COMPANIA: YPF S.A.

POZO: YPF.Ch.EA−747

CAMPO: EL ALBA

PROVINCIA: CHUBUT **PAIS:** ARGENTINA

Provincia: CHUBUT
Campo: EL ALBA
Locacion: ARCS
Pozo: YPF.Ch.EA−747
Compania: YPF S.A.

Schlumberger

COMBINADA

ESCALA: 1/200

LOCACION

AIT−BHC−LDL−CNL−CALI
XPT

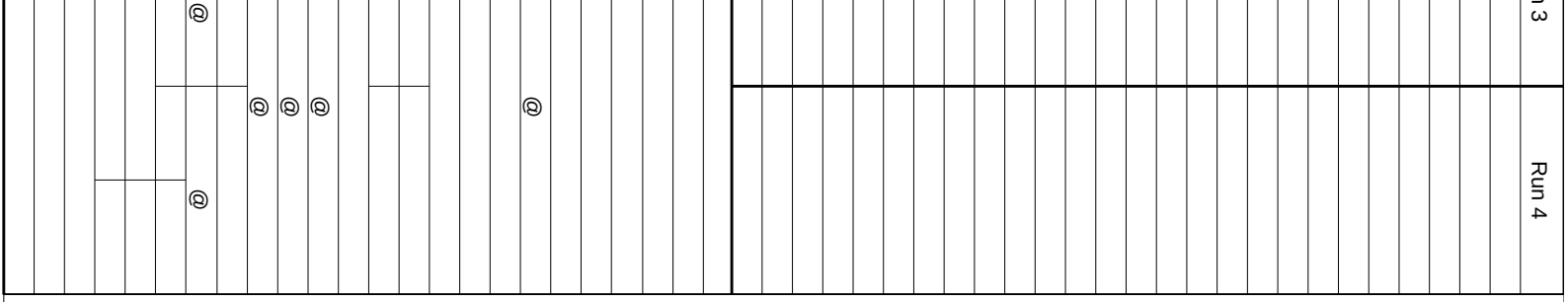
Elev.: B.V. 669 m
N. T. 663.1 m
M. R. 668.7 m

Ref. Permanente: NIVEL DEL TERRENO Elev.: 663.1 m
Reg. Medido Desde: NIVEL DEL TERRENO 0.0 m sobre nivel ref.
Perforacion Medida Desde: NIVEL DEL TERRENO

UWI: AR0100008062	Equipo SAI−381	Longitud X: 4.949.898,90	Latitud Y: 2.582.765,32

Fecha			3−Oct−2009				Logging Date		
Corrida No.			1				Run Number		
Prof. Perforador			2050 m				Depth Driller		
Prof. Registro			2053.8 m				Logger Depth		
Primera Lectura			2051.4 m				Bottom Log Interval		
Ultima Lectura			379 m				Top Log Interval		
Fondo Tuberia Perforador			9.625 in @ 378.76 m		@		Casing Driller Size @ Depth	@	
Fondo Tuberia Registro			379 m				Casing Logger		
Diametro Trepano			8.750 in				Bit Size		
Tipo De Lodo			PHPA				Type Fluid In Hole		
LODO Densidad	Viscosidad		1.13 g/cm3	68 s			MUD Density	Viscosity	
LODO Perdidas	PH		5 cm3	8.5			MUD Fluid Loss	PH	
LODO Fuente Muestra De Lodo			PILETA				MUD Source Of Sample		
RM @ Temp.			1.084 ohm.m @ 15 degC		@		RM @ Measured Temperature	@	
RMF @ Temp.			0.880 ohm.m @ 14 degC		@		RMF @ Measured Temperature	@	
RMC @ Temp.			2.300 ohm.m @ 14 degC		@		RMC @ Measured Temperature	@	
Fuente: RMF	RMC		PRENSA	PRENSA			Source RMF	RMC	
RM @ T. Fdo.	RMF @ T. Fdo.		0.400 @ 78	0.313 @ 78	@	@	RM @ MRT	RMF @ MRT	@ @
Temp. Maxima Medida			78 degC				Maximum Recorded Temperatures		
Circulacion Final	Hora		3−Oct−2009	16:45			Circulation Stopped	Time	
Registro Fondo	Hora		4−Oct−2009	1:25			Logger On Bottom	Time	
Unidad No.	Locacion		3034	ARCS			Unit Number	Location	
Registrado por:			MARCELO SODRE				Recorded By		
Testigo			CARINA CEVASCO				Witnessed By		

	Run 1	Run 2	Run



DEPTH SUMMARY LISTING

Date Created: 4−OCT−2009 4:31:11

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−46P XS
Serial Number:	4810	Serial Number:	1471	Serial Number:	7058
Calibration Date:	27−JUN−2009	Calibration Date:	26−SEP−2009	Length:	4070 M
Calibrator Serial Number:	31	Calibrator Serial Number:	1028		
Calibration Cable Type:	7−46P XS	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−4	Calibration RMS:	15	Rig Type:	LAND
Wheel Correction 2:	−8	Calibration Peak Error:	24		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	73.90 M
Rig Up Length At Bottom:	74.00 M
Rig Up Length Correction:	−0.10 M
Stretch Correction:	1.80 M
Tool Zero Check At Surface:	0.10 M

Depth Control Remarks

1. Primer carrera en el pozo y referencia para todas las demas.
2. Se han seguido todos los procedimientos de control de profundidad de Schlumberger para esta carrera.
3. IDW utilizado como primer control de profundidad, Z−Chart como el segundo.
4. E1−E2= 1.33
5.
6.

OTROS SERVICIOS # 1	OTROS SERVICIOS # 2
OS1: AIT−BHC−LDL−CNL−CALI	OS1:
OS2: XPT	OS2:
OS3:	OS3:
OS4:	OS4:
OS5: SAI−381	OS5:

OBSERVACIONES: CORRIDA # 1	OBSERVACIONES: CORRIDA # 2
1. Primer carrera en el pozo y perfil de referencia de profundidad.	
2. Esquema del pozo segun datos del perforador.	
3. Coordenadas definitivas.	
4. Herramienta corrida segun diagrama.	
5. Maxima temperatura registrada 78.2 degC desde termometro en cabeza.	
6. Datos adicionales del lodo: Cl = 2400 ppm, Ca = 240 ppm.	
7. Maxima desviacion del pozo: 1 deg segun datos del perforador.	

7. Maxima desviacion del pozo: 1 deg segun datos del perforador.	
8. Ultima circulacion termino el dia 03−10−2009 a las 16:45 hs y duro 2h.	
9. FPHI= SPHI, FNUM=0.81, y FEXP=2 utilizados el calculo de RWA.	
10. Lecturas de LDL, CNL y BHC afectadas en zonas de mal caliper.	
11. AIT corrido descentralizado usando standoffs de 1.5".	
12. Repetibilidad afectada en zonas de mal caliper.	
13. LDL, BHC, CNL corrido hasta 920 m a pedido del cliente.	
14. BHC corrido centrlizado usando standoofs de 1.5".	

CORRIDA #1			CORRIDA #2		
ORDEN DE SERVICIO:	AXLA000039		ORDEN DE SERVICIO:		
VERSION DEL PROGRAMA:	17C0−154		VERSION DEL PROGRAMA:		
NIVEL DEL LODO:	0 m		NIVEL DEL LODO:		
INTERVALO REGISTRADO	COMIENZO	FINAL	INTERVALO REGISTRADO	COMIENZO	FINAL

DESCRIPCION DEL EQUIPO

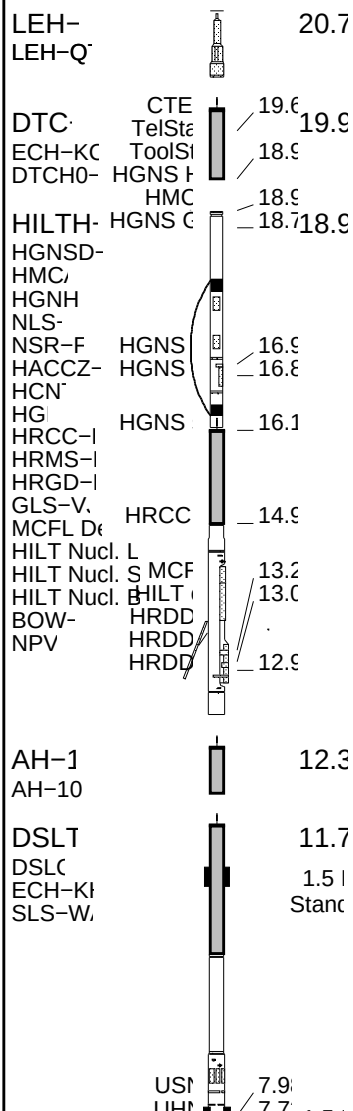
CORRIDA # 1

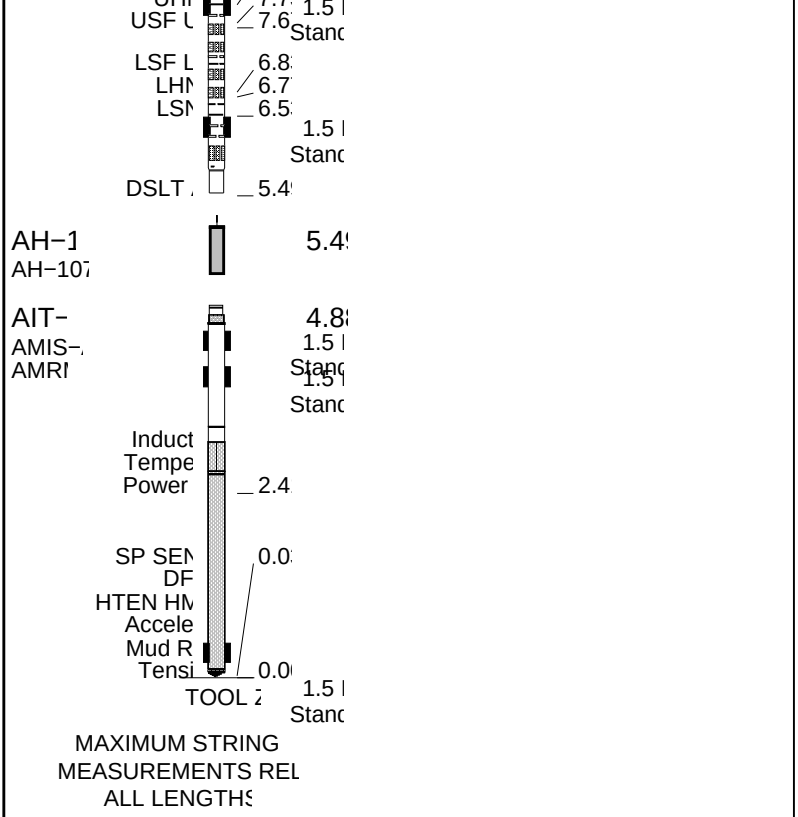
CORRIDA # 2

SURFACE E

GSR−U/ WITM (D
NCT
CNB-
NCS-

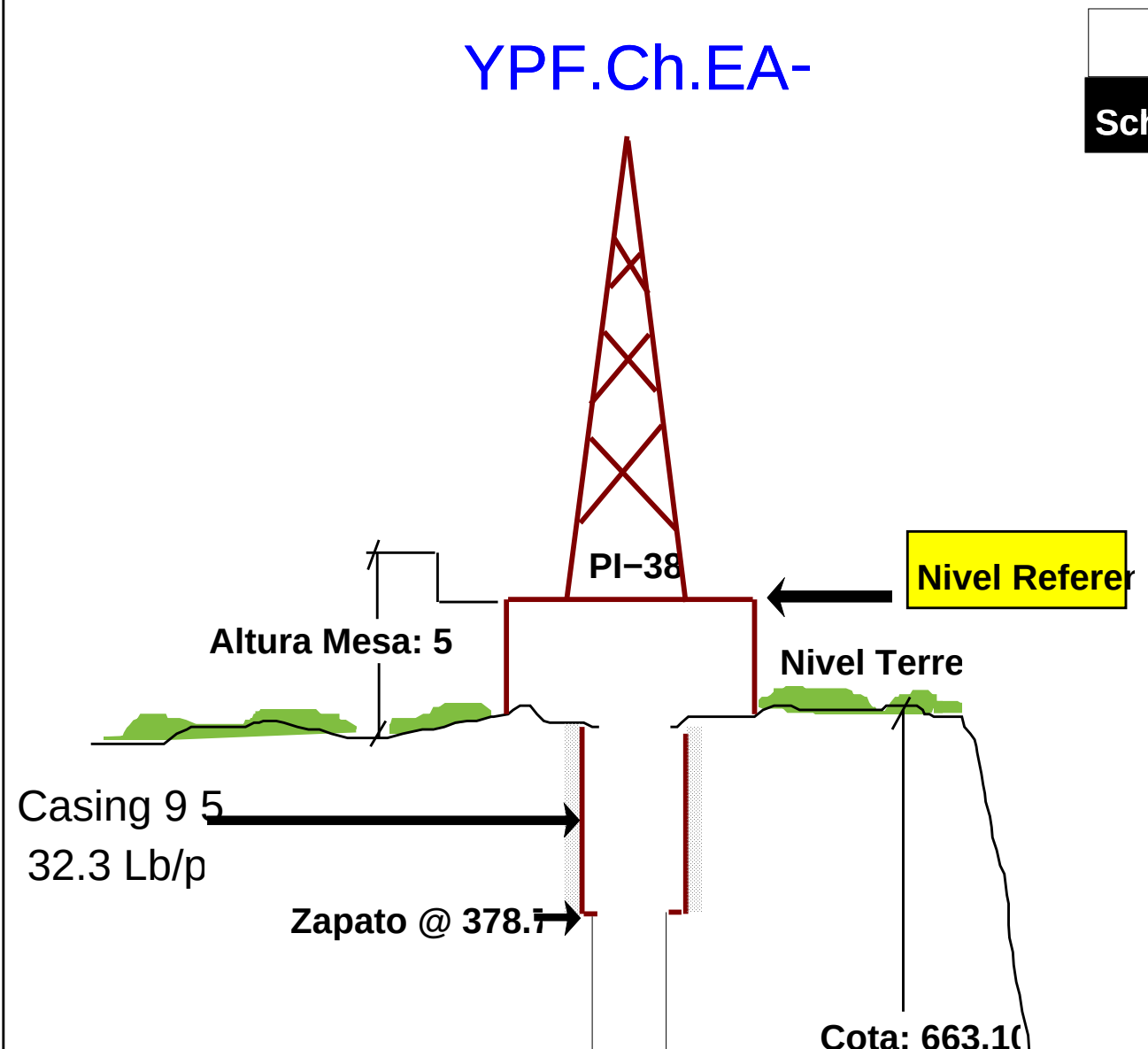
DOWNHOLE

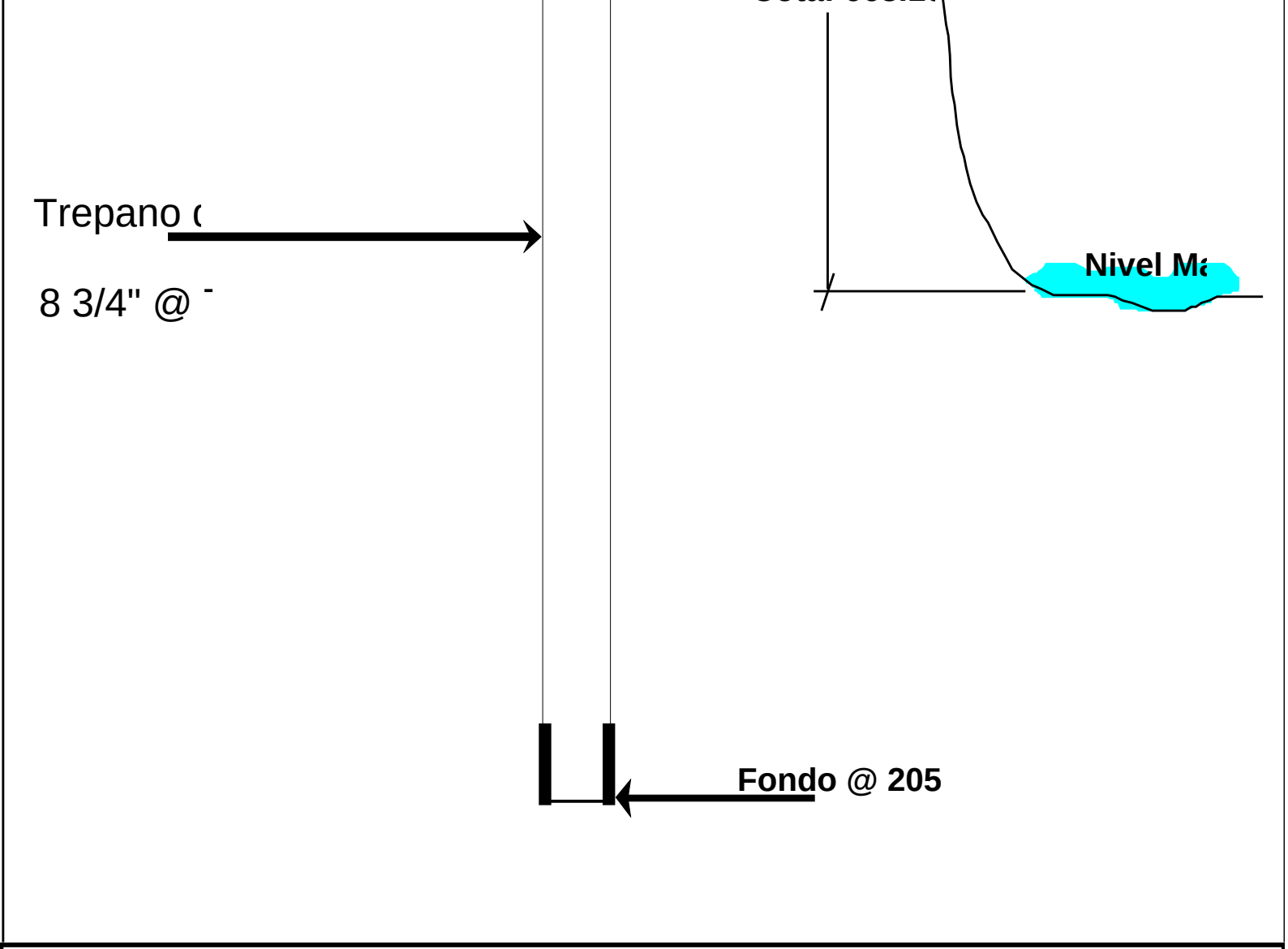




YPF.Ch.EA-

Schlumber





Schlumberger

TRAMO PRINCIPAL

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_112PUP	FN:22	PRODUCER	04−Oct−2009 03:49	2060.1 M	229.1 M

OP System Version: 17C0−154

AITM	unofficial	DSLT−H	unofficial
HILTHD	unofficial	DTCH	unofficial

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

CAVERNA

CAVERNA
From BS to HCAL

REVOQUE
From HCAL to BS

SP (SP)
−80 (MV) 20

RWA (RWA)
0 (OHMM) 1

Std. Res. Formation Pe (PEFZ)
0 (----) 5

Caliper (HCAL)
6 (IN) 16

Bit Size (BS)
6 (IN) 16

Stuck Stretch (STIT)
0 (M) 20

Tension (TENS) (LBF)
0 1000

AIT 90 Inch Investigation (AT90)
0 (OHMM) 10

AIT 60 Inch Investigation (AT60)
0 (OHMM) 10

AIT 30 Inch Investigation (AT30)
0 (OHMM) 10

AIT 20 Inch Investigation (AT20)
0 (OHMM) 10

AIT 10 Inch Investigation (AT10)
0 (OHMM) 10

Env.Corr.Thermal Neutron Porosity (TNPH)
0.4 (V/V) 0

Gas
From DPHZ to TNPH

Sonic Porosity (SPHI)
0.4 (V/V) 0

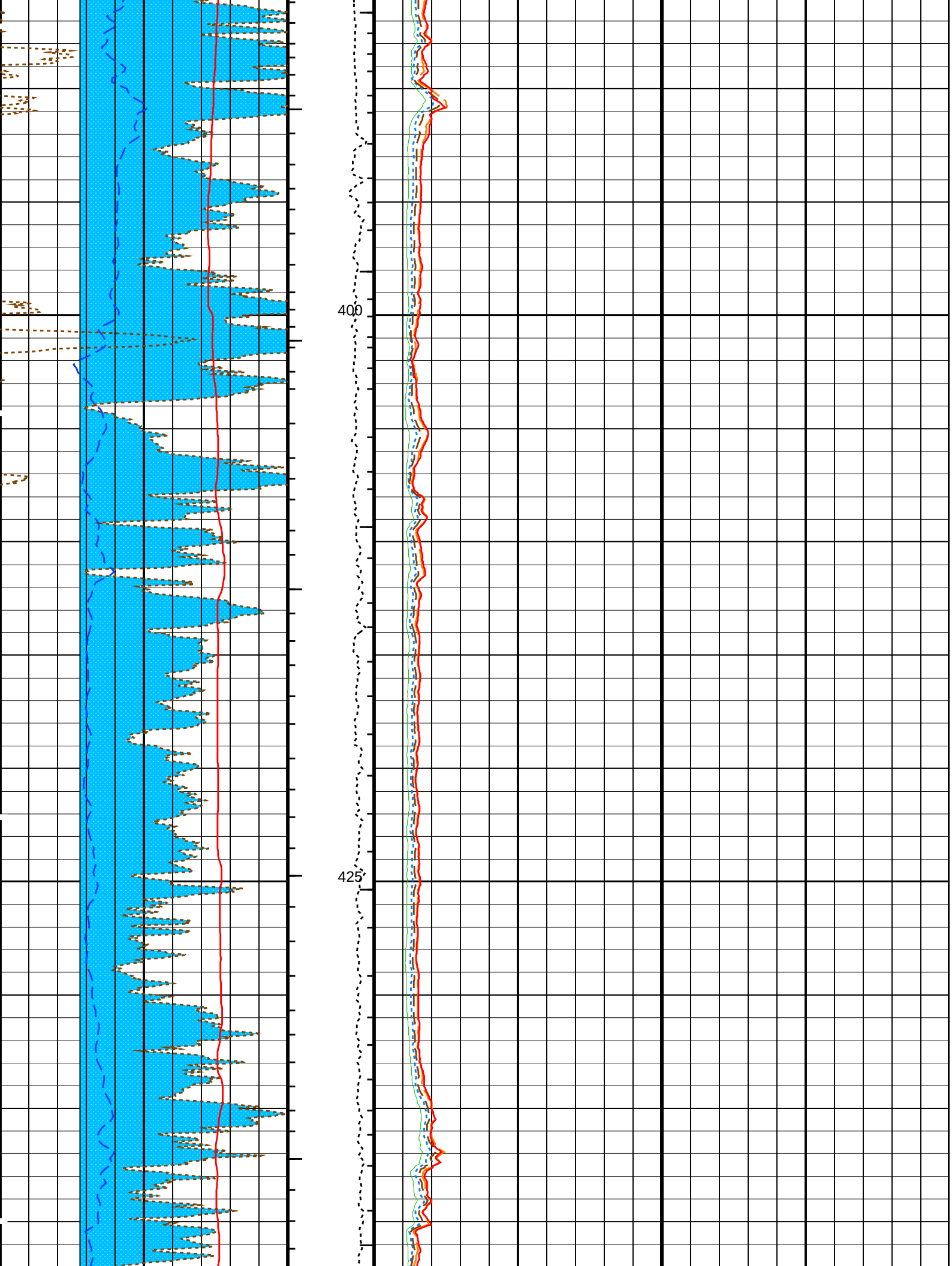
Std. Res. Density Porosity (DPHZ)
0.4 (V/V) 0

Chequeo del Caliper despues del perfil. ID=9"

375

Ultimas Lecturas @ zapato

379.00 M
ZAPATO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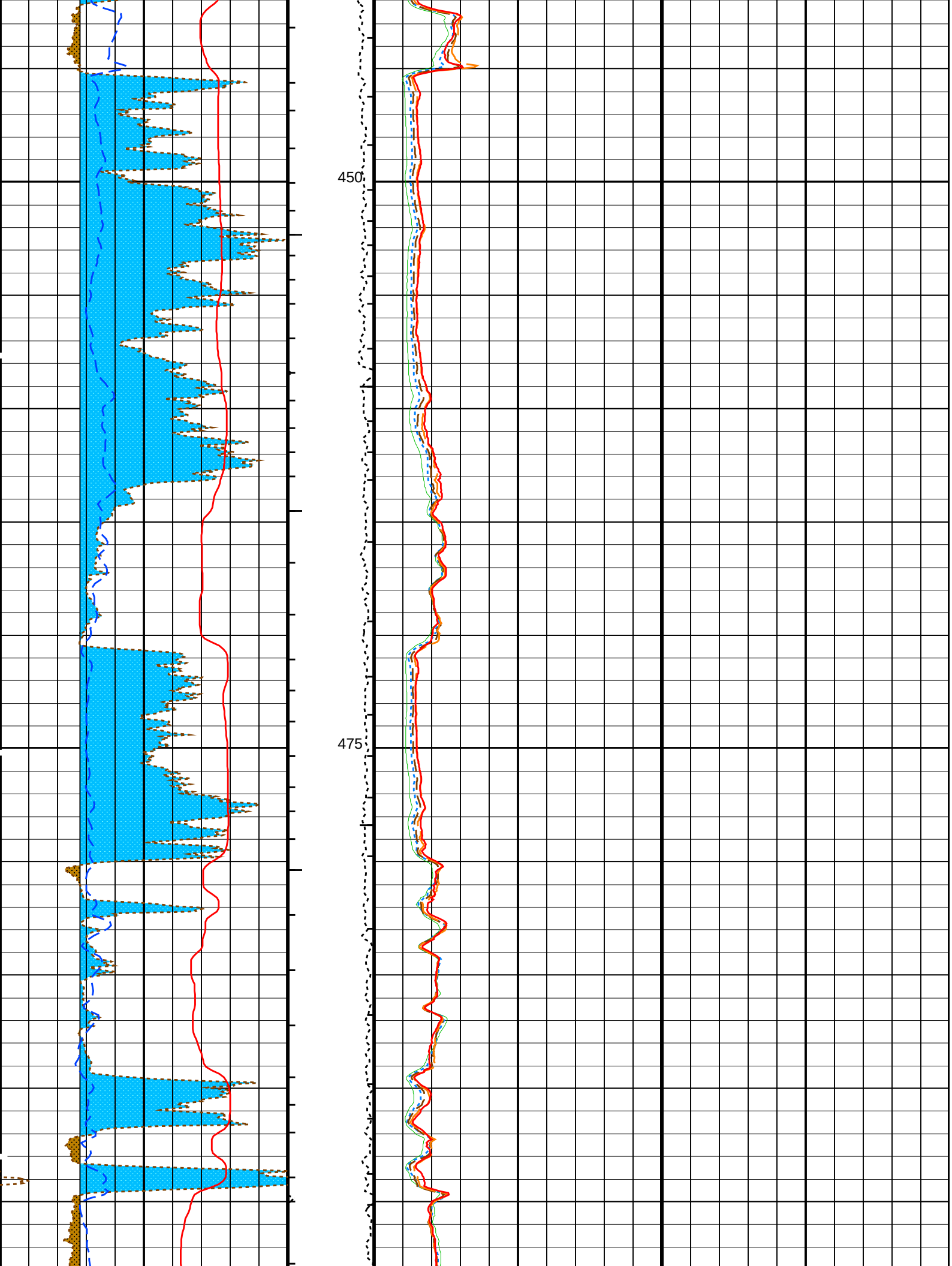
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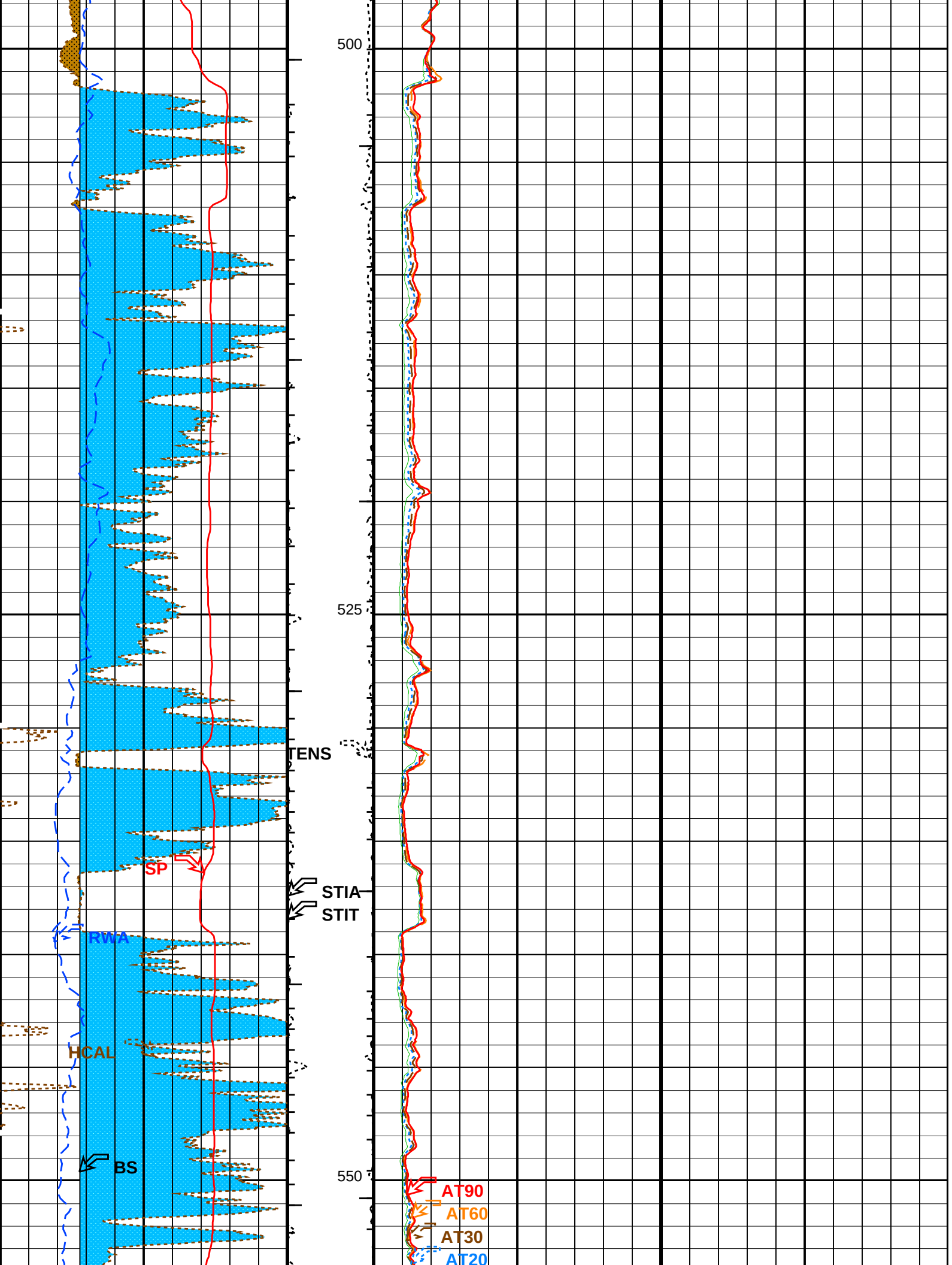
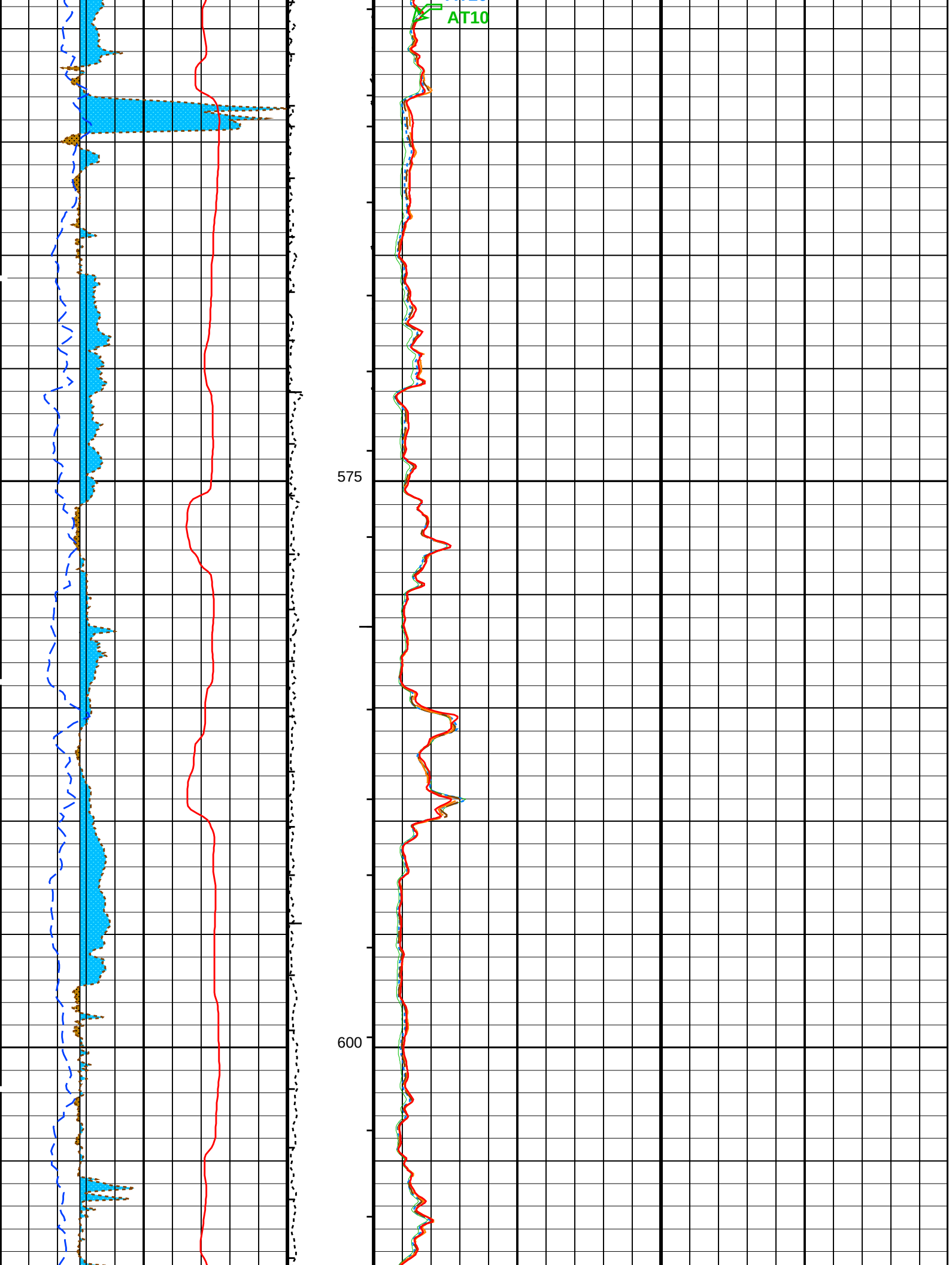
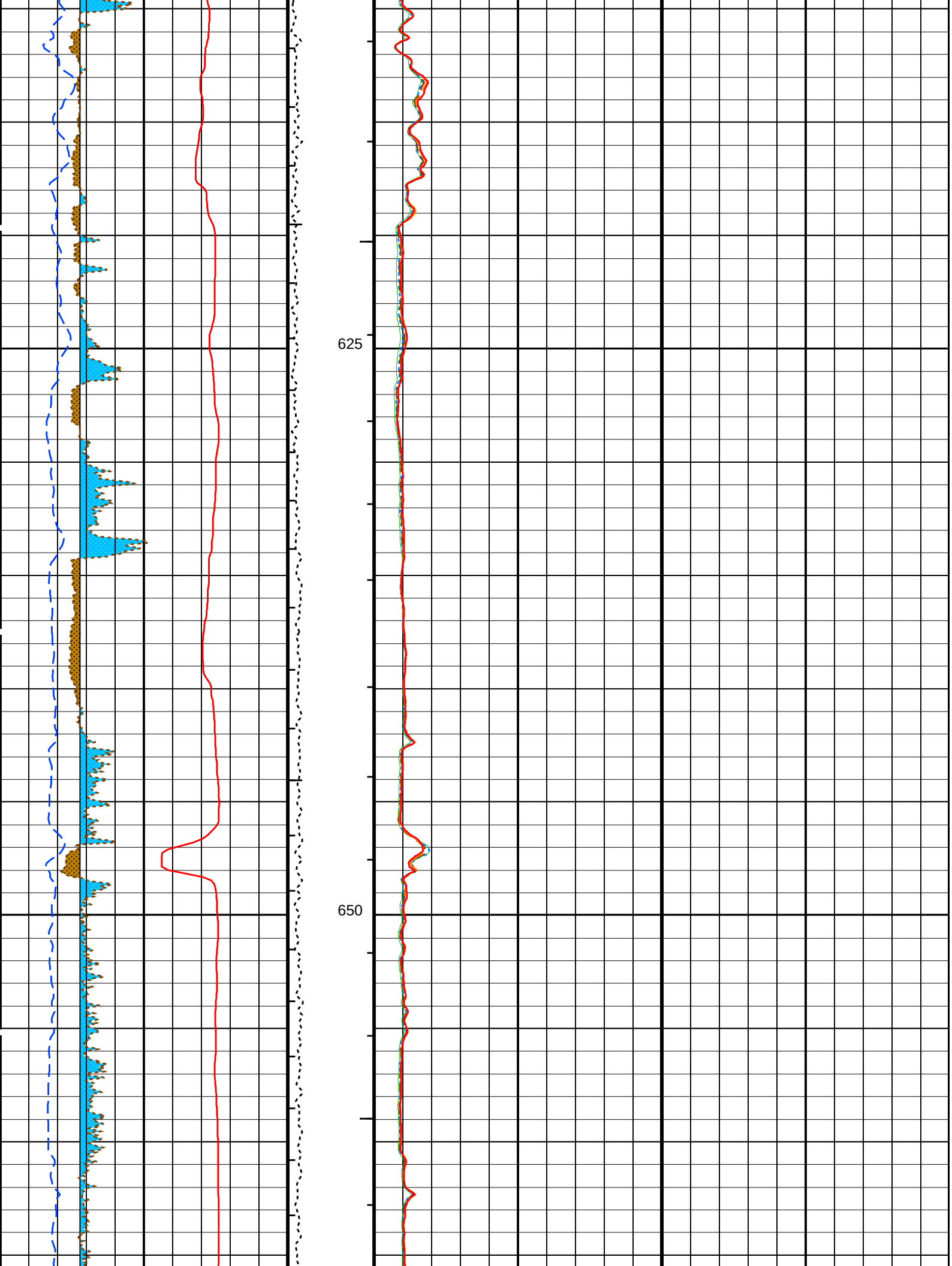

500
525
550
TENS
SP
STIA
STIT
RWA
HCAL
BS
AT90
AT60
AT30
AT20


AT10
575
600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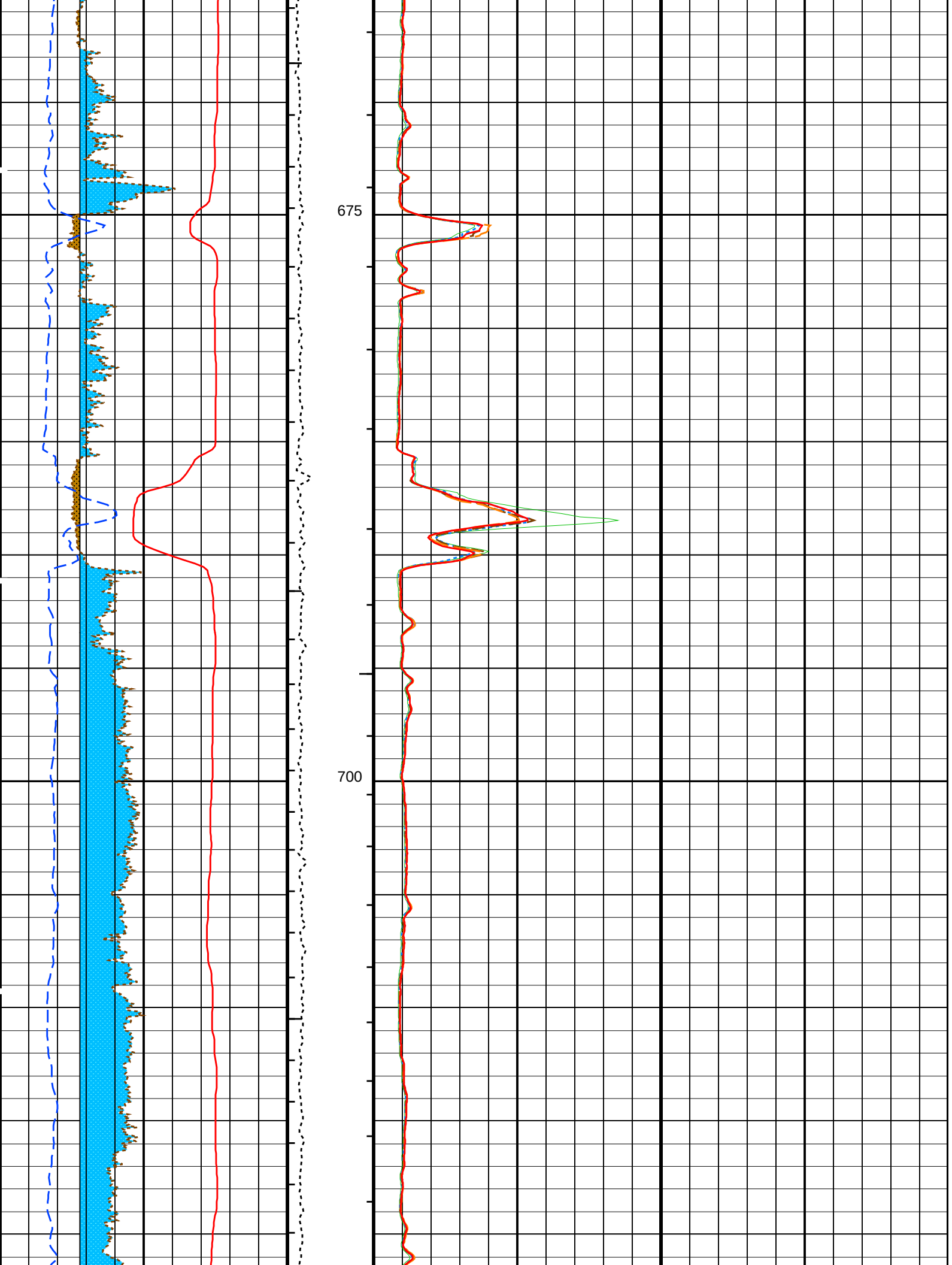
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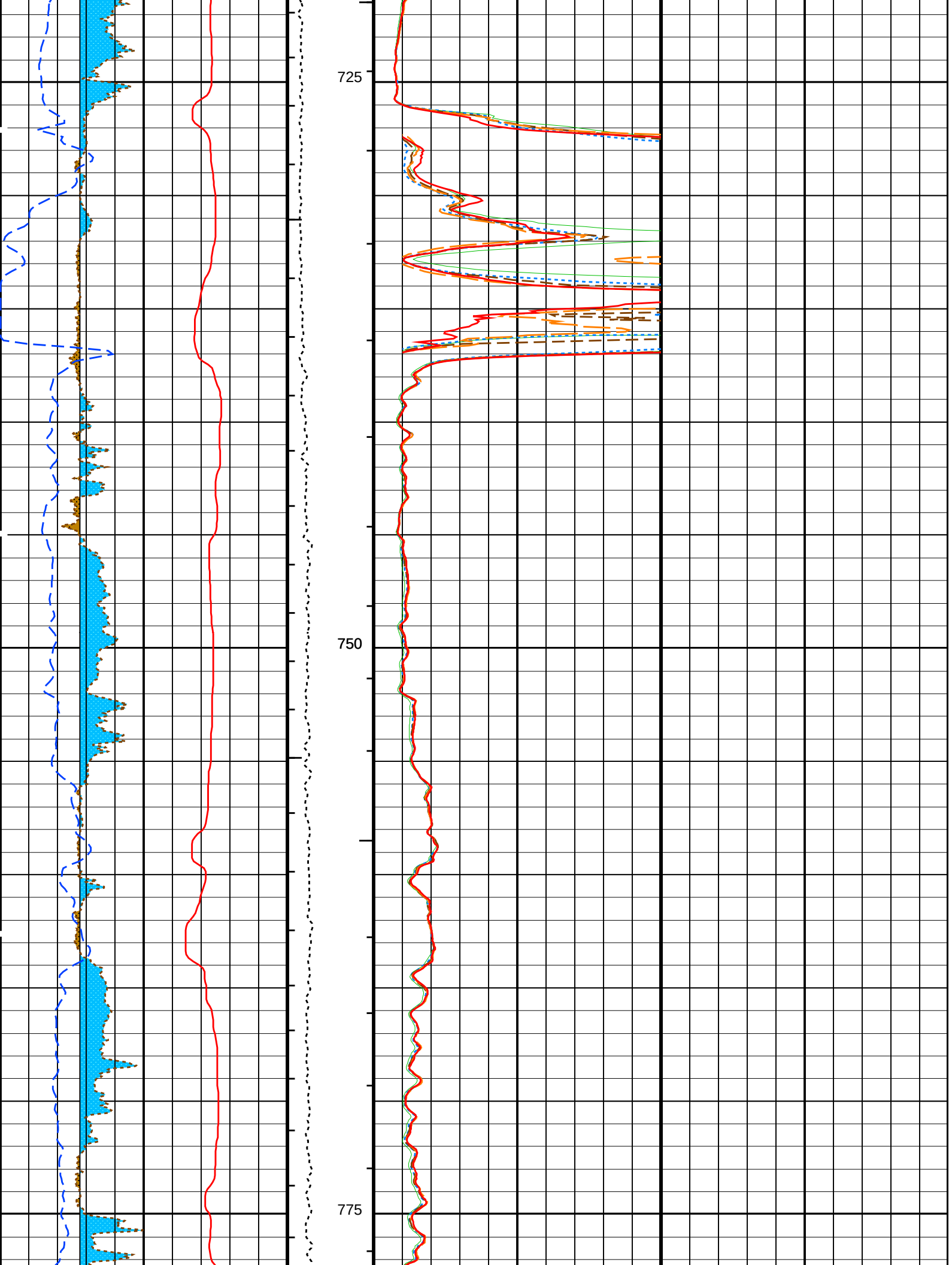
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750
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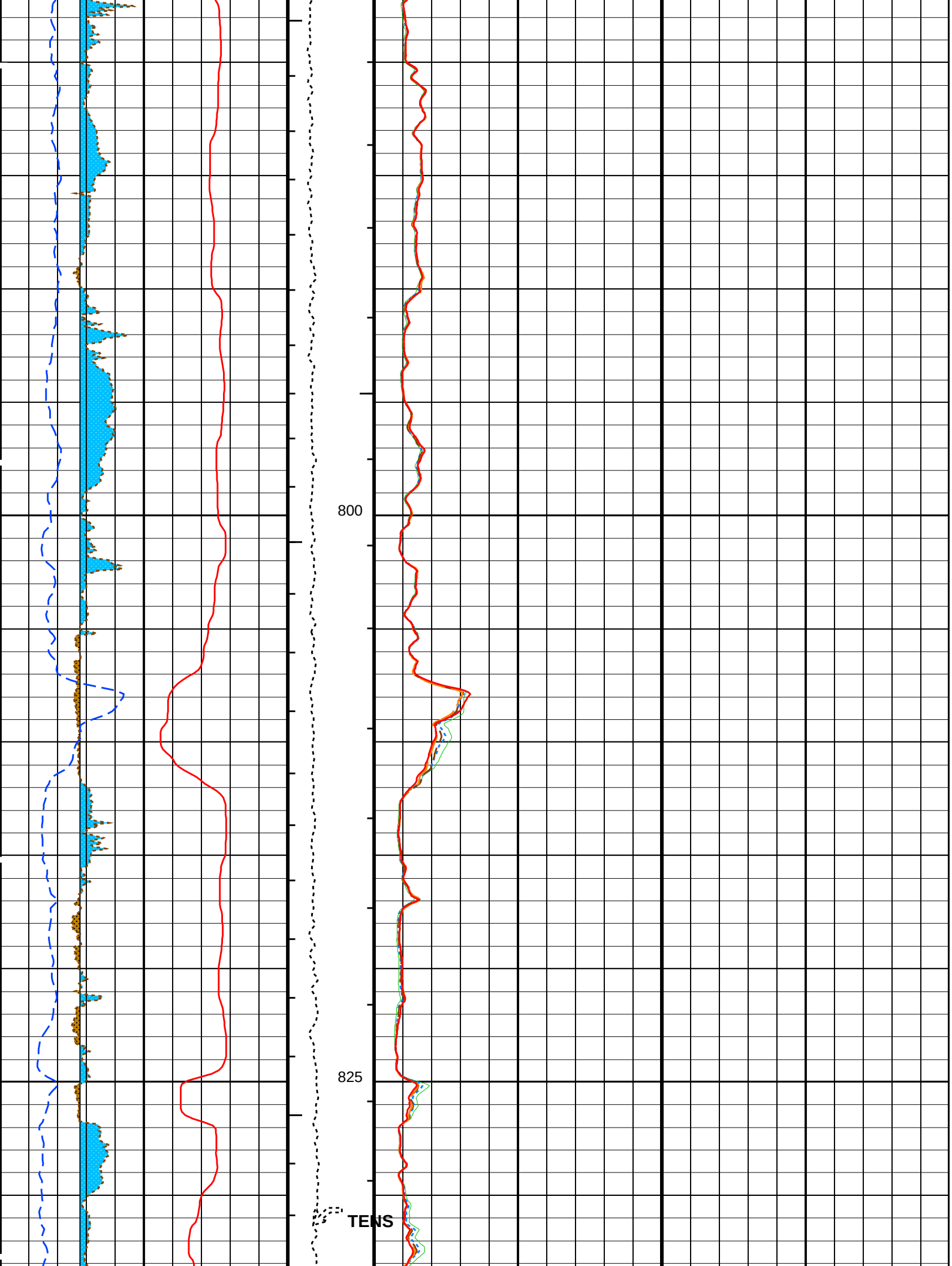
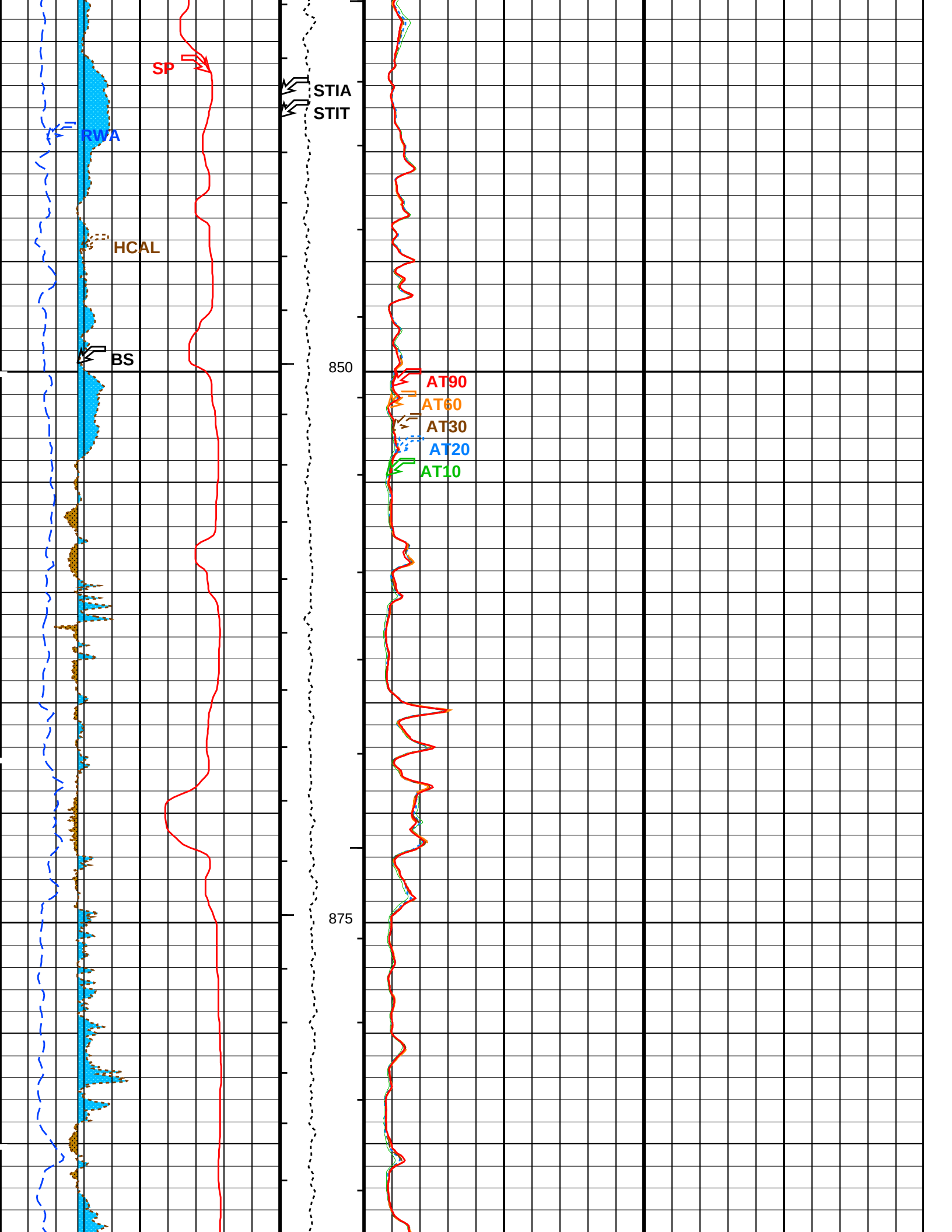
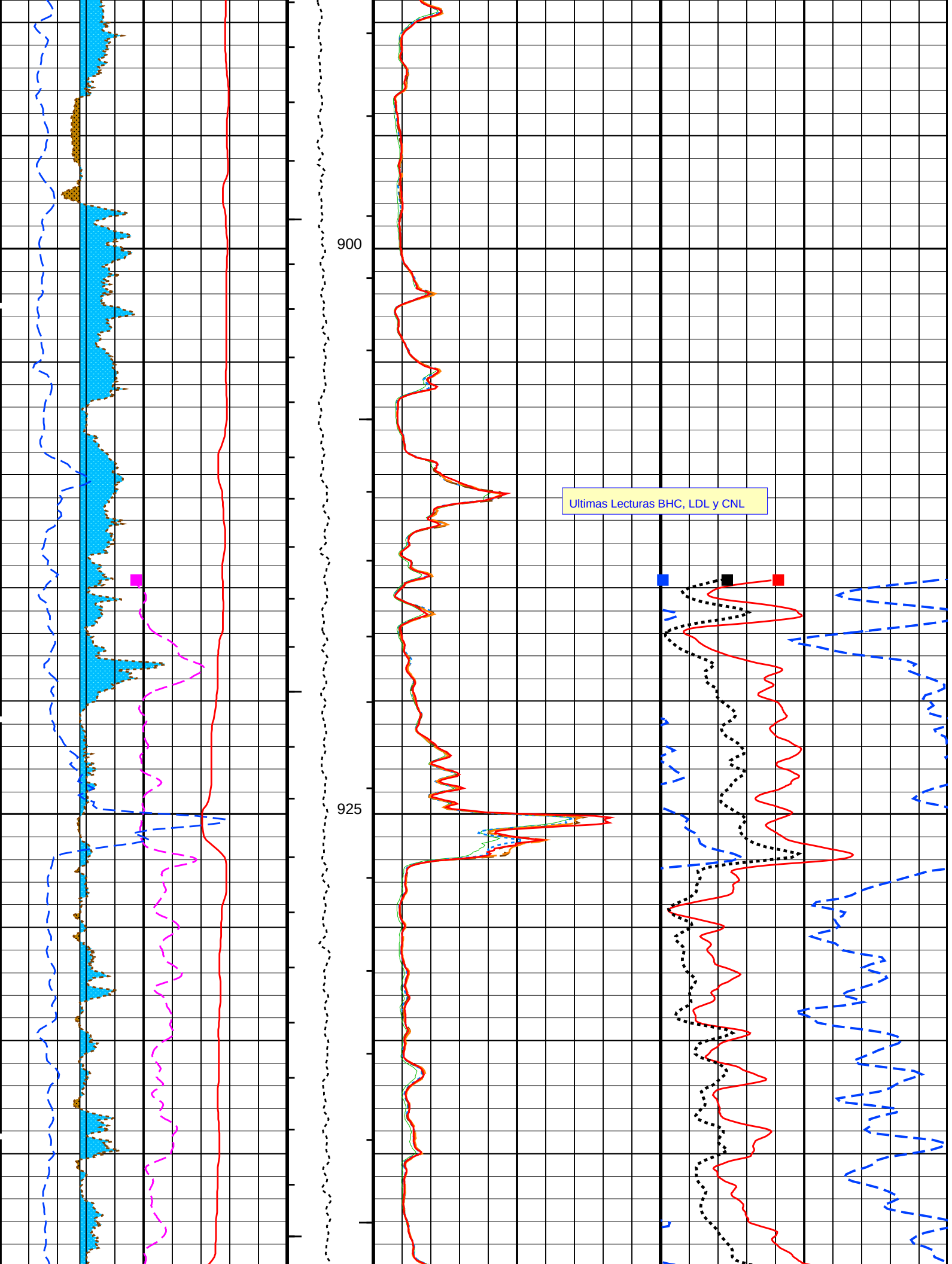

