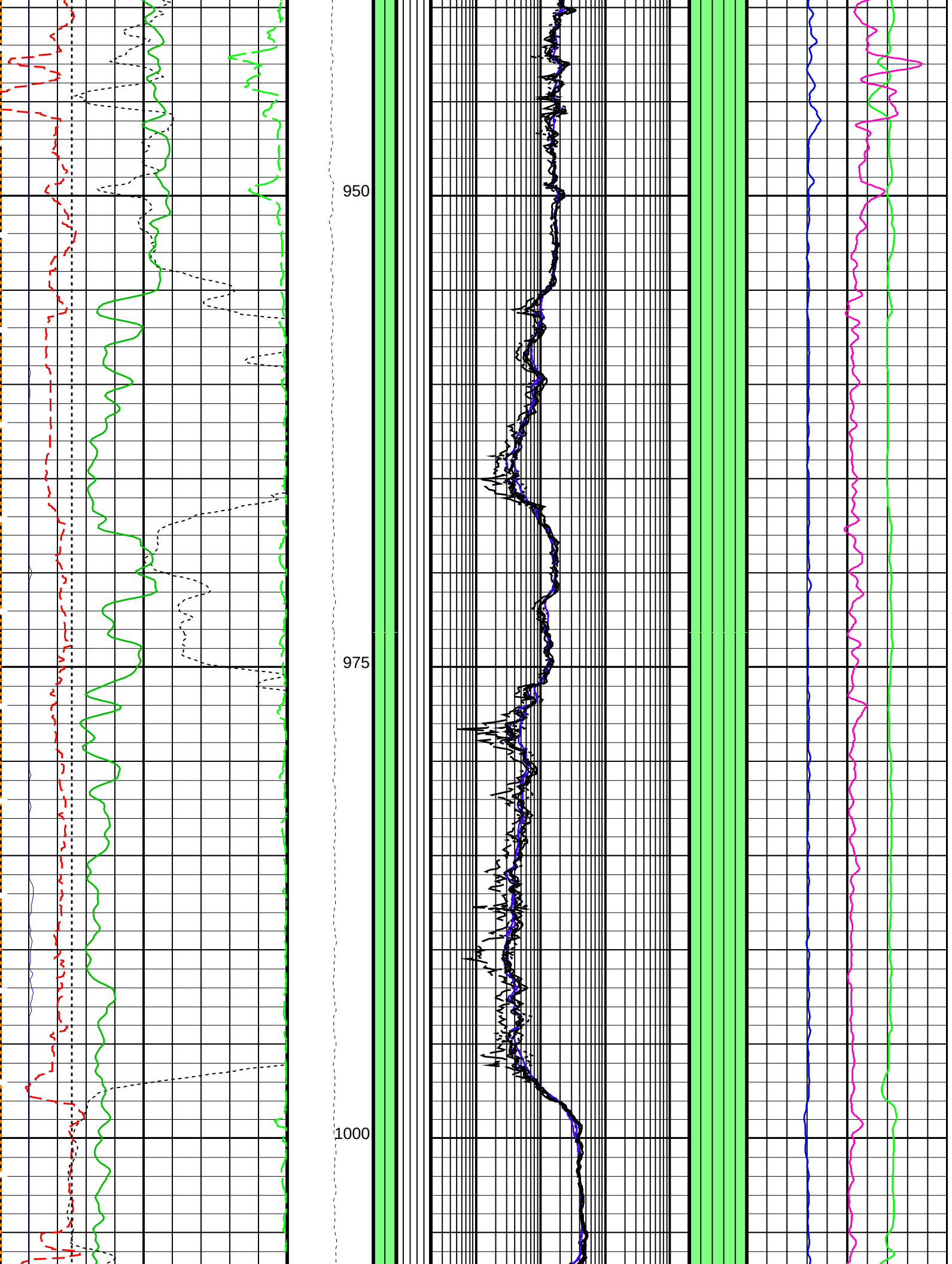
