A N E X O S

Registro Provincial de Prestadores Ambientales de EySA SRL

REPUBLICA ARGENTINA
PROVINCIA DEL CHUBUT

MINISTERIO DE AMBIENTE Y CONTROL DEL DESARROLLO SUSTENTABLE

SUBSECRETARÍA DE GESTION AMBIENTAL Y DESARROLLO SUSTENTABLE

Dirección Gral. de Asesoría Legal y Normativa Ambiental
FOLIO Nº 1089
MA y CDS

RAWSON, 12 DIC 2014

VISTO:

El Expediente Nº 0320-MAyCDS-07; y

CONSIDERANDO:

Que por el Expediente citado en el Visto la empresa ESTUDIOS Y SERVICIOS AMBIENTALES S.R.L., solicita la renovación de la inscripción en el Registro Provincial de Prestadores de Consultoría Ambiental en las categorías "Consultoría Ambiental" y "Expertos Ambientales de la Industria Petrolera";

Que por aplicación del Decreto 39/2013, se establece en su artículo 1°: *"De acuerdo a lo establecido por los Artículos 110° inciso e) y 130° de la Ley XI N° 35 «Código Ambiental de la Provincia del Chubut», la Autoridad de Aplicación llevará el Registro Provincial de Prestadores de Consultoría Ambiental, en el que deberán inscribirse las personas físicas y/o jurídicas que realicen servicios de consultoría para la evaluación ambiental en el ámbito de la Provincia del Chubut, y cuyos trabajos sean presentados ante la Administración"*;

Que el artículo 2° del Decreto 39/2013 establece: *"El Registro Provincial de Prestadores de Consultoría Ambiental se compondrá a su vez de cuatro categorías: Consultoría Ambiental, Expertos Ambientales de la Industria Petrolera, Actividad Minera - minerales de primera y segunda categoría, y Actividad Minera - minerales de tercera categoría"*;

Gabriela Alejandrina ANDRADE
ABOGADA
A/C Jefatura Departamento Letrado
Dirección General Asesoría Legal
y Normativa Ambiental
Ministerio de Ambiente y Control
del Desarrollo Sustentable

Que los profesionales que integran el grupo de trabajo son comunes para ambas categorías: en calidad de responsable técnico el Licenciado en Ciencias Geológicas Fernando VALDOVINO, D.N.I. Nº 16.206.305, el Licenciado en Gestión Ambiental Daniel Alejandro WARTON, D.N.I. Nº 30.605.559, la Ingeniera Ambiental María Leonor AZAGRA, D.N.I. Nº 26.632.478, la Licenciada en Geología Melina Gisela SANTOMAURO, D.N.I. Nº 29.718.611, la Ingeniera Ambiental María Eugenia ZANDUETA, D.N.I. Nº 24.820.593, el Licenciado en Ciencias Geológicas Juan Manuel CASAL, D.N.I. Nº 24.508.074, el Licenciado en Diagnóstico y Gestión Ambiental Andrés Alexis IRIBE, D.N.I. Nº 30.461.106, el Licenciado en Ciencias Biológicas Pablo Antonio MONTES, D.N.I. Nº 30.742.668 y el Licenciado en Ciencias Antropológicas Santiago Francisco BARBICH, D.N.I. Nº 32.173.157;

Que el Señor Director de Registros y Sistemas de Información Ambiental, mediante Nota Nº 182/14/DRySIA-DGGA, de fecha 25 de noviembre de 2014 expresa que: *" ...en relación al trámite de solicitud de renovación de la empresa ESTUDIOS y SERVICIOS AMBIENTALES S.R.L. (CUIT: 30-70822204-2) en el Registro Provincial de Prestadores de Consultoría Ambiental... por el título universitario, perfil profesional y la formación académica de su responsable técnico, el perfil profesional de los integrantes del grupo de trabajo y los antecedentes laborales declarados por la empresa, sugiero se le renueve la inscripción para las categorías 'Consultoría Ambiental' y 'Expertos Ambientales de la Industria Petrolera' bajo el número 086 del mencionado registro..."*;

Que a fin de agilizar la tramitación de inscripciones en el Registro Provincial de Prestadores de Consultoría Ambiental, resulta conveniente propiciar la extensión de inscripciones existentes sujeta a la acreditación de extremos de admisibilidad previstos en la normativa vigente y en la presente Disposición;

Que la Dirección General de Asesoría Legal y Normativa Ambiental ha tomado intervención en el presente trámite;

//...

//2.-

POR ELLO:

EL SUBSECRETARIO DE GESTIÓN AMBIENTAL
Y DESARROLLO SUSTENTABLE
D I S P O N E:

Artículo 1º.- RENUÉVESE por el término de UN (1) año la inscripción para las categorías "Consultoría Ambiental" y "Expertos Ambientales de la Industria Petrolera" con el **Nº 086** en el Registro Provincial de Prestadores de Consultoría Ambiental a la empresa ESTUDIOS Y SERVICIOS AMBIENTALES S.R.L. (CUIT: 30-70822204-2) con domicilio legal en calle Alicia Moreau de Justo Nº 750, 2º 212 de la Ciudad Autónoma de Buenos Aires y oficina técnico comercial declarada en la Provincia del Chubut en calle Río Pico Nº 83 de la localidad de Rada Tilly.-

Artículo 2º.- Al término de la vigencia establecida en el Artículo 1°, y a los efectos de extender el plazo de la inscripción por igual período, la empresa ESTUDIOS Y SERVICIOS AMBIENTALES S.R.L. y el grupo de trabajo detallados en el Anexo I que forma parte de la presente Disposición, deberán cumplimentar los deberes establecidos en los artículos 12°, 15° y 16° del Decreto 39/2013, debiendo presentar la siguiente documentación, bajo apercibimiento de Ley:

a) Antes de los DOS (2) años presentar los cambios que se hayan producido en el Estatuto Social respectivo, en la designación de autoridades o mandatarios, composición societaria, etc.
b) Antes de los DOS (2) años presentar para cada uno de los profesionales integrantes: currículum vitae actualizado conteniendo además de los datos personales, información relacionada a cursos, congresos, posgrados y demás aspectos académicos y los nuevos trabajos realizados, debiendo acompañar la documentación respectiva que acredite dicha información. El mismo tendrá carácter de Declaración Jurada.
c) Deberá mantenerse actualizada en la temática ambiental a través de cursos, congresos, talleres, congresos, publicaciones, etc. para lo cual deberá acreditar la realización de alguna de estas actualizaciones como mínimo una cada DOS (2) años.
d) Abonar ANUALMENTE la Tasa Retributiva de Servicios prevista en la Ley de Obligaciones Tributarias vigente en la Provincia del Chubut.

Gabriela Alejandrina ANDRADE
ABOGADA
A/C Jefatura Departamento Letrado
Dirección General Asesoría Legal
y Normativa Ambiental
Ministerio de Ambiente y Control
del Desarrollo Sustentable

Artículo 3º.- La empresa ESTUDIOS Y SERVICIOS AMBIENTALES S.R.L. deberá confeccionar los documentos ambientales que presente bajo su exclusiva responsabilidad y en función de las incumbencias profesionales determinadas para cada uno de los títulos universitarios de los profesionales que integran el grupo de trabajo, de acuerdo a las categorías en las que fue inscripta, debiendo acompañar copia de las mismas en cada presentación.-

Artículo 4º.- La presente disposición será refrendada por el Señor Director General de Evaluación Ambiental.-

Artículo 5º.- Regístrese, notifíquese a la empresa, dese al Boletín Oficial para su publicación y cumplido, ARCHÍVESE.-

Juan Francisco Arce
Lic. en Geología
Director General de Evaluación Ambiental
Ministerio de Ambiente y Control
Del Desarrollo Sustentable

306

DISPOSICION Nº_____/14-SGAyDS.-

//...

Dr Ariel Orlando Gamboa
Subsecretario de Gestión Ambiental
y Desarrollo Sustentable
Ministerio de Ambiente y Control
del Desarrollo Sustentable
Provincia del Chubut

REPUBLICA ARGENTINA
PROVINCIA DEL CHUBUT

MINISTERIO DE AMBIENTE Y CONTROL DEL DESARROLLO SUSTENTABLE

SUBSECRETARÍA DE GESTION AMBIENTAL Y DESARROLLO SUSTENTABLE

Dirección Gral. de Asesoría Legal y Normativa Ambiental
FOLIO Nº 1091
MA y CDS

//3.-

ANEXO I: "PROFESIONALES DEL GRUPO DE TRABAJO"

Categoría "Consultoría Ambiental"

Categoría "Expertos Ambientales de la Industria Petrolera"

Gabriela Alejandrina ANDRADE
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Dirección General Asesoría Legal
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3- Ingeniera Ambiental María Leonor AZAGRA, D.N.I. Nº 26.632.478,
4- Licenciada en Geología Melina Gisela SANTOMAURO, D.N.I. Nº 29.718.611,
5- Ingeniera Ambiental María Eugenia ZANDUETA, D.N.I. Nº 24.820.593,
6- Licenciado en Ciencias Geológicas Juan Manuel CASAL, D.N.I. Nº 24.508.074,
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8- Licenciado en Ciencias Biológicas Pablo Antonio MONTES, D.N.I. Nº 30.742.668, y
9- Licenciado en Ciencias Antropológicas Santiago Francisco BARBICH, D.N.I. Nº 32.173.157.-

Juan Francisco [illegible]
Lic. en Geología
Director General de Evaluación Ambiental
Ministerio de Ambiente y Control
Del Desarrollo Sustentable

Dr Ariel Orlando Gamboa
Subsecretario de Gestión Ambiental
y Desarrollo Sustentable
Ministerio de Ambiente y Control
del Desarrollo Sustentable
Provincia del Chubut

306

DISPOSICION Nº_____/14-SGAyDS.-

Legajos del Pozo PCN-605

U.E. CH- CONVENIO N°4900006787

LABORATORIO
BASE CHUBUT

EPSILON SRL
LABORATORIO INDUSTRIAL

Ruta 3, Km.1838, BºGral. Mosconi - (9005) C. Rivadavia -Chubut, Arg. * Tel/Fax: (0297)-4550825 / 4559365

Muestra de: Petróleo
Lugar de Muestreo: POZO PCN-605
Extraído Por: Cliente
Fecha de Extracción: 11/01/03
Fecha de Recepción: 13/01/03
Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2252/53

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	16.0
Arena y Barro		% $^{V}/_{V}$	0.4
Agua Separada		% $^{V}/_{V}$	7.0
Emulsión	**Por Calculo**	% $^{V}/_{V}$	8.6
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	15.6
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9039
% de parafina	**UOP-86**	% $^{P}/_{p}$	9.86
% de Asfalteno	**SPE-23810**	% $^{P}/_{p}$	30.61
Punto de escurrimiento	**ASTM D-97**	ºC	+7
Viscosidad 300 RPM (Z3) Petróleo deshidratado			
Temperatura **30°C**	**Por Reometro**	Cp	47
40°C	**Por Reometro**	Cp	32
50°C	**Por Reometro**	Cp	17
DETERMINACION	**NORMA**	**UNIDAD**	**VALORES ENCONTRADOS**
% de Agua por Kf	**ASTM D-4928**	% $^{v}/_{v}$	0.18
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8776

Analista A.G
Observaciones: *Salinidad impracticable.*

.....
Ing. Miguel LIZZANO
Rep. Tec. Por ***EPSILON S.R.L.***

REPSOL YPF
U.E. CH- CONVENIO N°4900006787

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INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2140/41.5

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	38.0
Arena y Barro		% $^{V}/_{V}$	0.2
Agua Separada		% $^{V}/_{V}$	14.0
Emulsión	**Por Calculo**	% $^{V}/_{V}$	23.8
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	37.8
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9638
% de AGUA Total	**Por probeta**	**	98.0
Salinidad	**ASTM D-512**	Grs/lts	12.48

Analista A.G
Observaciones: *Demás análisis impracticables por escasa cantidad de muestra.*

.....
Ing. Miguel LIZZANO
Rep. Tec. Por EPSILON S.R.L.

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Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2095/97

DETERMINACION		NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total		**ASTM D-4007 Mod.**	% $^{V}/_{V}$	46.0
Arena y Barro			% $^{V}/_{V}$	0.3
Agua Separada			% $^{V}/_{V}$	26.0
Emulsión		**Por Calculo**	% $^{V}/_{V}$	19.7
Agua Exacta		**ASTM D-4007 Mod.**	% $^{V}/_{V}$	45.7
Densidad a 15ºC		**ASTM D-5002**	Grs/cm^3	0.9499
% de parafina		**UOP-86**	% $^{P}/_{p}$	2.93
% de Asfalteno		**SPE-23810**	% $^{P}/_{p}$	2.01
Punto de escurrimiento		**ASTM D-97**	ºC	-13
Viscosidad 300 RPM (Z3) Petróleo deshidratado				
Temperatura	**30°C**	**Por Reometro**	Cp	688
	40°C	**Por Reometro**	Cp	338
	50°C	**Por Reometro**	Cp	149
DETERMINACION		**NORMA**	**UNIDAD**	**VALORES ENCONTRADOS**
% de Agua por Kf		**ASTM D-4928**	% $^{v}/_{v}$	0.22
Densidad a 15ºC		**ASTM D-5002**	Grs/cm^3	0.9170

Analista A.G
Observaciones: *Salinidad impracticable.*

.....
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PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

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CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2252/53

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	16.0
Arena y Barro		% $^{V}/_{V}$	0.4
Agua Separada		% $^{V}/_{V}$	7.0
Emulsión	**Por Calculo**	% $^{V}/_{V}$	8.6
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	15.6
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9039
% de parafina	**UOP-86**	% $^{P}/_{p}$	9.86
% de Asfalteno	**SPE-23810**	% $^{P}/_{p}$	30.61
Punto de escurrimiento	**ASTM D-97**	ºC	+7
Viscosidad 300 RPM (Z3) Petróleo deshidratado			
Temperatura **30°C**	**Por Reometro**	Cp	47
40°C	**Por Reometro**	Cp	32
50°C	**Por Reometro**	Cp	17
DETERMINACION	**NORMA**	**UNIDAD**	**VALORES ENCONTRADOS**
% de Agua por Kf	**ASTM D-4928**	% $^{v}/_{v}$	0.18
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8776

Analista A.G
Observaciones: *Salinidad impracticable.*

.....
Ing. Miguel LIZZANO
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REPSOL YPF
U.E. CH- CONVENIO N°4900006787

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Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

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CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2140/41.5

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	38.0
Arena y Barro		% $^{V}/_{V}$	0.2
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Emulsión	**Por Calculo**	% $^{V}/_{V}$	23.8
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Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9638
% de AGUA Total	**Por probeta**	**	98.0
Salinidad	**ASTM D-512**	Grs/lts	12.48

Analista A.G
Observaciones: *Demás análisis impracticables por escasa cantidad de muestra.*

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PROTOCOLO Nº: 0169-03CR

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INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2095/97

DETERMINACION		NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total		**ASTM D-4007 Mod.**	% $^{V}/_{V}$	46.0
Arena y Barro			% $^{V}/_{V}$	0.3
Agua Separada			% $^{V}/_{V}$	26.0
Emulsión		**Por Calculo**	% $^{V}/_{V}$	19.7
Agua Exacta		**ASTM D-4007 Mod.**	% $^{V}/_{V}$	45.7
Densidad a 15ºC		**ASTM D-5002**	Grs/cm^3	0.9499
% de parafina		**UOP-86**	% $^{P}/_{p}$	2.93
% de Asfalteno		**SPE-23810**	% $^{P}/_{p}$	2.01
Punto de escurrimiento		**ASTM D-97**	ºC	-13
Viscosidad 300 RPM (Z3) Petróleo deshidratado				
Temperatura	**30°C**	**Por Reometro**	Cp	688
	40°C	**Por Reometro**	Cp	338
	50°C	**Por Reometro**	Cp	149
DETERMINACION		**NORMA**	**UNIDAD**	**VALORES ENCONTRADOS**
% de Agua por Kf		**ASTM D-4928**	% $^{v}/_{v}$	0.22
Densidad a 15ºC		**ASTM D-5002**	Grs/cm^3	0.9170

Analista A.G
Observaciones: *Salinidad impracticable.*

.....
Ing. Miguel LIZZANO
Rep. Tec. Por ***EPSILON S.R.L.***

U.E. CH- CONVENIO N°4900006787

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Muestra de: Petróleo
Lugar de Muestreo: POZO PCN-605
Extraído Por: Cliente
Fecha de Extracción: 11/01/03
Fecha de Recepción: 13/01/03
Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2252/53

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	16.0
Arena y Barro		% $^{V}/_{V}$	0.4
Agua Separada		% $^{V}/_{V}$	7.0
Emulsión	**Por Calculo**	% $^{V}/_{V}$	8.6
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	15.6
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9039
% de parafina	**UOP-86**	% $^{P}/_{p}$	9.86
% de Asfalteno	**SPE-23810**	% $^{P}/_{p}$	30.61
Punto de escurrimiento	**ASTM D-97**	ºC	+7
Viscosidad 300 RPM (Z3) Petróleo deshidratado			
Temperatura **30°C**	**Por Reometro**	Cp	47
40°C	**Por Reometro**	Cp	32
50°C	**Por Reometro**	Cp	17
DETERMINACION	**NORMA**	**UNIDAD**	**VALORES ENCONTRADOS**
% de Agua por Kf	**ASTM D-4928**	% $^{v}/_{v}$	0.18
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8776

Analista A.G
Observaciones: *Salinidad impracticable.*

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Rep. Tec. Por ***EPSILON S.R.L.***

REPSOL YPF
U.E. CH- CONVENIO N°4900006787

LABORATORIO
BASE CHUBUT

EPSILON SRL
LABORATORIO INDUSTRIAL

Ruta 3, Km.1838, BºGral. Mosconi - (9005) C. Rivadavia -Chubut, Arg. * Tel/Fax: (0297)-4550825 / 4559365

Muestra de: Petróleo
Lugar de Muestreo: POZO PCN-605
Extraído Por: Cliente
Fecha de Extracción: 11/01/03
Fecha de Recepción: 13/01/03
Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2140/41.5

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	38.0
Arena y Barro		% $^{V}/_{V}$	0.2
Agua Separada		% $^{V}/_{V}$	14.0
Emulsión	**Por Calculo**	% $^{V}/_{V}$	23.8
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	37.8
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9638
% de AGUA Total	**Por probeta**	**	98.0
Salinidad	**ASTM D-512**	Grs/lts	12.48

Analista A.G
Observaciones: *Demás análisis impracticables por escasa cantidad de muestra.*

.....
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Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

ITEM Nº =										**Distrito Nº =**
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INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2095/97

DETERMINACION		NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total		**ASTM D-4007 Mod.**	% $^{V}/_{V}$	46.0
Arena y Barro			% $^{V}/_{V}$	0.3
Agua Separada			% $^{V}/_{V}$	26.0
Emulsión		**Por Calculo**	% $^{V}/_{V}$	19.7
Agua Exacta		**ASTM D-4007 Mod.**	% $^{V}/_{V}$	45.7
Densidad a 15ºC		**ASTM D-5002**	Grs/cm^3	0.9499
% de parafina		**UOP-86**	% $^{P}/_{p}$	2.93
% de Asfalteno		**SPE-23810**	% $^{P}/_{p}$	2.01
Punto de escurrimiento		**ASTM D-97**	ºC	-13
Viscosidad 300 RPM (Z3) Petróleo deshidratado				
Temperatura	**30°C**	**Por Reometro**	Cp	688
	40°C	**Por Reometro**	Cp	338
	50°C	**Por Reometro**	Cp	149
DETERMINACION		**NORMA**	**UNIDAD**	**VALORES ENCONTRADOS**
% de Agua por Kf		**ASTM D-4928**	% $^{v}/_{v}$	0.22
Densidad a 15ºC		**ASTM D-5002**	Grs/cm^3	0.9170

Analista A.G
Observaciones: *Salinidad impracticable.*

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Muestra de: Petróleo
Lugar de Muestreo: POZO PCN-605
Extraído Por: Cliente
Fecha de Extracción: 11/01/03
Fecha de Recepción: 13/01/03
Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

ITEM Nº =										**Distrito Nº =**
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INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2252/53

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	16.0
Arena y Barro		% $^{V}/_{V}$	0.4
Agua Separada		% $^{V}/_{V}$	7.0
Emulsión	**Por Calculo**	% $^{V}/_{V}$	8.6
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	15.6
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9039
% de parafina	**UOP-86**	% $^{P}/_{p}$	9.86
% de Asfalteno	**SPE-23810**	% $^{P}/_{p}$	30.61
Punto de escurrimiento	**ASTM D-97**	ºC	+7
Viscosidad 300 RPM (Z3) Petróleo deshidratado			
Temperatura **30°C**	**Por Reometro**	Cp	47
40°C	**Por Reometro**	Cp	32
50°C	**Por Reometro**	Cp	17
DETERMINACION	**NORMA**	**UNIDAD**	**VALORES ENCONTRADOS**
% de Agua por Kf	**ASTM D-4928**	% $^{v}/_{v}$	0.18
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8776

Analista A.G
Observaciones: *Salinidad impracticable.*

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Muestra de: Petróleo
Lugar de Muestreo: POZO PCN-605
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Fecha de Extracción: 11/01/03
Fecha de Recepción: 13/01/03
Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2140/41.5

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	38.0
Arena y Barro		% $^{V}/_{V}$	0.2
Agua Separada		% $^{V}/_{V}$	14.0
Emulsión	**Por Calculo**	% $^{V}/_{V}$	23.8
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	37.8
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9638
% de AGUA Total	**Por probeta**	**	98.0
Salinidad	**ASTM D-512**	Grs/lts	12.48

Analista A.G
Observaciones: *Demás análisis impracticables por escasa cantidad de muestra.*

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Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0169-03CR

Fecha Informe: 14/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2095/97

DETERMINACION		NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total		**ASTM D-4007 Mod.**	% $^{V}/_{V}$	46.0
Arena y Barro			% $^{V}/_{V}$	0.3
Agua Separada			% $^{V}/_{V}$	26.0
Emulsión		**Por Calculo**	% $^{V}/_{V}$	19.7
Agua Exacta		**ASTM D-4007 Mod.**	% $^{V}/_{V}$	45.7
Densidad a 15ºC		**ASTM D-5002**	Grs/cm^3	0.9499
% de parafina		**UOP-86**	% $^{P}/_{p}$	2.93
% de Asfalteno		**SPE-23810**	% $^{P}/_{p}$	2.01
Punto de escurrimiento		**ASTM D-97**	ºC	-13
Viscosidad 300 RPM (Z3) Petróleo deshidratado				
Temperatura	**30°C**	**Por Reometro**	Cp	688
	40°C	**Por Reometro**	Cp	338
	50°C	**Por Reometro**	Cp	149
DETERMINACION		**NORMA**	**UNIDAD**	**VALORES ENCONTRADOS**
% de Agua por Kf		**ASTM D-4928**	% $^{v}/_{v}$	0.22
Densidad a 15ºC		**ASTM D-5002**	Grs/cm^3	0.9170

Analista A.G
Observaciones: *Salinidad impracticable.*

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Muestra de: Petróleo
Lugar de Muestreo: POZO PCN-605
Extraído Por: Cliente
Fecha de Extracción: 09/01/03
Fecha de Recepción: 09/01/03
Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0150-03CR

Fecha Informe: 10/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2402.5/05.5

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	$\%\ ^{V}/_{V}$	4.0
Arena y Barro		$\%\ ^{V}/_{V}$	0.1
Agua Separada		$\%\ ^{V}/_{V}$	2.2
Emulsión	**Por Calculo**	$\%\ ^{V}/_{V}$	1.7
Agua Exacta	**ASTM D-4007 Mod.**	$\%\ ^{V}/_{V}$	3.9
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9121
% de parafina	**UOP-86**	$\%\ ^{P}/_{p}$	8.46
% de Asfalteno	**Sin norma**	$\%\ ^{P}/_{p}$	1.63
Punto de escurrimiento	**ASTM D-97**	ºC	+12
Viscosidad 300 RPM (Z3) Petróleo deshidratado			
Temperatura **30°C**	**Por Reometro**	Cp	66
40°C	**Por Reometro**	Cp	34
50°C	**Por Reometro**	cp	18

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
% de Agua por Kf	**ASTM D-4928**	$\%\ ^{v}/_{v}$	0.16
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8695

Analista A.G
Observaciones: *Salinidad impracticable.*

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Muestra de: Petróleo
Lugar de Muestreo: POZO PCN-605
Extraído Por: Cliente
Fecha de Extracción: 09/01/03
Fecha de Recepción: 09/01/03
Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0150-03CR

Fecha Informe: 10/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2423.5/25

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	28
Arena y Barro		% $^{V}/_{V}$	0.5
Agua Separada		% $^{V}/_{V}$	9.5
Emulsión	**Por Calculo**	% $^{V}/_{V}$	14.0
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	27.5
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9117
% de parafina	**UOP-86**	% $^{P}/_{p}$	3.26
% de Asfalteno	**Sin norma**	% $^{P}/_{p}$	1.76
Punto de escurrimiento	**ASTM D-97**	ºC	+4
Viscosidad 300 RPM (Z3) Petróleo deshidratado			
Temperatura **30°C**	**Por Reometro**	Cp	75
40°C	**Por Reometro**	Cp	40
50°C	**Por Reometro**	Cp	21

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
% de Agua por Kf	**ASTM D-4928**	% $^{v}/_{v}$	0.23
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8890

Analista A.G
Observaciones: *Salinidad impracticable*

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Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0150-03CR

Fecha Informe: 10/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2402.5/05.5

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	$\%\ ^{V}/_{V}$	4.0
Arena y Barro		$\%\ ^{V}/_{V}$	0.1
Agua Separada		$\%\ ^{V}/_{V}$	2.2
Emulsión	**Por Calculo**	$\%\ ^{V}/_{V}$	1.7
Agua Exacta	**ASTM D-4007 Mod.**	$\%\ ^{V}/_{V}$	3.9
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9121
% de parafina	**UOP-86**	$\%\ ^{P}/_{p}$	8.46
% de Asfalteno	**Sin norma**	$\%\ ^{P}/_{p}$	1.63
Punto de escurrimiento	**ASTM D-97**	ºC	+12
Viscosidad 300 RPM (Z3) Petróleo deshidratado			
Temperatura **30°C**	**Por Reometro**	Cp	66
40°C	**Por Reometro**	Cp	34
50°C	**Por Reometro**	cp	18

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
% de Agua por Kf	**ASTM D-4928**	$\%\ ^{v}/_{v}$	0.16
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8695

Analista A.G
Observaciones: *Salinidad impracticable.*

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PROTOCOLO Nº: 0150-03CR

Fecha Informe: 10/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2423.5/25

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	28
Arena y Barro		% $^{V}/_{V}$	0.5
Agua Separada		% $^{V}/_{V}$	9.5
Emulsión	**Por Calculo**	% $^{V}/_{V}$	14.0
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	27.5
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.9117
% de parafina	**UOP-86**	% $^{P}/_{p}$	3.26
% de Asfalteno	**Sin norma**	% $^{P}/_{p}$	1.76
Punto de escurrimiento	**ASTM D-97**	ºC	+4
Viscosidad 300 RPM (Z3) Petróleo deshidratado			
Temperatura **30°C**	**Por Reometro**	Cp	75
40°C	**Por Reometro**	Cp	40
50°C	**Por Reometro**	Cp	21

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
% de Agua por Kf	**ASTM D-4928**	% $^{v}/_{v}$	0.23
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8890

Analista A.G
Observaciones: *Salinidad impracticable*

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Muestra de: Petróleo
Lugar de Muestreo: POZO PCN-605
Extraído Por: Cliente
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Fecha de Recepción: 09/01/03
Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0139-03CR

Fecha Informe: 10/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2580.5/82.5

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	$\%\ ^{V}/_{V}$	1.2
Arena y Barro		$\%\ ^{V}/_{V}$	0.0
Agua Separada		$\%\ ^{V}/_{V}$	0.2
Emulsión	**Por Calculo**	$\%\ ^{V}/_{V}$	1.0
Agua Exacta	**ASTM D-4007 Mod.**	$\%\ ^{V}/_{V}$	1.2
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8520
% de parafina	**UOP-86**	$\%\ ^{P}/_{p}$	2.44
% de Asfalteno	**Sin norma**	$\%\ ^{P}/_{p}$	1.80
Punto de escurrimiento	**ASTM D-97**	ºC	+12
Viscosidad 300 RPM (Z3) Petróleo hidratado 1.2 %			
Temperatura **30°C**	**Por Reometro**	cp	25
40°C	**Por Reometro**	cp	18
50°C	**Por Reometro**	cp	12
Viscosidad 300 RPM (Z3) Petróleo deshidratado			
Temperatura **30°C**	**Por Reometro**	cp	23
40°C	**Por Reometro**	cp	16
50°C	**Por Reometro**	cp	10

Analista A.G
Observaciones: *Salinidad impracticable.*

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Solicitado Por: REPSOL - YPF SA.
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 0139-03CR

Fecha Informe: 10/01/03

ITEM Nº =										**Distrito Nº =**
CANTIDAD =										**Nº Orden =**

INFORME DE ENSAYO

PETROLEO HIDRATADO Pozo: PCN-605 Zona: 2456.5/59.5

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	3.6
Arena y Barro		% $^{V}/_{V}$	0.0
Agua Separada		% $^{V}/_{V}$	2.4
Emulsión	**Por Calculo**	% $^{V}/_{V}$	1.2
Agua Exacta	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	3.6
Densidad a 15ºC	**ASTM D-5002**	Grs/cm^3	0.8868
% de parafina	**UOP-86**	% $^{P}/_{p}$	2.67
% de Asfalteno	**Sin norma**	% $^{P}/_{p}$	1.24
Punto de escurrimiento	**ASTM D-97**	ºC	+9
Viscosidad 300 RPM (Z3) Petróleo hidratado 3.6 %			
Temperatura **30°C**	**Por Reometro**	Cp	62
40°C	**Por Reometro**	Cp	49
50°C	**Por Reometro**	Cp	38
Viscosidad 300 RPM (Z3) Petróleo dehidratado			
Temperatura **30°C**	**Por Reometro**	Cp	52
40°C	**Por Reometro**	cp	42
50°C	**Por Reometro**	cp	34

Analista A.G
Observaciones: *Salinidad impracticable*

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Ing. Miguel LIZZANO
Rep. Tec. Por EPSILON S.R.L.

LABORATORIO
CAÑADON SECO

U·E· CH - CS

CONVENIO Nª 4900006787

Epsilon S.R.L. Cañadon Seco (C.P. 9013)Tel/Fax 0297-4850216

Procedente de:	PCN 605	**Zona:**	MB	**Protocolo Nº:**	00034-03CS
Solicitado por:	Gimenez	**Pozo:**	605	**Fecha de Extracción:**	8/1/03
Extraido por:	Terceros	**Bateria:**		**Fecha de Recepción:**	8/1/03
Capa:	2682/84			**Fecha de Análisis:**	8/1/03

Análisis de Cromatografía Gaseosa Extendida

COMPONENTES	*% MOLAR*	*Propiedades Físicas*	
N2	0,423829	*PM (Kg/Kmol)*	38,982800
O2	0,058561	*Vm (m3/Kmol)*	23,653200
CO2	80,403029	*Densidad (abs)*	1,648100
CH4	18,098000	*Densidad (rel)*	1,345500
C2H6	0,527389	*PCs (Kcal/m3)*	1913,311800
C3H8	0,144332	*PCi (Kcal/m3)*	1727,919800
iC4H10	0,019981	*Compresib Z*	0,994500
nC4H10	0,051624	*ºT Critica (ºK)*	283,463100
iC5H12	0,016642	*Presion Critica*	67,540300
nC5H12	0,027969		
C6H14	0,027153		
nC7H16	0,045156		
nC8H18	0,060230		
nC9H20	0,096105		
Total	100		

Observaciones

Analista: **M.H**

Por Lab. Epsilon S.R.L.

Los resultados consignados fueron obtenidos dentro de un sistema de calidad y son representativos de la muestra

COMPANIA: YPF S.A

POZO: YPF.Ch.PCN−605

CAMPO: PAMPA DEL CASTILLO NORTE

PROVINCIA: CHUBUT **PAIS:** ARGENTINA

Municipio: CHUBUT
Campo: PAMPA DEL CASTILLO NORTE
Locacion: CAS
Pozo: YPF.Ch.PCN−605
Compania: YPF S.A

Schlumberger

COMBINADA

ESCALA 1:200

LOCACION

AIT−CALI−BHC

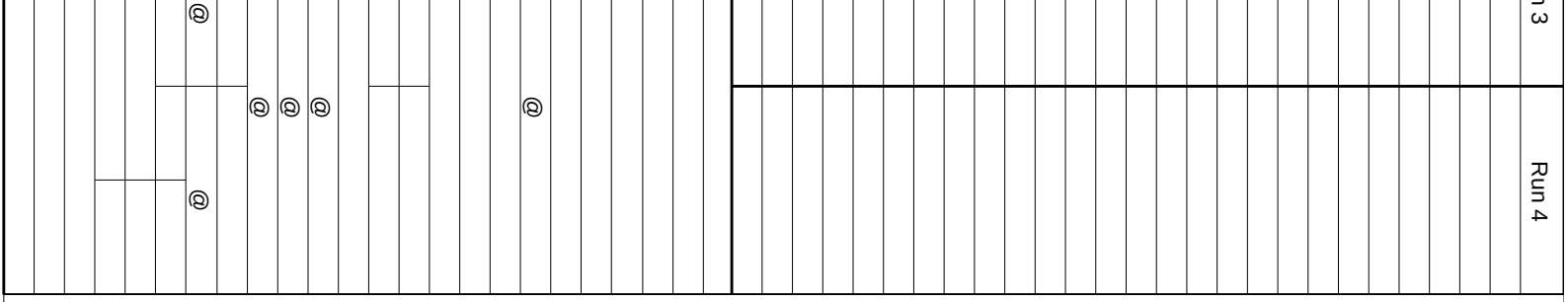
Elev.: B.V. 678.04 m
N. T. 673.14 m
M. R. 677.74 m

Ref. Permanente: NIVEL DEL TERRENO Elev.: 673.14 m
Reg. Medido Desde: NIVEL DEL TERRENO 0.0 m sobre nivel ref.
Perforacion Medida Desde: NIVEL DEL TERRENO

UWI: AR0100005137	Equipo PI 359	Longitud X: 4.939.737,76	Latitud Y: 2.577.923,41

Fecha			26−Dec−2002				Logging Date		
Corrida No.			1				Run Number		
Prof. Perforador			2684 m				Depth Driller		
Prof. Registro			2689.5 m				Logger Depth		
Primera Lectura			2687.1 m				Bottom Log Interval		
Ultima Lectura			420 m				Top Log Interval		
Fondo Tuberia Perforador			9.625 in @ 417.5 m		@		Casing Driller Size @ Depth	@	
Fondo Tuberia Registro			420 m				Casing Logger		
Diametro Trepano			8.500 in				Bit Size		
Tipo De Lodo			DRILLPLEX				Type Fluid In Hole		
LODO	Densidad	Viscosidad	1.16 g/cm3	37 s			MUD Density	Viscosity	
LODO	Perdidas	PH	9.2 cm3	10.2			MUD Fluid Loss	PH	
LODO	Fuente Muestra De Lodo		POZO				MUD Source Of Sample		
RM @ Temp.			2.000 ohm.m @ 20 degC		@		RM @ Measured Temperature	@	
RMF @ Temp.			1.891 ohm.m @ 20 degC		@		RMF @ Measured Temperature	@	
RMC @ Temp.			1.844 ohm.m @ 11 degC		@		RMC @ Measured Temperature	@	
Fuente: RMF	RMC		PRENSA	PRENSA			Source RMF	RMC	
RM @ T. Fdo.	RMF @ T. Fdo.		0.707 @ 96	0.668 @ 96	@	@	RM @ MRT	RMF @ MRT	@ @
Temp. Maxima Medida			96 degC				Maximum Recorded Temperatures		
Circulacion Final	Hora		26−Dec−2002	14:15			Circulation Stopped	Time	
Registro Fondo	Hora		27−Dec−2002	0:45			Logger On Bottom	Time	
Unidad No.	Locacion		3064	CAS			Unit Number	Location	
Registrado por:			GIULIO RECHIA				Recorded By		
Testigo			OSCAR OLIMA				Witnessed By		

	Run 1	Run 2	Run



DEPTH SUMMARY LISTING

Date Created: 27−DEZ−2002 5:00:0C

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−42P−XS
Serial Number:	4858	Serial Number:	1686	Serial Number:	71141
Calibration Date:	27−oct−2002	Calibration Date:	22−jul−2002	Length:	4614.98 M
Calibrator Serial Number:	1	Calibrator Serial Number:	1028		
Calibration Cable Type:	7−46P	Calibration Gain:		Conveyance Method:	Wireline
Wheel Correction 1:	−2	Calibration Offset:	0.86	Rig Type:	LAND
Wheel Correction 2:	−2		479.00		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	72.00 M
Rig Up Length At Bottom:	72.00 M
Rig Up Length Correction:	0.00 M
Stretch Correction:	4.50 M
Tool Zero Check At Surface:	0.30 M

Depth Control Remarks

1. Control de profundidad segun estandares
2. Primer perfil en el pozo, usado como referencia de profundidad
3. Estiramiento del cable, calculado entre LogUP y LogDown
4.
5.
6.