800
825
TENS


SP
STIA
STIT
RWA
HCAL
BS
850
AT90
AT60
AT30
AT20
AT10
875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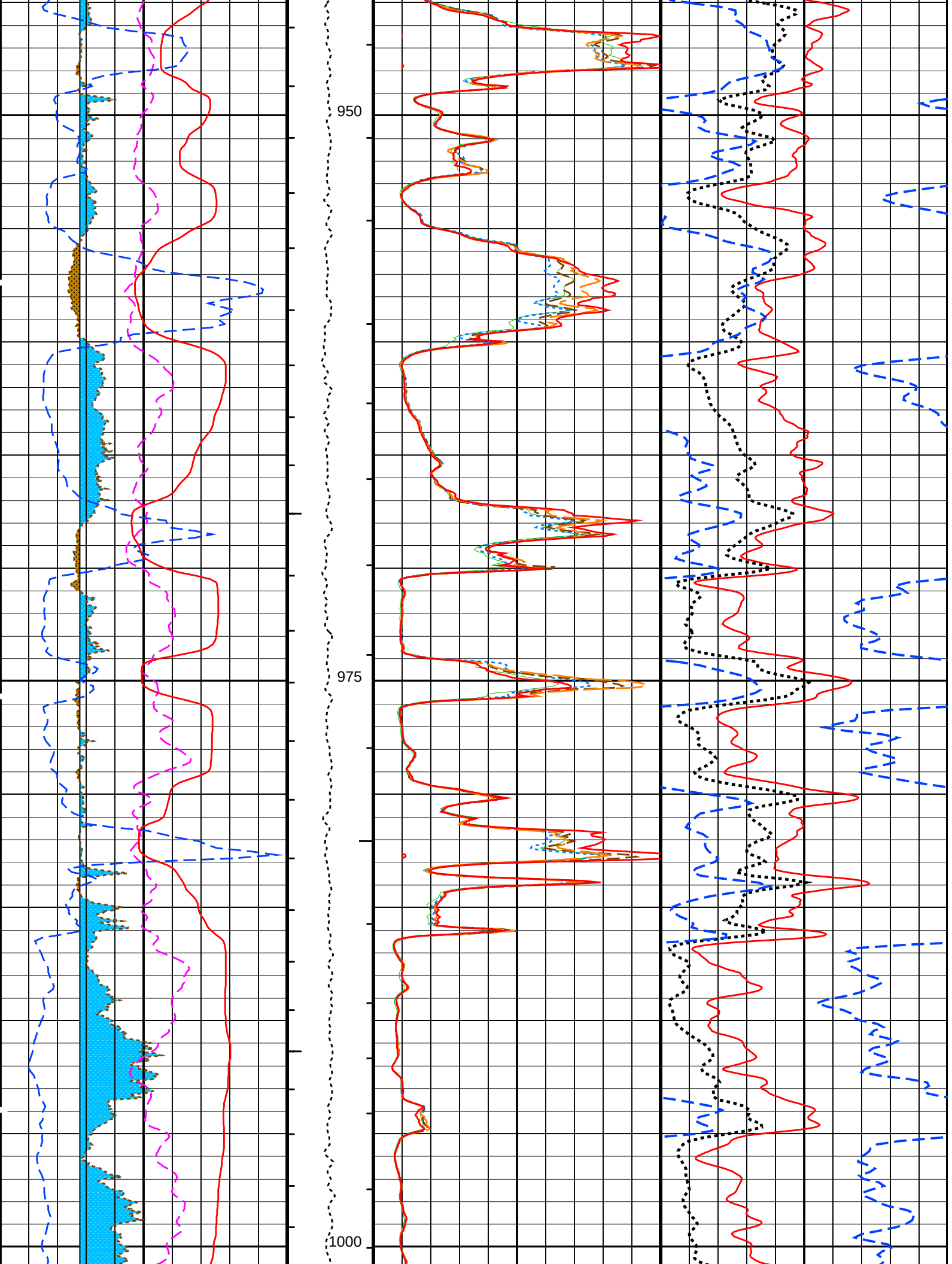
925
Ultimas Lecturas BHC, LDL y CNL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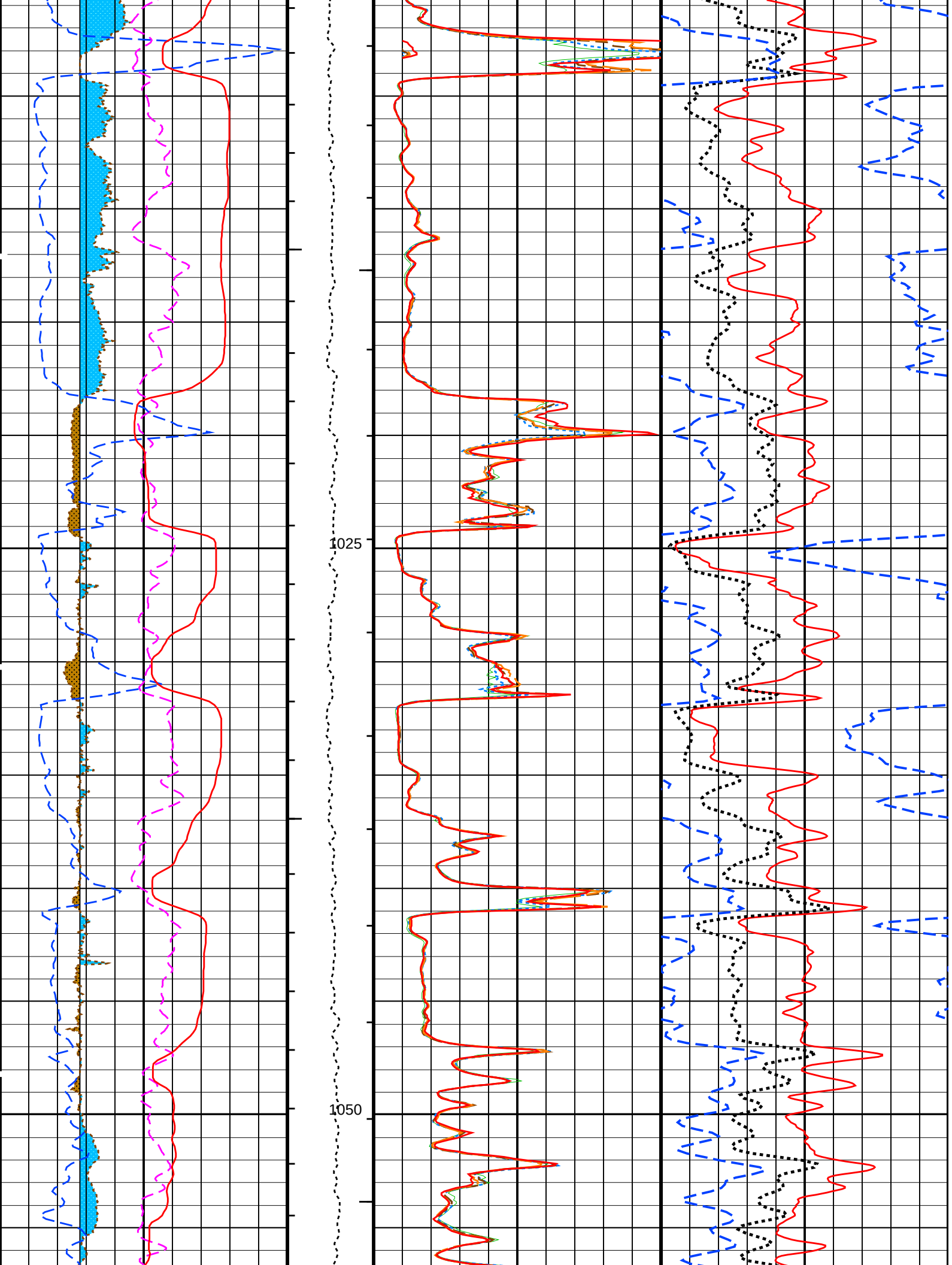
1000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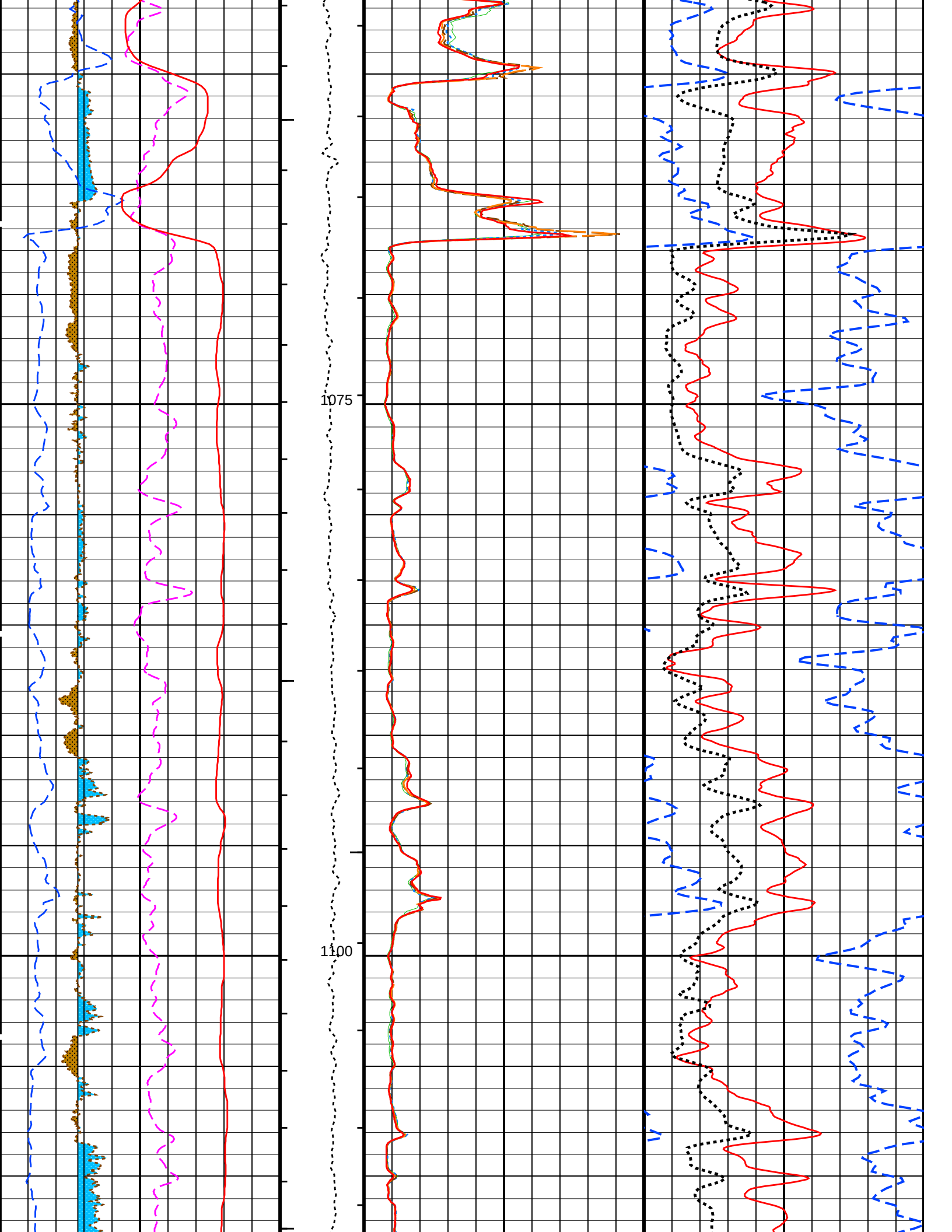
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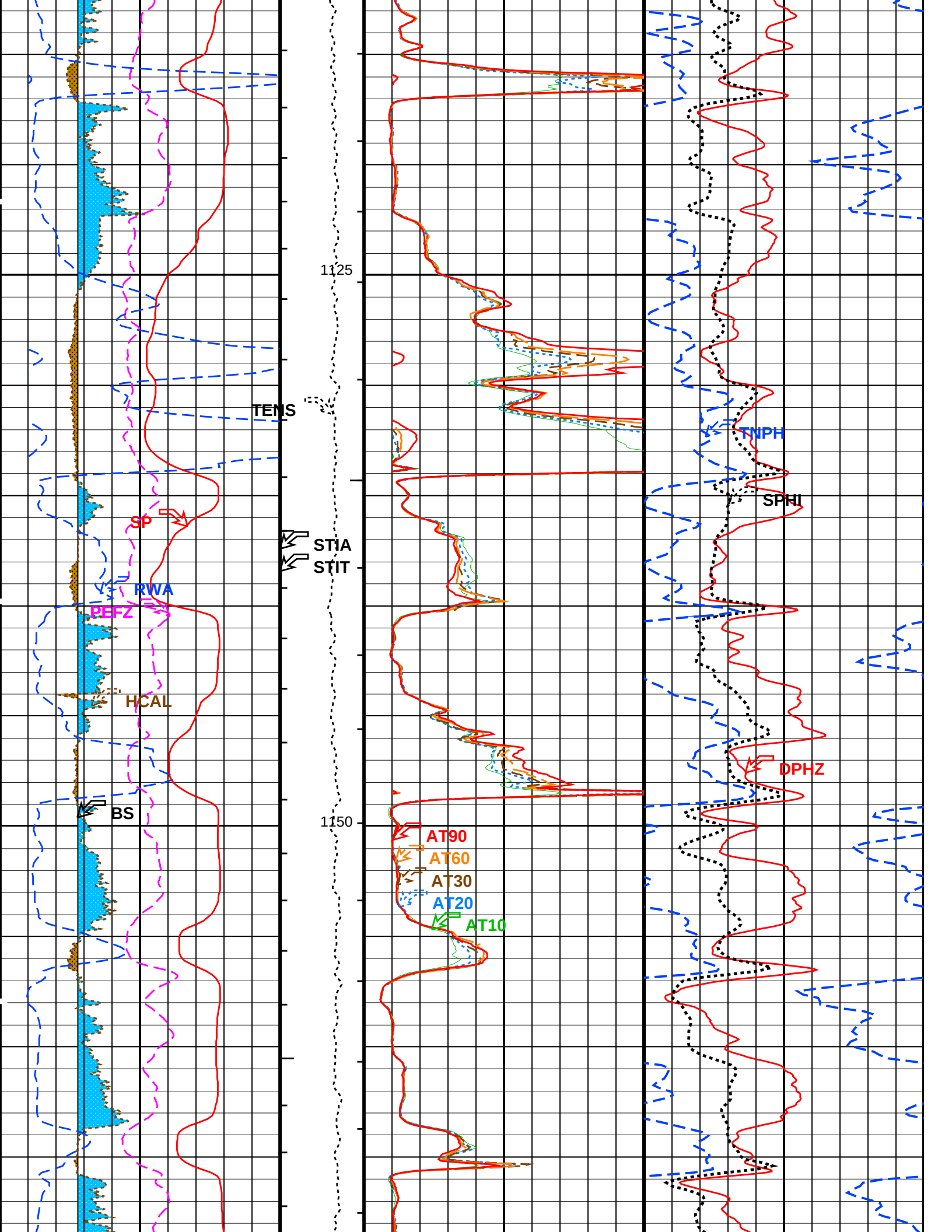
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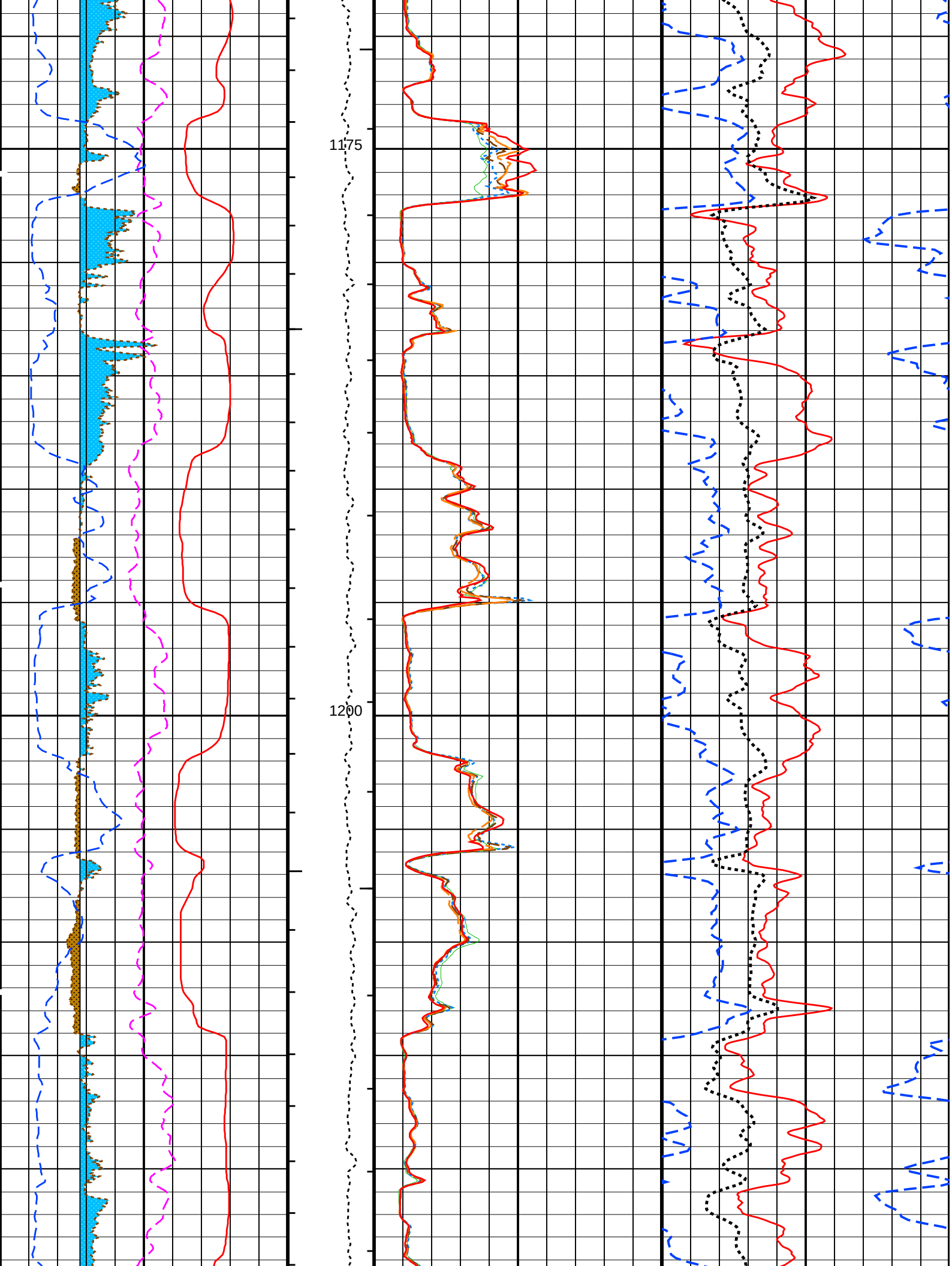
1150
TENS
SP
STIA
STIT
RWA
PEFZ
HCAL
BS
TNPH
SPHI
DPHZ
AT90
AT60
AT30
AT20
AT10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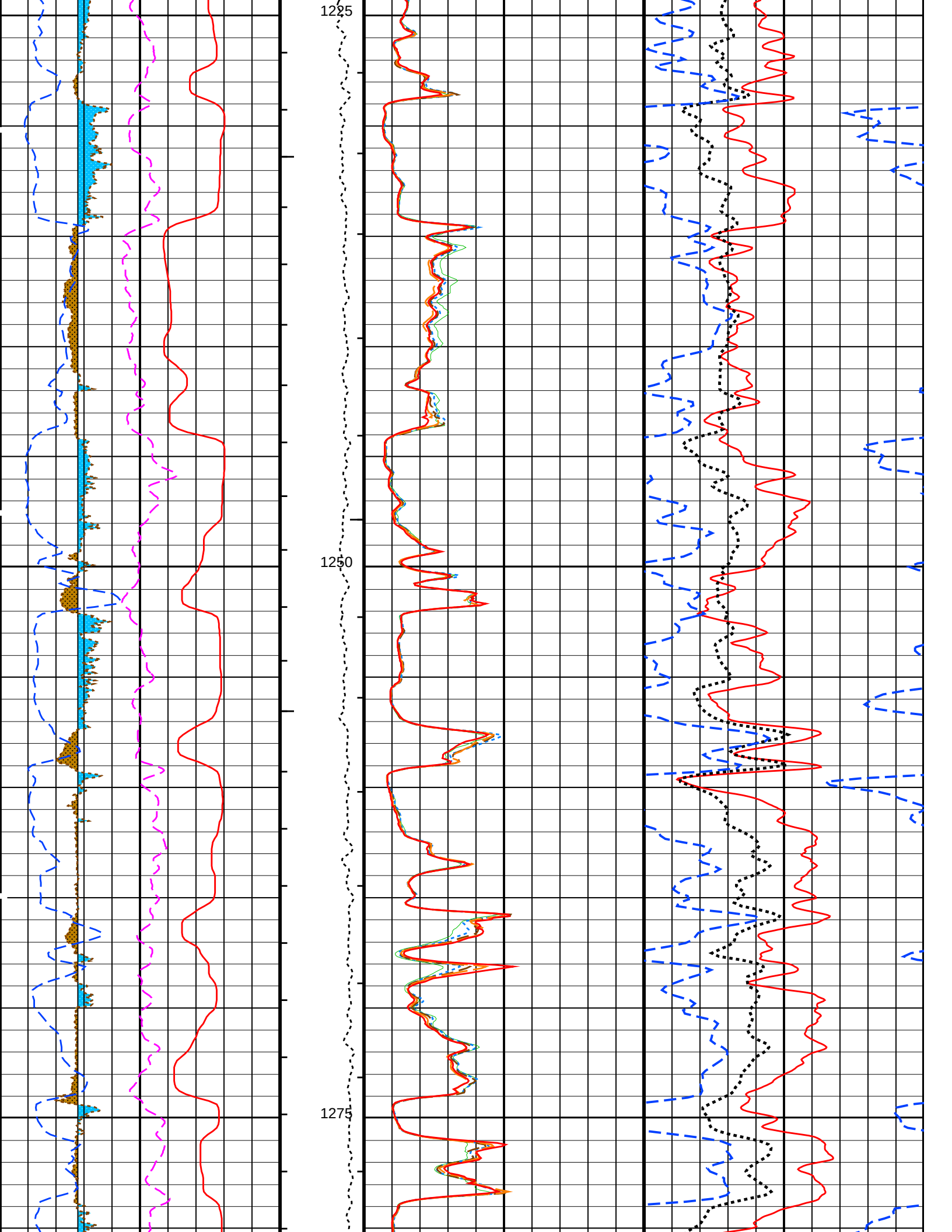
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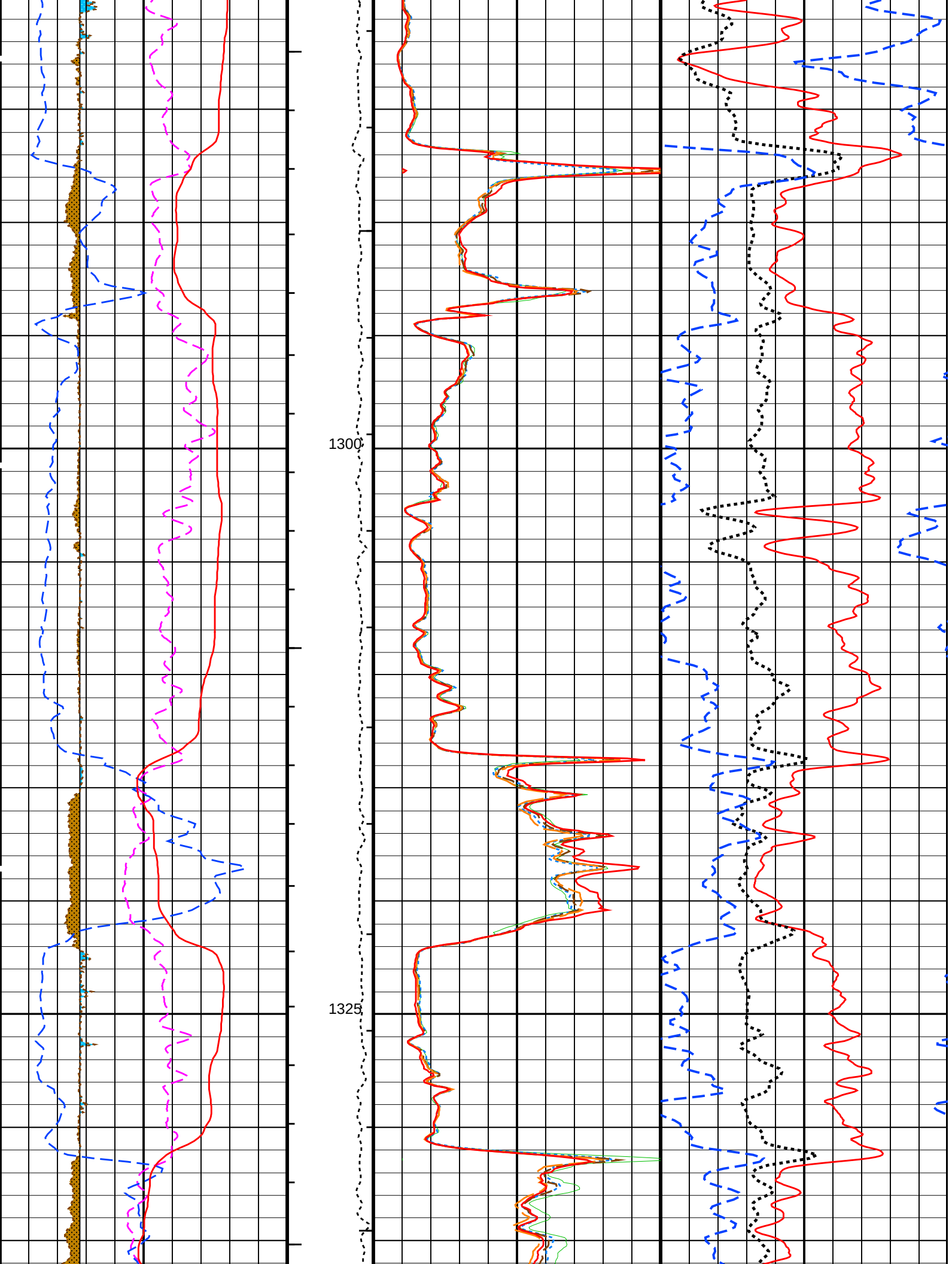
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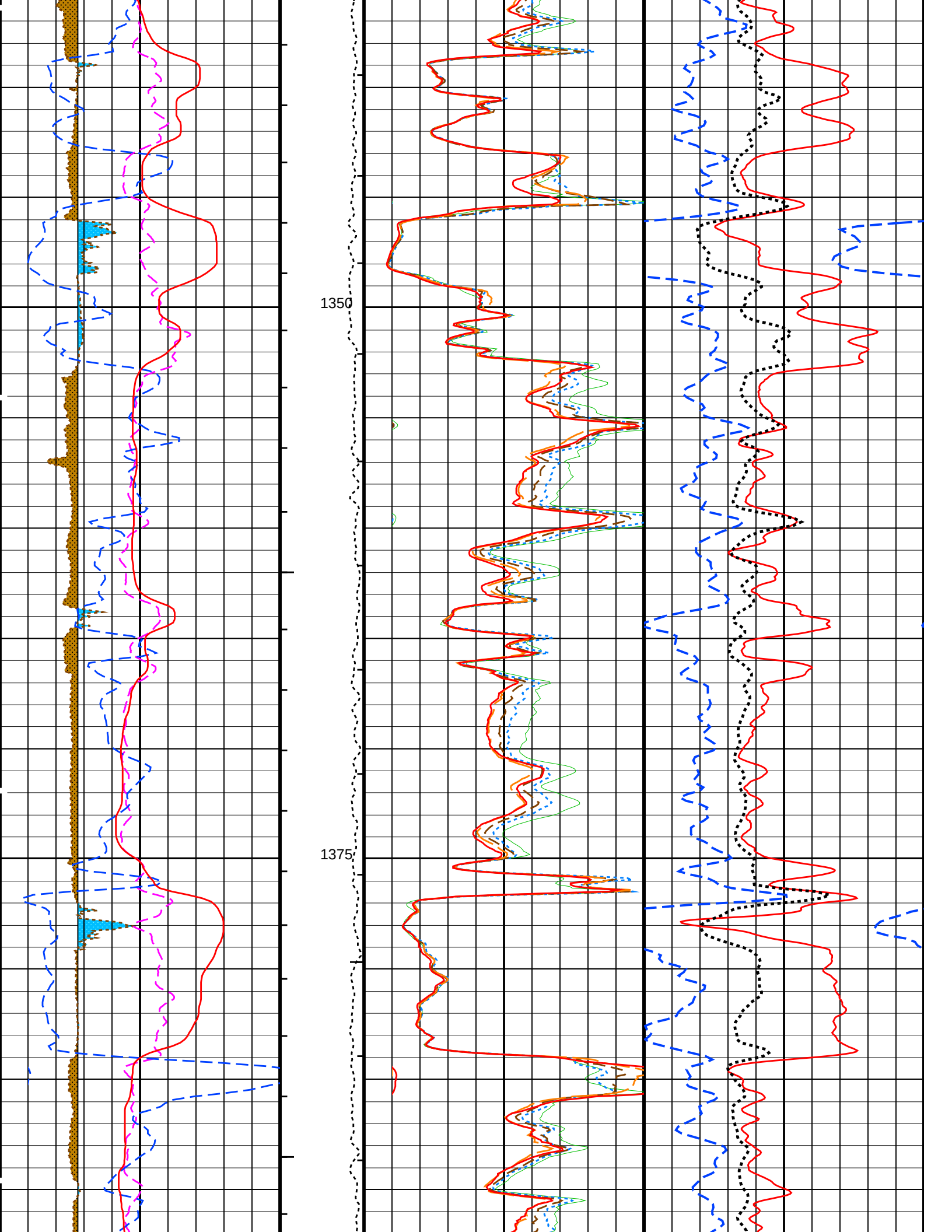
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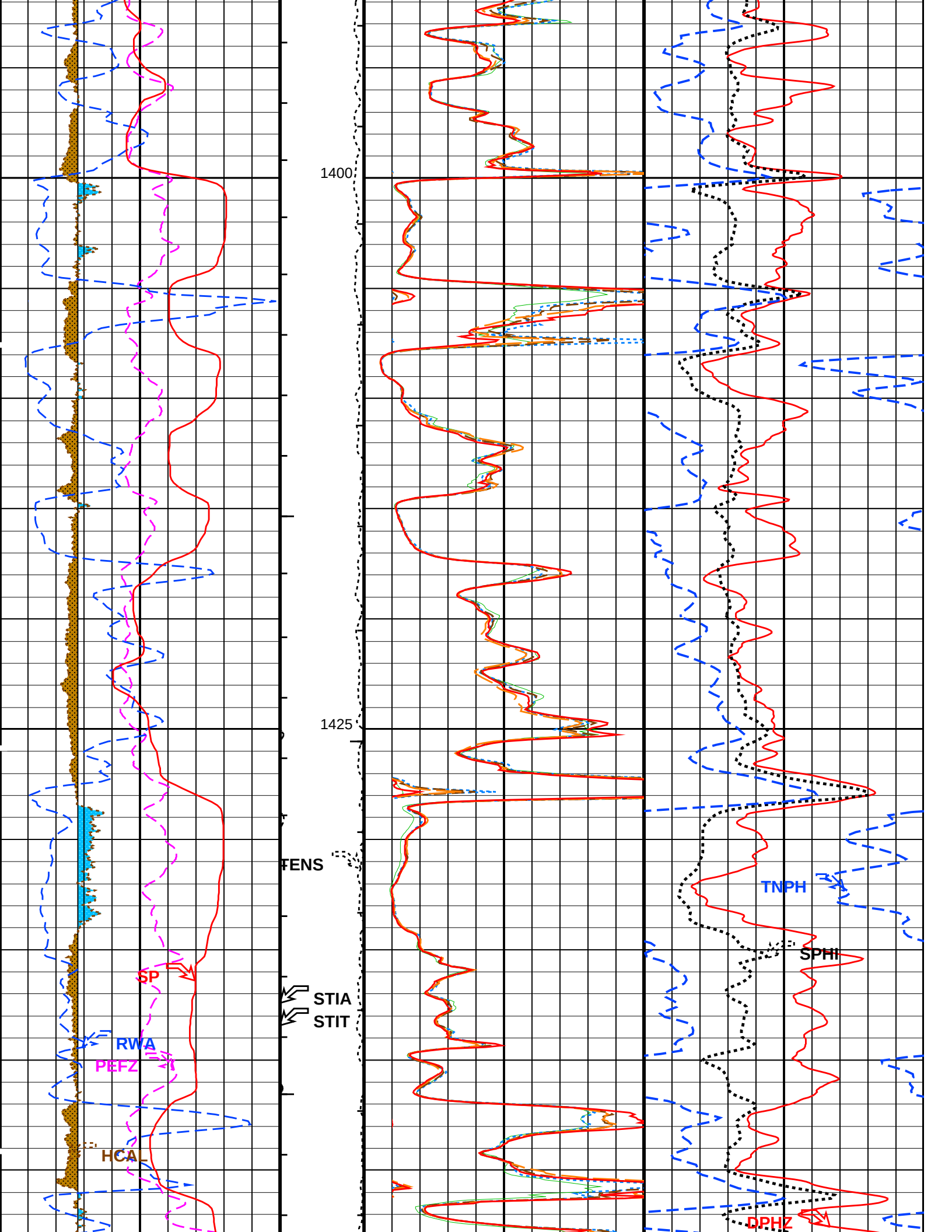
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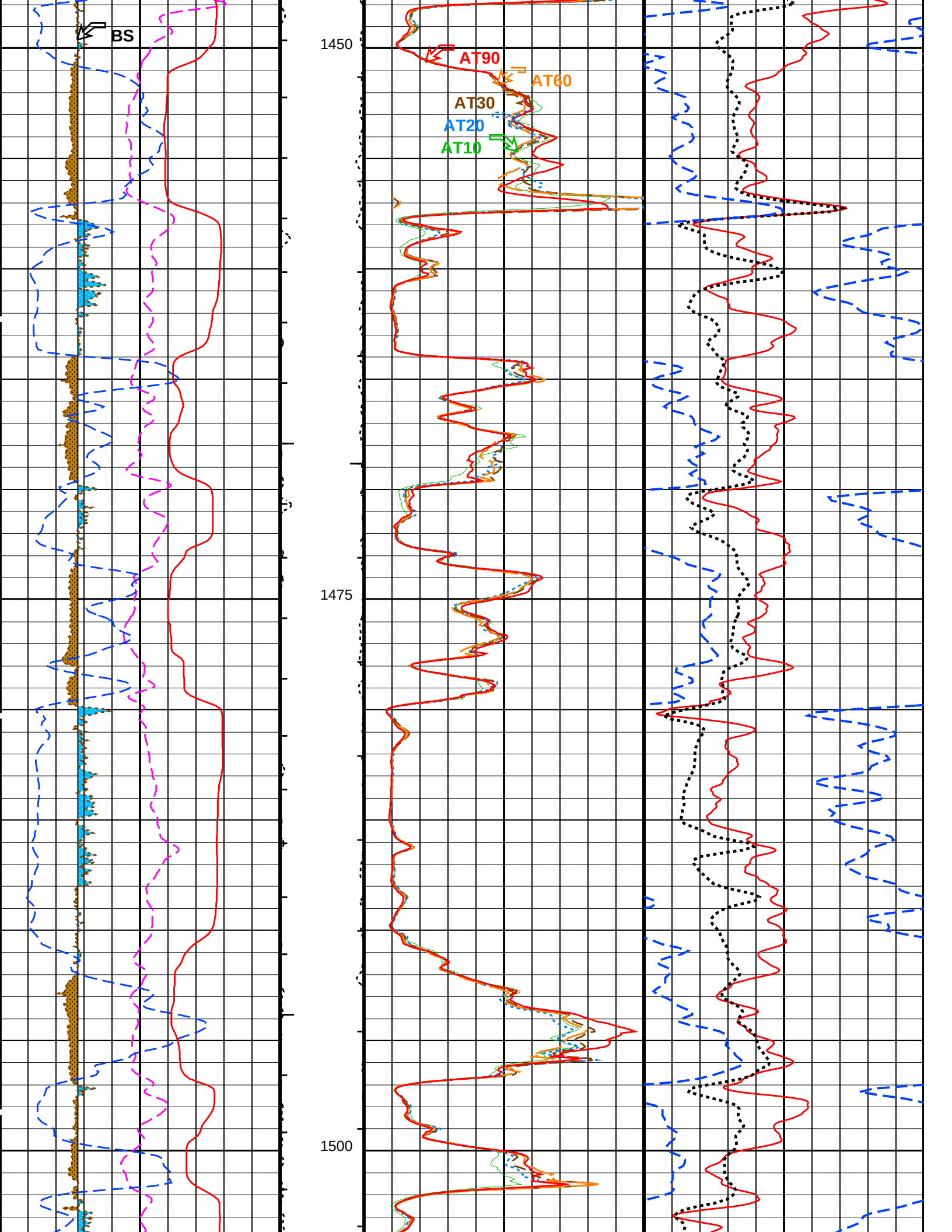
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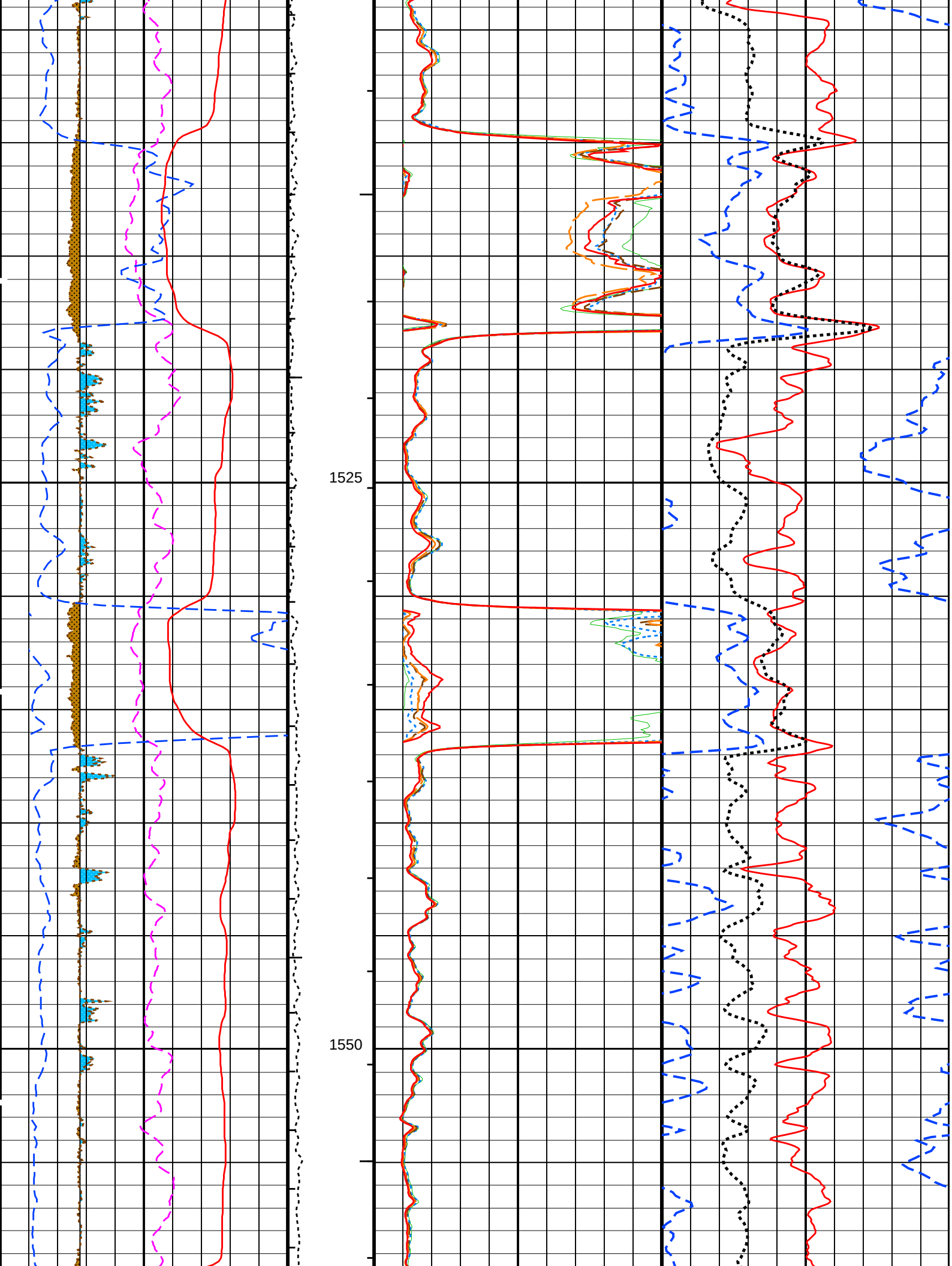
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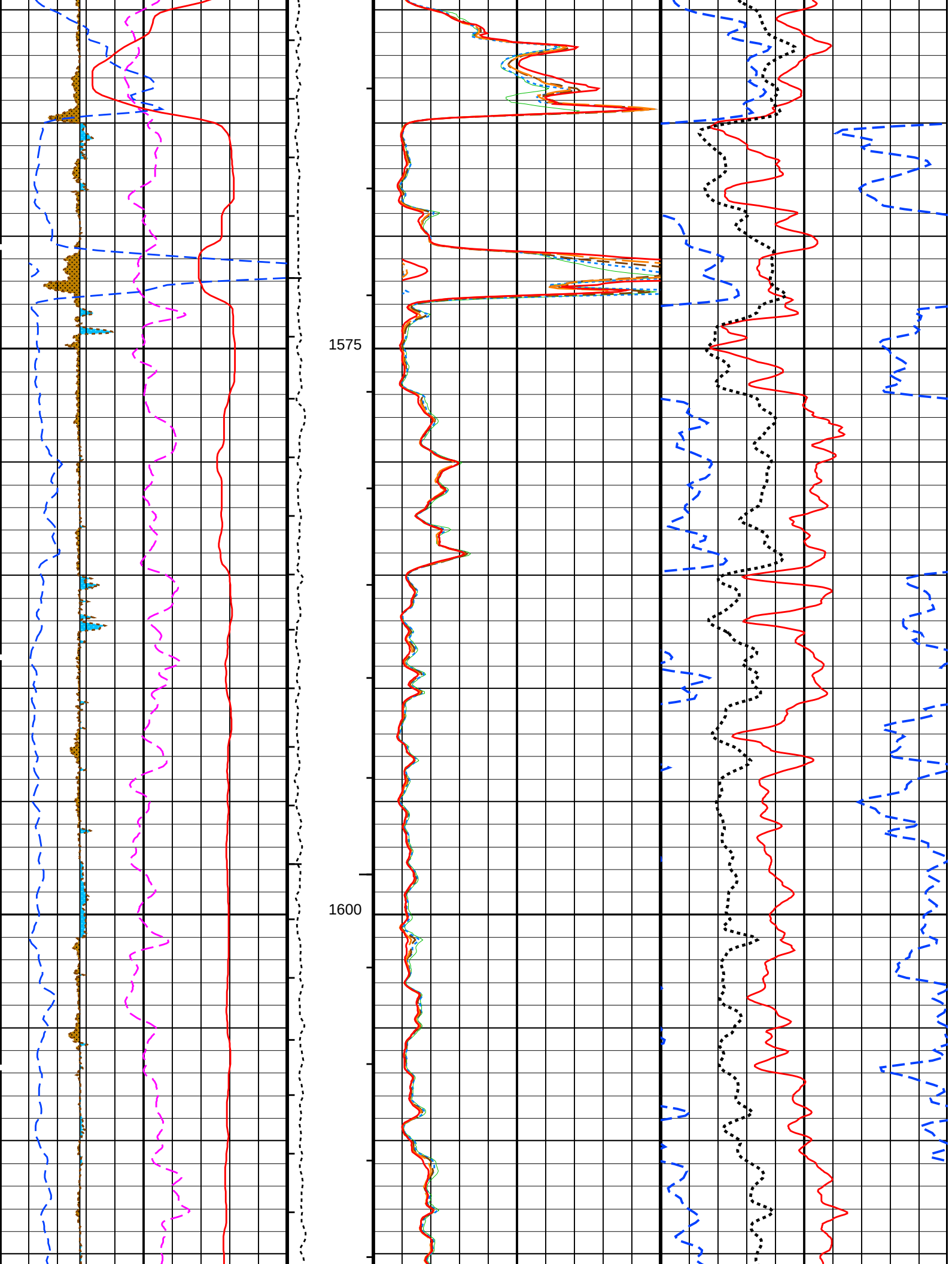
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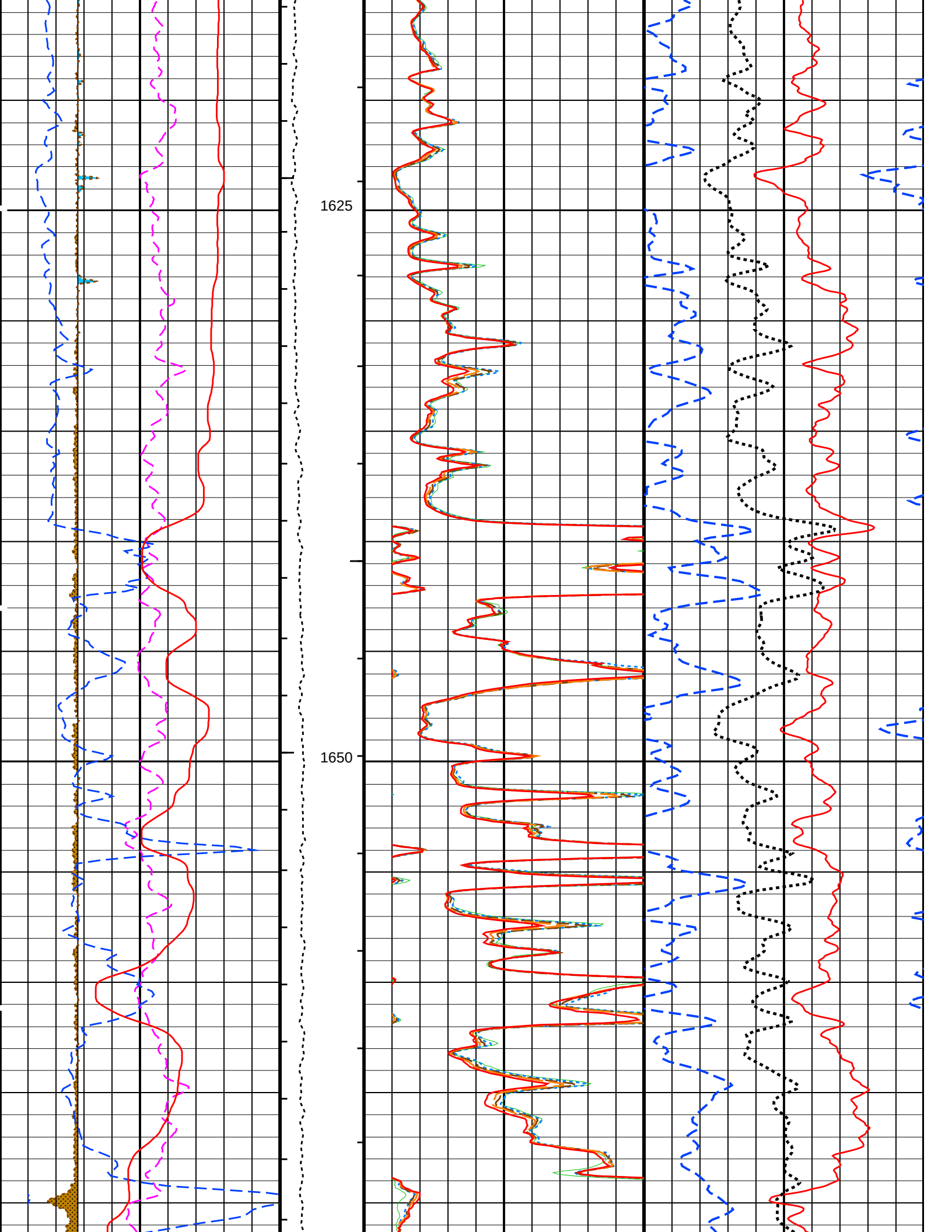
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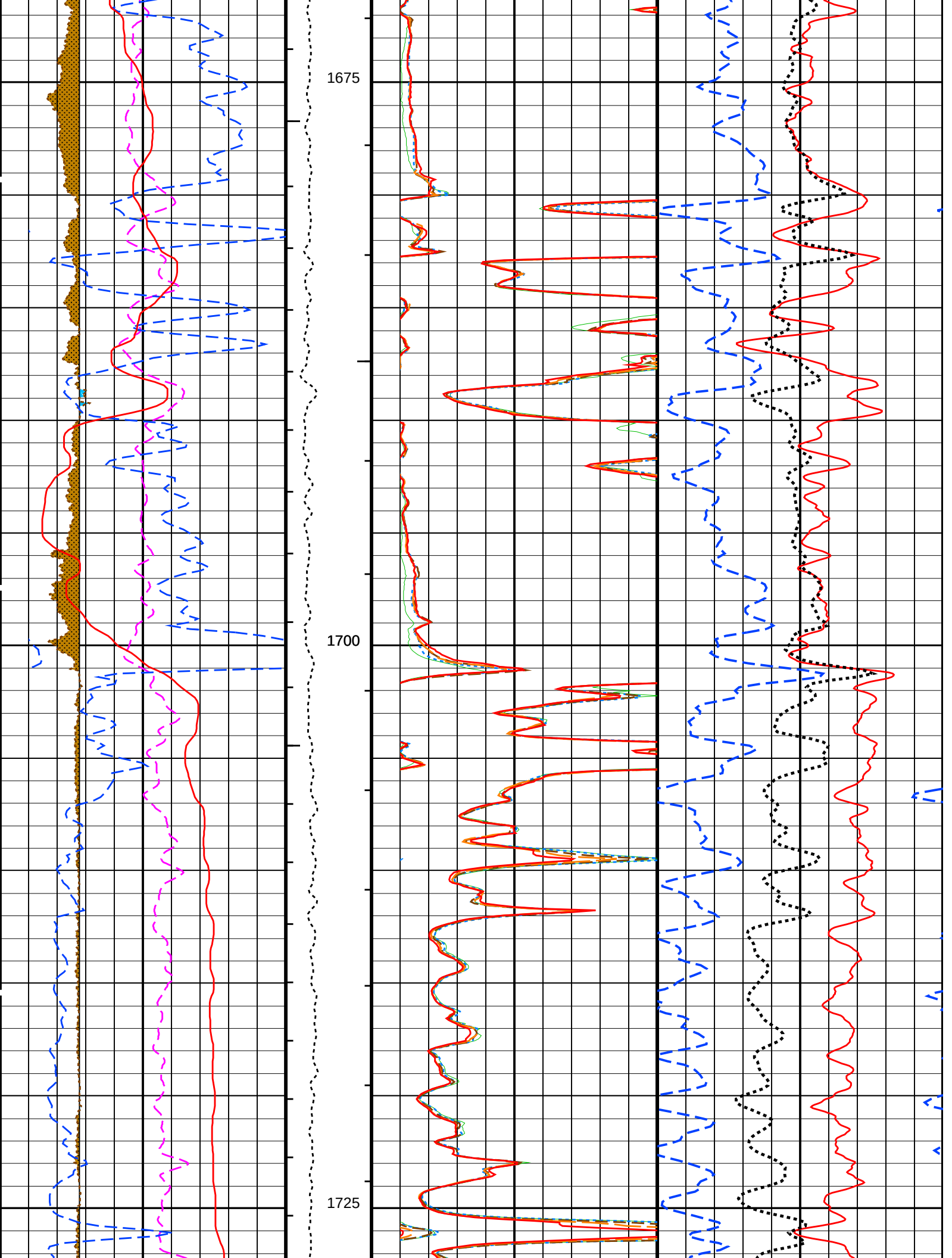
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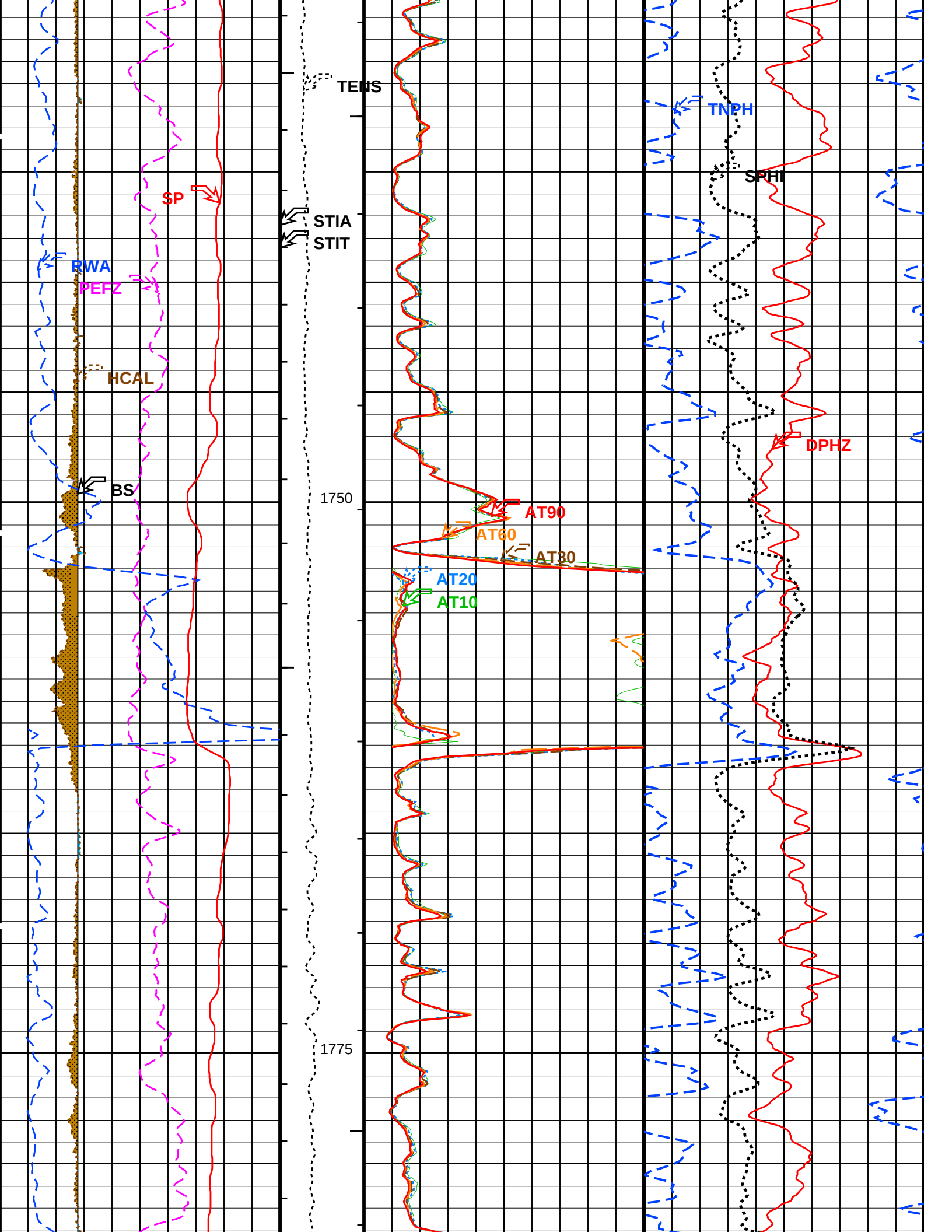
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AT10
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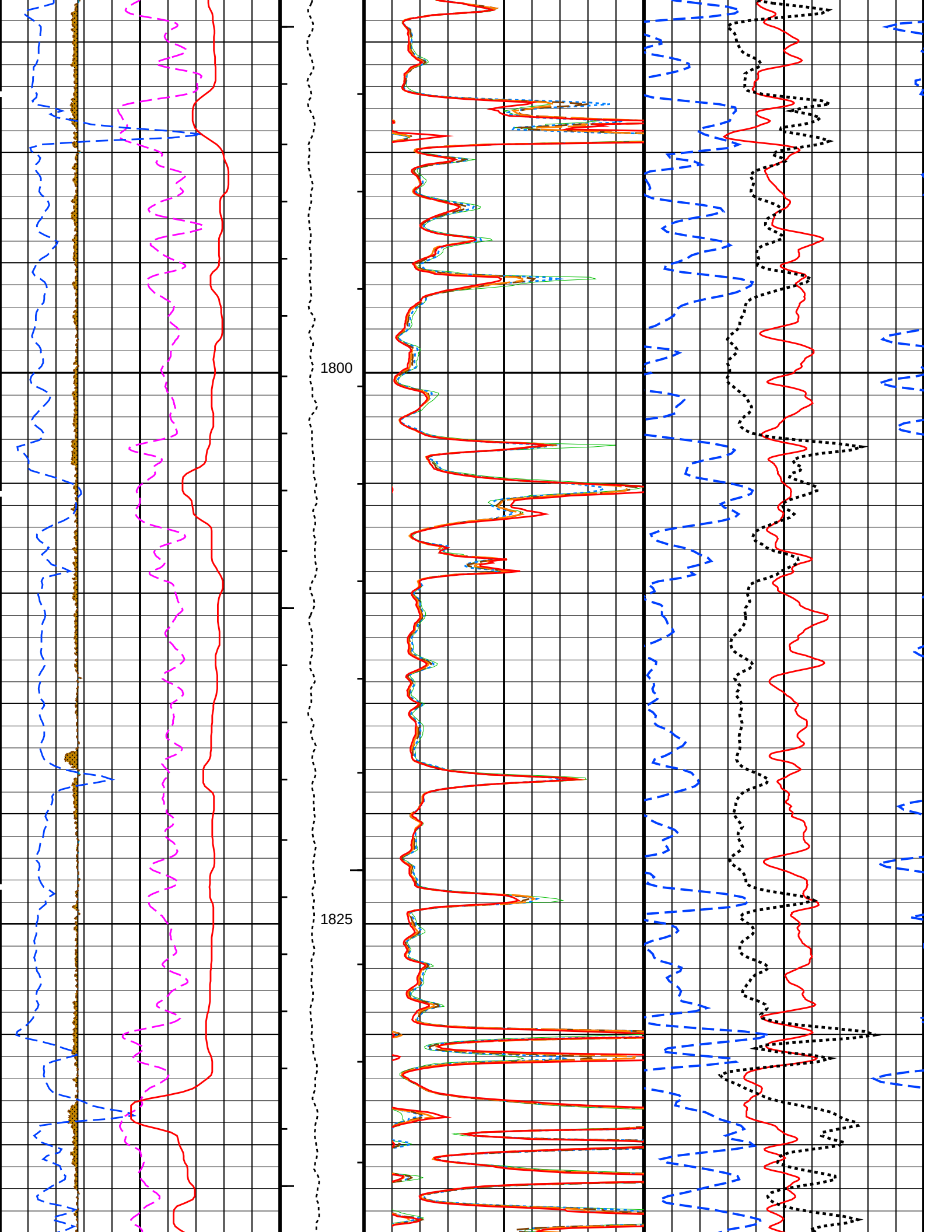
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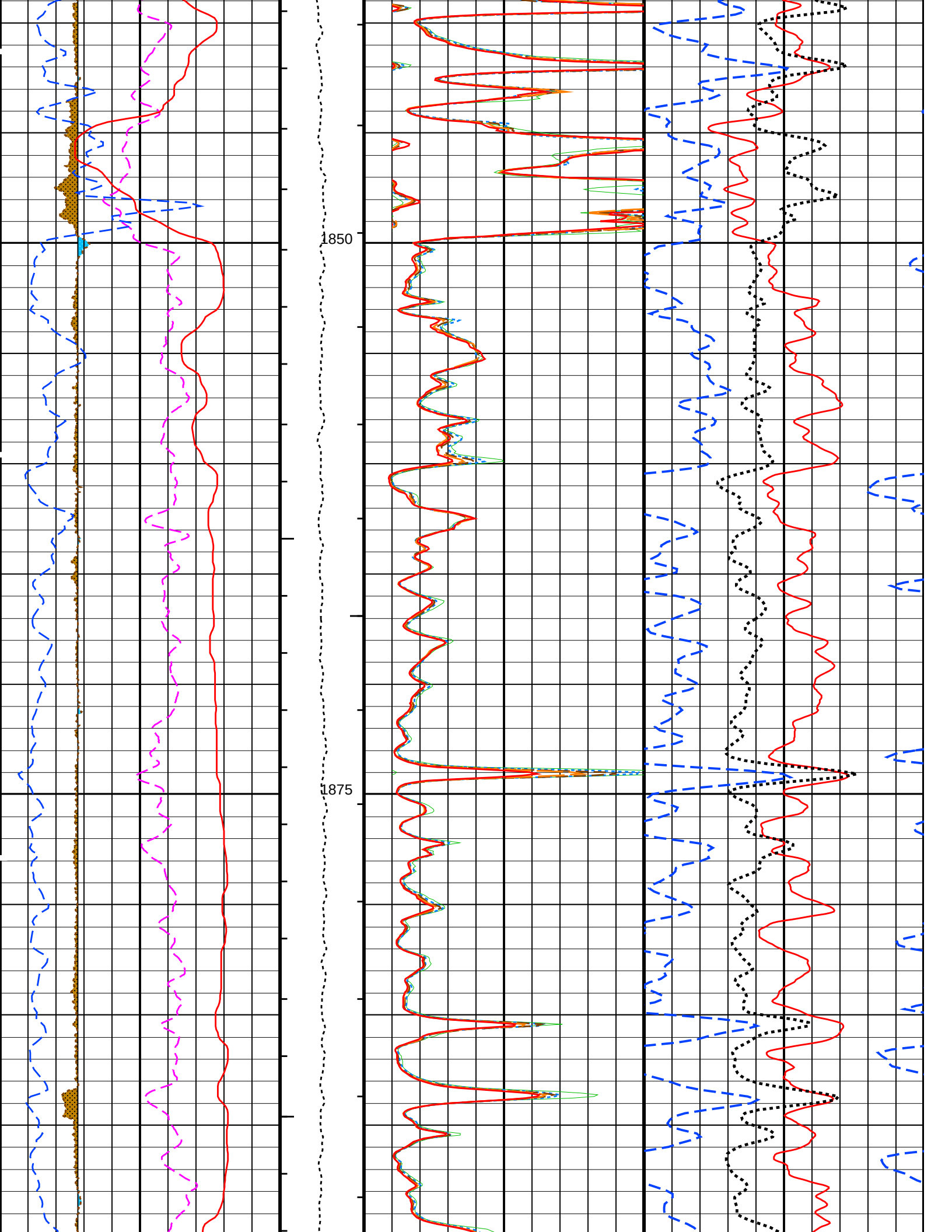
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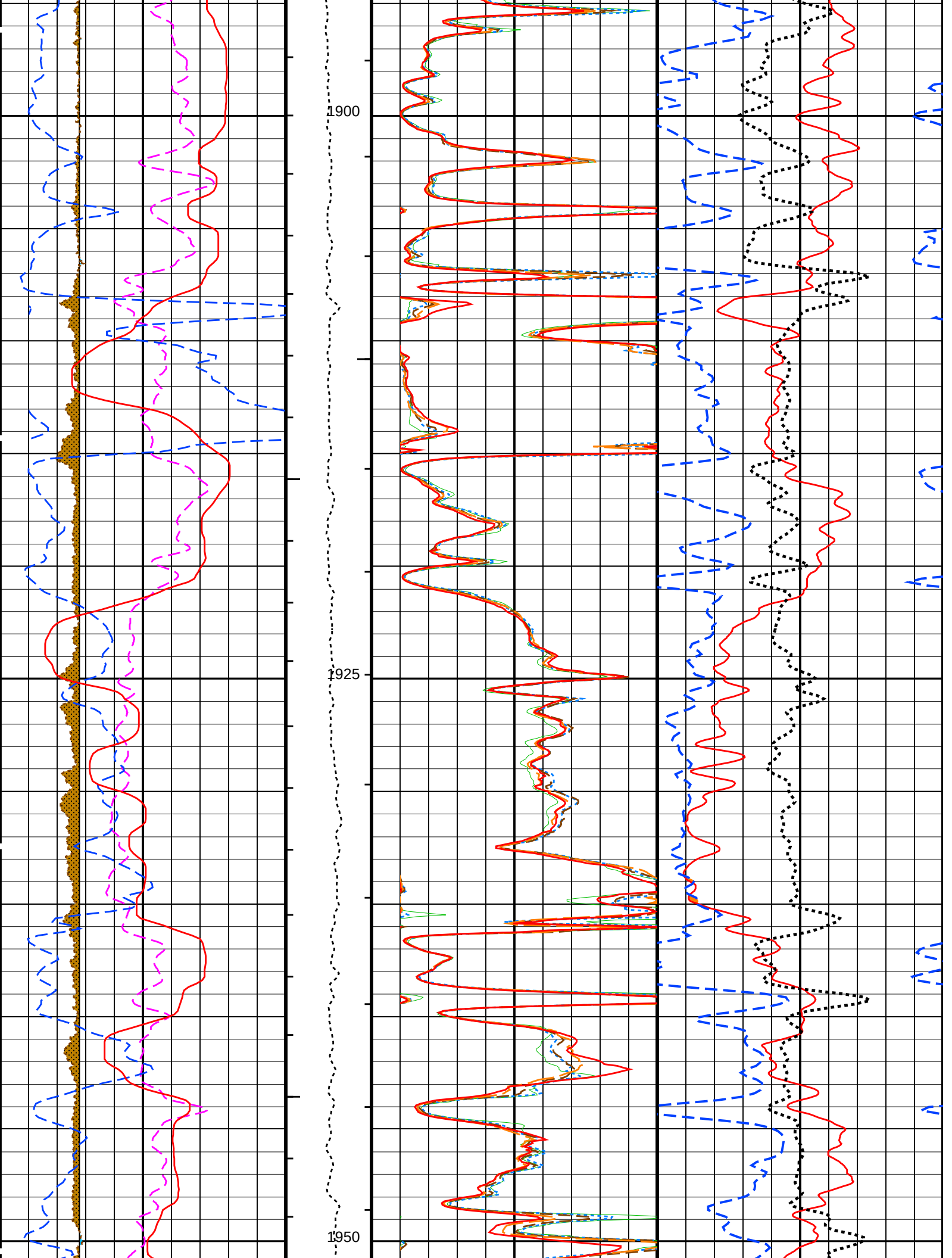
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1925
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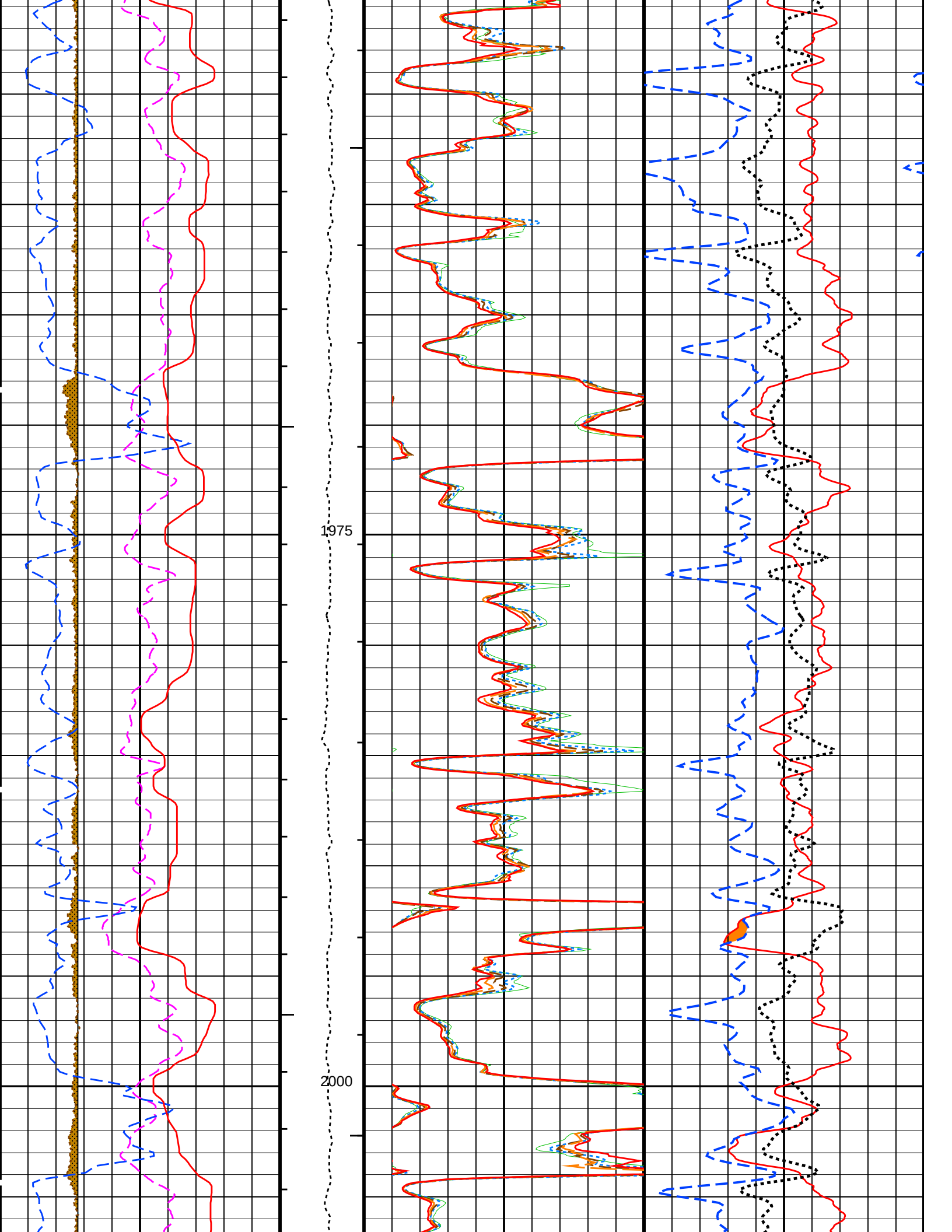
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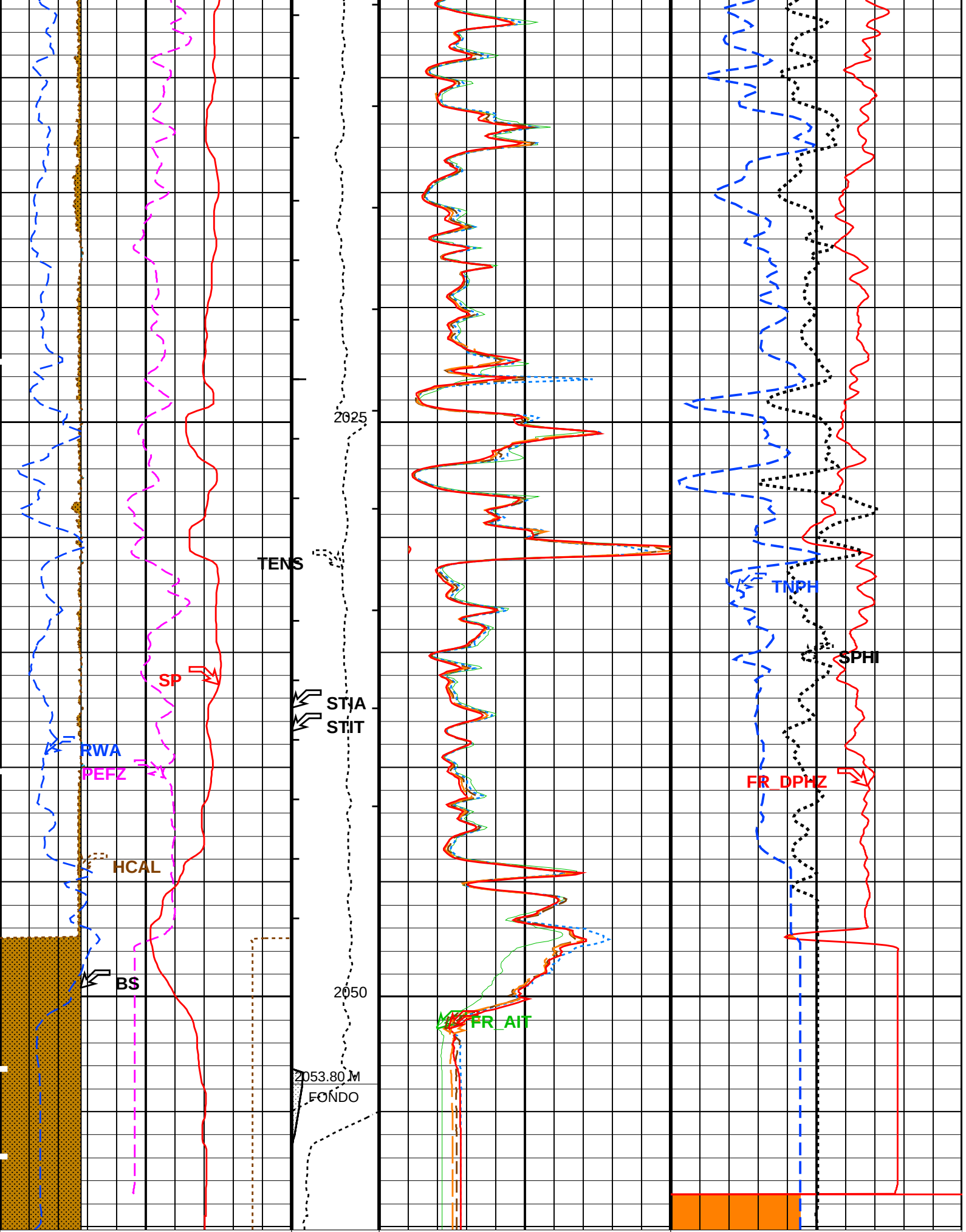
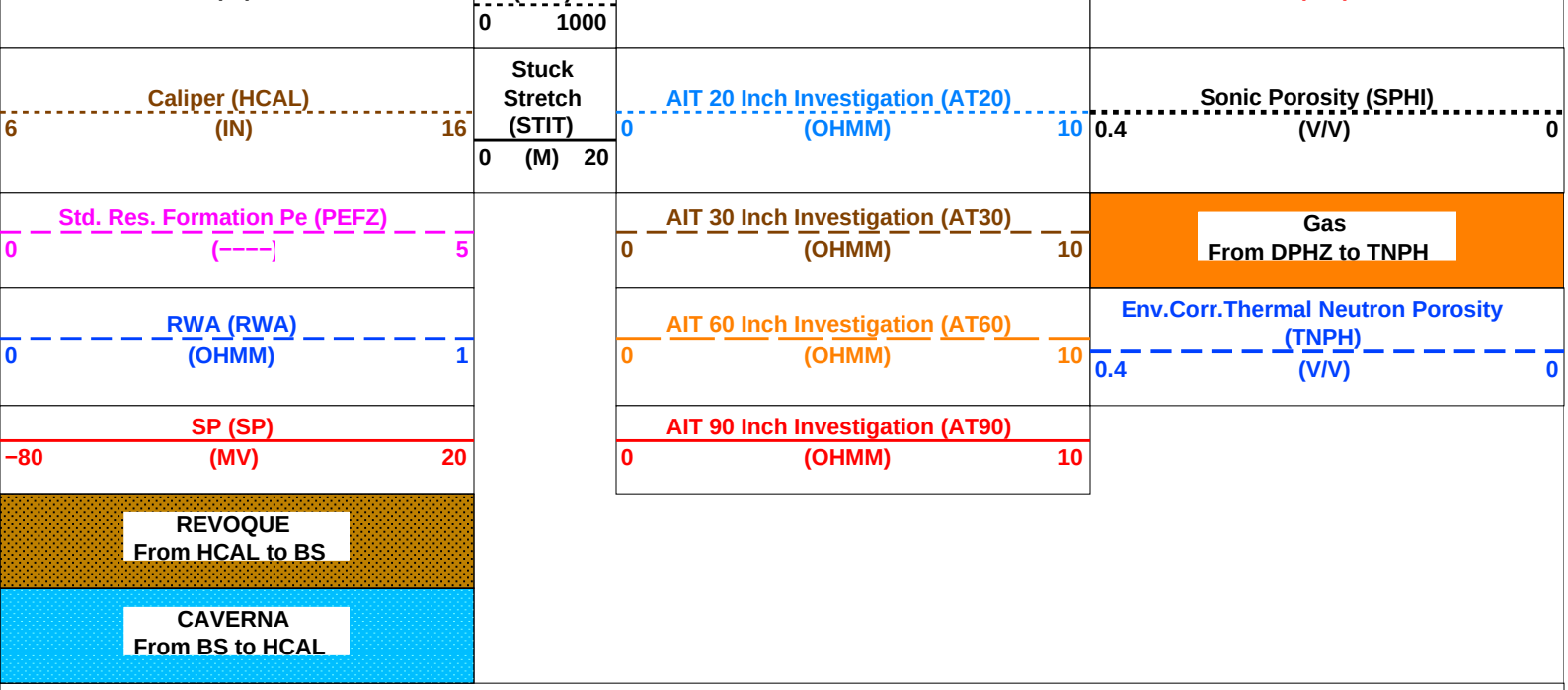