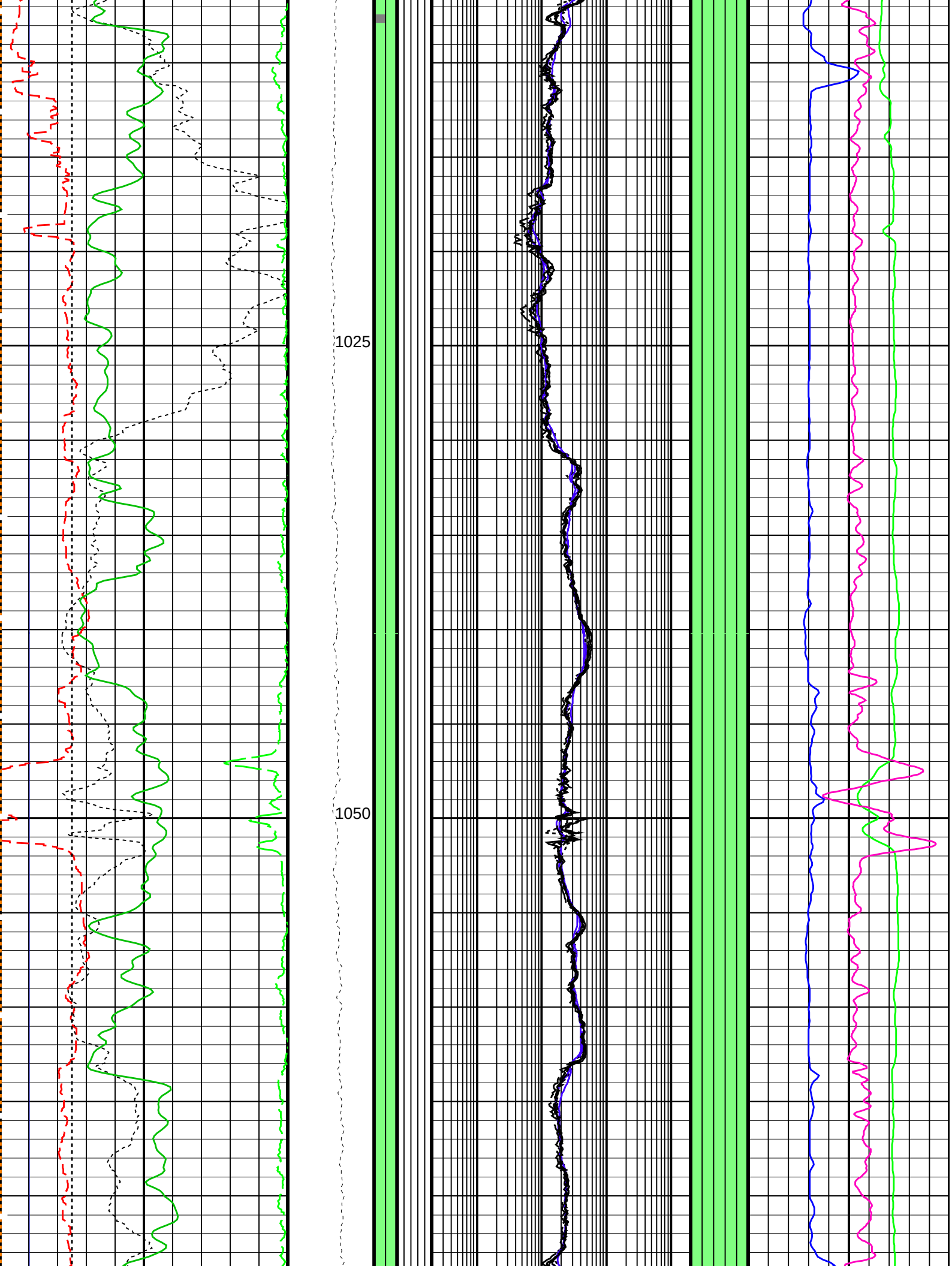