OTROS SERVICIOS # 1	OTROS SERVICIOS # 2
OS1: AIT−CALI−BHC	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5: PI 359	OS5:

OBSERVACIONES: CORRIDA # 1	OBSERVACIONES: CORRIDA # 2
1 − Primer perfil en el pozo y referencia de profundidad.	
2 − La herramienta se corrio segun muestra la figura.	
3 − Esquema del pozo segun datos del perforador	
4 − SPHI, FEXP=2.15 y FNUM = 0.62 usados para el calculo de RWA.	
5 − Datos adicionales del lodo Cl = 1200 ppm, Ca = 40 ppm	
6 − Maxima desviacion grados 1@2689.5m	
7− Zapato @420 m, Fondo @ 2689.5 m	

CORRIDA #1		
ORDEN DE SERVICIO:		
VERSION DEL PROGRAMA:	9C2−303	
NIVEL DEL LODO:	0 m	
INTERVALO REGISTRADO	COMIENZO	FINAL

CORRIDA #2		
ORDEN DE SERVICIO:		
VERSION DEL PROGRAMA:		
NIVEL DEL LODO:		
INTERVALO REGISTRADO	COMIENZO	FINAL

DESCRIPCION DEL EQUIPO

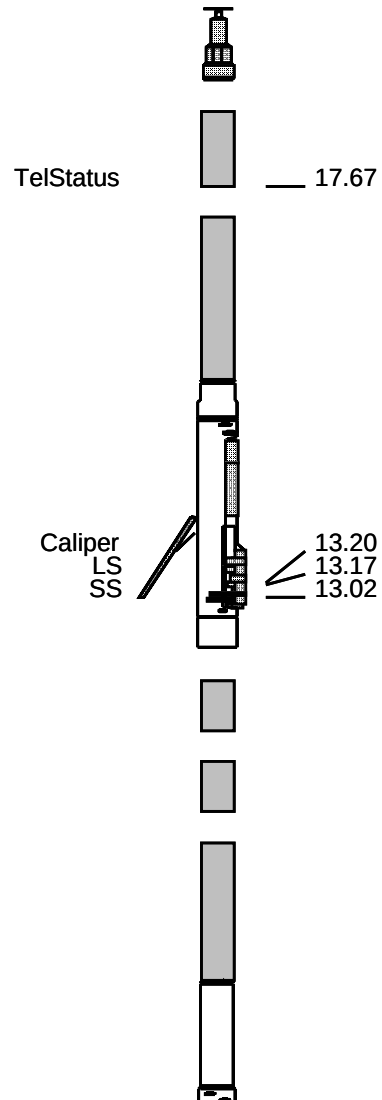
CORRIDA # 1

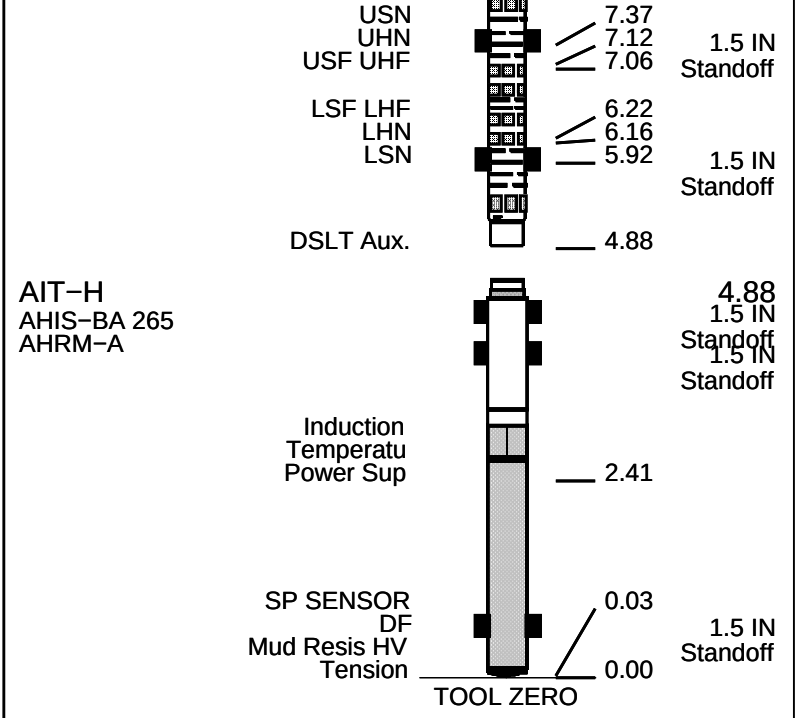
CORRIDA # 2

SURFACE EQUIPMENT

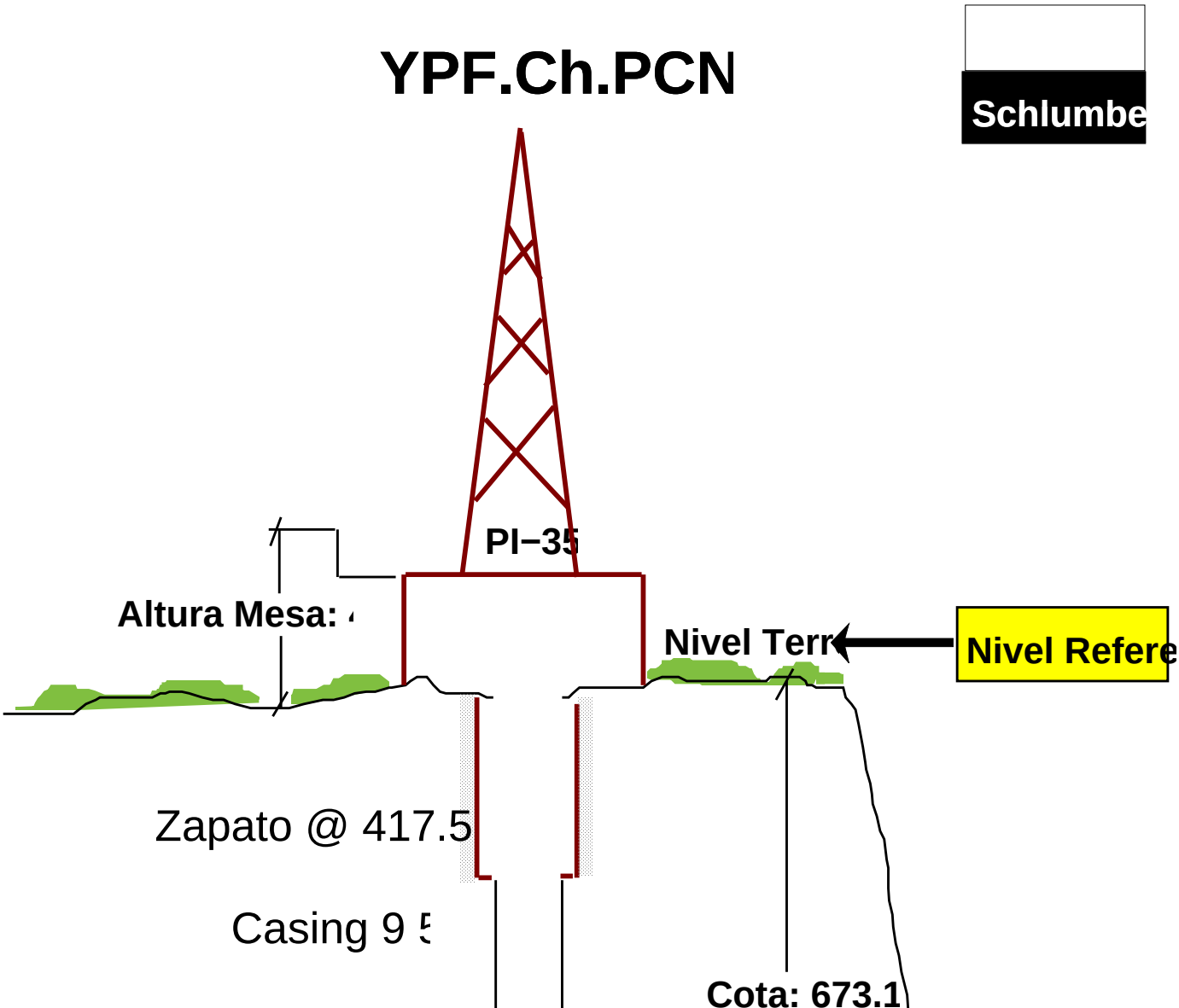
WITM (CTS)−A

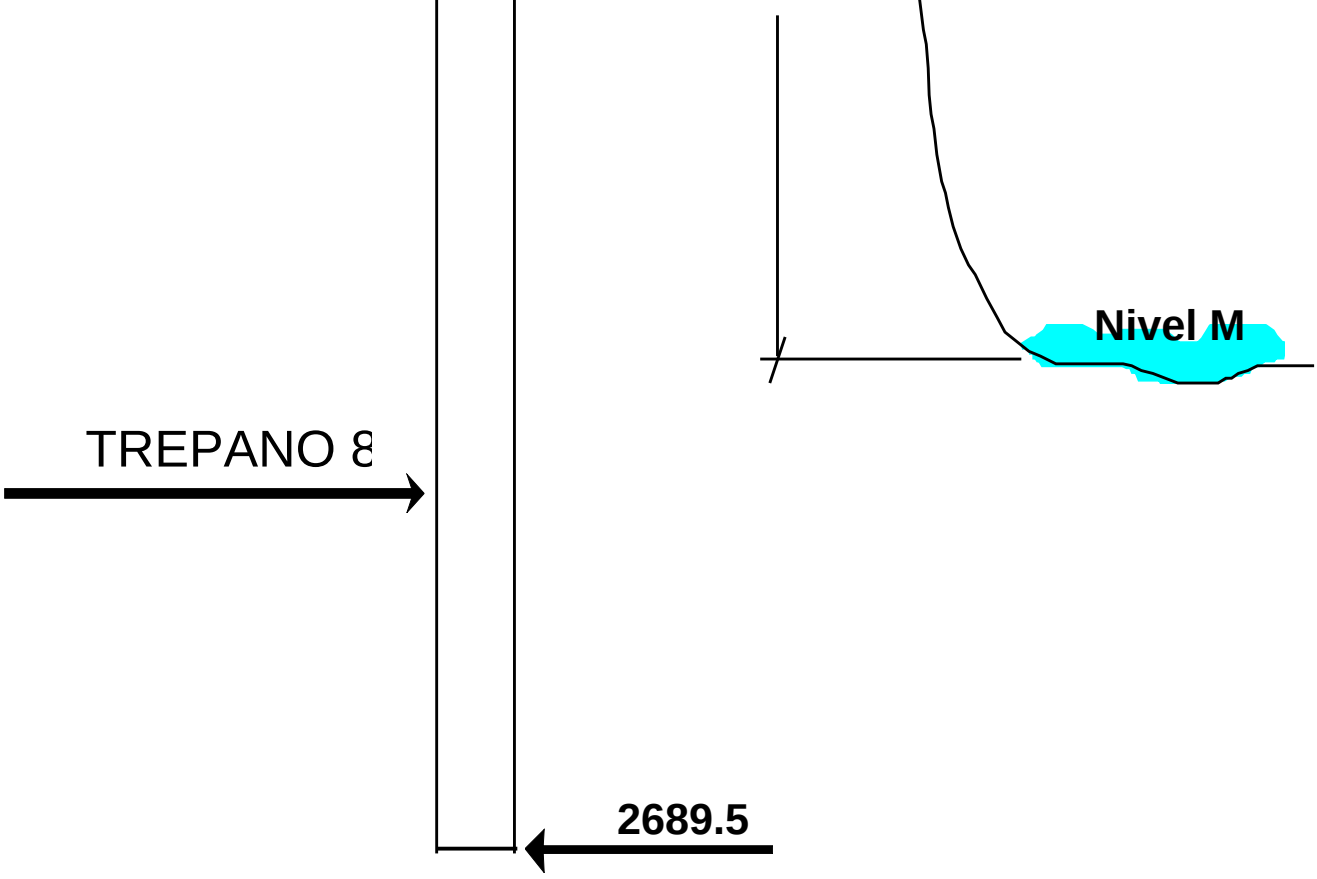
DOWNHOLE EQUIPMENT





MAXIMUM STRING DIAMETER 6.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS





Schlumberger

TRAMO PRINCIPAL

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_031LUP	FN:30	PRODUCER	27−Dec−2002 00:59	2692.0 M	363.3 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_039PUP	FN:32	PRODUCER	27−Dec−2002 03:25	2696.6 M	369.1 M

Integrated Hole/Cement Volume Summary

Hole Volume = 87.46 M3

Cement Volume = 52.64 M3 (assuming 5.50 IN casing O.D.)

Computed from 2689.4 M to 417.6 M using data channel(s) CALI

OP System Version: 9C2−303

MCM

MCM

AIT-H	OP92-KP2	DSLT-TCC	OP92-KP2
LDT-D	OP92-KP2	TCC-BF	OP92-KP2

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	7.875 IN	8.500 IN	2696.6 03:25:15
	8.500 IN	7.875 IN	2372.9 03:26:04

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

REVOQUE
From CALI to BS

CAVERNA
From BS to CALI

SP (SP)
-80 (MV) 20

RWA (RWA)
0 (OHMM) 1

Caliper (CALI)
6 (IN) 16

Bit Size (BS)
6 (IN) 16

Stuck Stretch (STIT)
0 (M) 20

Tension (TENS) (LBF)
0 1000

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

AIT-H 90 Inch Investigation (AHT90)
0 (OHMM) 10

AIT-H 60 Inch Investigation (AHT60)
0 (OHMM) 10

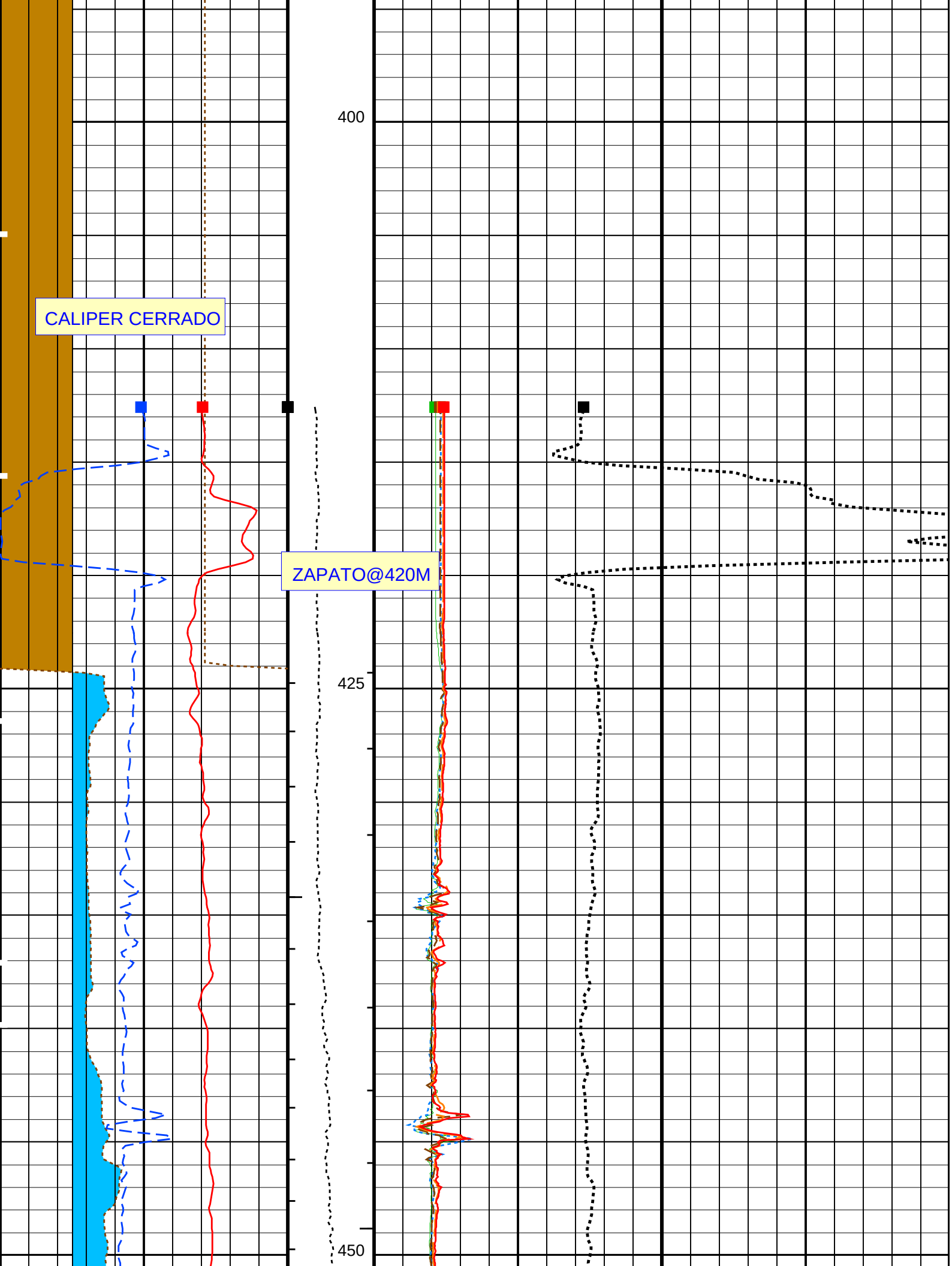
AIT-H 30 Inch Investigation (AHT30)
0 (OHMM) 10