Bit Size (BS)	Tension (TENS)	AIT 10 Inch Investigation (AT10)	Std. Res. Density Porosity (DPHZ)
6 (IN) 16	(LBF)	0 (OHMM) 10	0.4 (V/V) 0



PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

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	900	
ABLM	Array Induction Basic Logs Mode	6_ONE_TWO_AND_FOUR	
ABLV	Array Induction Basic Logs Code Version Number	223	
ACDE	Array Induction Casing Detection Enable	YES	
ACEN	Array Induction Tool Centering Flag (in Borehole)	ECCENTERED	
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	YES	
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AIGS	Array Induction Select Akima Interpolation Gating	ON	
AMRF	Array Induction Mud Resistivity Factor	1.000	
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
ARFV	Array Induction Radial Profiling Code Version Number	701	
ARPV	Array Induction Radial Parametrization Code Version Number	232	
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TWORESA90	
ASAP	Array Induction Suspend Answer Product Processing	0_NOSUSPENSION	
ASPC	Array Induction Sonde Characterization Pressure Coefficients	0.000	
ASTA	Array Induction Tool Standoff	1.600	in
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	INTERNAL	
AULV	Array Induction User Level Control	NORMAL	
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	78.200	degC
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	0.810	
FPHI	Form Factor Porosity Source	SPHI	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.018	degC/m
GRSE	Generalized Mud Resistivity Selection	AMF_AITM	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
RTCO	RTCO − Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	15.000	degC
SPDR	SP Drift	0.000	mV/m
SPNV	SP Next Value	−10.000	mV
	DSLT−H: Digitizing Sonic Logging Tool		
CDTS	C−Delta−T Shale	100.0	us/ft
DTF	Delta−T Fluid	189.0	us/ft
DTM	Delta−T Matrix	56.000	us/ft
SPFS	Sonic Porosity Formula	R−H	
SPSO	Sonic Porosity Source	DT	

SPSO	Sonic Porosity Source	DT	
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)	78.200	degC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1.000	g/cm3
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	0.810	
FPHI	Form Factor Porosity Source	SPHI	
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal−like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.018	degC/m
GRSE	Generalized Mud Resistivity Selection	AMF_AITM	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.650	g/cm3
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	STDRES	
NSAR	HRDD Depth Sampling Rate	1.000	in
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	15.000	degC
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	YES	
ALLRES: Basic Resistivity Transforms			
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TWORESA90	
RTCO	RTCO − Rt Invasion Correction	YES	
RWA: Apparent Water Resistivity			
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TWORESA90	
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	0.810	
FPHI	Form Factor Porosity Source	SPHI	
RTCO	RTCO − Rt Invasion Correction	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	78.200	degC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.018	degC/m
GRSE	Generalized Mud Resistivity Selection	AMF_AITM	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
SHT	Surface Hole Temperature	15.000	degC
STI: Stuck Tool Indicator			
STKT	STI Stuck Threshold	0.762	m
TDD	Total Depth − Driller	2050.0	m
TDL	Total Depth − Logger	2053.8	m
System and Miscellaneous			
ACSED	Array Induction Casing Shoe Estimated Depth		
BS	Bit Size	8.750	in
BSAL	Borehole Salinity	2400.0	ppm
CSIZ	Current Casing Size	9.625	in
CWEI	Casing Weight	32.300	lbm/ft
DFD	Drilling Fluid Density	1.130	g/cm3
FLEV	Fluid Level	0.000	m
FSAL	Formation Salinity		
MST	Mud Sample Temperature	15.300	degC
RMFS	Resistivity of Mud Filtrate Sample	0.880	ohm.m
RW	Resistivity of Connate Water	1.000	ohm.m
TD	Total Depth	2053.8	m
TWS	Temperature of Connate Water Sample	37.778	degC

Format: COMBINADA **Vertical Scale: 1:200** **Graphics File Created: 04−Oct−2009 05:13**

OP System Version: 17C0−154

AITM	unofficial	DSLT−H	unofficial
HILTHD	unofficial	DTCH	unofficial

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_113PUP	FN:33	PRODUCER	04−Oct−2009 03:40	2060.1 M	220.1 M

DEFAULT	AIT_SONIC_TLD_MCFL_112PUP	FN:22	PRODUCER	04-Oct-2009 03:49	2060.1 M	229.1 M

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MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_009LUP	FN:16	PRODUCER	04-Oct-2009 01:07	2058.8 M	1934.8 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_109PUP	FN:16	PRODUCER	04-Oct-2009 03:39	2035.0 M	1969.9 M
CUSTOMER	AIT_SONIC_TLD_MCFL_109PUC	FN:17	CUSTOMER	04-Oct-2009 03:39	2035.0 M	1969.9 M

Integrated Hole/Cement Volume Summary

Hole Volume = 2.41 M3

Cement Volume = 1.41 M3 (assuming 5.50 IN casing O.D.)

Computed from 2035.0 M to 1970.1 M using data channel(s) HCAL

OP System Version: 17C0-154

AIT-M	unofficial	DSLT-H	unofficial
HILTH-FTB	unofficial	DTC-H	unofficial

PIP SUMMARY

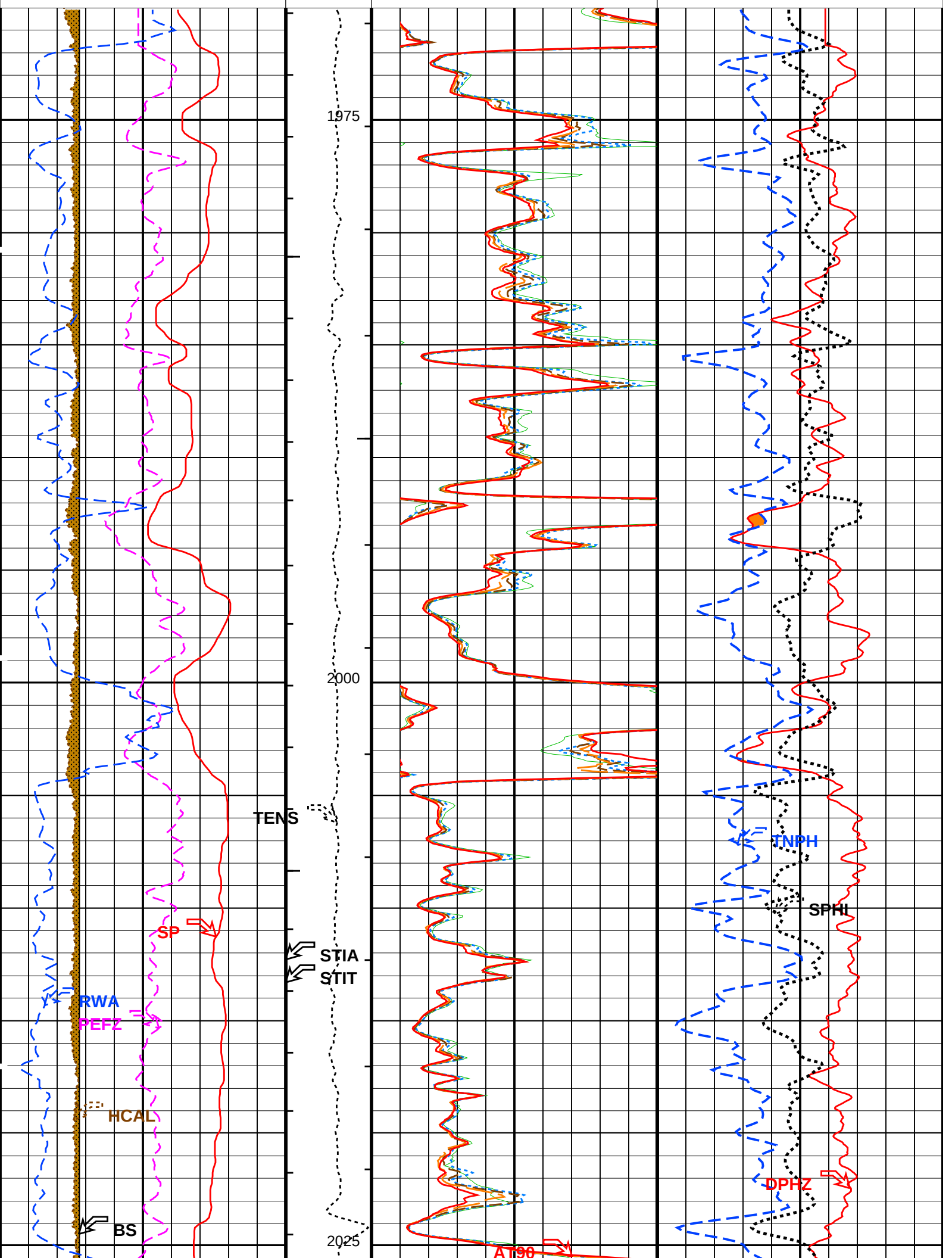
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

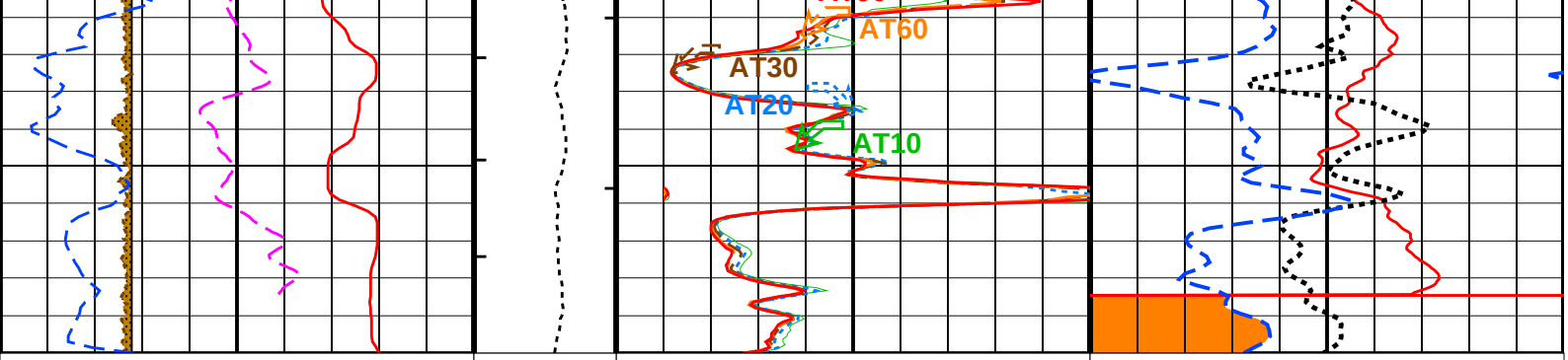
Time Mark Every 60 S

CAVERNA
From BS to HCAL

REVOQUE
From HCAL to BS

SP (SP) −80 (MV) 20		AIT 90 Inch Investigation (AT90) 0 (OHMM) 10		
RWA (RWA) 0 (OHMM) 1		AIT 60 Inch Investigation (AT60) 0 (OHMM) 10		Env.Corr.Thermal Neutron Porosity (TNPH) 0.4 (V/V) 0
Std. Res. Formation Pe (PEFZ) 0 (----) 5		AIT 30 Inch Investigation (AT30) 0 (OHMM) 10		Gas From DPHZ to TNPH
Caliper (HCAL) 6 (IN) 16	Stuck Stretch (STIT) 0 (M) 20	AIT 20 Inch Investigation (AT20) 0 (OHMM) 10		Sonic Porosity (SPHI) 0.4 (V/V) 0
Bit Size (BS) 6 (IN) 16	Tension (TENS) (LBF) 0 1000	AIT 10 Inch Investigation (AT10) 0 (OHMM) 10		Std. Res. Density Porosity (DPHZ) 0.4 (V/V) 0


1975
2000
2025
TENS
SP
STIA
STIT
RWA
PEFZ
HCAL
BS
TNPH
SPHI
DPHZ
AT90



Bit Size (BS) 6 (IN) 16	Tension (TENS) (LBF) 0 1000	AIT 10 Inch Investigation (AT10) 0 (OHMM) 10
Caliper (HCAL) 6 (IN) 16	Stuck Stretch (STIT) 0 (M) 20	AIT 20 Inch Investigation (AT20) 0 (OHMM) 10
Std. Res. Formation Pe (PEFZ) 0 (----) 5		AIT 30 Inch Investigation (AT30) 0 (OHMM) 10
RWA (RWA) 0 (OHMM) 1		AIT 60 Inch Investigation (AT60) 0 (OHMM) 10
SP (SP) −80 (MV) 20		AIT 90 Inch Investigation (AT90) 0 (OHMM) 10
REVOQUE From HCAL to BS		
CAVERNA From BS to HCAL		

Std. Res. Density Porosity (DPHZ) 0.4 (V/V) 0	
Sonic Porosity (SPHI) 0.4 (V/V) 0	
Gas From DPHZ to TNPH	
Env.Corr.Thermal Neutron Porosity (TNPH) 0.4 (V/V) 0	

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

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	900	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	223	
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	41.70.24.20	
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	41.70.24.20	
ARFV	Array Induction Radial Profiling Code Version Number	701	
ARPV	Array Induction Radial Parametrization Code Version Number	232	
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TwoResA90	
ASTA	Array Induction Tool Standoff	1.6	IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	78.2	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	

FPHI	Form Factor Porosity Source	SPHI	
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	
RTCO	RTCO − Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	15	DEGC
SPNV	SP Next Value	0	MV
DSLT−H: Digitizing Sonic Logging Tool			
CDTS	C−Delta−T Shale	100	US/F
DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	56	US/F
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DT	
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)	78.2	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal−like Formation 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	YES	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	15	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
RWA: Apparent Water Resistivity			
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TwoResA90	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
RTCO	RTCO − Rt Invasion Correction	YES	
ALLRES: Basic Resistivity Transforms			
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TwoResA90	
RTCO	RTCO − Rt Invasion Correction	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	78.2	DEGC
FCD	Future Casing (Outer) Diameter	5.5	IN
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	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	15	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth − Driller	2050.00	M
TDL	Total Depth − Logger	2053.80	M
System and Miscellaneous			
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	2400.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	32.30	LB/F
DFD	Drilling Fluid Density	1.13	G/C3
DO	Depth Offset for Playback	1.8	M
FLEV	Fluid Level	0.00	M

MST	Mud Sample Temperature	15.30	DEGC
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	0.8800	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2053.8	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA Vertical Scale: 1:200 Graphics File Created: 04−Oct−2009 03:39

OP System Version: 17C0−154

AIT−M	unofficial	DSLT−H	unofficial
HILTH−FTB	unofficial	DTC−H	unofficial

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_009LUP	FN:16	PRODUCER	04−Oct−2009 01:07	2058.8 M	1934.8 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_109PUP	FN:16	PRODUCER	04−Oct−2009 03:39		
CUSTOMER	AIT_SONIC_TLD_MCFL_109PUC	FN:17	CUSTOMER	04−Oct−2009 03:39		

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MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_112PUP	FN:22	PRODUCER	04−Oct−2009 03:49	2060.1 M	229.1 M
DEFAULT	AIT_SONIC_TLD_MCFL_109PUP	FN:16	PRODUCER	04−Oct−2009 03:39	2035.0 M	1969.9 M

OP System Version: 17C0−154

AITM	unofficial	DSLT−H	unofficial
HILTHD	unofficial	DTCH	unofficial

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

SP_REP Curve (SP_REP)
−80 (MV) 20

RWA_REP Curve (RWA_REP)
0 (OHMM) 1

PEFZ_REP Curve (PEFZ_REP)
0 (−−−−) 5

HCAL_REP Curve (HCAL_REP)
6 (IN) 16

BS_REP Curve (BS_REP)

TENS_REP Curve (TENS_

AT90_REP Curve (AT90_REP)
0 (OHMM) 10

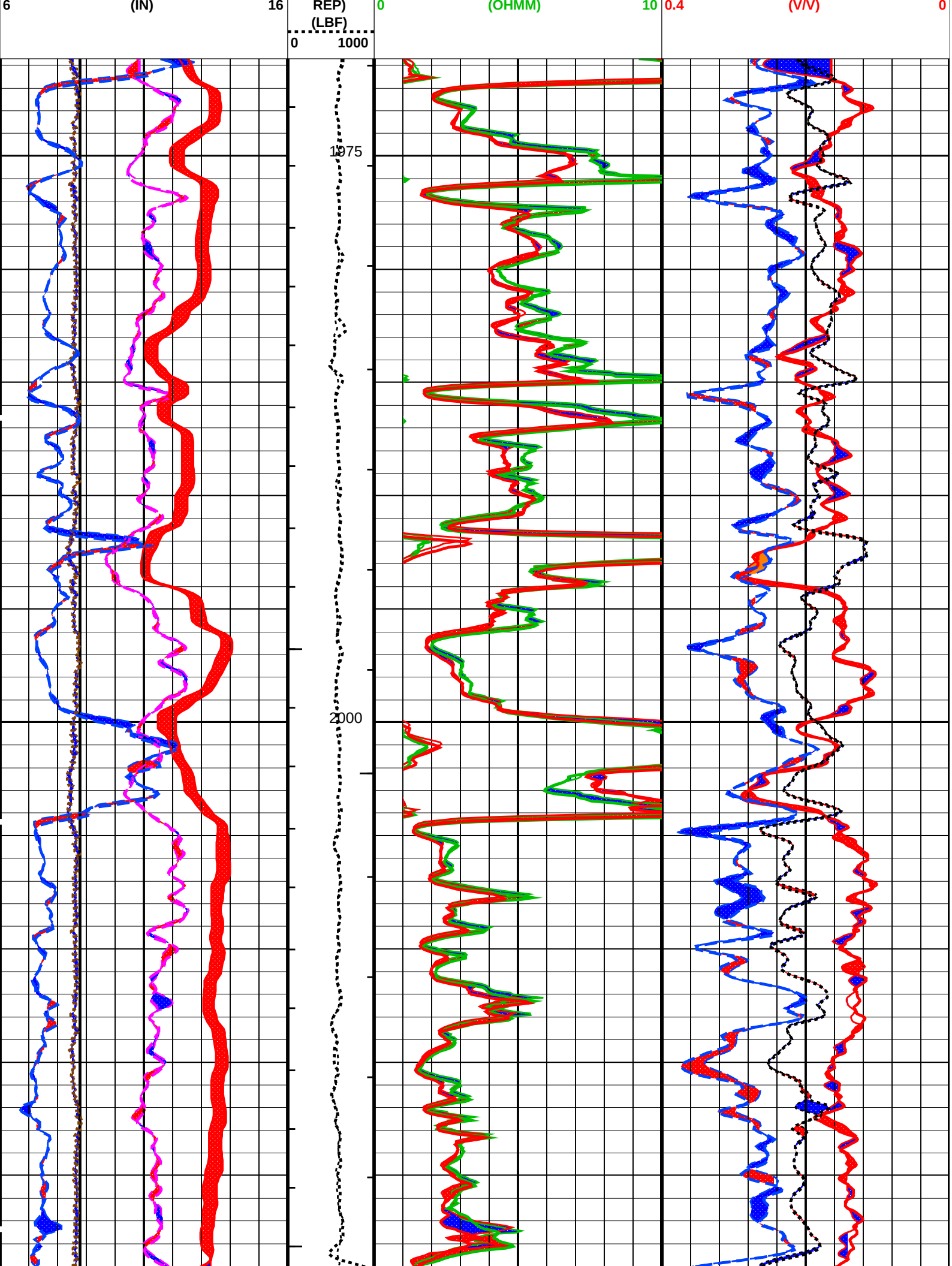
AT10_REP Curve (AT10_REP)

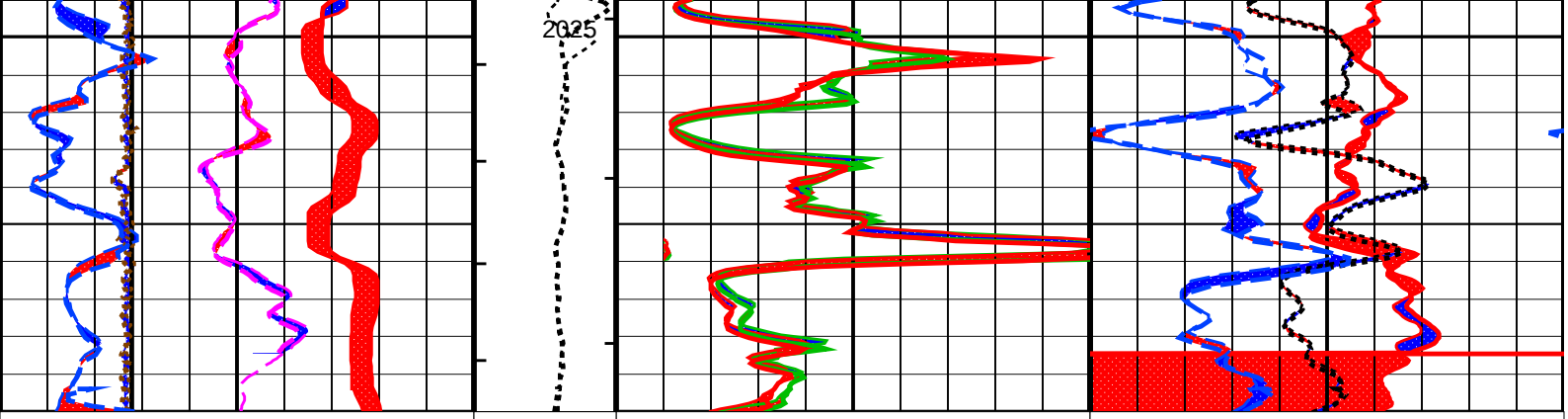
Gas
From DPHZ to TNPH

TNPH_REP Curve (TNPH_REP)
0.4 (V/V) 0

SPHI_REP Curve (SPHI_REP)
0.4 (V/V) 0

DPHZ_REP Curve (DPHZ_REP)


6
(IN)
16
REP)
(LBF)
0
1000
0
(OHMM)
10
0.4
(V/V)
0
1975
2000



BS_REP Curve (BS_REP)	TENS_REP Curve (TENS_REP) (LBF)	AT10_REP Curve (AT10_REP)	DPHZ_REP Curve (DPHZ_REP)
6 (IN) 16	0 1000	0 (OHMM) 10	0.4 (V/V) 0
HCAL_REP Curve (HCAL_REP)		AT90_REP Curve (AT90_REP)	SPHI_REP Curve (SPHI_REP)
6 (IN) 16		0 (OHMM) 10	0.4 (V/V) 0
PEFZ_REP Curve (PEFZ_REP)			TNPH_REP Curve (TNPH_REP)
0 (----) 5			0.4 (V/V) 0
RWA_REP Curve (RWA_REP)			Gas From DPHZ to TNPH
0 (OHMM) 1			
SP_REP Curve (SP_REP)			
−80 (MV) 20			

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- **Integrated Hole Volume Major Pip Every 1 M3**
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

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	900	
ABLM	Array Induction Basic Logs Mode	6_ONE_TWO_AND_FOUR	
ABLV	Array Induction Basic Logs Code Version Number	223	
ACDE	Array Induction Casing Detection Enable	YES	
ACEN	Array Induction Tool Centering Flag (in Borehole)	ECCENTERED	
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	YES	
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AIGS	Array Induction Select Akima Interpolation Gating	ON	
AMRF	Array Induction Mud Resistivity Factor	1.000	
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
ARFV	Array Induction Radial Profiling Code Version Number	701	
ARPV	Array Induction Radial Parametrization Code Version Number	232	
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TWORESA90	
ASAP	Array Induction Suspend Answer Product Processing	0_NOSUSPENSION	
ASPC	Array Induction Sonde Characterization Pressure Coefficients	0.000	
ASTA	Array Induction Tool Standoff	1.600	in
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	INTERNAL	
AULV	Array Induction User Level Control	NORMAL	
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	78.200	degC
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	0.810	
FPHI	Form Factor Porosity Source	SPHI	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.018	degC/m
GRSE	Generalized Mud Resistivity Selection	AMF, AITM	

GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
RTCO	RTCO − Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	15.000	degC
SPDR	SP Drift	0.000	mV/m
SPNV	SP Next Value	−10.000	mV
DSLT−H: Digitizing Sonic Logging Tool			
CDTS	C−Delta−T Shale	100.0	us/ft
DTF	Delta−T Fluid	189.0	us/ft
DTM	Delta−T Matrix	56.000	us/ft
SPFS	Sonic Porosity Formula	R−H	
SPSO	Sonic Porosity Source	DT	
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)	78.200	degC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1.000	g/cm3
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	0.810	
FPHI	Form Factor Porosity Source	SPHI	
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal−like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.018	degC/m
GRSE	Generalized Mud Resistivity Selection	AMF_AITM	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.650	g/cm3
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	STDRES	
NSAR	HRDD Depth Sampling Rate	1.000	in
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	15.000	degC
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	YES	
ALLRES: Basic Resistivity Transforms			
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TWORESA90	
RTCO	RTCO − Rt Invasion Correction	YES	
RWA: Apparent Water Resistivity			
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TWORESA90	
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	0.810	
FPHI	Form Factor Porosity Source	SPHI	
RTCO	RTCO − Rt Invasion Correction	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	78.200	degC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.018	degC/m
GRSE	Generalized Mud Resistivity Selection	AMF_AITM	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
SHT	Surface Hole Temperature	15.000	degC
STI: Stuck Tool Indicator			
TDL	Total Depth − Logger	2053.8	m
System and Miscellaneous			
ACSED	Array Induction Casing Shoe Estimated Depth		
BS	Bit Size	8.750	in
BSAL	Borehole Salinity	2400.0	ppm
CSIZ	Current Casing Size	9.625	in
CWEI	Casing Weight	32.300	lbm/ft
DFD	Drilling Fluid Density	1.130	g/cm3
FLEV	Fluid Level	0.000	m
FSAL	Formation Salinity		
MST	Mud Sample Temperature	15.300	degC
RMFS	Resistivity of Mud Filtrate Sample	0.880	ohm.m
RW	Resistivity of Connate Water	1.000	ohm.m
TD	Total Depth	2053.8	m
TWS	Temperature of Connate Water Sample	37.778	degC

Format: COMBINADA_REP_1 **Vertical Scale: 1:200** **Graphics File Created: 04−Oct−2009 04:18**

OP System Version: 17C0−154

AITM	**unofficial**	**DSLT−H**	**unofficial**
HILTHD	**unofficial**	**DTCH**	**unofficial**

Input DLIS Files

DEFAULT	**AIT_SONIC_TLD_MCFL_112PUP**	**FN:22**	**PRODUCER**	**04−Oct−2009 03:49**	**2060.1 M**	**229.1 M**
DEFAULT	**AIT_SONIC_TLD_MCFL_109PUP**	**FN:16**	**PRODUCER**	**04−Oct−2009 03:39**	**2035.0 M**	**1969.9 M**

Schlumberger

CALIBRACIONES

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: 21−Sep−2009 11:40 Before: 3−Oct−2009 23:37 After: 4−Oct−2009 3:35							
Thru Cal Magnitude − 0	0	0.5819	0.5820	0.5813	−0.0006497	N/A	V
Thru Cal Magnitude − 1	0	1.193	1.193	1.192	−0.001781	N/A	V
Thru Cal Magnitude − 2	0	0.5918	0.5917	0.5905	−0.001205	N/A	V
Thru Cal Magnitude − 3	0	0.6675	0.6674	0.6661	−0.001323	N/A	V
Thru Cal Magnitude − 4	0	1.248	1.248	1.246	−0.001963	N/A	V
Thru Cal Magnitude − 5	0	1.817	1.817	1.815	−0.002363	N/A	V
Thru Cal Magnitude − 6	0	1.814	1.814	1.813	−0.001696	N/A	V
Thru Cal Magnitude − 7	0	1.304	1.304	1.301	−0.002339	N/A	V
Thru Cal Phase − 0	0	196.2	201.0	201.3	0.3223	N/A	DEG
Thru Cal Phase − 1	0	195.0	199.9	200.2	0.3178	N/A	DEG
Thru Cal Phase − 2	0	191.4	196.2	196.5	0.3142	N/A	DEG
Thru Cal Phase − 3	0	190.6	195.4	195.7	0.3109	N/A	DEG
Thru Cal Phase − 4	0	184.3	189.1	189.4	0.2915	N/A	DEG
Thru Cal Phase − 5	0	182.6	187.4	187.7	0.2798	N/A	DEG
Thru Cal Phase − 6	0	182.6	187.5	187.7	0.2753	N/A	DEG
Thru Cal Phase − 7	0	181.9	186.7	186.8	0.1654	N/A	DEG
Array Induction Tool − M Wellsite Calibration − Electronics Calibration Check − Auxiliary							
Master: 21−Sep−2009 11:40 Before: 3−Oct−2009 23:37 After: 4−Oct−2009 3:35							
Array Induction SPA Plus	991.0	988.7	988.7	989.0	0.2549	N/A	MV
Array Induction SPA Zero	0	−0.3085	−0.2925	−0.2999	−0.007390	N/A	MV
Array Induction Temperature Pl	0.9170	0.9156	0.9156	0.9159	0.0002241	N/A	V
Array Induction Temperature Ze	0	−0.0003104	−0.0002956	−0.0002974	−1.847E−006	N/A	V
Array Induction Tool − M Wellsite Calibration − Test Loop Gain Correction							
Master: 21−Sep−2009 11:40							
Test Loop Gain Correctio − 0	0	1.011	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 1	0	1.013	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 2	0	1.011	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 3	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 4	0	0.9949	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 5	0	0.9890	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 6	0	1.002	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 7	0	1.017	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio − 0	0	0.5708	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 1	0	0.6285	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 2	0	0.07725	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 3	0	0.1332	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 4	0	0.1106	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 5	0	−0.01500	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 6	0	0.3023	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio − 7	0	−0.006340	N/A	N/A	N/A	N/A	DEG

Array Induction Tool − M Wellsite Calibration − Sonde Error Correction

Master: 21−Sep−2009 11:40

R Sonde Error Correction − 0	0	−108.5	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 1	0	159.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 2	0	111.5	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 3	0	56.70	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 4	0	23.62	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 5	0	14.19	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 6	0	9.031	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 7	0	−0.7832	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 0	0	−582.1	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 1	0	−313.0	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 2	0	−61.33	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 3	0	−79.12	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 4	0	−1.688	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 5	0	5.479	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 6	0	−3.128	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 7	0	0.9551	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool − M Wellsite Calibration − Mud Gain Correction

Master: 21−Sep−2009 11:40

Coarse − Mag, Real, Imag − 0	0	1.074	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 1	0	1.074	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 2	0	1.074	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 0	0	1.075	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 1	0	1.075	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 2	0	1.075	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Stab Measurement Summary

Before: 3−Oct−2009 23:42

BS Window Ratio	0.7444	N/A	0.7434	N/A	N/A	N/A	
BS Window Sum	32310	N/A	32310	N/A	N/A	N/A	CPS
SS Window Ratio	0.4844	N/A	0.4858	N/A	N/A	N/A	
SS Window Sum	12840	N/A	12790	N/A	N/A	N/A	CPS
LS Window Ratio	0.2976	N/A	0.2948	N/A	N/A	N/A	
LS Window Sum	1432	N/A	1433	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Photo−multiplier High Voltages Calibrations

Before: 3−Oct−2009 23:42

BS PM High Voltage (Command)	1649	N/A	1650	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1871	N/A	1845	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1539	N/A	1515	N/A	N/A	N/A	V

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Crystal Quality Resolutions Calibration

Before: 3−Oct−2009 23:42

BS Crystal Resolution	11.53	N/A	11.87	N/A	N/A	N/A	%
SS Crystal Resolution	9.874	N/A	9.703	N/A	N/A	N/A	%
LS Crystal Resolution	8.240	N/A	8.342	N/A	N/A	N/A	%

High resolution Integrated Logging Tool−DTS Wellsite Calibration − MCFL Calibration

Before: 3−Oct−2009 23:38

Raw B0 Resistivity	3875	N/A	3884	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3823	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3829	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HILT Caliper Calibration

Before: 3−Oct−2009 23:43

HILT Caliper Zero Measurement	8.000	N/A	7.624	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	11.89	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Detector Calibration

Before: 3−Oct−2009 23:37 After: 4−Oct−2009 3:39

Gamma Ray Background	30.00	N/A	32.55	43.35	10.80	N/A	GAPI
Gamma Ray (Jig − Bkgd)	165.0	N/A	175.3	160.8	−14.43	15.00	GAPI

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Zero Measurement

Master: 21−Sep−2009 14:22 Before: 3−Oct−2009 23:38 After: 4−Oct−2009 3:40

CNTC Background	27.26	27.26	26.78	27.79	1.011	4.089	CPS
CFTC Background	26.27	26.27	27.20	28.21	1.011	3.941	CPS

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Ratio Measurement

Master: 21−Sep−2009 14:22

Thermal Near Corr. (Tank)	5800	5305	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2213	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.397	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Accelerometer Calibration

Before: 3−Oct−2009 23:37

Z−Axis Acceleration	9.810	N/A	9.790	N/A	N/A	N/A	M/S2

High resolution Integrated Logging Tool−DTS Master Calibration − Inversion results

Master: 1−Oct−2009 23:20

Master: 1−Oct−2009 22:20

Rho Aluminum	2.596	2.596	−−	−−	−−	−−	G/C3
Rho Magnesium	1.686	1.688	−−	−−	−−	−−	G/C3
Pe Aluminum	2.570	2.551	−−	−−	−−	−−	
Pe Magnesium	2.650	2.606	−−	−−	−−	−−	

High resolution Integrated Logging Tool−DTS Master Calibration − Deviation Summary

Master: 1−Oct−2009 22:20

BS Average Deviation	0	0.5589	−−	−−	−−	−−	%
BS Max Deviation	0	1.302	−−	−−	−−	−−	%
SS Average Deviation	0	0.3003	−−	−−	−−	−−	%
SS Max Deviation	0	0.6668	−−	−−	−−	−−	%
LS Average Deviation	0	0.6496	−−	−−	−−	−−	%
LS Max Deviation	0	2.495	−−	−−	−−	−−	%

The GLS−VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT−B Water Temperature 9.0 DEGC.
Thermal Housing Size 3.383 IN.
NSR−F serial number 1472

Array Induction Tool − M / Equipment Identification

Primary Equipment:

Rm/SP Bottom Nose	AMRM − A	
Array Induction Sonde	AMIS − A	124

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	0.5819		0.6100	196.2		197.0
	Before	0.5820			201.0		
	After	0.5813			201.3		
1	Master	1.193		1.270	195.0		196.0
	Before	1.193			199.9		
	After	1.192			200.2		
2	Master	0.5918		0.6200	191.4		192.0
	Before	0.5917			196.2		
	After	0.5905			196.5		
3	Master	0.6675		0.7000	190.6		191.0
	Before	0.6674			195.4		
	After	0.6661			195.7		
4	Master	1.248		1.340	184.3		185.0
	Before	1.248			189.1		
	After	1.246			189.4		
5	Master	1.817		1.960	182.6		182.0
	Before	1.817			187.4		
	After	1.815			187.7		
6	Master	1.814		1.960	182.6		181.0
	Before	1.814			187.5		
	After	1.813			187.7		

	Master	1.304			181.9		
7	Before	1.304		1.410	186.7		175.0
	After	1.301			186.8		
		60.00 % (Minimum)		140.0 % (Maximum)	Nom −60.00 (Minimum)	Nom + 60.00 (Maximum)	

Master: 21−Sep−2009 11:40 Before: 3−Oct−2009 23:37

After: 4−Oct−2009 3:35

Array Induction Tool − M Wellsite Calibration

Electronics Calibration Check − Auxiliary

Phase	Array Induction SPA Plus MV	Value
Master		988.7
Before		988.7
After		989.0
	941.0 (Minimum) 991.0 (Nominal) 1040 (Maximum)	

Phase	Array Induction SPA Zero MV	Value
Master		−0.3085
Before		−0.2925
After		−0.2999
	−50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Array Induction Temperature Plus V	Value
Master		0.9156
Before		0.9156
After		0.9159
	0.8710 (Minimum) 0.9170 (Nominal) 0.9630 (Maximum)	

Phase	Array Induction Temperature Zero V	Value
Master		−0.0003104
Before		−0.0002956
After		−0.0002974
	−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 21−Sep−2009 11:40 Before: 3−Oct−2009 23:37

After: 4−Oct−2009 3:35

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	1.011		0.5708	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
1	1.013		0.6285	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
2	1.011		0.07725	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
3	1.012		0.1332	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
4	0.9949		0.1106	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
5	0.9890		−0.01500	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
6	1.002		0.3023	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)
7	1.017		−0.006340	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)

Master: 21−Sep−2009 11:40

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	−108.5		−582.1	
		−231.0 (Minimum) −56.00 (Nominal) 119.0 (Maximum)		−2250 (Minimum) 0 (Nominal) 2250 (Maximum)
1	159.6		−313.0	
		114.0 159.0 204.0		−625.0 0 625.0

	(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)	
2	111.5				−61.33			
	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)	
3	56.70				−79.12			
	39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)	
4	23.62				−1.688			
	15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)	
5	14.19				5.479			
	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)	
6	9.031				−3.128			
	5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)	
7	−0.7832				0.9551			
	−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)	

Master: 21−Sep−2009 11:40

Array Induction Tool − M Wellsite Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	1.074				1.075			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
1	1.074				1.075			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
2	1.074				1.075			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	

Master: 21−Sep−2009 11:40

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	0.5819			0.6100	196.2			197.0
1	Master	1.193			1.270	195.0			196.0
2	Master	0.5918			0.6200	191.4			192.0
3	Master	0.6675			0.7000	190.6			191.0
4	Master	1.248			1.340	184.3			185.0
5	Master	1.817			1.960	182.6			182.0
6	Master	1.814			1.960	182.6			181.0
7	Master	1.304			1.410	181.9			175.0
		60.00 % (Minimum)		140.0 % (Maximum)	(Nominal)	Nom −60.00 (Minimum)		Nom + 60.00 (Maximum)	(Nominal)

Master: 21−Sep−2009 11:40

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				988.7	Master				−0.3085
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				0.9156	Master				−0.0003104
0.8710 (Minimum)	0.9170 (Nominal)	0.9630 (Maximum)			−0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)		

Master: 21−Sep−2009 11:40

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	1.011				0.5708			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.013				0.6285			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.011				0.07725			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.012				0.1332			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9949				0.1106			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9890				−0.01500			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.002				0.3023			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.017				−0.006340			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master: 21−Sep−2009 11:40

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	−108.5				−582.1			
		−231.0 (Minimum)	−56.00 (Nominal)	119.0 (Maximum)		−2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	159.6				−313.0			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	111.5				−61.33			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	56.70				−79.12			
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	23.62				−1.688			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	14.19				5.479			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.031				−3.128			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	−0.7832				0.9551			
		−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 21−Sep−2009 11:40

Array Induction Tool − M Master Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	1.074				1.075			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.074				1.075			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)
2	1.074				1.075			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 21−Sep−2009 11:40

High resolution Integrated Logging Tool−DTS / Equipment Identification

Primary Equipment:		
HILT high−Resolution Mechanical Sonde	HRMS − H	4829
HILT Rxo Gamma−ray Device	HRGD − H	5714
HILT Micro Cylindrically Focused Log Dev	MCFL − H	
GR Logging Source	GLS − VJ	5065
HILT High Res. Control Cartridge	HRCC − H	4783
HILT Gamma−Ray Neutron Sonde−DTS	HGNS − H	4862
HGNS Gamma−Ray Device	HGR −	
HGNS Neutron Detector with Alpha Source	HCNT − H	
Auxiliary Equipment:		
Neutron Calibration Tank	NCT − B	
Gamma Source Radioactive	GSR − U/Y	1910
HGNS Housing	HGNH −	3987

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		0.7434	Before		0.4858	Before		0.2948
	0.7071 (Minimum) 0.7444 (Nominal) 0.7816 (Maximum)			0.4601 (Minimum) 0.4844 (Nominal) 0.5086 (Maximum)			0.2827 (Minimum) 0.2976 (Nominal) 0.3125 (Maximum)	
Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		32310	Before		12790	Before		1433
	30700 (Minimum) 32310 (Nominal) 33930 (Maximum)			12190 (Minimum) 12840 (Nominal) 13480 (Maximum)			1360 (Minimum) 1432 (Nominal) 1504 (Maximum)	

Before: 3−Oct−2009 23:42

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		1650	Before		1845	Before		1515
	1549 (Minimum) 1649 (Nominal) 1749 (Maximum)			1771 (Minimum) 1871 (Nominal) 1971 (Maximum)			1439 (Minimum) 1539 (Nominal) 1639 (Maximum)	

Before: 3−Oct−2009 23:42

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		11.87	Before		9.703	Before		8.342
	10.53 (Minimum) 11.53 (Nominal) 12.53 (Maximum)			8.874 (Minimum) 9.874 (Nominal) 10.87 (Maximum)			7.240 (Minimum) 8.240 (Nominal) 9.240 (Maximum)	

Before: 3−Oct−2009 23:42

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		3884	Before		3823	Before		3829
	3565 (Minimum) 3875 (Nominal) 4185 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)	

Before: 3−Oct−2009 23:38

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HILT Caliper Calibration

Phase	HILT Caliper Zero Measurement IN	Value	Phase	HILT Caliper Plus Measurement IN	Value
Before		7.624	Before		11.89
	6.000 (Minimum) 8.000 (Nominal) 10.00 (Maximum)			9.000 (Minimum) 12.00 (Nominal) 15.00 (Maximum)	

Before: 3−Oct−2009 23:43

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value
Before		32.55
After		43.35
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)	

Phase	Gamma Ray (Jig − Bkgd) GAPI	Value
Before		175.3
After		160.8
	157.1 (Minimum) 165.0 (Nominal) 206.3 (Maximum)	

Before: 3−Oct−2009 23:37 After: 4−Oct−2009 3:39

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Zero Measurement

Phase	CNTC Background CPS	Value
Master		27.26
Before		26.78
After		27.79
	5.000 (Minimum) 27.26 (Nominal) 40.00 (Maximum)	

Phase	CFTC Background CPS	Value
Master		26.27
Before		27.20
After		28.21
	5.000 (Minimum) 26.27 (Nominal) 40.00 (Maximum)	

Master: 21−Sep−2009 14:22 Before: 3−Oct−2009 23:38

After: 4−Oct−2009 3:40

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Ratio Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value
Master		5305
	4700 (Minimum) 5800 (Nominal) 6900 (Maximum)	

Phase	Thermal Far Corr. (Tank) CPS	Value
Master		2213
	1900 (Minimum) 2400 (Nominal) 2900 (Maximum)	

Phase	CNTC/CFTC (Tank)	Value
Master		2.397
	2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

Master: 21−Sep−2009 14:22

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Accelerometer Calibration

Phase	Z−Axis Acceleration M/S2	Value
Before		9.790
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 3−Oct−2009 23:37

High resolution Integrated Logging Tool−DTS Master Calibration

Inversion results

Phase	Rho Aluminum G/C3	Value
Master		2.596
	2.586 (Minimum) 2.596 (Nominal) 2.606 (Maximum)	

Phase	Rho Magnesium G/C3	Value
Master		1.688
	1.676 (Minimum) 1.686 (Nominal) 1.696 (Maximum)	

Phase	Pe Aluminum	Value
Master		2.551
	2.470 (Minimum) 2.570 (Nominal) 2.670 (Maximum)	

Phase	Pe Magnesium	Value
Master		2.606
	2.550 (Minimum) 2.650 (Nominal) 2.750 (Maximum)	

Master: 1−Oct−2009 22:20

High resolution Integrated Logging Tool−DTS Master Calibration

Deviation Summary

Phase	BS Average Deviation %	Value
Master		0.5589
	−0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)	

Phase	SS Average Deviation %	Value
Master		0.3003
	−1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)	

Phase	LS Average Deviation %	Value
Master		0.6496
	−1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)	

Phase	BS Max Deviation %	Value
Master		1.302
	−1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)	

Phase	SS Max Deviation %	Value
Master		0.6668
	−2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)	

Phase	LS Max Deviation %	Value
Master		2.495
	−3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)	

Master: 1−Oct−2009 22:20

High resolution Integrated Logging Tool−DTS Master Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		27.26	Master		26.27
	5.000 (Minimum) 27.26 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 26.27 (Nominal) 40.00 (Maximum)	

Master: 21−Sep−2009 14:22

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		5305	Master		2213	Master		2.397
	4700 (Minimum) 5800 (Nominal) 6900 (Maximum)			1900 (Minimum) 2400 (Nominal) 2900 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

Master: 21−Sep−2009 14:22

DTS Telemetry Tool / Equipment Identification

Primary Equipment:		
DTC−H Auxiliary Cartridge	DTCH − A	9411
DTC−H Telemetry Cartridge	DTCH − A	9411
Auxiliary Equipment:		
DTCH Telemetry Cartridge Housing	ECH − KC	10503

COMPANIA:	**YPF S.A.**
POZO:	**YPF.Ch.EA−747**
CAMPO:	**EL ALBA**
PROVINCIA:	**CHUBUT**
PAIS:	**ARGENTINA**

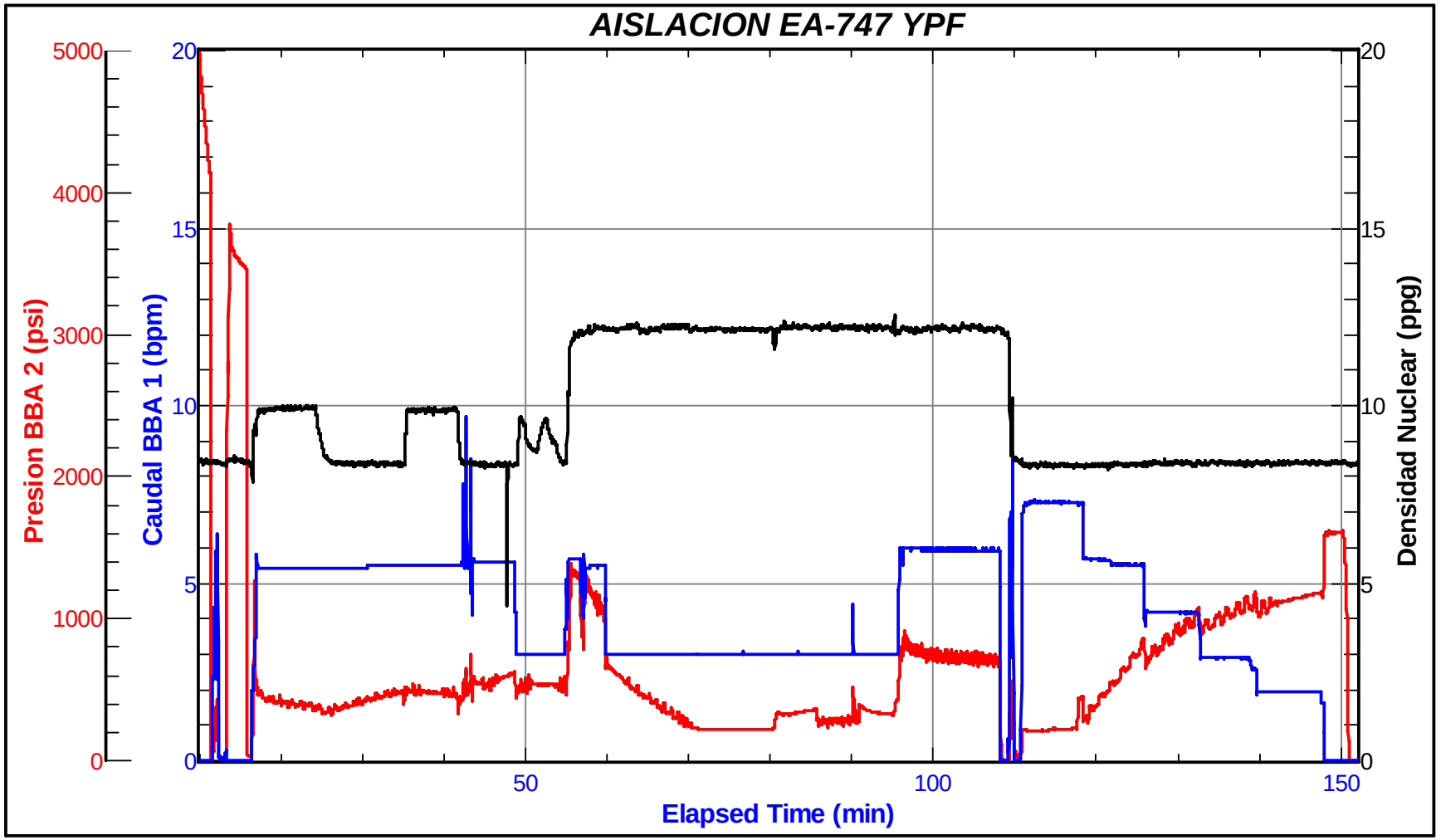
PRIMERA LECTURA	2051.4 m
PROFUNDIDAD PERFIL	2053.8 m
PROF. PERFORADOR	2050 m
BUJE DE VASTAGO	669 m
MESA ROTATIVA	668.7 m
NIVEL TERRENO	663.1 m

Schlumberger

COMBINADA

ESCALA: 1/200

BJ Services JobMaster Program Version 3.20
Job Number:
Customer: YPF
Well Name: EA-747



PLANILLA DE APOYO AL GEOLOGO OPERATIVO para CORRELACION

Pozo a Intervenir

POZO EA-747

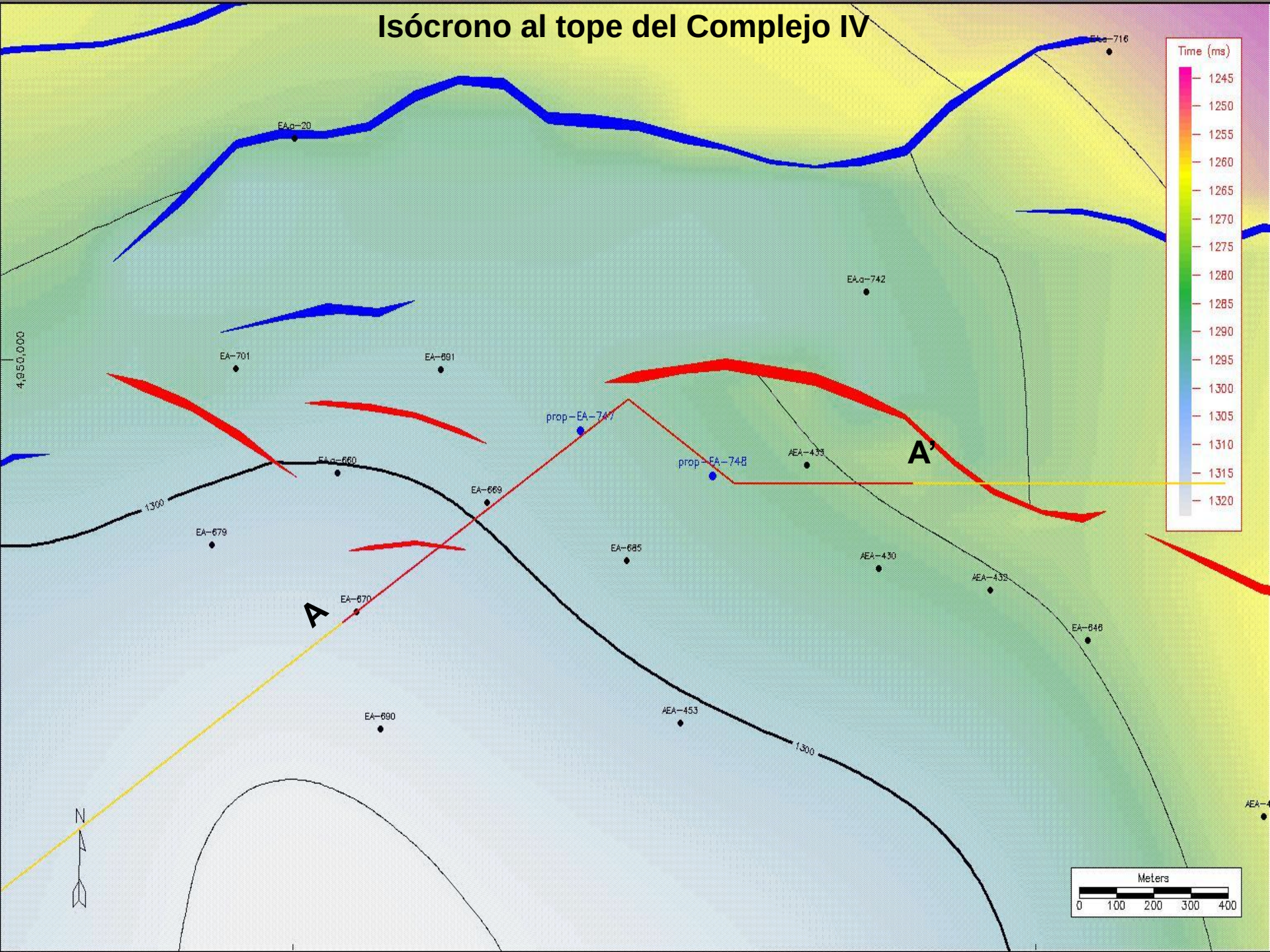
Pozo	EA-747			AEA-433				EA-685				EA-691				EA.a-742			
Cota	663,1			667,5				663,0				663,4				669,4			
Estado	Perforación original																		
	m.b.b.p.	*m.b.n.m.*		m.b.b.p.	m.b.n.m.	Term Febrero 05	Q / IT / N	m.b.b.p.	m.b.n.m.		Q / IT / N	m.b.b.p.	m.b.n.m.		Q / IT / N	m.b.b.p.	m.b.n.m.	Term Abril 09	Q / IT / N
Glauc																			
Tope C.II		663,1		930,0	-262,5			935,0	-272,0			915,0	-251,6			920,0	-250,6		
C II o Fm. Yac. El Trébol																			
				986,5	-319,0	S/E													
Tope C.III		663,1		1110,0	-442,5			1085,0	-422,0			1098,0	-434,6			1107,0	-437,6		
																1129,0	-459,6	↑	
				1134,0	-466,5	●X	2400/55%/920												
																1162,0	-492,6	↑	
				1191,5	-524,0	●↑	160/10%/1128												
C III o Fm. Comodoro Rivadvia																			
																1246,0	-576,6	X	312/100%/1131
				1307,5	-640,0	X	120/100%/1255												
				1382,0	-714,5	S/E													
																1399,0	-729,6	↑	
				1438,0	-770,5	↑	Gas humedo												
				1451,5	-784,0	XO	160/100%/												
																1436,5	-767,1	X	
				1455,5	-788,0	XO	160/100%/												
				1490,0	-822,5	XO	1670/100%/1320												
				1501,5	-834,0	XO	1670/100%/1320												
				1509,5	-842,0	XO	2400/100%/1000									1505,5	-836,1	↯	1800/40%/1317
				1530,5	-863,0	S/E													
																1525,0	-855,6	↯	1800/40%/1317
				1564,0	-896,5	◑	240/2%/1467												
Tope C.IV	1535,0	-871,9		1573,0	-905,5			1566,0	-903,0			1566,0	-902,6			1545,0	-875,6		
																1595,0		▬	
																1603,0	-933,6		
				1618,5	-951,0	X	3000/100%/650												
				1659,5	-992,0	S/E													
																1666,0	-996,6	XO	200/100/1585
				1672,5	-1005,0	S/E													
																1683,5	-1014,1	XO	200/100/1585
CIV o Fm. Mina El Carmen																			
																1732,5	-1063,1	X	2400/100/1100
				1744,5	-1077,0	X	2400/100%/1500												
													663,4						
Tope D-129	2007,0	-1343,9		NA				2065,0	-1402,0			2050,0	-1386,6			NA			
Fm. D-129																			
Prof. Final	2054,0			1801,5				2105,0				2101,8				1797,1			

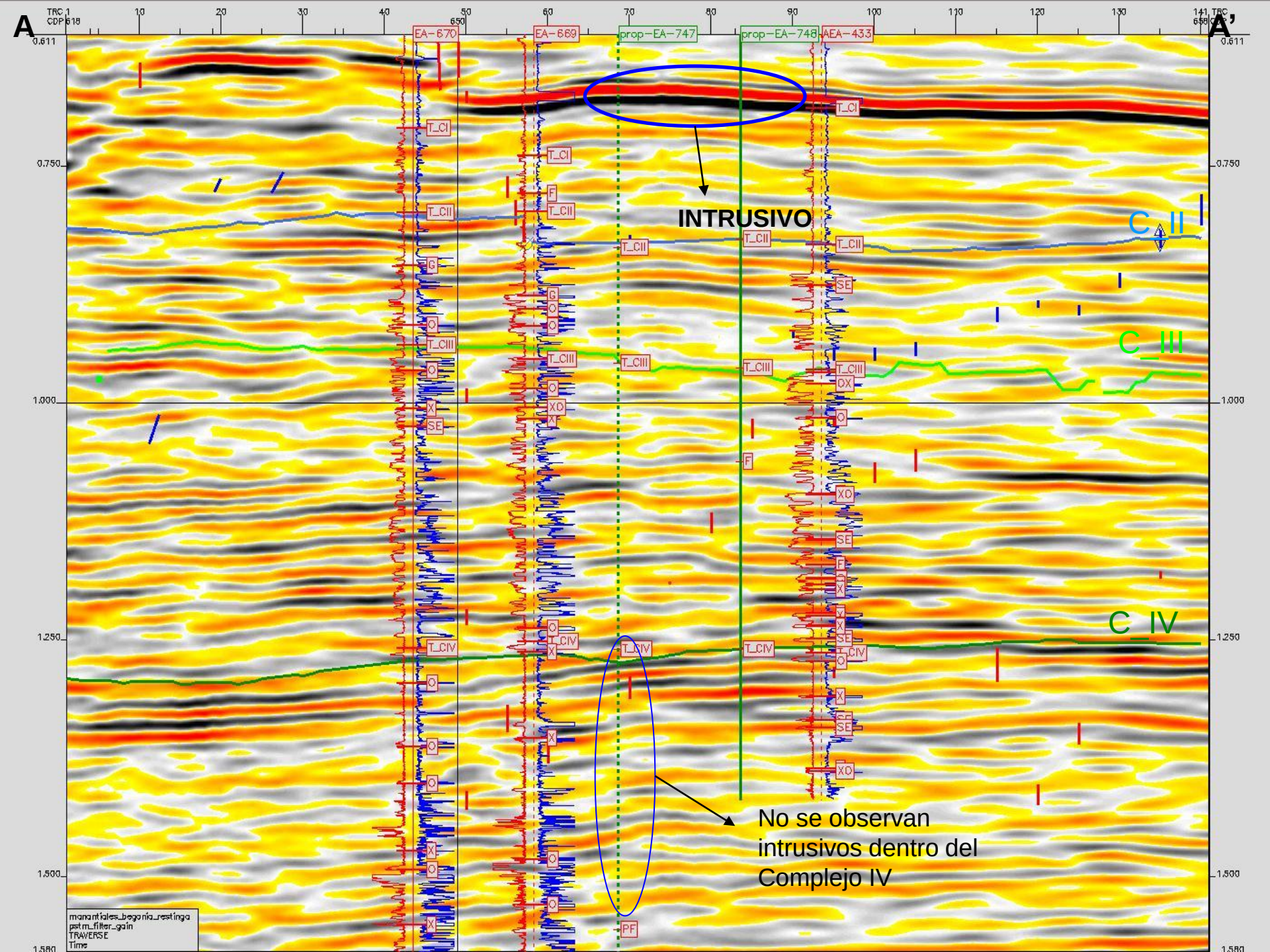
Prod Neta de P°			
Acumulada P°			

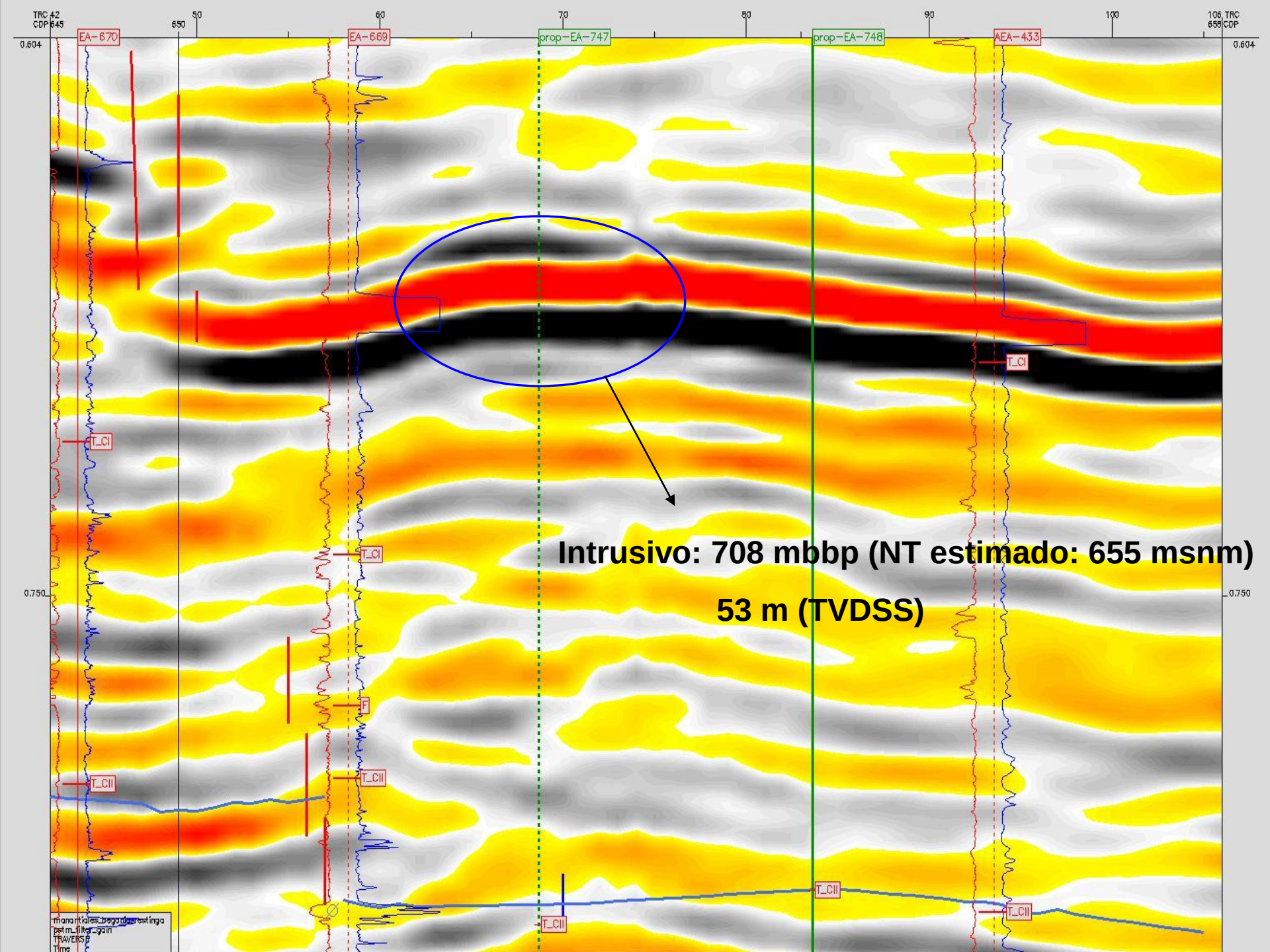
Referencias

↑●	Petroleo surg.
●↑	Petroleo C/gas
●	Petroleo
◑	Poco petroleo
●X	Petróleo C/Agua
X◑	Agua y Poco Pet.
X	Agua
XO	Agua C/ Rastros
↑	Gas
S/E	Sin Entrada
sd	Sin desarrollo
NA	No Alcanzó
↯	Fracturada
▭	Cementada
▬	Tapón N
}	En cjto.