950
975
1000


1025
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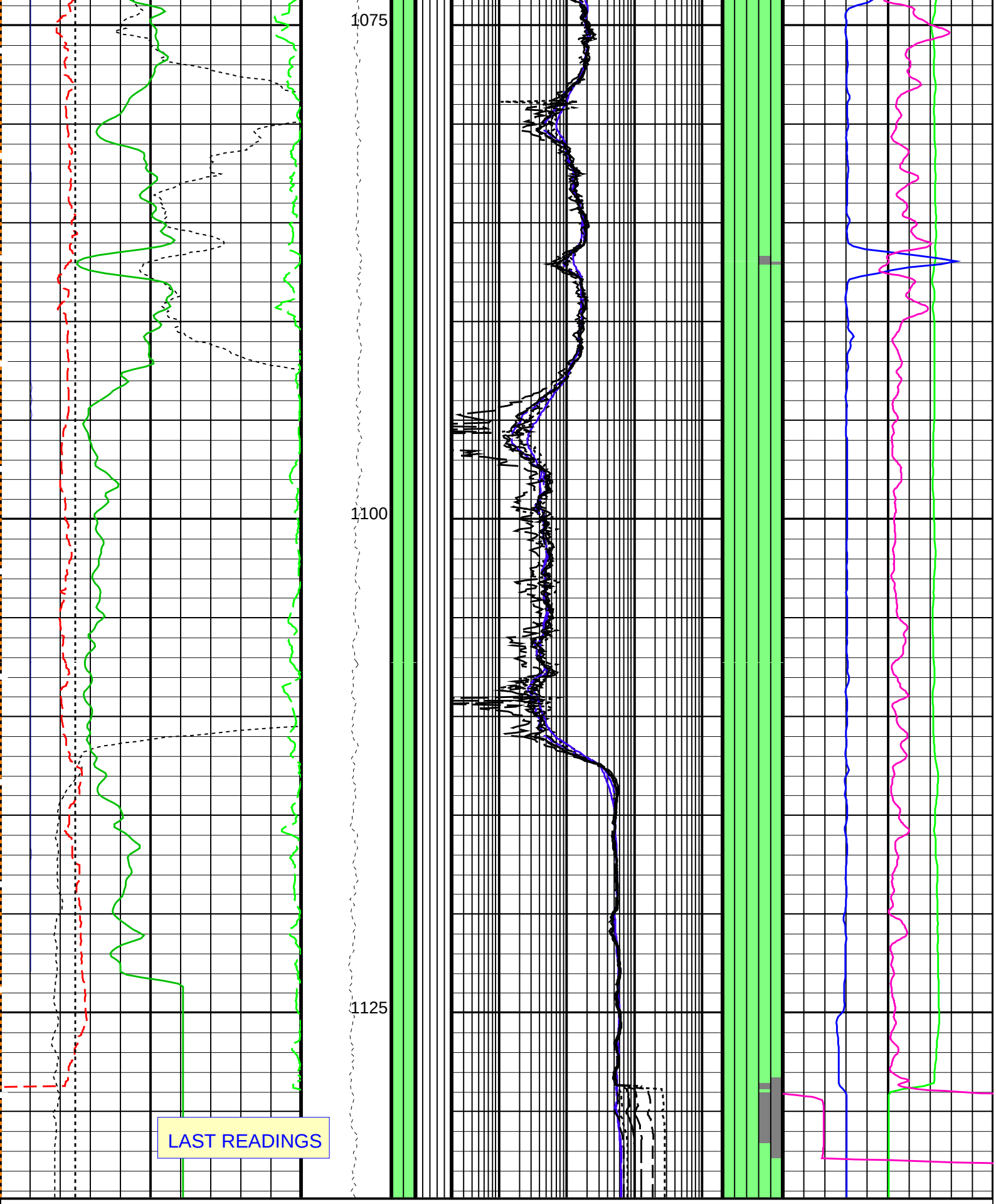

***** Flag Tracks *****

White = Absent Green = Good Yellow = Warn Red/Black = Bad

RESISTIVITY TRACK :