AIT-H 20 Inch Investigation (AHT20)
0 (OHMM) 10

AIT-H 10 Inch Investigation (AHT10)
0 (OHMM) 10

375

<==CHEQUEO DE CALIPER DESPUES


CALIPER CERRADO
ZAPATO@420M
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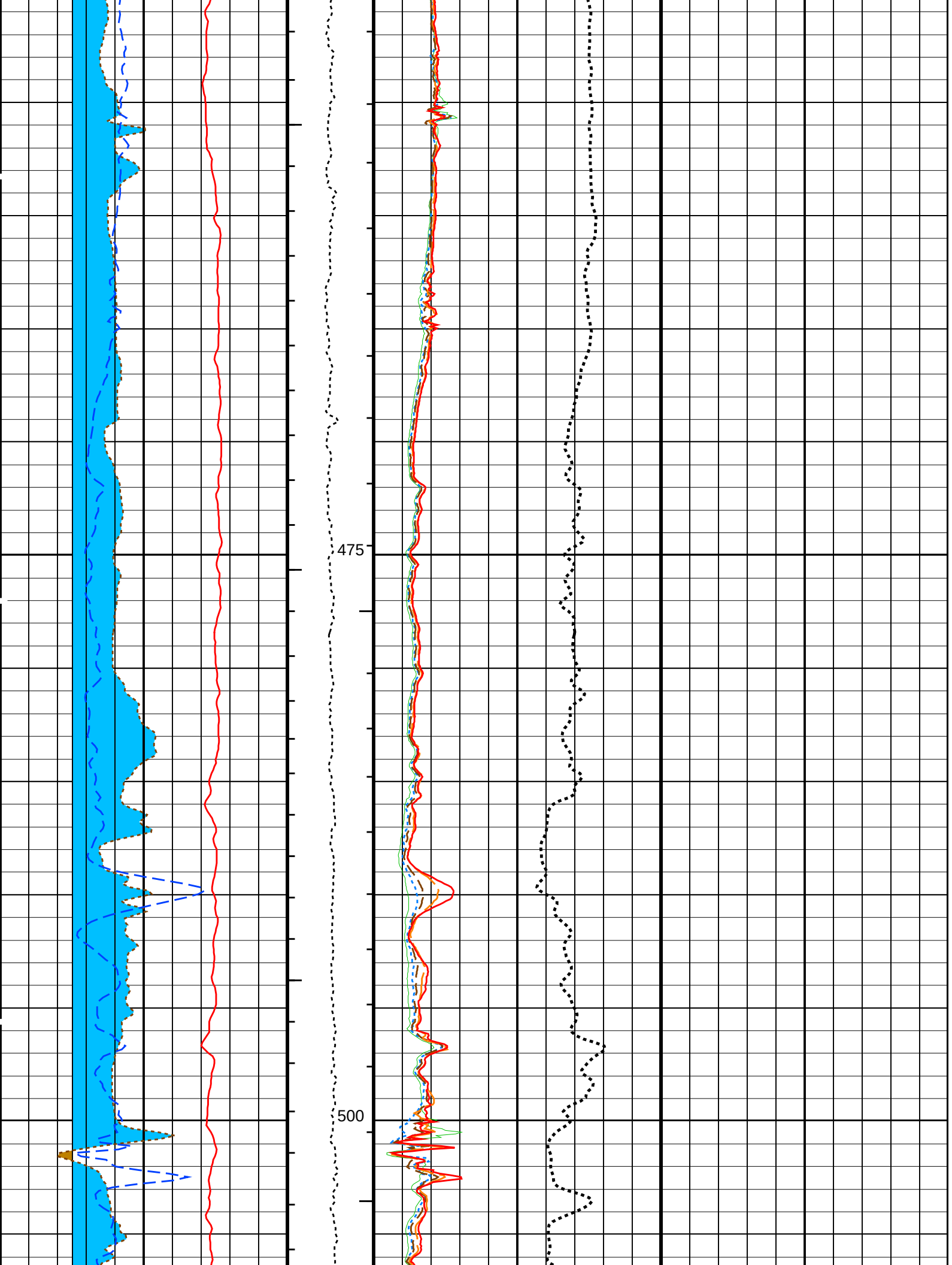
425
450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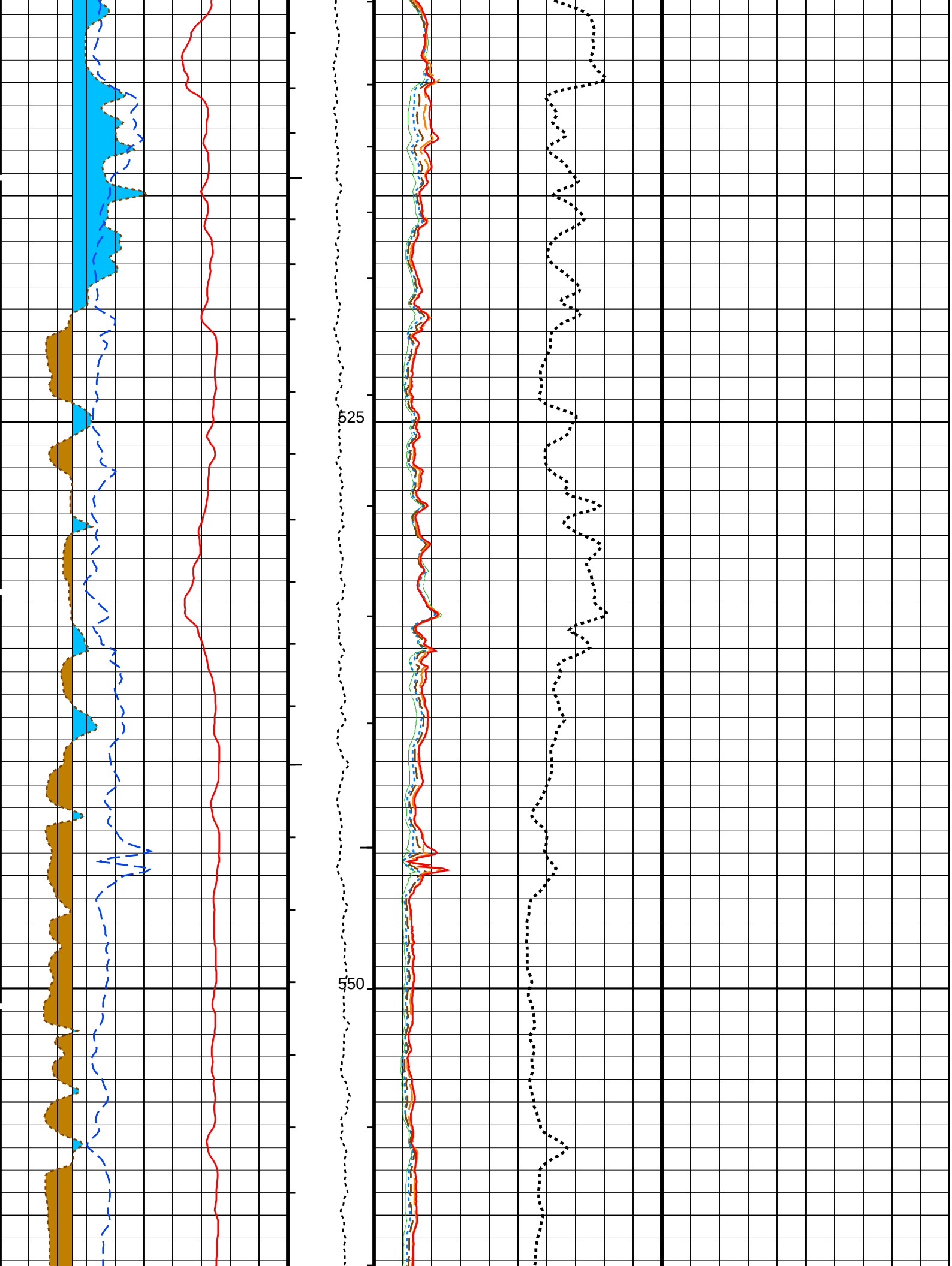
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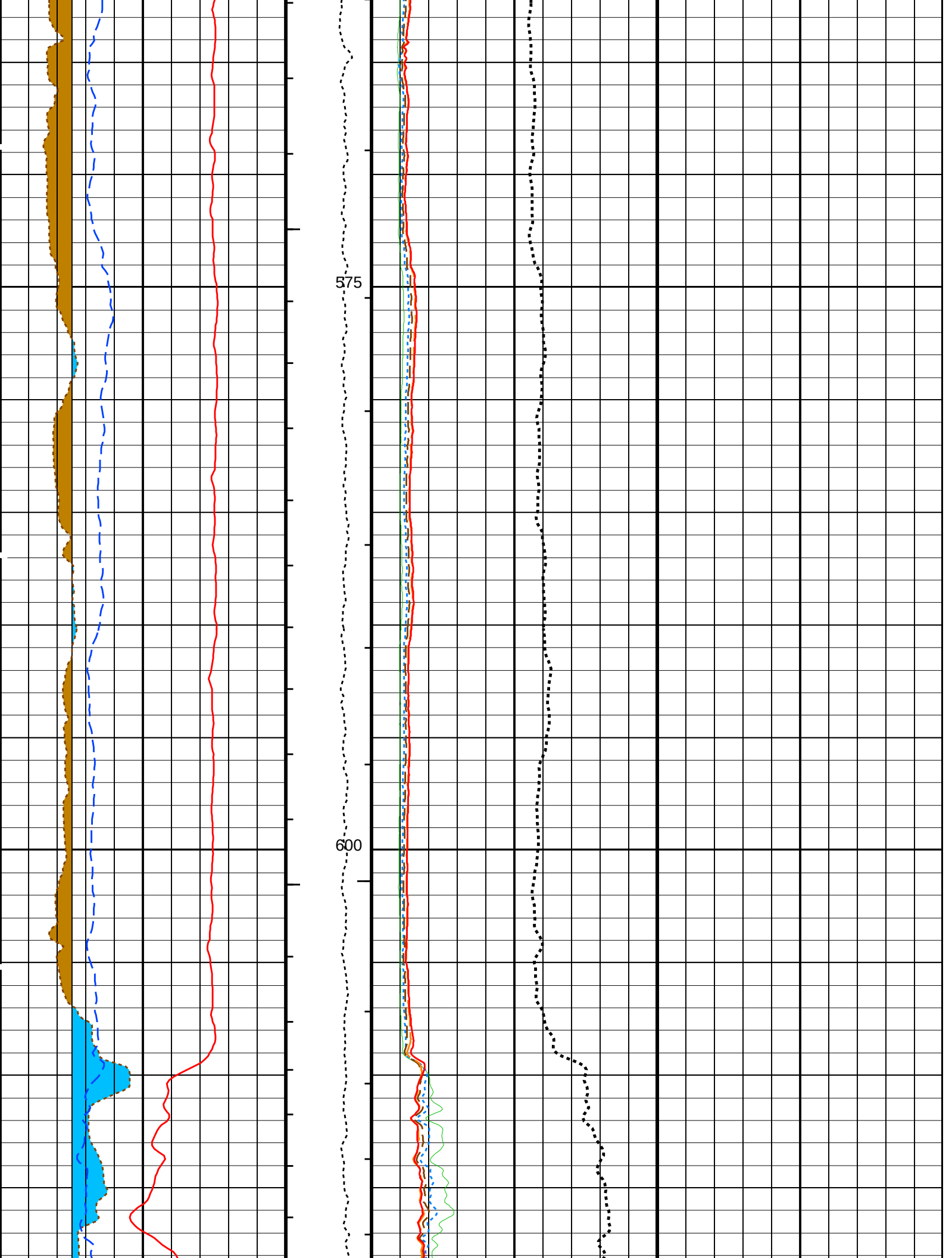
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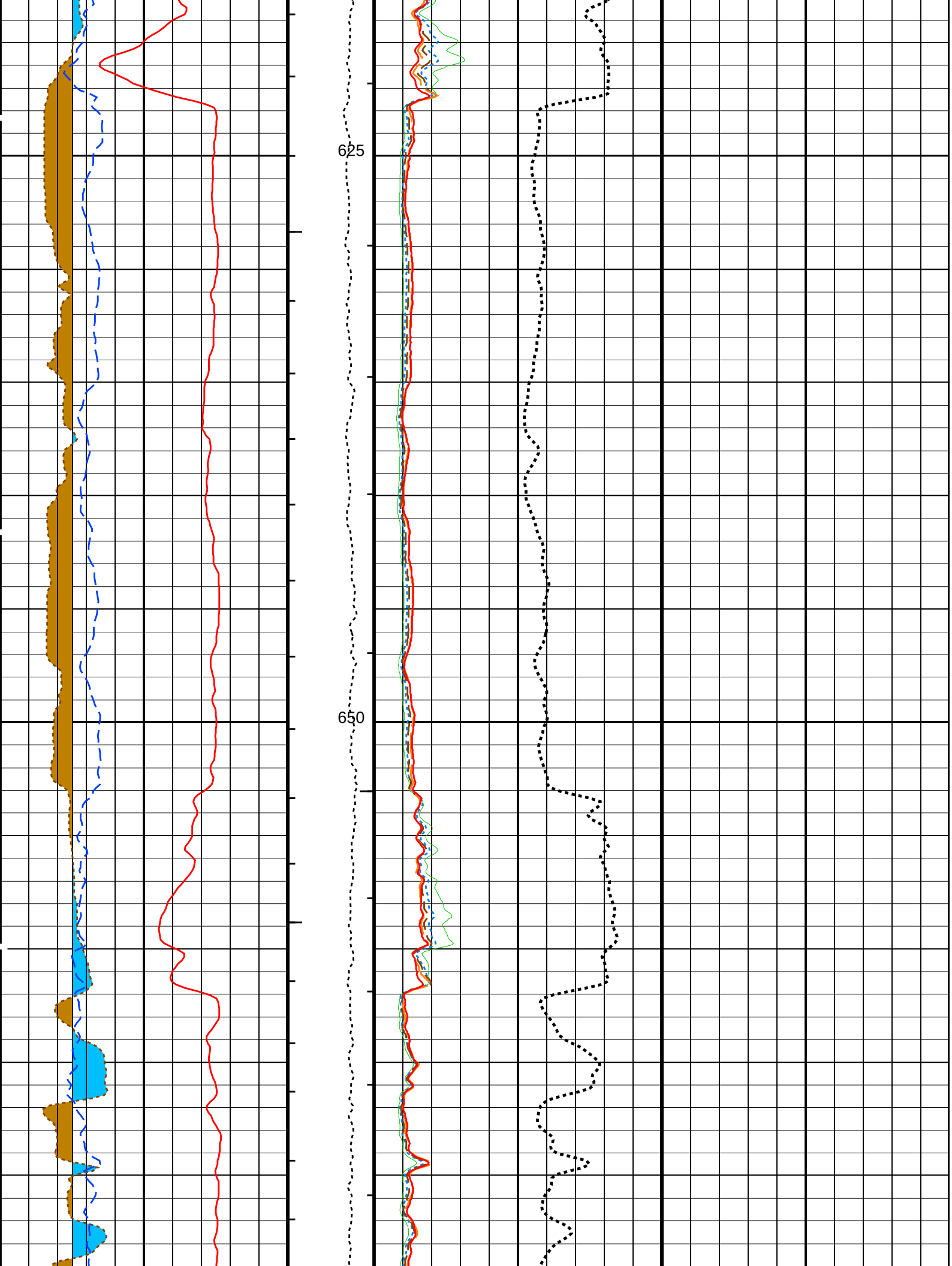
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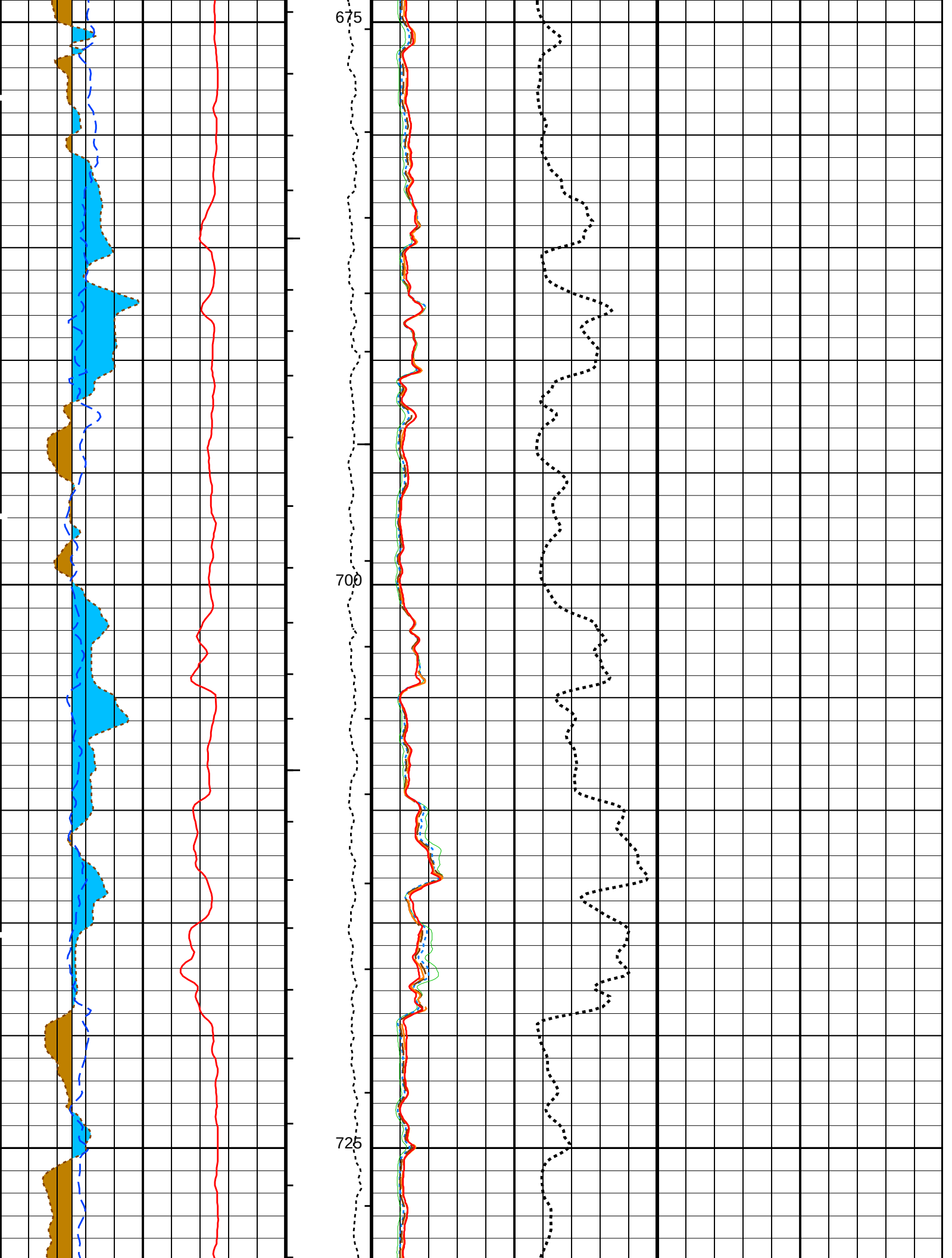
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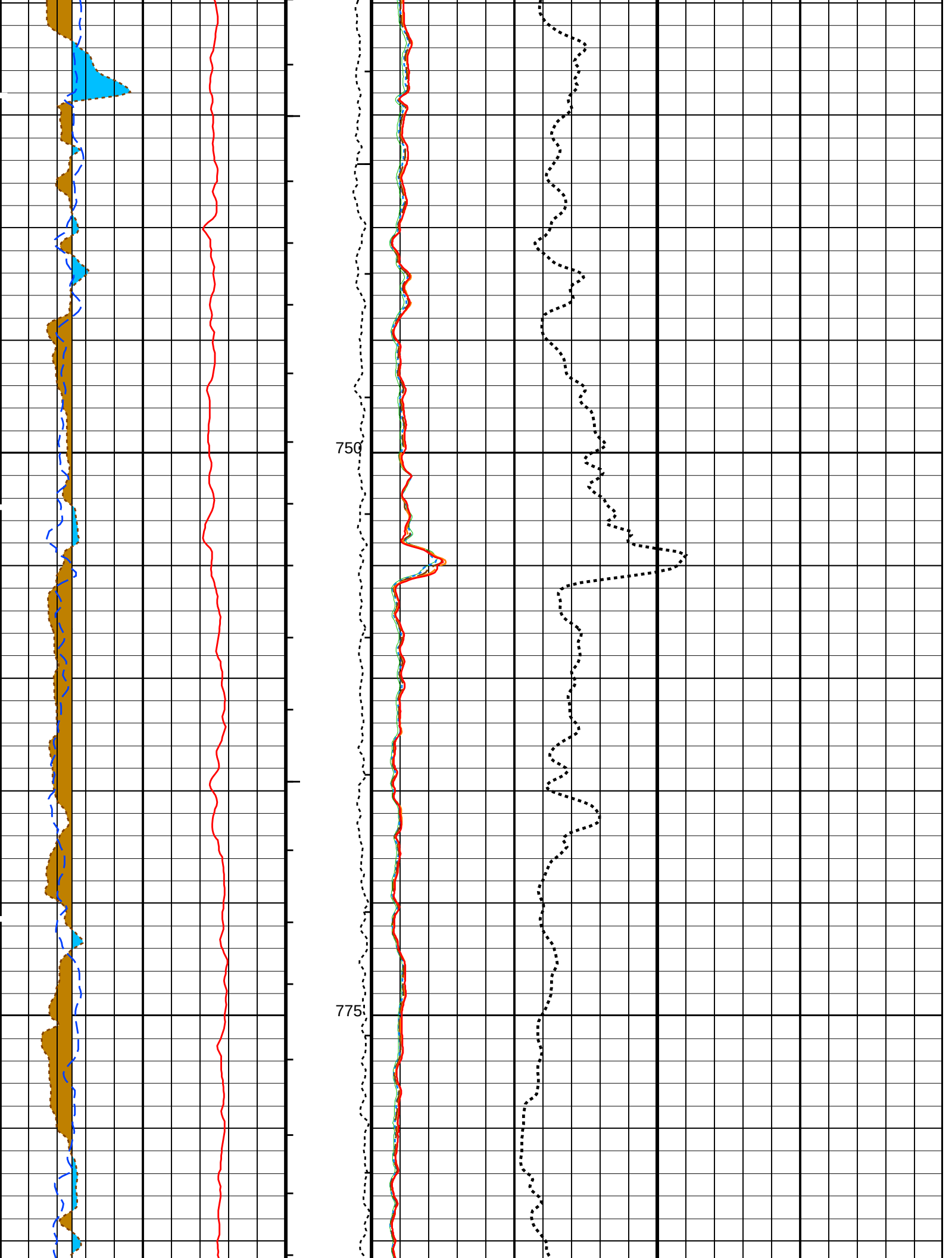
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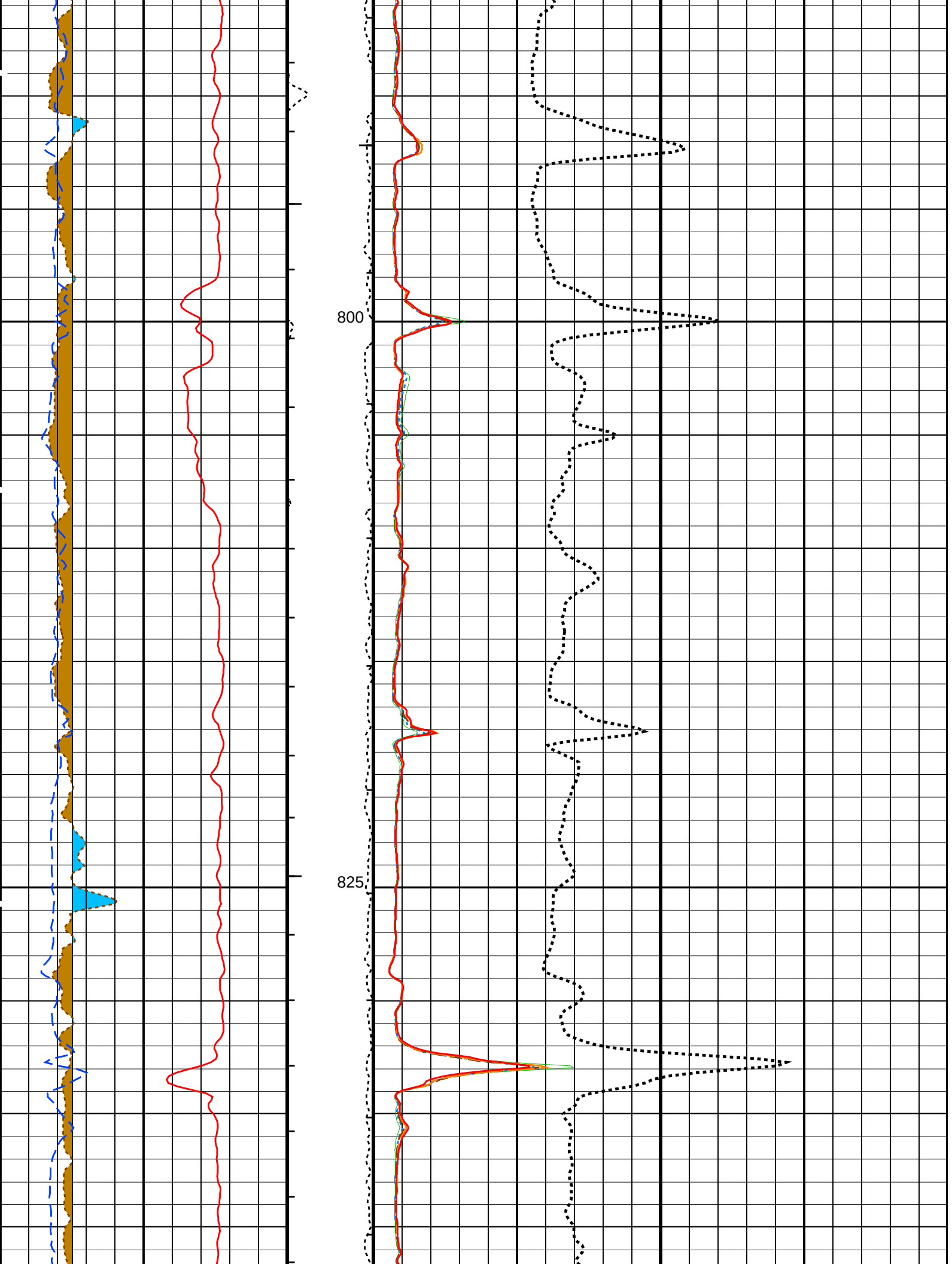
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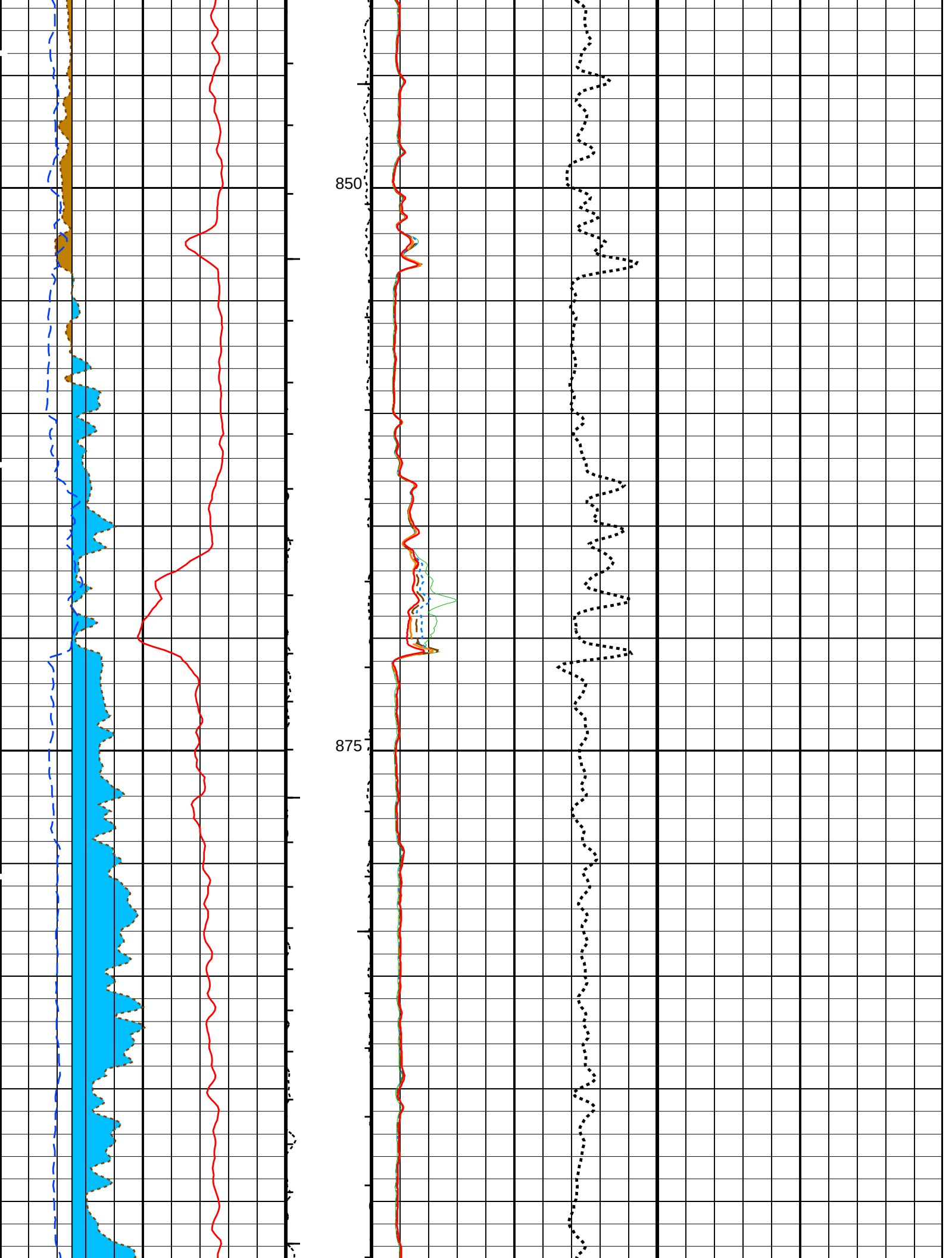
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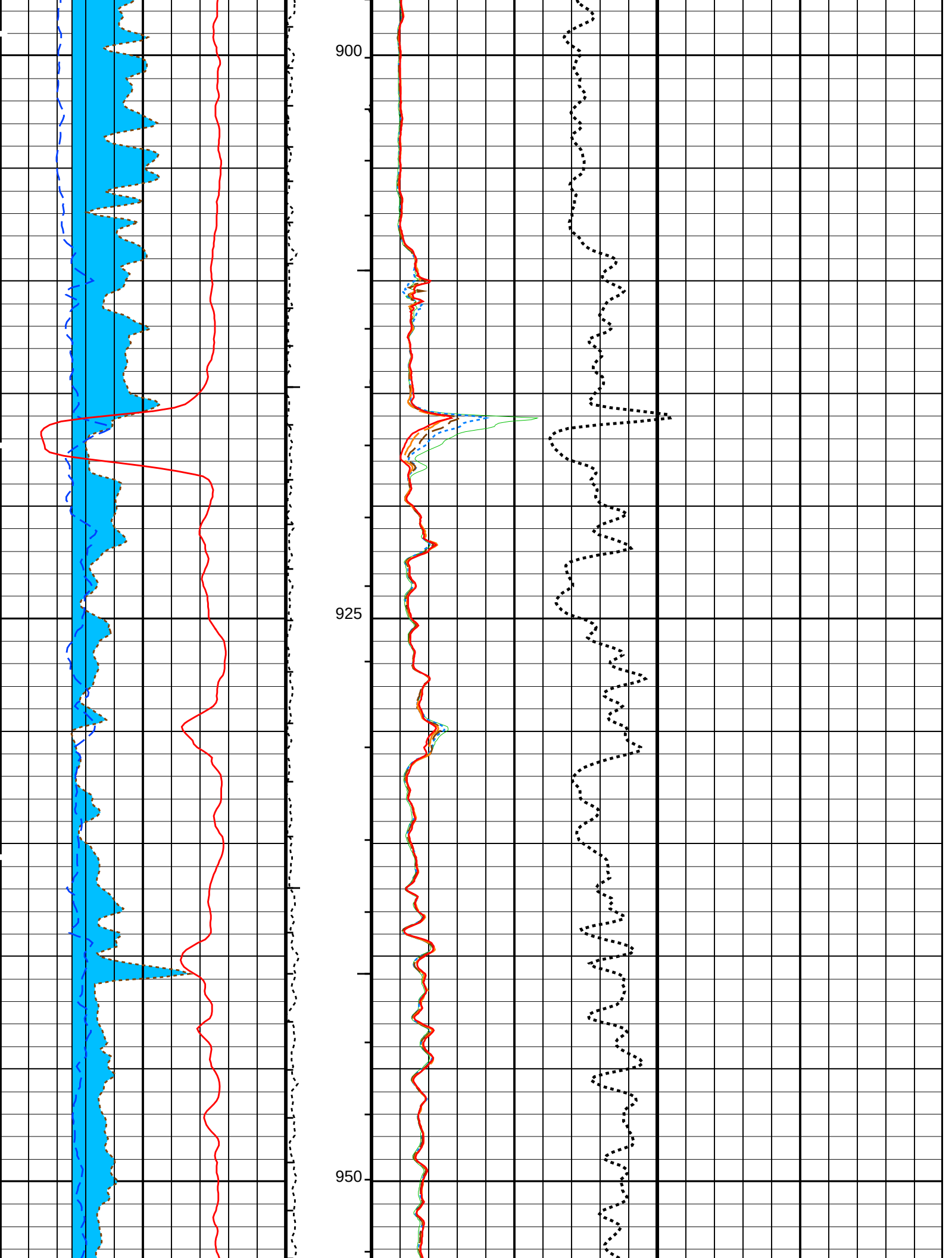
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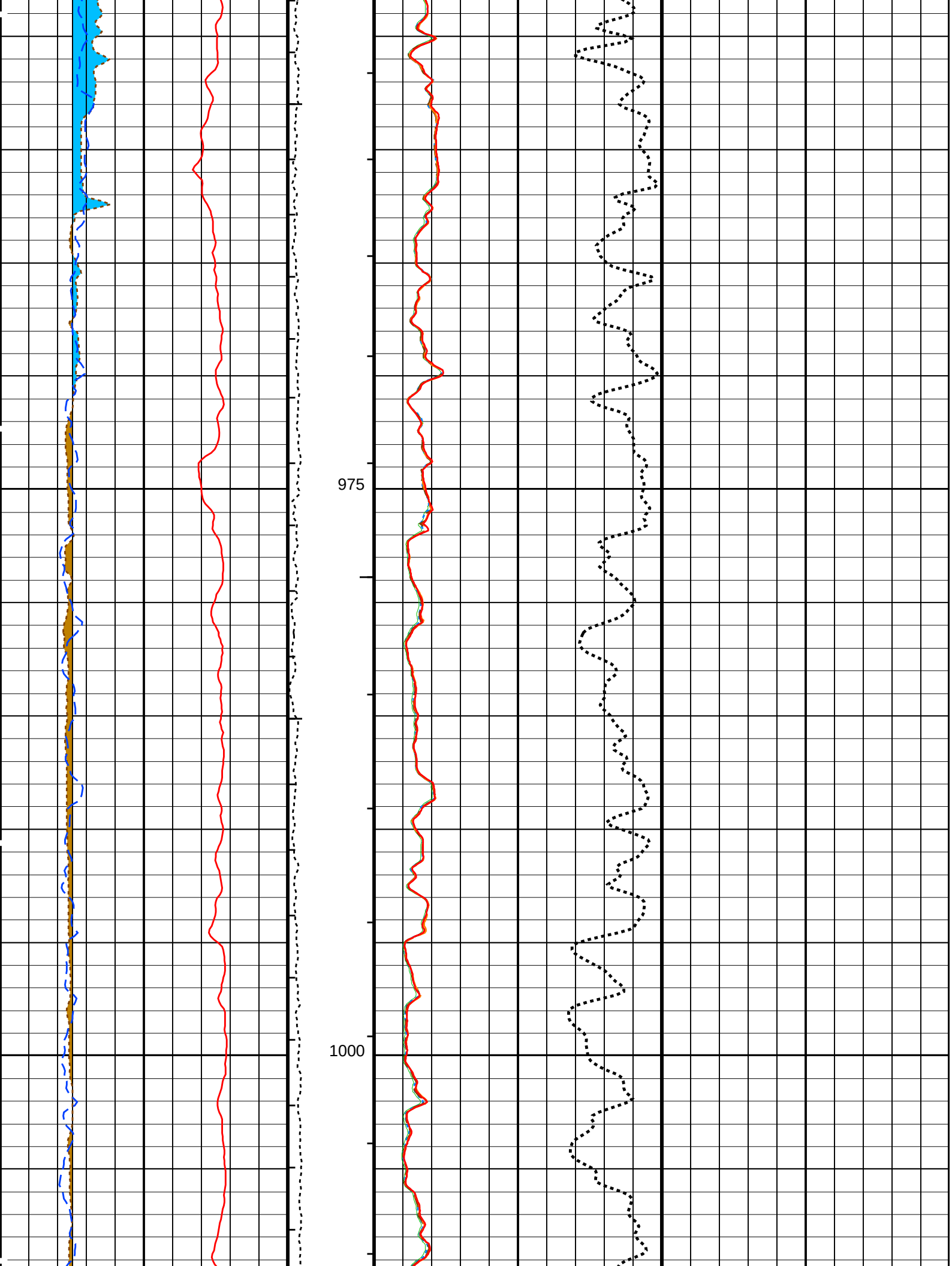
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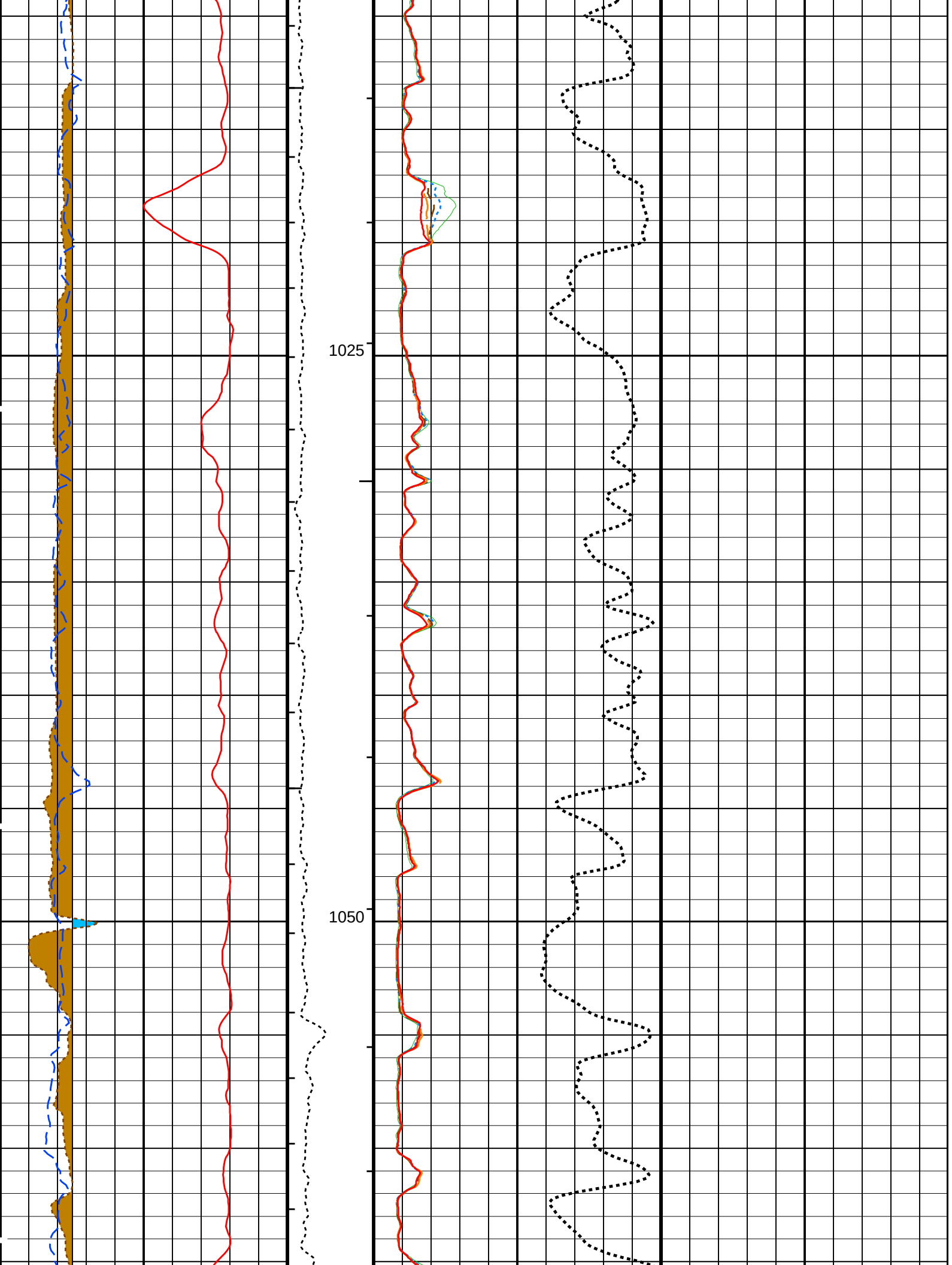
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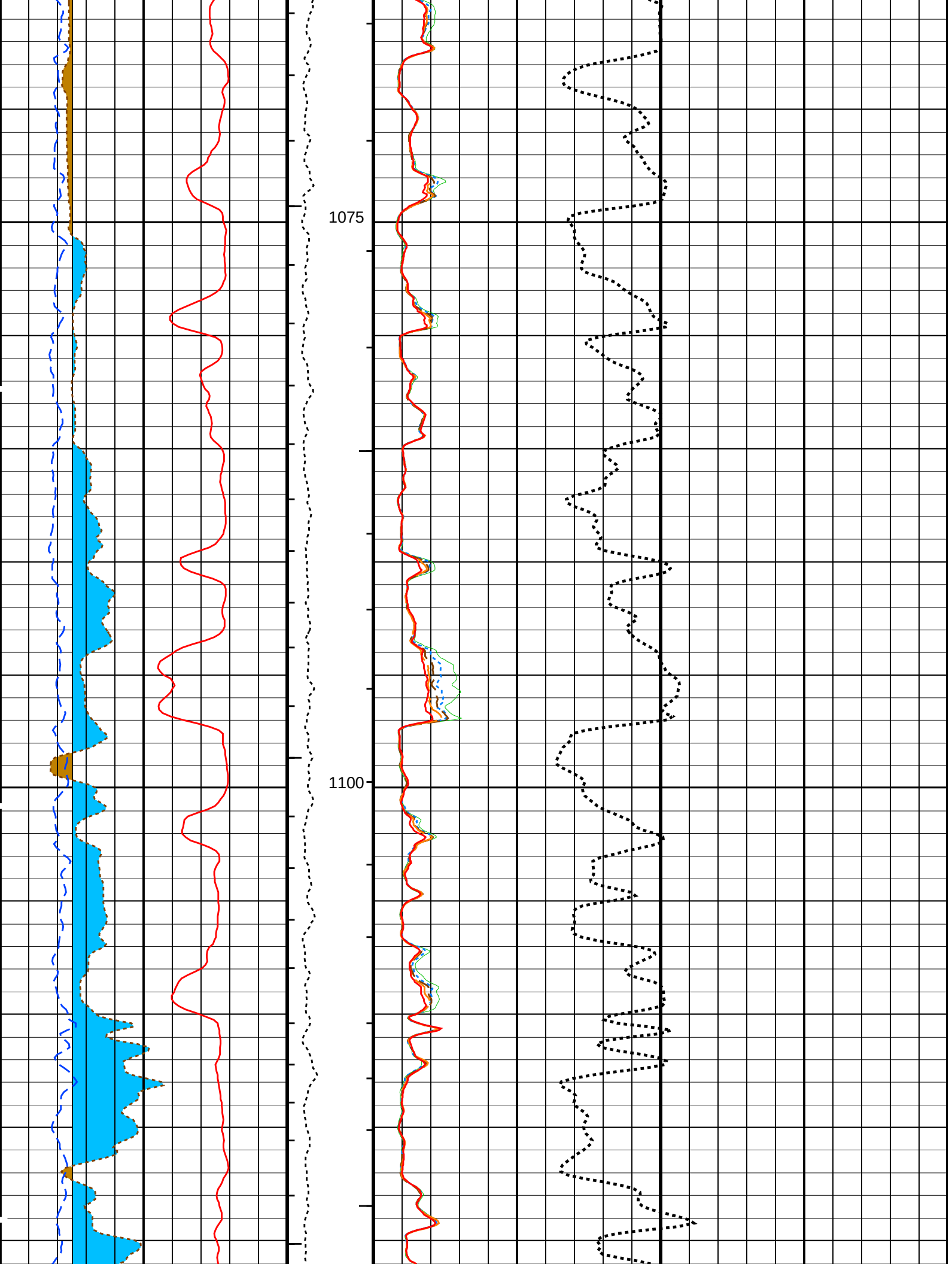
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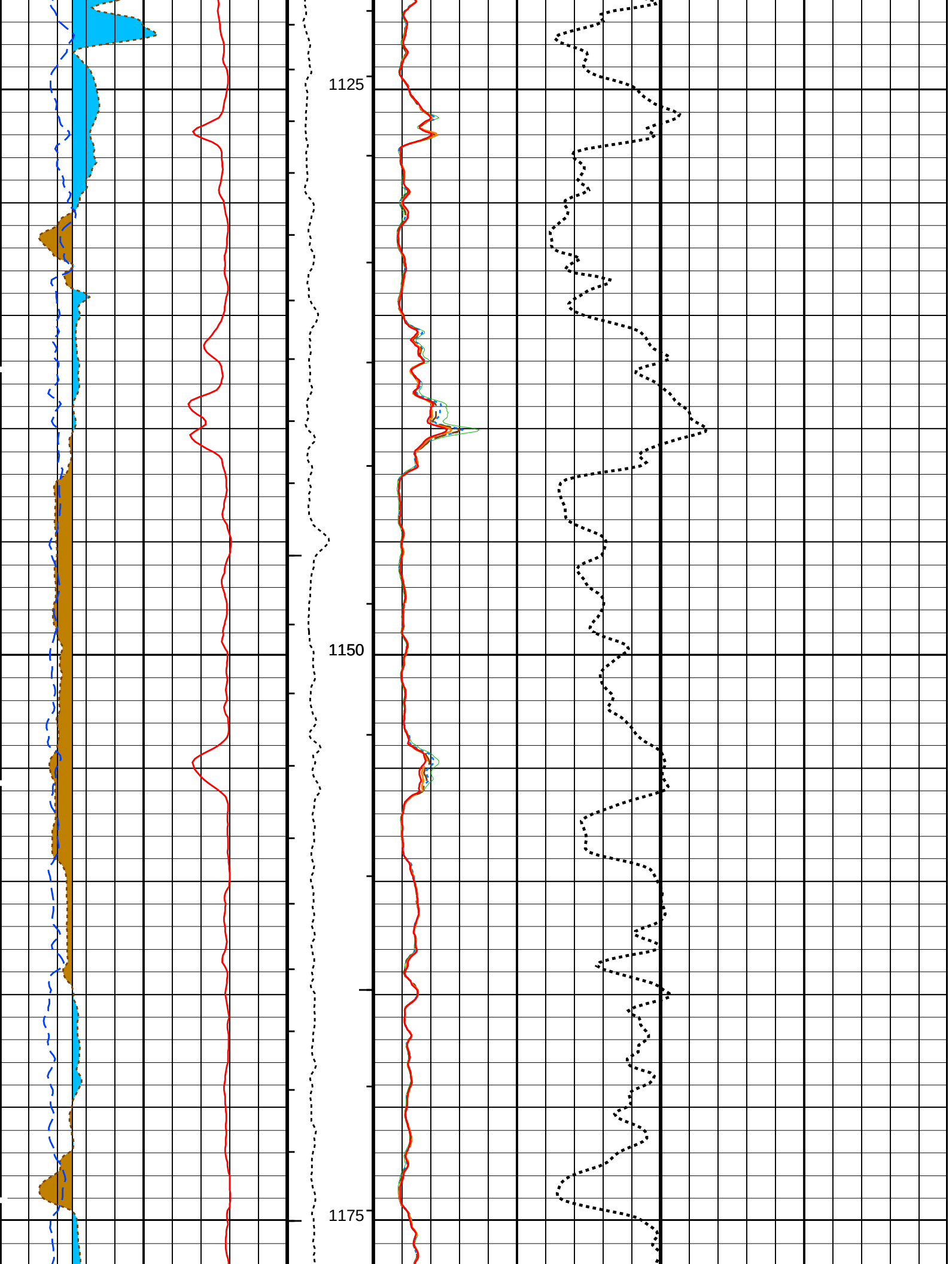
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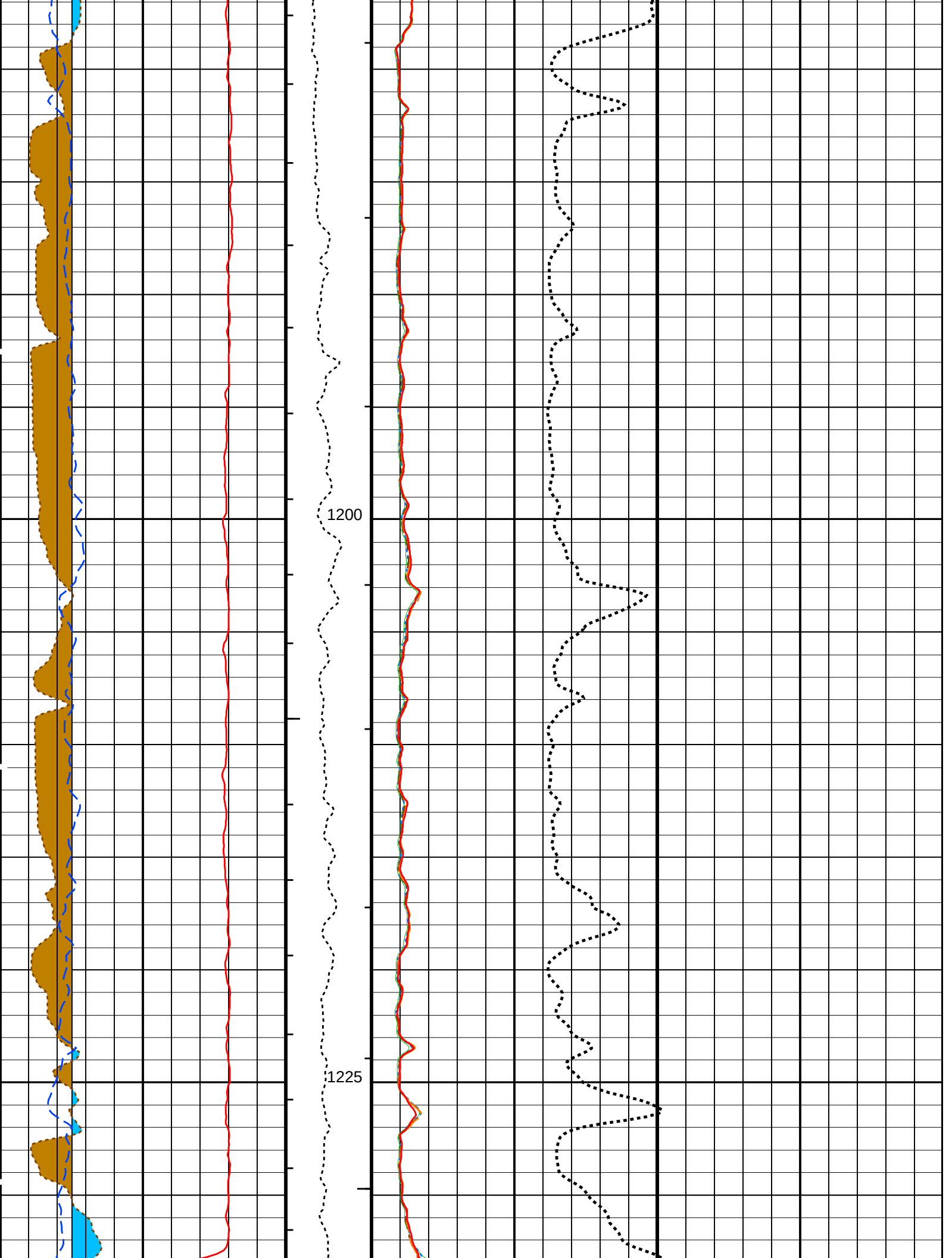
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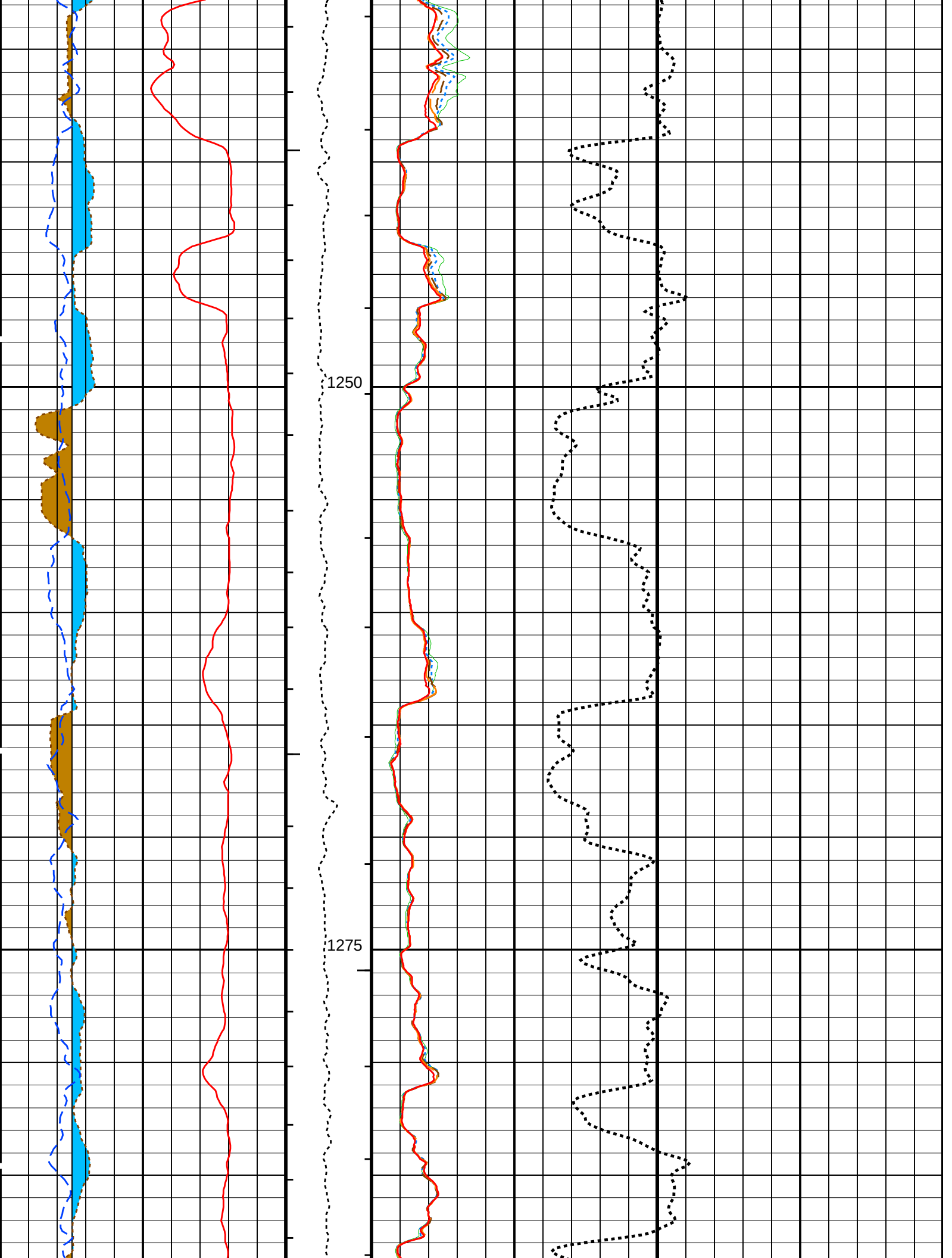
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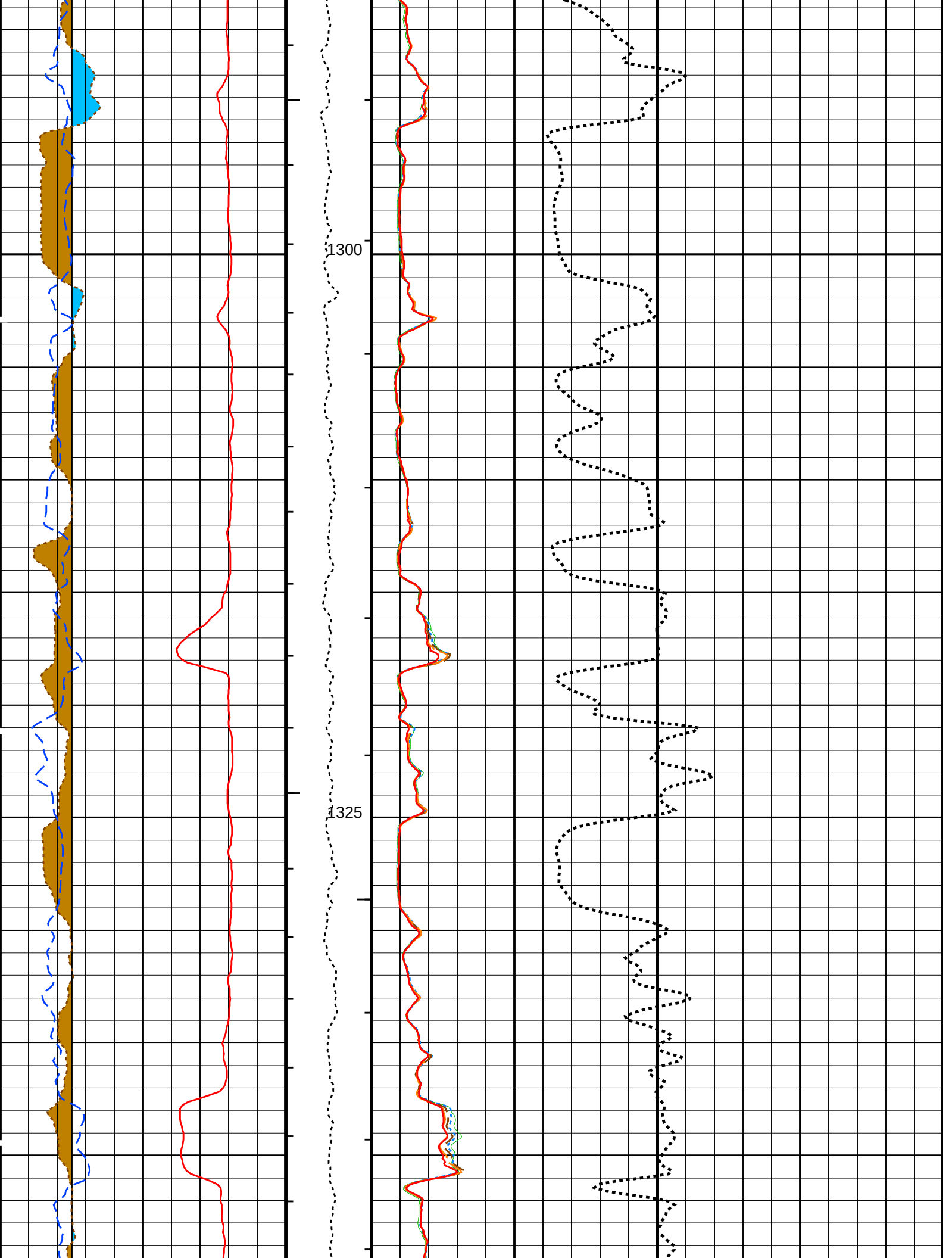
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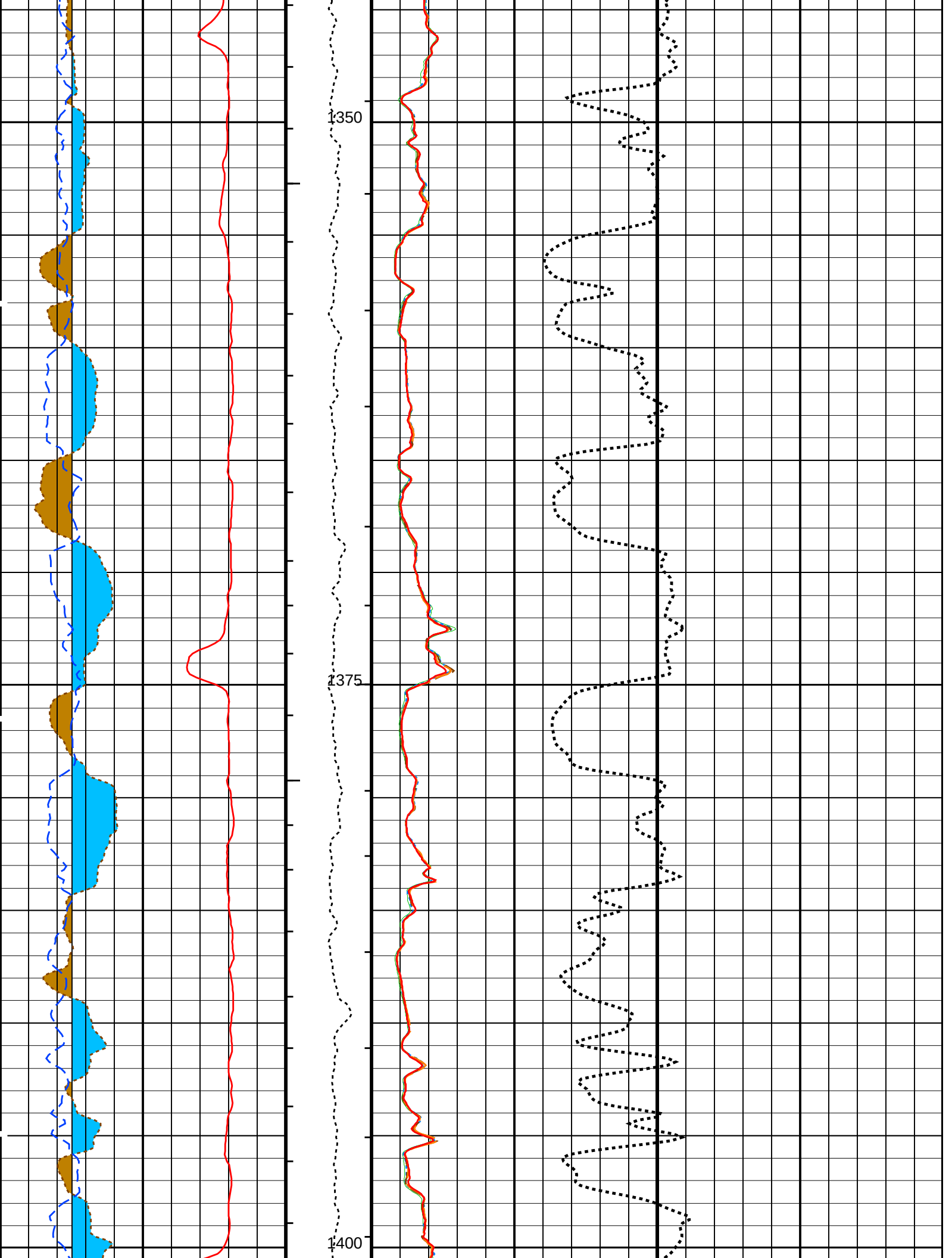
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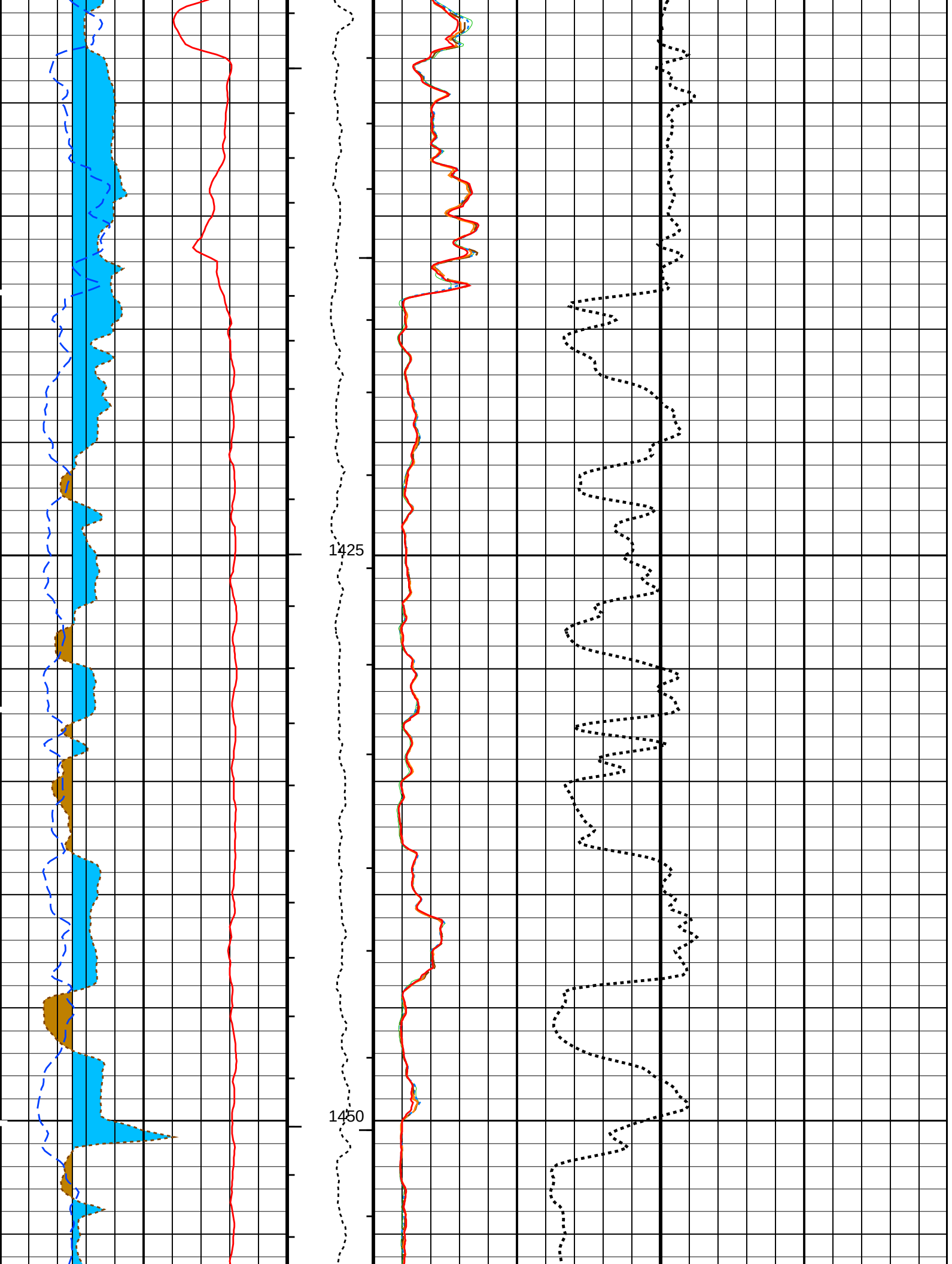
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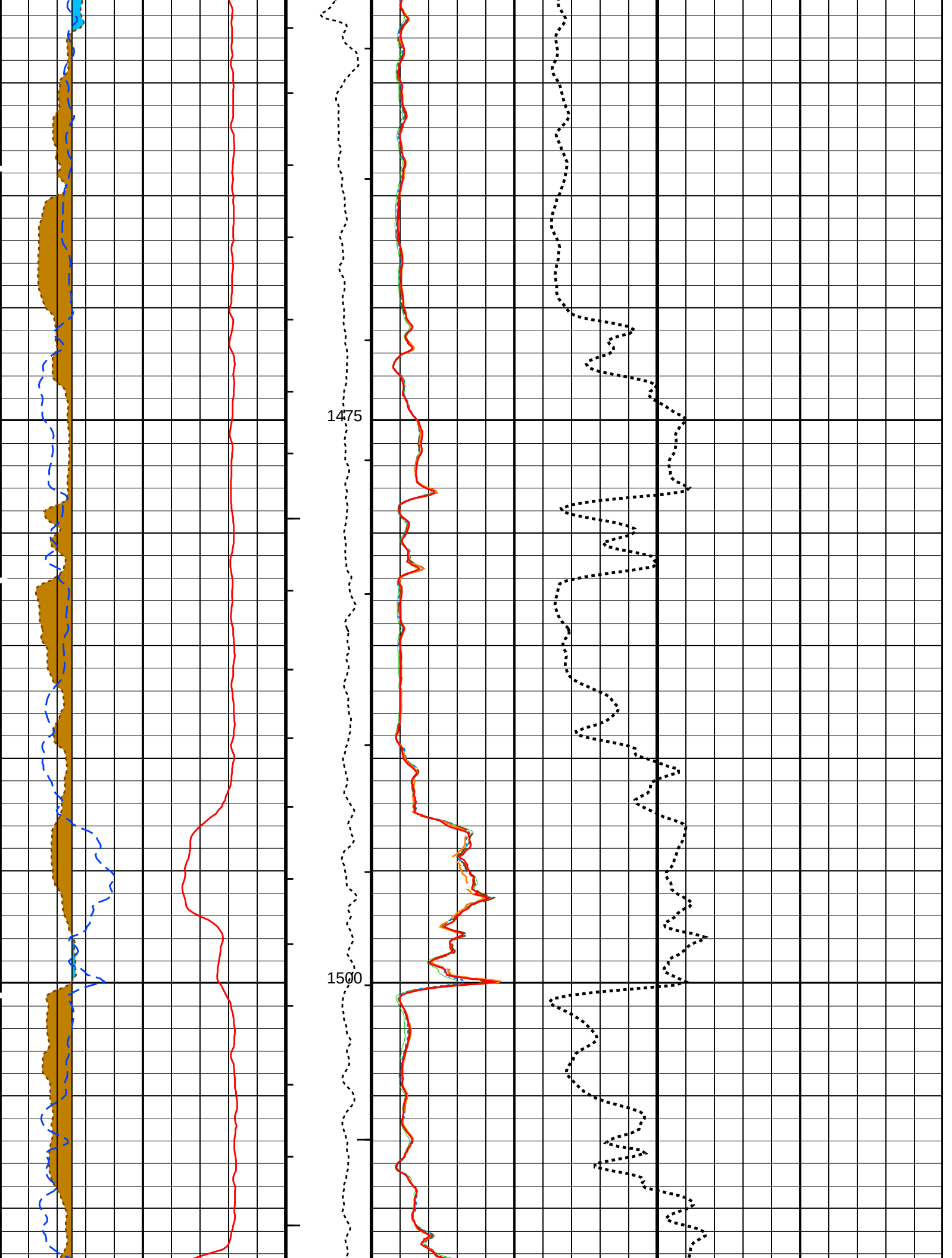
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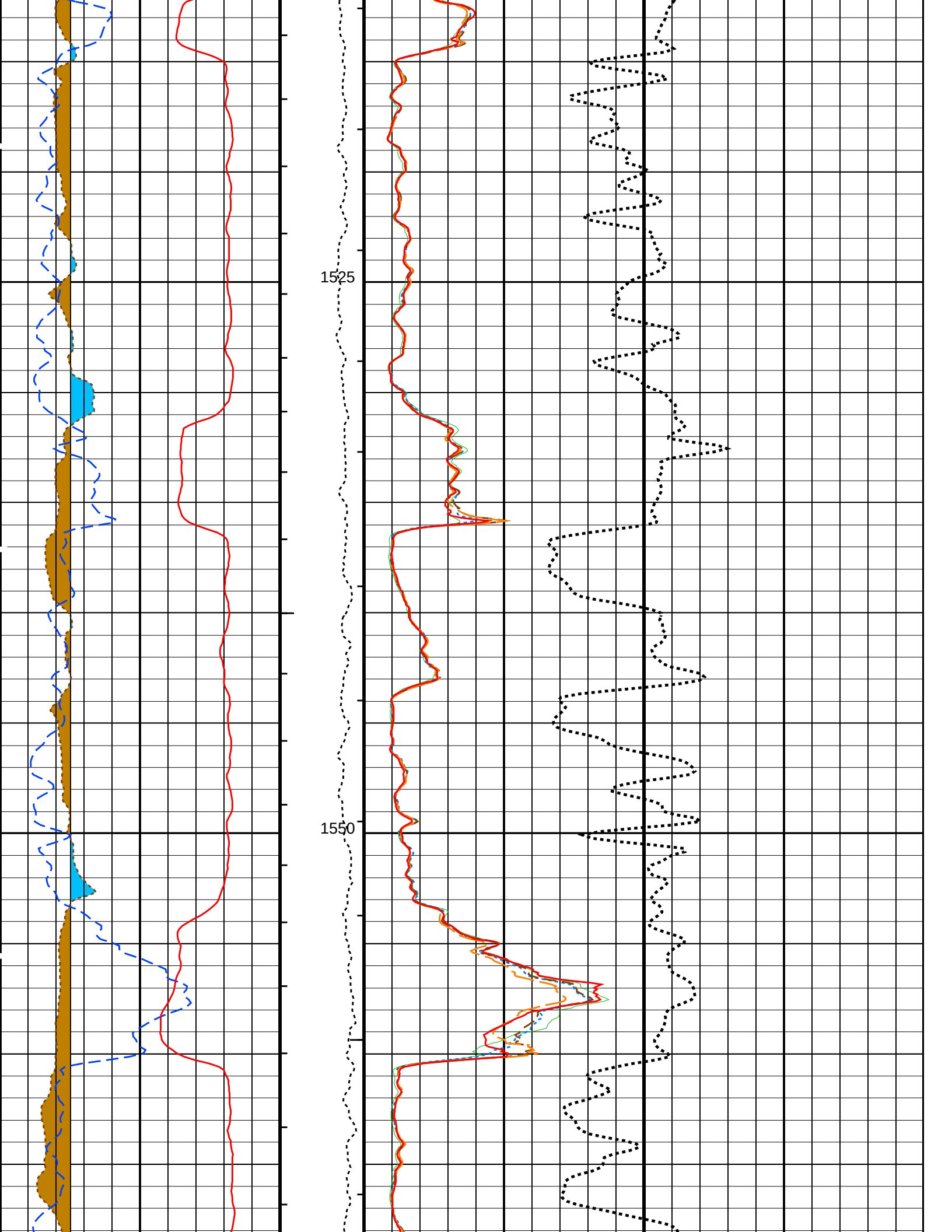