Isócrono al tope del Complejo IV




A
A'
EA-670
EA-669
prop-EA-747
prop-EA-748
AEA-433
INTRUSIVO
C_II
C_III
C_IV
No se observan intrusivos dentro del Complejo IV
manantiales_begonia_restinga
pstm_filter_gain
TRAVERSE
Time


TRC 42
CDP 645
50
650
60
70
80
90
100
106 TRC
658 CDP
EA-670
EA-669
prop-EA-747
prop-EA-748
AEA-433
0.604
0.750
T_CI
T_CII
F
Intrusivo: 708 mbbp (NT estimado: 655 msnm)
53 m (TVDSS)

POZO: YPF.Ch.EA-747

YACIMIENTO: EL ALBA

EQUIPO: 381 SAN ANTONIO INTERNACIONAL SRL.

FECHA: 27 de septiembre de 2009

COMPAÑIA: SCHLUMBERGER ARGENTINA S.A.

OPERACIÓN SOLICITADA

1	*INDUCCIÓN MULTIPLE*	IM	De fondo (2050 m. aprox.) hasta zapato caño guía	378,76	m.
2	*CALIBRE*	CAL	En profundidades y tramos a determinar en el pozo.		
3	*DENSIDAD LITOLOGICA*	DLT	En profundidades y tramos a determinar en el pozo.		
4	*NEUTRON COMPENSADO*	NC	En profundidades y tramos a determinar en el pozo.		
5	*SÓNICO COMPENSADO*	SC	En profundidades y tramos a determinar en el pozo.		
6	*MULTIENSAYADOR EXPRESS*	ME (XPT)	En profundidades y cantidad de medidas a determinar en el pozo.		

SERVICIOS OPCIONALES

NOTA:

OBSERVACIONES:

(1)

a)-

b)-

PROCESAMIENTOS de DATOS

IMPORTANTE: ***Antes de comenzar la operación se debe estimar el tiempo de duración de la misma. Si dicho tiempo de operación se estima en más de 12:00 Hs consecutivas, se debe, indefectiblemente, solicitar el reemplazo del personal involucrado con tiempo suficiente a fin de evitar perdidas de tiempo innecesarias.***

POZO LISTO: *A CONFIRMAR*

DATOS DEL POZO

PROFUNDIDAD FINAL ESTIMADA:	2050	m.	Aproximadamente	
DIAMETRO TREPANO:	8 3/4	"	8,750	(Confirmar diámetro de trepano en el pozo)
DIAMETRO CAÑO GUIA:	9 5/8	"	9,625	
PROFUNDIDAD ZAPATO CAÑO GUIA:	378,76	m.		

PEP: **RS1EC.09K0.53.P0002**

UWI: **AR0100008062**

NOTA: FIRMAR y ADJUNTAR A LA HOJA DE TIEMPO y TICKET

FIRMA y ACLARACIÓN REPRESENTANTE COMPAÑÍA

FIRMA y ACLARACIÓN REPRESENTANTE YPF S.A.

Nelso LOVERA

YPF	PEDIDO DE OPERACIONES	1-ADM.	2-AREA	3-ZONA	4-PEDIDO Nro.
		CR	Manantiales Behr	EL ALBA	

5-OBJETO:	6-FECHA DE EJECUCION REQUERIDA			7-EJECUTANTE
PERFILAJE POZO ENTUBADO	DIA	Mes	Año	
YPF.Ch.EA-747	08	10	2009	GEOLOG S.A.

8-OPERACIÓN SOLICITADA

NEUTRON de CORRELACIÓN (N)

Registrar en los siguientes tramos:

Desde: Fondo (2035 m. Aproxim.) Hasta: 910 m.

CEMENTACION-IMAGEN SEGMENTADA (CBL-VDL-IS)

Registrar en los siguientes tramos:

Desde: Fondo (2035 m. Aproxim.) Hasta: 910 m.

REGISTRAR TOPE ANILLO de CEMENTO y CAÑERIA LIBRE

NOTA:

Se utilizó una única lechada con una densidad de 1466 g/l (12.2lpg),

OBSERVACIONES: *Cumple fragüe el* ***jueves, 08 de octubre de 2009*** *a las* ***22:30*** *Hs.*

Operación a realizar con Equipo RTP. Montado (KEY 8)

NOTA: ***Personal de RTP confirmara Hora de Pozo Listo.***

FONDO MÍNIMO: **0 m.**

DATOS del POZO

PROFUNDIDAD FINAL: 2.053,80 m.

Diámetro Casing: 5 1/2" de -------- lbs/pie (---/--- mm.)

ZAPATO: 2.047,66 m.

COLLAR: 2.035,42 m.

FIRMAR y ADJUNTAR ESTE PROGRAMA a la HOJA de TIEMPO y TICKET

9- SOLICITANTE		10- RESPONSABLE DE EJECUCIÓN		11- CONTROL EJECUCIÓN	
07/10/2009	***Nelso D. Lovera***				
FECHA	FIRMA	FECHA	FIRMA EMPRESA SERVICIO	FECHA	FIRMA

Minuta de Programa de Terminación pozo YPF.Ch.EA-747

EA-747	**RS1EC.09F0.53.P0001**

Concedido de IAP Plan Versión 1: US$ 98.745,00

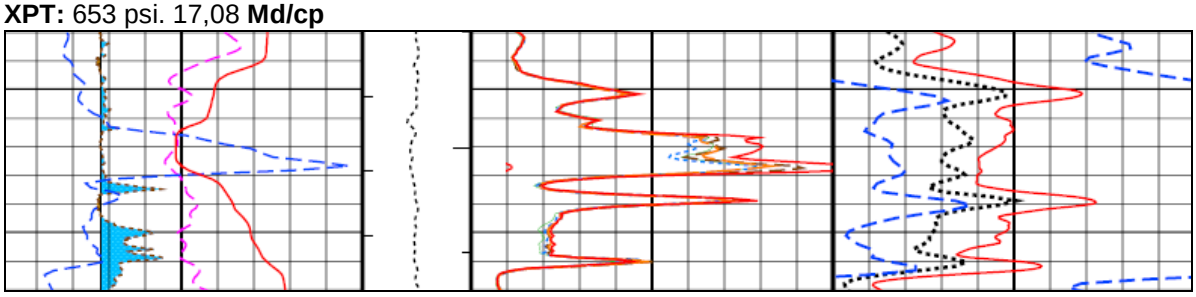
DIA: 05/10/2009

Helena Ciapparelli (Geóloga de Desarrollo)
Carina Cevasco (Geología Proyecto MB)
Lucas Gialleonardo (Ing WO)
Juan Carlos Bazan (Supervisión WO)
Jose Luis Lozada (Grupo de Productividad)
Federico Menconi (Ingeniería Reservorios Proy. MB)
Luciano Genini (Geología Proyecto MB)

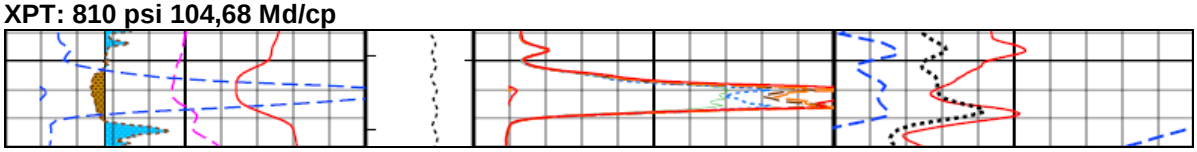
Temas tratados:
Niveles con mayor interés a punzar.
Análisis petrofísico
Ensayos en conjunto e individuales.
Punzado en balance
Presupuesto aprobado Vrs presupuesto Real.

Niveles con mayor interés a punzar:

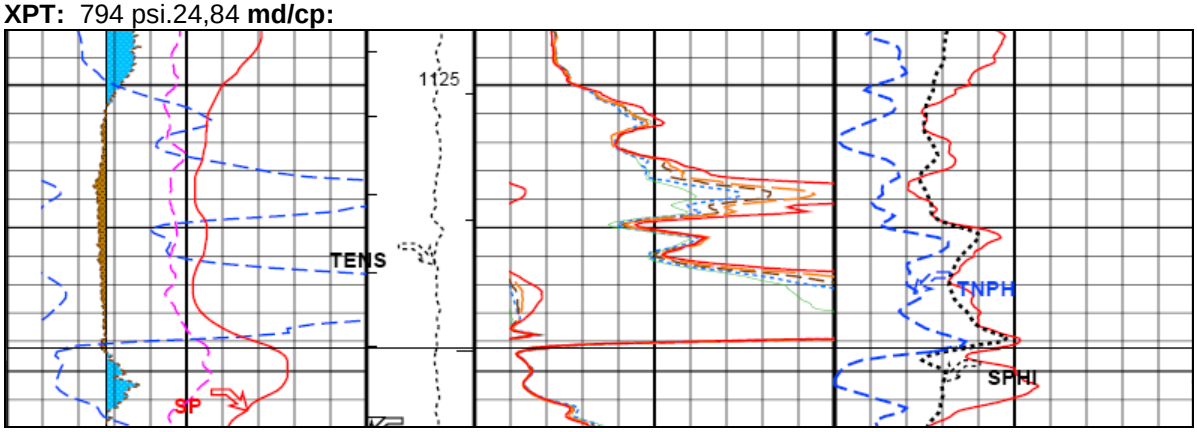
981,5-983,5 mbbp:
DPHZ: 23% **R max:** 10 ohmm
XPT: 653 psi. 17,08 **Md/cp**



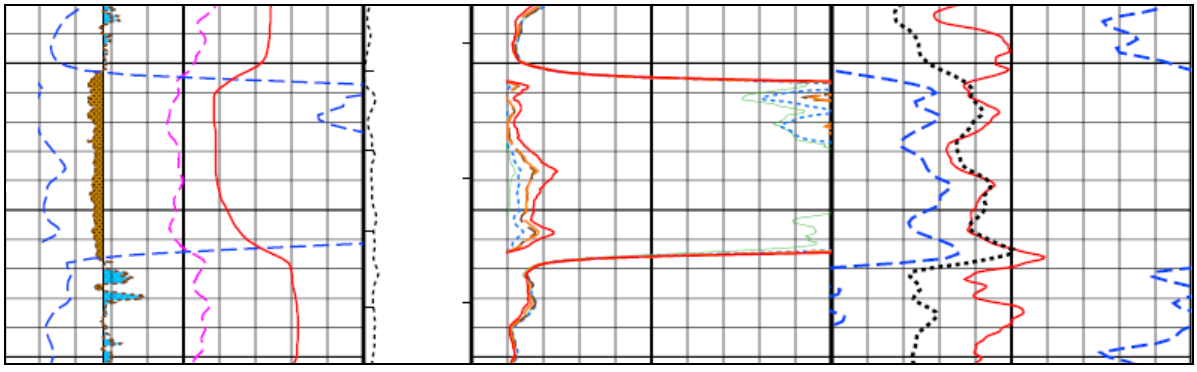
1115-1116,5 mbbp:
DPHZ: 27% **R max:** 11 ohmm
XPT: 810 psi 104,68 Md/cp



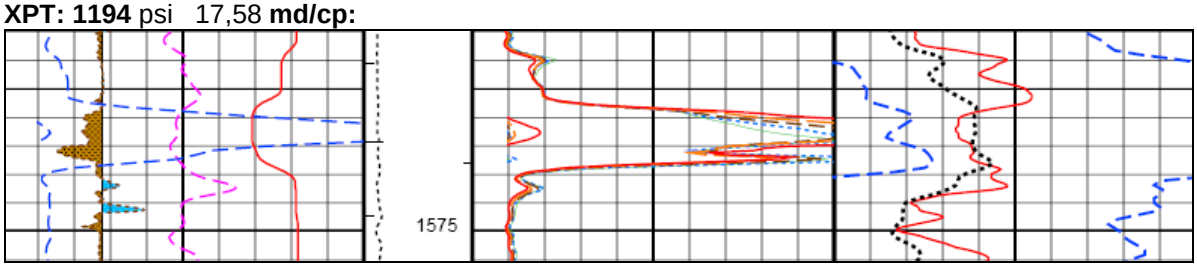
1128-1129,5 y 1131,5-1134 mbbp:
DPHZ: 30 y 25% **R max:** 15ohmm
XPT: 794 psi.24,84 **md/cp:**



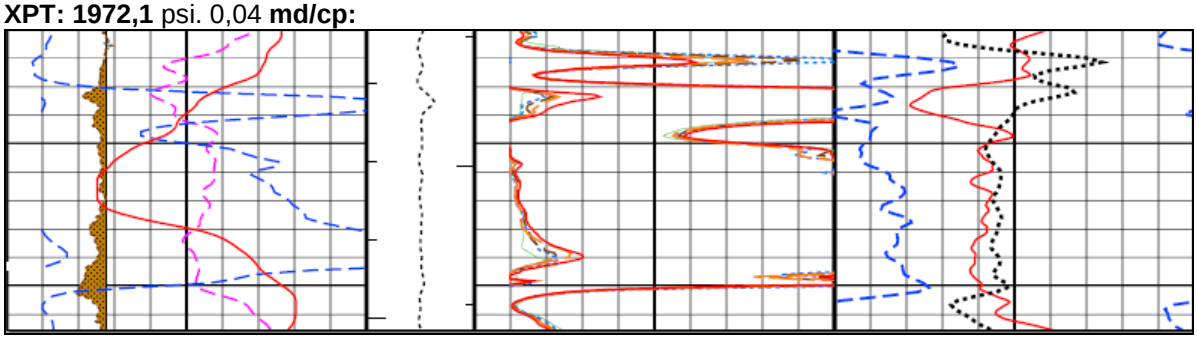
1530,5-1536,5 mbbp
DPHZ: 25% **R max:** 20ohmm
XPT: 922 psi. 0,45 **md/cp:**



1570,5-1572,5 mbbp
DPHZ: 25% **R max:** 18 ohmm
XPT: 1194 psi 17,58 **md/cp:**

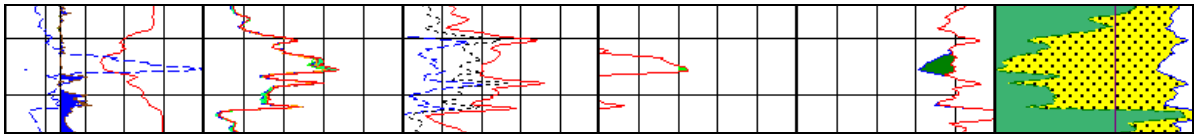


1908-1909 y 1910-1915 mbbp
DPHZ: 30 y 27 % **R max:** 30 ohmm
XPT: 1972,1 psi. 0,04 **md/cp:**

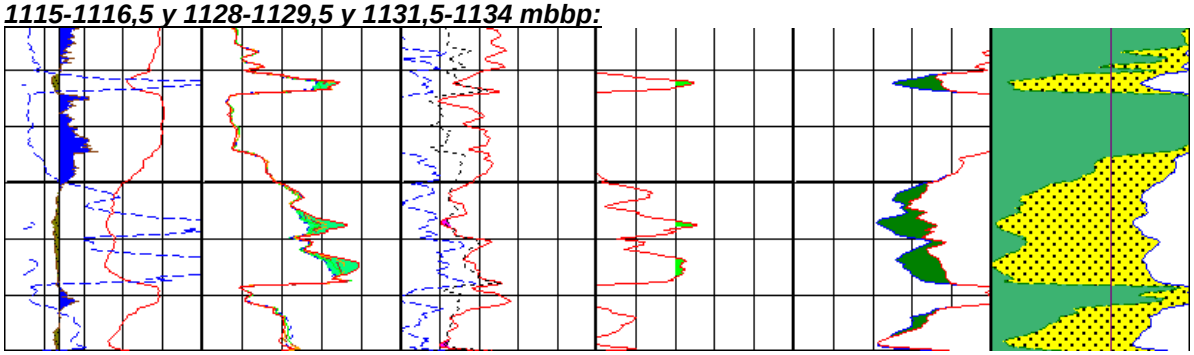


INTERPRETACIÓN PETROFÍSICA DE LOS INTERVALOS:

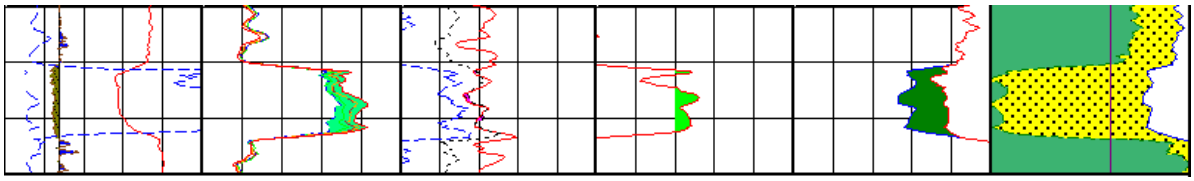
981,5-983,5 mbbp:



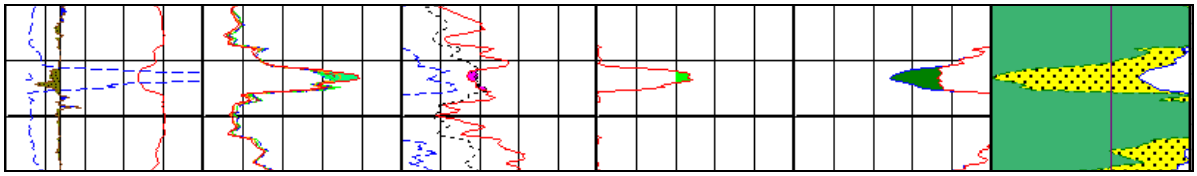
1115-1116,5 y 1128-1129,5 y 1131,5-1134 mbbp:



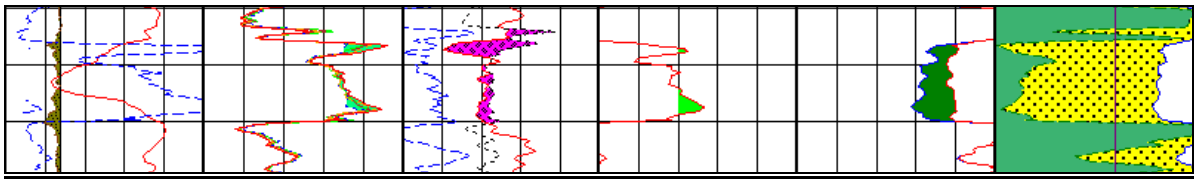
1530,5-1536,5 mbbp



1570,5-1572,5 mbbp

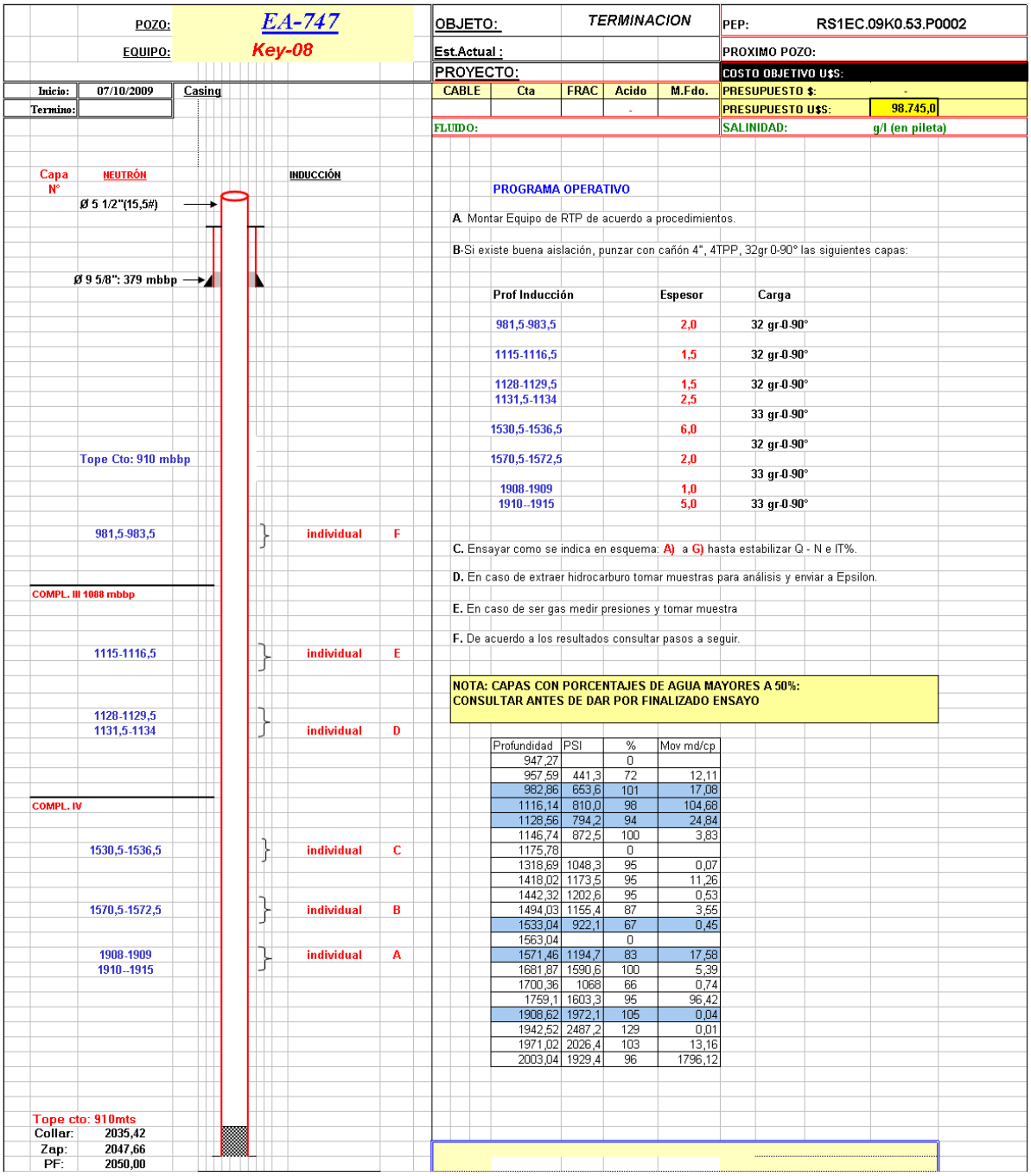


1908-1909 y 1910-1915 mbbp



Ensayos en conjunto e individuales:

Se acordó ensayar de forma convensional. Se adjunta Programa de Terminación:



Profundidad	PSI	%	Mov md/cp
947,27		0	
957,59	441,3	72	12,11
982,86	653,6	101	17,08
1116,14	810,0	98	104,68
1128,56	794,2	94	24,84
1146,74	872,5	100	3,83
1175,78		0	
1318,69	1048,3	95	0,07
1418,02	1173,5	95	11,26
1442,32	1202,6	95	0,53
1494,03	1155,4	87	3,55
1533,04	922,1	67	0,45
1563,04		0	
1571,46	1194,7	83	17,58
1681,87	1590,6	100	5,39
1700,36	1068	66	0,74
1759,1	1603,3	95	96,42
1908,62	1972,1	105	0,04
1942,52	2487,2	129	0,01
1971,02	2026,4	103	13,16
2003,04	1929,4	96	1796,12

Presupuesto aprobado Vrs presupuesto Real:

Presupuesto disponible para la terminación: **U$S 98.745,0**
Presupuesto estimado para la terminación: **U$S**

Programa de cementación

PROGRAMA DE CEMENTACION - AISLACION 5 1/2"

FECHA	04/10/09	TRABAJO	AISLACION	D. CASING	5.50	TIPO LODO	PHPA
POZO	EA-747	FDO.POZO	2050. m	PESO stg	15.5 / 14	Kg LODO	MI SWACO
COMPAÑIA	YPF	ZAPATO	2047.66 m	CAP.CSG.	12.73	DENSIDAD	1.130 Kg/L
YACIMIENTO	EL ALBA	COLLAR	2035.42 m	D.POZO(")	8.892	Vis	9
EQUIPO	SAI-381	TOPE Ped.sis	910. m	CAP.POZO	40.07	V.EMBUDO	seg
BASE	CRV	Altura Anillo	1137.66 m	CAP.ANULO	24.74	TEMP.POZO	78 °C BHLT

LECHADAS	REMOVEDORA		LECH. CABEZA		LECH. PPAL		COLCHONES (Baches segun programa)
Volumen L/bbls	0	0	0	0	31128	196	Bombear a 5 BPM
CEMENTO "G" bls	0	Bolsas	0	Bolsas	440	Bolsas	
ADITIVOS	%	Kg	%	Kg	%	Kg	1.3 - C. Mecánico 80 bbls
Aditita - (Extendedor)	0	0	0	0	0	0	Agua: 71 bbls
LW-6 - (Extendedor liviano)	0	0	0	0	20	4400	GW-27 (Gel): 68 Kg
BA-10B - (Controla Gas)	0	0	0	0	2.4	528	Carb Cal (Densifi): 4050 Kg
CD-32 - (Dispersante)	0	0	0	0	0.6	132	XLW-24/Agua: 80 L
S-8 - (P/ evitar Retrogresión)	0	0	0	0	0	0	Clay Treat (I. Arcilla): 26 L
FL-52 - (Controla filtrado)	0	0	0	0	0.1	22	Densidad: 10.01 ppg
A-2 - (Controla agua libre)	0	0	0	0	0.3	66	2. 4 - C. Químico 100 bbls
MPA-2002 - (Multipropósito)	0	0	0	0	8	1760	MCSA-LB (Surfac): 160.0 L
MPA-3 RA - (Multipropósito)	0	0	0	0	0	0	
FP-12LB - (Antiespumante)	0	0	0	0	0.2	44	
ENSAYOS					crvCA166-09		5 - C. Obturante 20 bbls
Relac. A/C	0		0		0.78		A-7 (Cloruro de Ca): 150 Kg
Agua Nec (L/bbls)	0	0	0	0	16720	106	A-8 (Cloruro de K): 25 Kg
Densidad	0.000	0.00	0.000	0.00	1.488	12.2	A-2 (Metasilicato Na): 250 Kg
Rendimiento (L/bls)	0		0		70.74		Clay Treat (I. Arcilla): 7 L

			Fluidos	Volumen L	Altura M	Densidad Kg/L	Anulo Psi	Directa Psi
	0 m	C. Mecánico						
	16 m	C. Químico						
	354 m	C. Mecánico	Lodo		0	1.130	0	0
			C. Gel/Dens	6360	16	1.200	27	0
A	564 m	C. Químico	C. Químico	7950	369	1.000	523	0
			C. Gel/Dens	6360	180	1.200	307	0
U	743. m	C. Obturante	C. Químico	7950	179	1.000	255	0
			C. Solvente			1.000	0	0
A	833. m	LECH. PPAL	C. Obturante	3180	90	1.000	140	0
T			Removedora	0	0	0.000	0	
			LECH. CABEZA	0	0	0.000	0	
R			LECH. PPAL	30970	1215	1.488	2530	
A			P. ANULO	0	0	0.000	0	0
T			DESP. AGUA	25911	2035	1.000		2690
			LECH. PPAL	156	12.2	1.488		25
A			P. TOTALES ANULO Y DIRECTA				3782	2916
			DIFERENCIA HIDROSTATICA					866
D			PRESION FINAL EN SUPERFICIE					910
			DESPLAZAMIENTO		Agua total con exceso:			97 m3
A			AGUA	163	BBLS	Reciprocar	SI	
			LODO	0	BBLS	V. mezcla	4	Bbls/Min
			Clay Treat	52	LTS	Tpo.mezcla	52	Minutos
	2047.66 m	ZAPATO	Caudal	7/5/2	BPM	Tpo.operac.	135	Minutos
	2050. m	FONDO	T.desplaz	34	Minutos	Bombeab.	157° + 30° b. anular	Minutos
			V.ascenc.	0	Mts/Min	Fragua	72	Horas

OBSERVACIONES: DESPLAZAMIENTO: 54 bbls a 7 BPM
DESTINADO 73 bbls del desplazamiento 95 bbls a 5 BPM
14 bbls a 2 BPM

GRADIENTES

GRAD.DINAM. MAX.:	0.5660	PSI / ft	DENS. EQUIVALENTE:	10.88 #/gal	1.305 g/lts
GRAD.ESTATICO.:	0.5631	PSI / ft	DENS. EQUIVALENTE:	10.83 #/gal	1.298 g/lts

LODO: Fondo: Acondicionar el lodo a los mínimos valores compatibles con el sistema.
Circular Mínimo 2 o 3 circuitos completos

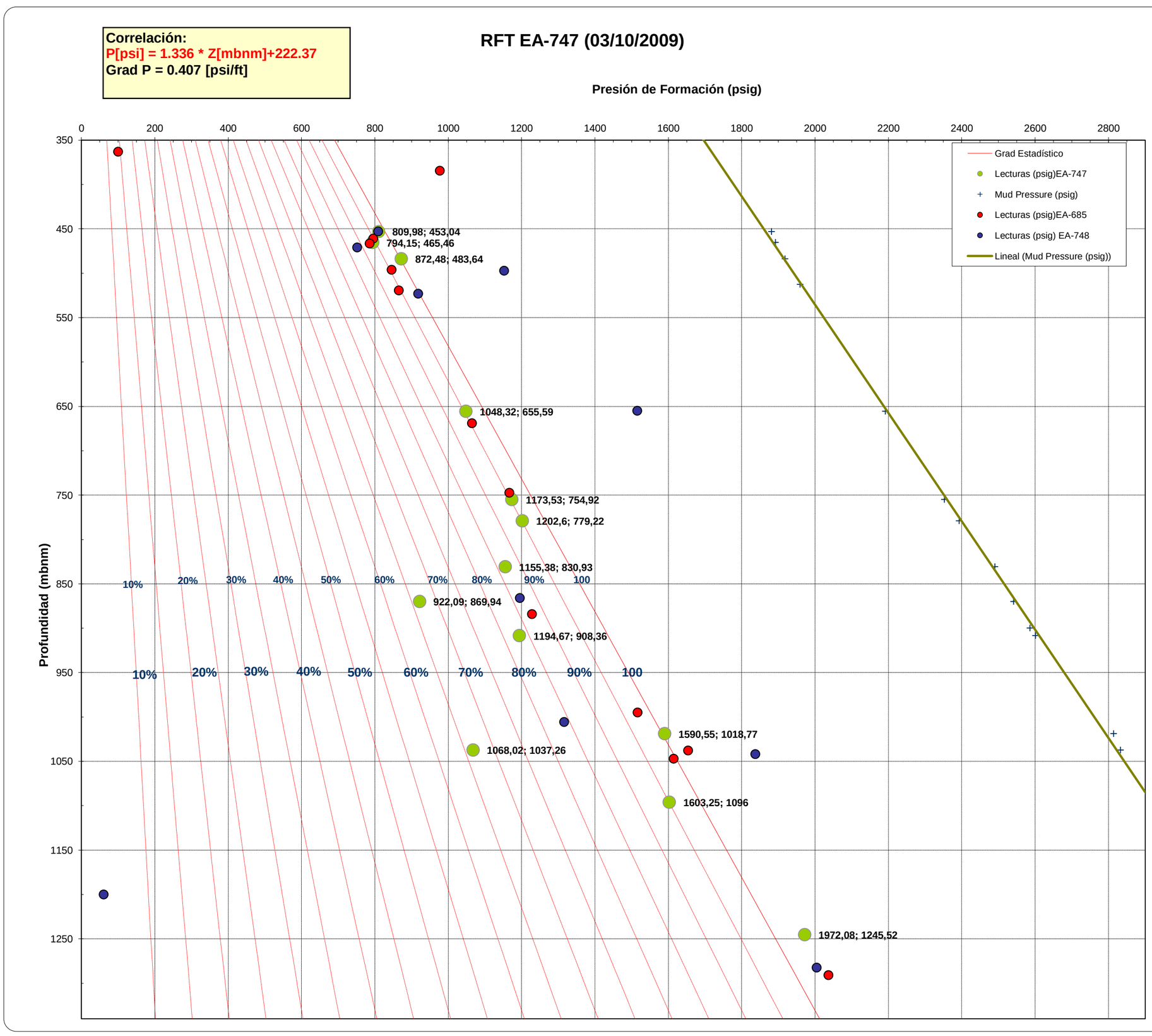
OBSERVACIONES :

OPTIMIZAR LAS MANIOBRAS PREVIAS AL INICIO DE LA OPERACION AL EFECTO DE ELIMINAR DEMORAS INNECESARIAS
LAVAR LINEAS ANTES DEL DESPLAZAMIENTO.
OBSERVAR ATENTAMENTE LA LLEGADA DEL TAPON DE DESPLAZAMIENTO.
UTILIZAR CABEZA DE CEMENTACIÓN CON SIMPLE ALOJAMIENTO PARA TAPONES
PRESION MAXIMA DE TRABAJO: 3000 psi

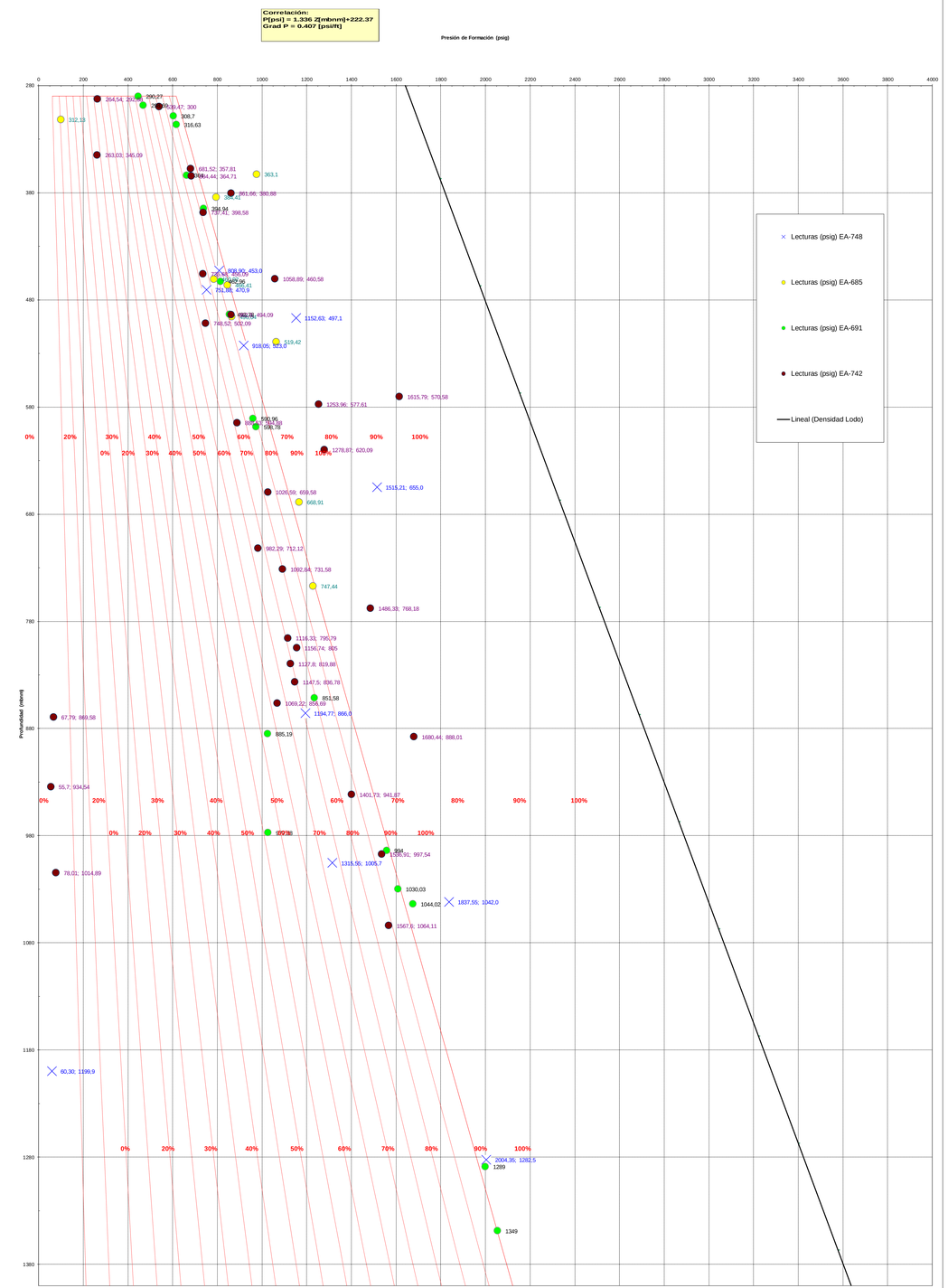
Por El Cliente Por BJ Services

Cota	663,1	N° Gage :								
EA-747 03/10/2009	**Prof. (mbbp)**	**Profundidad (mbnm)**	**Correlación Psia**	**Correlación kg/cm2**	**Lectura Psig**	**Mud Pres Psig**	**%**	**Movilidad md/cp**	**Correla**	**Observ.**
1	947,3	284,17	602	42		1588,94	**0**			Dry Test
2	957,6	294,49	616	43	441,28	1598,78	**72**	12,11		Volumetric Limited Draw down
3	982,9	319,76	650	46	653,56	1641,99	**101**	17,08		Volumetric Limited Draw down
4	1116,1	453,04	828	58	809,98	1881,46	**98**	104,68		Volumetric Limited Draw down
5	1128,6	465,46	844	59	794,15	1892,75	**94**	24,84		Volumetric Limited Draw down
6	1146,7	483,64	869	61	872,48	1918,12	**100**	3,83		Volumetric Limited Draw down
7	1175,8	512,68	907	64		1959,29	**0**			Dry Test
8	1318,7	655,59	1098	77	1048,32	2192,58	**95**	0,07		Volumetric Limited Draw down
9	1418,0	754,92	1231	87	1173,53	2353,44	**95**	11,26		Volumetric Limited Draw down
10	1442,3	779,22	1263	89	1202,6	2392,97	**95**	0,53		Volumetric Limited Draw down
11	1494,0	830,93	1332	94	1155,38	2491,07	**87**	3,55		Volumetric Limited Draw down
12	1533,0	869,94	1385	97	922,09	2541,56	**67**	0,45		Volumetric Limited Draw down
13	1563,0	899,94	1425	100		2586,38	**0**			
14	1571,46	908,36	1436	101	1194,67	2601,54	**83**	17,58		Volumetric Limited Draw down
15	1681,9	1018,77	1583	111	1590,55	2814,36	**100**	5,39		Volumetric Limited Draw down
16	1700,4	1037,26	1608	113	1068,02	2833,28	**66**	0,74		Volumetric Limited Draw down
17	1759,1	1096	1687	119	1603,25	2945,05	**95**	96,42		Volumetric Limited Draw down
18	1908,62	1245,52	1886	133	1972,08	3159,63	**105**	0,04		Volumetric Limited Draw down
19	1942,52	1279,42	1932	136	2487,2	3205,4	**129**	0,01		Volumetric Limited Draw down
20	1971,02	1307,92	1970	138	2026,4	3249,6	**103**	13,16		Volumetric Limited Draw down
29	2003,04	1339,94	2013	141	1929,4	3323,2	**96**	1796,12		Volumetric Limited Draw down

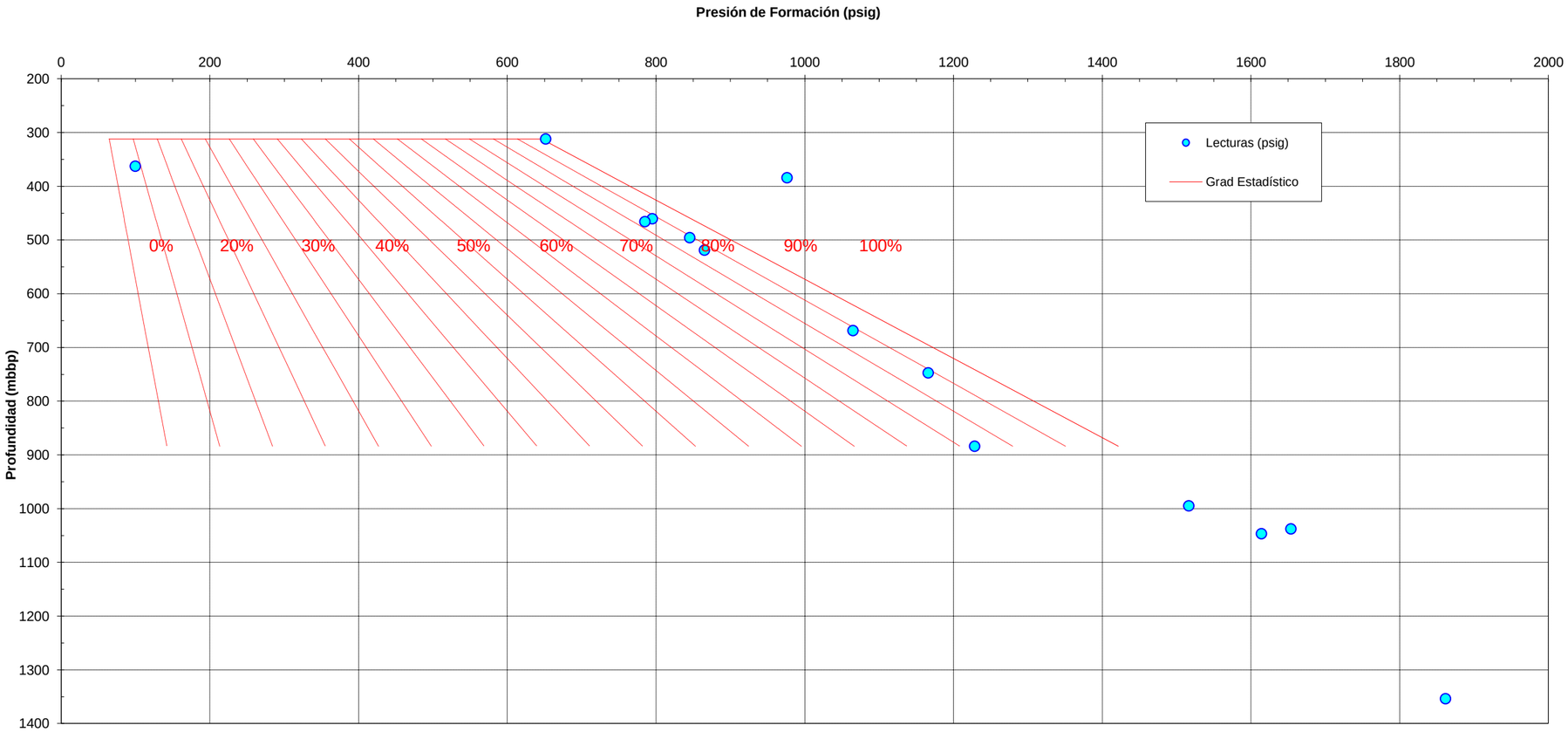
Correlación:
P[psi] = 1.336 * Z[mbnm]+222.37
Grad P = 0.407 [psi/ft]



RFT EA-748(21- 08 -2009)



RFT EA-685 (13- 11 -2005)



POZO:	***EA-748***
EQUIPO:	***KEY-8***

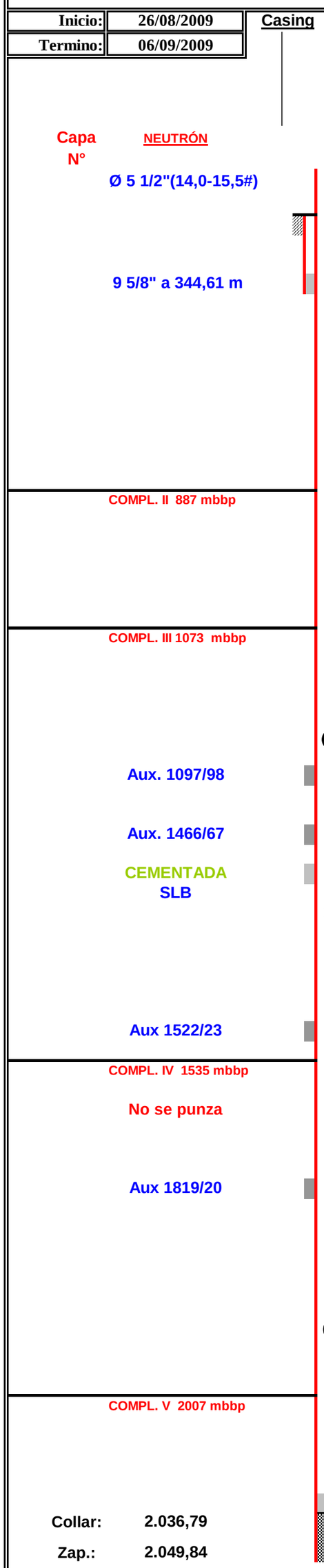
Inicio:	26/08/2009
Termino:	06/09/2009

OBJETO:	***TERMINACION***
Est.Actual :	***En producción***
PROYECTO:	TERMINACION 2009

CABLE	Cta	FRAC	Acido	M.Fdo.
ARTEX	ILUMBER	LUMBE	LUMBE	RISTENS

PEP:	**RS1EC.09P4.53.P0000**
OI:	**-**
COSTO DRILLING ABC U$S:	**129.700,00**
PRESUPUESTO U$S:	**93.092,04**
ACTUAL u$S	**118.745,65**

FLUIDO: AGUA DULCE CON MARCAT 0,4% (MARBAR)



	<	1085,0 - 1088,5	D	**351** l/h - **Pleo** - N: **952** m - IT: 6 % - Dens: **0,951** - Sal: **3,5** - PH: **10** - T **28** °C	4 hs
XO			C	**3000** l/h - **ASF LRPleo** - N: **870** m - Sal: **7,5** - PH: **9** - Temp: **32** °C	6 hs
se	<	1498,0 - 1500	C1	SE - Rompe con 2000 psi - Admite 98 LPM con 1800 psi. **SE**	
	<	~~1674,5 - 1676,0~~			
X		1834,0 - 1836,0	B	**2400** l/h - **ASF** - N: **1100** m - Sal: **4** - PH: **8** - Temp: **28** °C	8 hs
	<	1915,0 - 1918,5	A	**1800** l/h - **Pleo + Gas** - N: **1690** m - IT: **8** % - AE: **7** % - AB: **1** % - Dens: **0,879**.- Sal: **2,4** - PH: **8** - Temp: **40** °C	4 hs

Hs Ensayo Formación:

Transporto equipo, desde el pozo EA-744, sobre 16 km.
Monto equipo completo, coloco y probo BOP.
Cia Artex registro perfil N-CBL-VDL desde 2030 m (fondo) hasta 990 m. Con 500 psi. Tramo 1155 m hasta 975 m (mala aislación)
Bajo Pkr con cañeria armando. Pkr en 1758 m
Cia **Artex** punzo con ristra 1 11/16" 2 Tpp 11 gr **Aux. 1819/20** m
Cia **SCH** cemento Aux. 1819/20 m con 30 bolsas de cmto G.
Pkr en 1455 m
Cia **Artex** punzo con ristra 1 11/16" 2 Tpp 11 gr **Aux. 1522/23** m. Ctto cielo cmto 1784 m
Fijo Pkr en 1397.
Cia **SCH** cemento **Aux. 1522/23** m con 35 bolsas cmto G.
Cia **Artex** punzo con ristra 1 11/16" 2 Tpp - 11 gr **Aux. 1466,5/67,5** m. Ctto cielo cmto 1492 m
Cia **SCH** cemento Aux 1466,5/67,5 m con 35 bolsas cmto G.
Cia **Artex** punzo con ristra 1 11/16" **Aux 1097/98** m Ctto cielo cmto en 1445 m
Cia **SCH** cemento Aux 1097/98 m con 60 bolsas de cmto G. Saco Pkr
Baja M.F. con fresa 120 mm hasta 1078 m. ctto 1° cielo, roto cmto. Hasta 1100 m. Paso libre
Profundizo M.F. + fresa 120 mm hasta 1441 m Ctto 2° cielo, roto cmto. Hasta 1469 m Paso libre
Profundizo M.F. + fresa 120 mm hasta 1490 m. Ctto 3° cielo, roto cmto. Hasta 1524 m Paso libre
Profundizo M.F. + fresa 120 mm hasta 1777 m. Ctto 4° cielo, roto cmto. Hasta 1822 m
Profundizo hasta **2032 m Fondo**. Saco M.Fondo + fresa 120 mm. Bajo Tpn y Pkr
Realizo hermeticidad por pistoneo a tramos **1522/23 - 1819/29 m Positivo** y tramo **1097/98 - 1466,5/67,5 m Positivo**. Saco Tpn y Pkr. **Artex** registro CBL-VDL, 1925 a 1050 m Bajo Tbg de la torre. Punta lisa 998 m. Bajo nivel por pistoneo a 650 m
Cia **Artex** punza en balance con cañon 4" 4 Tpp 32 gr. Las siguientes capas: **1915,0/18,5 - 1834,0/36,0 - 1498,0/1500,0 - 1473,5/1476,0 - 1085,0/88,5** m T. Tiros: **177**.-
Bajo Tpn y Pkr con tbg de la torre, ensaya por pistoneo según se indica con las letras: (**A**) **(B) - (C) - (C1) - (D)**
Cía SLB cementa capa **1473,5/76,0** c/20 bls. Baja fresa + M. de Fdo. Rota cemento desde 1466,60 m hasta 1473 m. Baja Pkr realiza hermeticidad por vaciado ok.
Baja instalación de tubing.
Baja bomba insertable y varillas. **Desmonta equipo**

Admisión del pozo 11.587 lts

Nota:

Fondo WL: 2030 m

INST. TBG: B/collar+filtro+BHD+7 tbg+ancla+194 tbg (2 7/8")

INST.VAR.: Bba. RHBC+12 Var. Peso Ø 1 1/2"+68 Var. Ø 3/4"+88 Var. Ø 7/8"+79 Var. Ø 1"

2 trozos Var. Ø 1 "+1 vastago Ø 1 1/2"

DIVISION REGIONAL SUR
UNIDAD ECONOMICA CHUBUT - C.S.

EQUIPO: PI-222 **POZO:** EA-685

DISTRIT0 N°: MANANTIALRES BHER **CIA DE CABLE:** Schlumberger
PROYECTO : DRILL 150 **CIA DE FRACTURA:** Schlumberger

ESQUEMA DE TERMINACIÓN

PEP: RS1EC.5C01.53.P0007

OBJETIVO: Poner en Producción

INICIO: 08-dic-05
TERMINO: 15-dic-05

CASING: 5 1/2"
9-5/8" 14 #

ACTUAL: Baja Bba.
Proximo DTM al EA -668

384 5/7

(T)

		CAUDAL	FLUIDO	NIVEL	ANALISIS				SAL	Hs Ensayo	QB	QN
					I-T	DEN	Temp	A/SEP				
1128,00	10	800	Pet.	976	6	0,900	26	6	4.2/PH-8	6	19,20	18,05
1130,00												
1158,00	9	1040	Pet.	974	12	0,920	22	11	3.5/PH-9	6	24,96	22,21
1161,00												
1331,00	8	420	Pet.	1180	20	0,890	25	20	3.5/PH-9	5,45	10,08	8,06
1333,00						(15º)						
1460,50	7	3000	Ag. S/R	620			30		4.6/PH-8	5		
1462,50		Cto. C/15 bls. Pi: 2100 ; Pf: 2700 ; Pc: 3600 PSI										
		Ensayó hermeticidad con resultado positivo										
1546,00	6	200	Ag. S/R	1464			28		4.2/PH-8	6	4,80	4,80
1549,00												
1577,00	5	265	Pet.	1470	14	0,890	32	14	4.2/PH-8	7	6,36	5,47
1579,00						(15º)						
		R.F.c/1800 psi										
1657,00	4	424	Pet.	1490	16	0,860	30	16	4.2/PH-8	6	10,18	8,55
1658,50						(15ª)						
1690,00	3	180	Ag. S/R	1019			20		3.5/PH-9	6	4,32	4,32
1693,00												
1709,00	2	1600	Pet.	154	8	0,910	32	8	4.2/8	6	38,40	35,33
1711,00												
2010 (+-)		Tapón "N" c/D. Bailer a fijar										
2016,50	1	2400	Ag.	1450			25		4.2/8	6	57,60	57,60
2018,50												
											175,90	164,39

Collar: 2082,65
Zapato: 2097,61
P. Final: 2105,00

SHARC

YPF

Cotización de Trepanos
Pozo EA:747

MegaDiamond
ULTRA-HARD MATERIALS

Calle El Cano 176 Chubut Tel. 0297-4460040–4464433

Comodoro Rivadavia, 17 Septiembre 2009

Señores
YPF S.A.
ATN: Carlos Robledo
Departamento de perforación

De nuestra consideración:

Adjuntamos para su análisis y consideración propuesta Técnica-económica para trépanos de PDC y TCI

Propuesta Técnica-Económica

Pozo: EA -747

Para este pozo se propone dos alternativa con y si costo de trepano de TCI, dado que se perforara cuerpo intrrusivo, el primer trepano que se propone TCI Tipo **GF15PS**, **(IADC437),** hasta mas menos los **750mts**, fin de cuerpo intrusivo, para luego continuar con trepano PDC tipo M616MUPX, Reparado, hasta TD, programado 2050mts.

Se trabajaran los trépanos de PDC a costo métrico, según lo acordado oportunamente con **YPF S.A. Los triconos según lista de precios.**

Esta propuesta esta fundamentada en optimizar y bajar los tiempos de perforación y aumentar las ROP, sin duda que esto significara un esfuerzo y una continuidad de trabajo por la cual estamos predispuesto alcanzar nuestros objetivos.

Adjuntamos reseña o justificación Técnica de dicha propuesta, Fichas Técnicas de Trepanos

Sin otro particular saluda a ustedes muy atte. Agradeciendo poder participar en vuestras operaciones.

Rolando Gimenez
Ventas Comodoro Rivadavia

Escala de valores a reconocer en caso de LIH o Scrap de trepanos de PDC

Costo de Trepano Tipo PDC MSi516MUPX Nuevo u$s 48.500
Costo de trepano Tipo PDC Mi516MUPX Nuevo u$s 48.500
Costo de Trepanos Tipo PDC Mi616PX Nuevo u$s 44.500
Costo de Trepanos Tipo PDC Mi519PX Nuevo u$s 44.500

En caso que el trepano salga inutilizado en su primer carrera de Nuevo, el costo será Igual al 100% de un trepano Nuevo de iguales características

Perdida LIH o Scrap en su Primera reparación será igual al 85% del valor de un trepano nuevo.

Perdida LIH o Scrap en su Segunda reparación será igual al 65% del valor de un trepano nuevo.

Perdida LIH o Scrap en su Tercera reparación será igual al 50% del valor de un trepano nuevo.

Perdida LIH o Scrap en su Cuarta reparación será igual al 40% del valor de un trepanos nuevo

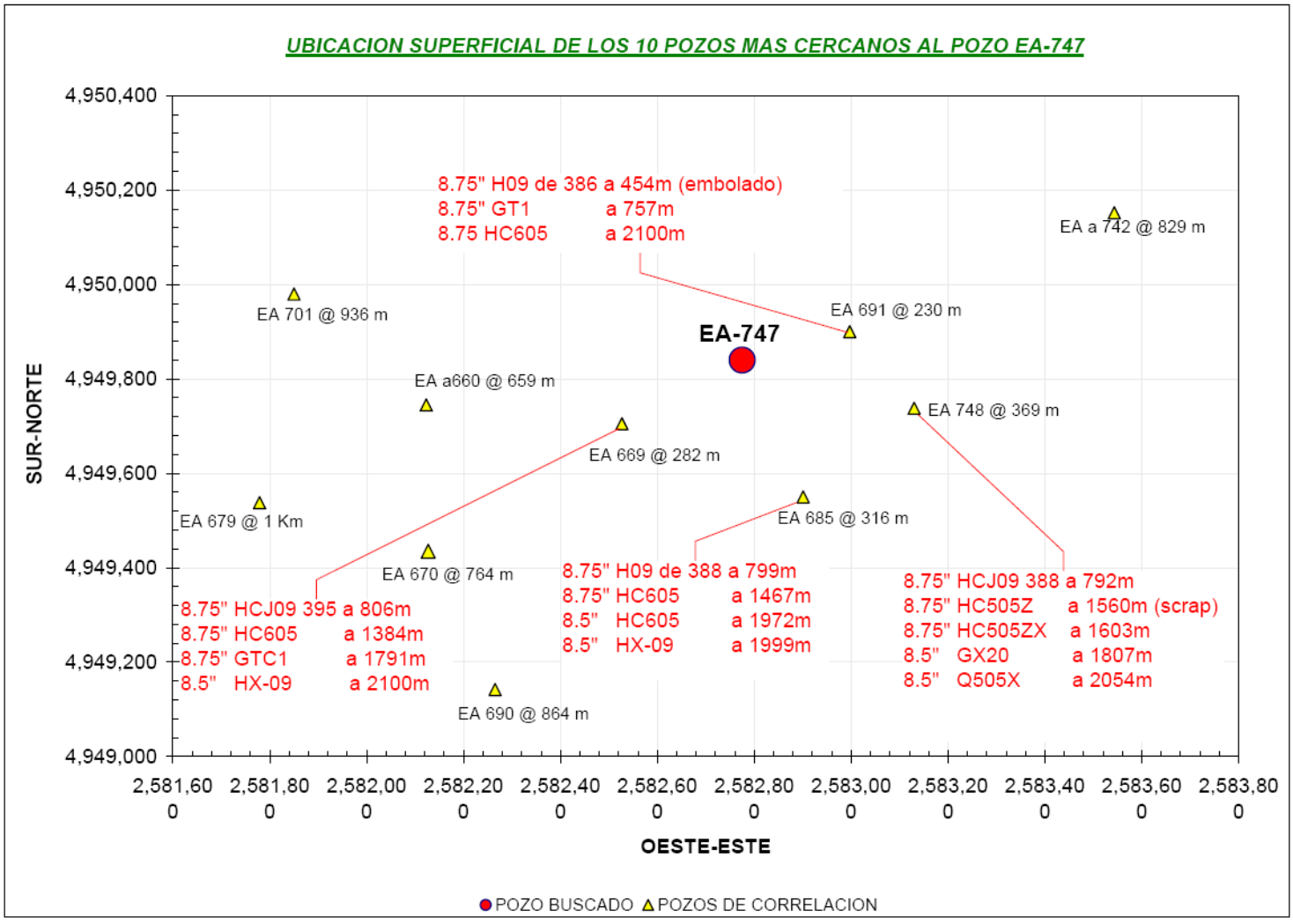
Para el caso de trepanos REPARADOS se toma el 50% del Valor de Trepanos Nuevos y se mantiene igual escala de descuentos

Sin otro particular saluda a ustedes muy atte. Quedando a vuestra disposición ante cualquier consulta y agradeciendo el poder participar en vuestras operaciones.

Rolando Gimenez
Ventas Comodoro Rivadavia

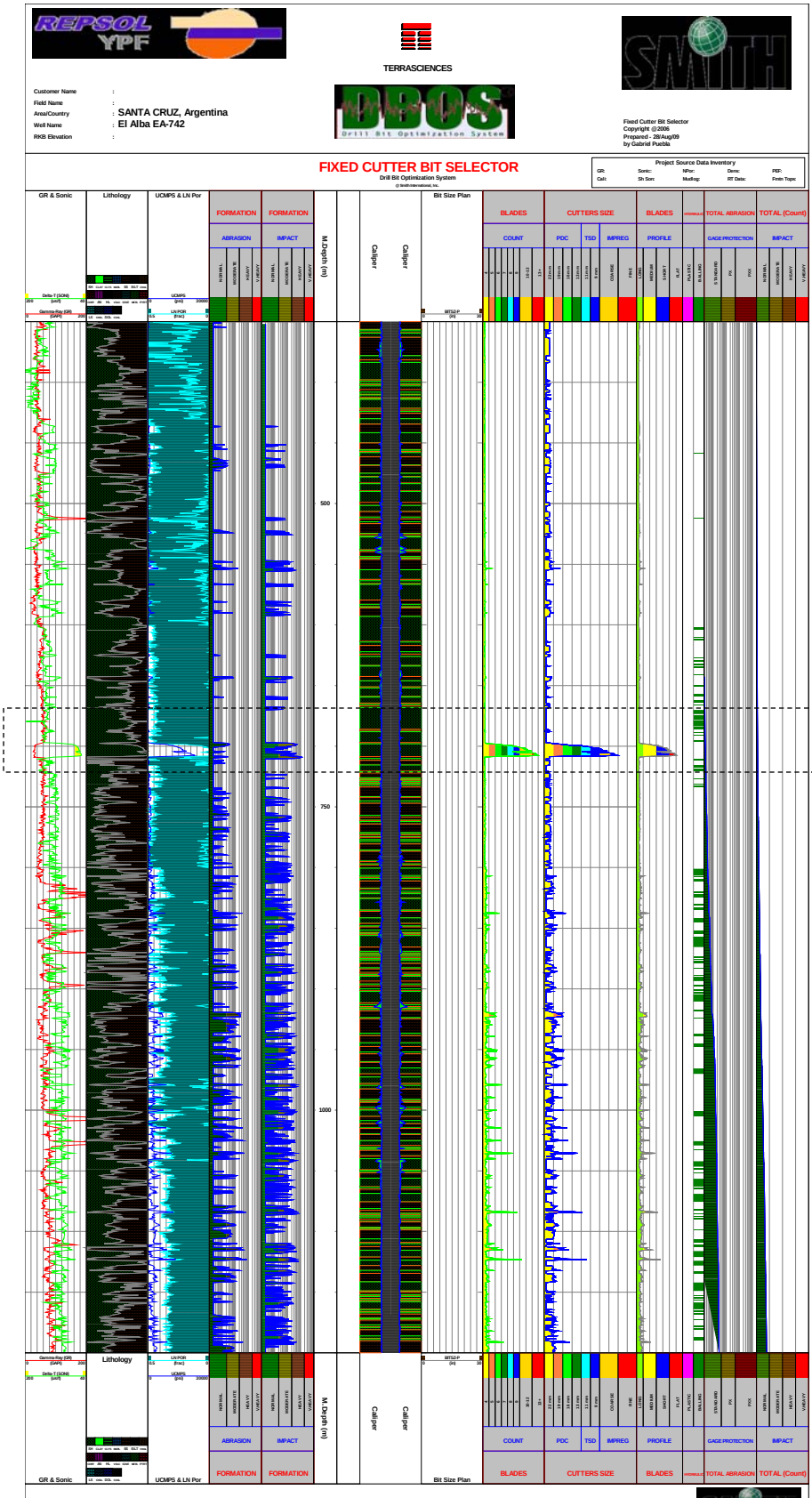
El presente anexo técnico tiene el fin de ampliar brevemente la propuesta económica adjunta.