1. MCFL Hardware

2. RXO Processing
3. HAIT Hardware
4. HAIT Array[1−2]
5. HAIT Array[3−4]
6. HAIT Array[5−6]
7. HAIT Array[7−8]

NUCLEAR TRACK :
1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation

HGNS Deviation (GDEV)	Tension (TENS)	AIT QC Fully Calibrated A1 Signal (AQABN[0])
−5 (DEG) 45	25000 (N) 0	2 (MM/M) 20000
AIT Bhole/Form Signal Ratio (ABFR)		AIT QC Fully Calibrated A8 Signal (AQABN[7])
0 (−−−− 25		2 (MM/M) 20000
AIT Input Bhole Diameter (AIBD)		AIT QC Fully Calibrated A7 Signal (AQABN[6])
300 (MM) 550		2 (MM/M) 20000
Bit Size (BS)		AIT QC Fully Calibrated A6 Signal (AQABN[5])
300 (MM) 550		2 (MM/M) 20000
Gamma Ray (GR)		AIT QC Fully Calibrated A5 Signal (AQABN[4])
0 (GAPI) 150		2 (MM/M) 20000
Std. Res. Resistivity Standoff (RSOZ)		AIT QC Fully Calibrated A4 Signal (AQABN[3])
65 (MM) 0		2 (MM/M) 20000
AIT Mud Full Cal (AMF)		AIT QC Fully Calibrated A3 Signal (AQABN[2])
0.02 (OHMM) 200		2 (MM/M) 20000
		AIT QC Fully Calibrated A2 Signal (AQABN[1])
		2 (MM/M) 20000

GR Borehole Correction Factor (CFGR)	
0.5 (−−−− 1.5	
Delta Neutron Porosity (DNPH)	
−0.1 (V/V) 0.1	
BS Delta Rho (HDRB)	
−0.5 (G/C3) 0.5	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	AIT−M: Array Induction Tool − M		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AIGS	Array Induction Select Akima Interpolation Gating	On	
AMRF	Array Induction Mud Resistivity Factor	1	
ASTA	Array Induction Tool Standoff	64	MM
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M

GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	0	DEGC
HILTH−FTB: High resolution Integrated Logging Tool−DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
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	HiRes	
NSAR	HRDD Depth Sampling Rate	25.4	MM
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	0	DEGC
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	YES	
EMS−B: Environment Measurement Sonde			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	9.4	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITM_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	0	DEGC
STI: Stuck Tool Indicator			
TDL	Total Depth − Logger	1133.00	M
System and Miscellaneous			
BS	Bit Size	361.950	MM
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	339.700	MM
CWEI	Casing Weight	81.11	KG/M
DFD	Drilling Fluid Density	1120.00	K/M3
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	20.50	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.1500	OHMM
TD	Total Depth	1147	M

Format: HILT−IND−LQC−CAN Vertical Scale: 1:240 Graphics File Created: 03−Mar−2007 11:51

OP System Version: 14C0−302

MCM

AIT−M	14C0−302	HILTH−FTB	14C0−302
EMS−B	14C0−302	DTC−H	14C0−302

Input DLIS Files

DEFAULT	SPLICE_AIT_TLD_MCFL_089	FN:1	PRODUCER	03−Mar−2007 11:47	1134.3 M	622.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_091PUP	FN:110	PRODUCER	03−Mar−2007 11:51
CUST	AIT_TLD_MCFL_CNL_091PUP	FN:111	PRODUCER	03−Mar−2007 11:51