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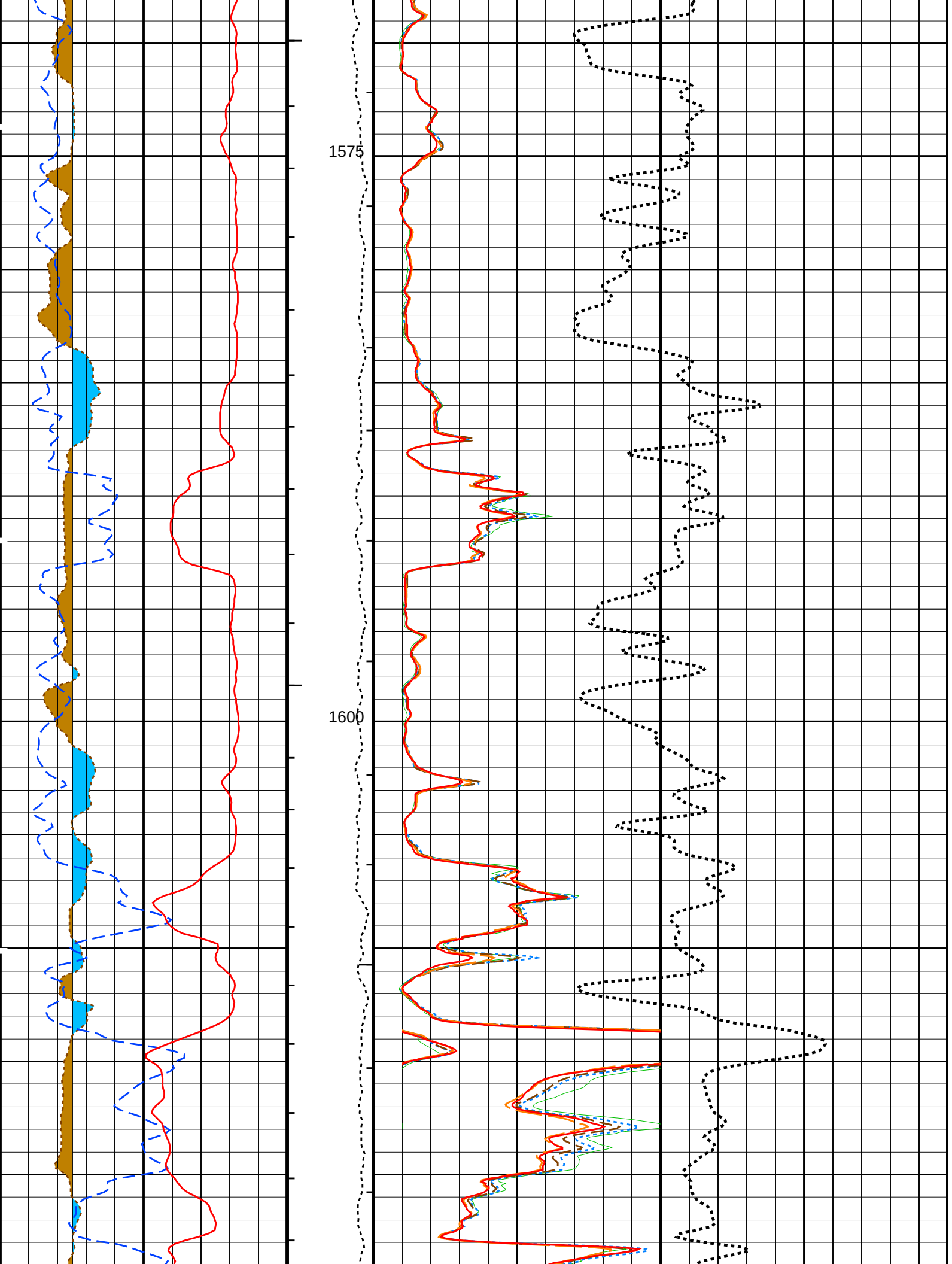
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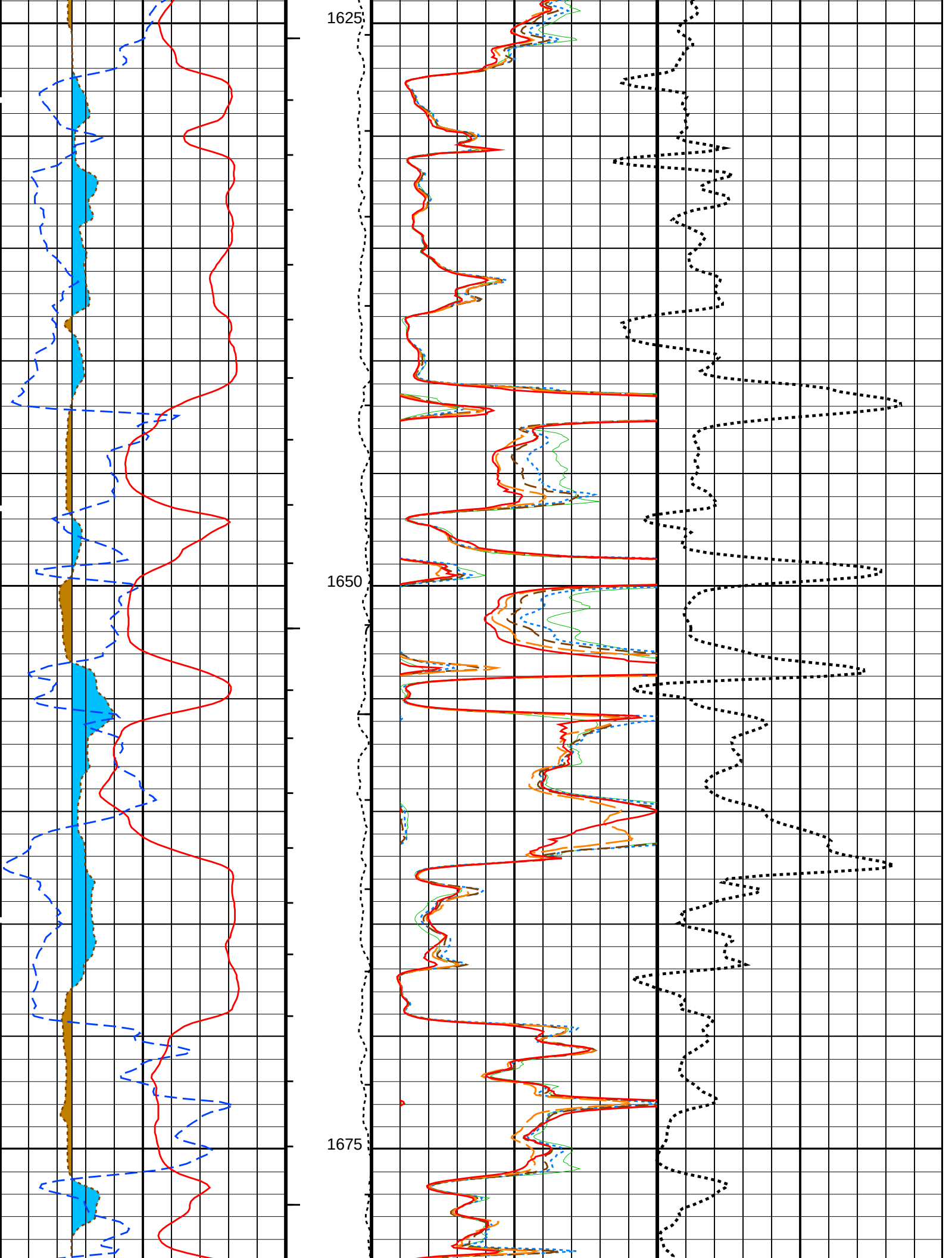
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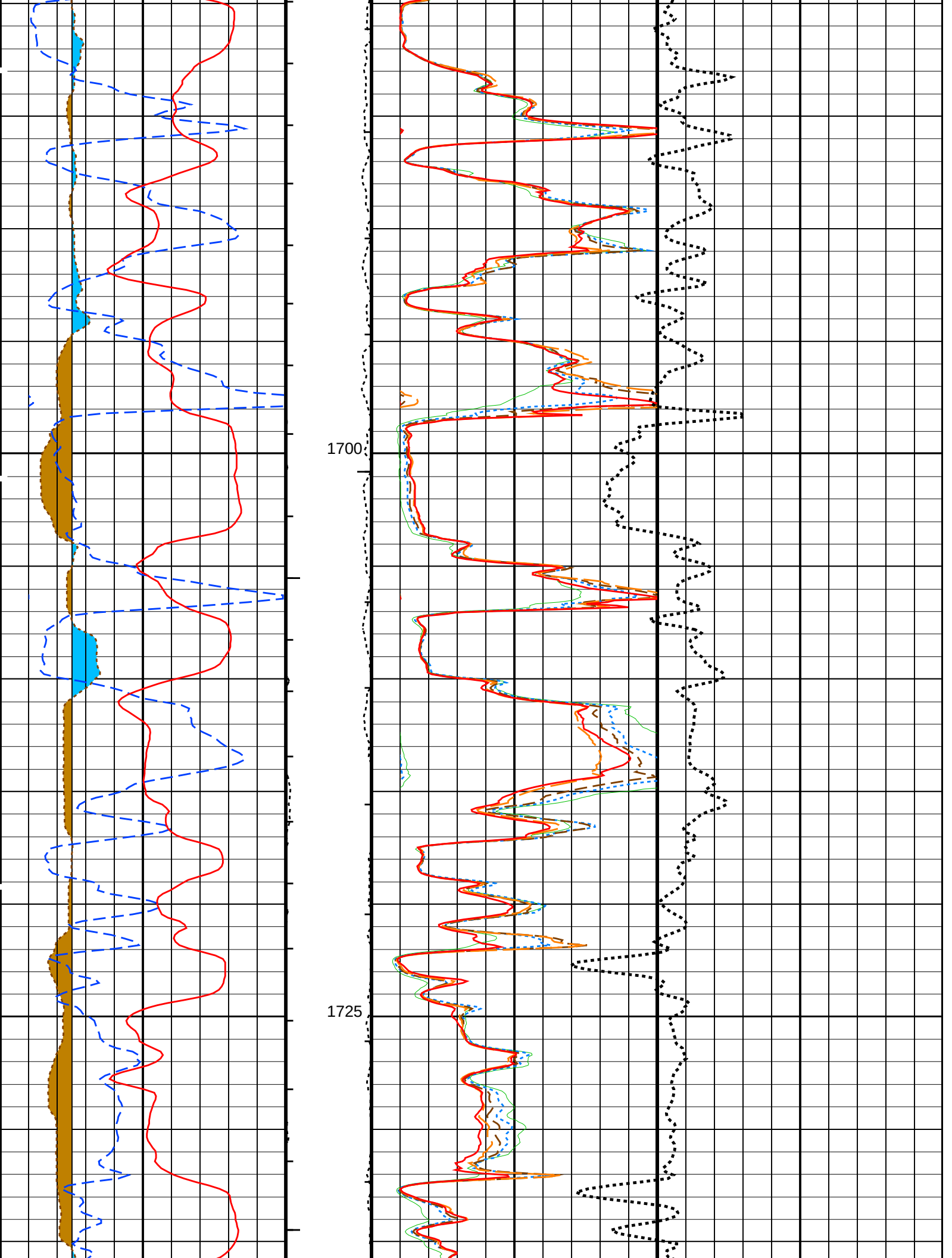
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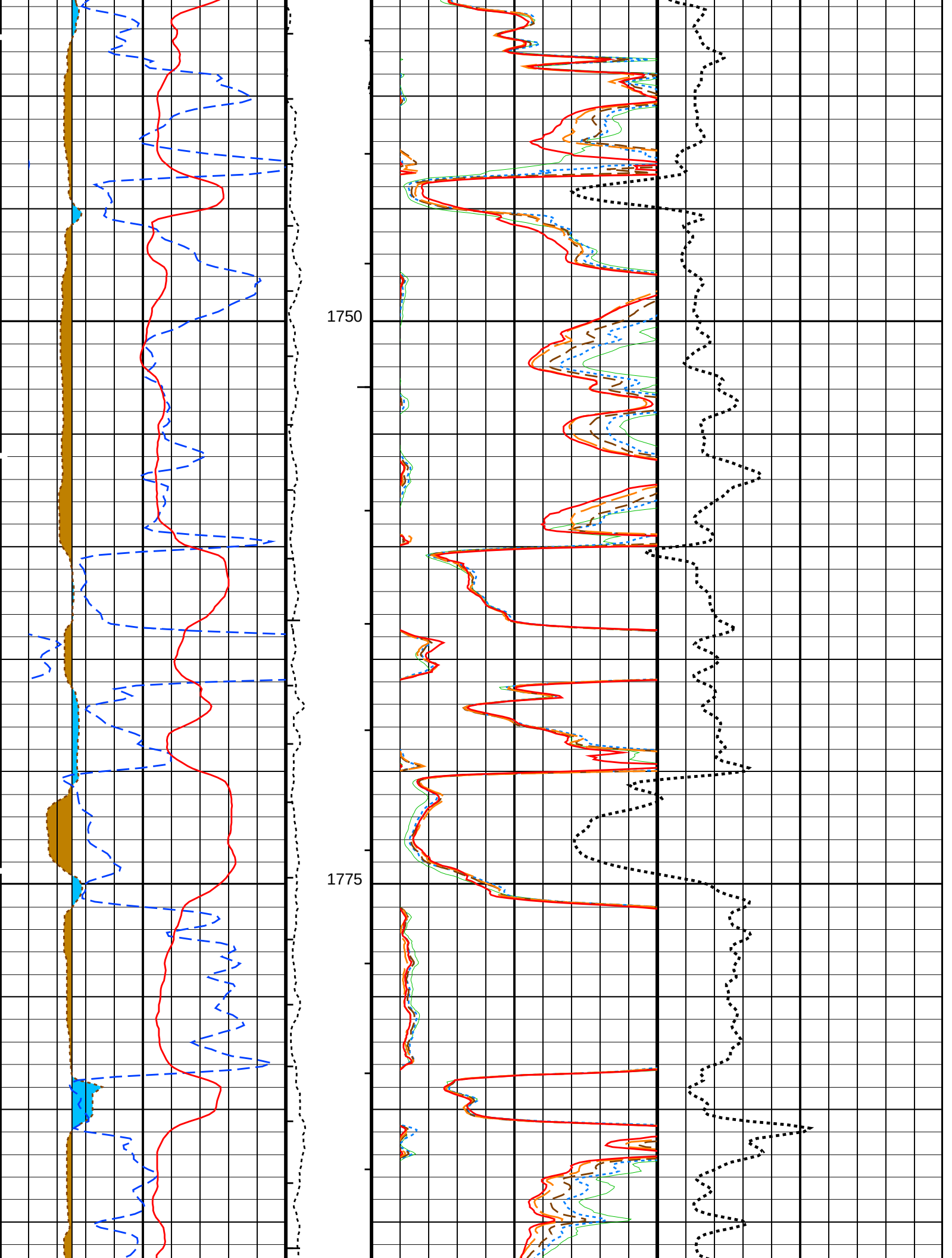
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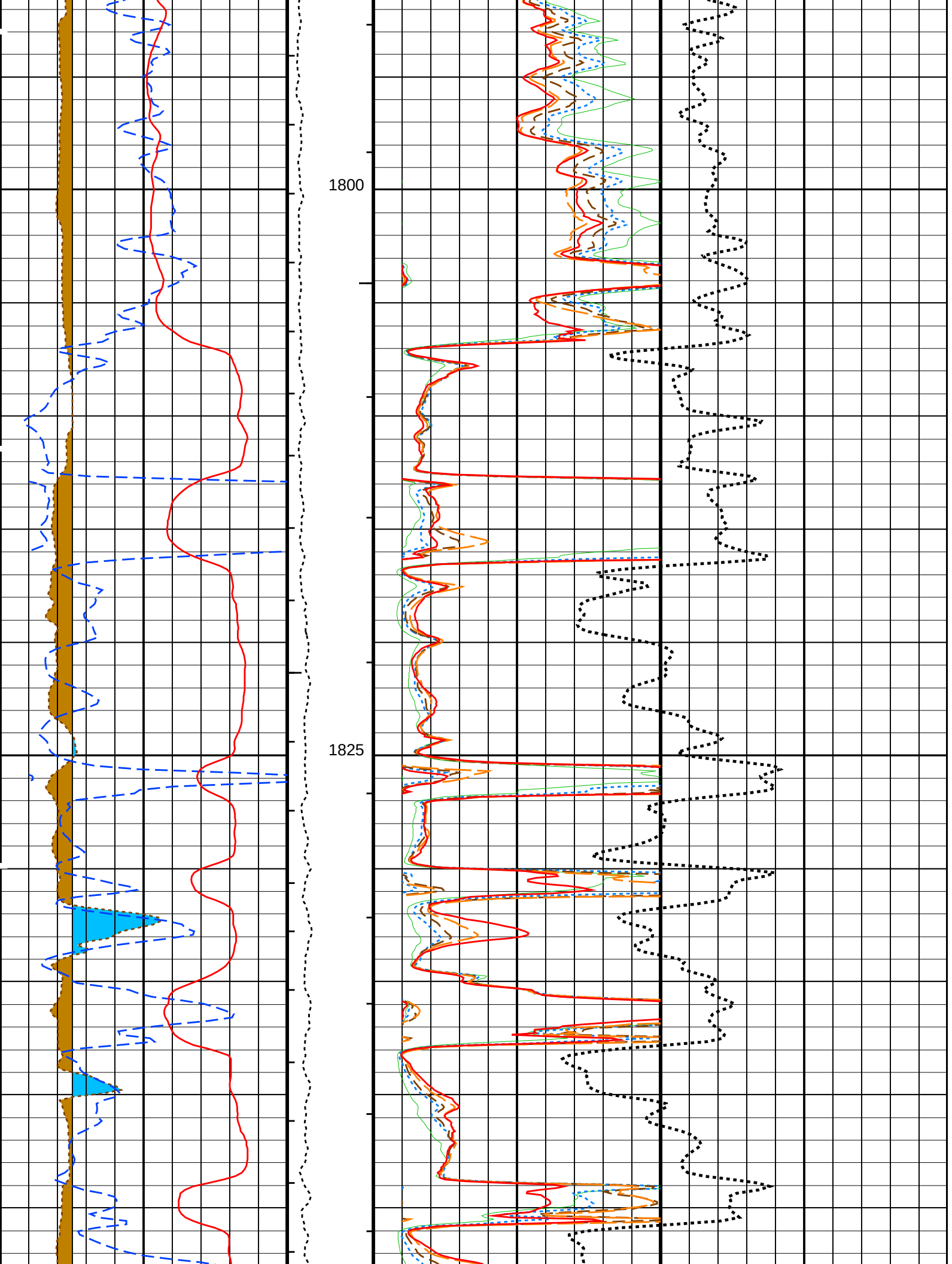
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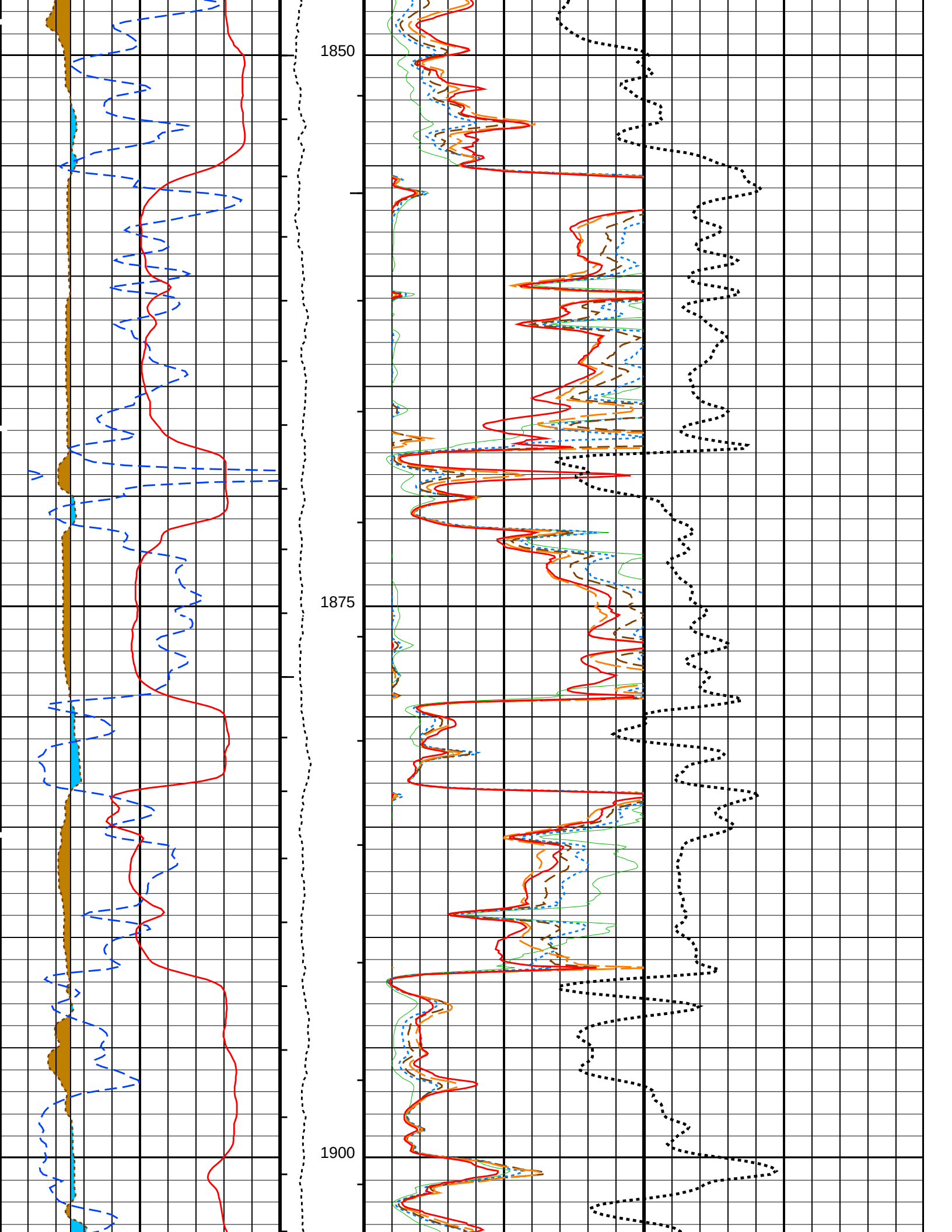
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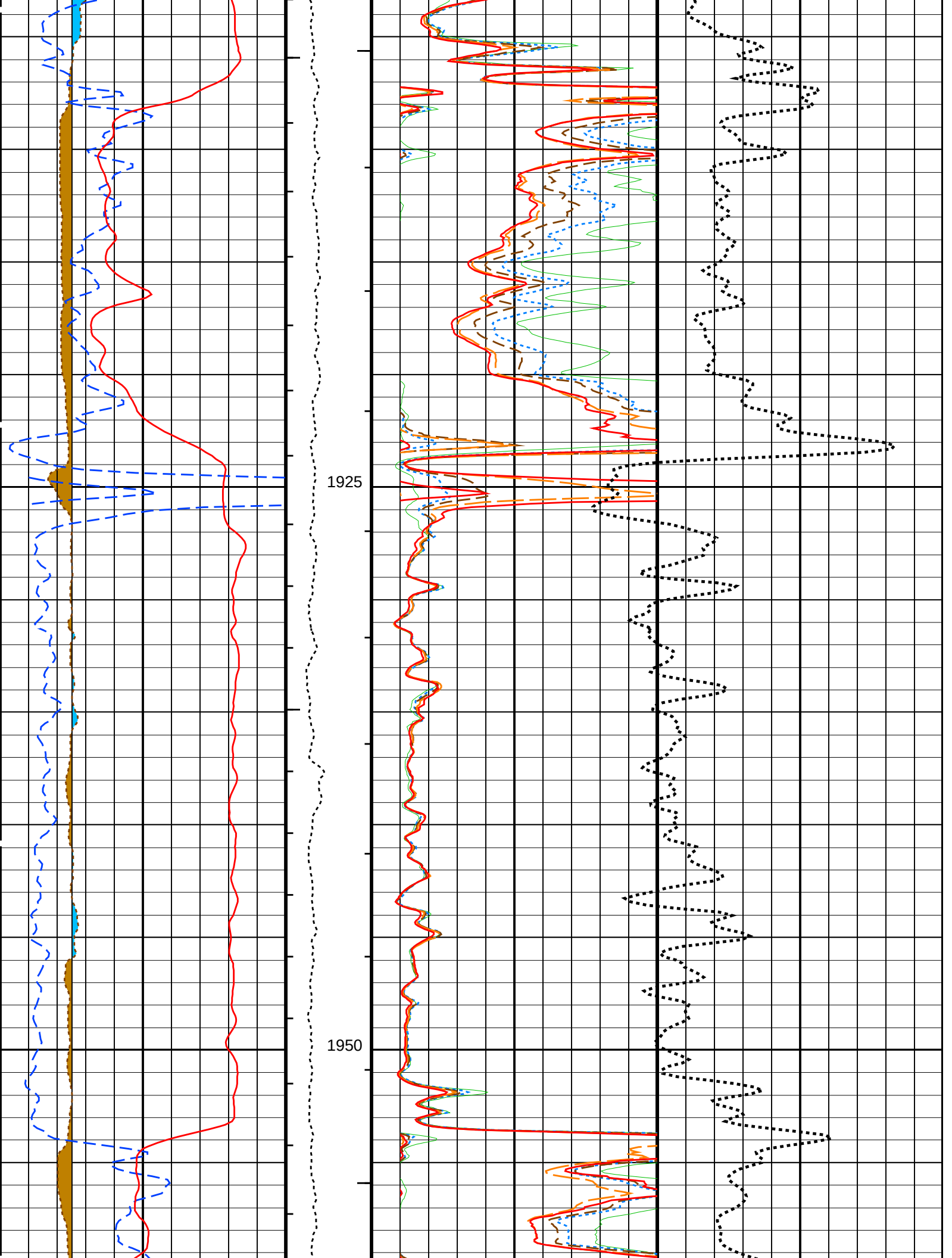
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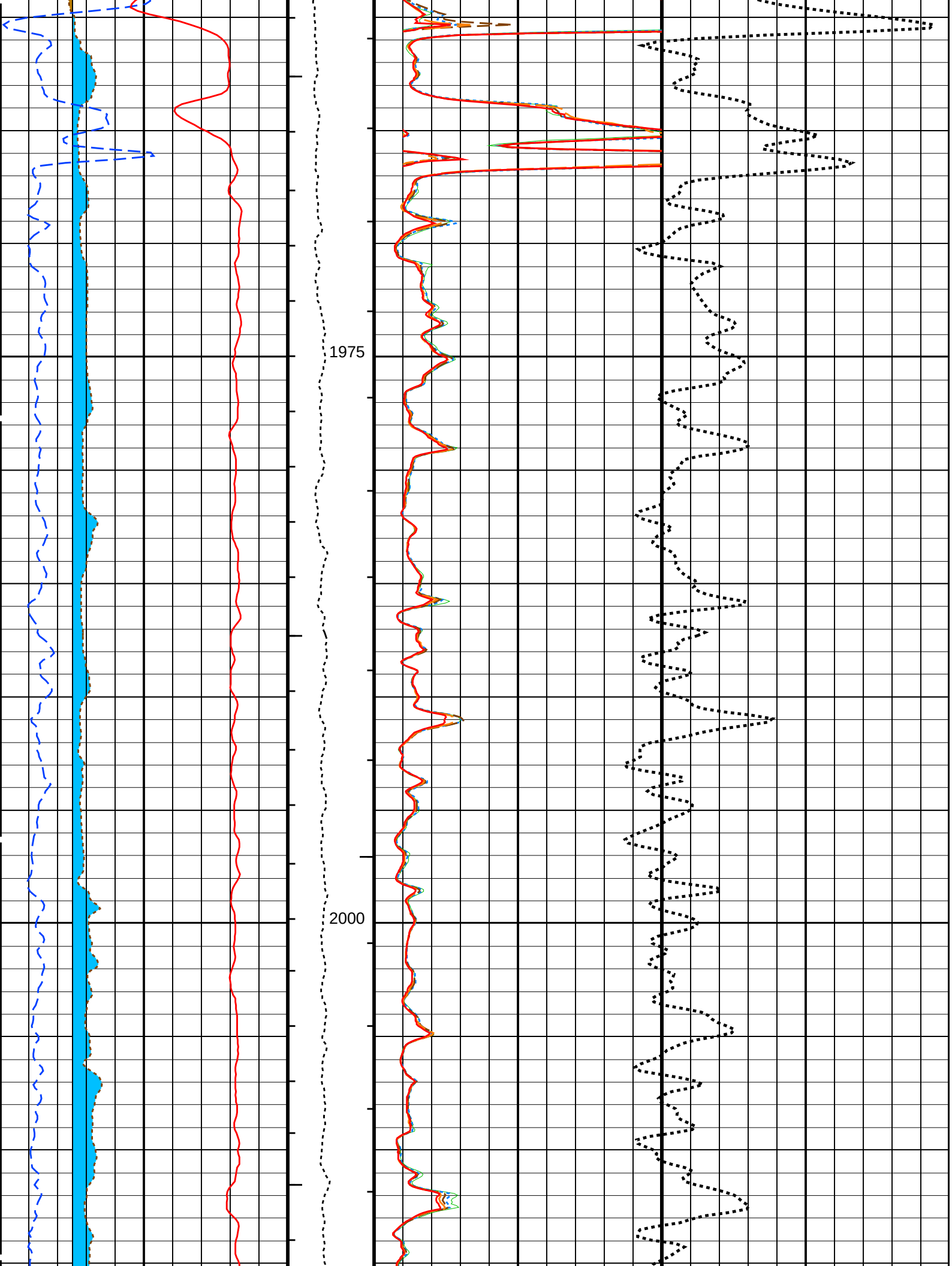
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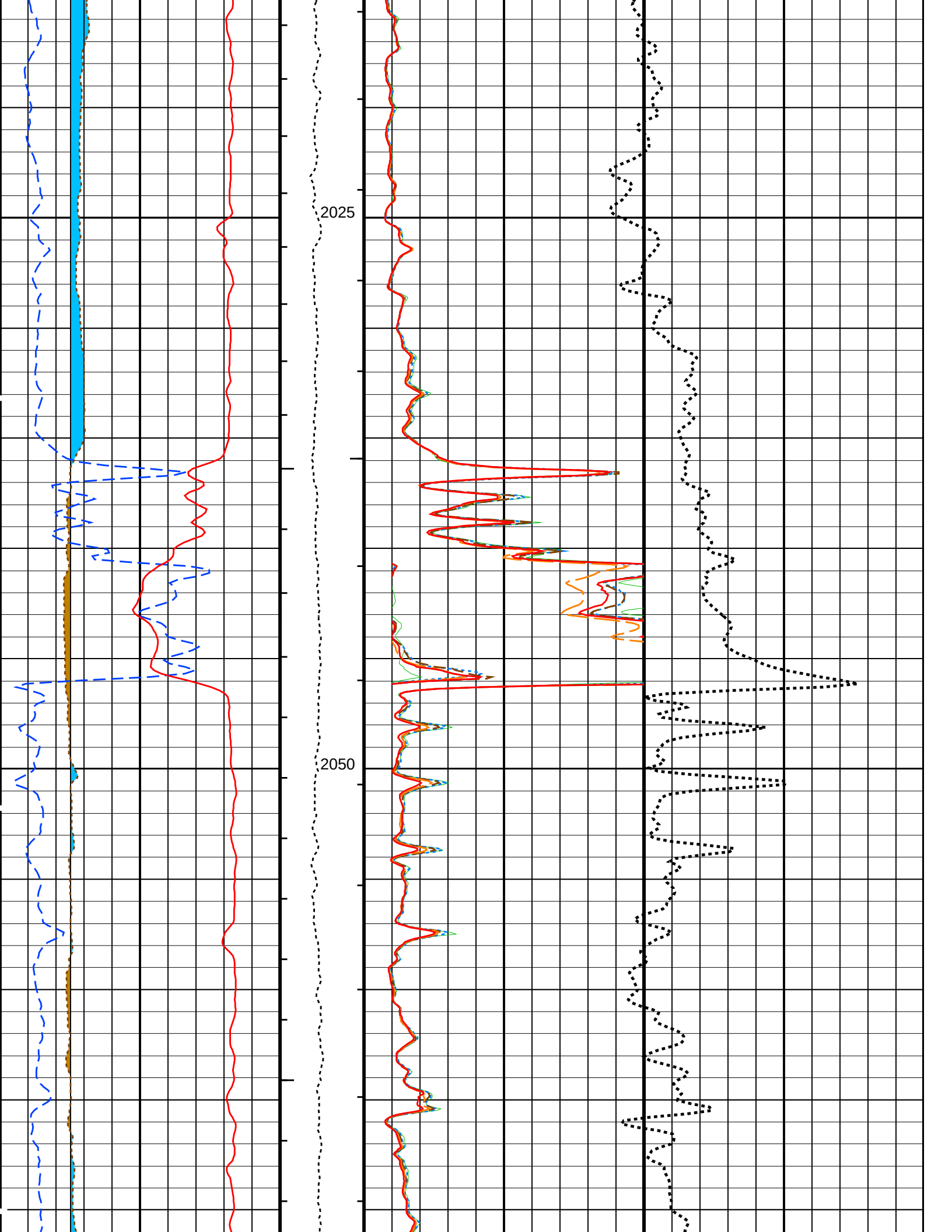
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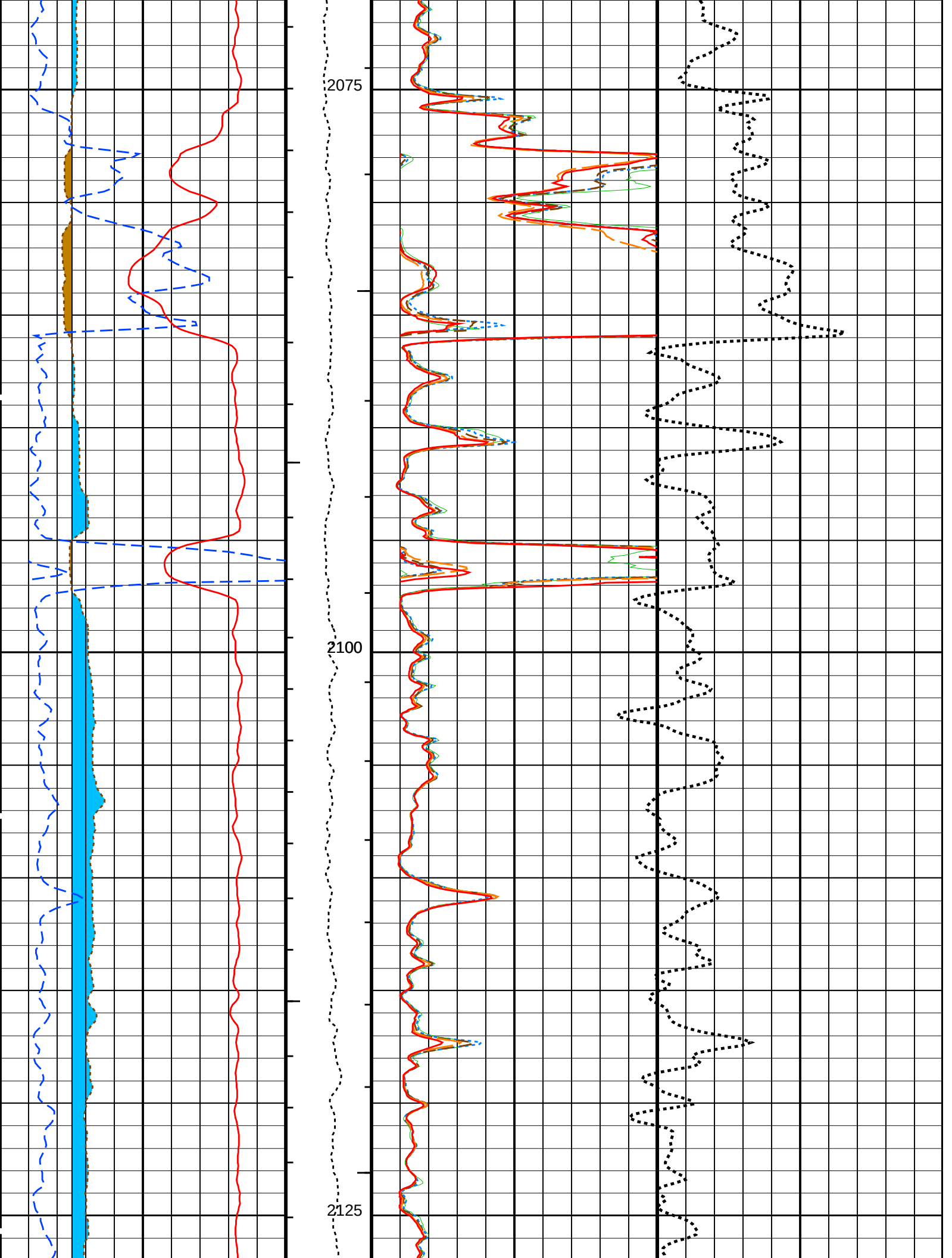
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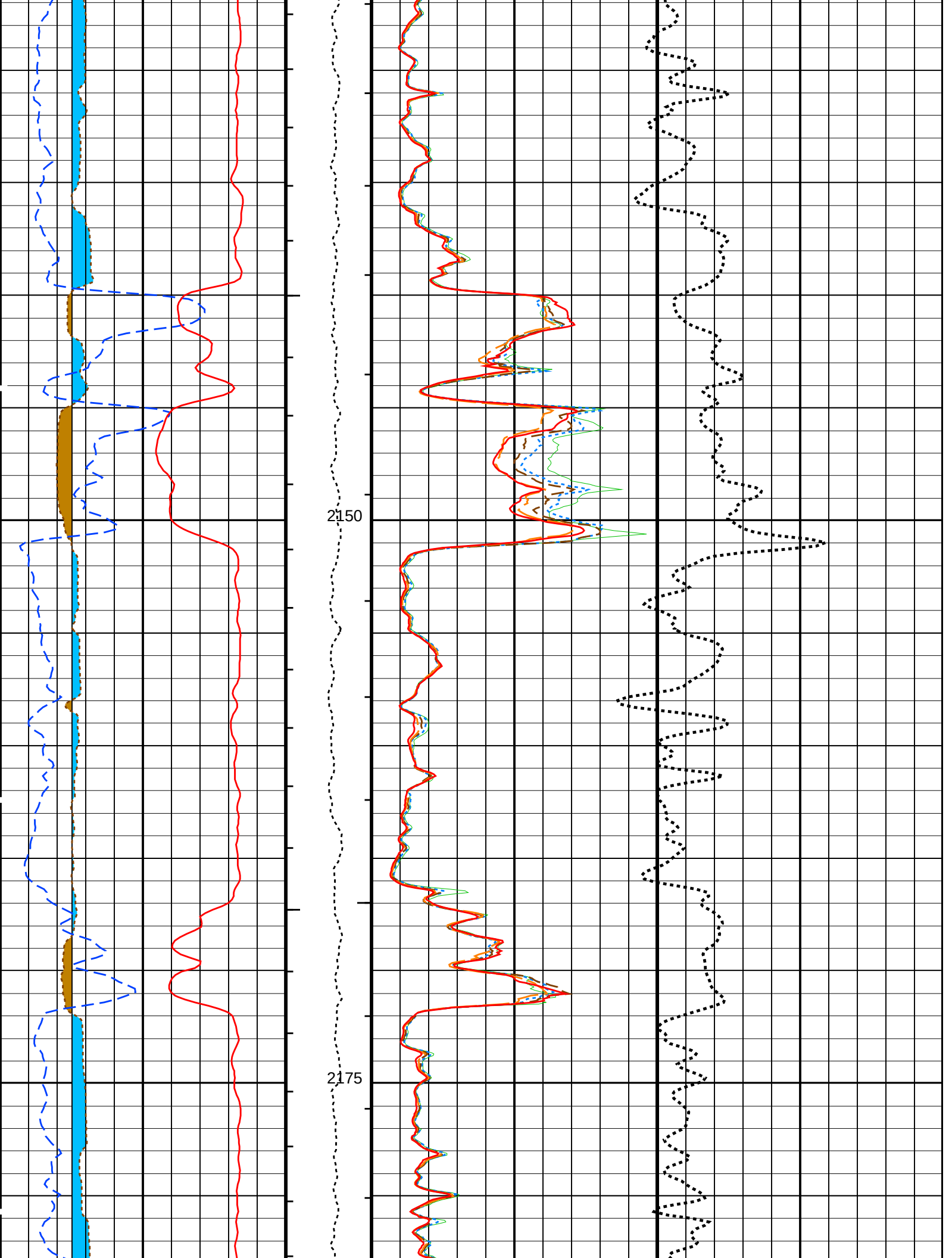
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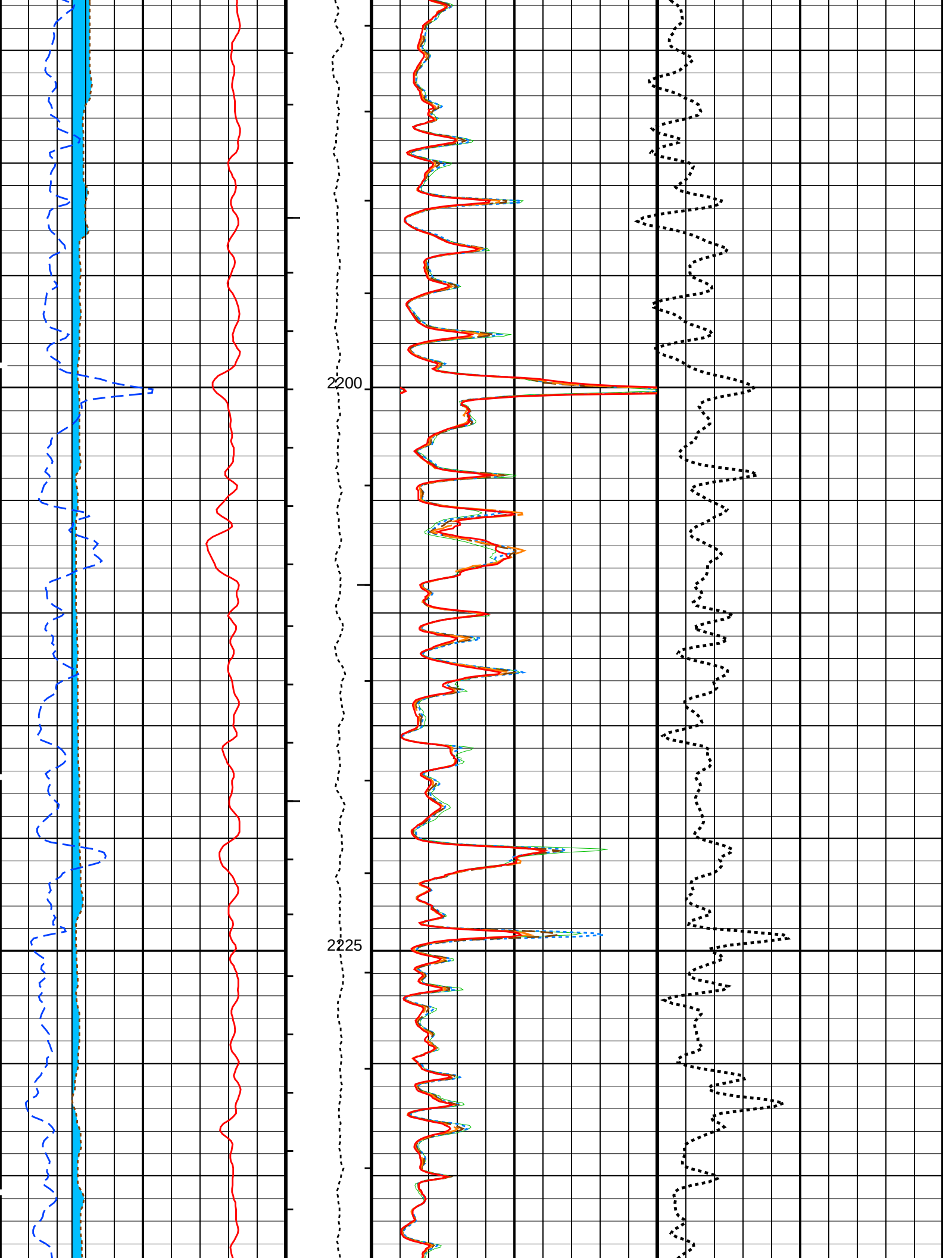
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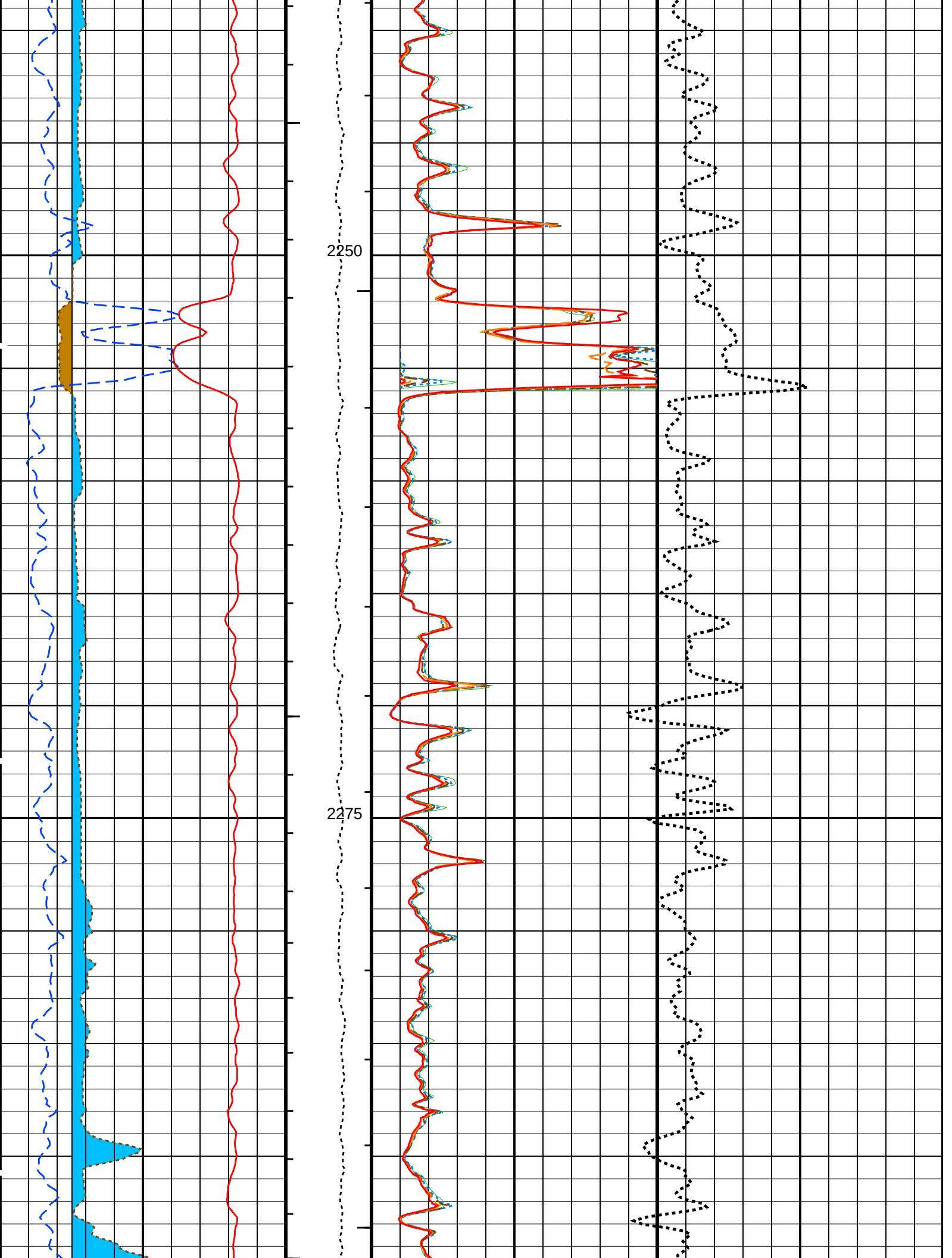
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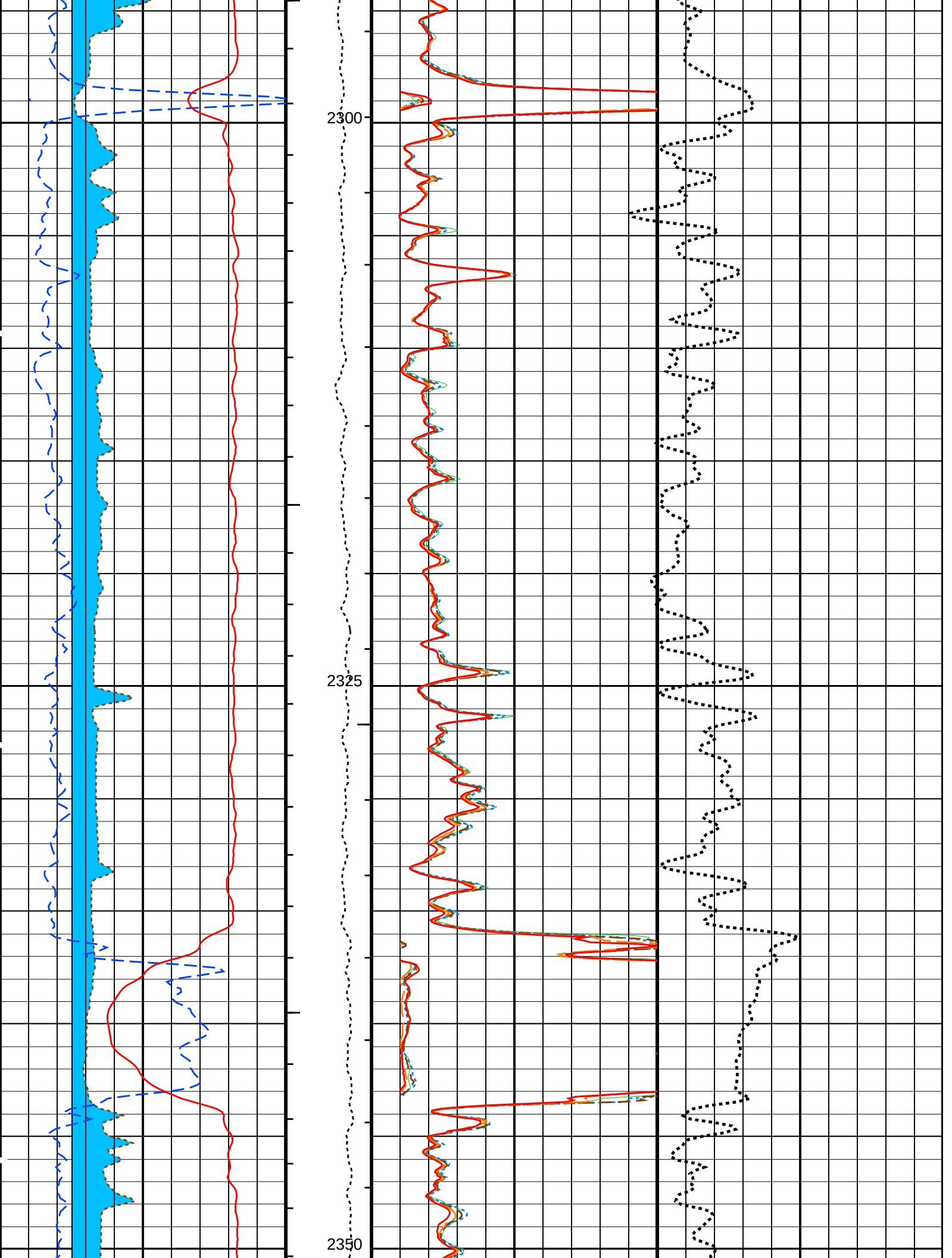
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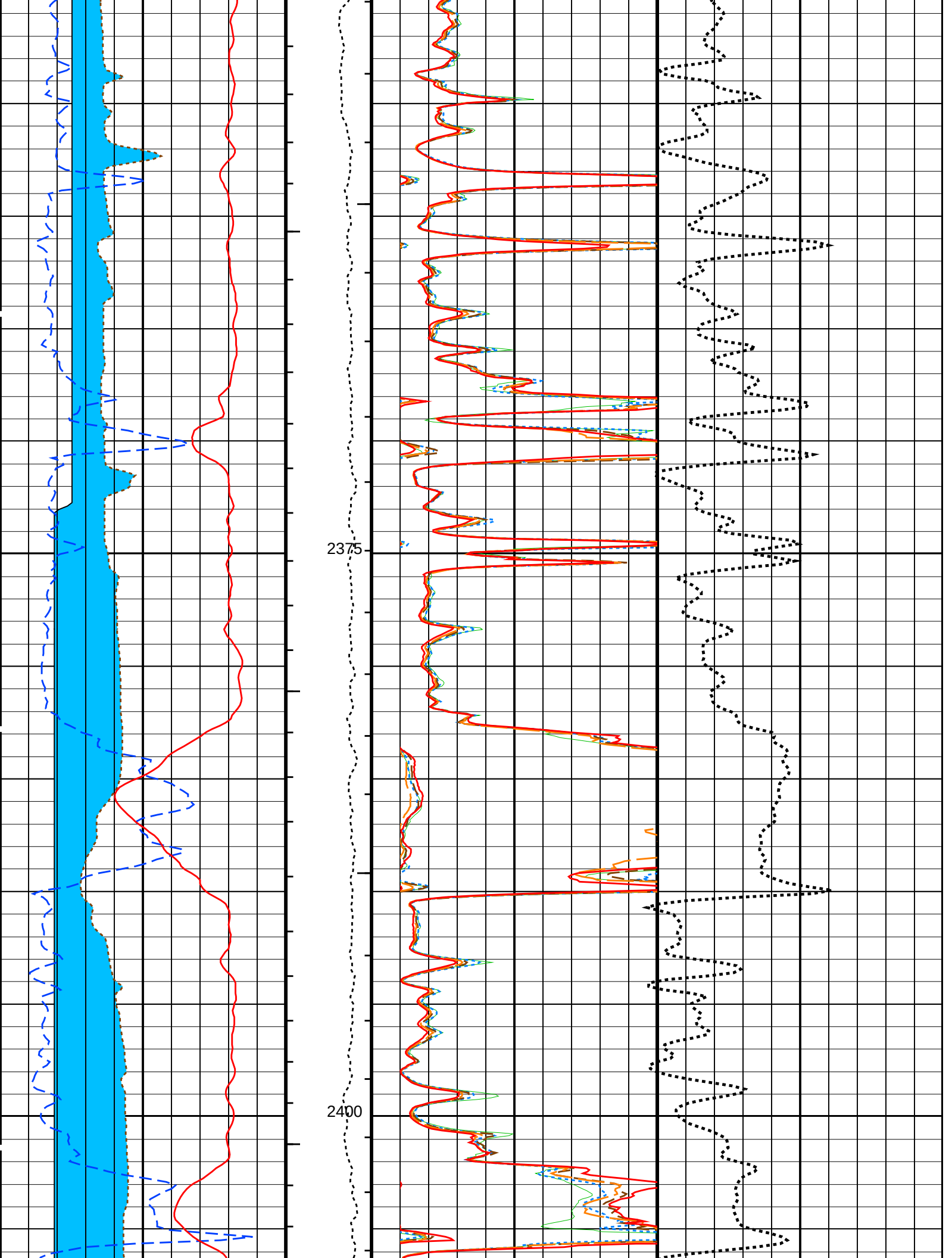
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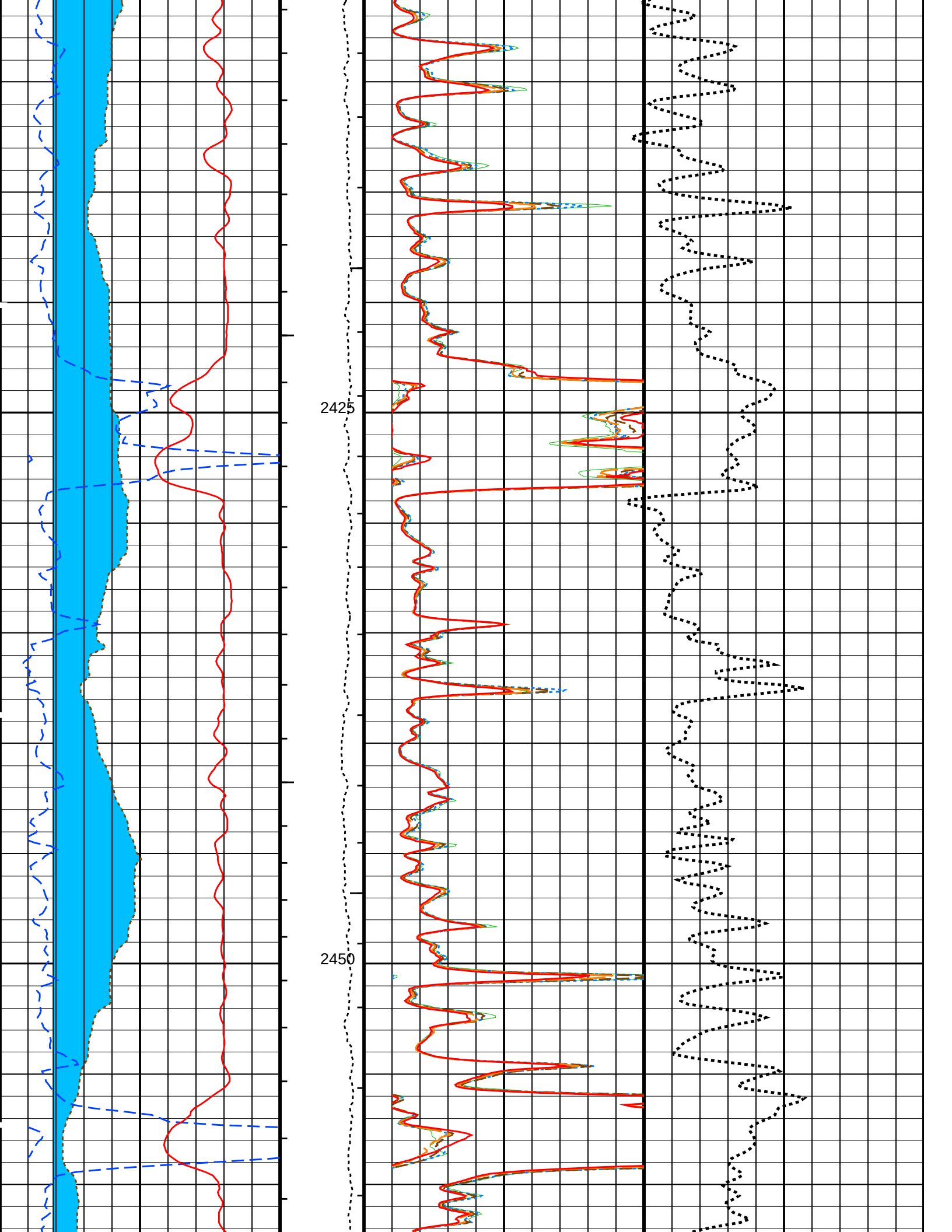
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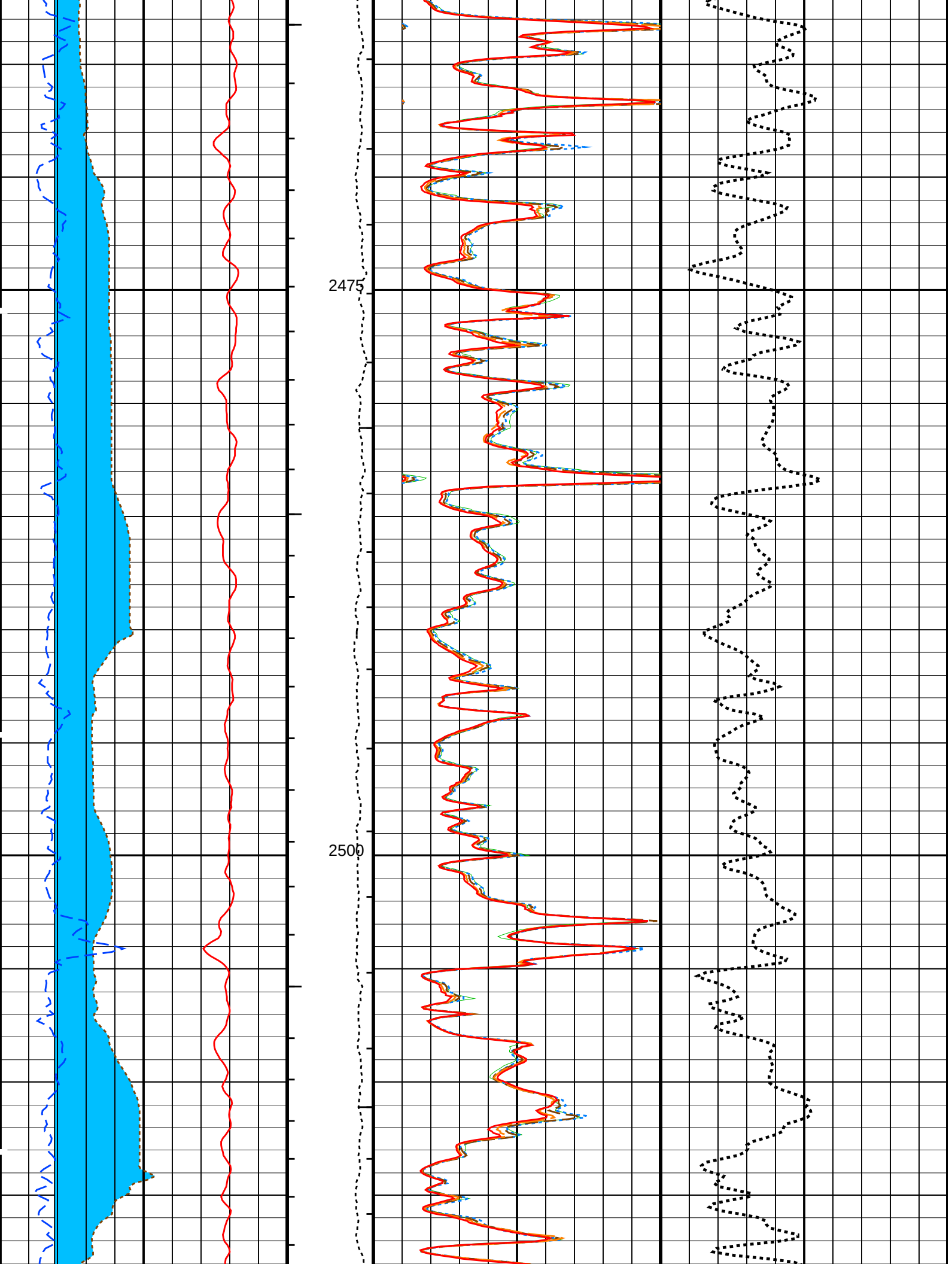
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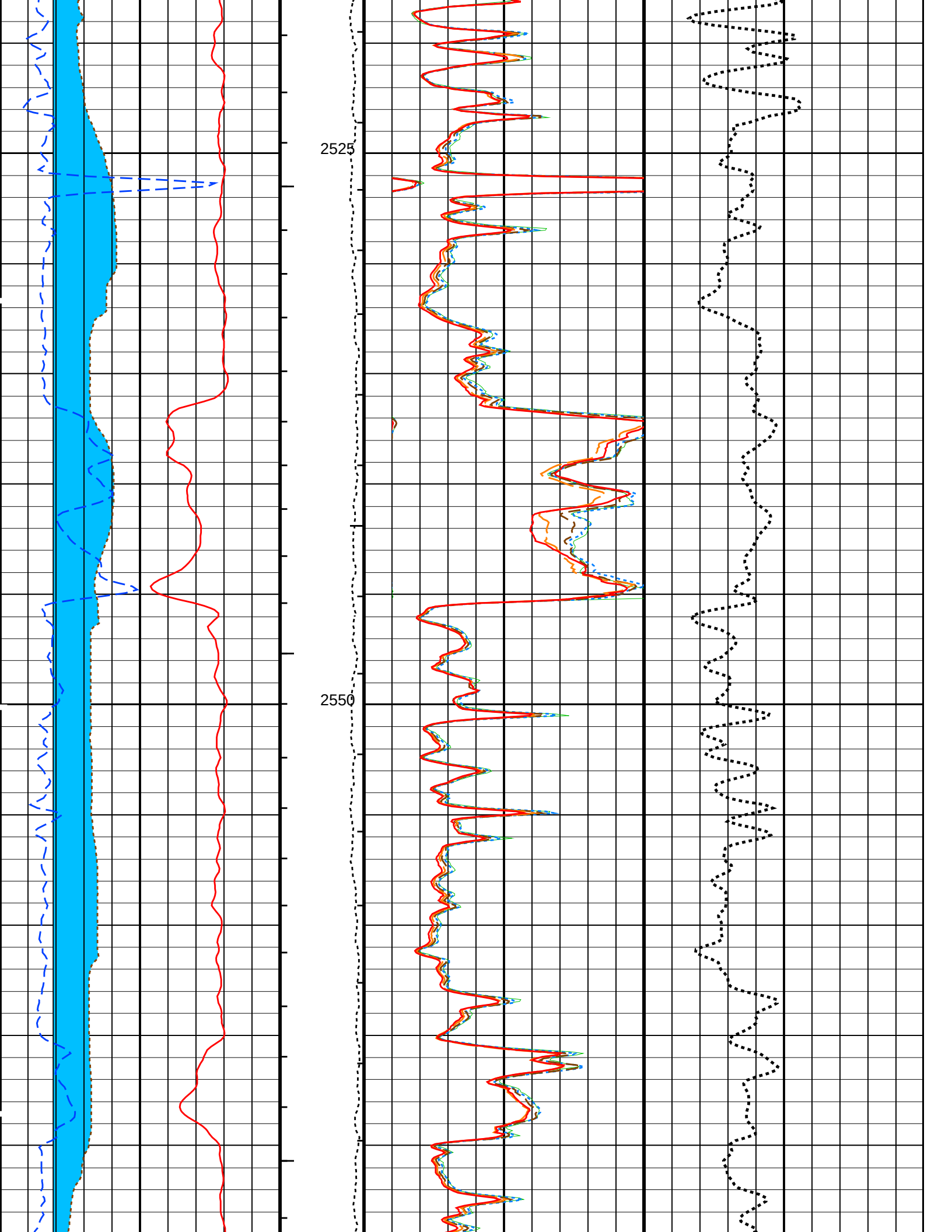
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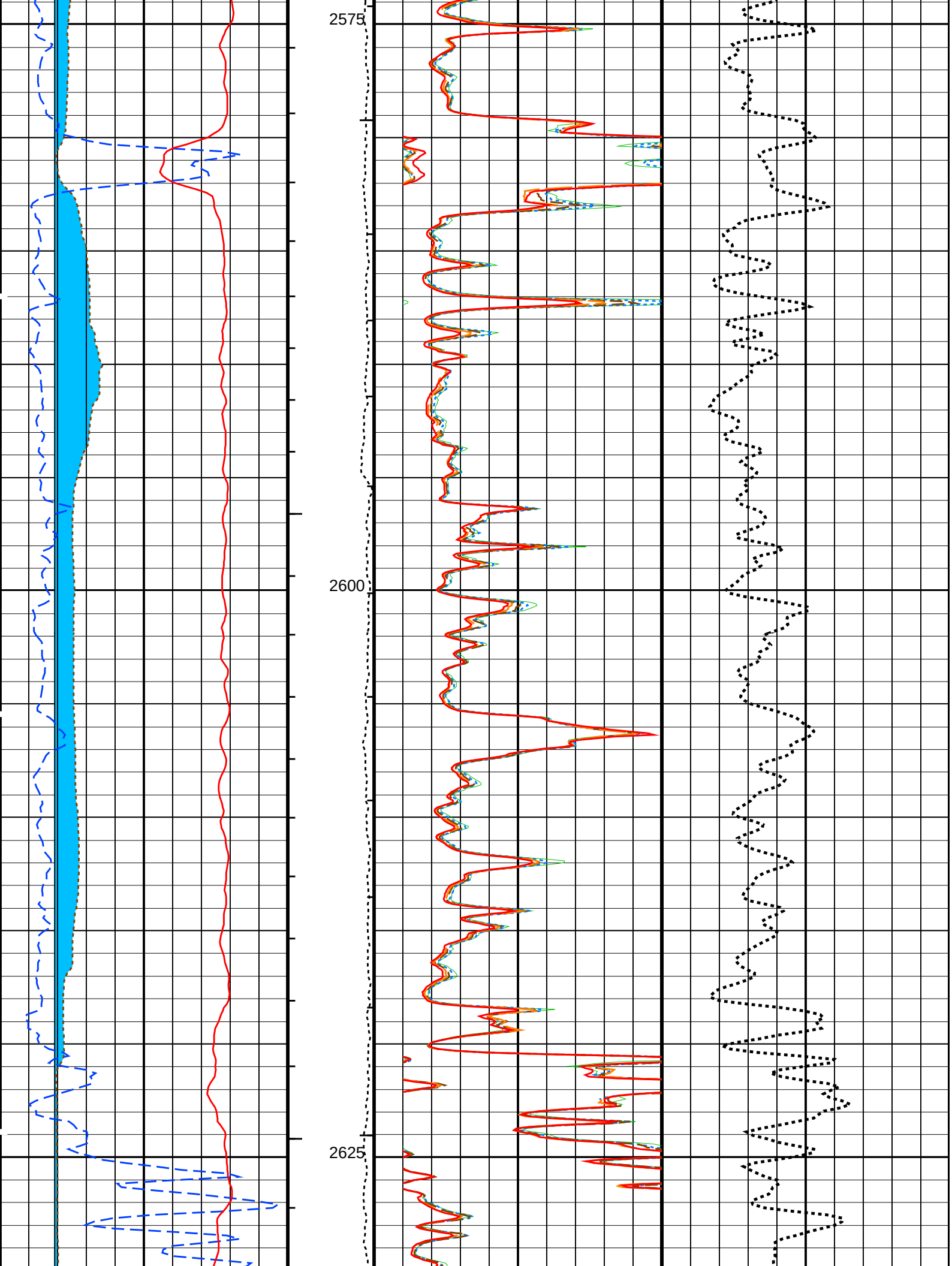
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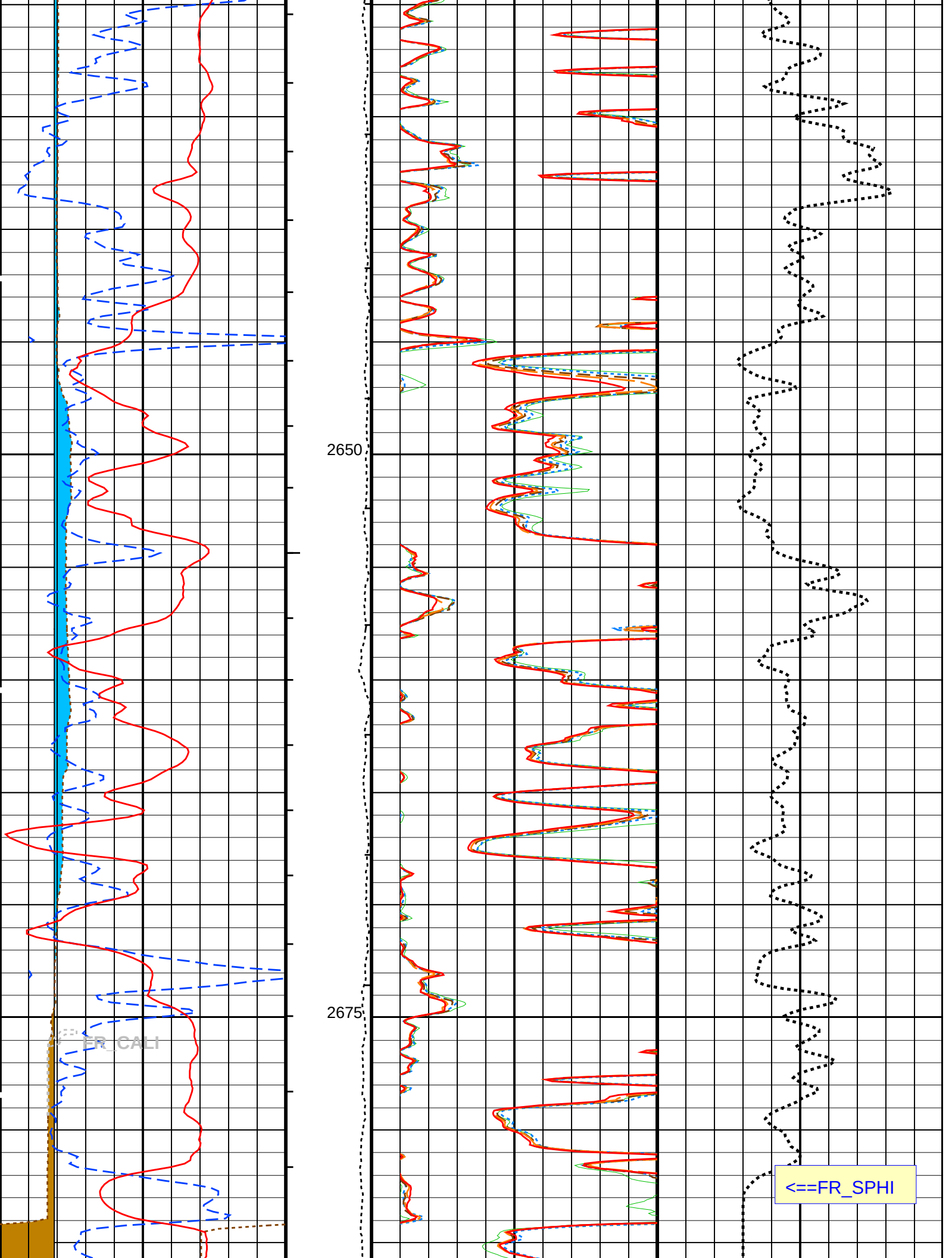
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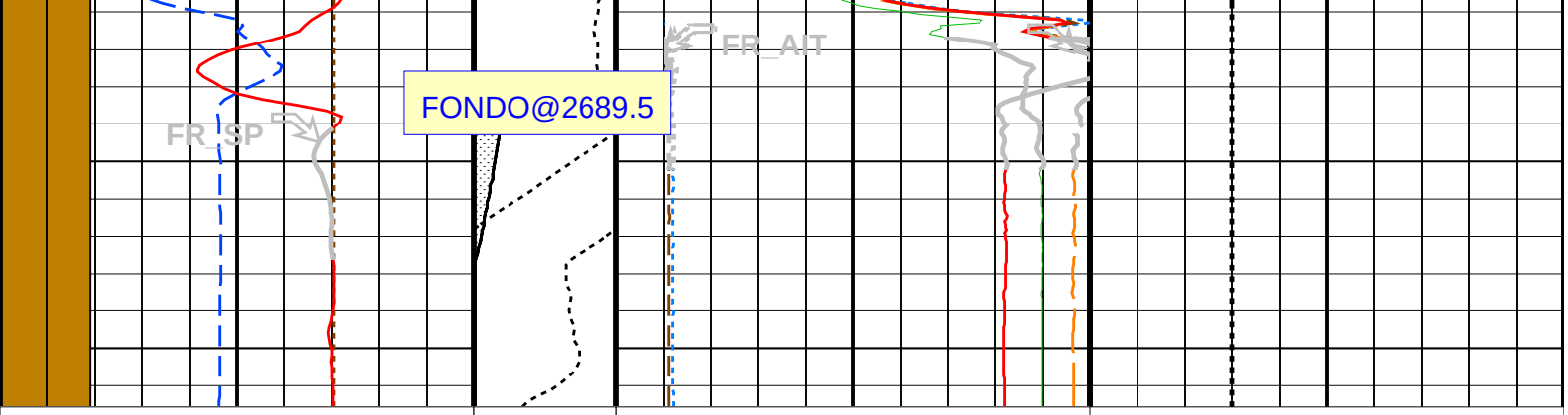
<==FR_SPHI