Para este fin se procedió a realizar DBOS™ estudio de compresibilidad abrasión e impacto del reciente pozo perforado EA-748, el cual figura como referencia al EA-747, del cual se contaban con la información necesarios para realizar dicho estudio, es decir perfiles tipo sónico y gamma mas control geológico.

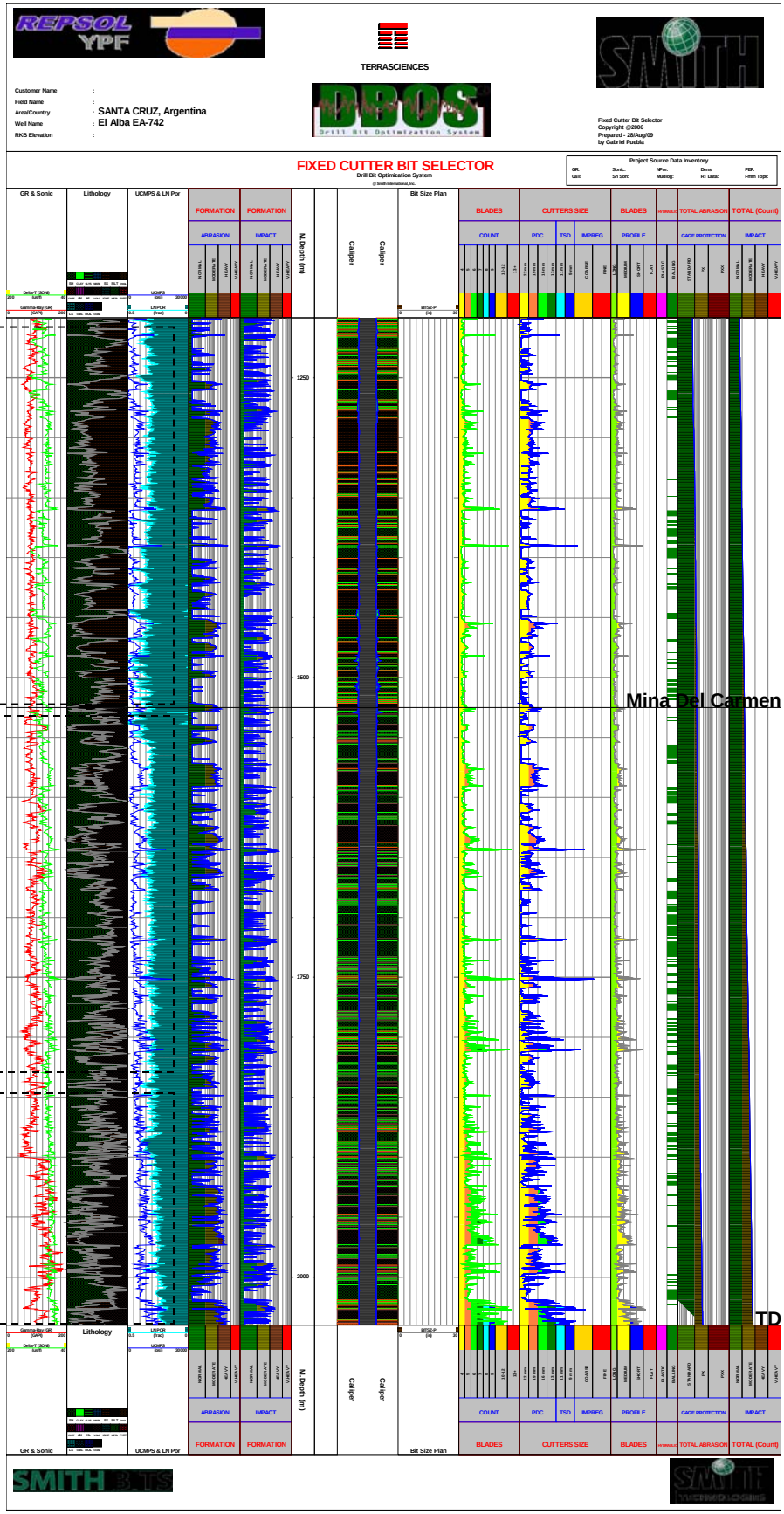


Observando los pozos de referencia solo uno de los cuatro pozos más cercanos a EA 747 arribo a profundidad final con PDC luego de atravesar intrusivo con trépano de insertos. Resto requirió carreras

adicionales de PDC o insertos siendo comunes condiciones de desgaste producidas por impacto en algunos casos desencadenando en un anillamiento como es el caso de la primera carrera de PDC de 8 ¾” en reciente pozo EA 748.



Cuerpo Intrusivo



Picos puntuales de compresibilidad de hasta 15000PSi

Alta generación de impacto

Picos puntuales de compresibilidad de hasta 21000PSi

Alta generación de impacto

Mayor consistencia en dureza de roca aumentando en ultimos 20m hasta 15000 PSI con alta taza abrasión en toda la sección.

Por lo puntos expuestos anteriormente es por eso que propone luego de atravesado el cuerpo intrusivo con trépano 8 ¾" de insertos tipo GF-15PS IADC447, se recomienda trépano 8 ¾" tipo M616VPX, PDC de 6 aletas cortadores de 16mm el cual esta provisto de Lo Vibes (sufijo V) con el fin de contrarrestar efecto del impacto en la estructura de corte. Adicional se aumenta porcentaje de diamante en carrera respecto a un trépano de 5 aletas 16mm con el fin de poder llegar a profundidad final en una carrera. Con respecto a los antecedentes del mismo, el mencionado diseño fue utilizado recientemente en el campo La cholita de YPF, perforando enteramente la sección de 8 ¾ incluyendo fm. Castillo arribando a TD. Cabe destacar que dicha formación presenta por secciones alto impacto combinado con valores considerables de abrasión propia de la litología perforada.

8-3/4" GF15HV
(222.25 MM)

The Gemini Dynamic Twin Seal System is the industry leader in durability and reliability. Offering two precisely configured seals with extraordinary material properties, Gemini bits deliver consistent performance over long run intervals.

SPECIFICATIONS

Bearing Type	Sealed Friction Bearing
Seal Type	Gemini™ Twin Seal System
Bit Connection Type	4-1/2" API Reg.
Rows	Total: 10 Inner: 7 Gage: 3
Inserts/Teeth	Total: 99 Inner: 58 Gage: 41

OPERATING PARAMETERS

Weight on Bit	10,000 To 55,000 (lbs) 4,545 To 24,998 (daN) 4 To 25 (Tonnes)
Rotary Speed (RPM)	300 To 50

Operating parameters are typical ranges. Please contact your Smith Bits representative for recommendations for your individual well.

FEATURES

- The Gemini twin seal system consists of a primary seal which protects the bearing, and a secondary seal that protects the primary seal. This dual seal system will perform reliably for extended periods of time in high RPM, heavier WOB, high mud weight and severe dogleg applications.

- Spinodal 2 bearing ensures longer runs at higher ROP. This proprietary material offers maximum wear resistance and withstands extreme load forces for longer periods than conventional bearing materials.

- V-Flo™ directs nozzles to the leading side of the following bit cone to maximize cleaning. The resulting upward spiral flow enhances bottom hole cleaning, prevents bit balling and allows the bit to drill at maximum ROP.

SMITH BITS

PEOPLE TECHNOLOGY RESULTS

SMITH

Date: 11/02/2005 ID: 6503

8-3/4" M616VPX

(222.25 MM)

ER: 20223 IADC: M323

PEOPLE TECHNOLOGY RESULTS

FEATURES

Smith Bits' standard line of PDC bits are designed to deliver premium performance and excellent durability in a wide range of challenging applications.

SPECIFICATIONS

Total Cutters	41
Cutter Size	16mm (5/8")
Face Cutters	(35) 16mm
Gauge Cutters	(6) 16mm
Blade Count	6
Nozzles	6 Standard Series 60N
Bit Connection	4-1/2" API Reg.
Junk Slot Area (sq in)	19.5
Face Volume (cu in)	61.5
Void Volume Ratio (%)	73.2
Gauge	Length: 2" Protection: Options available
Length	Make-Up: 10-5/8" Overall: 14-13/16"
Fishing Neck	Diameter: 6" Length: 4-5/16"

OPERATING PARAMETERS

Rotary Speed	Suitable for Rotary & PDM
Weight-on-Bit	3,500 To 30,000 (lbs) 1,591 To 13,635 (daN) 2 To 14 (Tonnes)
Flow Rate (GPM)	300 To 650
Hydraulic Horsepower (HSI)	1 To 8

Operating parameters are typical ranges. Please contact your Smith Bits representative for recommendations for your individual well.

SMITH BITS

PEOPLE TECHNOLOGY RESULTS

SMITH

Date: 04/07/2009 ID: 10008

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_011LUP	FN:22	PRODUCER	04−Oct−2009 01:22	2060.1 M	228.9 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_112PUP	FN:22	PRODUCER	04−Oct−2009 03:49	2060.1 M	229.1 M
CUSTOMER	AIT_SONIC_TLD_MCFL_112PUC	FN:23	CUSTOMER	04−Oct−2009 03:49	2060.1 M	229.1 M

Integrated Hole/Cement Volume Summary

Hole Volume = 73.89 M3

Cement Volume = 48.21 M3 (assuming 5.50 IN casing O.D.)

Computed from 2053.7 M to 379.0 M using data channel(s) HCAL

OP System Version: 17C0−154

AIT−M	unofficial	DSLT−H	unofficial
HILTH−FTB	unofficial	DTC−H	unofficial

PIP SUMMARY

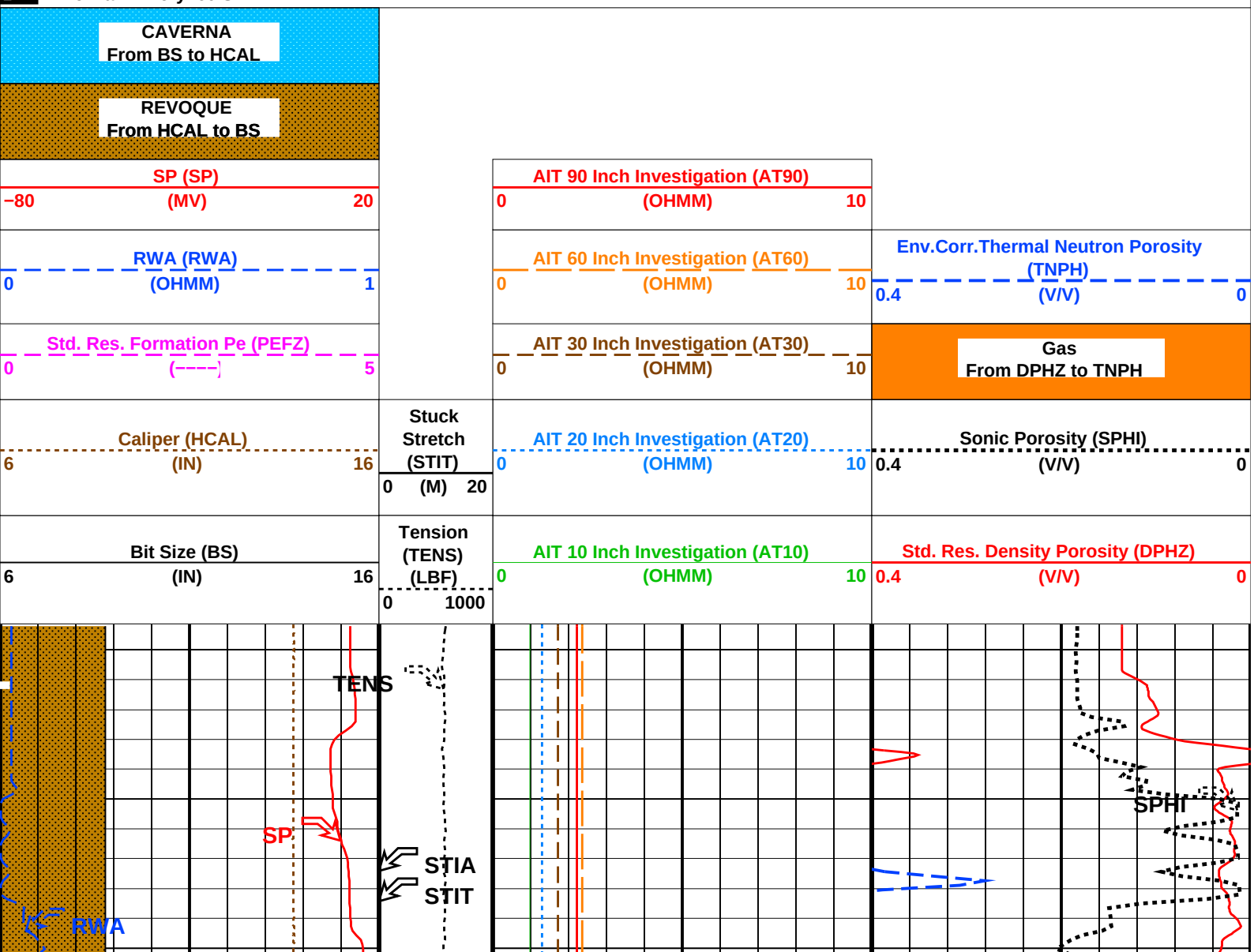
Integrated Hole Volume Minor Pip Every 0.1 M3

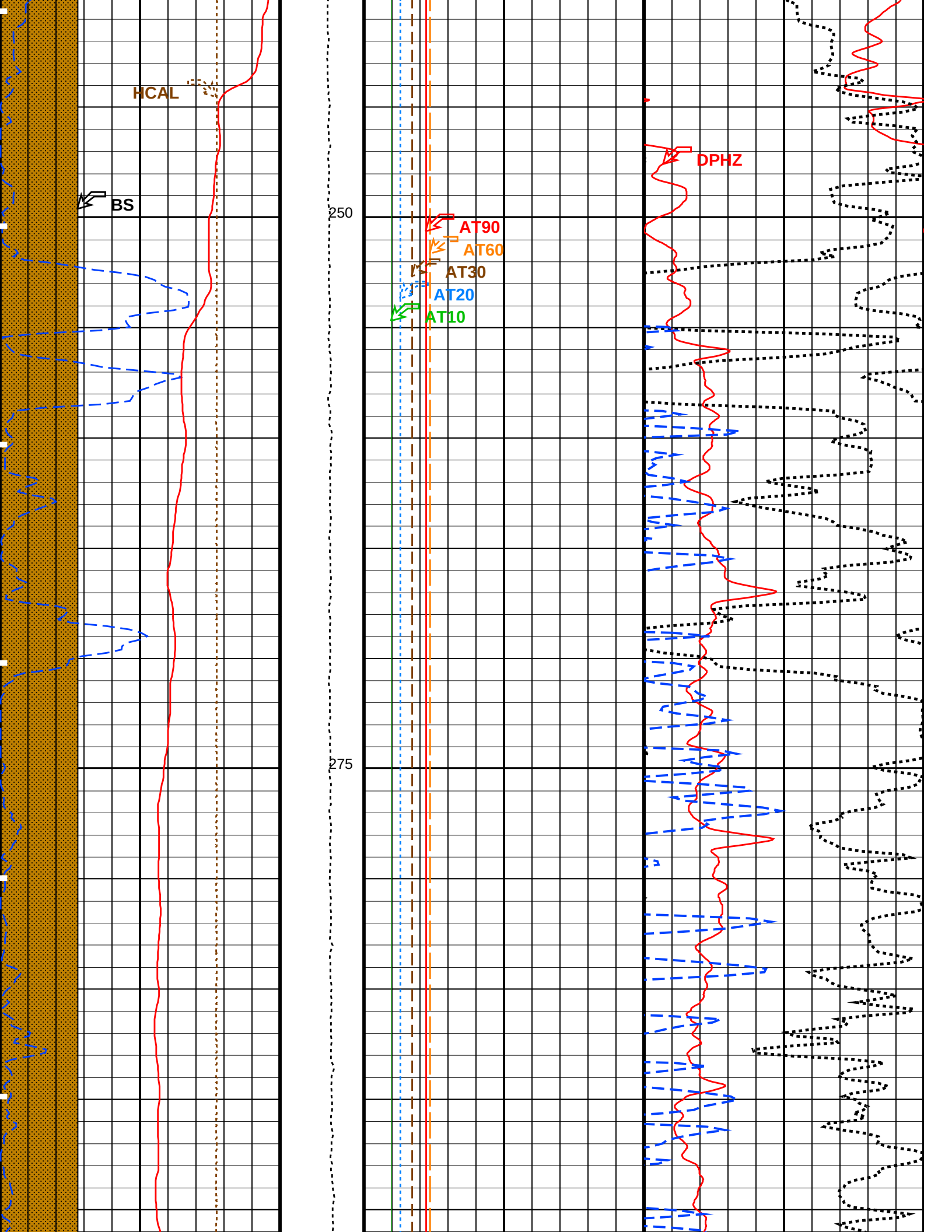
Integrated Hole Volume Major Pip Every 1 M3

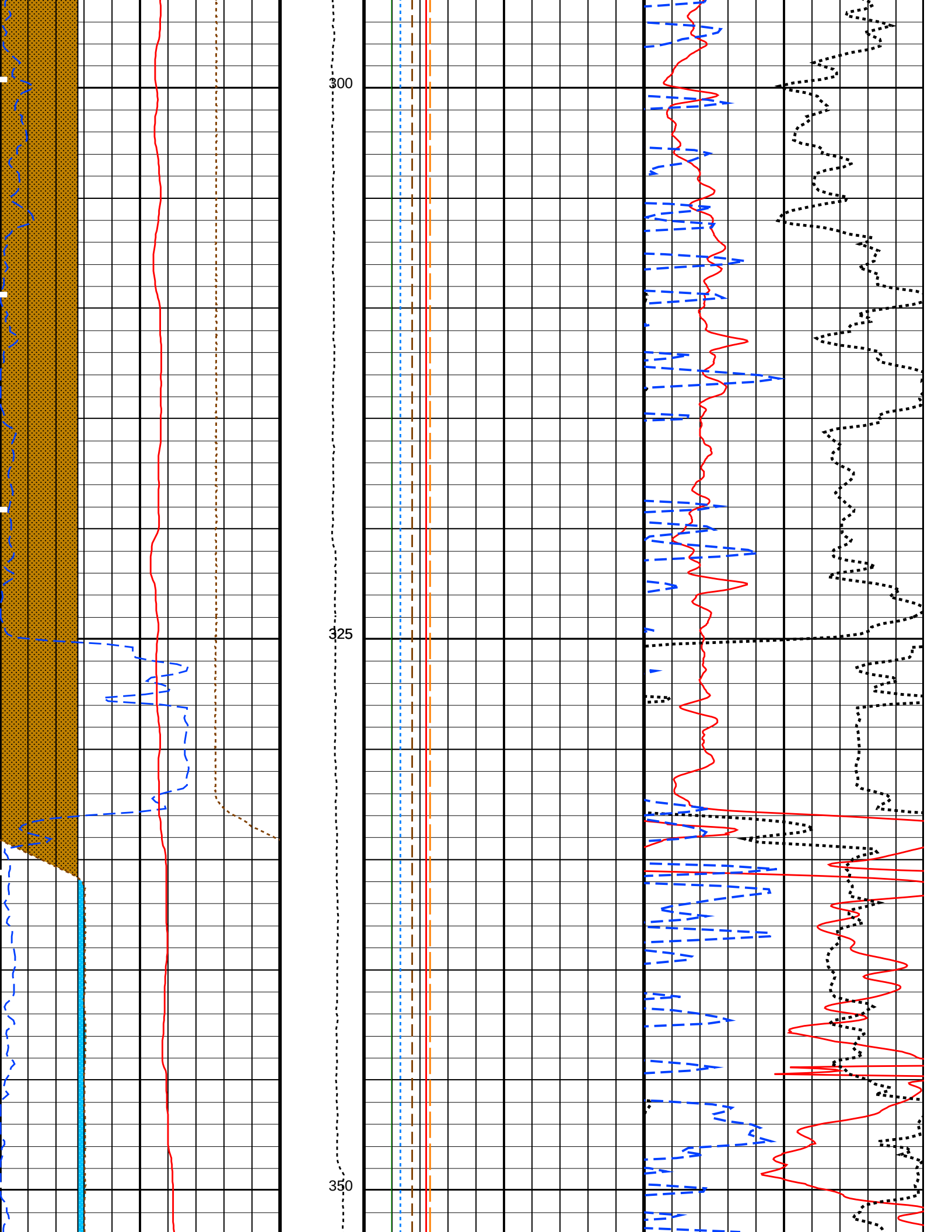
Integrated Cement Volume Minor Pip Every 0.1 M3

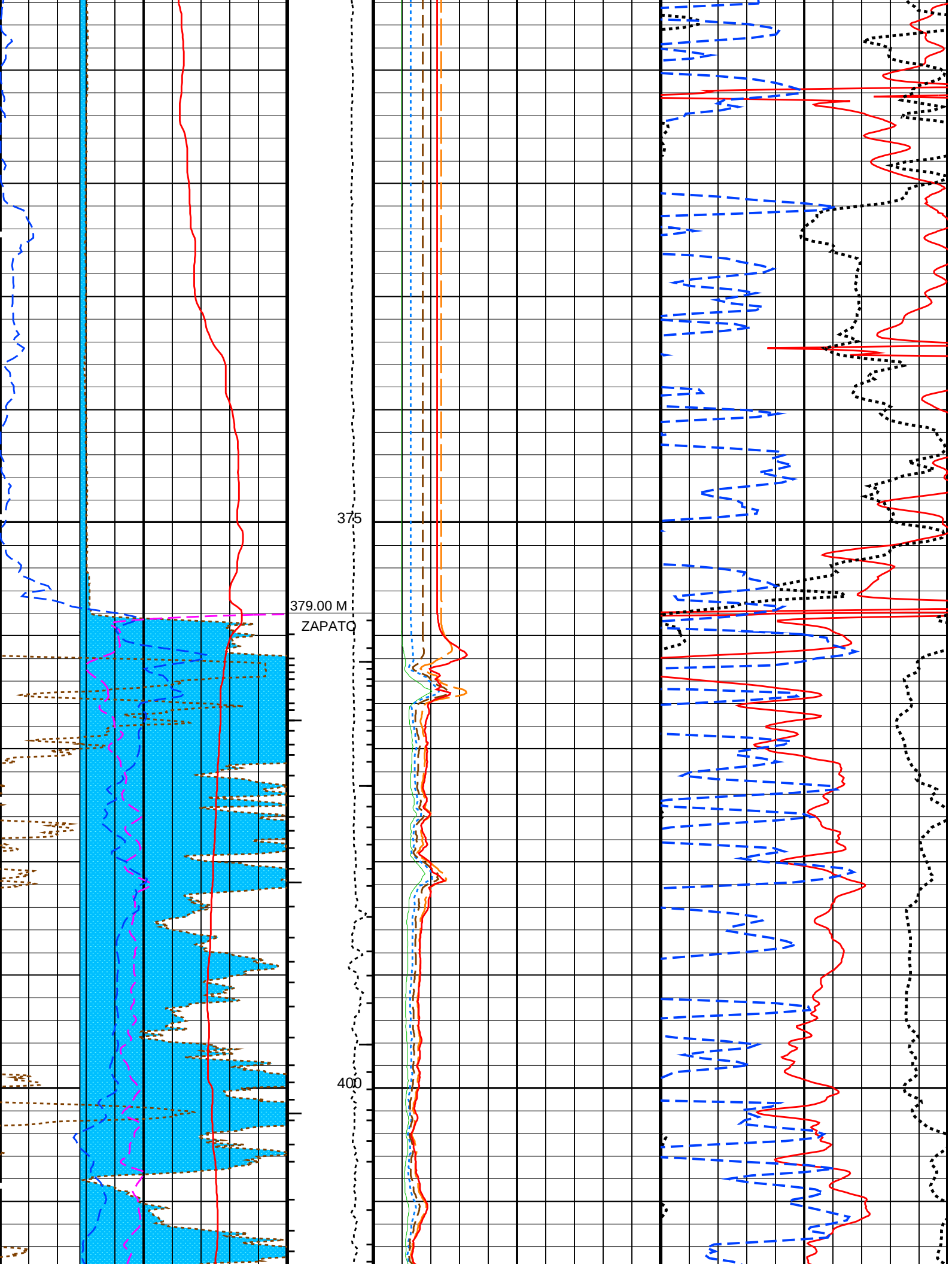
Integrated Cement Volume Major Pip Every 1 M3

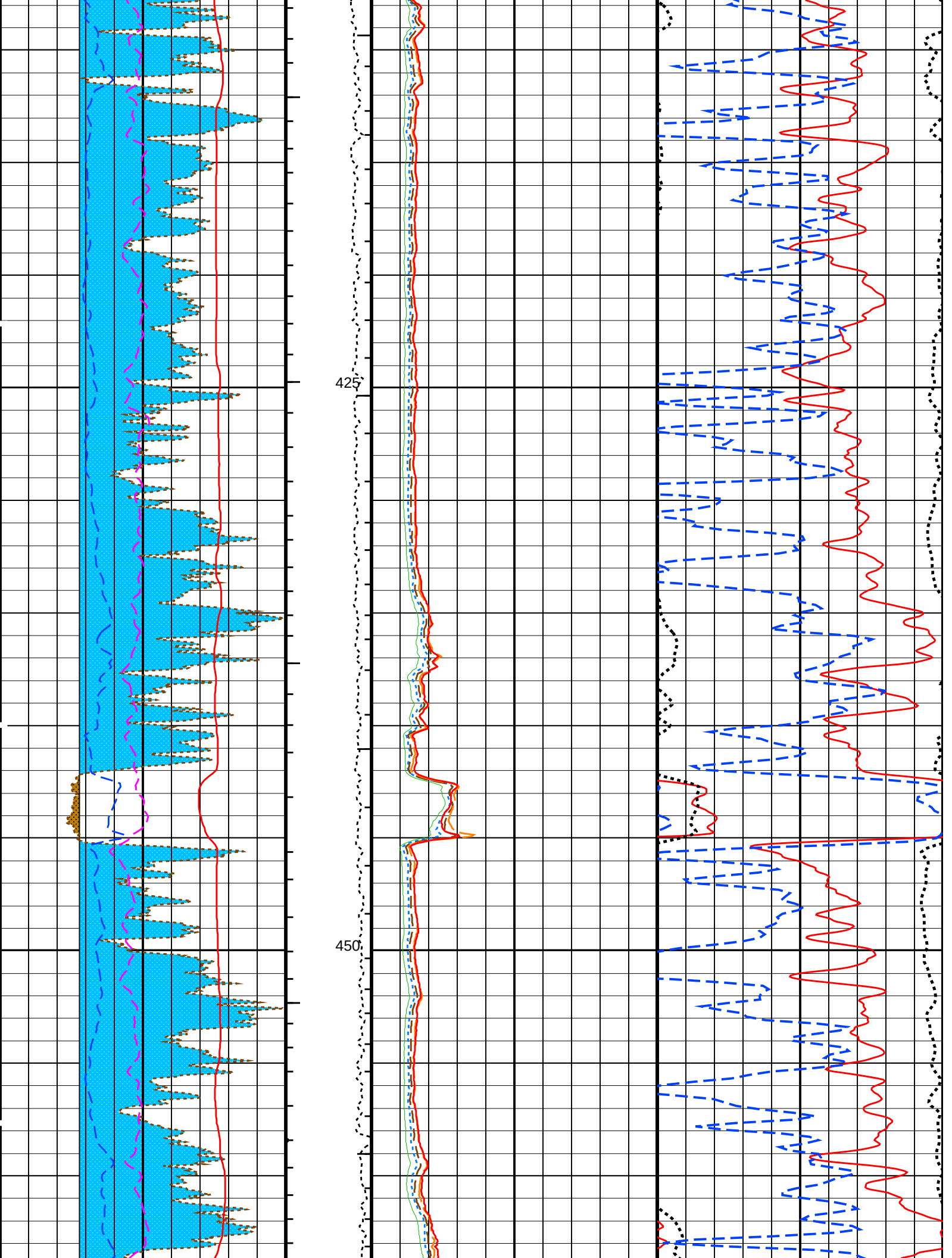
Time Mark Every 60 S

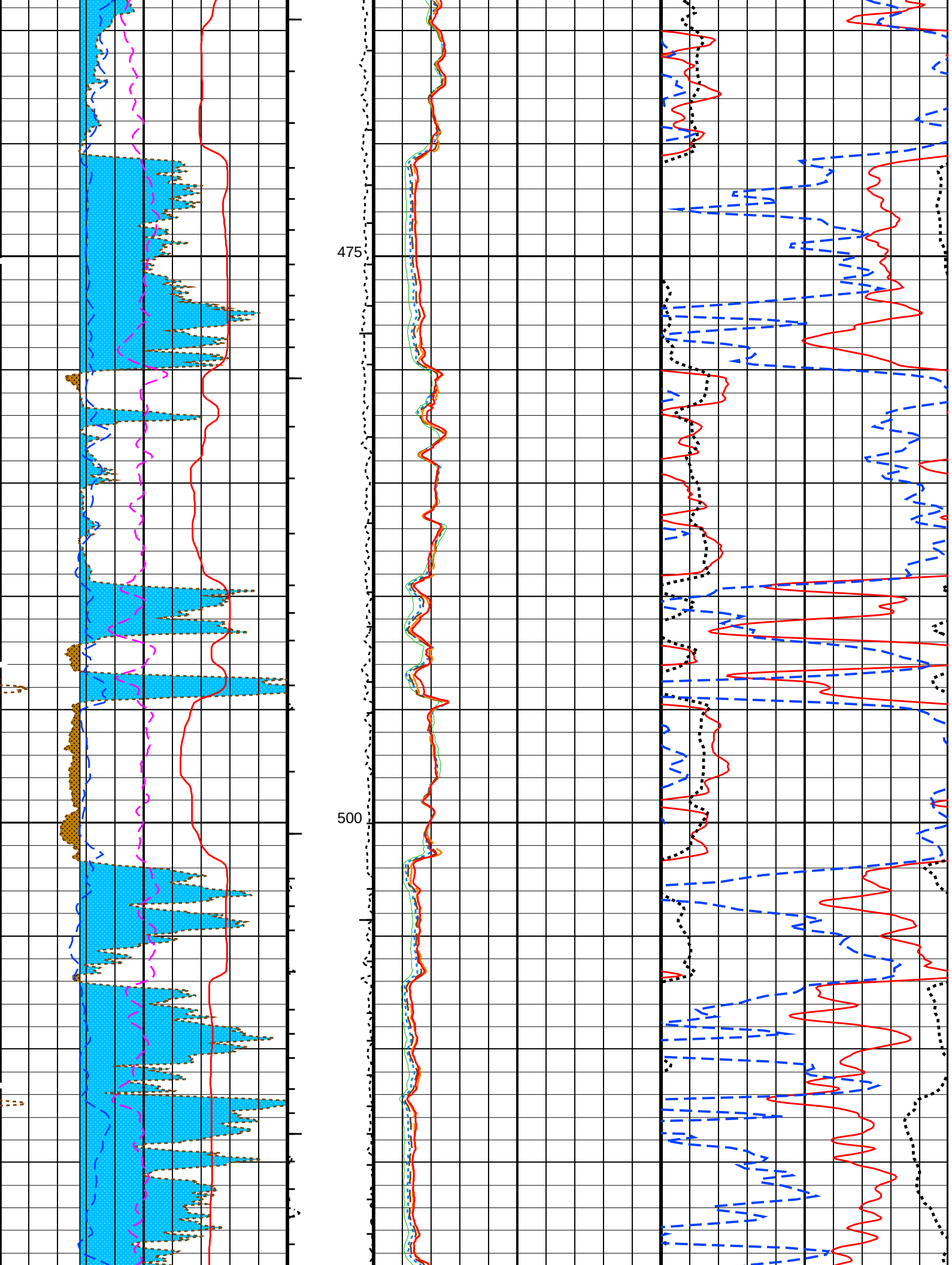


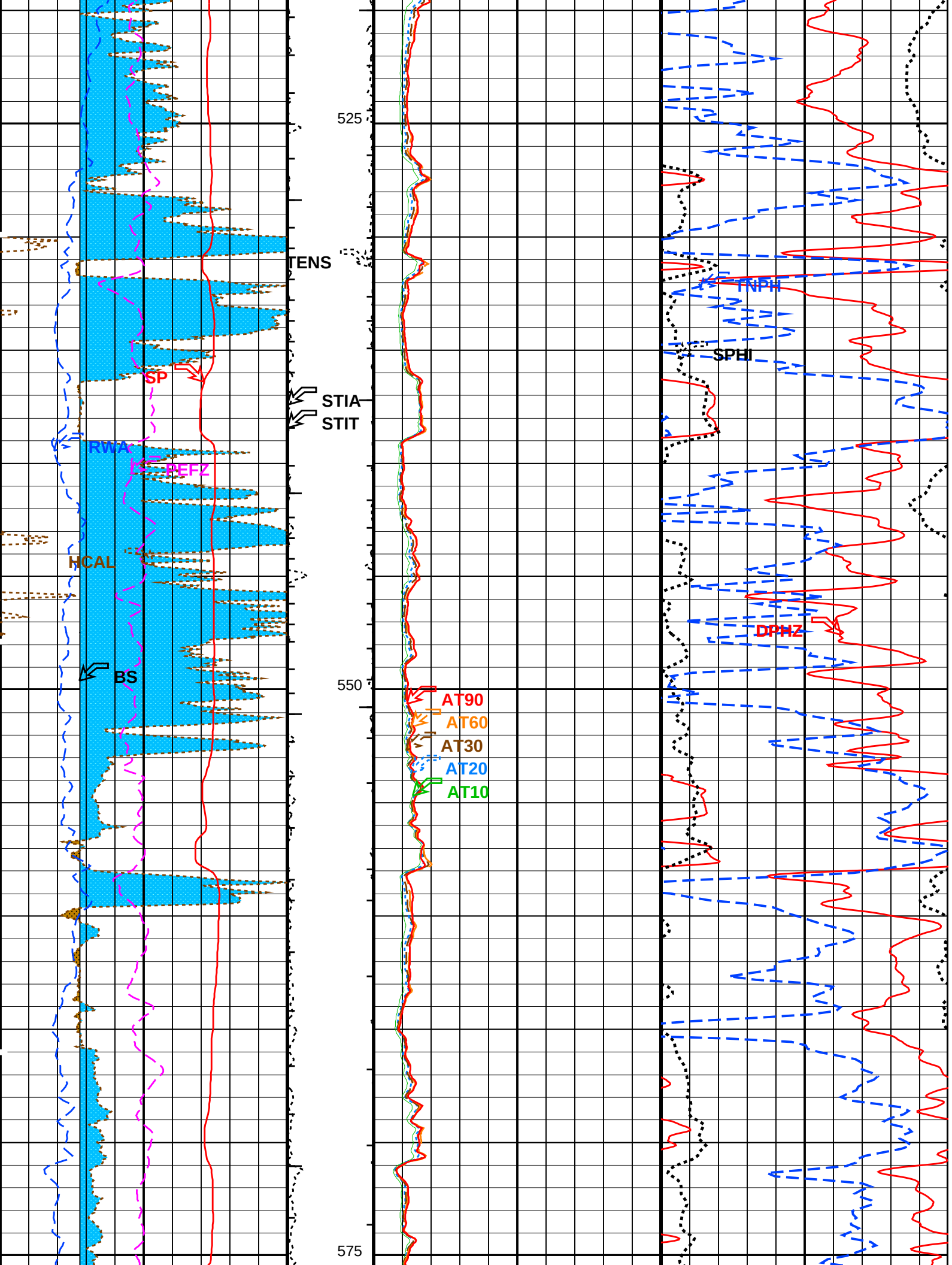

HCAL
BS
250
AT90
AT60
AT30
AT20
AT10
DPHZ
275

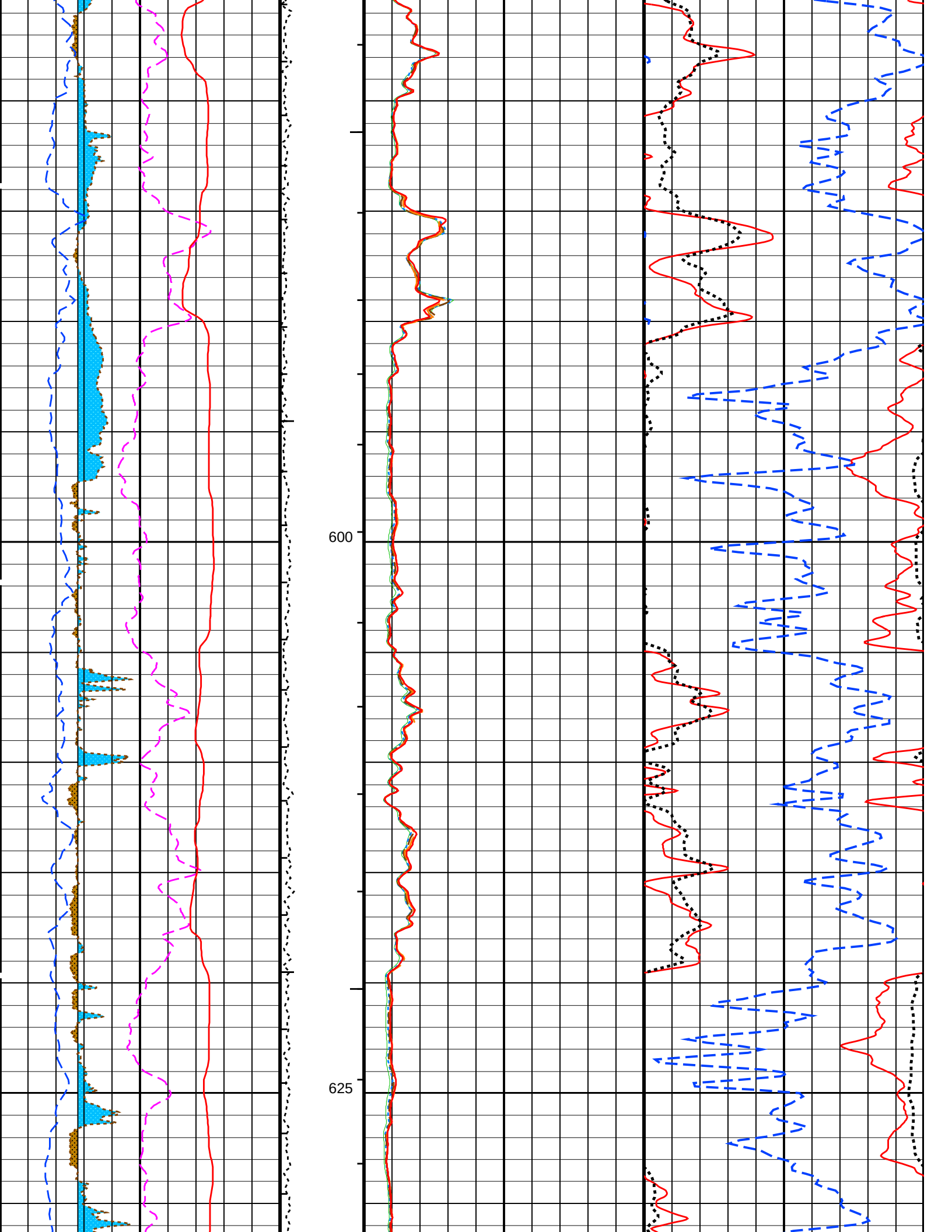

300
325
350

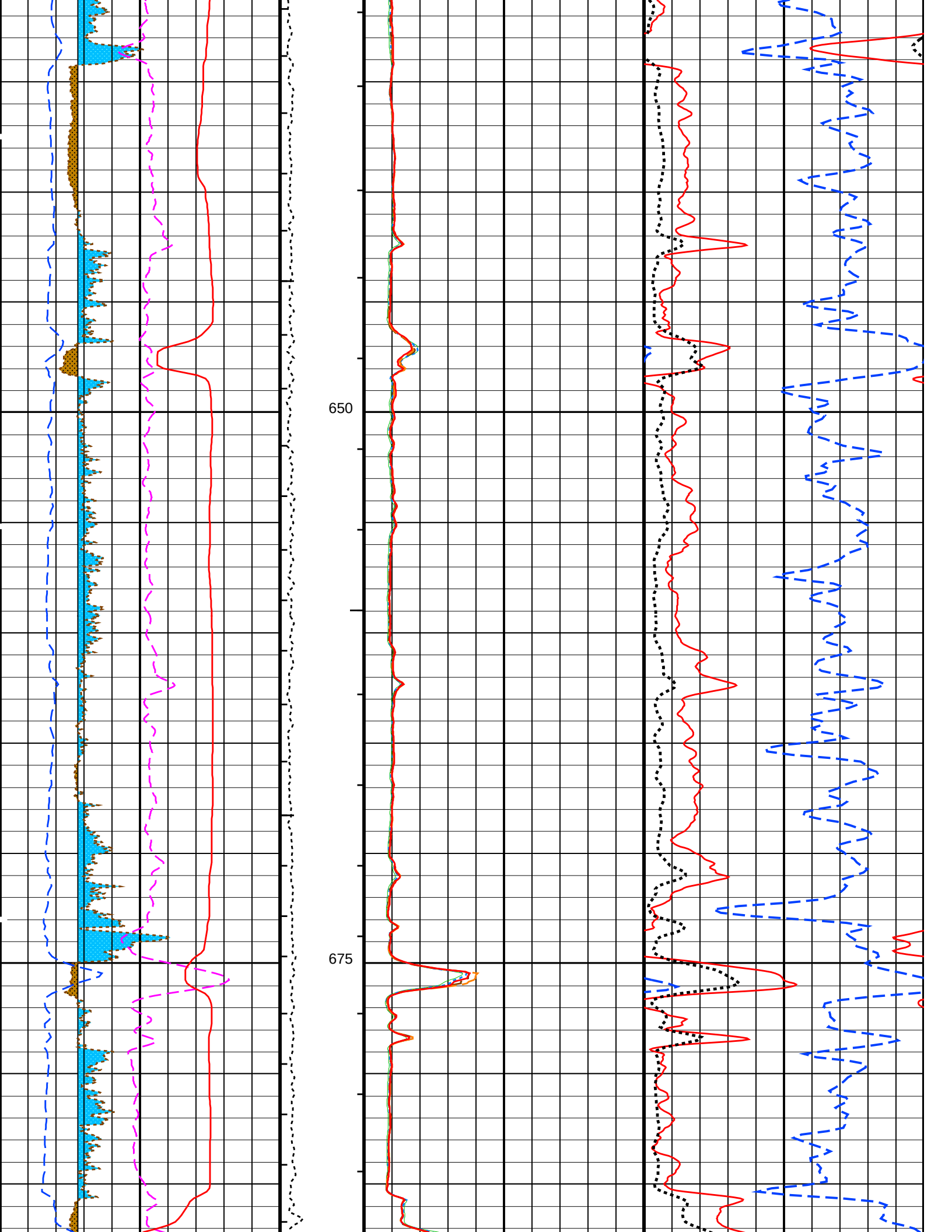

375
379.00 M
ZAPATO
400

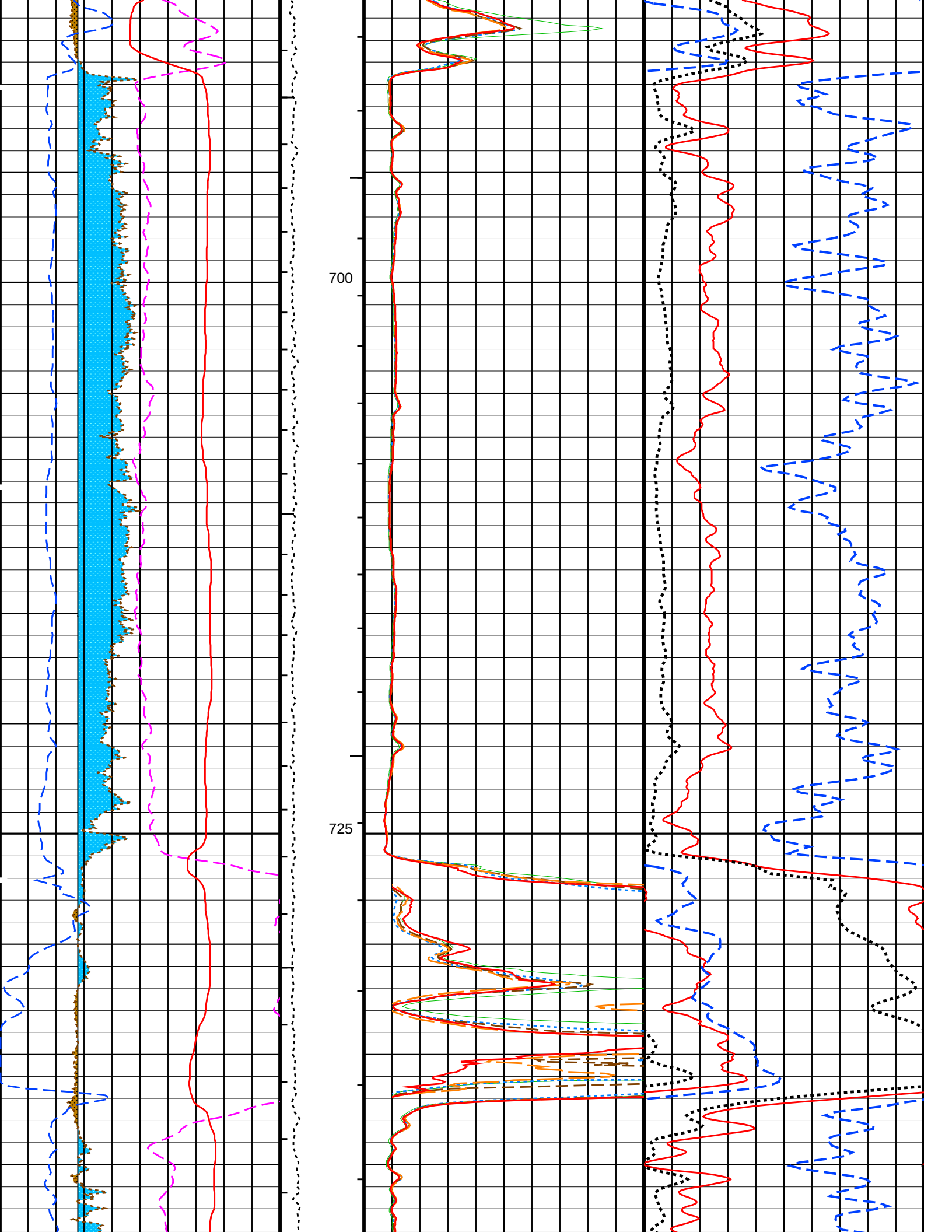

425
450


475
500


525
550
575
TENS
SP
STIA
STIT
RWA
PEFZ
HCAL
BS
AT90
AT60
AT30
AT20
AT10
TNPH
SPHI
DPHZ


600
625


650
675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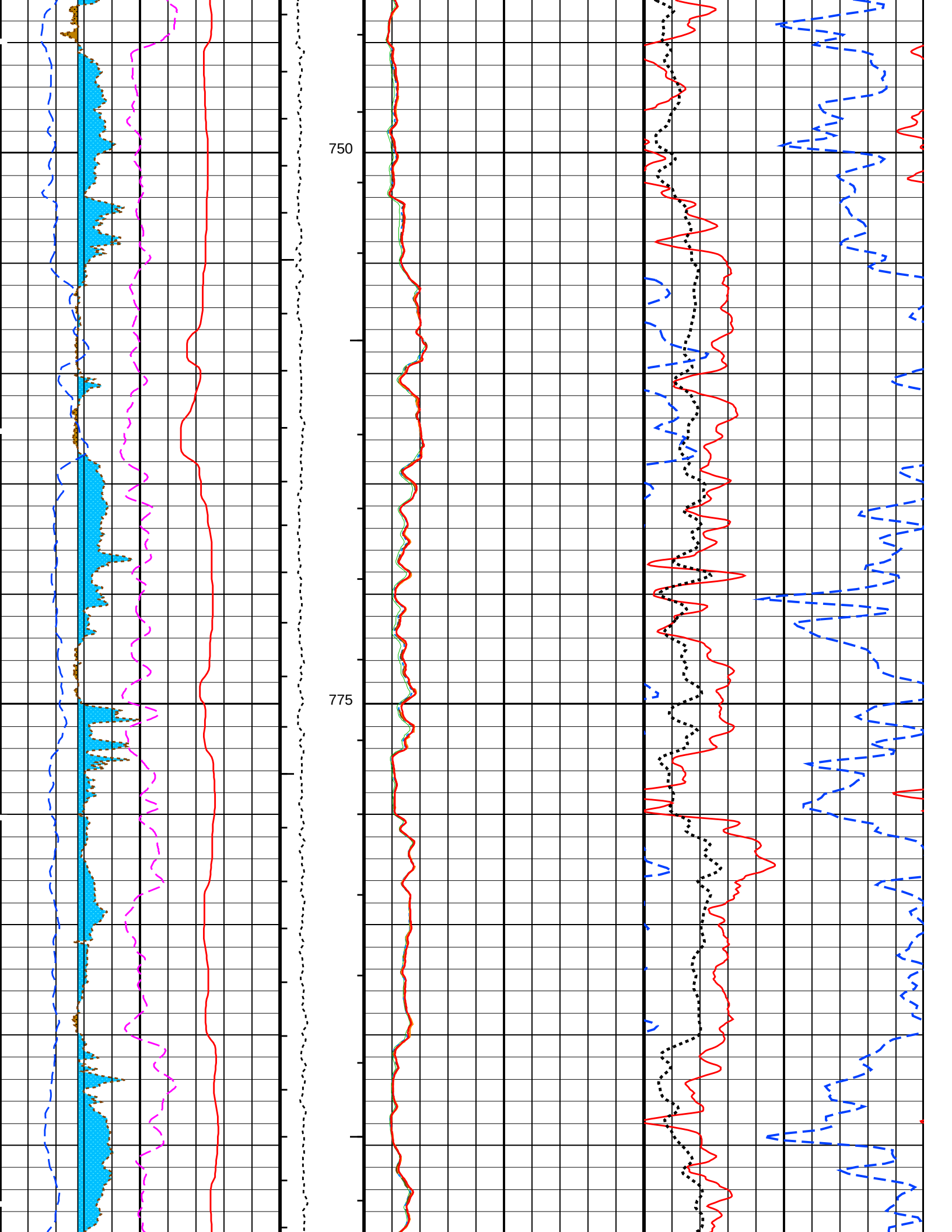
750
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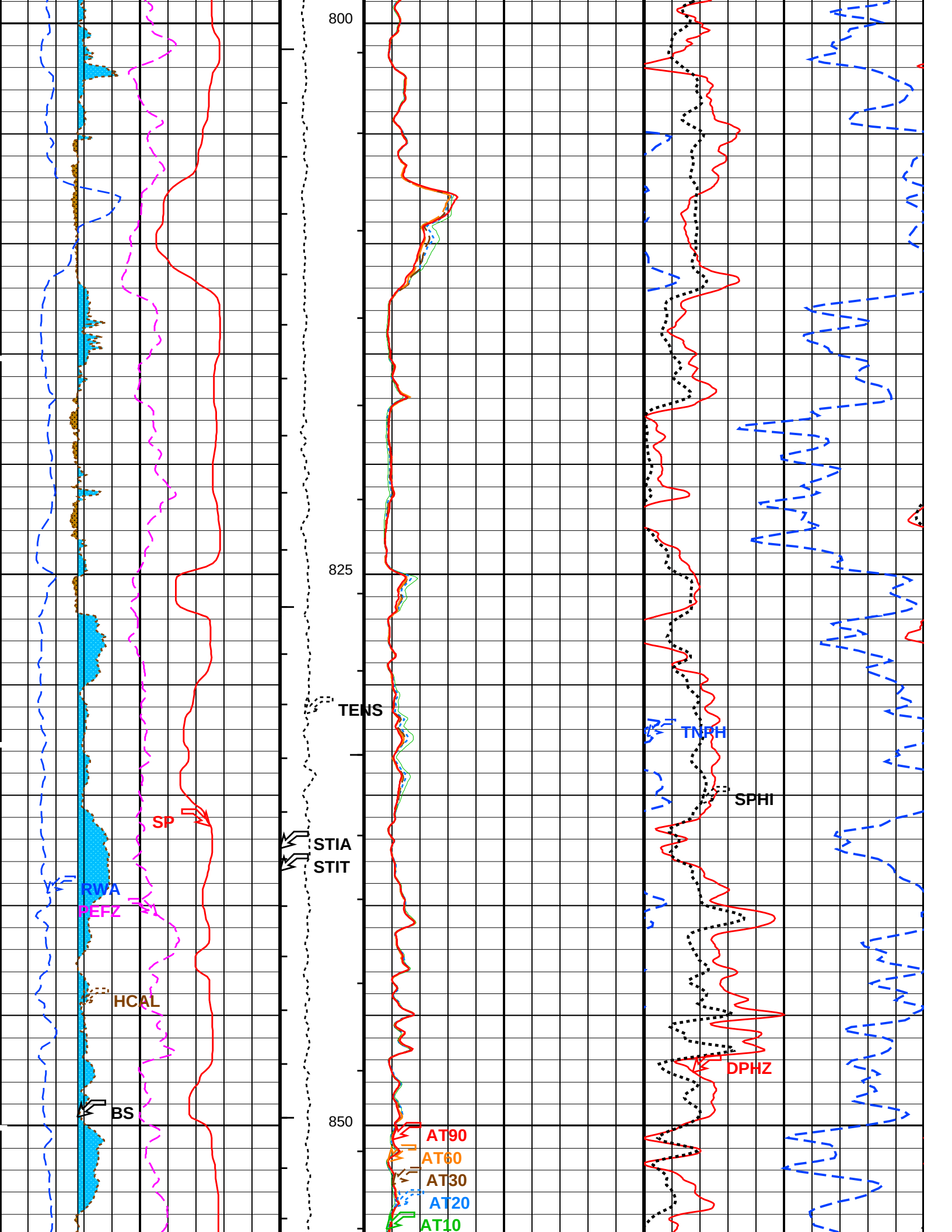
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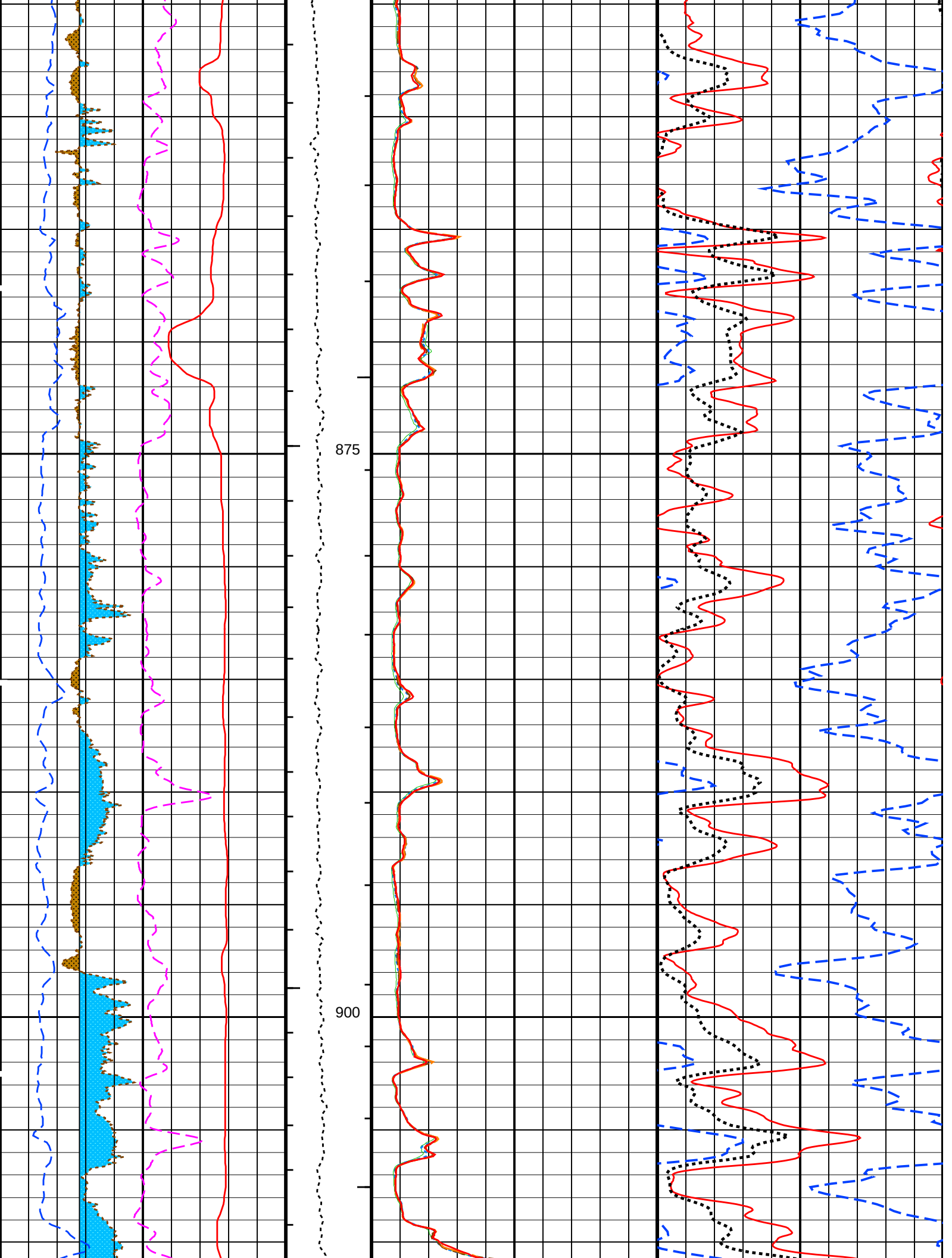
825
850
TENS
STIA
STIT
SP
RWA
PEFZ
HCAL
BS
TNPH
SPHI
DPHZ
AT90
AT60
AT30
AT20
AT10