Schlumberger

CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool − M Wellsite Calibration − Electronics Calibration Check − Thru Cal Mag. & Phase							
Master: 9−Jan−2007 16:33 Before: 2−Mar−2007 21:07							
Thru Cal Magnitude − 0	0	0.6106	0.6119	N/A	N/A	N/A	V
Thru Cal Magnitude − 1	0	1.251	1.254	N/A	N/A	N/A	V
Thru Cal Magnitude − 2	0	0.6204	0.6215	N/A	N/A	N/A	V
Thru Cal Magnitude − 3	0	0.6999	0.7012	N/A	N/A	N/A	V
Thru Cal Magnitude − 4	0	1.310	1.313	N/A	N/A	N/A	V
Thru Cal Magnitude − 5	0	1.909	1.912	N/A	N/A	N/A	V
Thru Cal Magnitude − 6	0	1.905	1.909	N/A	N/A	N/A	V
Thru Cal Magnitude − 7	0	1.370	1.372	N/A	N/A	N/A	V
Thru Cal Phase − 0	0	194.5	192.9	N/A	N/A	N/A	DEG
Thru Cal Phase − 1	0	193.4	191.8	N/A	N/A	N/A	DEG
Thru Cal Phase − 2	0	189.7	188.2	N/A	N/A	N/A	DEG
Thru Cal Phase − 3	0	189.0	187.4	N/A	N/A	N/A	DEG
Thru Cal Phase − 4	0	182.7	181.1	N/A	N/A	N/A	DEG
Thru Cal Phase − 5	0	181.0	179.4	N/A	N/A	N/A	DEG
Thru Cal Phase − 6	0	181.1	179.5	N/A	N/A	N/A	DEG
Thru Cal Phase − 7	0	180.5	178.8	N/A	N/A	N/A	DEG
Array Induction Tool − M Wellsite Calibration − Electronics Calibration Check − Auxiliary							
Master: 9−Jan−2007 16:33 Before: 2−Mar−2007 21:07							
Array Induction SPA Plus	991.0	992.5	992.9	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	−0.1065	−0.06589	N/A	N/A	N/A	MV
Array Induction Temperature Pl	0.9170	0.9193	0.9197	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	−0.0001016	−0.00007390	N/A	N/A	N/A	V
Array Induction Tool − M Wellsite Calibration − Test Loop Gain Correction							
Master: 9−Jan−2007 16:33							
Test Loop Gain Correctio − 0	0	1.044	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 1	0	1.044	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 2	0	1.026	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 3	0	1.018	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 4	0	1.005	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 5	0	1.004	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 6	0	1.013	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 7	0	1.025	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 0	0	0.7534	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 1	0	0.6562	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 2	0	0.06160	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 3	0	0.1409	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 4	0	0.1225	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 5	0	0.05437	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 6	0	0.4129	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 7	0	0.09432	N/A	N/A	N/A	N/A	DEG
Array Induction Tool − M Wellsite Calibration − Sonde Error Correction							
Master: 9−Jan−2007 16:33							
R Sonde Error Correction − 0	0	−18.53	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 1	0	176.7	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 2	0	101.8	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 3	0	56.95	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 4	0	23.72	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 5	0	11.78	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 6	0	9.211	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 7	0	−2.205	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 0	0	186.1	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 1	0	−10.08	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 2	0	2.897	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 3	0	−11.83	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 4	0	45.25	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 5	0	4.755	N/A	N/A	N/A	N/A	MM/M

X Sonde Error Correction − 5	0	4.755	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 6	0	4.629	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 7	0	5.289	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool − M Wellsite Calibration − Mud Gain Correction
Master: 9−Jan−2007 16:33

Coarse − Mag, Real, Imag − 0	0	1.054	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 1	0	1.067	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 2	0	1.067	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 0	0	1.077	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 1	0	1.077	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 2	0	1.077	N/A	N/A	N/A	N/A	

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 − Calibration Fixture Measurement

Master: 3−Mar−2007 6:32

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	−−	−−	−−	−−	%

Environment Measurement Sonde Wellsite Calibration − EMS Caliper Calibration

Before: 2−Mar−2007 22:46

Radius 1 Short Radius	101.6	N/A	100.3	N/A	N/A	5.080	MM
Radius 1 Long Radius	152.4	N/A	160.0	N/A	N/A	5.080	MM
Radius 2 Short Radius	152.4	N/A	165.1	N/A	N/A	5.080	MM
Radius 2 Long Radius	101.6	N/A	100.0	N/A	N/A	5.080	MM
Radius 3 Short Radius	101.6	N/A	94.47	N/A	N/A	5.080	MM
Radius 3 Long Radius	152.4	N/A	155.7	N/A	N/A	5.080	MM
Radius 4 Short Radius	152.4	N/A	160.1	N/A	N/A	5.080	MM
Radius 4 Long Radius	101.6	N/A	104.3	N/A	N/A	5.080	MM
Radius 5 Short Radius	101.6	N/A	107.8	N/A	N/A	5.080	MM
Radius 5 Long Radius	152.4	N/A	165.1	N/A	N/A	5.080	MM
Radius 6 Short Radius	152.4	N/A	162.4	N/A	N/A	5.080	MM
Radius 6 Long Radius	101.6	N/A	103.8	N/A	N/A	5.080	MM

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

Array Induction Tool − M / Equipment Identification

Primary Equipment:

Rm/SP Bottom Nose	AMRM − A	
Array Induction Sonde	AMIS − A	175

Auxiliary Equipment:

Array Induction Tool − M Wellsite Calibration

Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG	Nominal
0	Master	0.6106		0.6100	194.5		197.0
	Before	0.6119			192.9		
1	Master	1.251		1.270	193.4		196.0
	Before	1.254			191.8		
2	Master	0.6204		0.6200	189.7		192.0
	Before	0.6215			188.2		
3	Master	0.6999		0.7000	189.0		191.0
	Before	0.7012			187.4		
4	Master	1.310		1.340	182.7		185.0
	Before	1.313			181.1		
5	Master	1.909		1.960	181.0		182.0
	Before	1.912			179.4		
6	Master	1.905		1.960	181.1		181.0
	Before	1.909			179.5		
7	Master	1.370		1.410	180.5		175.0
	Before	1.372			178.8		
		60.00 % (Minimum)	140.0 % (Maximum)		Nom −60.00 (Minimum)	Nom + 60.00 (Maximum)	

(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)

Master: 9−Jan−2007 16:33 Before: 2−Mar−2007 21:07

Array Induction Tool − M Wellsite Calibration

Electronics Calibration Check − Auxiliary

Phase	Array Induction SPA Plus MV	Value
Master		992.5
Before		992.9
	941.0 (Minimum) 991.0 (Nominal) 1040 (Maximum)	

Phase	Array Induction SPA Zero MV	Value
Master		−0.1065
Before		−0.06589
	−50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Array Induction Temperature Plus V	Value
Master		0.9193
Before		0.9197
	0.8710 (Minimum) 0.9170 (Nominal) 0.9630 (Maximum)	

Phase	Array Induction Temperature Zero V	Value
Master		−0.0001016
Before		−7.390E−00
	−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 9−Jan−2007 16:33 Before: 2−Mar−2007 21:07

Array Induction Tool − M Wellsite Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Correction Magnitude V	Value	Test Loop Gain Correction Phase DEG
0	1.044		0.7534	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
1	1.044		0.6562	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
2	1.026		0.06160	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
3	1.018		0.1409	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
4	1.005		0.1225	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
5	1.004		0.05437	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
6	1.013		0.4129	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
7	1.025		0.09432	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)

Master: 9−Jan−2007 16:33

Array Induction Tool − M Wellsite Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M	Value	X Sonde Error Correction MM/M
0	−18.53		186.1	
		−231.0 (Minimum) −56.00 (Nominal) 119.0 (Maximum)		−2250 (Minimum) 0 (Nominal) 2250 (Maximum)
1	176.7		−10.08	
		114.0 (Minimum) 159.0 (Nominal) 204.0 (Maximum)		−625.0 (Minimum) 0 (Nominal) 625.0 (Maximum)
2	101.8		2.897	
		66.00 (Minimum) 111.0 (Nominal) 156.0 (Maximum)		−350.0 (Minimum) 0 (Nominal) 350.0 (Maximum)
3	56.95		−11.83	
		39.00 (Minimum) 64.00 (Nominal) 89.30 (Maximum)		−250.0 (Minimum) 0 (Nominal) 250.0 (Maximum)
4	23.72		45.25	
		15.00 (Minimum) 25.00 (Nominal) 35.00 (Maximum)		−63.00 (Minimum) 0 (Nominal) 63.00 (Maximum)
5	11.78		4.755	

		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.211				4.629			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	−2.205				5.289			
		−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 9−Jan−2007 16:33

Array Induction Tool − M Wellsite Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	1.054				1.077			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.067				1.077			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.067				1.077			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 9−Jan−2007 16:33

Array Induction Tool − M Master Calibration

Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V		Nominal	Value	Thru Cal Phase DEG		Nominal
0	Master	0.6106			0.6100	194.5			197.0
1	Master	1.251			1.270	193.4			196.0
2	Master	0.6204			0.6200	189.7			192.0
3	Master	0.6999			0.7000	189.0			191.0
4	Master	1.310			1.340	182.7			185.0
5	Master	1.909			1.960	181.0			182.0
6	Master	1.905			1.960	181.1			181.0
7	Master	1.370			1.410	180.5			175.0
		60.00 % (Minimum)		140.0 % (Maximum)		Nom −60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)	

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Array Induction Tool − M Master Calibration

Electronics Calibration Check − Auxiliary

Phase	Array Induction SPA Plus MV			Value	Phase	Array Induction SPA Zero MV			Value
Master				992.5	Master				−0.1065
	941.0 (Minimum)	991.0 (Nominal)	1040 (Maximum)			−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)	
Phase	Array Induction Temperature Plus V			Value	Phase	Array Induction Temperature Zero V			Value
Master				0.9193	Master				−0.0001016
	0.8710 (Minimum)	0.9170 (Nominal)	0.9630 (Maximum)			−0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)	