Bit Size (BS) 6 (IN) 16	Tension (TENS) (LBF) 0 1000	AIT−H 10 Inch Investigation (AHT10) 0 (OHMM) 10
Caliper (CALI) 6 (IN) 16	Stuck Stretch (STIT) 0 (M) 20	AIT−H 20 Inch Investigation (AHT20) 0 (OHMM) 10
RWA (RWA) 0 (OHMM) 1		AIT−H 30 Inch Investigation (AHT30) 0 (OHMM) 10
SP (SP) −80 (MV) 20		AIT−H 60 Inch Investigation (AHT60) 0 (OHMM) 10
CAVERNA From BS to CALI		AIT−H 90 Inch Investigation (AHT90) 0 (OHMM) 10
REVOQUE From CALI to BS		Sonic Porosity (SPHI) 0.6 (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	
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	880	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	108	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHCSED	Array Induction Casing Shoe Estimated Depth	−50000	M
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHRFV	Array Induction Radial Profiling Code Version Number	700	
AHRPV	Array Induction Radial Parametrization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHT	Bottom Hole Temperature (used in calculations)	96	DEGC
BS	Bit Size	8.500	IN
CDTS	C−Delta−T Shale	100	US/F
DFD	Drilling Fluid Density	1.16	G/C3
DO	Depth Offset for Playback	4.5	M
DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	53	US/F
FCD	Future Casing (Outer) Diameter	5.5	IN
FEXP	Form Factor Exponent	2.15	
FNUM	Form Factor Numerator	0.62	
FPHI	Form Factor Porosity Source	SPHI	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018237	DC/M

GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	CALI	
LBFR	Trigger for MAXIS First Reading Label	TDL	
MST	Mud Sample Temperature	20.00	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.8913	OHMM
RTCO	RTCO − Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPDR	SP Drift	0.01	MV/M
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPNV	SP Next Value	−10	MV
SPSO	Sonic Porosity Source	DT	
STKT	STI Stuck Threshold	0.762	M
TD	Total Depth	2689.5	M
TDD	Total Depth − Driller	2684.00	M
TDL	Total Depth − Logger	2689.50	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA_PORO_I Vertical Scale: 1:200 Graphics File Created: 27−Dec−2002 03:25

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_031LUP	FN:30	PRODUCER	27−Dec−2002 00:59	2692.0 M	363.3 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_039PUP	FN:32	PRODUCER	27−Dec−2002 03:25		

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TRAMO REPETIDO

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_030LUP	FN:29	PRODUCER	27−Dec−2002 10:36	2693.8 M	2580.9 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_054PUP	FN:12	PRODUCER	27−Dec−2002 15:42	2698.1 M	2596.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 3.02 M3

Cement Volume = 1.58 M3 (assuming 5.50 IN casing O.D.)

Computed from 2689.4 M to 2596.0 M using data channel(s) CALI

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	7.875 IN	7.875 IN	2698.1 15:42:53

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

REVOQUE
From CALI to BS

CAVERNA
From BS to CALI

SP (SP)
−80 (MV) 20

RWA (RWA)
0 (OHMM) 1

Caliper (CALI)
6 (IN) 16

Bit Size (BS)
6 (IN) 16

Stuck Stretch (STIT)
0 (M) 20

Tension (TENS)
(LBF)
0 1000

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

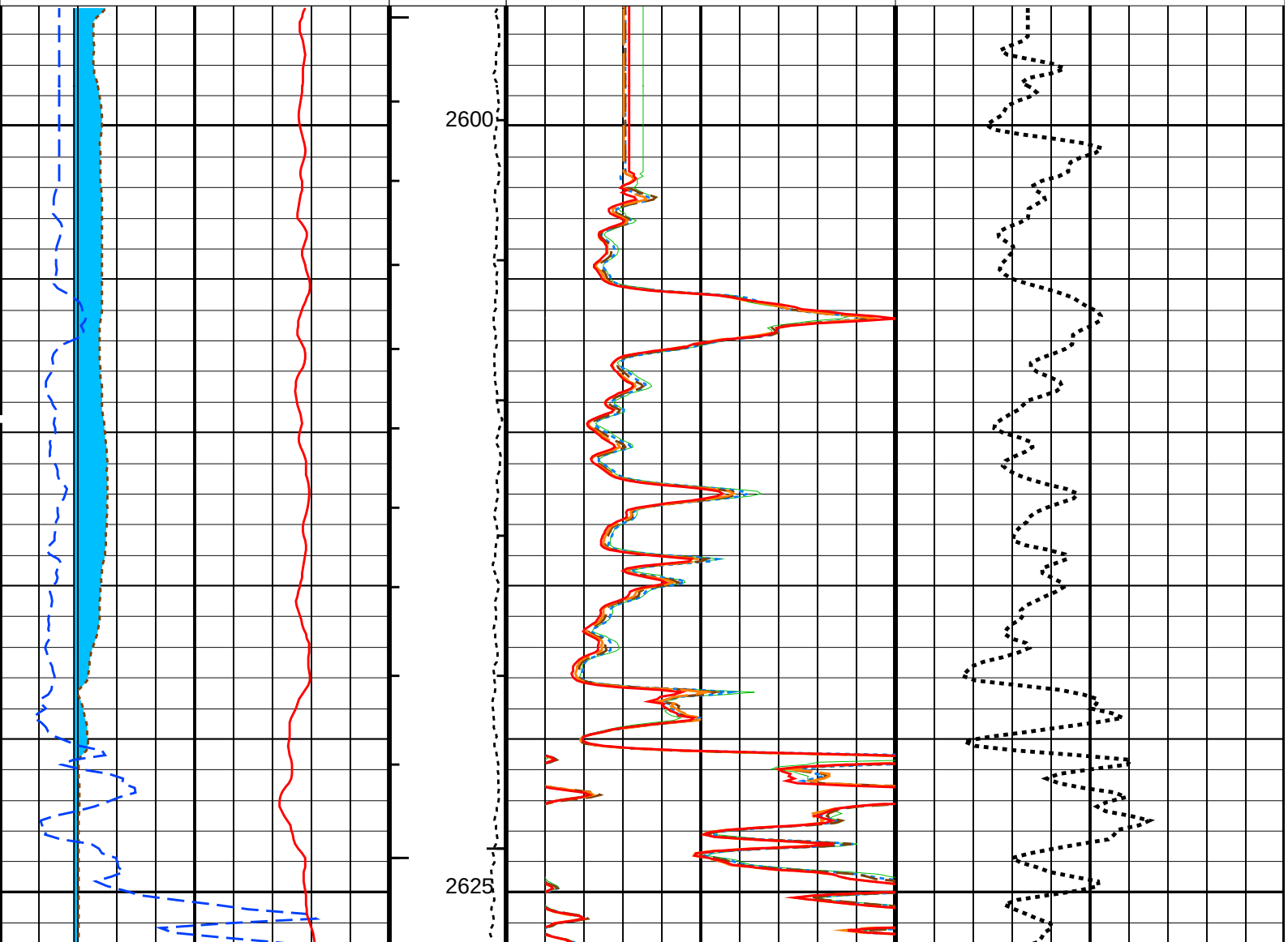
AIT−H 90 Inch Investigation (AHT90)
0 (OHMM) 10

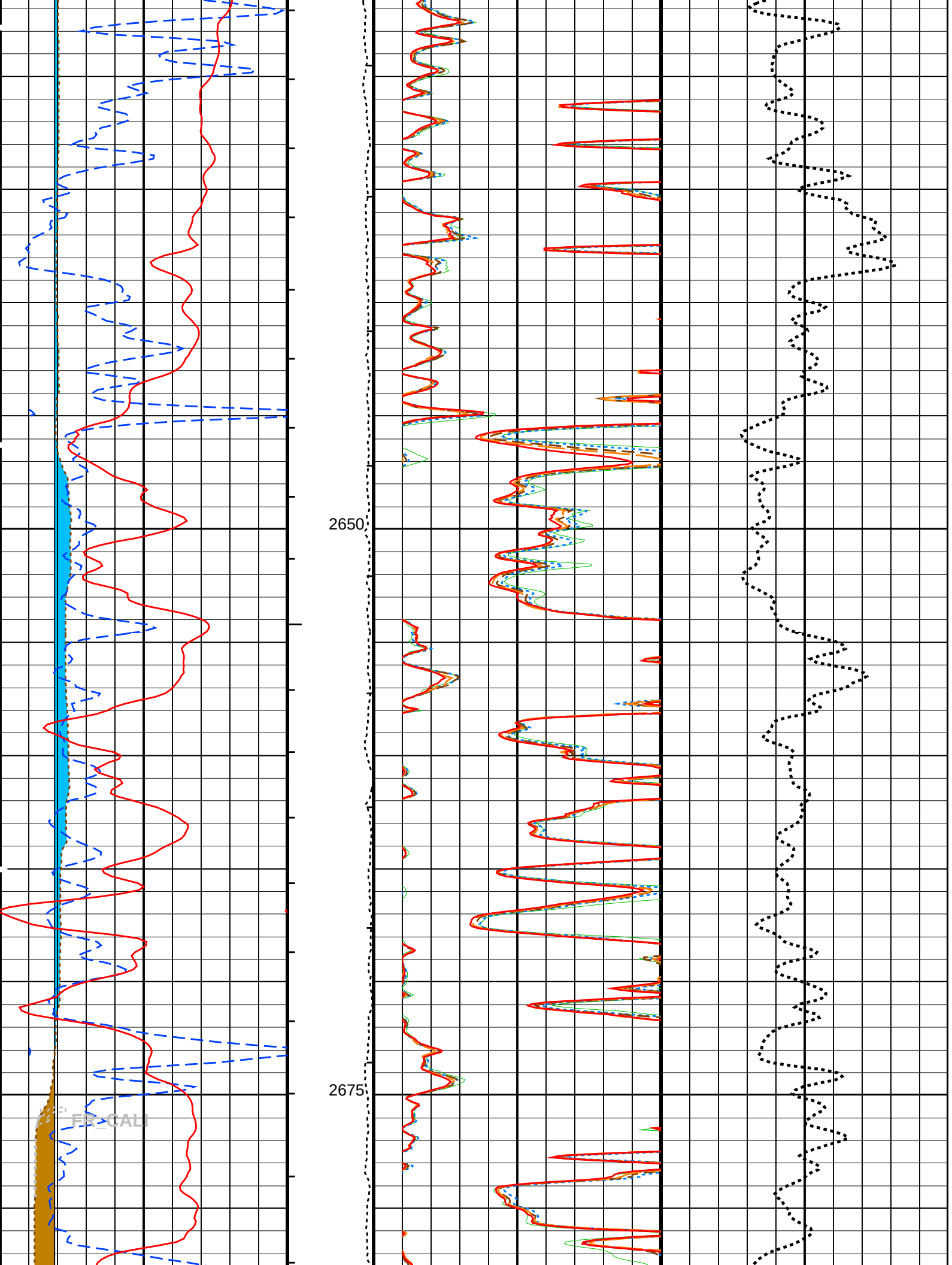
AIT−H 60 Inch Investigation (AHT60)
0 (OHMM) 10

AIT−H 30 Inch Investigation (AHT30)
0 (OHMM) 10

AIT−H 20 Inch Investigation (AHT20)
0 (OHMM) 10

AIT−H 10 Inch Investigation (AHT10)
0 (OHMM) 10

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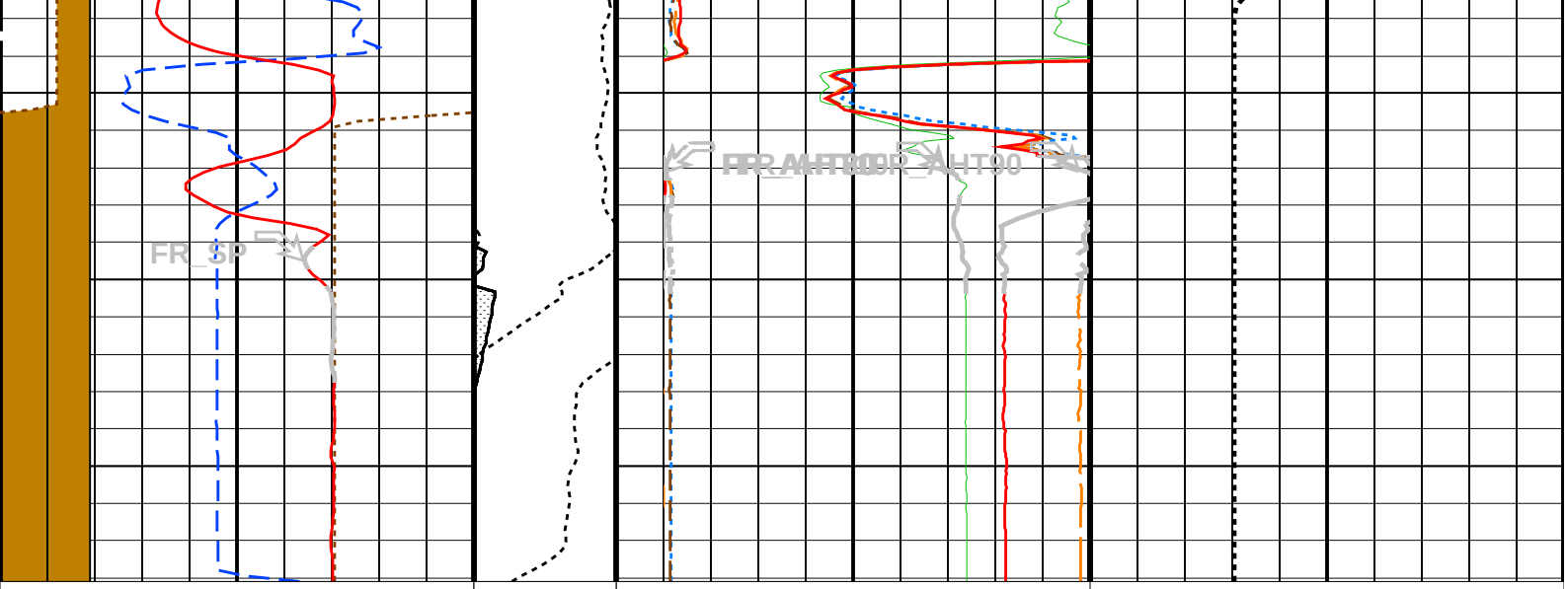

Bit Size (BS)	Tension (TENS)	AIT−H 10 Inch Investigation (AHT10)
6 (IN) 16	0 (LBF) 1000	0 (OHMM) 10
Caliper (CALI)	**Stuck Stretch (STIT)**	**AIT−H 20 Inch Investigation (AHT20)**
6 (IN) 16	0 (M) 20	0 (OHMM) 10
RWA (RWA)		**AIT−H 30 Inch Investigation (AHT30)**
0 (OHMM) 1		0 (OHMM) 10
SP (SP)		**AIT−H 60 Inch Investigation (AHT60)**
−80 (MV) 20		0 (OHMM) 10
CAVERNA From BS to CALI		**AIT−H 90 Inch Investigation (AHT90)**
		0 (OHMM) 10
REVOQUE From CALI to BS		**Sonic Porosity (SPHI)**
		0.6 (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	
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	880	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	108	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHCSED	Array Induction Casing Shoe Estimated Depth	−50000	M
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHRFV	Array Induction Radial Profiling Code Version Number	700	
AHRPV	Array Induction Radial Parametrization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHT	Bottom Hole Temperature (used in calculations)	96	DEGC
BS	Bit Size	7.875	IN
CDTS	C−Delta−T Shale	100	US/F
DFD	Drilling Fluid Density	1.16	G/C3
DO	Depth Offset for Playback	4.2	M
DORL	Depth Offset for Repeat Analysis	0.0	M
DTF	Delta−T Fluid	189	US/F

DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	53	US/F
FCD	Future Casing (Outer) Diameter	5.5	IN
FEXP	Form Factor Exponent	2.15	
FNUM	Form Factor Numerator	0.62	
FPHI	Form Factor Porosity Source	SPHI	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	CALI	
LBFR	Trigger for MAXIS First Reading Label	TDL	
MST	Mud Sample Temperature	20.00	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.8913	OHMM
RTCO	RTCO − Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPNV	SP Next Value	−10	MV
SPSO	Sonic Porosity Source	DT	
STKT	STI Stuck Threshold	0.762	M
TD	Total Depth	2689.5	M
TDD	Total Depth − Driller	2684.00	M
TDL	Total Depth − Logger	2689.50	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA_PORO_I Vertical Scale: 1:200 Graphics File Created: 27−Dec−2002 15:42

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_030LUP	FN:29	PRODUCER	27−Dec−2002 10:36	2693.8 M	2580.9 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_054PUP	FN:12	PRODUCER	27−Dec−2002 15:42		

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ANALISIS DE REPETIBILIDAD

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_030LUP	FN:29	PRODUCER	27−Dec−2002 10:36	2693.8 M	2580.9 M
DEFAULT	AIT_DSLT_LDL_039PUP	FN:32	PRODUCER	27−Dec−2002 10:35	2696.6 M	369.1 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_054PUP	FN:12	PRODUCER	27−Dec−2002 15:42	2698.1 M	2596.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 3.02 M3

Cement Volume = 1.58 M3 (assuming 5.50 IN casing O.D.)