875
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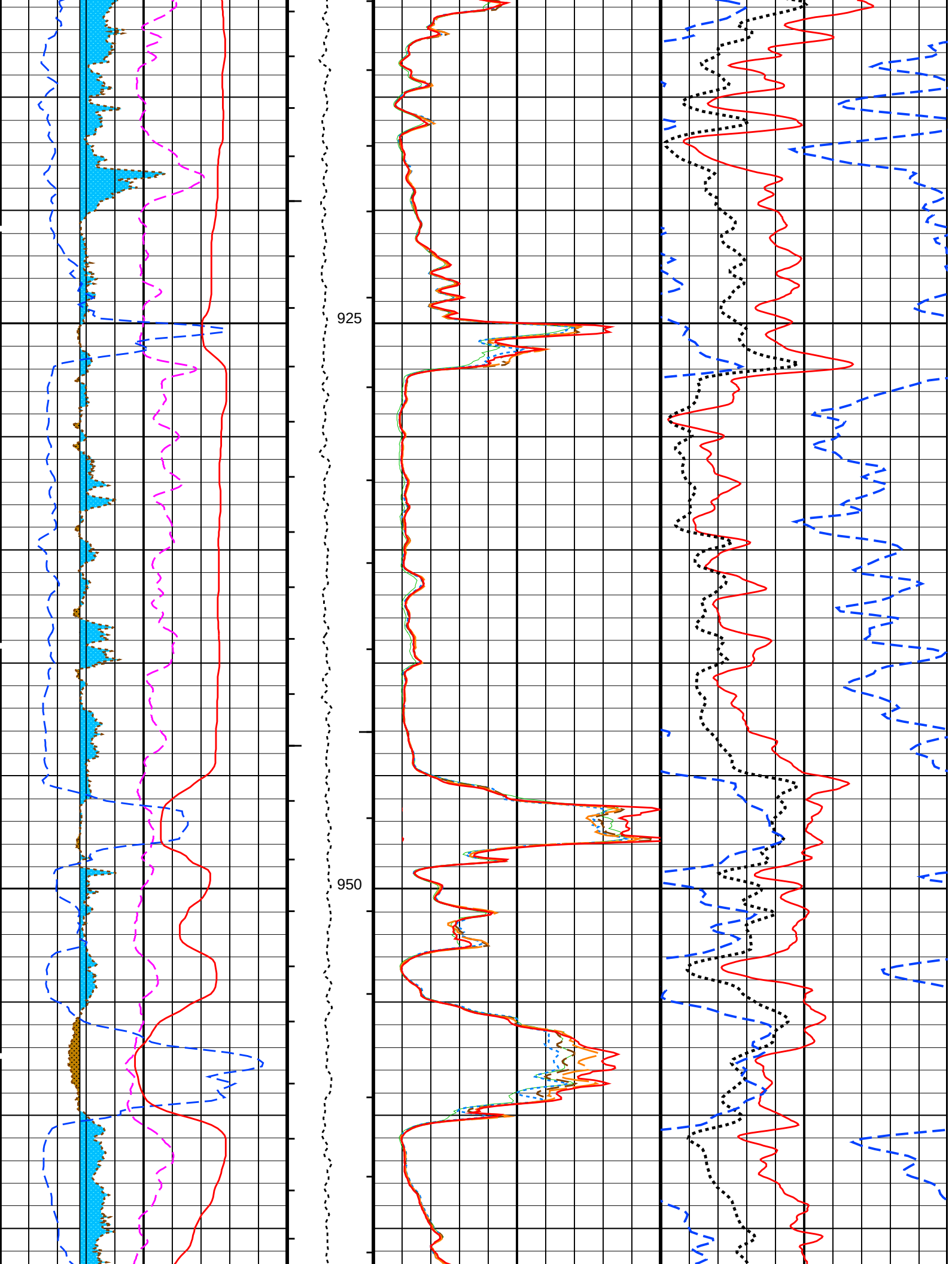
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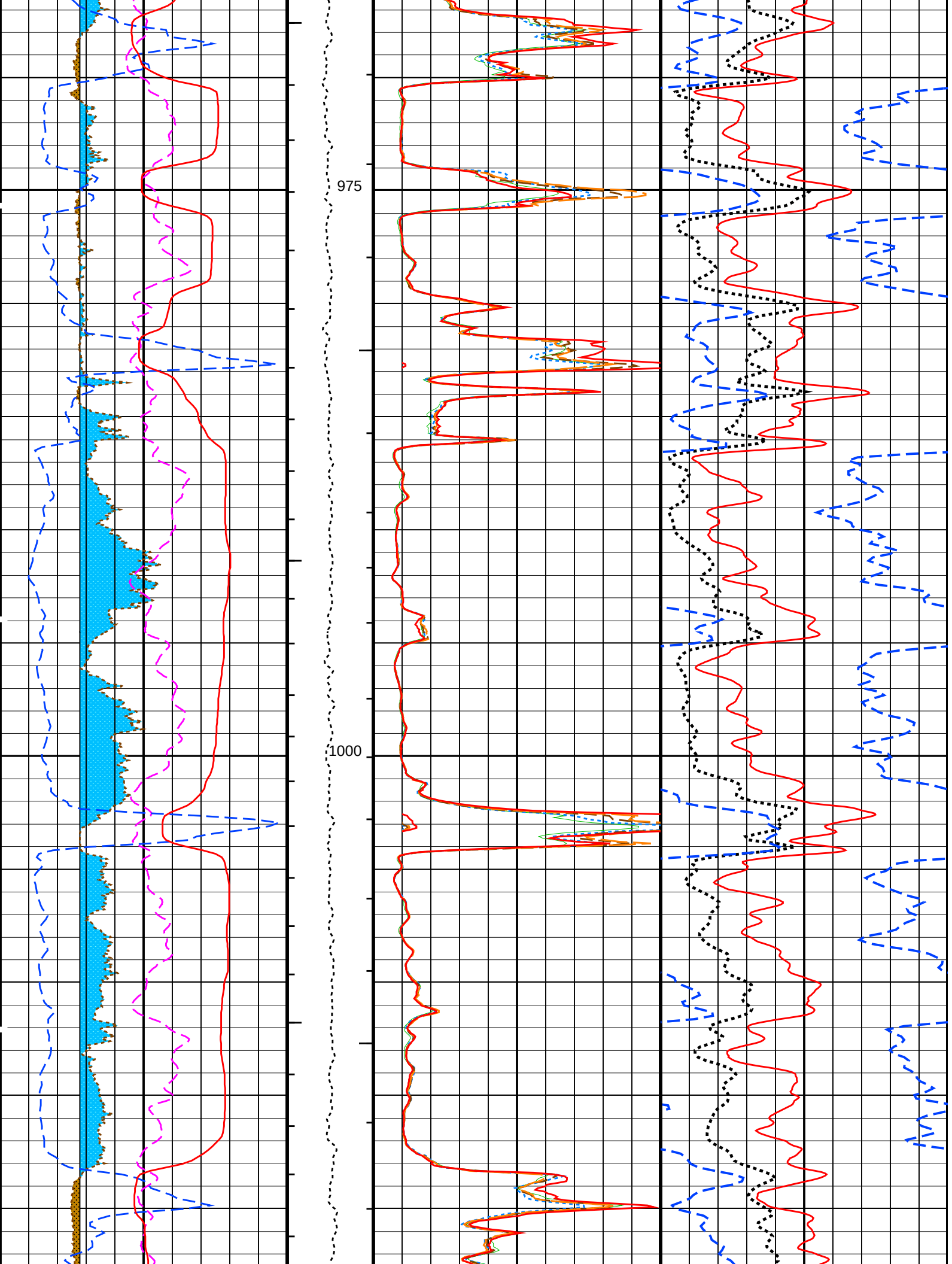
975
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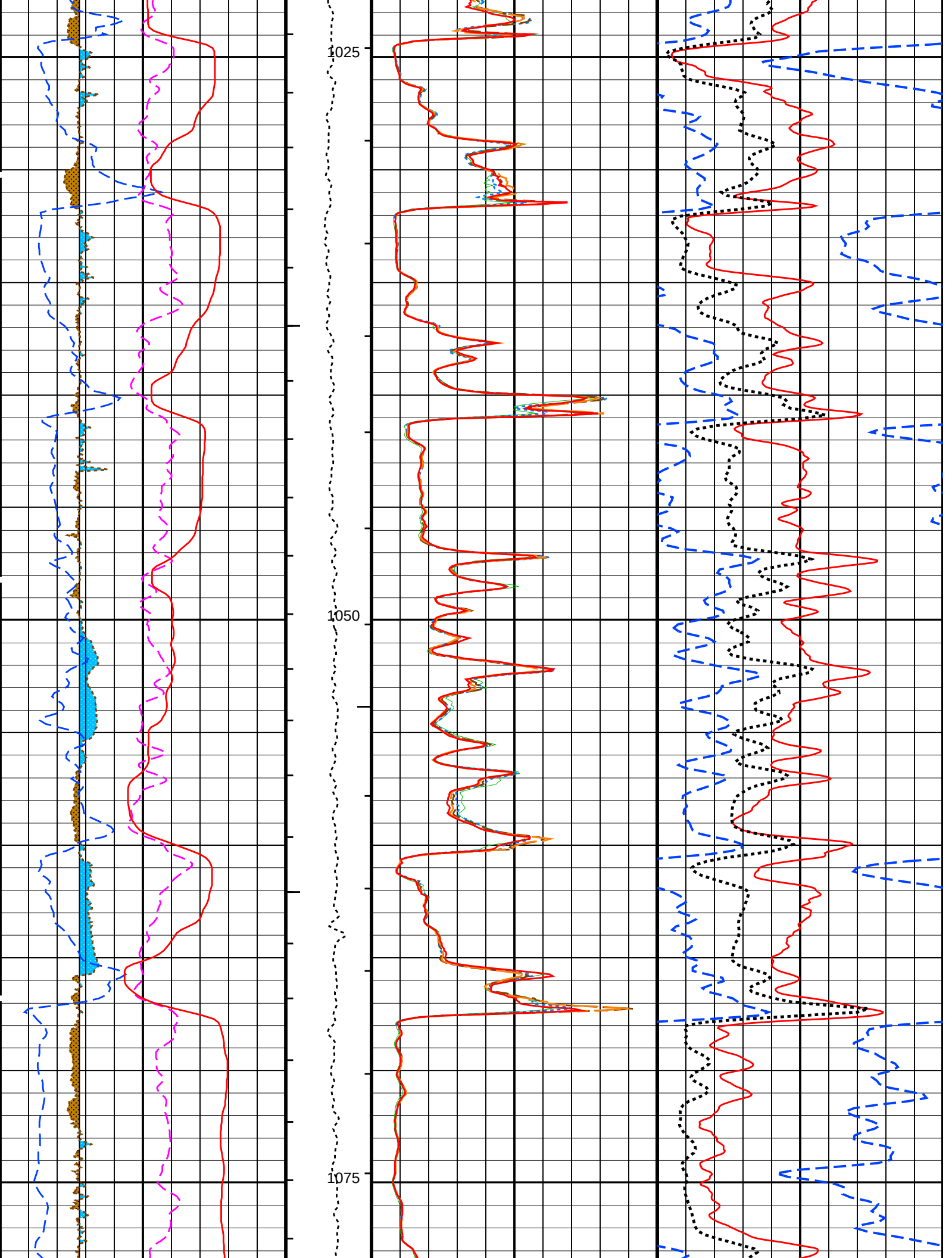
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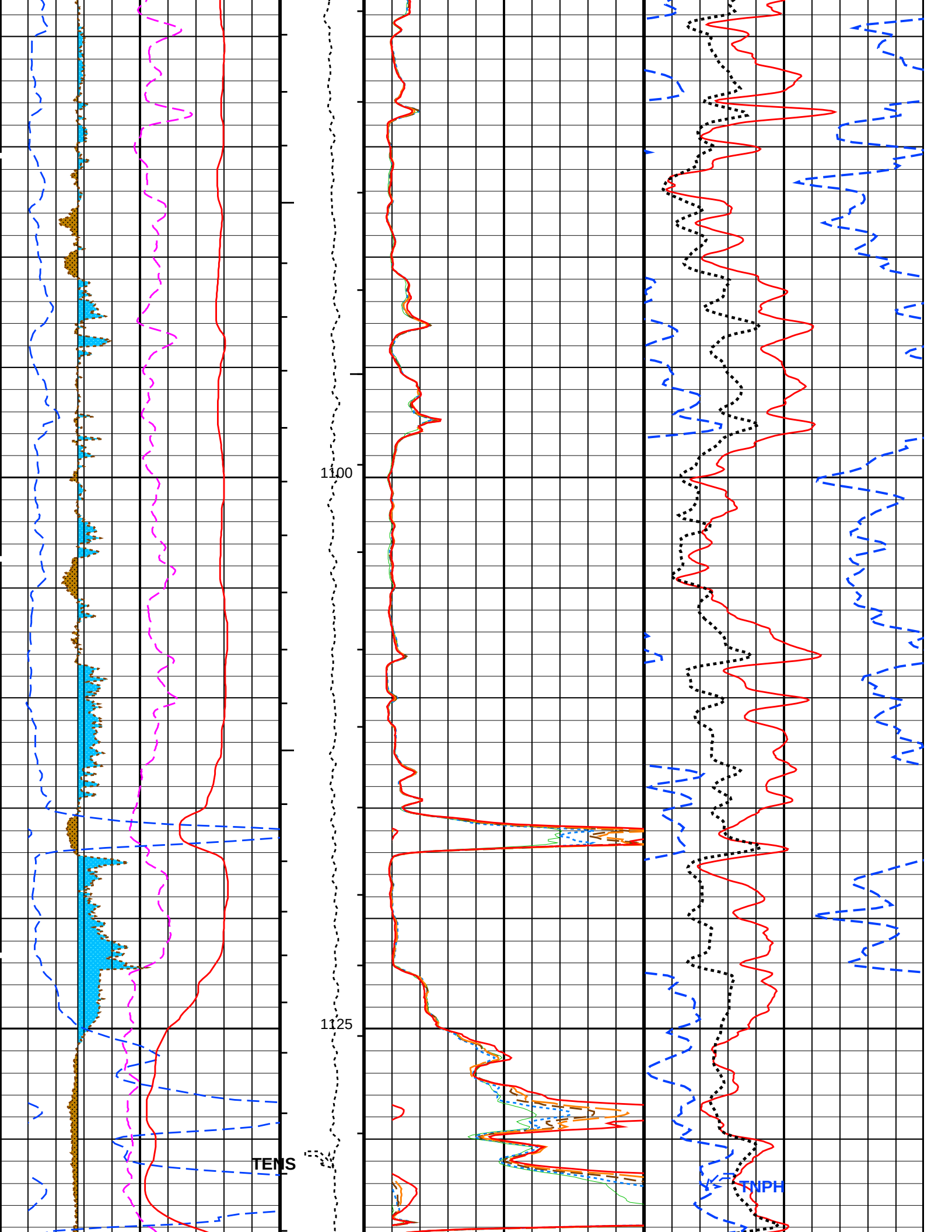
1050
1075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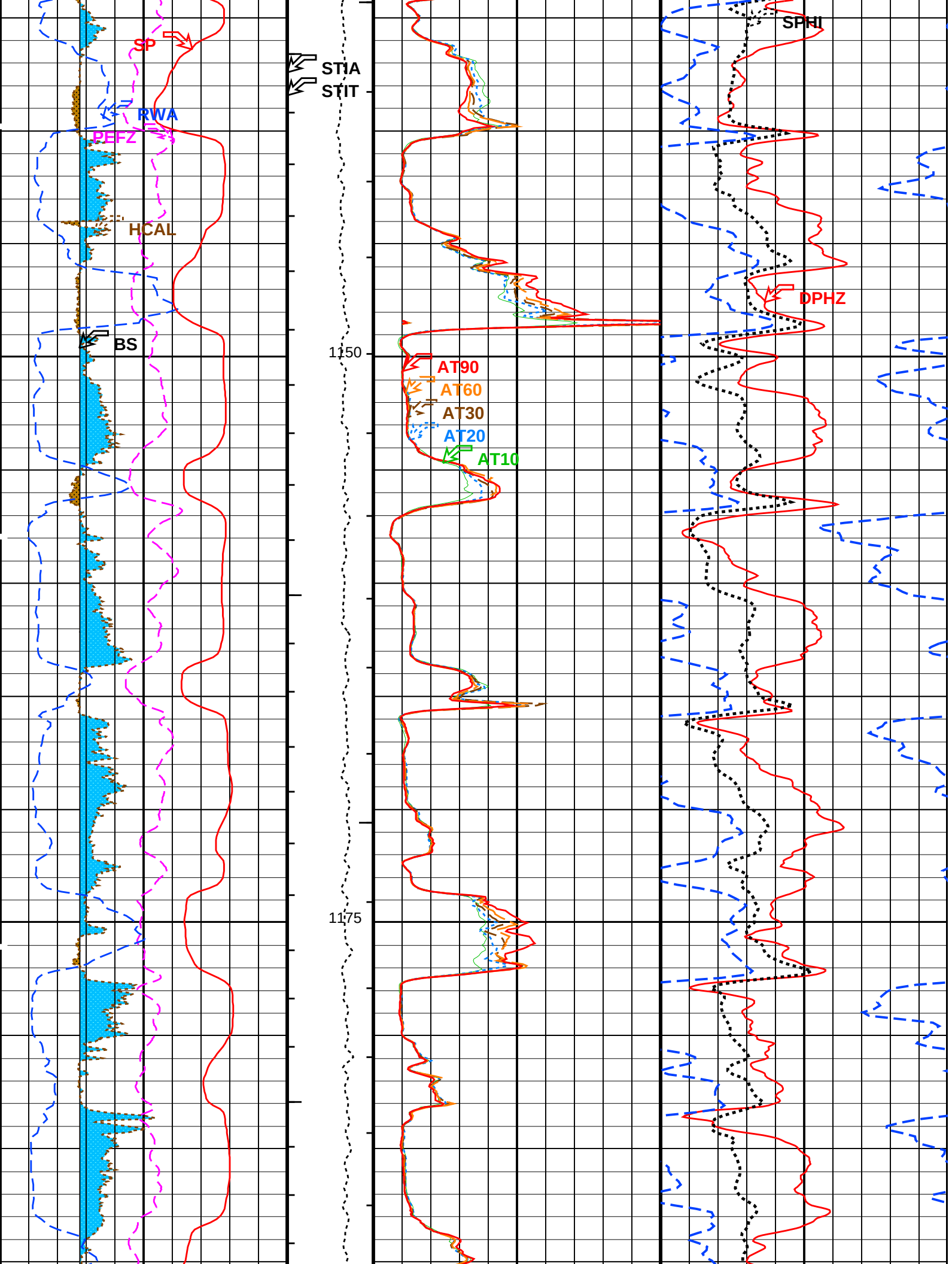
1125
TENS
TNPH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BS
STIA
STIT
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1175
AT90
AT60
AT30
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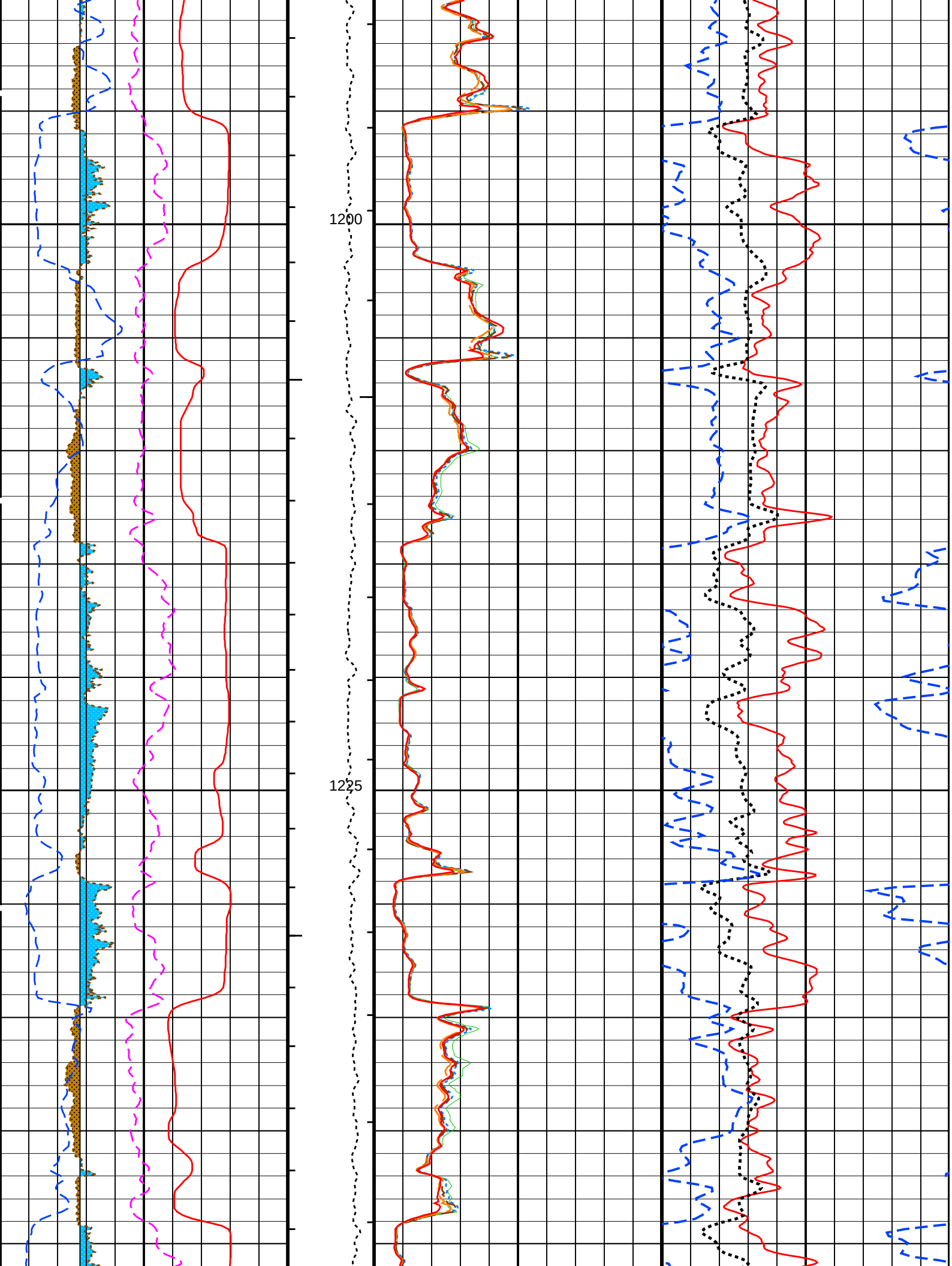
AT10
SPHI
DPHZ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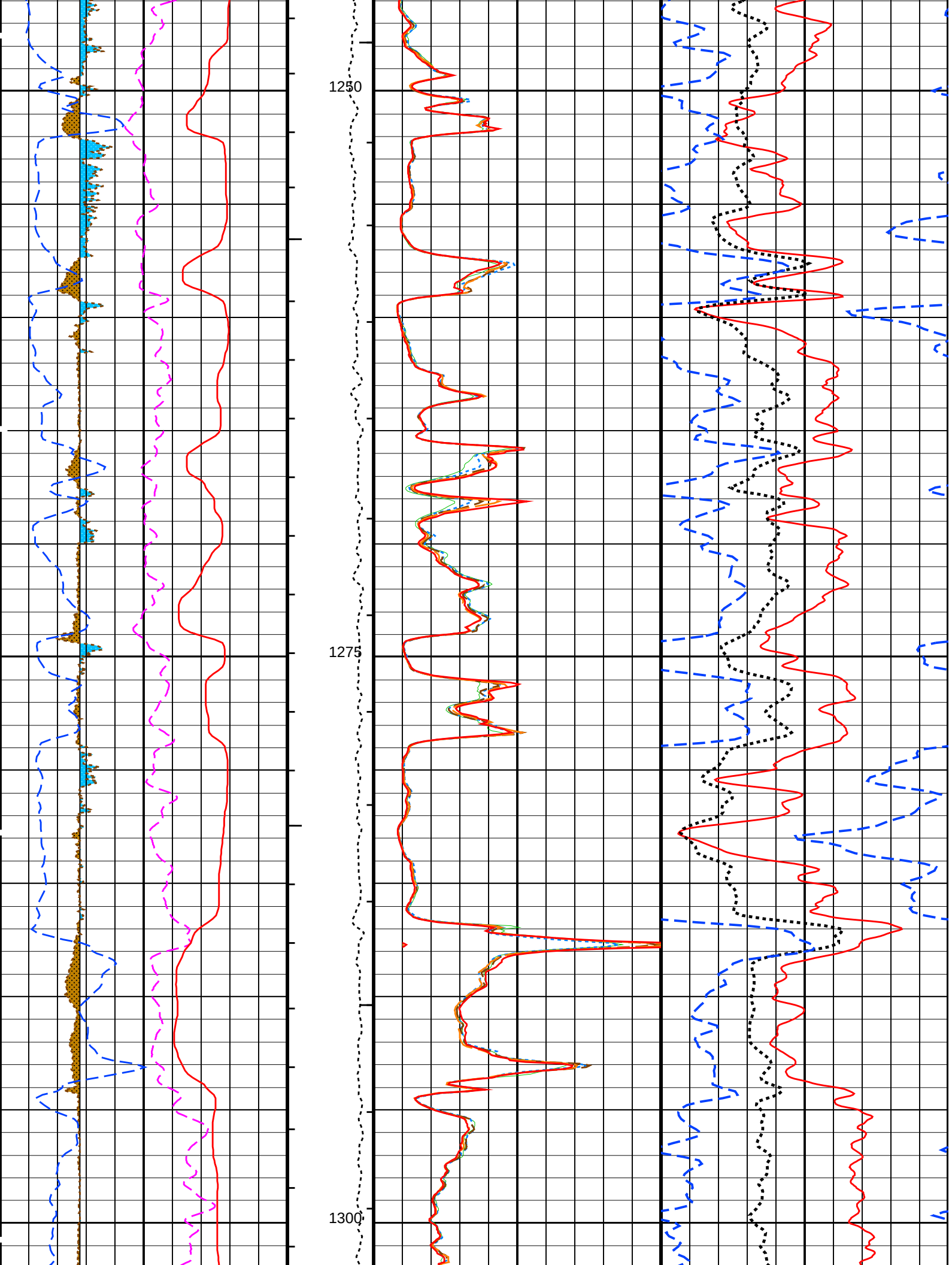
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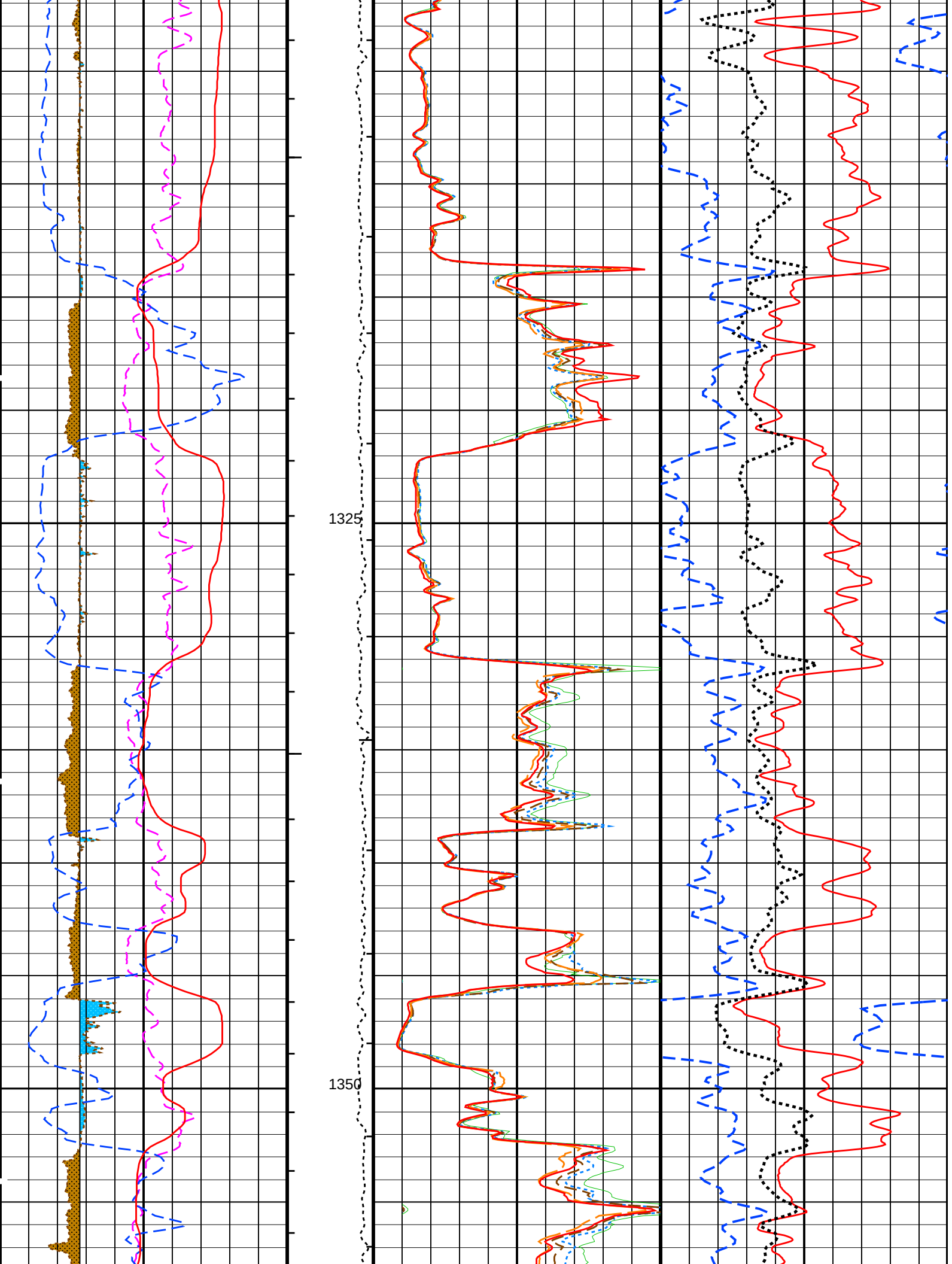
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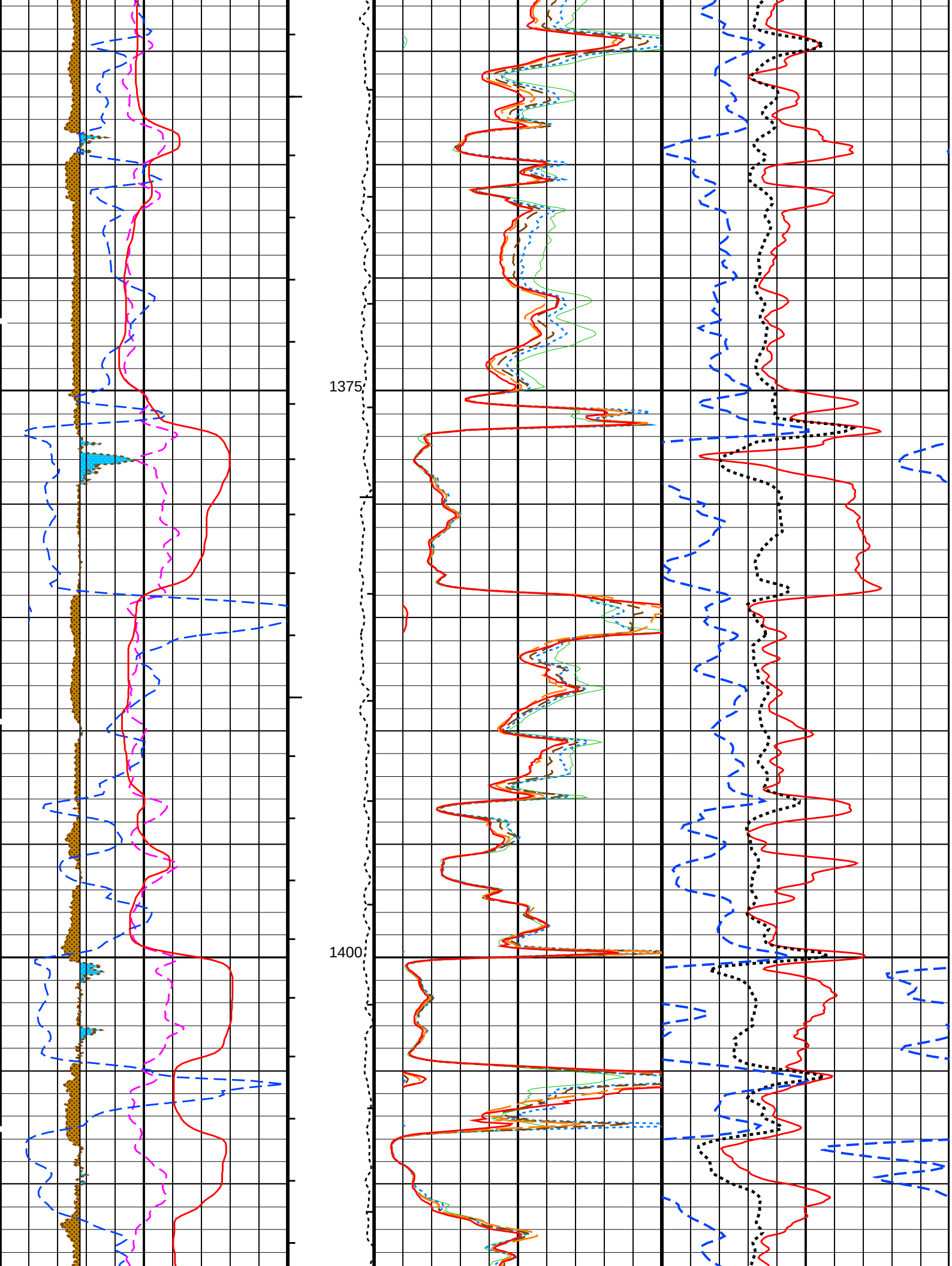
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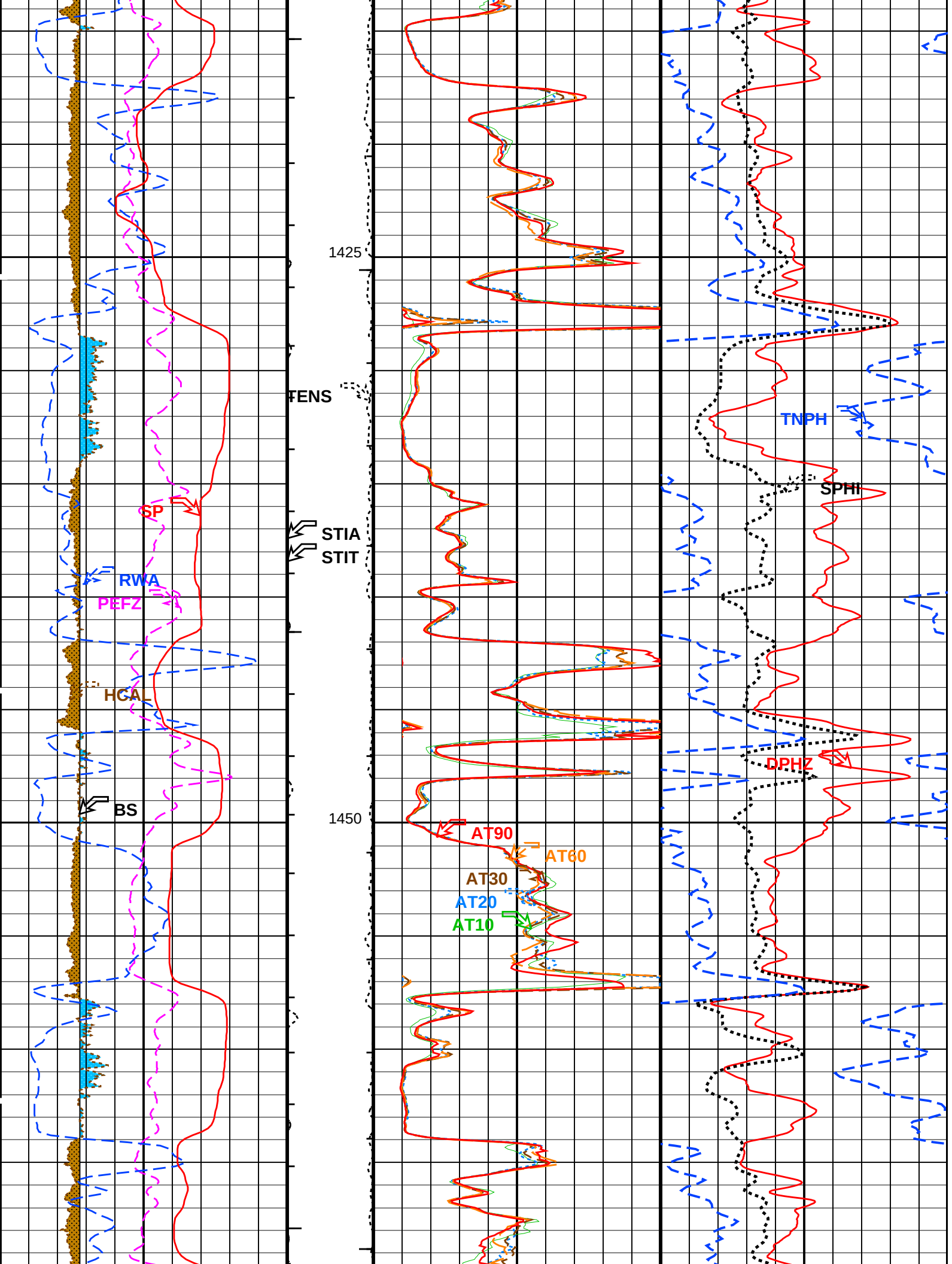
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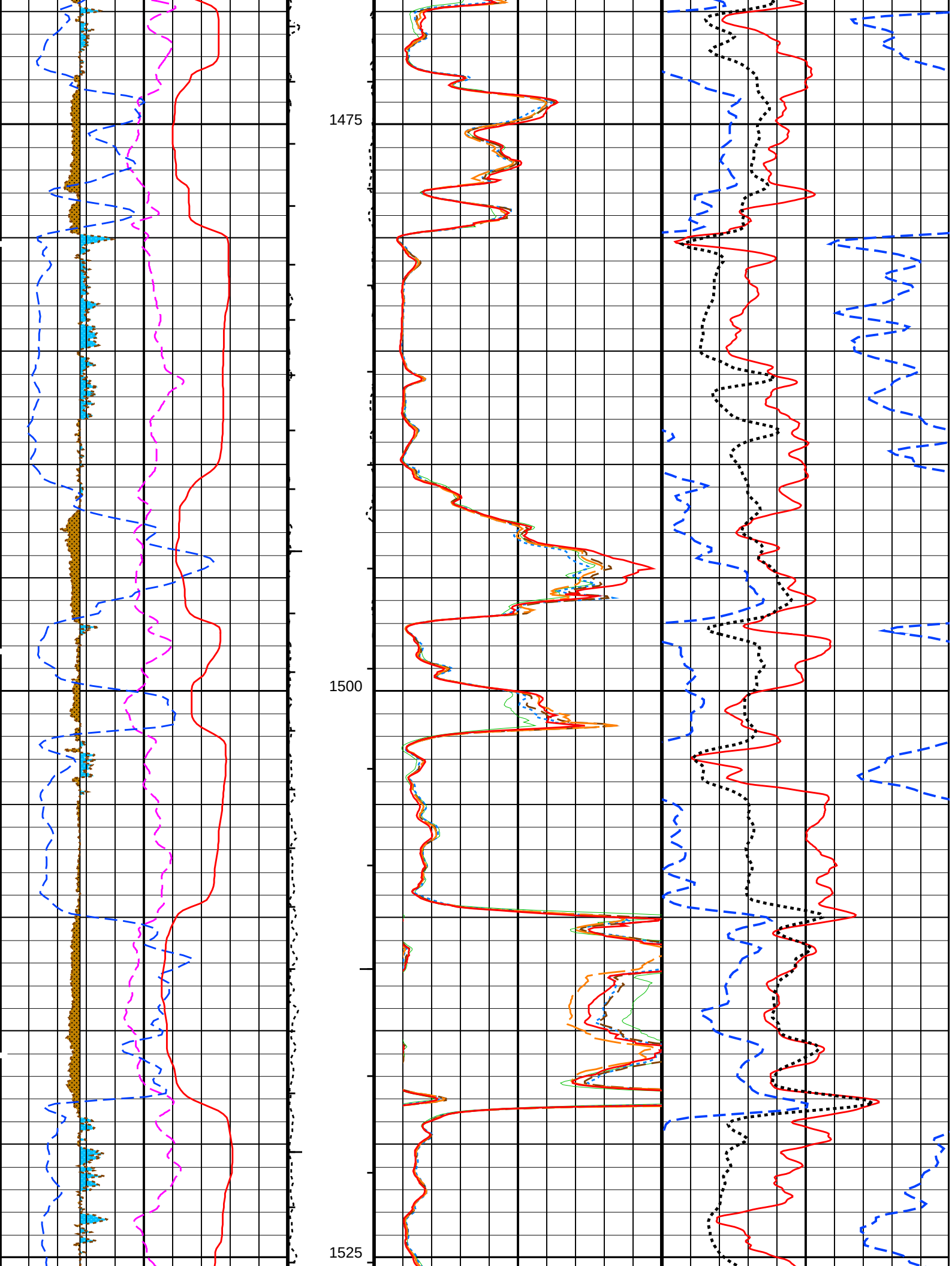
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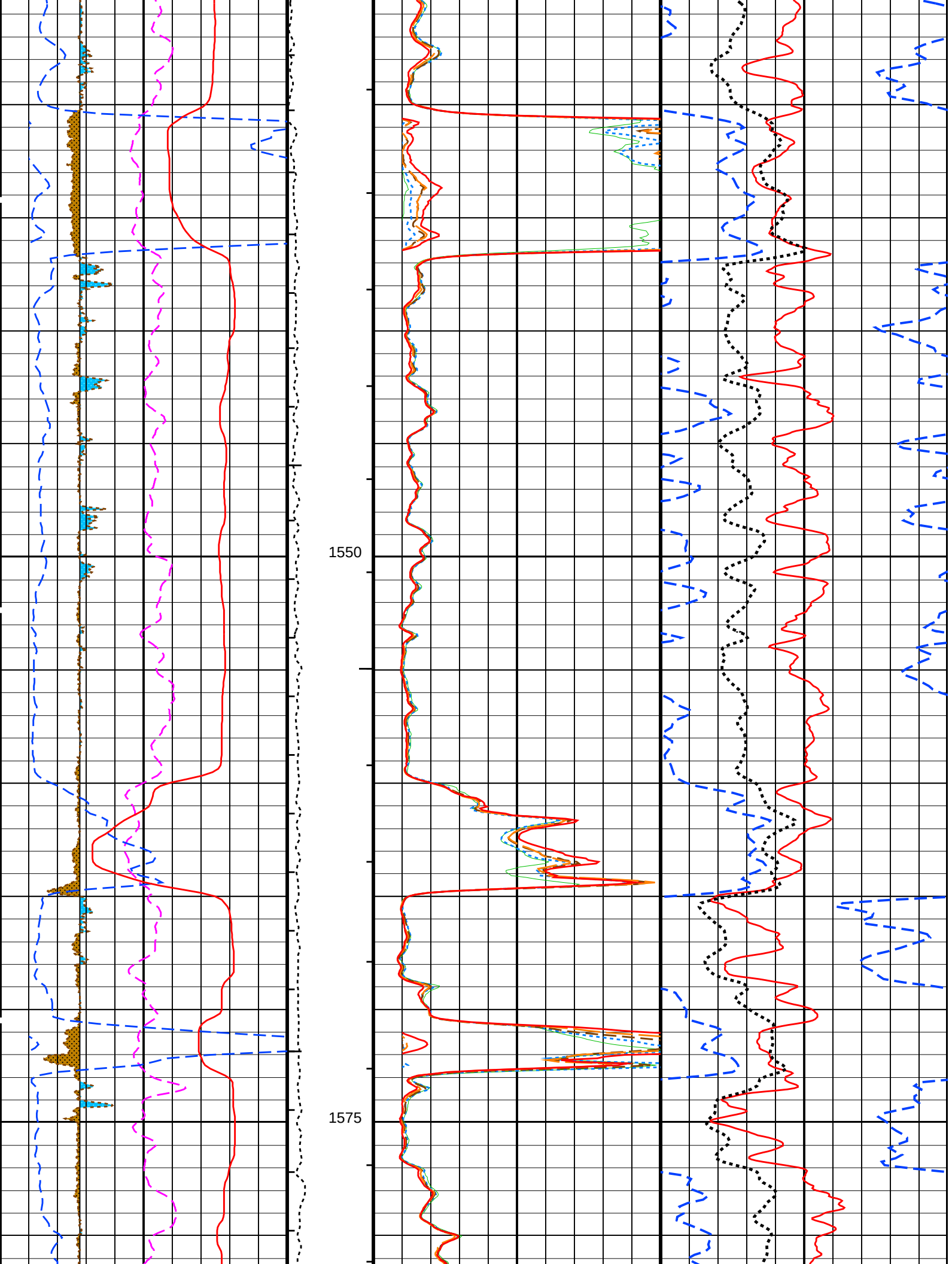
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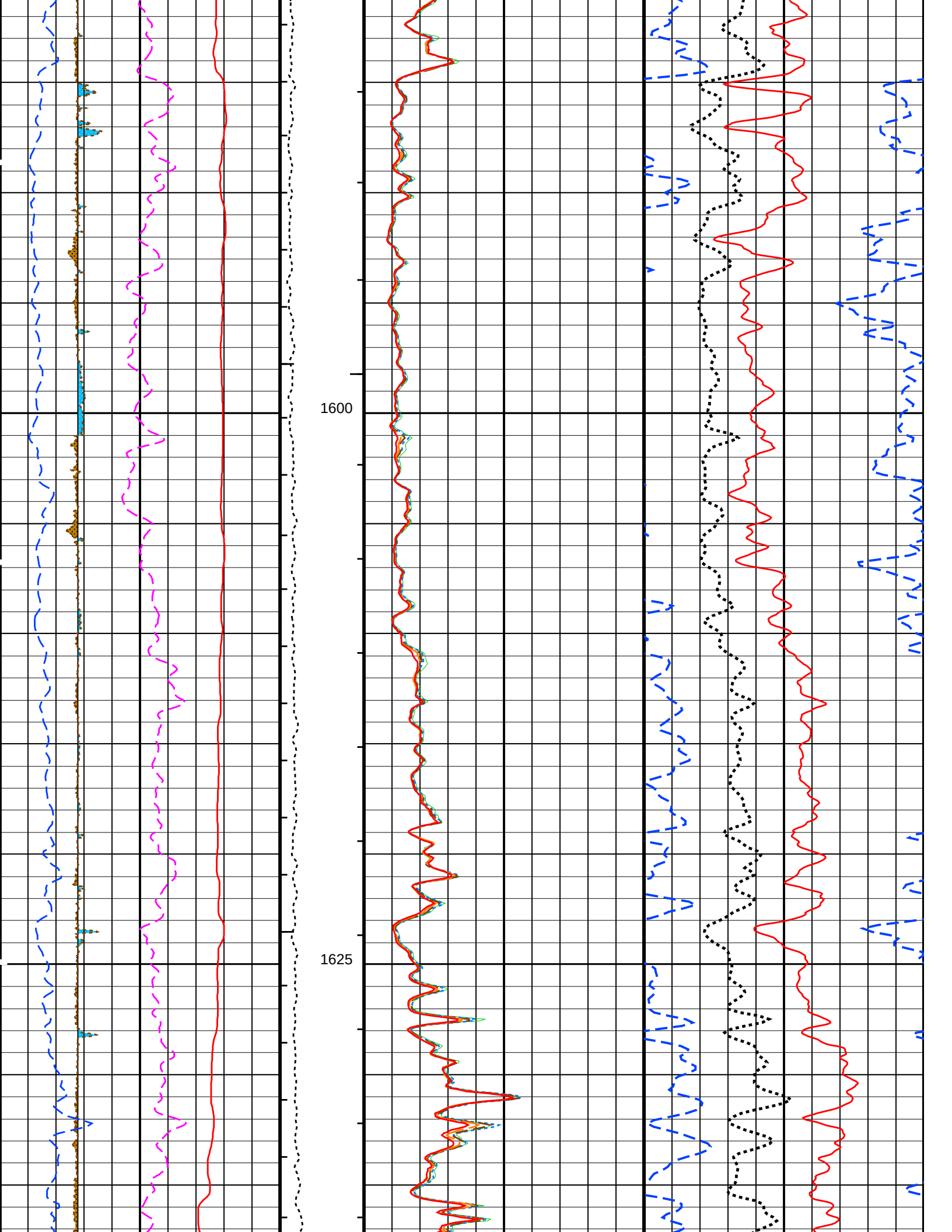
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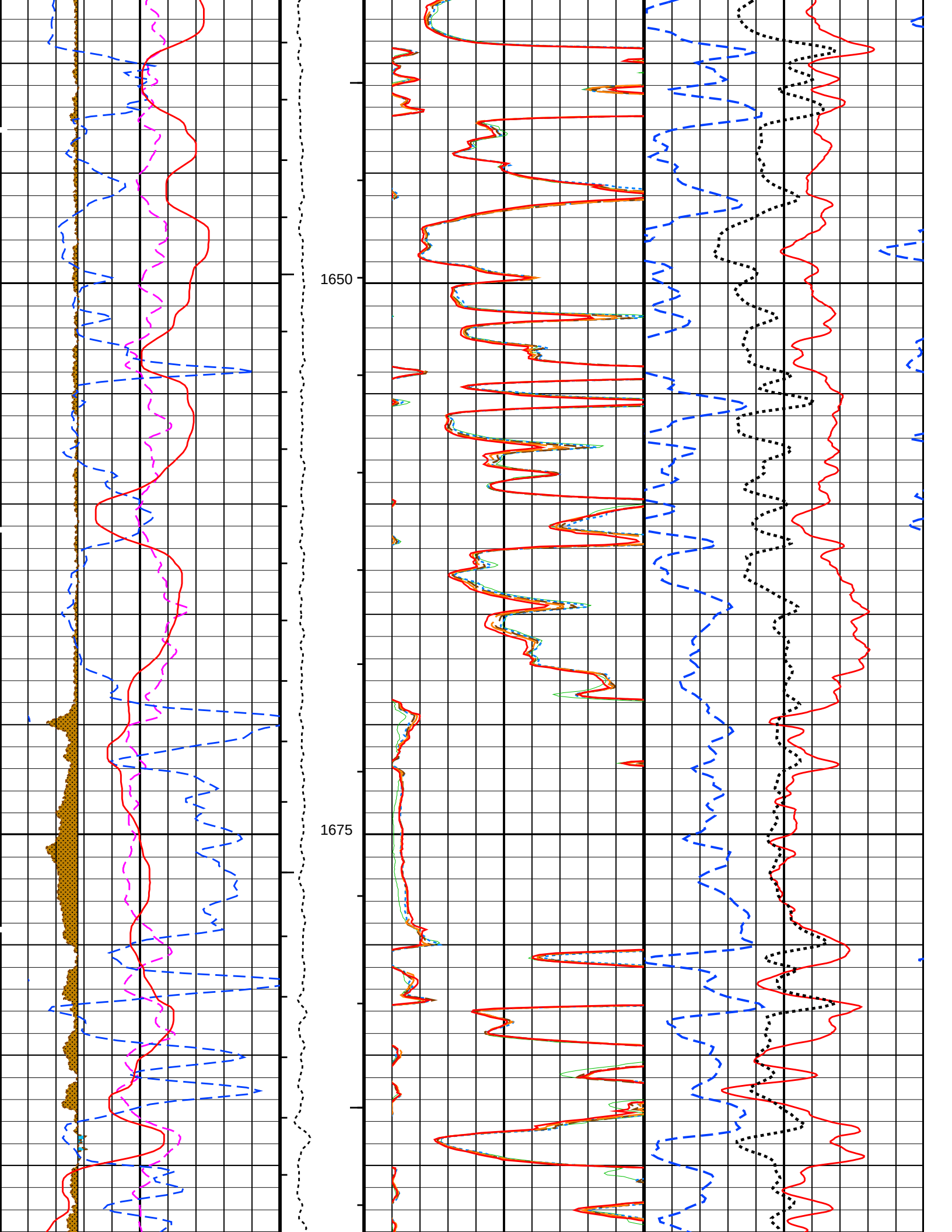
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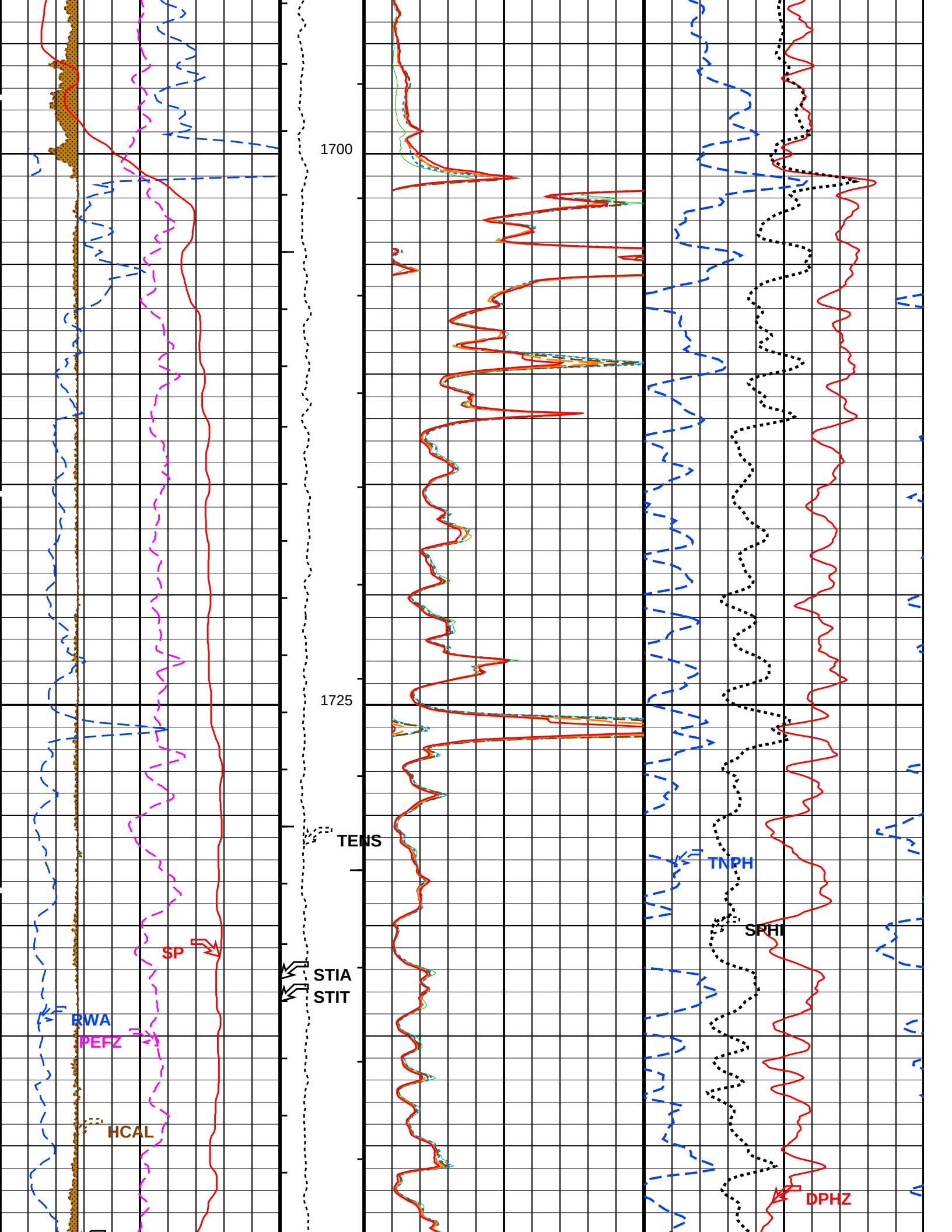
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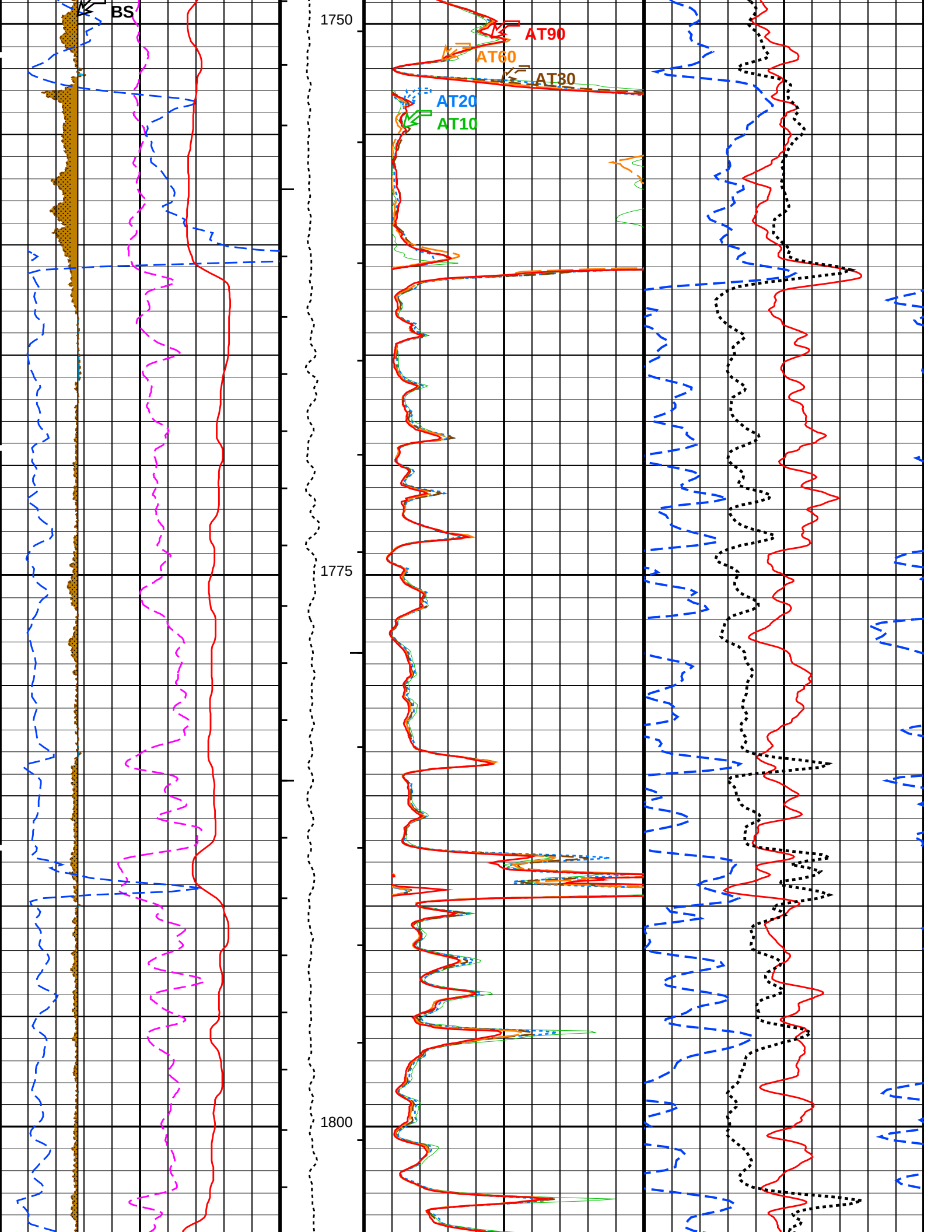
HCAL
DPHZ


BS
1750
AT90
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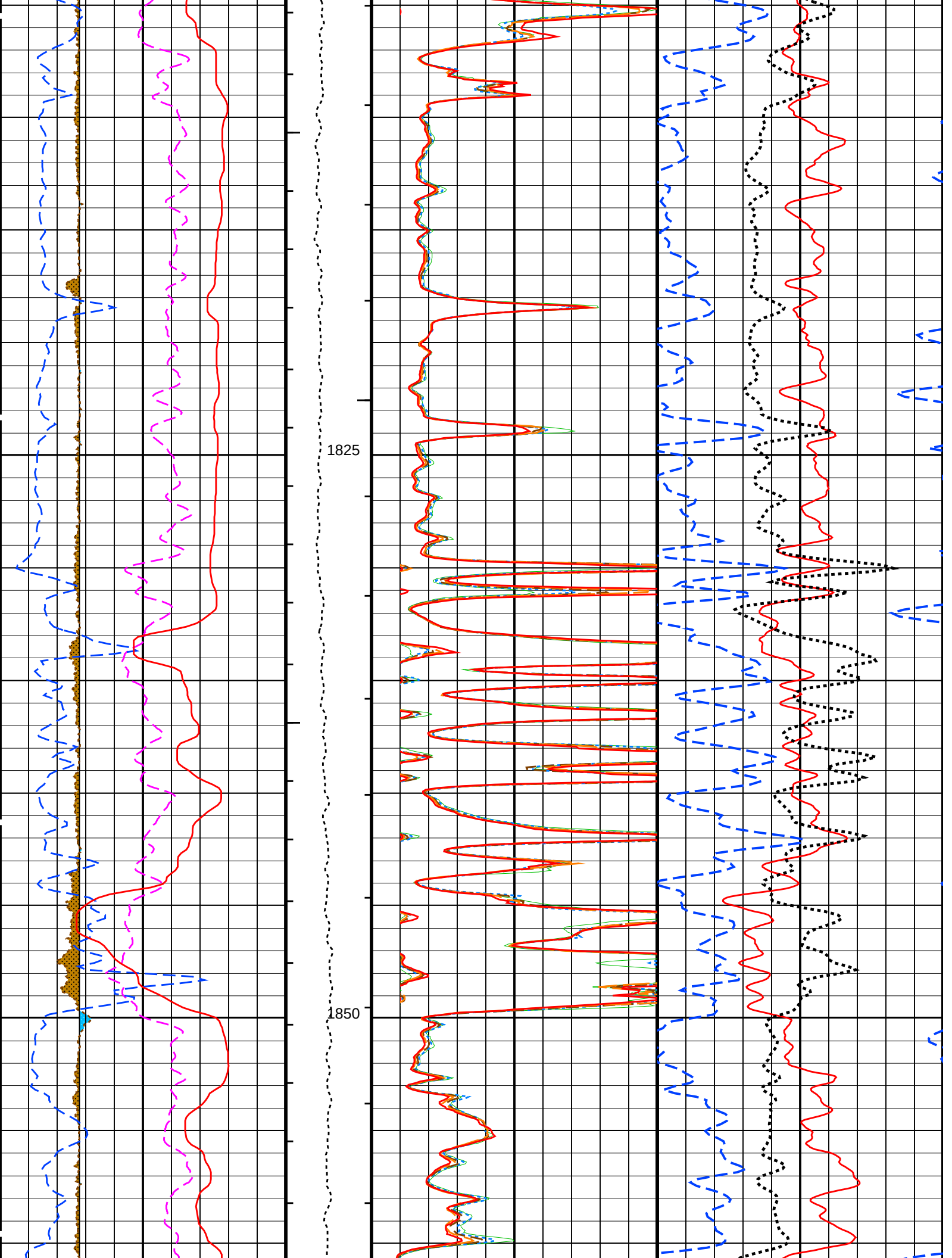
AT30
AT20
AT10
1775
1800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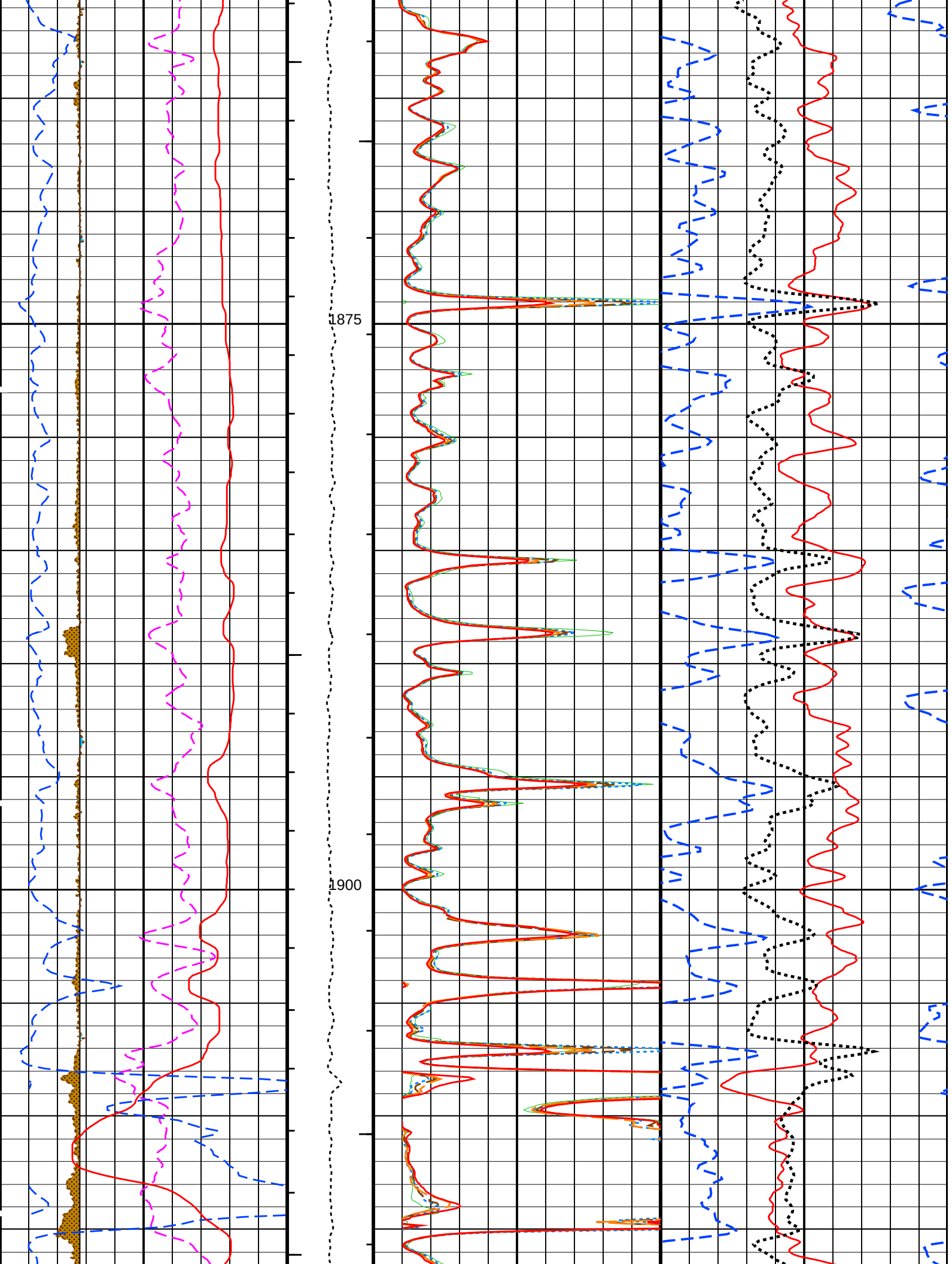
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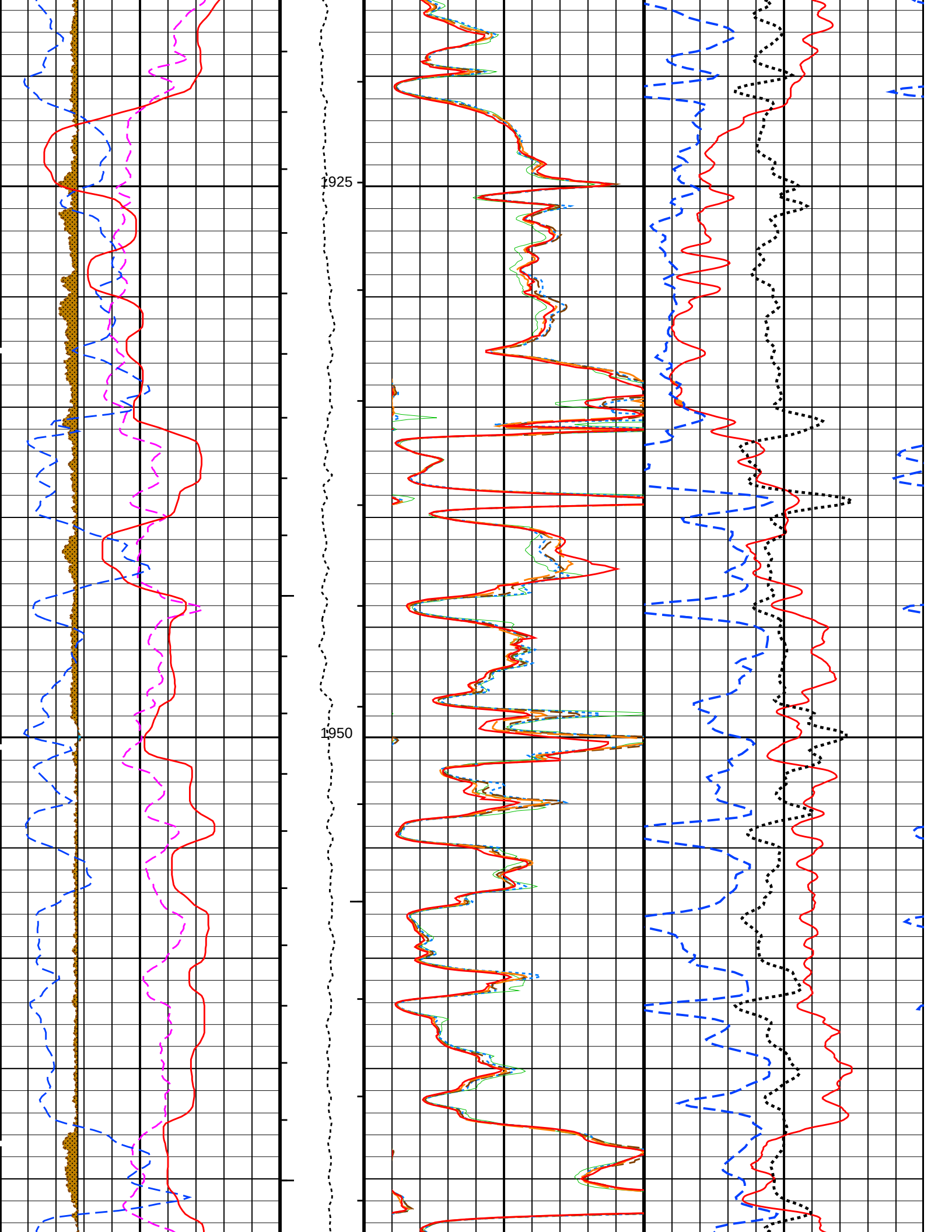
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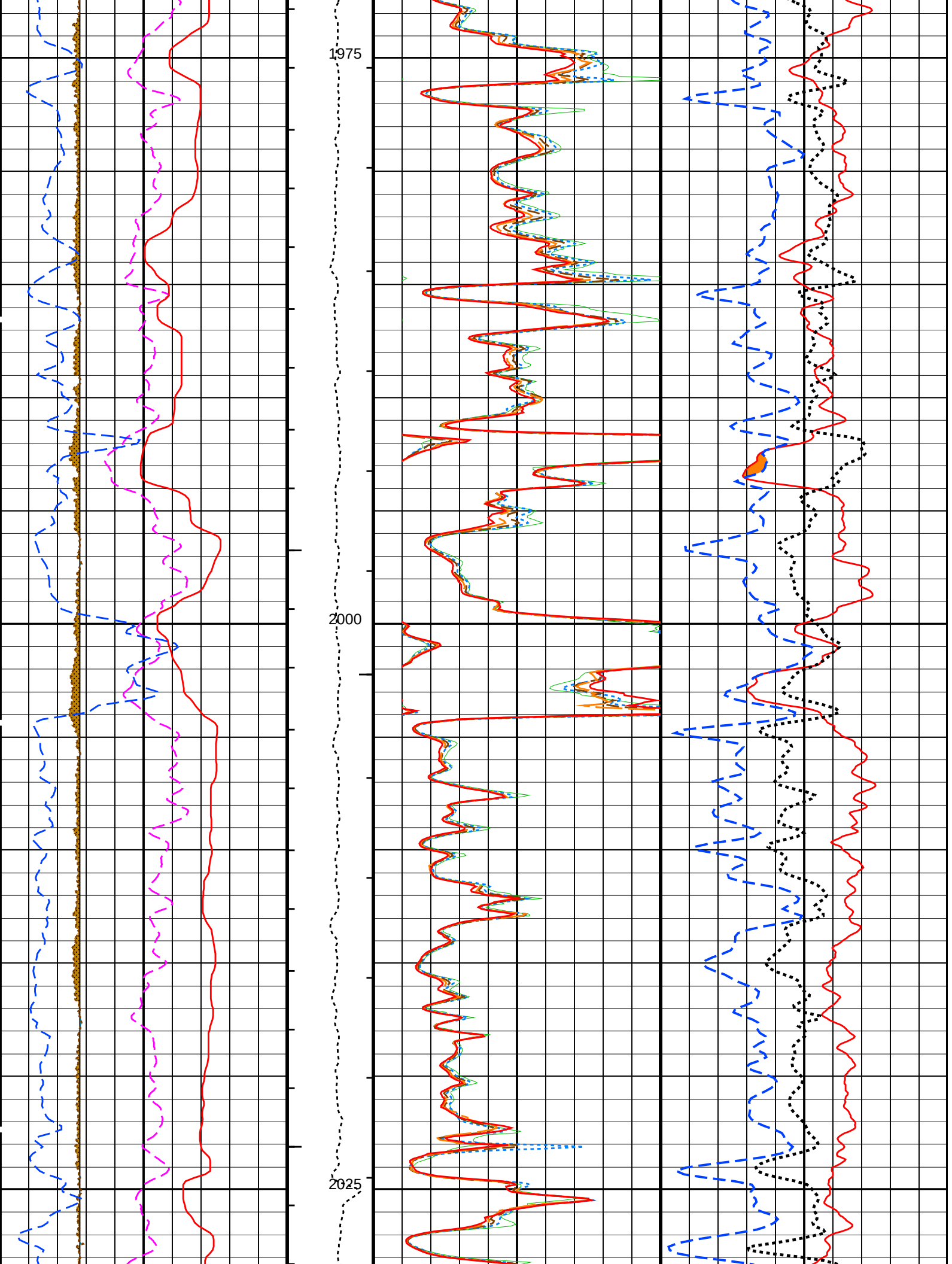
1950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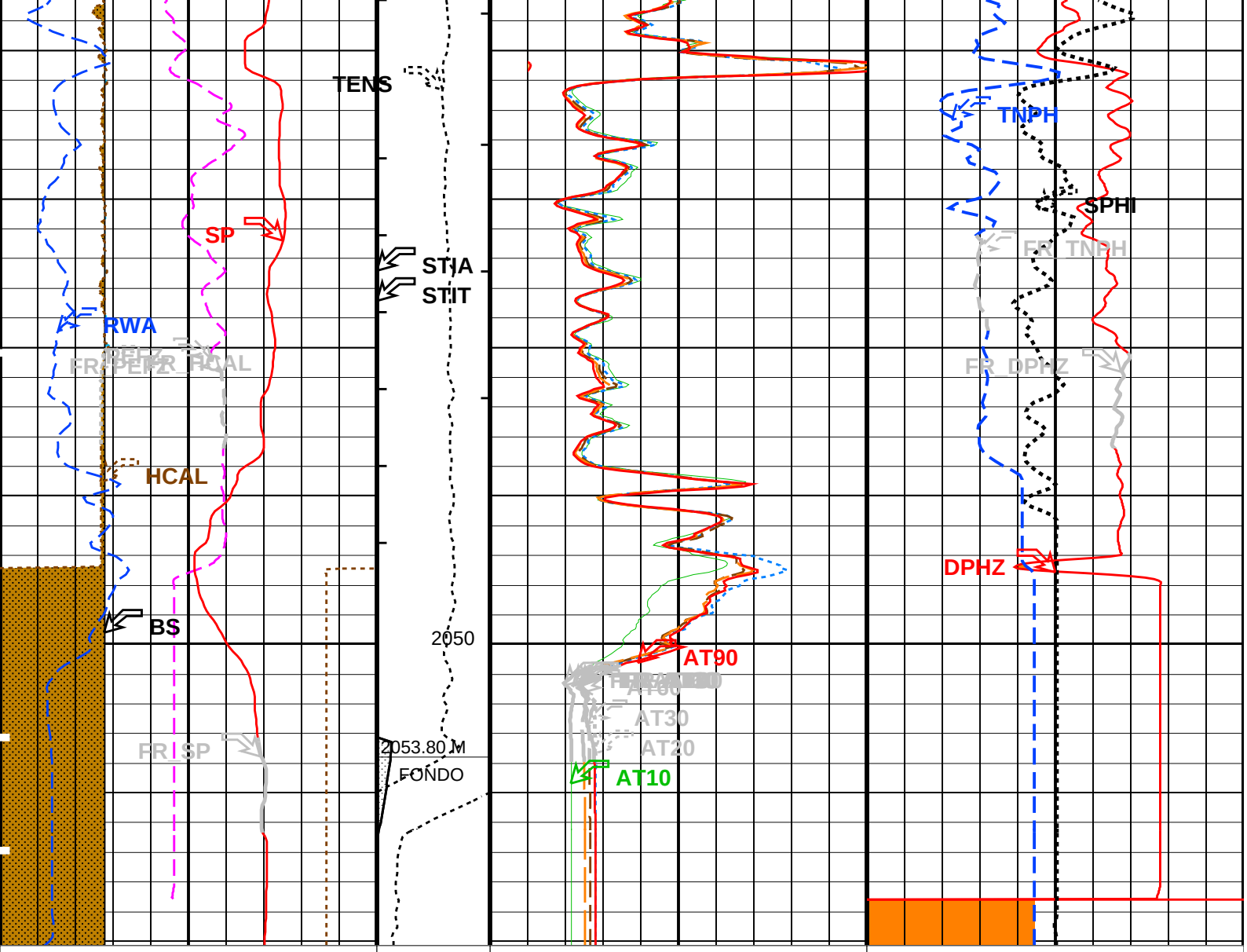