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Array Induction Tool − M Master Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Correction Magnitude V			Value	Test Loop Gain Correction Phase DEG		
0	1.044				0.7534			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.044				0.6562			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.026				0.06160			
		0.9500	1.000	1.050		−3.000	0	3.000

		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)
3	1.018				0.1409			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	1.005				0.1225			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	1.004				0.05437			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.013				0.4129			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.025				0.09432			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

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Array Induction Tool − M Master Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	−18.53				186.1			
		−231.0 (Minimum)	−56.00 (Nominal)	119.0 (Maximum)		−2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	176.7				−10.08			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	101.8				2.897			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	56.95				−11.83			
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	23.72				45.25			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	11.78				4.755			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.211				4.629			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	−2.205				5.289			
		−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

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Array Induction Tool − M Master Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	1.054				1.077			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.067				1.077			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.067				1.077			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

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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)

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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)

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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)

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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)

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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)

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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

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)	

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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)	

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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)	

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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)	

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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

Calibration Fixture Measurement

Phase	Tool Temperature MCAL DEGC	Value
Master		25.19
	10.00 (Minimum) 27.00 (Nominal) 44.00 (Maximum)	

Phase	LOOP Measurement MCAL	Value
Master		1870
	1500 (Minimum) 2300 (Nominal) 2900 (Maximum)	

Phase	Hall Probe B0 MCAL MTES	Value
Master		52.68
	50.00 (Minimum) 52.00 (Nominal) 55.00 (Maximum)	

Phase	Cal. Fixture Amplitude MCAL %	Value
Master		28.32
	25.00 (Minimum) 37.50 (Nominal) 50.00 (Maximum)	

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Environment Measurement Sonde / Equipment Identification

Primary Equipment:

EMS Mechanical	EMM − B
EMS Long Caliper Extention	LONG −
EMS Cartridge	EMC − B
EMS Adaptor	EMA − B
Resistivity Meter	RES −

Auxiliary Equipment:

Electronics Cartridge Housing	ECH − KH

Environment Measurement Sonde Wellsite Calibration

EMS Caliper Calibration

Phase	Radius 1 Short Radius MM	Value
Before		100.3
	76.20 (Minimum) 101.6 (Nominal) 127.0 (Maximum)	

Phase	Radius 1 Long Radius MM	Value
Before		160.0
	127.0 (Minimum) 152.4 (Nominal) 177.8 (Maximum)	

Phase	Radius 2 Short Radius MM	Value
Before		165.1
	127.0 (Minimum) 152.4 (Nominal) 177.8 (Maximum)	

Phase	Radius 2 Long Radius MM	Value
Before		100.0
	76.20 (Minimum) 101.6 (Nominal) 127.0 (Maximum)	

Phase	Radius 3 Short Radius MM	Value
Before		94.47
	76.20 (Minimum) 101.6 (Nominal) 127.0 (Maximum)	

Phase	Radius 3 Long Radius MM	Value
Before		155.7
	127.0 (Minimum) 152.4 (Nominal) 177.8 (Maximum)	

Phase	Radius 4 Short Radius MM	Value
Before		160.1
	127.0 (Minimum) 152.4 (Nominal) 177.8 (Maximum)	

Phase	Radius 4 Long Radius MM	Value
Before		104.3
	76.20 (Minimum) 101.6 (Nominal) 127.0 (Maximum)	

Phase	Radius 5 Short Radius MM	Value
Before		107.8
	76.20 (Minimum) 101.6 (Nominal) 127.0 (Maximum)	

Phase	Radius 5 Long Radius MM	Value
Before		165.1
	127.0 (Minimum) 152.4 (Nominal) 177.8 (Maximum)	

Phase	Radius 6 Short Radius MM	Value
Before		162.4
	127.0 (Minimum) 152.4 (Nominal) 177.8 (Maximum)	

Phase	Radius 6 Long Radius MM	Value
Before		103.8
	76.20 (Minimum) 101.6 (Nominal) 127.0 (Maximum)	

Before: 2−Mar−2007 22:46

Company: **JOGMEC**

Schlumberger

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

PLATFORM EXPRESS:
ARRAY INDUCTION − SP LOG