Computed from 2689.4 M to 2596.0 M using data channel(s) CALI

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	7.875 IN	7.875 IN	2698.1 15:42:53

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

REVOQUE
From CALI to BS

CAVERNA
From BS to CALI

SP_REP Curve (SP_REP)
−80 (MV) 20

RWA_REP Curve (RWA_REP)
0 (OHMM) 1

CALI_REP Curve (CALI_REP)
6 (IN) 16

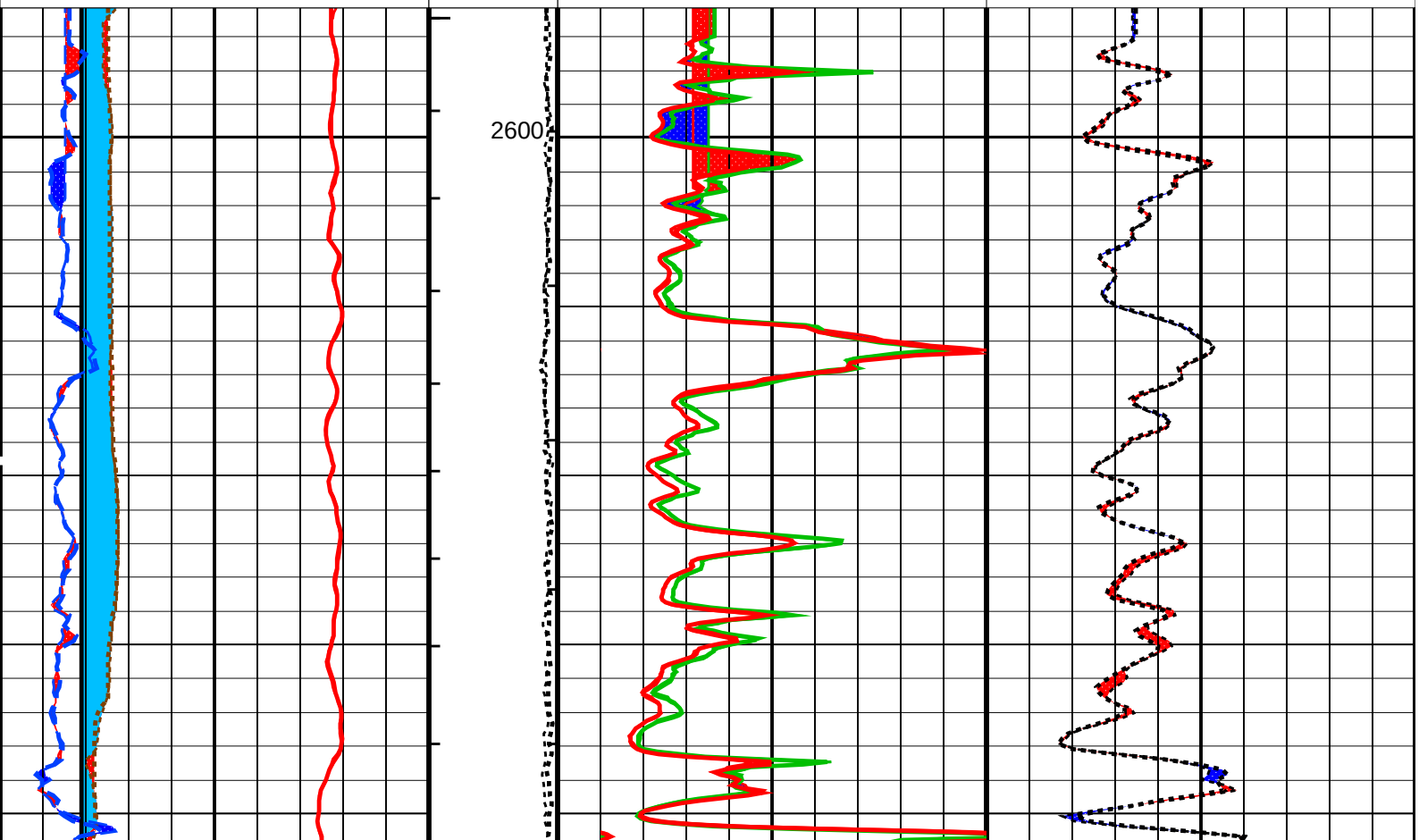
BS_REP Curve (BS_REP)
6 (IN) 16

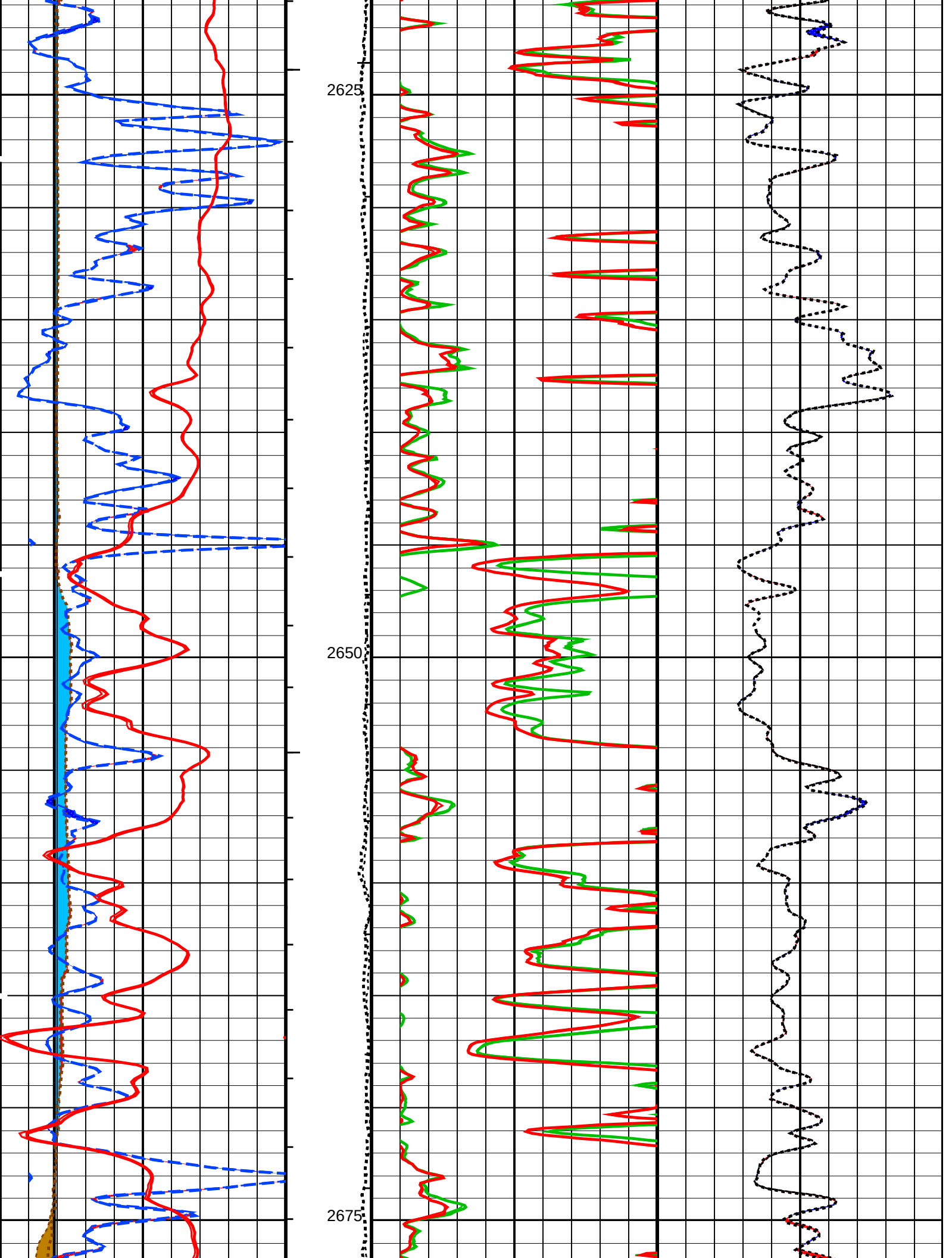
TENS_REP Curve (TENS_REP) (LBF)
0 1000

SPHI_REP Curve (SPHI_REP)
0.6 (V/V) 0

AHT90_REP Curve (AHT90_REP)
0 (OHMM) 10

AHT10_REP Curve (AHT10_REP)
0 (OHMM) 10

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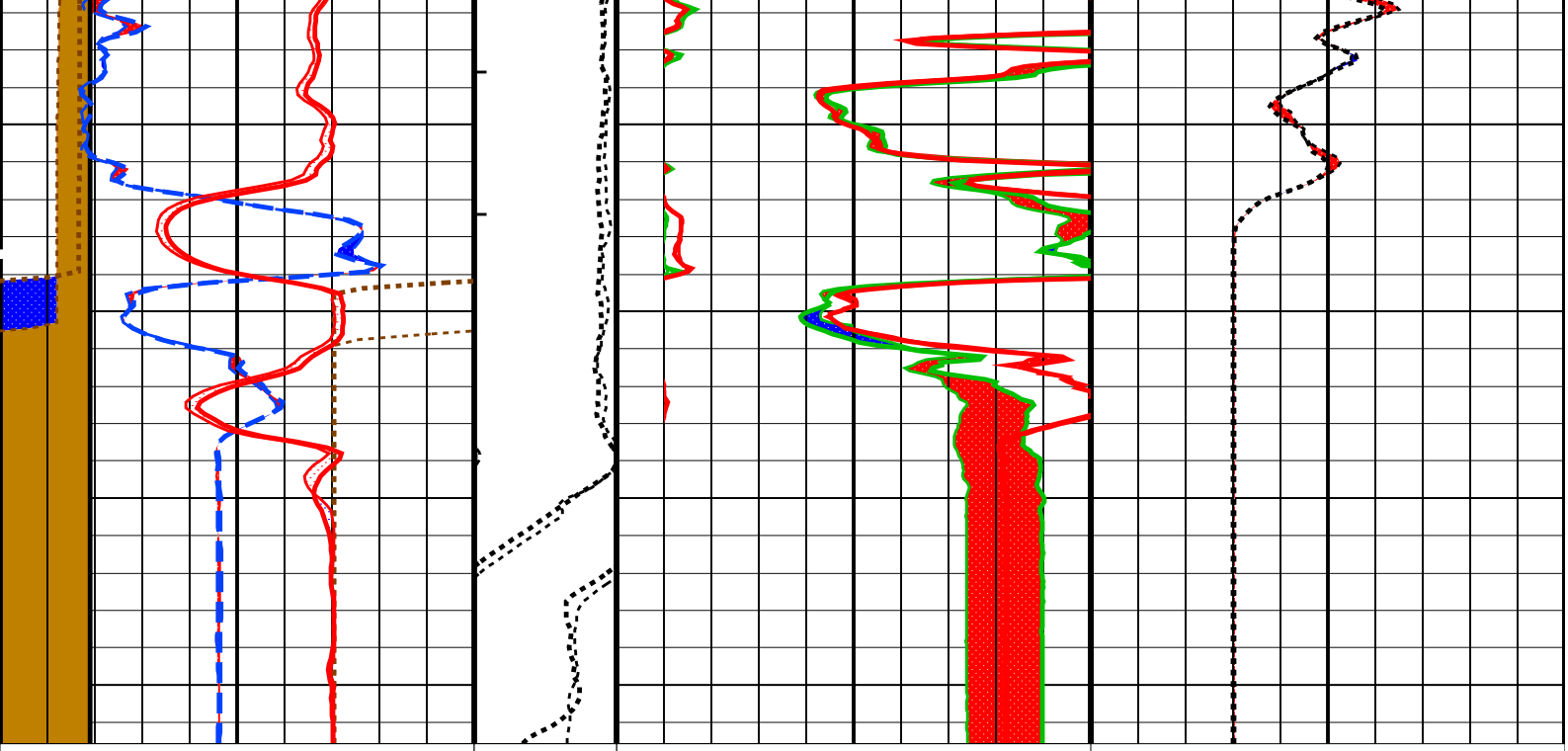

BS_REP Curve (BS_REP)
6 (IN) 16

TENS_REP Curve (TENS_REP) (LBF)
0 1000

AHT10_REP Curve (AHT10_REP)
0 (OHMM) 10

CALI_REP Curve (CALI_REP)
6 (IN) 16

AHT90_REP Curve (AHT90_REP)
0 (OHMM) 10

RWA_REP Curve (RWA_REP)
0 (OHMM) 1

SPHI_REP Curve (SPHI_REP)
0.6 (V/V) 0

SP_REP Curve (SP_REP)
−80 (MV) 20

CAVERNA
From BS to CALI

REVOQUE
From CALI to BS

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	
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	880	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	108	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHCSED	Array Induction Casing Shoe Estimated Depth	−50000	M
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHRFV	Array Induction Radial Profiling Code Version Number	700	
AHRPV	Array Induction Radial Parametrization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ARTS	AIT-Pt Selection (for ALL RES computation)	AITH_TwoResA90	

ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TWoResA90	
BHT	Bottom Hole Temperature (used in calculations)	96	DEGC
BS	Bit Size	7.875	IN
CDTS	C−Delta−T Shale	100	US/F
DFD	Drilling Fluid Density	1.16	G/C3
DO	Depth Offset for Playback	4.2	M
DORL	Depth Offset for Repeat Analysis	0.0	M
DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	53	US/F
FCD	Future Casing (Outer) Diameter	5.5	IN
FEXP	Form Factor Exponent	2.15	
FNUM	Form Factor Numerator	0.62	
FPHI	Form Factor Porosity Source	SPHI	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	CALI	
MST	Mud Sample Temperature	20.00	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.8913	OHMM
RTCO	RTCO − Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPNV	SP Next Value	−10	MV
SPSO	Sonic Porosity Source	DT	
TD	Total Depth	2689.5	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA_PORO_I_REP Vertical Scale: 1:200 Graphics File Created: 27−Dec−2002 15:42

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_030LUP	FN:29	PRODUCER	27−Dec−2002 10:36	2693.8 M	2580.9 M
DEFAULT	AIT_DSLT_LDL_039PUP	FN:32	PRODUCER	27−Dec−2002 10:35	2696.6 M	369.1 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_054PUP	FN:12	PRODUCER	27−Dec−2002 15:42

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MAXIS Field Log

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_028LUP	FN:27	PRODUCER	26−Dec−2002 23:16	395.0 M	348.8 M

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Changed Parameter Summary

DLIS Name	New Value	Previous Value, Depth & Time

DLIS Name	New Value	Previous Value	Depth & Time
MAHTR	40	120	365.4 23:19:05
MNHTR	30	100	364.4 23:19:09

PIP SUMMARY

Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S

Revoque
From CALI to BS

Caverna
From BS to CALI

Tool/Tot. Drag From D4T to STIA

Cable Drag From D4T to STIT

SP (SP)
−80 (MV) 20

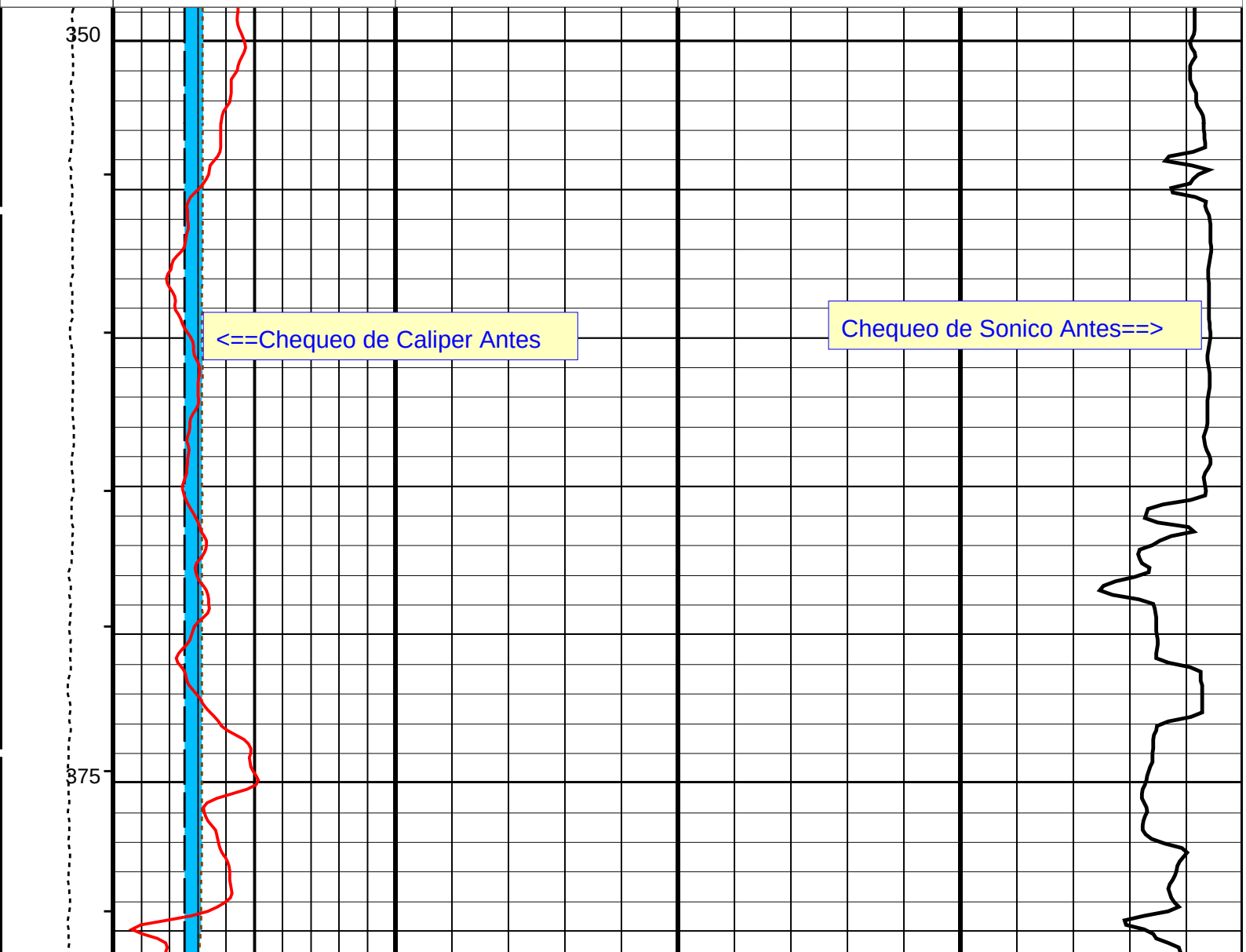
Stuck Stretch (STIT)
0 (M) 20

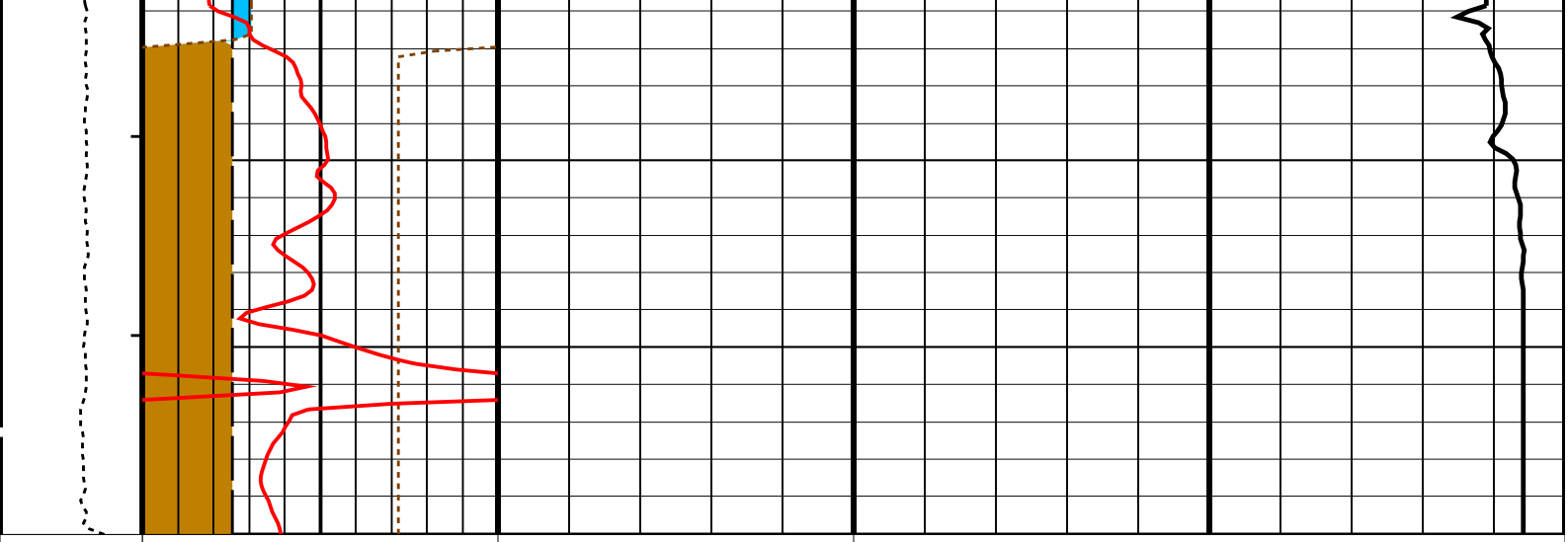
Caliper (CALI)
6 (IN) 16

Tension (TENS) (LBF)
1000 0

Bit Size (BS)
6 (IN) 16

Delta−T (DT)
150 (US/F) 50





Tension (TENS) (LBF) 1000 0	Bit Size (BS) 6 (IN) 16	Delta−T (DT) 150 (US/F) 50
Stuck Stretch (STIT) 0 (M) 20	Caliper (CALI) 6 (IN) 16	
Cable Drag From D4T to STIT	SP (SP) −80 (MV) 20	
Tool/Tot. Drag From D4T to STIA	Caverna From BS to CALI	
	Revoque From CALI to BS	

PIP SUMMARY

Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DSLT Firing Mode	BHC	
	Telemetry Mode	DSLC_TCC	
BS	Bit Size	8.500	IN
DDEL	Digitizing Delay	200	US
DFAD_TYPE	DFAD type	DFAD2	
DIVL	DSLT Depth Sampling Interval	20	
DRCS	DSLT DLIS Recording Size	100	
DSIN	Digitizing Sample Interval	10	
DTFS	DSLC Telemetry Frame Size	236	
DWCO	Digitizing Word Count	100	
GAI	Manual Gain	40	
ITTS	Integrated Transit Time Source	DT	
LBFR	Trigger for MAXIS First Reading Label	STI	
MAHTR	Manual High Threshold Reference	120	
MGAI	Maximum Gain	60	
MNHTR	Minimum High Threshold Reference	100	
NMSG	Near Minimum Sliding Gate	250	US
NMXG	Near Maximum Sliding Gate	750	US
RATE	Firing Rate	R15	
SFAF	Sonic Formation Attenuation Factor	0	DB/M
SGCL	Sliding Gate Closing Delta−T	250	US/F
SGDT	Sliding Gate Delta−T	50	US/F
SGW	Sliding Gate Width	80	US
SLEV	Signal Level for AGC	5000	
SPNV	SP Next Value	0	MV

SPNV	SP Next Value	0	MV
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth − Driller	2684.00	M
TDL	Total Depth − Logger	2684.00	M
WMOD	Waveform Firing Mode	FULL	

Format: CALI_CHECK **Vertical Scale: 1:200** **Graphics File Created: 26−Dec−2002 23:16**

OP System Version: 9C2−303

MCM

AIT−H	**OP92−KP2**	**DSLT−TCC**	**OP92−KP2**
LDT−D	**OP92−KP2**	**TCC−BF**	**OP92−KP2**

Output DLIS Files

DEFAULT **AIT_DSLT_LDL_028LUP** **FN:27** **PRODUCER** **26−Dec−2002 23:16**

Schlumberger

CALIBRACIONES

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool − H Wellsite Calibration − Electronics Calibration Check − Thru Cal Mag. & Phase							
Master: 25−Oct−2002 10:40 Before: 26−Dec−2002 23:12							
Thru Cal Magnitude − 0	0	0.6598	0.6673	N/A	N/A	N/A	V
Thru Cal Magnitude − 1	0	1.354	1.369	N/A	N/A	N/A	V
Thru Cal Magnitude − 2	0	0.6742	0.6819	N/A	N/A	N/A	V
Thru Cal Magnitude − 3	0	0.7615	0.7701	N/A	N/A	N/A	V
Thru Cal Magnitude − 4	0	1.430	1.446	N/A	N/A	N/A	V
Thru Cal Magnitude − 5	0	2.084	2.107	N/A	N/A	N/A	V
Thru Cal Magnitude − 6	0	2.083	2.107	N/A	N/A	N/A	V
Thru Cal Magnitude − 7	0	1.536	1.553	N/A	N/A	N/A	V
Phase − 0	0	63.78	64.22	N/A	N/A	N/A	DEG
Phase − 1	0	62.75	63.18	N/A	N/A	N/A	DEG
Phase − 2	0	58.87	59.30	N/A	N/A	N/A	DEG
Phase − 3	0	58.05	58.49	N/A	N/A	N/A	DEG
Phase − 4	0	51.52	51.94	N/A	N/A	N/A	DEG
Phase − 5	0	49.54	49.95	N/A	N/A	N/A	DEG
Phase − 6	0	49.60	50.02	N/A	N/A	N/A	DEG
Phase − 7	0	46.02	46.40	N/A	N/A	N/A	DEG
Array Induction Tool − H Wellsite Calibration − Electronics Calibration Check − Auxilliary							
Master: 25−Oct−2002 10:40 Before: 26−Dec−2002 23:12							
Array Induction SPA Plus	990.5	993.5	993.4	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	−0.2641	−0.2995	N/A	N/A	N/A	MV
Array Induction Temperature Pl	0.9150	0.9204	0.9203	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	−0.0002619	−0.0002904	N/A	N/A	N/A	V
Array Induction Tool − H Wellsite Calibration − Test Loop Gain Correction							
Master: 25−Oct−2002 10:40							
Test Loop Gain Magnitude − 0	0	1.019	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 1	0	1.023	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 2	0	1.019	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 3	0	1.021	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 4	0	0.9973	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 5	0	0.9981	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 6	0	1.007	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 7	0	1.028	N/A	N/A	N/A	N/A	V
Phase − 0	0	0.4769	N/A	N/A	N/A	N/A	DEG
Phase − 1	0	0.5447	N/A	N/A	N/A	N/A	DEG
Phase − 2	0	−0.04580	N/A	N/A	N/A	N/A	DEG

Phase − 3	0	0.05149	N/A	N/A	N/A	N/A	DEG
Phase − 4	0	−0.01958	N/A	N/A	N/A	N/A	DEG
Phase − 5	0	−0.2008	N/A	N/A	N/A	N/A	DEG
Phase − 6	0	0.1850	N/A	N/A	N/A	N/A	DEG
Phase − 7	0	−0.3662	N/A	N/A	N/A	N/A	DEG

Array Induction Tool − H Wellsite Calibration − Sonde Error Correction
Master: 25−Oct−2002 10:40

R Sonde Error Correction − 0	0	−74.88	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 1	0	151.1	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 2	0	105.0	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 3	0	61.90	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 4	0	25.67	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 5	0	12.05	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 6	0	8.573	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 7	0	−2.150	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 0	0	102.8	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 1	0	340.7	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 2	0	114.4	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 3	0	7.149	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 4	0	23.19	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 5	0	7.483	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 6	0	−0.5300	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 7	0	6.953	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool − H Wellsite Calibration − Mud Gain Correction
Master: 25−Oct−2002 10:40

Coarse − Mag, Real, Imag − 0	0	1.047	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 1	0	1.047	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 2	0	1.047	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 0	0	1.052	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 1	0	1.052	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 2	0	1.052	N/A	N/A	N/A	N/A	

Litho Density − D Wellsite Calibration − Background Measurement
Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

LL Background	20.00	17.53	17.35	N/A	N/A	1.000	CPS
LU Background	76.00	67.23	67.08	N/A	N/A	1.000	CPS
LS Background	57.00	51.15	50.89	N/A	N/A	1.000	CPS
LITH Background	5.500	4.990	5.027	N/A	N/A	0.3000	CPS
SS1 Background	16.00	15.96	16.06	N/A	N/A	0.5000	CPS
SS2 Background	11.00	10.72	10.73	N/A	N/A	0.5000	CPS

Litho Density − D Wellsite Calibration − Tool Quality Control Information HV
Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

LSHV Background	1500	1375	1378	N/A	N/A	N/A	V
SSHV Background	1500	1302	1303	N/A	N/A	N/A	V

Litho Density − D Wellsite Calibration − Detectors Resolution From BKG Measurments
Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

LS Resolution Background	8.000	9.038	9.066	N/A	N/A	N/A	
SS Resolution Background	8.000	8.771	8.776	N/A	N/A	N/A	

Litho Density − D Wellsite Calibration − Caliper Calibration
Before: 26−Dec−2002 15:28

Caliper Small Ring	8.000	N/A	7.990	N/A	N/A	N/A	IN
Caliper Large Ring	12.00	N/A	12.68	N/A	N/A	N/A	IN

Litho Density − D Master Calibration − Aluminum Measurement
Master: 20−Dec−2002 11:43

LL Aluminum	90.00	88.06	−−	−−	−−	−−	CPS
LU Aluminum	135.0	132.3	−−	−−	−−	−−	CPS
LS Aluminum	155.0	154.2	−−	−−	−−	−−	CPS
LITH Aluminum	50.00	53.41	−−	−−	−−	−−	CPS
SS1 Aluminum	175.0	194.3	−−	−−	−−	−−	CPS
SS2 Aluminum	260.0	258.9	−−	−−	−−	−−	CPS

Litho Density − D Master Calibration − Litholog Measurement
Master: 20−Dec−2002 11:54

LL Iron	80.00	78.03	−−	−−	−−	−−	CPS
LU Iron	120.0	117.4	−−	−−	−−	−−	CPS
LS Iron	135.0	136.8	−−	−−	−−	−−	CPS
LITH Iron	30.00	34.76	−−	−−	−−	−−	CPS
SS1 Iron	155.0	172.5	−−	−−	−−	−−	CPS
SS2 Iron	245.0	234.4	−−	−−	−−	−−	CPS

Litho Density − D Master Calibration − Spectrum Quality Ratios
Master: 20−Dec−2002 11:54

QRLS Calculated	0.6500	0.6654	−−	−−	−−	−−	
QRSS Calculated	0.7200	0.7504	−−	−−	−−	−−	
QRLI Calculated	0.3900	0.3463	−−	−−	−−	−−	

QLIR Calculated	1.390	1.362	--	--	--	--
QR Calculated	1.000	1.001	--	--	--	--

Array Induction Tool − H / Equipment Identification

Primary Equipment:

Rm/SP Bottom Nose	AHRM − A	
Array Induction Sonde	AHIS − BA	265

Auxiliary Equipment:

Array Induction Tool − H Wellsite Calibration

Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6598		0.6050	63.78		71.00
	Before	0.6673			64.22		
1	Master	1.354		1.270	62.75		70.00
	Before	1.369			63.18		
2	Master	0.6742		0.6230	58.87		66.00
	Before	0.6819			59.30		
3	Master	0.7615		0.7040	58.05		65.00
	Before	0.7701			58.49		
4	Master	1.430		1.337	51.52		59.00
	Before	1.446			51.94		
5	Master	2.084		1.955	49.54		57.00
	Before	2.107			49.95		
6	Master	2.083		1.955	49.60		57.00
	Before	2.107			50.02		
7	Master	1.536		1.415	46.02		53.00
	Before	1.553			46.40		
		60.00 % (Minimum)	140.0 % (Maximum)	(Nominal)	Nom −60.00 (Minimum)	Nom + 60.00 (Maximum)	(Nominal)

Master: 25−Oct−2002 10:40 Before: 26−Dec−2002 23:12

Array Induction Tool − H Wellsite Calibration

Electronics Calibration Check − Auxilliary

Phase	Array Induction SPA Plus MV	Value
Master		993.5
Before		993.4
	941.0 (Minimum) 990.5 (Nominal) 1040 (Maximum)	

Phase	Array Induction SPA Zero MV	Value
Master		−0.2641
Before		−0.2995
	−50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Array Induction Temperature Plus V	Value
Master		0.9204
Before		0.9203
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)	

Phase	Array Induction Temperature Zero V	Value
Master		−0.0002619
Before		−0.0002904
	−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 25−Oct−2002 10:40 Before: 26−Dec−2002 23:12

Array Induction Tool − H Wellsite Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
0	1.019		0.4769	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
1	1.023		0.5447	

	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
2	1.019				−0.04580			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
3	1.021				0.05149			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
4	0.9973				−0.01958			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
5	0.9981				−0.2008			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
6	1.007				0.1850			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
7	1.028				−0.3662			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	

Master: 25−Oct−2002 10:40

Array Induction Tool − H Wellsite Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	−74.88				102.8			
		−231.0 (Minimum)	−56.00 (Nominal)	119.0 (Maximum)		−2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	151.1				340.7			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	105.0				114.4			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	61.90				7.149			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	25.67				23.19			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	12.05				7.483			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	8.573				−0.5300			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	−2.150				6.953			
		−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 25−Oct−2002 10:40

Array Induction Tool − H Wellsite Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	1.047				1.052			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.047				1.052			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.047				1.052			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration

Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6598		0.6050	63.78		71.00
1	Master	1.354		1.270	62.75		70.00
2	Master	0.6742		0.6230	58.87		66.00
3	Master	0.7615		0.7040	58.05		65.00
4	Master	1.430		1.337	51.52		59.00
5	Master	2.084		1.955	49.54		57.00
6	Master	2.083		1.955	49.60		57.00
7	Master	1.536		1.415	46.02		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom −60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration
Electronics Calibration Check − Auxilliary

Phase	Array Induction SPA Plus MV	Value
Master		993.5
	941.0 (Minimum) 990.5 (Nominal) 1040 (Maximum)	

Phase	Array Induction SPA Zero MV	Value
Master		−0.2641
	−50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Array Induction Temperature Plus V	Value
Master		0.9204
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)	

Phase	Array Induction Temperature Zero V	Value
Master		−0.0002619
	−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
0	1.019		0.4769	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
1	1.023		0.5447	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
2	1.019		−0.04580	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
3	1.021		0.05149	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
4	0.9973		−0.01958	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
5	0.9981		−0.2008	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
6	1.007		0.1850	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
7	1.028		−0.3662	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration
Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M	Value	X Sonde Error Correction MM/M
0	−74.88		102.8	
	−231.0 (Minimum) −56.00 (Nominal) 119.0 (Maximum)		−2250 (Minimum) 0 (Nominal) 2250 (Maximum)	
1	151.1		340.7	

	114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)	
2	105.0				114.4			
	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)	
3	61.90				7.149			
	39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)	
4	25.67				23.19			
	15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)	
5	12.05				7.483			
	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)	
6	8.573				−0.5300			
	5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)	
7	−2.150				6.953			
	−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)	

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	1.047				1.052			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
1	1.047				1.052			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
2	1.047				1.052			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	