Bit Size (BS) 6 (IN) 16	**Tension (TENS) (LBF)** 0 1000	**AIT 10 Inch Investigation (AT10)** 0 (OHMM) 10
Caliper (HCAL) 6 (IN) 16	**Stuck Stretch (STIT)** 0 (M) 20	**AIT 20 Inch Investigation (AT20)** 0 (OHMM) 10
Std. Res. Formation Pe (PEFZ) 0 (----) 5		**AIT 30 Inch Investigation (AT30)** 0 (OHMM) 10
RWA (RWA) 0 (OHMM) 1		**AIT 60 Inch Investigation (AT60)** 0 (OHMM) 10
SP (SP) −80 (MV) 20		**AIT 90 Inch Investigation (AT90)** 0 (OHMM) 10
REVOQUE From HCAL to BS		
CAVERNA From BS to HCAL		

Std. Res. Density Porosity (DPHZ) 0.4 (V/V) 0	
Sonic Porosity (SPHI) 0.4 (V/V) 0	
Gas From DPHZ to TNPH	
Env.Corr.Thermal Neutron Porosity (TNPH) 0.4 (V/V) 0	

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3

Integrated Cement Volume Major Pip Every 1 M3

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	900	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	223	
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	41.70.24.20	
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	41.70.24.20	
ARFV	Array Induction Radial Profiling Code Version Number	701	
ARPV	Array Induction Radial Parametrization Code Version Number	232	
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TwoResA90	
ASTA	Array Induction Tool Standoff	1.6	IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
AULV	Array Induction User Level Control	Normal	
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	78.2	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
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	
RTCO	RTCO − Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	15	DEGC
SPNV	SP Next Value	−10	MV
	DSLT−H: Digitizing Sonic Logging Tool		
CDTS	C−Delta−T Shale	100	US/F
DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	56	US/F
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DT	
	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)	78.2	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal−like Formation 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	YES	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	15	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	PWA: Apparent Water Resistivity		

	RWA: Apparent Water Resistivity		
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TwoResA90	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
RTCO	RTCO − Rt Invasion Correction	YES	
	ALLRES: Basic Resistivity Transforms		
ARTS	AIT Rt Selection (for ALLRES computation)	AITM_TwoResA90	
RTCO	RTCO − Rt Invasion Correction	YES	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	78.2	DEGC
FCD	Future Casing (Outer) Diameter	5.5	IN
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	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	15	DEGC
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth − Driller	2050.00	M
TDL	Total Depth − Logger	2053.80	M
	System and Miscellaneous		
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	2400.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	32.30	LB/F
DFD	Drilling Fluid Density	1.13	G/C3
DO	Depth Offset for Playback	0.1	M
DORL	Depth Offset for Repeat Analysis	0.0	M
FLEV	Fluid Level	0.00	M
MST	Mud Sample Temperature	15.30	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.8800	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2053.8	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA Vertical Scale: 1:200 Graphics File Created: 04−Oct−2009 03:49

OP System Version: 17C0−154

AIT−M	unofficial	DSLT−H	unofficial
HILTH−FTB	unofficial	DTC−H	unofficial

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_011LUP	FN:22	PRODUCER	04−Oct−2009 01:22	2060.1 M	228.9 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_112PUP	FN:22	PRODUCER	04−Oct−2009 03:49
CUSTOMER	AIT_SONIC_TLD_MCFL_112PUC	FN:23	CUSTOMER	04−Oct−2009 03:49

GEOLOG

CS400

SECTOR BOND TOOL
CBL - VDL - NEUTRON

Archivo No.

1:200

COMPAÑIA YPF S.A.

POZO YPF.Ch.EA-747

CAMPO EL ALBA

PROVINCIA CHUBUT PAIS ARGENTINA

LOCALIZACION X: 4.949.898,90
COORDENADAS: Y: 2.582.765,32

Otros Servicios:
IS-CBL-VDL-NL

Ref.Perman. NIVEL TERRENO Elev. 663.10
Reg.Desde N.T. , 0.00 m Sobre Ref.Perm.
Perf. Medida Desde Nivel del Terreno

ELEV.K.B.
M.R.
N.T. 663,10

Fecha	09 OCTUBRE DE 2009.-
Carrera No.	UNO
Tipo de Regis.	IS-CBL-VDL-NL.-
Prof. Perf.	2050.00 Mts.
Prof.Registro	2029.00 Mts.
Int.Reg.Fondo	2027.00 Mts.
Int.Reg.Tope	800.00 Mts.
Fluido	AGUA
Nivel Fluido	LLENO
Unidad No.	# 4830
Ubicacion Base	CANADON SECO
Registrado Por	MARTIN R.
Presen. Por	ALIS M

Densidad De Tiros	Numero Tiros	Intervalo Desde	Intervalo Hasta

Tipo de Canon

Diametro Canon

Tabla de Datos/Tuberia/Revest

Diam.	Peso	Desde	Hasta
9 5/8"	32.3 #	SUPF.	350.64
5 1/2"	14/15.5#	SUPF.	2047.66

Localizacion de Cuellos		Otros Servicios			
Revest.	Tuberia	Servicio	Tipo	Diam.	Prof.
		Tapon			
		Packer			
		Retenedor			

Fondo Tub.	Diam. Canasta
Nipple Asent	Diam. Aro Calib.

Doble Aqui

TODAS LAS INTERPRETACIONES SON OPINIONES BASADAS EN INFERENCIAS DE MEDIDAS ELECTRICAS U OTRAS MEDICIONES Y NO PODEMOS GARANTIZAR NI GARANTIZAMOS, LA EXACTITUD O VALIDEZ DE NINGUNA INTERPRETACION Y NO ASUMIMOS, EXCEPTO EN EL CASO DE NEGLIGENCIA DE NUESTRA PARTE, RESPONSABILIDAD ALGUNA POR PERDIDAS, COSTOS O DANOS INCURRIDOS O SUFRIDOS POR PERSONA ALGUNA COMO RESULTADO DE CUALQUIER INTERPRETACION HECHA POR ALGUNO DE NUESTROS FUNCIONARIOS, AGENTES O EMPLEADOS, ESTAS INTERPRETACIONES TAMBIEN ESTAN SUJETAS A LOS TERMINOS Y CONDICIONES GENERALES ESTIPULADAS EN NEUSTRA LISTA DE PRECIOS VIGENTE.

REMARKS Rig: # KEY-08 Service Order # EA-747

BHT 90 °C

NOTA: REGISTRO CORRELACIONADO CON COMBINADA DE SCHLUMBERGER, 03/10/2009.-

Prints: 5

EQUIPMENT DATA

Run No.	Tool Type	Tool No.	Other
UNO	SBT	SB01	
UNO	NEUTRON	SB03	
UNO	CCL-TELEMETRIA	SB04	

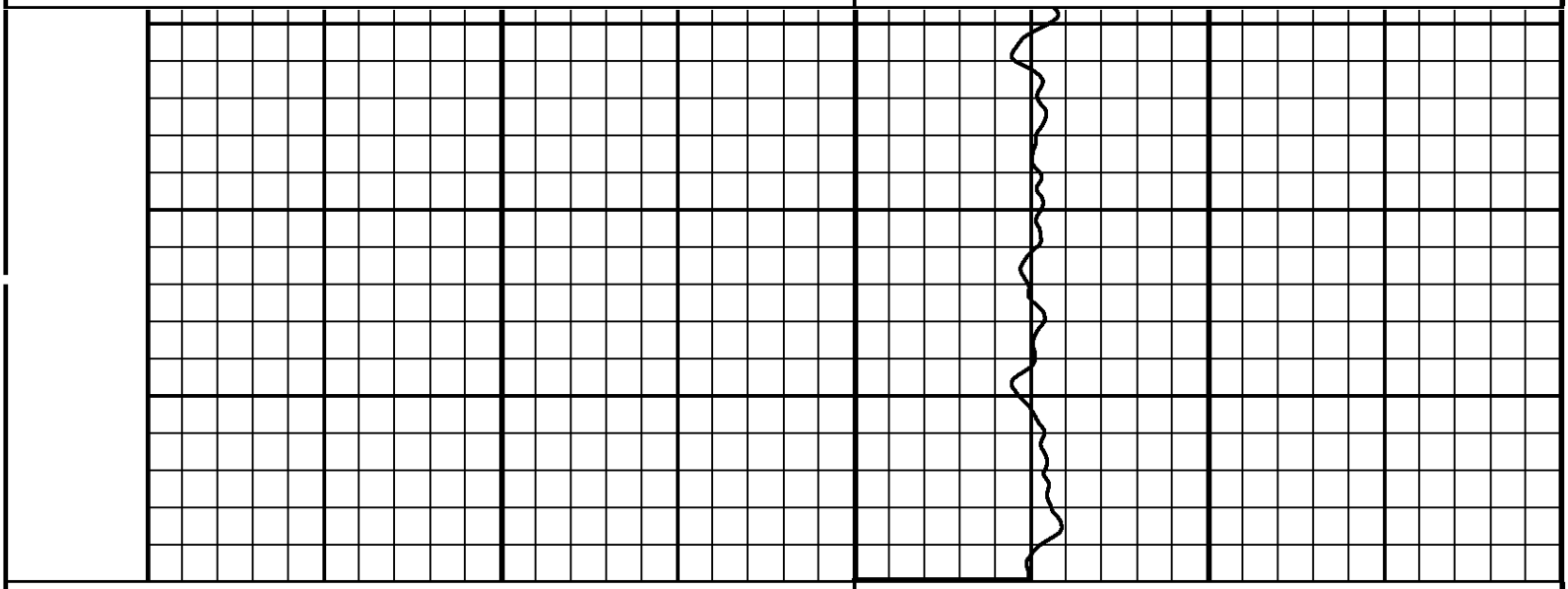
v.09.07.2000 VERSION: 1.64

V. ESTADISTICA

EA747VE

FINISH DEPTH: **297.0** METERS DIRECTION: **TIME** DATE: **10/08/2009** TIME: **20:57** MODE: **ORIGINAL**

NEUTRON
0 Unid. API 300



NEUTRON
0 Unid. API 300

START DEPTH: **297.0** METERS DIRECTION: **TIME** DATE: **10/08/2009** TIME: **20:55** MODE: **ORIGINAL**

EA747VE

V. ESTADISTICA

v.09.07.2000 VERSION: 1.64

VERSION: 1.64

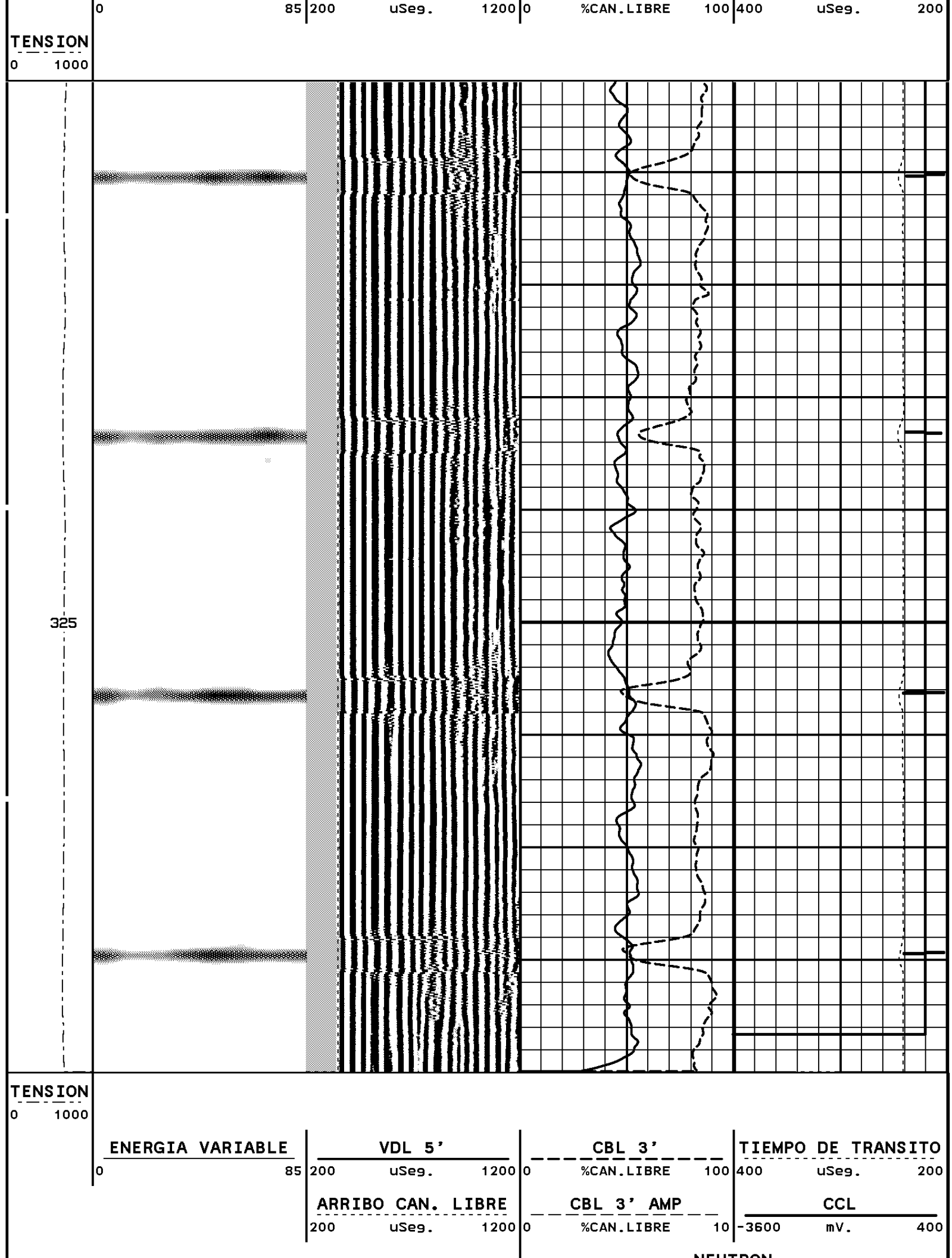
CANERIA LIBRE

EA747CL

FINISH DEPTH: **302.3** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:39** MODE: **ORIGINAL**

NEUTRON
0 Unid. API 300

ENERGIA VARIABLE	ARRIBO CAN. LIBRE 200 uSeg. 1200	CBL 3' AMP 0 %CAN.LIBRE 10	CCL -3600 mV. 400
	VDL 5'	CBL 3'	TIEMPO DE TRANSITO


0 85
200 uSeg. 1200
0 %CAN.LIBRE 100
400 uSeg. 200
TENSION
0 1000
325
TENSION
0 1000
ENERGIA VARIABLE
0 85
VDL 5'
200 uSeg. 1200
CBL 3'
0 %CAN.LIBRE 100
TIEMPO DE TRANSITO
400 uSeg. 200
ARRIBO CAN. LIBRE
200 uSeg. 1200
CBL 3' AMP
0 %CAN.LIBRE 10
CCL
-3600 mV. 400

NEUTRON

0 Unid. API 300

START DEPTH: **345.0** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:38** MODE: **ORIGINAL**

EA747CL

CANERIA LIBRE

VERSION: 1.64

VERSION: 1.64

TRAMO PRINCIPAL

EA747TP

FINISH DEPTH: **801.3** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:06** MODE: **ORIGINAL**

NEUTRON

0 Unid. API 300

ARRIBO CAN. LIBRE

200 uSeg. 1200

CBL 3' AMP

0 %CAN.LIBRE 10

CCL

-3600 mV. 400

ENERGIA VARIABLE

0 85

VDL 5'

200 uSeg. 1200

CBL 3'

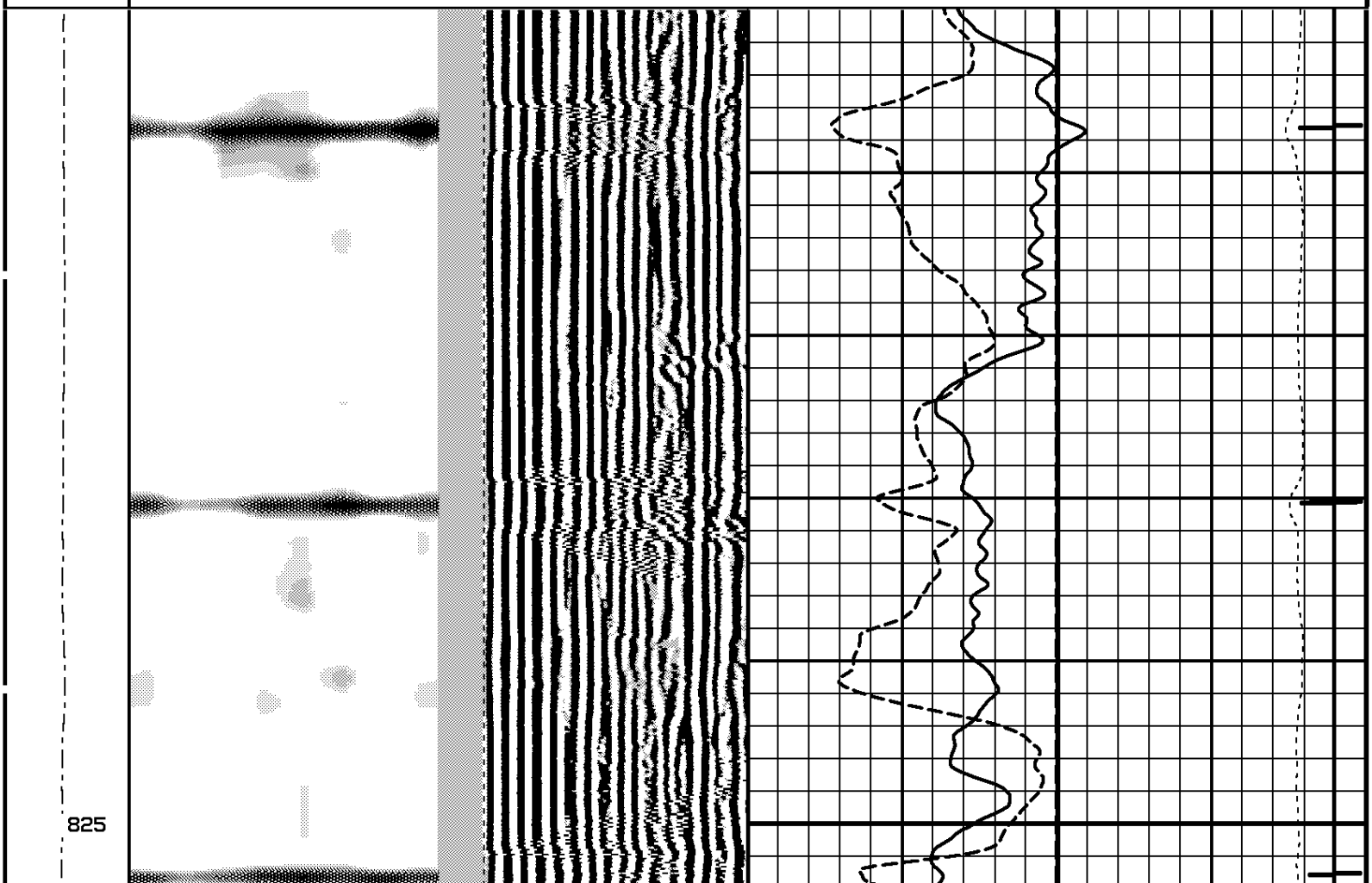
0 %CAN.LIBRE 100

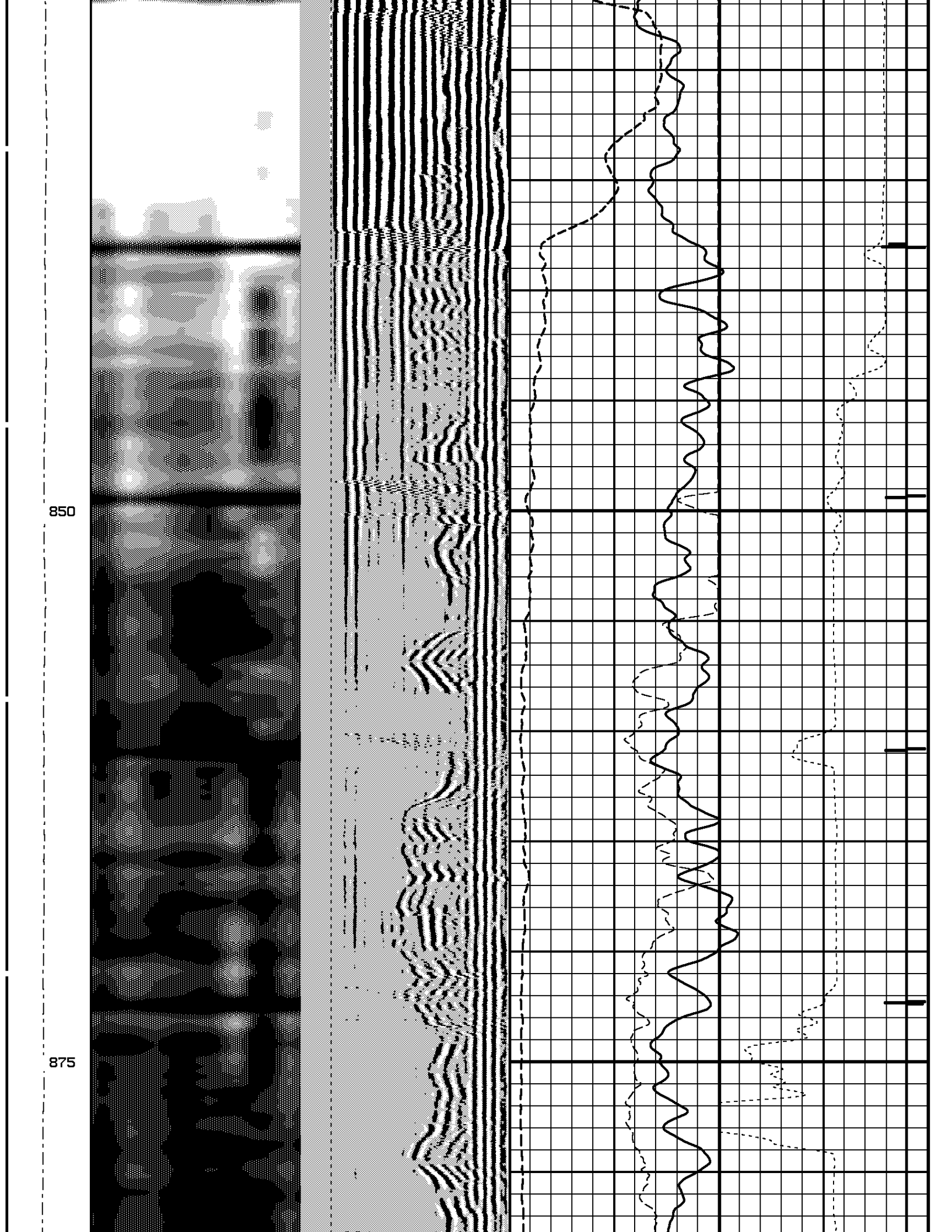
TIEMPO DE TRANSITO

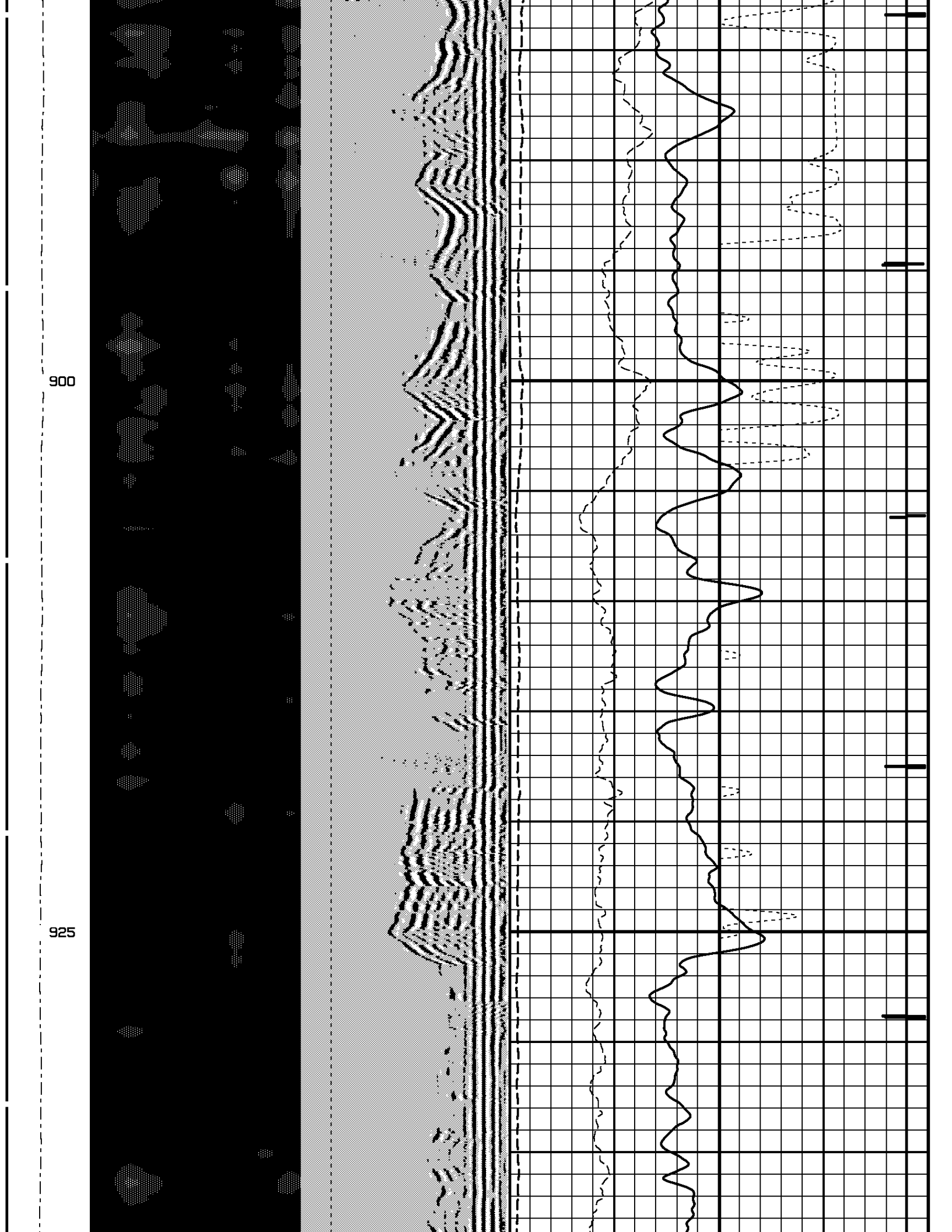
400 uSeg. 200

TENSION

0 1000




850
875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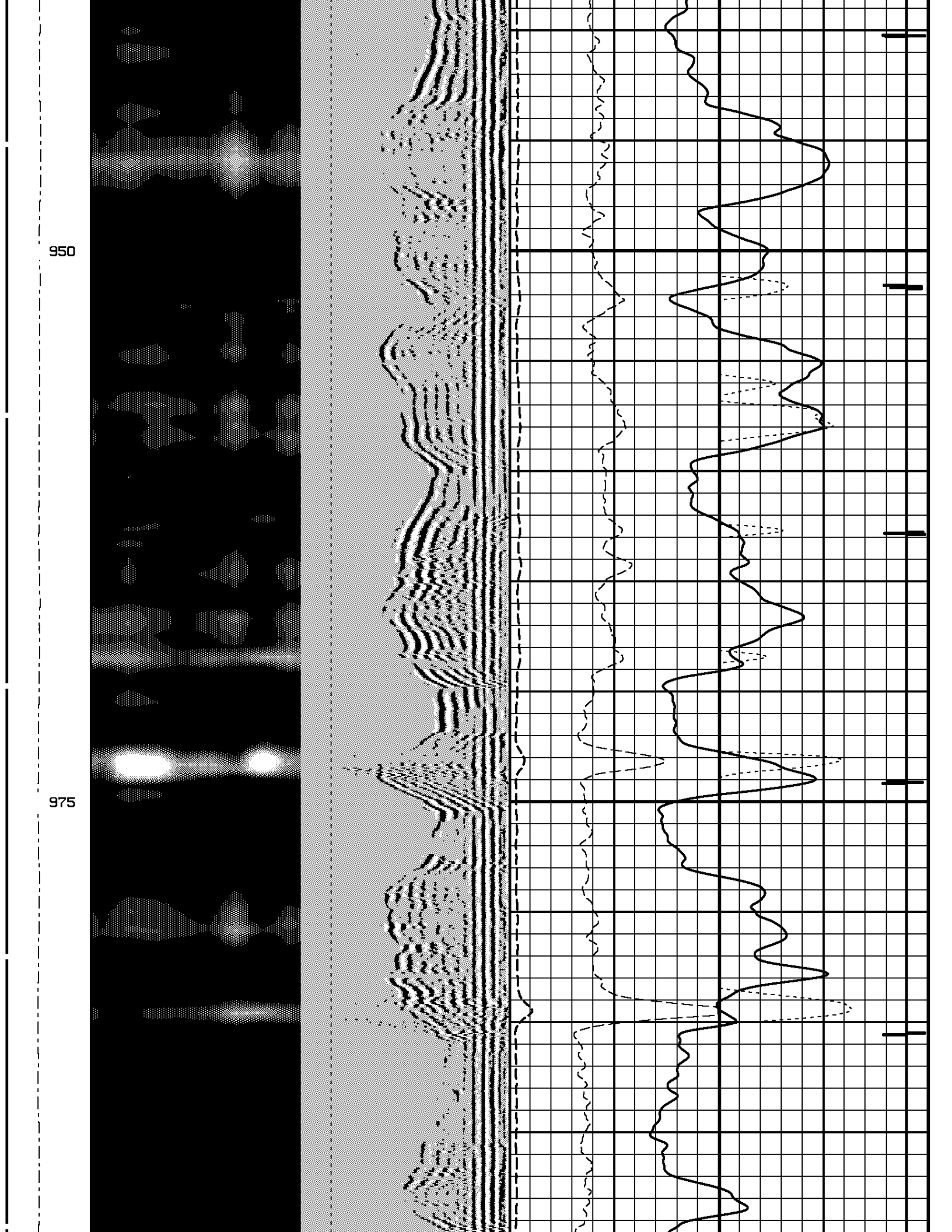
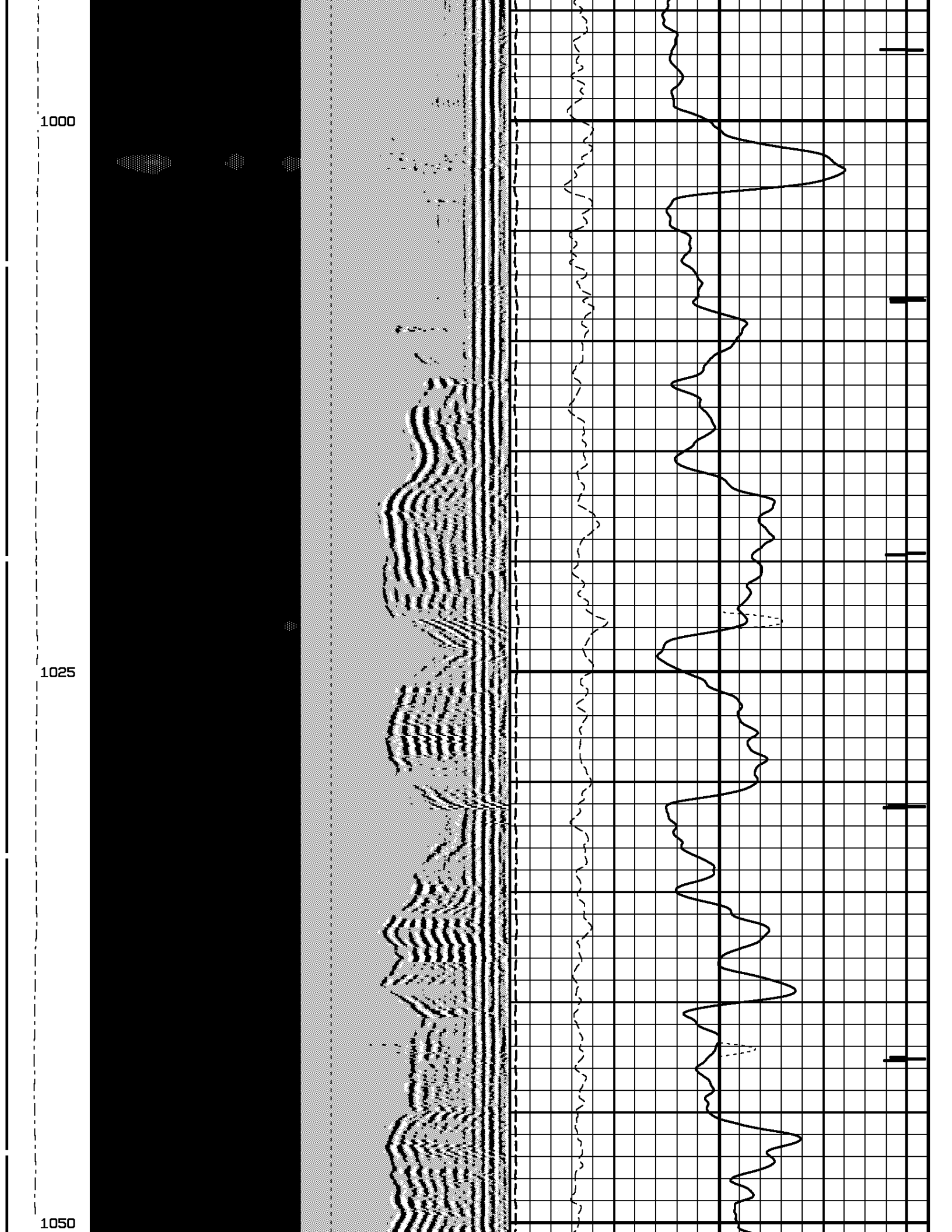
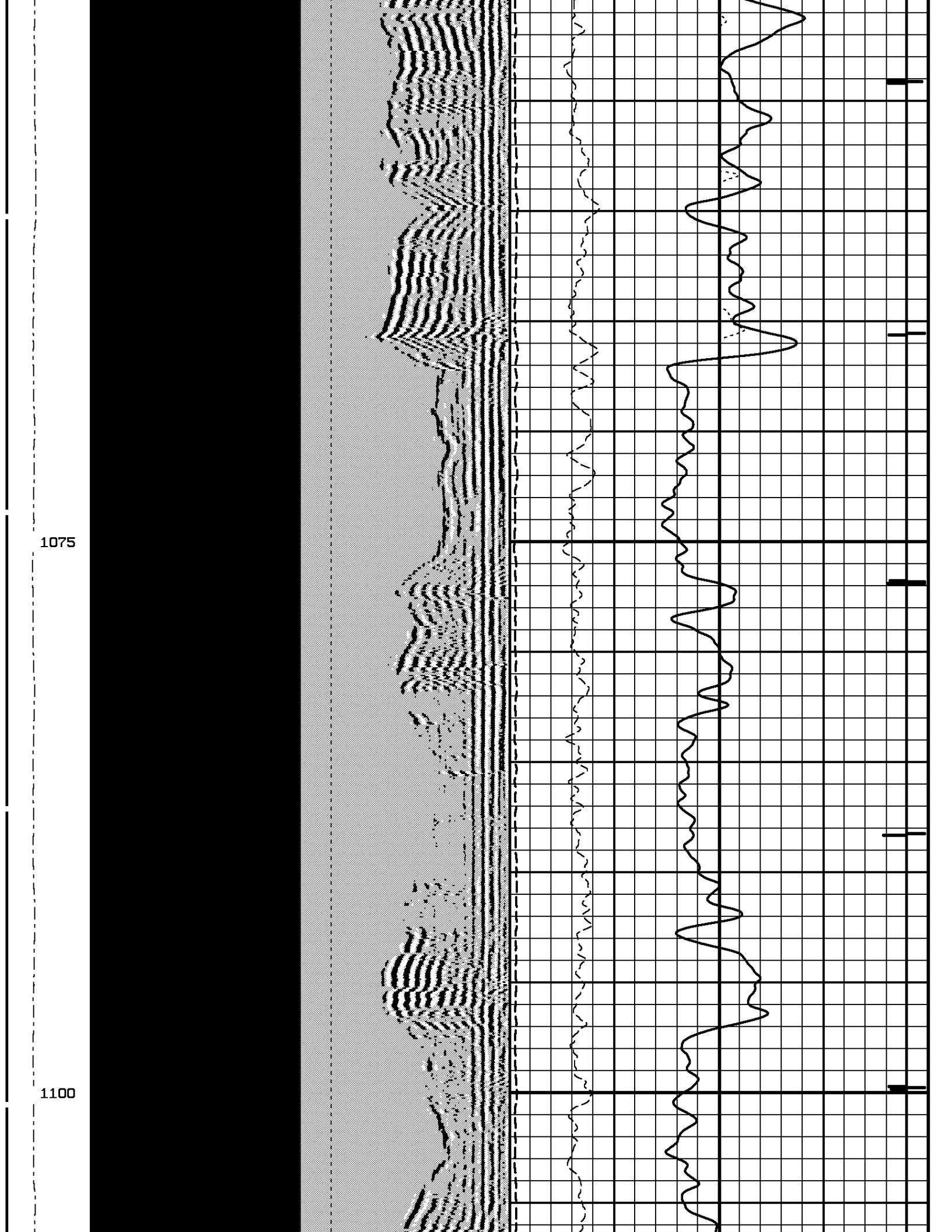
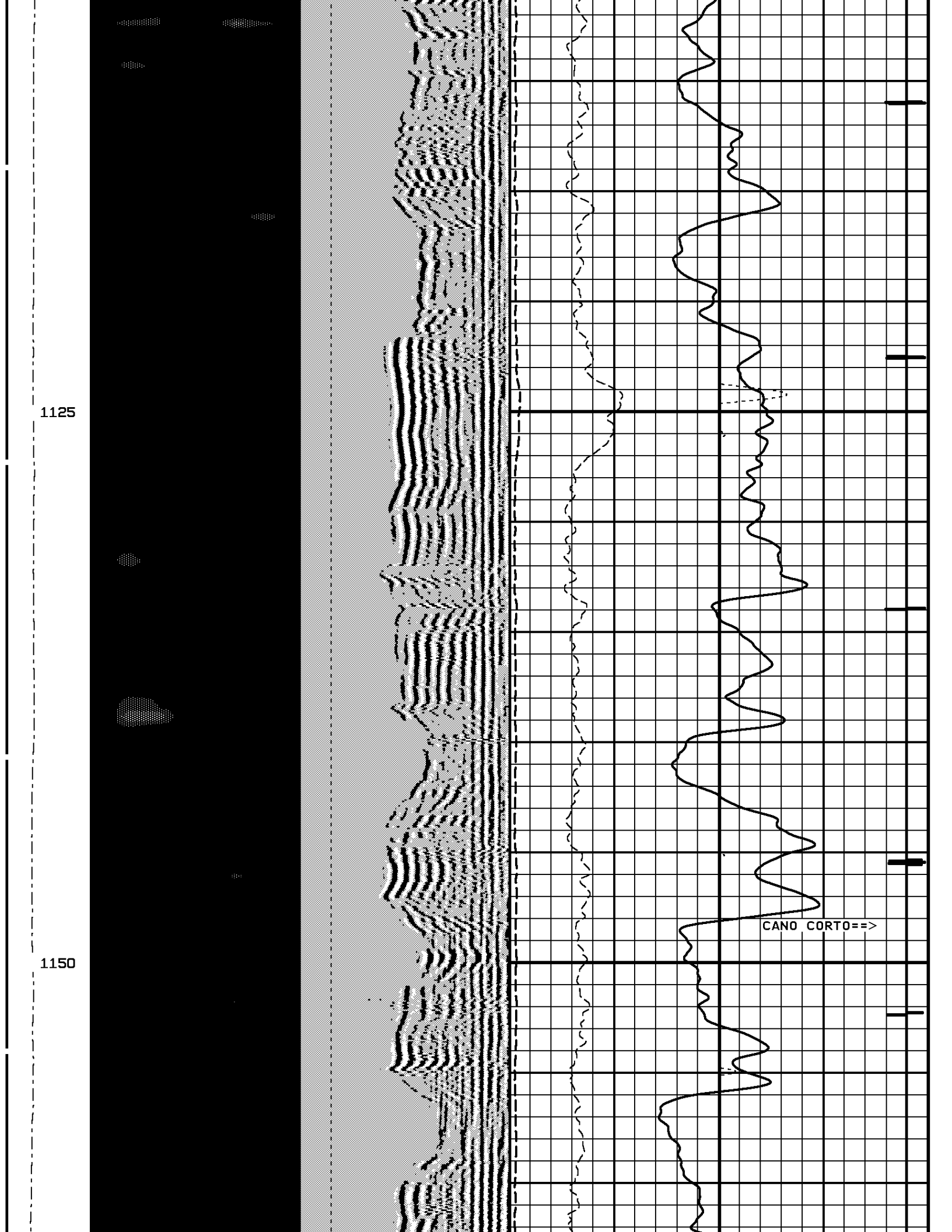
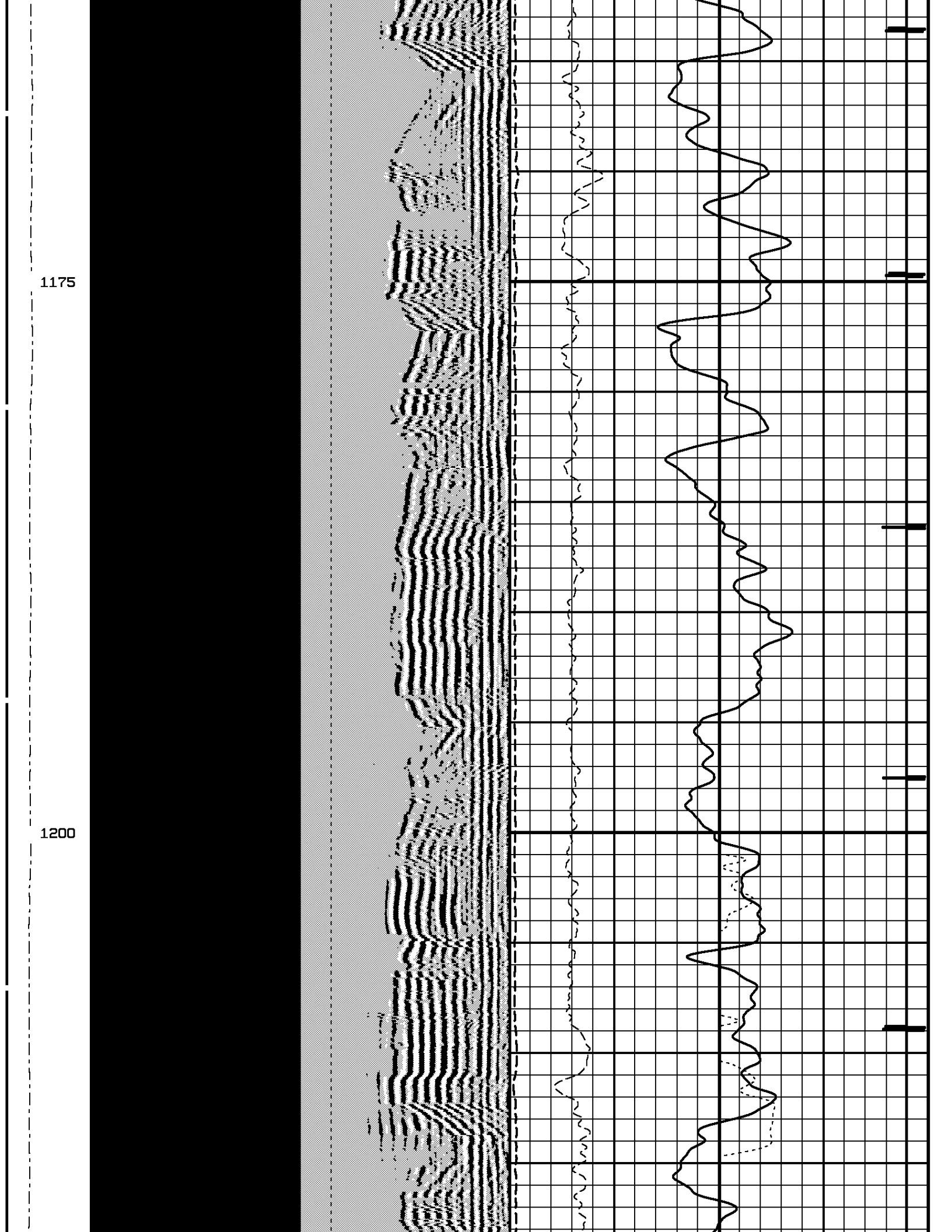
925


950
975


1000
1025
1050


1075
1100


1125
1150
CANO CORTO==>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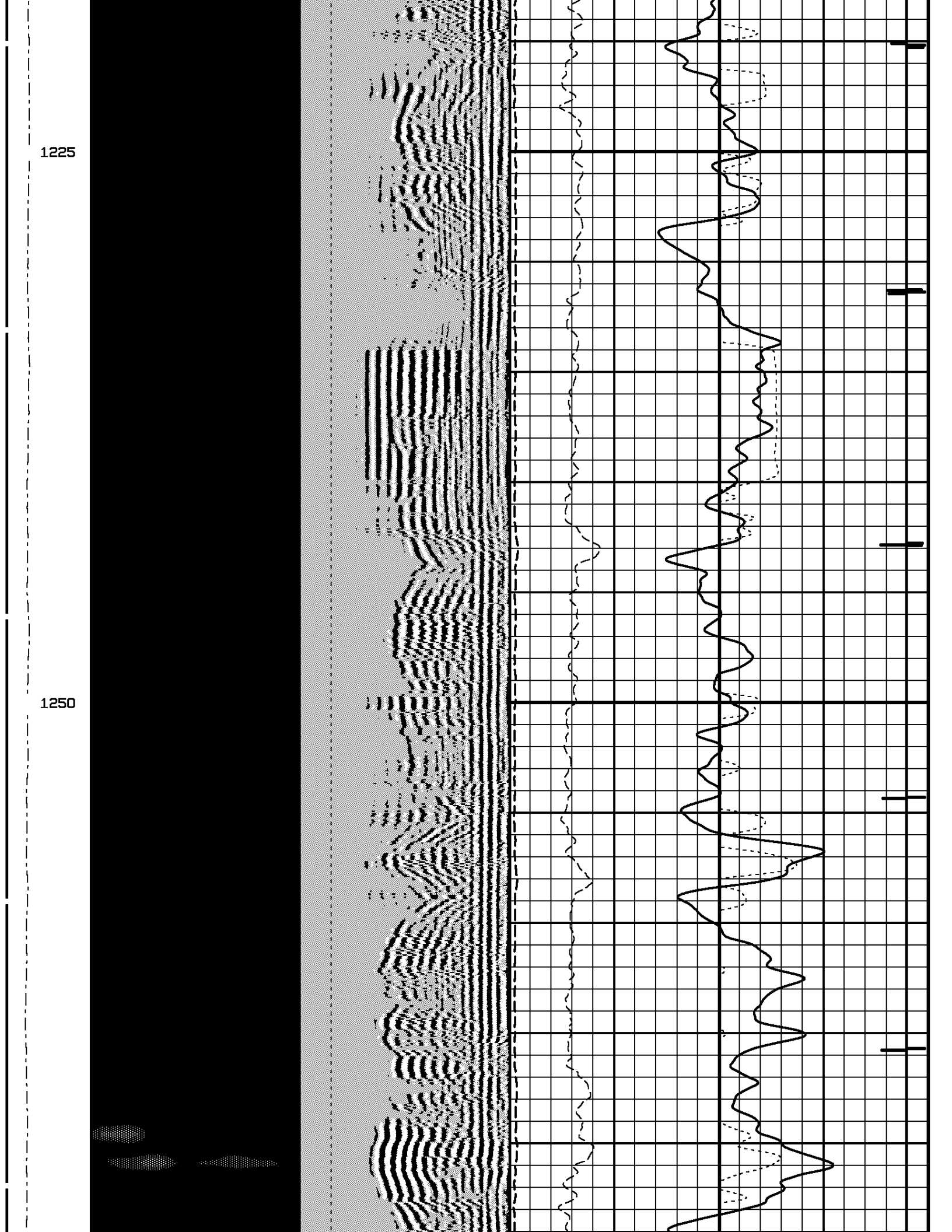
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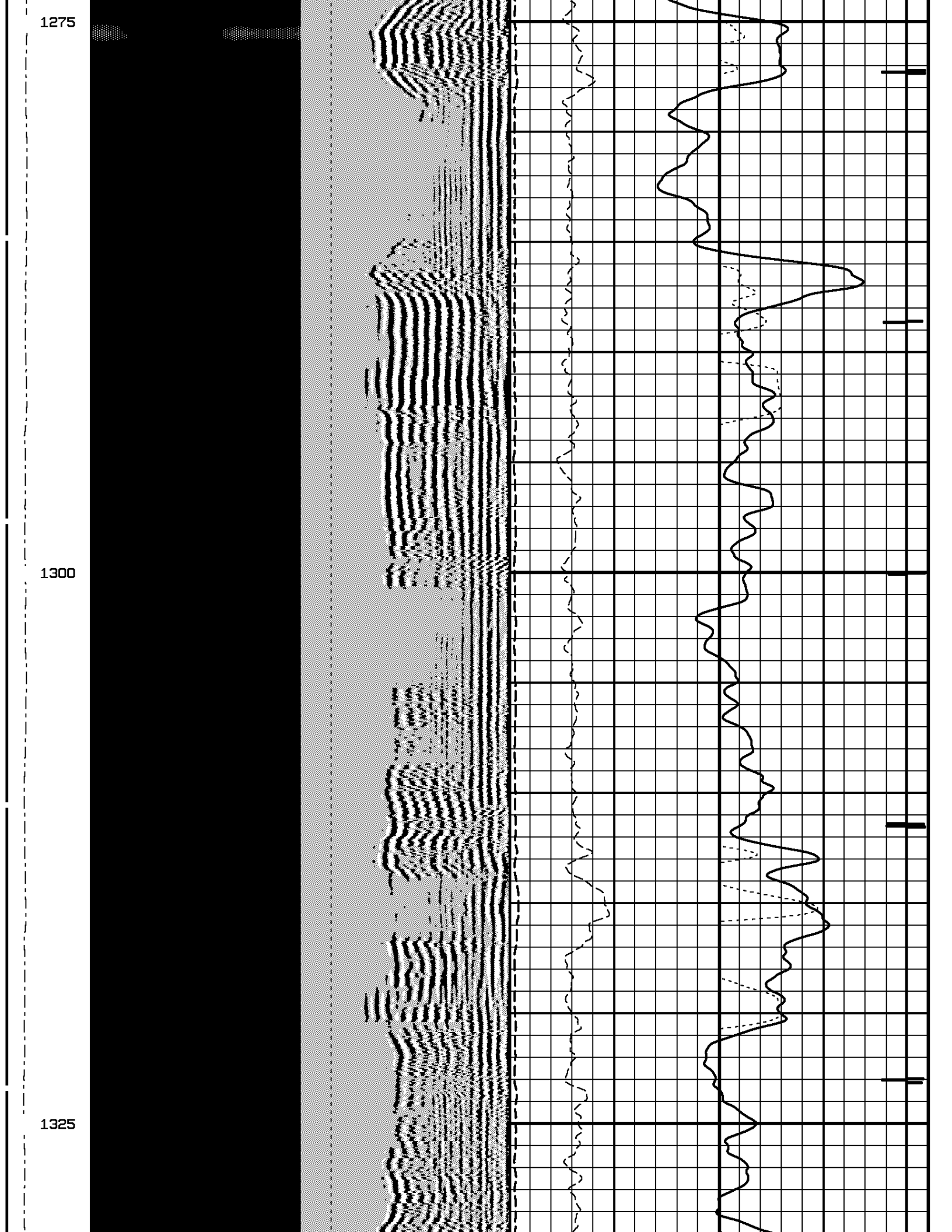
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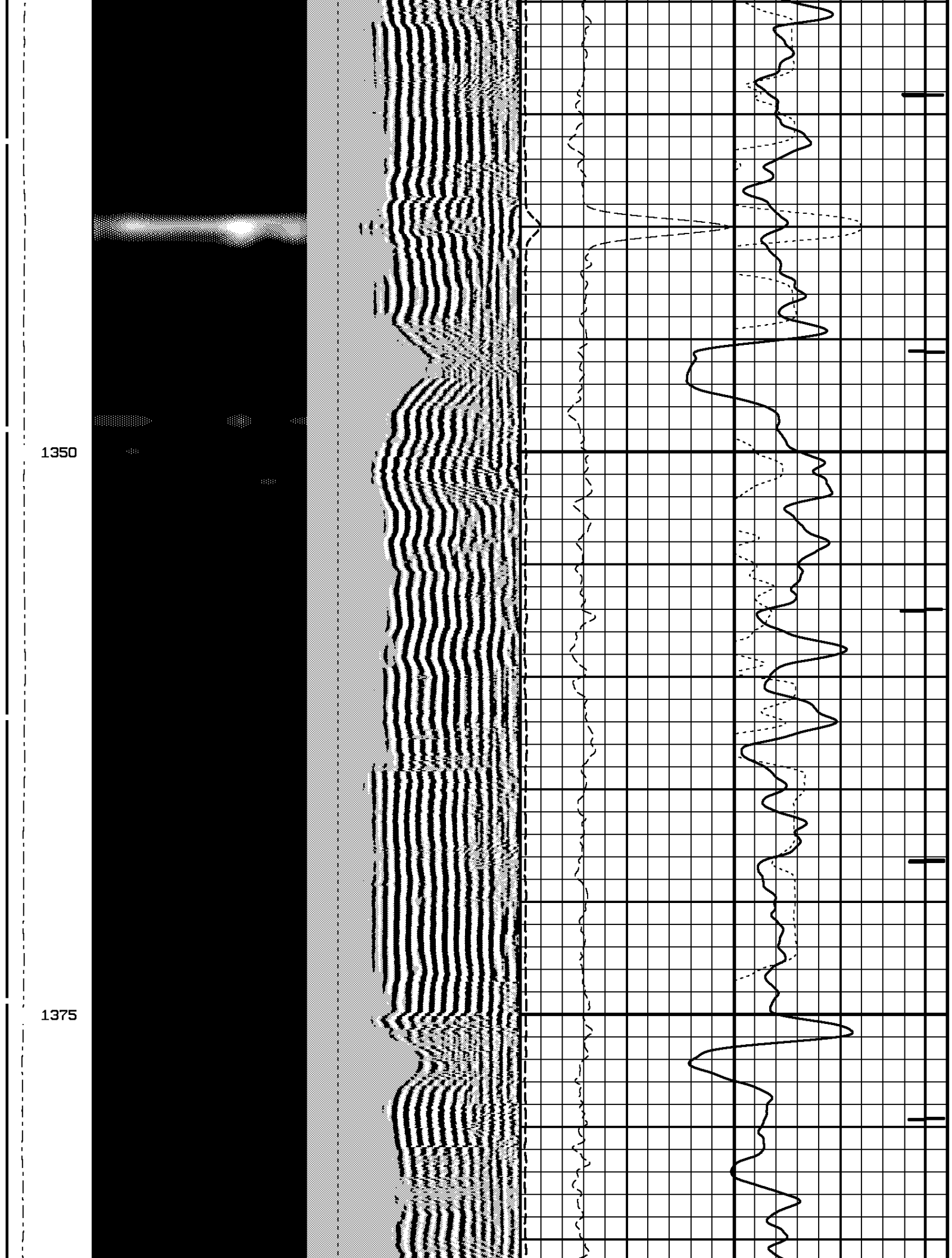
1300
1325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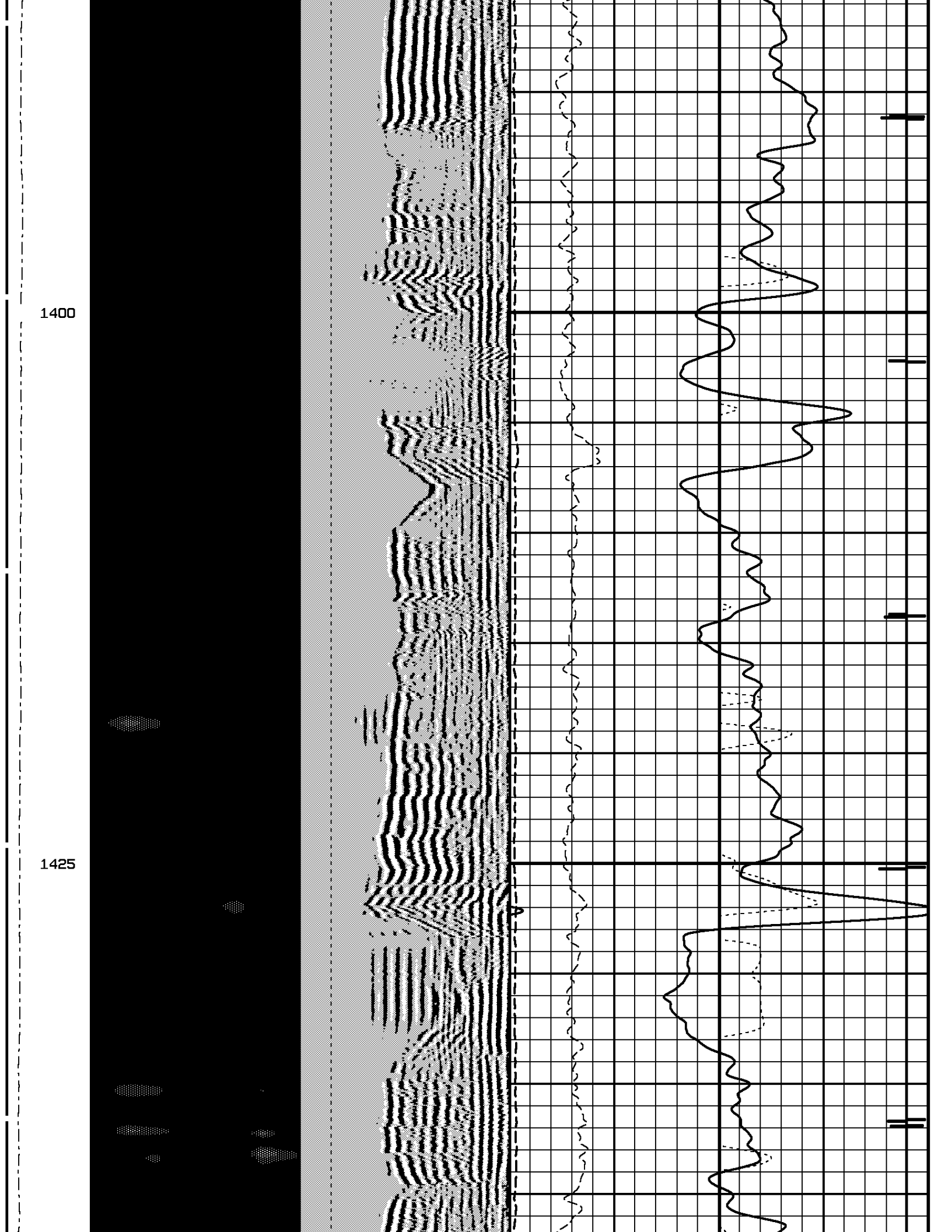
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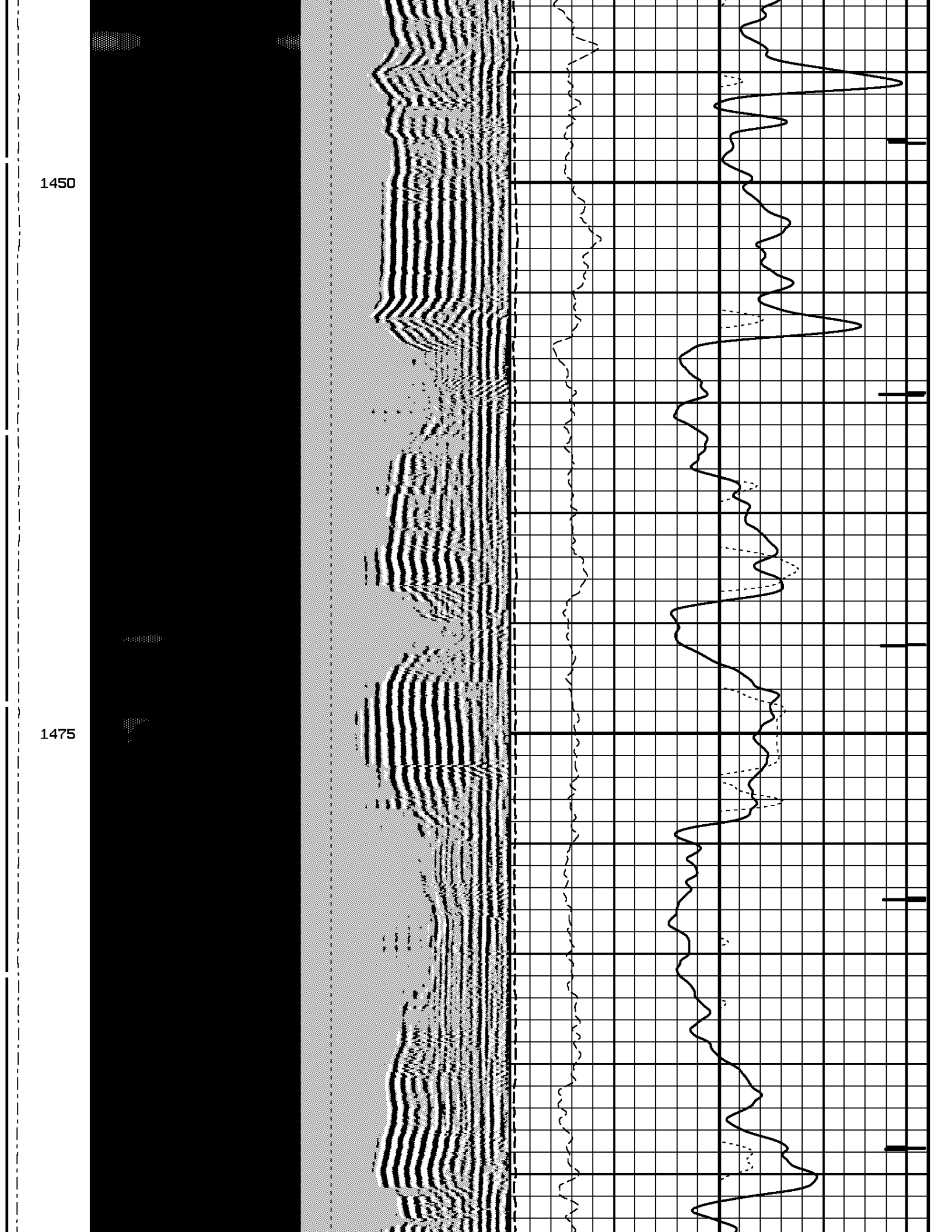
1425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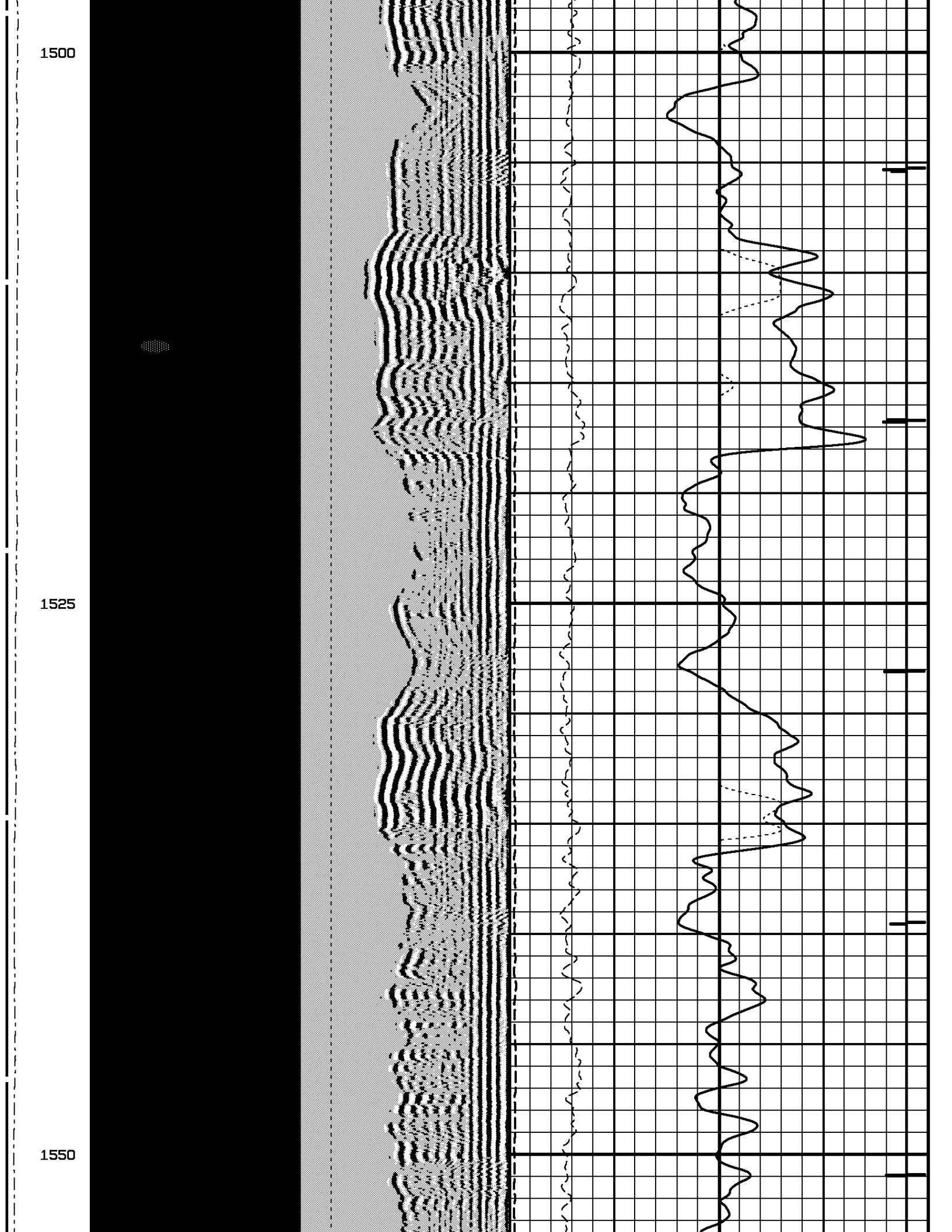
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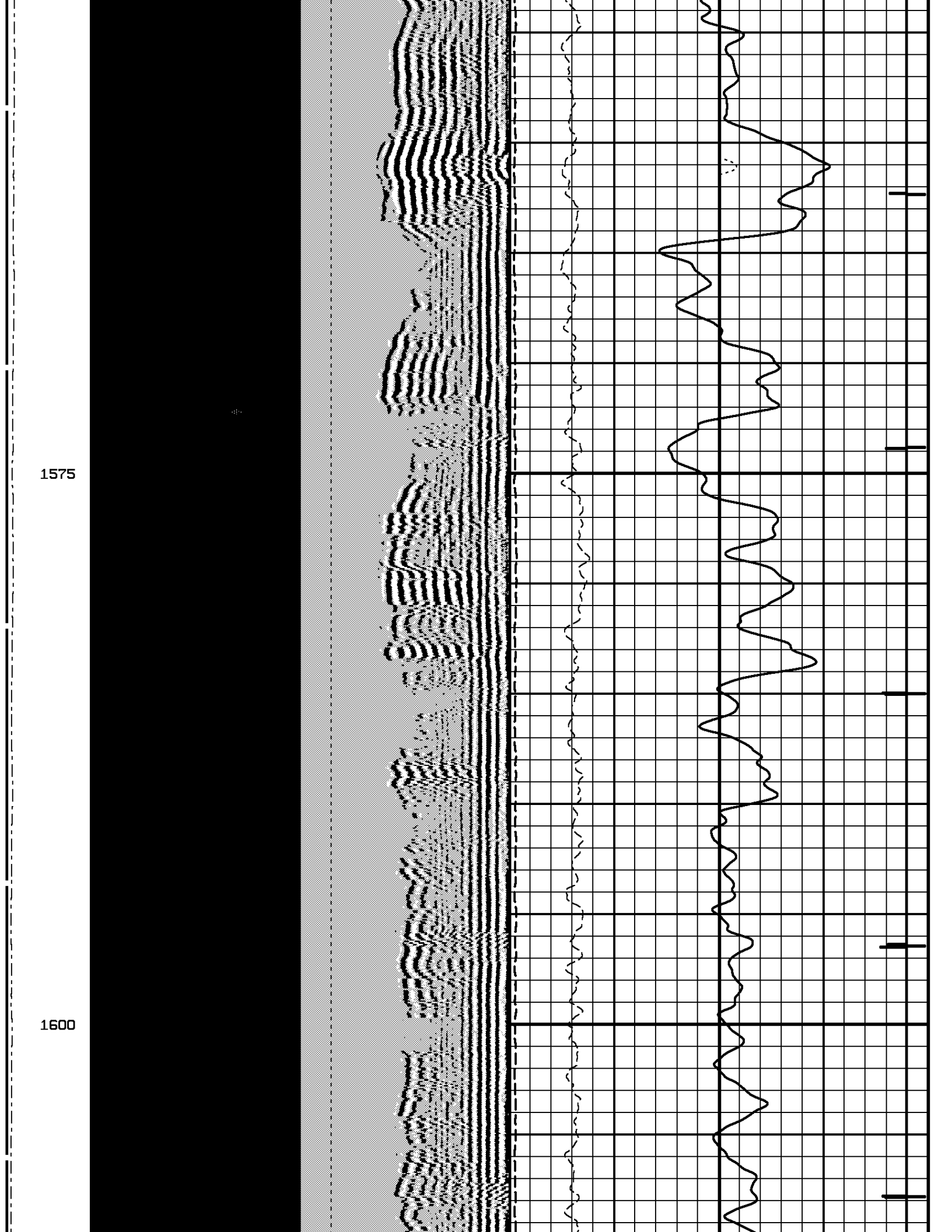
1550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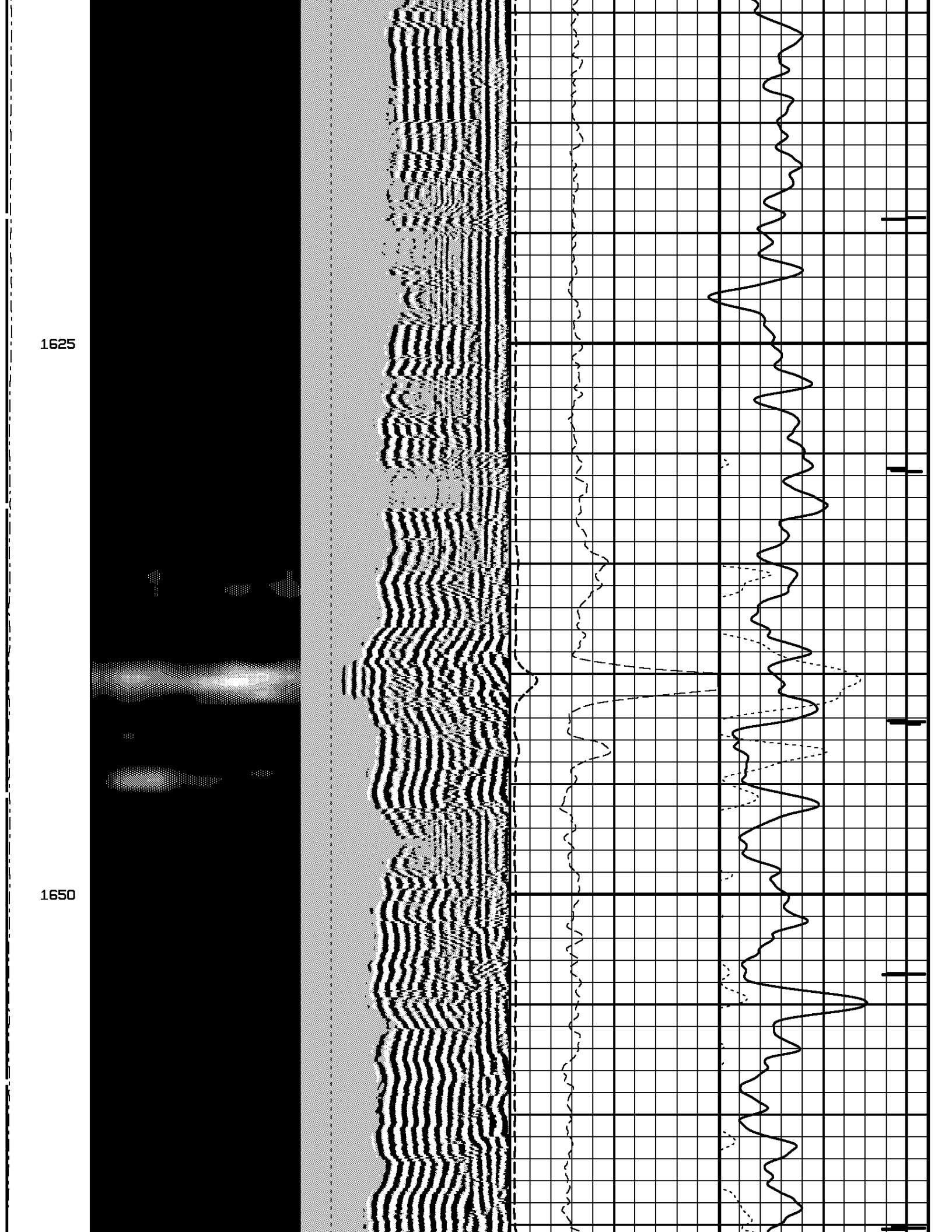
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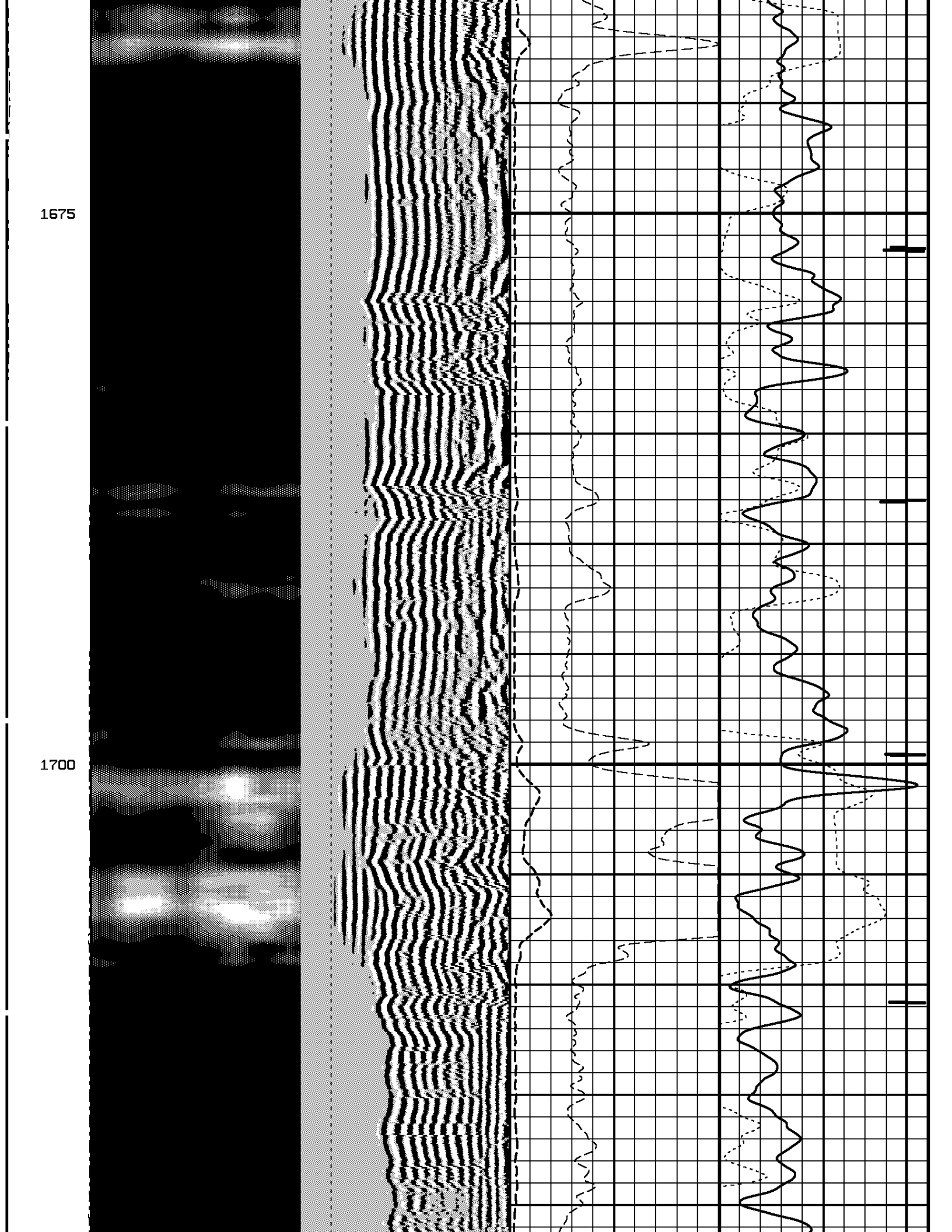
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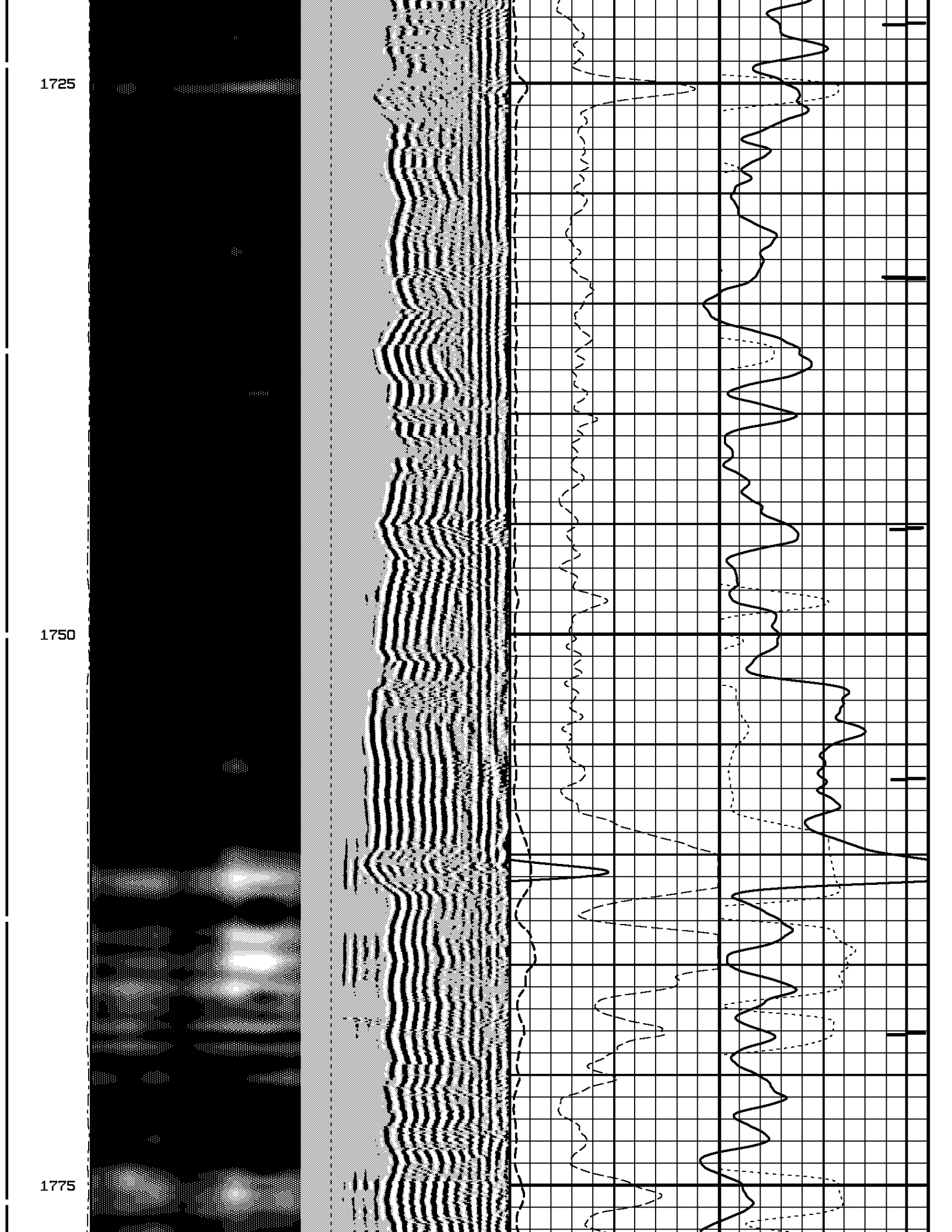
1700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1750
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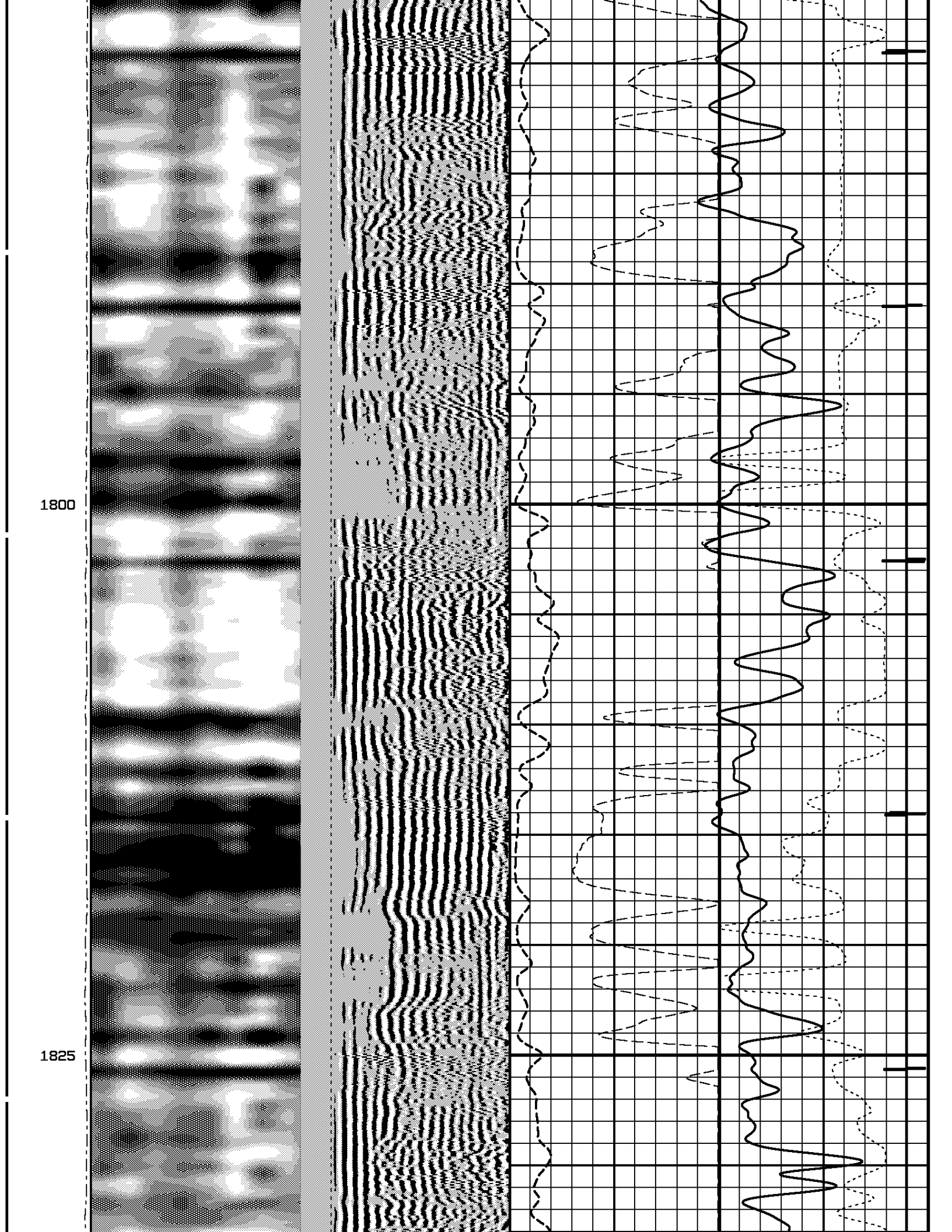
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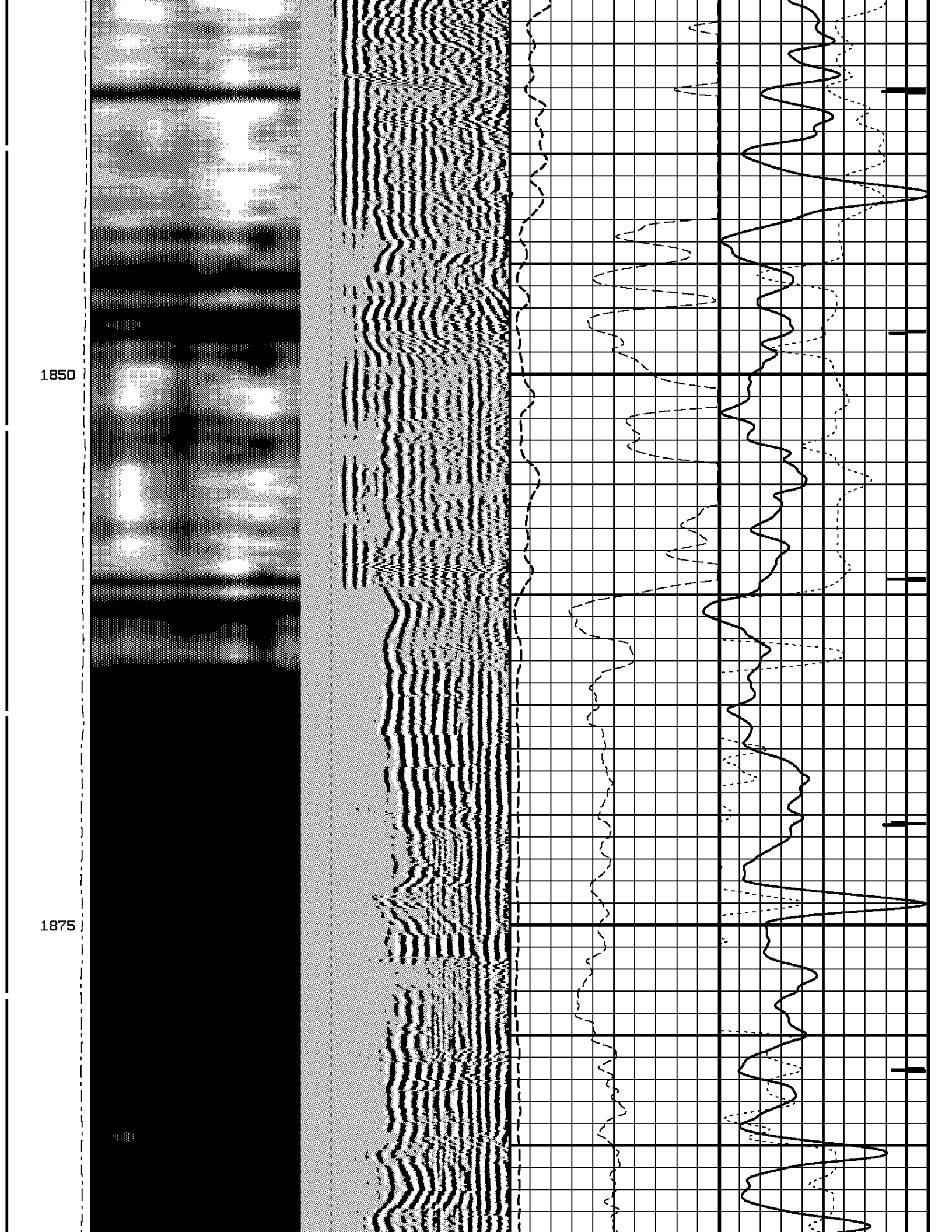
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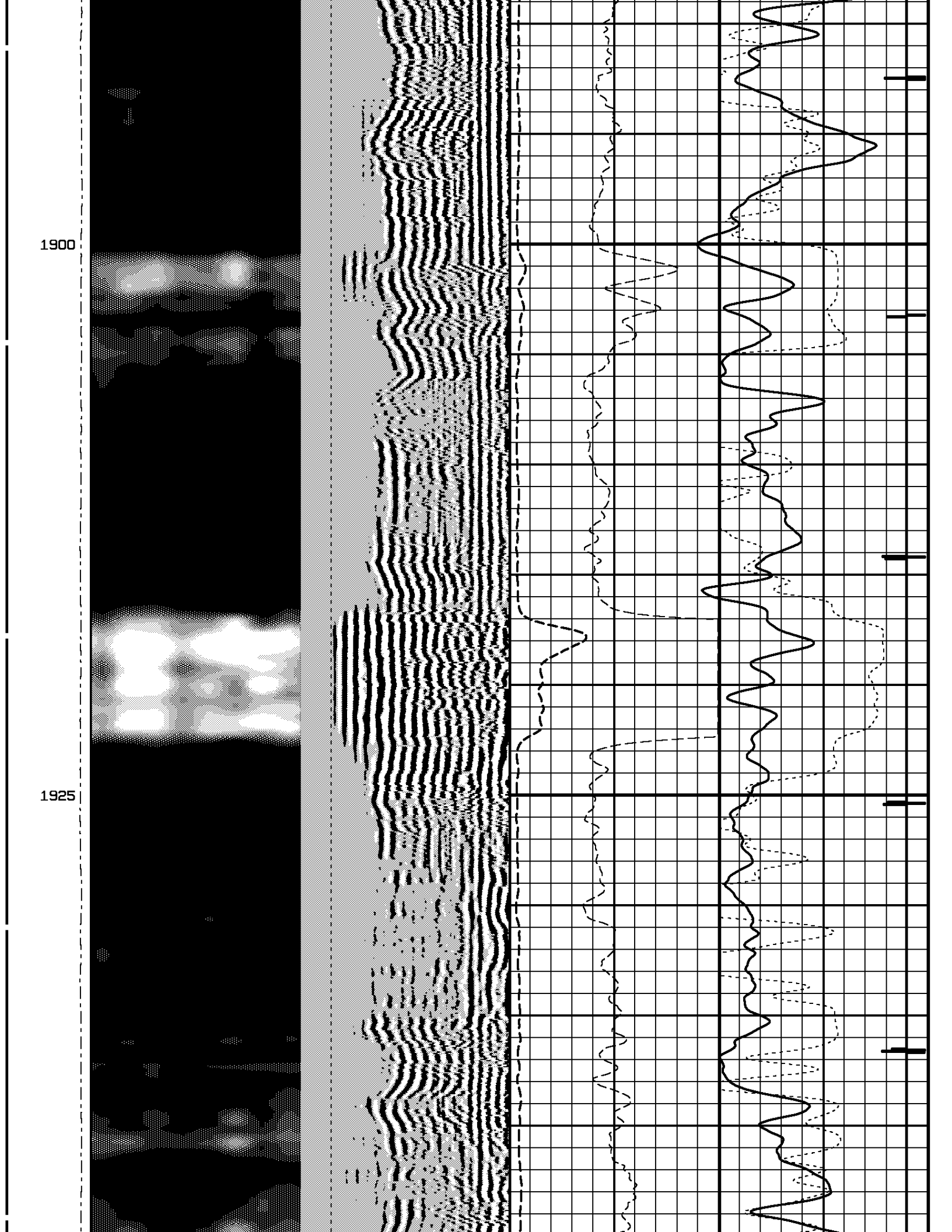
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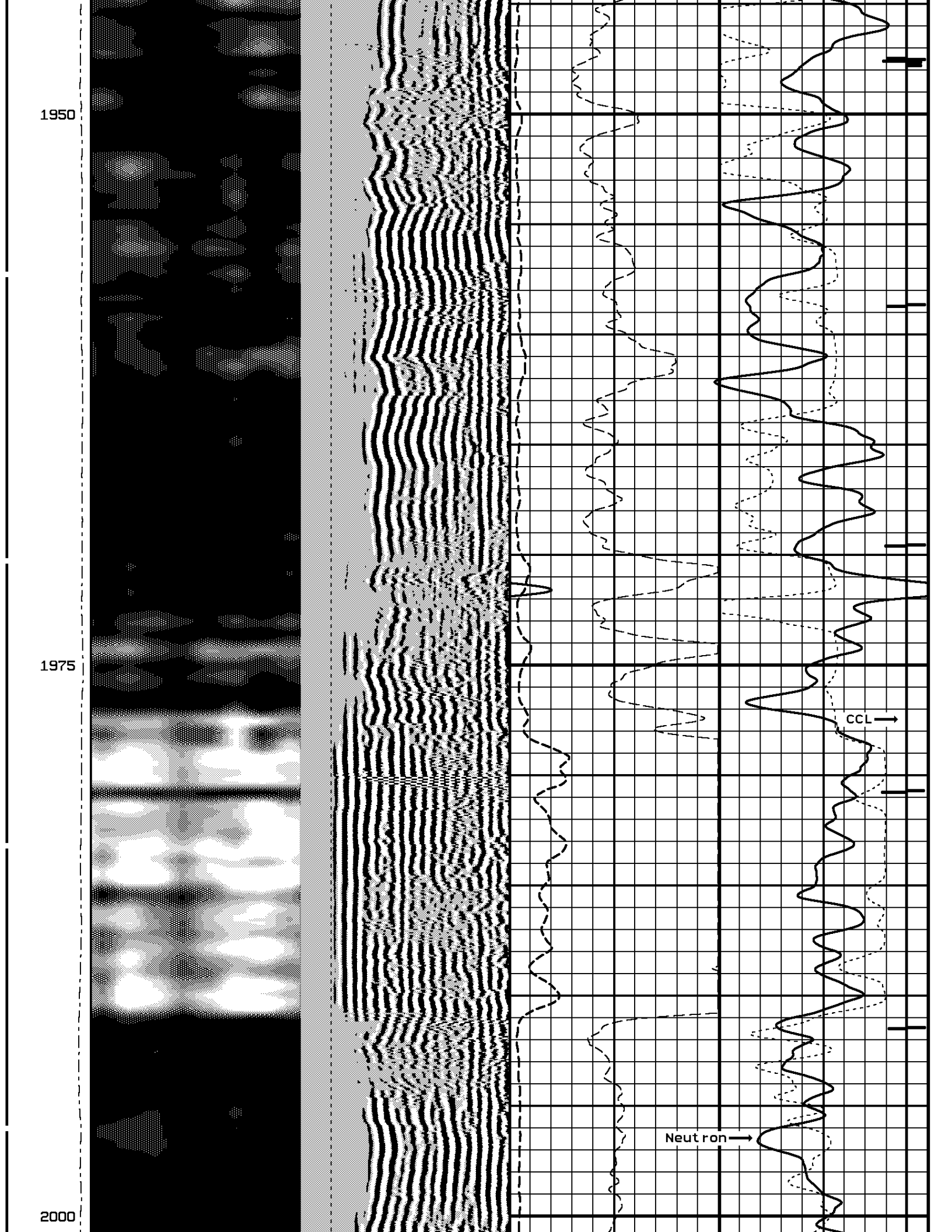
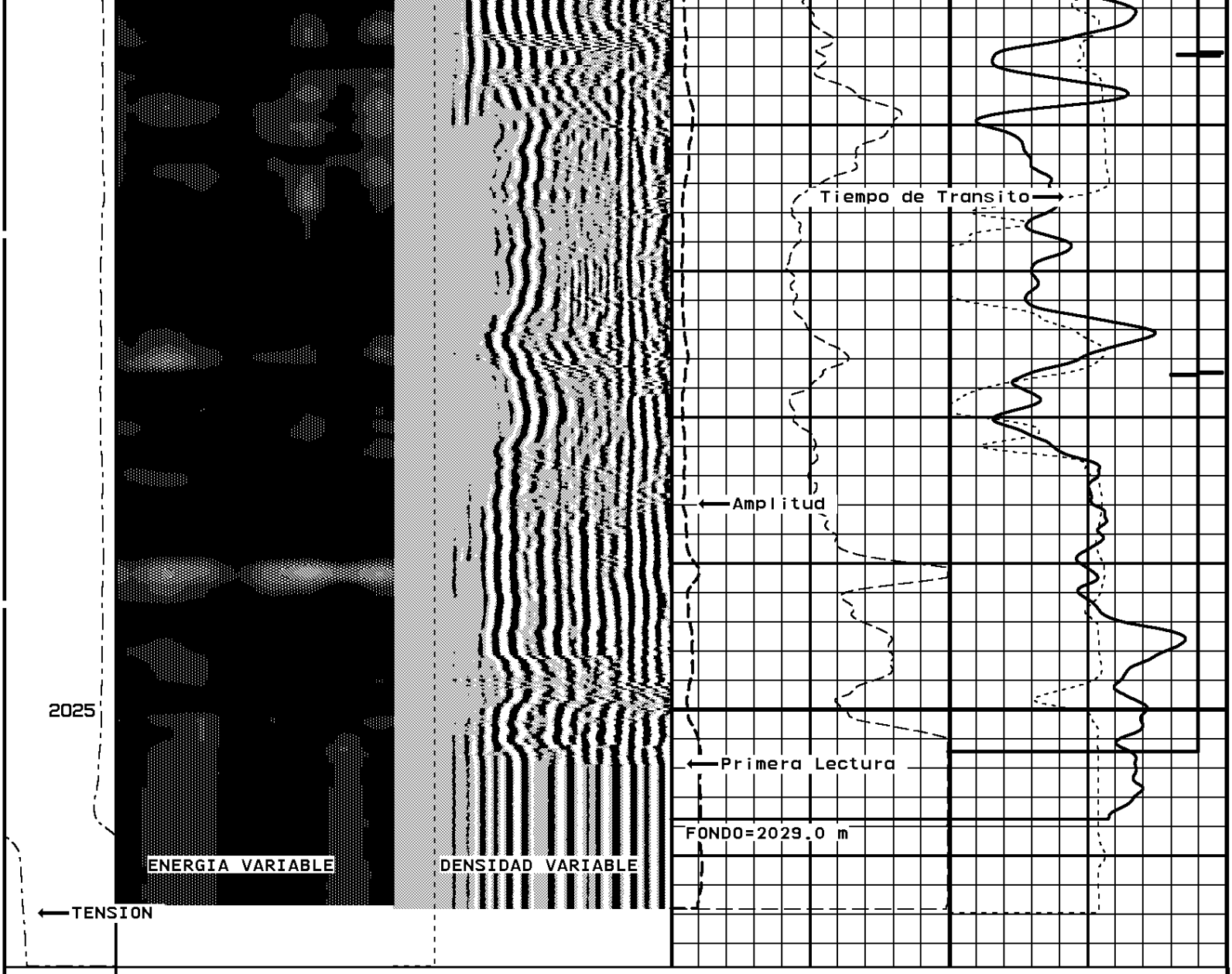

1950
1975
2000
CCL
Neutron



TENSION
0 1000

ENERGIA VARIABLE	VDL 5'	CBL 3'	TIEMPO DE TRANSITO
0 85	200 uSeg. 1200	0 %CAN.LIBRE 100	400 uSeg. 200
	ARRIBO CAN. LIBRE	**CBL 3' AMP**	**CCL**
	200 uSeg. 1200	0 %CAN.LIBRE 10	-3600 mV. 400
		NEUTRON	
		0 Unid. API 300	

START DEPTH: **2033.8** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **22:33** MODE: **ORIGINAL**

EA747TP

TRAMO PRINCIPAL

VERSION: 1.64

VERSION: 1.64

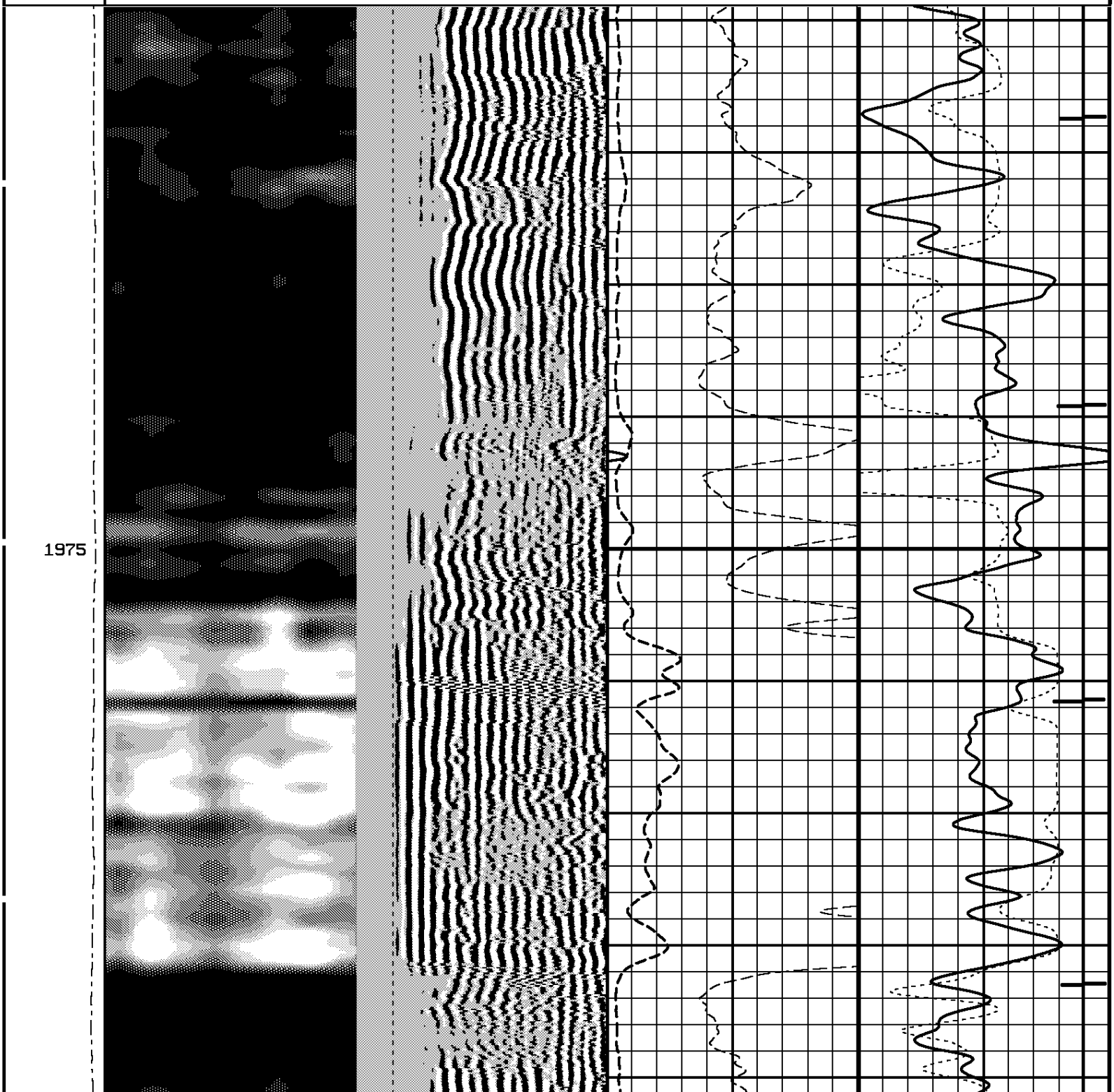
TRAMO REPETIDO

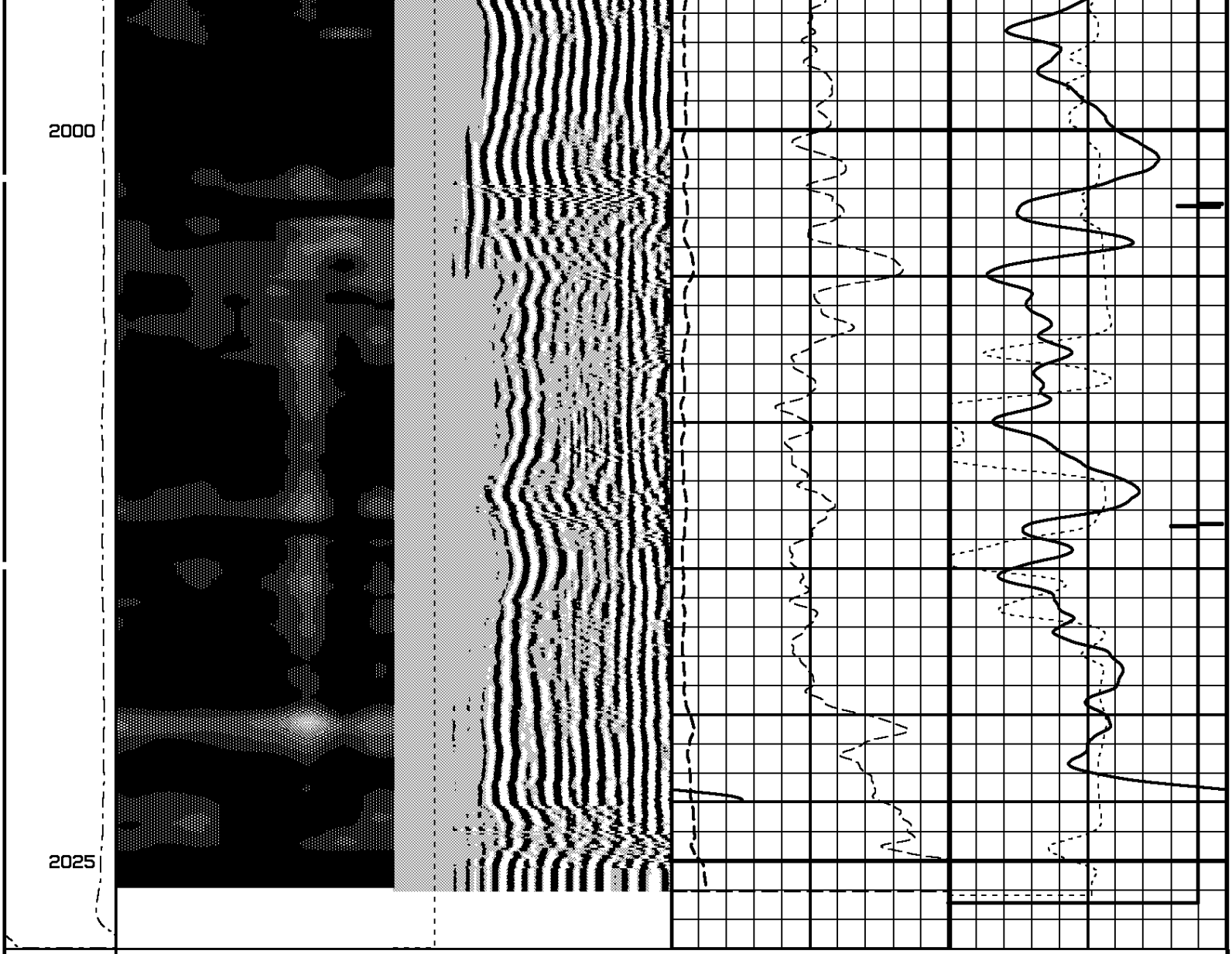
TRAMO REPETIDO

EA747TR

FINISH DEPTH: **1955.8** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:20** MODE: **ORIGINAL**

NEUTRON		
0 Unid. API 300		
ARRIBO CAN. LIBRE	CBL 3' AMP	CCL
200 uSeg. 1200	0 %CAN.LIBRE 10	-3600 mV. 400
ENERGIA VARIABLE	VDL 5'	CBL 3'	TIEMPO DE TRANSITO
0 85	200 uSeg. 1200	0 %CAN.LIBRE 100	400 uSeg. 200
TENSION			
0 1000			





TENSION
0 1000

ENERGIA VARIABLE	VDL 5'	CBL 3'	TIEMPO DE TRANSITO
0 85	200 uSeg. 1200	0 %CAN.LIBRE 100	400 uSeg. 200
	ARRIBO CAN. LIBRE	CBL 3' AMP	CCL
	200 uSeg. 1200	0 %CAN.LIBRE 10	-3600 mV. 400
		NEUTRON	
		0 Unid. API 300	

START DEPTH: **2028.0** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:18** MODE: **ORIGINAL**

EA747TR

TRAMO REPETIDO

VERSION: 1.64

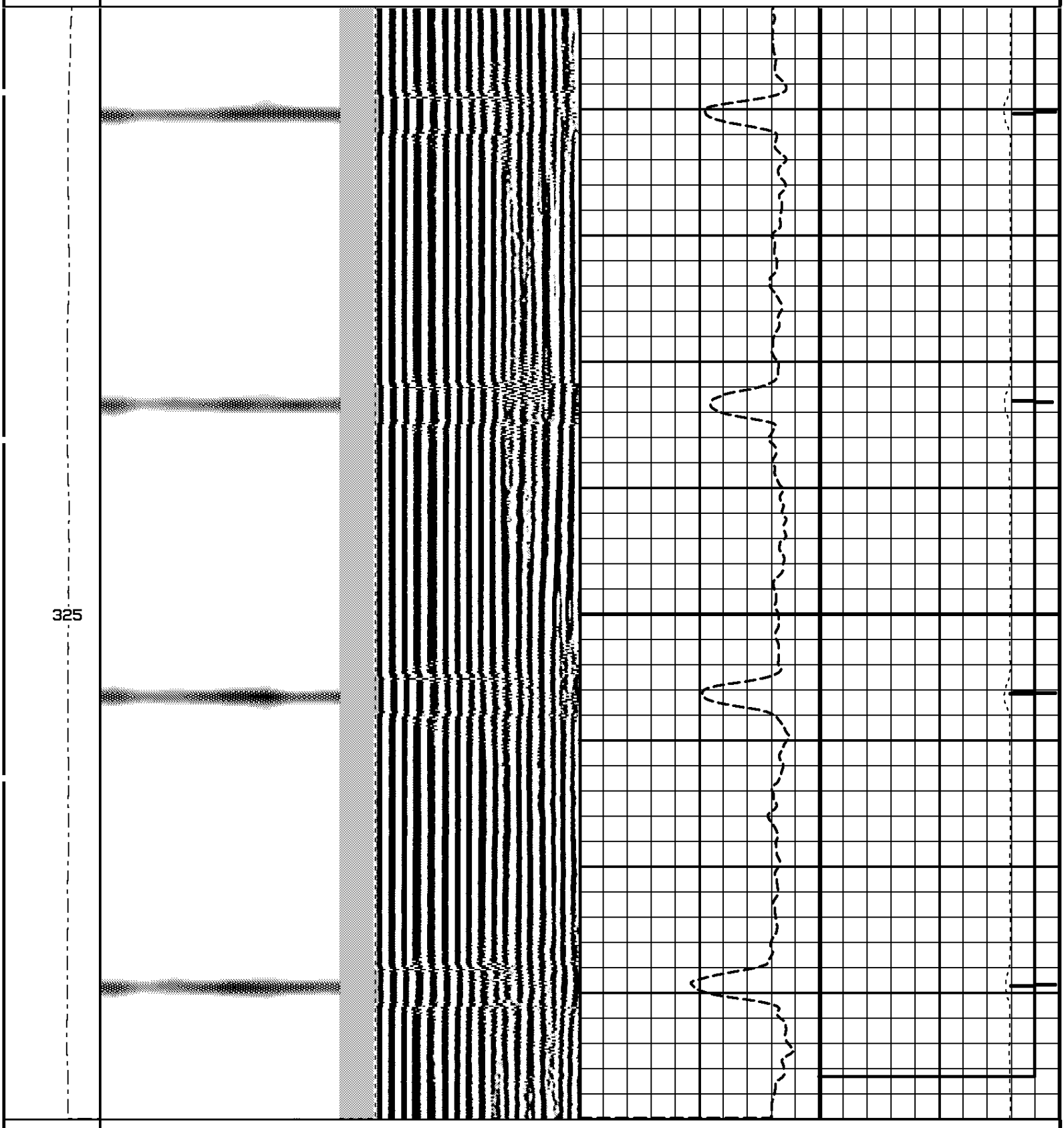
VERSION: 1.64

REPETIDO CBL

EA747RCBL

FINISH DEPTH: **302.3** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:43** MODE: **ORIGINAL**

	ARRIBO CAN. LIBRE	CBL 3' AMP	CCL
	200 uSeg. 1200	0 %CAN.LIBRE 10	-3600 mV. 400
ENERGIA VARIABLE	VDL 5'	CBL 3'	TIEMPO DE TRANSITO
0 85	200 uSeg. 1200	0 %CAN.LIBRE 100	400 uSeg. 200
TENSION			
0 1000			



TENSION
0 1000

ENERGIA VARIABLE	VDL 5'	CBL 3'	TIEMPO DE TRANSITO
0 85	200 uSeg. 1200	0 %CAN.LIBRE 100	400 uSeg. 200
	ARRIBO CAN. LIBRE	CBL 3' AMP	CCL
	200 uSeg. 1200	0 %CAN.LIBRE 10	-3600 mV. 400

START DEPTH: **345.0** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:42** MODE: **ORIGINAL**

EA747RCBL

REPETIDO CBL

VERSION: 1.64

REMARKS

ANALISIS DE REPETIBILIDAD

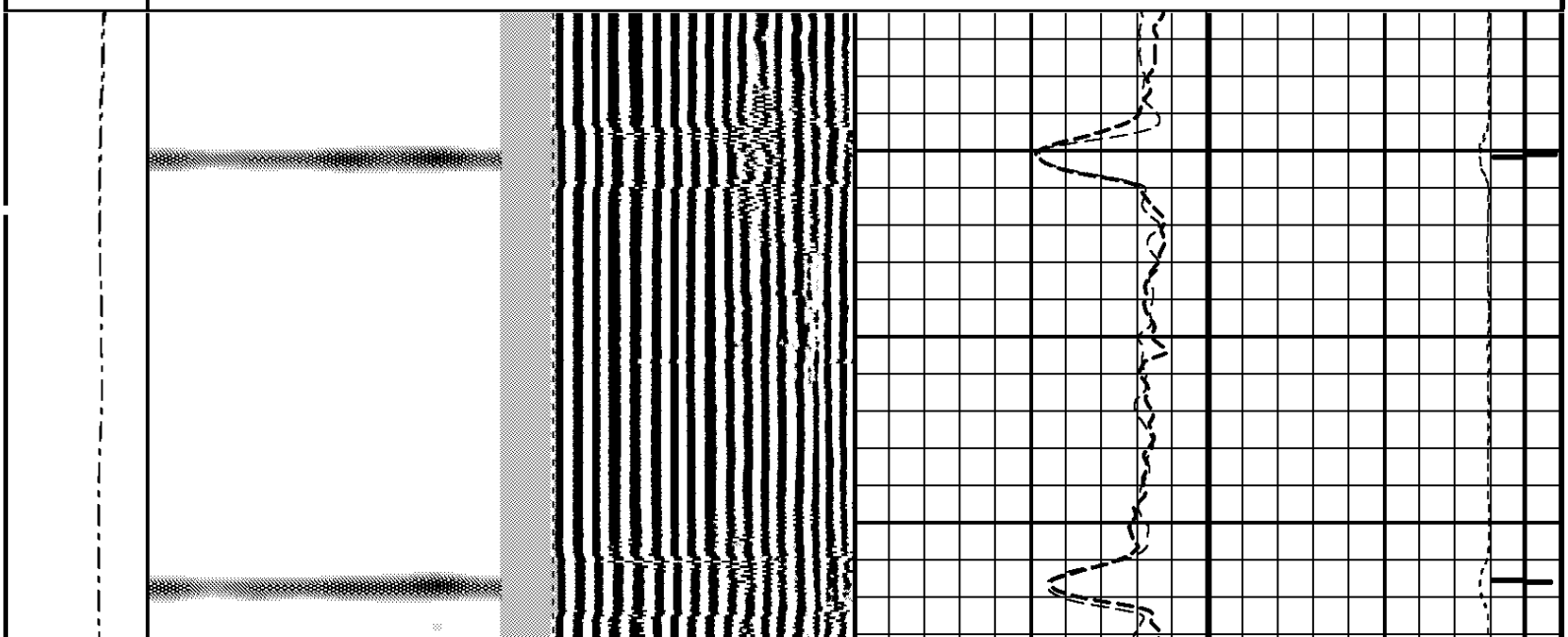
VERSION: 1.64

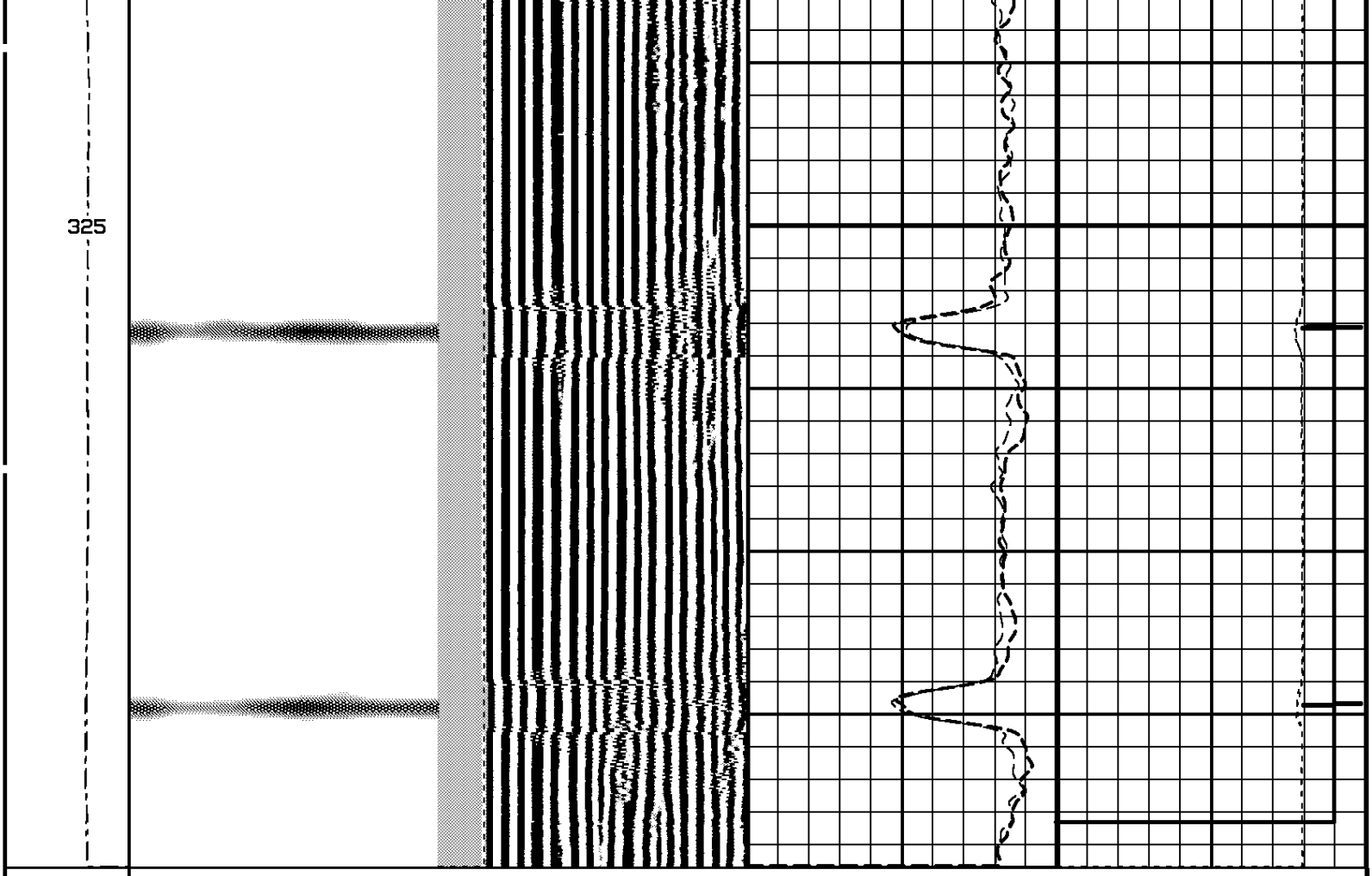
FINISH DEPTH: **302.5** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:47** MODE: **ORIGINAL**

		CBL 3' AMP. Rep.	
		0 %CAN.LIBRE 10	
		CBL 3' Repetido	T. de Transito Rep
		0 %CAN.LIBRE 100	400 uSeg. 200
	ARRIBO CAN. LIBRE	CBL 3' AMP	CCL
	200 uSeg. 1200	0 %CAN.LIBRE 10	-3600 mV. 400
ENERGIA VARIABLE	VDL 5'	CBL 3'	TIEMPO DE TRANSITO
0 85	200 uSeg. 1200	0 %CAN.LIBRE 100	400 uSeg. 200

Ten.Rep
0 1000

TENSION
0 1000





TENSION
0 1000

Ten.Rep
0 1000

ENERGIA VARIABLE
0 85

VDL 5'
200 uSeg. 1200

ARRIBO CAN. LIBRE
200 uSeg. 1200

CBL 3'
0 %CAN.LIBRE 100

CBL 3' AMP
0 %CAN.LIBRE 10

CBL 3' Repetido
0 %CAN.LIBRE 100

CBL 3' AMP. Rep.
0 %CAN.LIBRE 10

TIEMPO DE TRANSITO
400 uSeg. 200

CCL
-3600 mV. 400

T. de Transito Rep
400 uSeg. 200

START DEPTH: **344.7** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:46** MODE: **ORIGINAL**

VERSION: 1.64

REMARKS

ANALISIS DE REPETIBILIDAD

VERSION: 1.64

FINISH DEPTH: **1956.3** METERS DIRECTION: **UP** DATE: **10/08/2009** TIME: **23:32** MODE: **ORIGINAL**

NEUTRON Repetido