Master: 25−Oct−2002 10:40

Litho Density − D / Equipment Identification

Primary Equipment:		
Nuclear Services Cartridge	NSC − E	2733
Powered Gamma Detector	PGD − G	
Gamma Source Radioactive	GSR − J	3765
Auxiliary Equipment:		
Density Resistivity Sonde	DRS − C	3968
Electronics Cartridge Housing	ECH − MKA	2729
Powered Detector Housing	PDH − L	4897

Litho Density − D Wellsite Calibration

Background Measurement

Phase	LL Background CPS	Value	Phase	LU Background CPS	Value	Phase	LS Background CPS	Value
Master		17.53	Master		67.23	Master		51.15
Before		17.35	Before		67.08	Before		50.89
	15.00 (Minimum) 20.00 (Nominal) 25.00 (Maximum)			58.00 (Minimum) 76.00 (Nominal) 94.00 (Maximum)			43.00 (Minimum) 57.00 (Nominal) 72.00 (Maximum)	

Phase	LITH Background CPS	Value	Phase	SS1 Background CPS	Value	Phase	SS2 Background CPS	Value
Master		4.990	Master		15.96	Master		10.72
Before		5.027	Before		16.06	Before		10.73
	4.000 (Minimum) 5.500 (Nominal) 7.000 (Maximum)			12.00 (Minimum) 16.00 (Nominal) 19.50 (Maximum)			8.000 (Minimum) 11.00 (Nominal) 13.50 (Maximum)	

Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

Litho Density − D Wellsite Calibration

Detectors Resolution From BKG Measurments

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value
Master		9.038	Master		8.771
Before		9.066	Before		8.776
	5.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)			5.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)	

Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

Litho Density − D Master Calibration

Aluminum Measurement

Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LS Aluminum CPS	Value
Master		88.06	Master		132.3	Master		154.2
	70.00 (Minimum) 90.00 (Nominal) 125.0 (Maximum)			100.0 (Minimum) 135.0 (Nominal) 194.0 (Maximum)			120.0 (Minimum) 155.0 (Nominal) 217.0 (Maximum)	
Phase	LITH Aluminum CPS	Value	Phase	SS1 Aluminum CPS	Value	Phase	SS2 Aluminum CPS	Value
Master		53.41	Master		194.3	Master		258.9
	35.00 (Minimum) 50.00 (Nominal) 74.00 (Maximum)			125.0 (Minimum) 175.0 (Nominal) 256.0 (Maximum)			210.0 (Minimum) 260.0 (Nominal) 353.0 (Maximum)	

Master: 20−Dec−2002 11:43

Litho Density − D Master Calibration

Litholog Measurement

Phase	LL Iron CPS	Value	Phase	LU Iron CPS	Value	Phase	LS Iron CPS	Value
Master		78.03	Master		117.4	Master		136.8
	60.00 (Minimum) 80.00 (Nominal) 114.0 (Maximum)			85.00 (Minimum) 120.0 (Nominal) 177.0 (Maximum)			100.0 (Minimum) 135.0 (Nominal) 193.0 (Maximum)	
Phase	LITH Iron CPS	Value	Phase	SS1 Iron CPS	Value	Phase	SS2 Iron CPS	Value
Master		34.76	Master		172.5	Master		234.4
	15.00 (Minimum) 30.00 (Nominal) 51.00 (Maximum)			105.0 (Minimum) 155.0 (Nominal) 234.0 (Maximum)			190.0 (Minimum) 245.0 (Nominal) 325.0 (Maximum)	

Master: 20−Dec−2002 11:54

Litho Density − D Master Calibration

Spectrum Quality Ratios

Phase	QRLS Calculated	Value	Phase	QRSS Calculated	Value	Phase	QRLI Calculated	Value
Master		0.6654	Master		0.7504	Master		0.3463
	0.6000 (Minimum) 0.6500 (Nominal) 0.7000 (Maximum)			0.6200 (Minimum) 0.7200 (Nominal) 0.8200 (Maximum)			0.2900 (Minimum) 0.3900 (Nominal) 0.4500 (Maximum)	
Phase	QLIR Calculated	Value	Phase	QR Calculated	Value			
Master		1.362	Master		1.001			
	1.290 (Minimum) 1.390 (Nominal) 1.450 (Maximum)			0.9800 (Minimum) 1.000 (Nominal) 1.020 (Maximum)				

Master: 20−Dec−2002 11:54

COMPANIA:	**YPF S.A**
POZO:	**YPF.Ch.PCN−605**
CAMPO:	**PAMPA DEL CASTILLO NORTE**
PROVINCIA:	**CHUBUT**
PAIS:	**ARGENTINA**

PRIMERA LECTURA	2687.1 m
PROFUNDIDAD PERFIL	2689.5 m
PROF. PERFORADOR	2684 m
BUJE DE VASTAGO	678.04 m
MESA ROTATIVA	677.74 m
NIVEL TERRENO	673.14 m

Schlumberger

COMBINADA

ESCALA 1:200

OPERACIÓN SOLICITADA

1	*INDUCCION MULTIPLE*	IM	De fondo (2700 m. Aprox.) hasta Zapato Cañería Guía	410,89	m.
2	*CALIBRE*	CAL	De fondo (2700 m. Aprox.) hasta Zapato Cañería Guía	410,89	m.
3	*DENSIDAD LITOLOGICA*	DLT	En profundidades y tramos a determinar en el pozo		
4	*SONICO COMPENSADO*	SC	De fondo (2700 m. Aprox.) hasta Zapato Cañería Guía	410,89	m.
5	*MULTIENSAYADOR*	ME	En profundidades y medidas a determinar en el pozo		

SERVICIOS OPCIONALES

1	*TESTIGOS POR IMPACTO*	TLP	En profundidades y cantidad a determinar en el pozo		

NOTA:

IMPORTANTE: *En caso de superarse las 12:00 Hs de operación consecutivas, se debe reemplazar, indefectiblemente, la dotación completa. Se deberá, antes de comenzar la operación, estimar el tiempo de duración de la misma para, de ser necesario, 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	*2700* m.		
DIAMETRO TREPANO	*8 1/2* "	8,500	(Confirmar diámetro de trepano)
PROFUNDIDAD ZAPATO CAÑO GUIA	*410,89* m.		
DIAMETRO CAÑO GUIA	*9 5/8* "	9,625	"

NOTA: ADJUNTAR A LA HOJA DE TIEMPO Y TICKET

Nelso Lovera
YPF S.A.

RETIRA

FECHA: ___/___/___.

FIRMA: _____.

ACLARACION:_____.

COMPANIA: YPF S.A

POZO: YPF.Ch.PCN−605

CAMPO: PAMPA DEL CASTILLO NORTE

PROVINCIA: CHUBUT **PAIS:** ARGENTINA

Municipio: CHUBUT
Campo: PAMPA DEL CASTILLO NORTE
Locacion: CAS
Pozo: YPF.Ch.PCN−605
Compania: YPF S.A

Schlumberger

COMBINADA

ESCALA 1:200

LOCACION

AIT−CALI−BHC

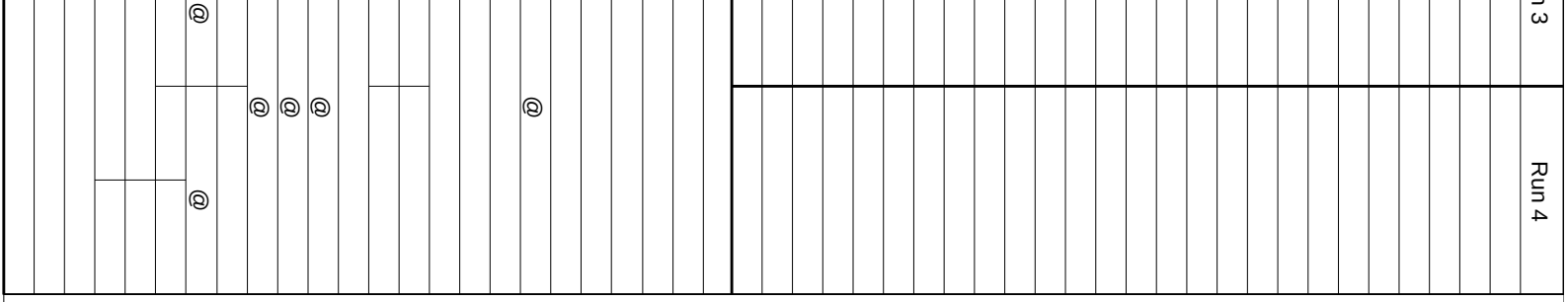
Elev.: B.V. 678.04 m
N. T. 673.14 m
M. R. 677.74 m

Ref. Permanente: NIVEL DEL TERRENO Elev.: 673.14 m
Reg. Medido Desde: NIVEL DEL TERRENO 0.0 m sobre nivel ref.
Perforacion Medida Desde: NIVEL DEL TERRENO

UWI: AR0100005137	Equipo PI 359	Longitud X: 4.939.737,76	Latitud Y: 2.577.923,41

Fecha			26−Dec−2002				Logging Date		
Corrida No.			1				Run Number		
Prof. Perforador			2684 m				Depth Driller		
Prof. Registro			2689.5 m				Logger Depth		
Primera Lectura			2687.1 m				Bottom Log Interval		
Ultima Lectura			420 m				Top Log Interval		
Fondo Tuberia Perforador			9.625 in @ 417.5 m		@		Casing Driller Size @ Depth	@	
Fondo Tuberia Registro			420 m				Casing Logger		
Diametro Trepano			8.500 in				Bit Size		
Tipo De Lodo			DRILLPLEX				Type Fluid In Hole		
LODO	Densidad	Viscosidad	1.16 g/cm3	37 s			MUD Density	Viscosity	
LODO	Perdidas	PH	9.2 cm3	10.2			MUD Fluid Loss	PH	
LODO	Fuente Muestra De Lodo		POZO				MUD Source Of Sample		
RM @ Temp.			2.000 ohm.m @ 20 degC		@		RM @ Measured Temperature	@	
RMF @ Temp.			1.891 ohm.m @ 20 degC		@		RMF @ Measured Temperature	@	
RMC @ Temp.			1.844 ohm.m @ 11 degC		@		RMC @ Measured Temperature	@	
Fuente: RMF	RMC		PRENSA	PRENSA			Source RMF	RMC	
RM @ T. Fdo.	RMF @ T. Fdo.		0.707 @ 96	0.668 @ 96	@	@	RM @ MRT	RMF @ MRT	@ @
Temp. Maxima Medida			96 degC				Maximum Recorded Temperatures		
Circulacion Final	Hora		26−Dec−2002	14:15			Circulation Stopped	Time	
Registro Fondo	Hora		27−Dec−2002	0:45			Logger On Bottom	Time	
Unidad No.	Locacion		3064	CAS			Unit Number	Location	
Registrado por:			GIULIO RECHIA				Recorded By		
Testigo			OSCAR OLIMA				Witnessed By		

	Run 1	Run 2	Run



DEPTH SUMMARY LISTING

Date Created: 27−DEZ−2002 5:00:0C

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−42P−XS
Serial Number:	4858	Serial Number:	1686	Serial Number:	71141
Calibration Date:	27−oct−2002	Calibration Date:	22−jul−2002	Length:	4614.98 M
Calibrator Serial Number:	1	Calibrator Serial Number:	1028		
Calibration Cable Type:	7−46P	Calibration Gain:		Conveyance Method:	Wireline
Wheel Correction 1:	−2	Calibration Offset:	0.86	Rig Type:	LAND
Wheel Correction 2:	−2		479.00		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	72.00 M
Rig Up Length At Bottom:	72.00 M
Rig Up Length Correction:	0.00 M
Stretch Correction:	4.50 M
Tool Zero Check At Surface:	0.30 M

Depth Control Remarks

1. Control de profundidad segun estandares
2. Primer perfil en el pozo, usado como referencia de profundidad
3. Estiramiento del cable, calculado entre LogUP y LogDown
4.
5.
6.

OTROS SERVICIOS # 1	OTROS SERVICIOS # 2
OS1: AIT−CALI−BHC	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5: PI 359	OS5:

OBSERVACIONES: CORRIDA # 1	OBSERVACIONES: CORRIDA # 2
1 − Primer perfil en el pozo y referencia de profundidad.	
2 − La herramienta se corrio segun muestra la figura.	
3 − Esquema del pozo segun datos del perforador	
4 − SPHI, FEXP=2.15 y FNUM = 0.62 usados para el calculo de RWA.	
5 − Datos adicionales del lodo Cl = 1200 ppm, Ca = 40 ppm	
6 − Maxima desviacion grados 1@2689.5m	
7− Zapato @420 m, Fondo @ 2689.5 m	

CORRIDA #1		
ORDEN DE SERVICIO:		
VERSION DEL PROGRAMA:	9C2−303	
NIVEL DEL LODO:	0 m	
INTERVALO REGISTRADO	COMIENZO	FINAL

CORRIDA #2		
ORDEN DE SERVICIO:		
VERSION DEL PROGRAMA:		
NIVEL DEL LODO:		
INTERVALO REGISTRADO	COMIENZO	FINAL

DESCRIPCION DEL EQUIPO

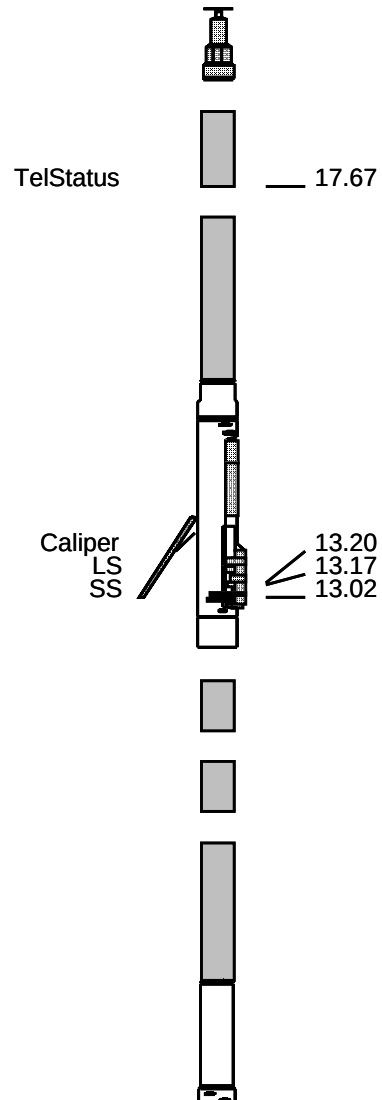
CORRIDA # 1

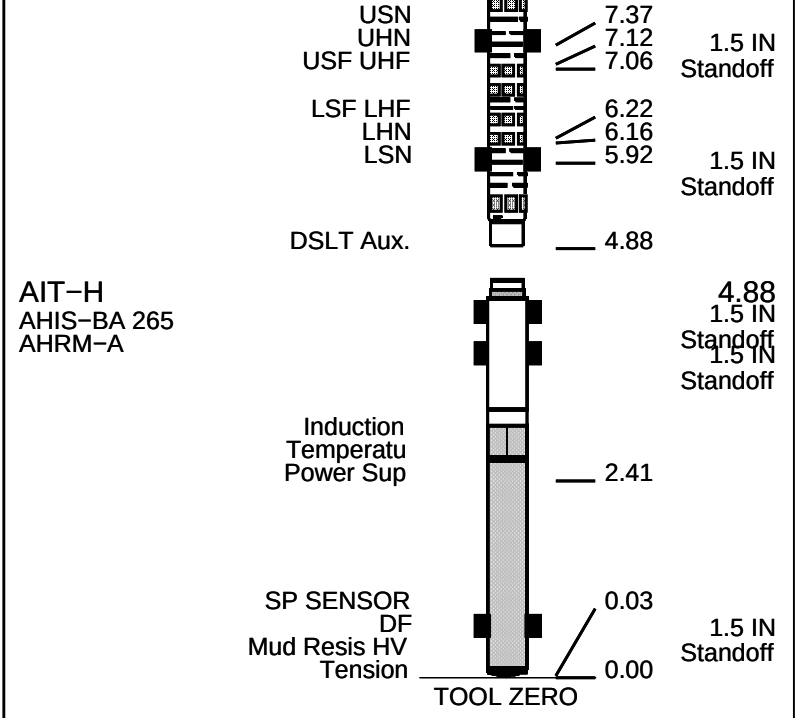
CORRIDA # 2

SURFACE EQUIPMENT

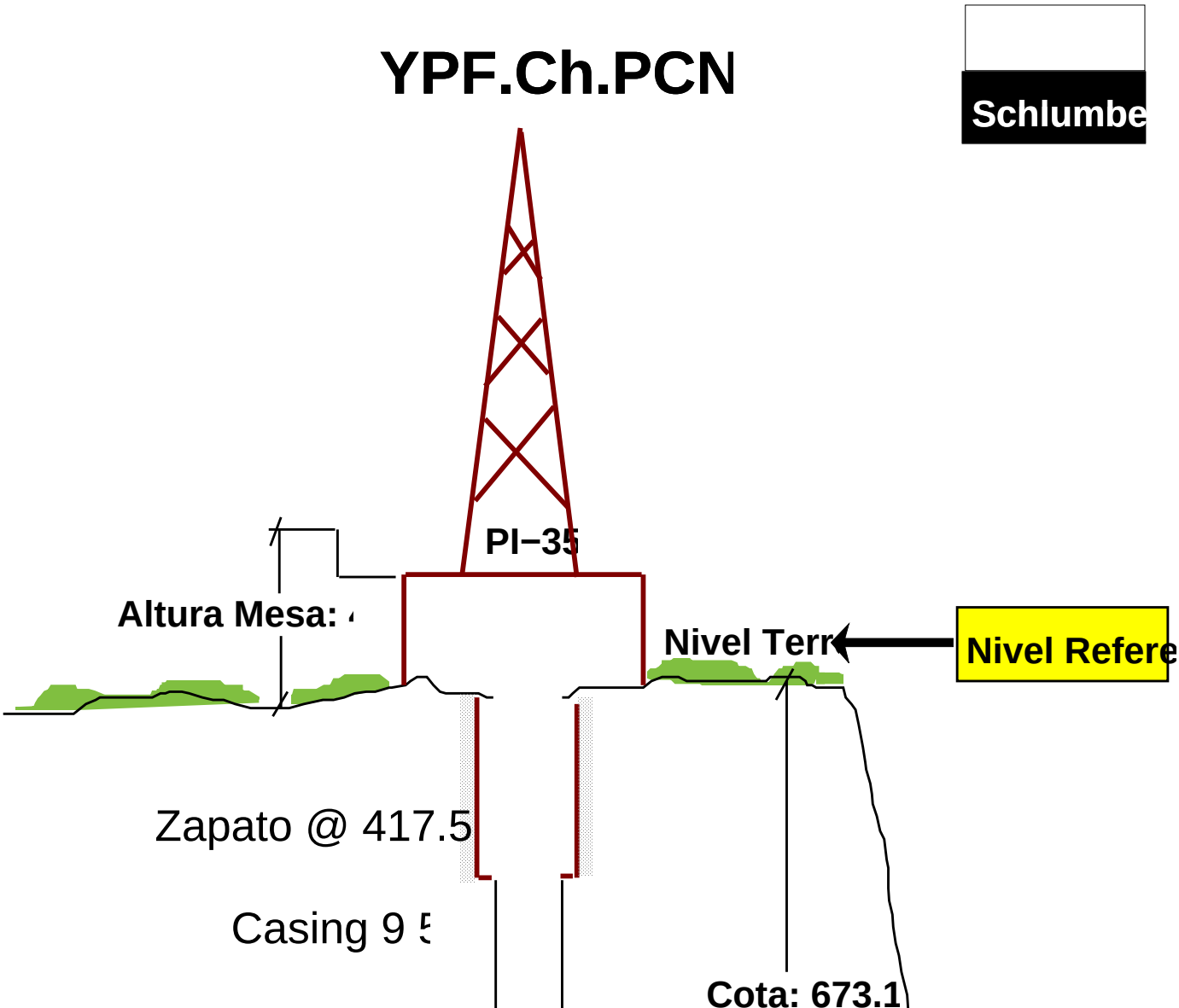
WITM (CTS)−A

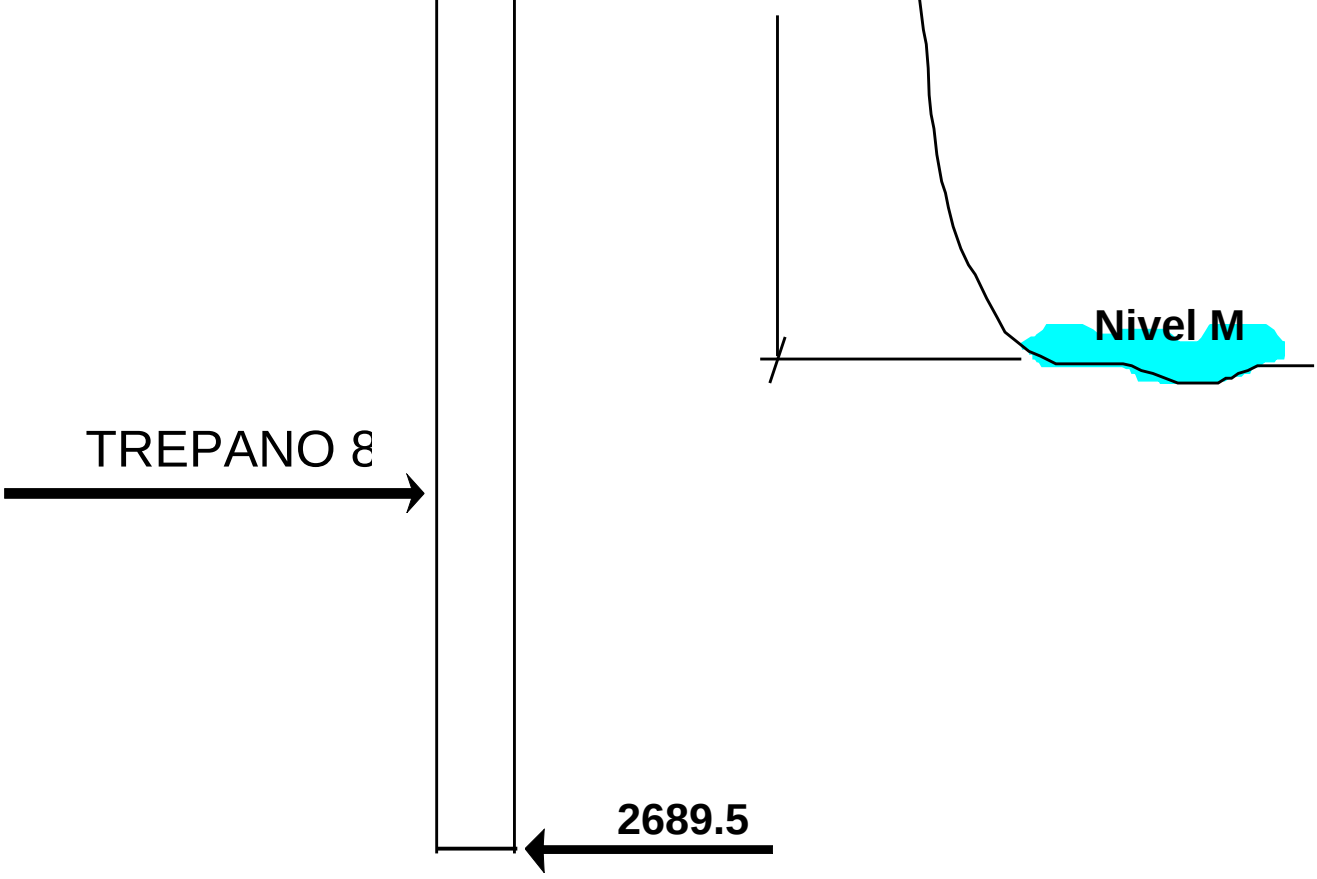
DOWNHOLE EQUIPMENT





MAXIMUM STRING DIAMETER 6.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS





Schlumberger

TRAMO PRINCIPAL

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_031LUP	FN:30	PRODUCER	27−Dec−2002 00:59	2692.0 M	363.3 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_039PUP	FN:32	PRODUCER	27−Dec−2002 03:25	2696.6 M	369.1 M

Integrated Hole/Cement Volume Summary

Hole Volume = 87.46 M3

Cement Volume = 52.64 M3 (assuming 5.50 IN casing O.D.)

Computed from 2689.4 M to 417.6 M using data channel(s) CALI

OP System Version: 9C2−303

MCM

MCM

AIT-H	OP92-KP2	DSLT-TCC	OP92-KP2
LDT-D	OP92-KP2	TCC-BF	OP92-KP2

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	7.875 IN	8.500 IN	2696.6 03:25:15
	8.500 IN	7.875 IN	2372.9 03:26:04

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

REVOQUE
From CALI to BS

CAVERNA
From BS to CALI

SP (SP)
-80 (MV) 20

RWA (RWA)
0 (OHMM) 1

Caliper (CALI)
6 (IN) 16

Bit Size (BS)
6 (IN) 16

Stuck Stretch (STIT)
0 (M) 20

Tension (TENS) (LBF)
0 1000

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

AIT-H 90 Inch Investigation (AHT90)
0 (OHMM) 10

AIT-H 60 Inch Investigation (AHT60)
0 (OHMM) 10

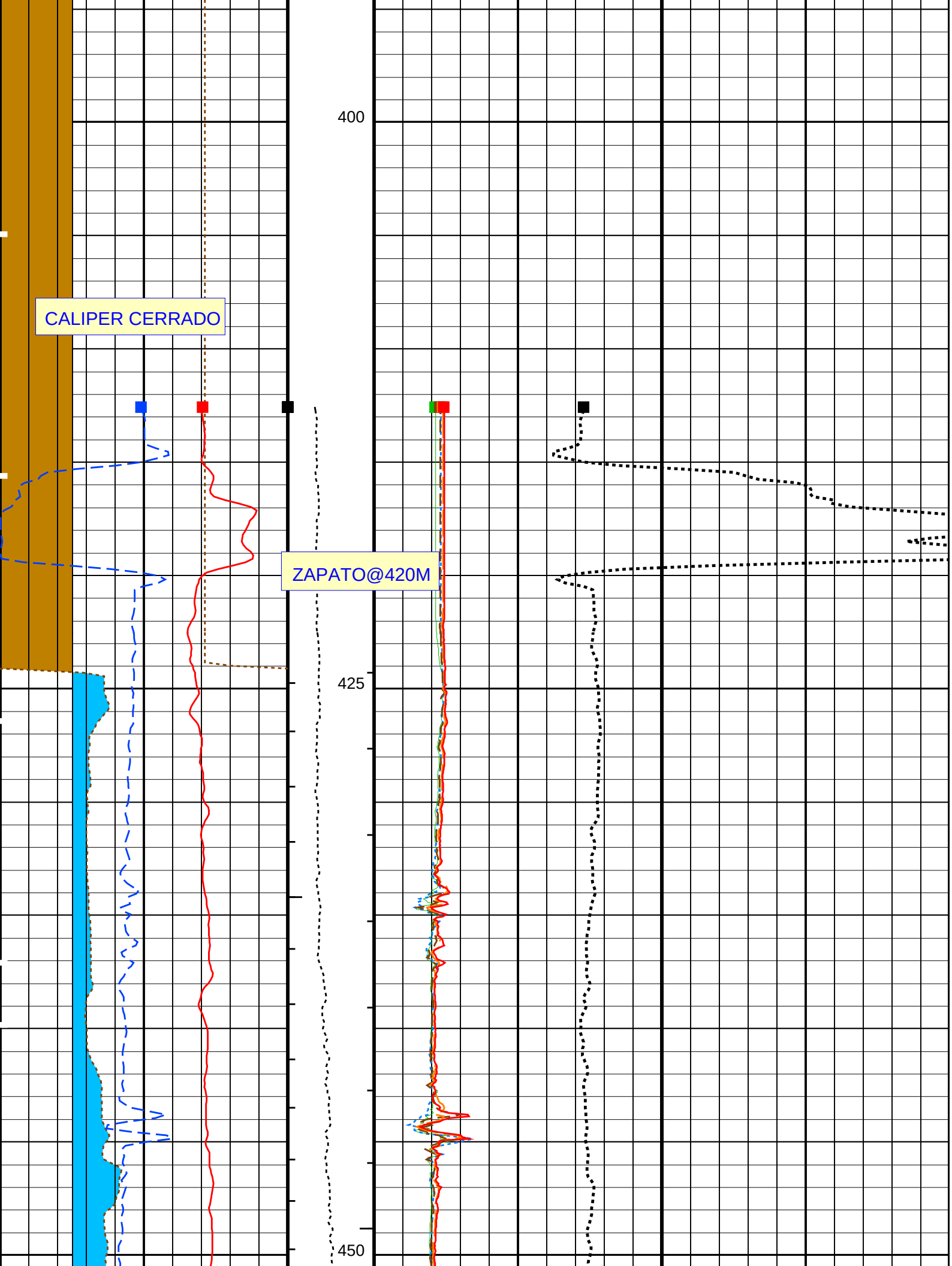
AIT-H 30 Inch Investigation (AHT30)
0 (OHMM) 10

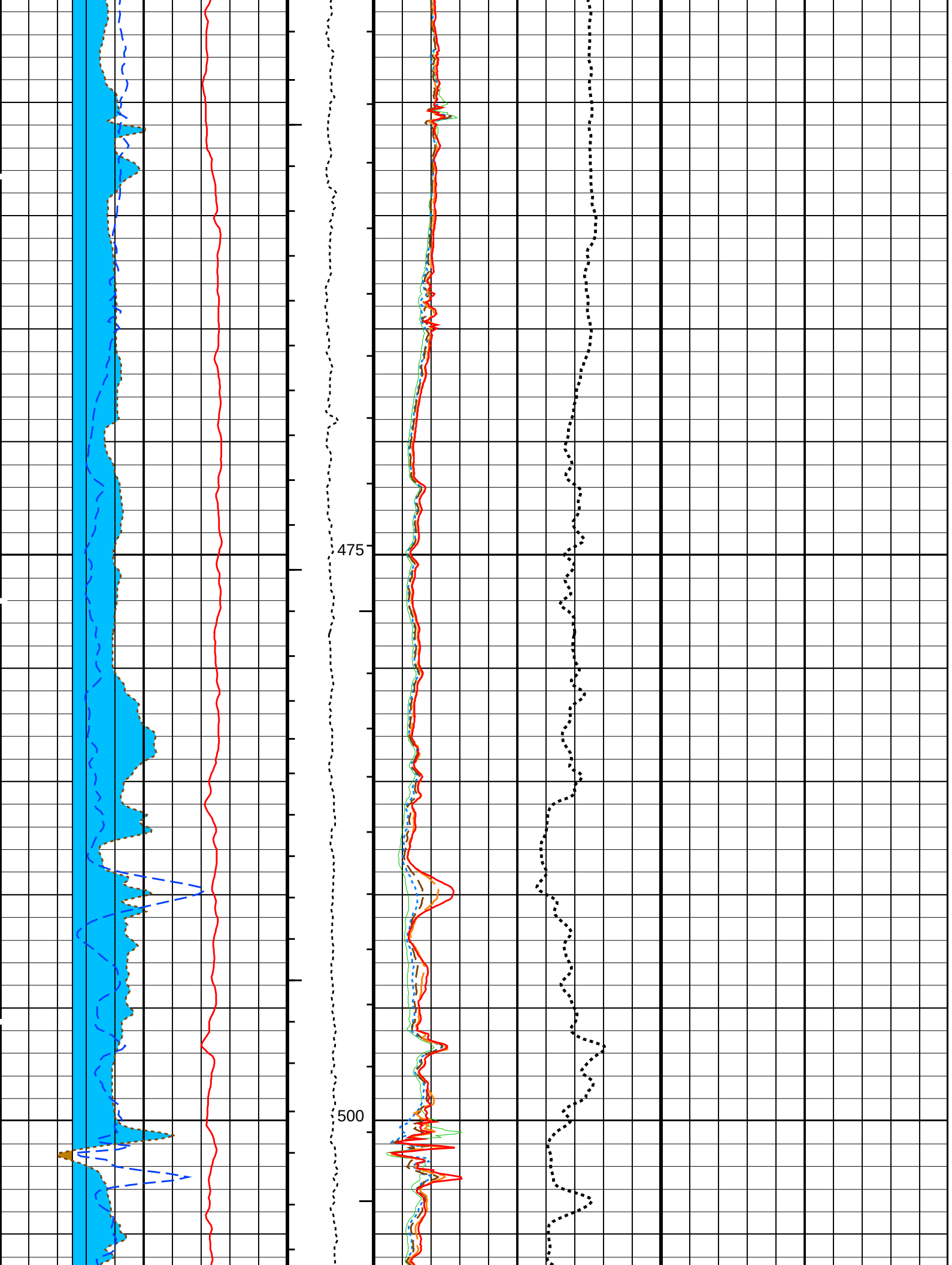
AIT-H 20 Inch Investigation (AHT20)
0 (OHMM) 10

AIT-H 10 Inch Investigation (AHT10)
0 (OHMM) 10

375

<==CHEQUEO DE CALIPER DESPUES


CALIPER CERRADO
ZAPATO@420M
400
425
450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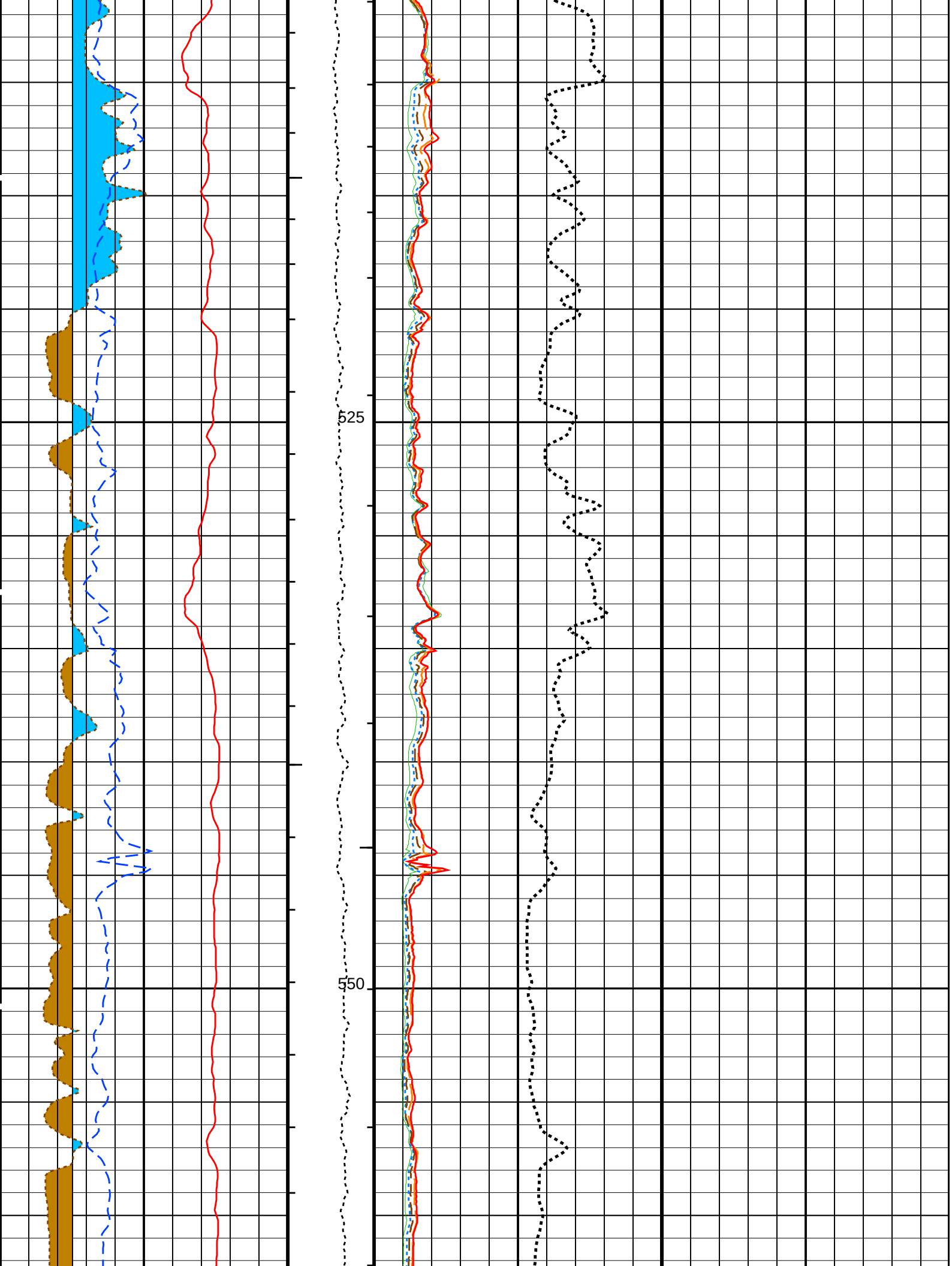
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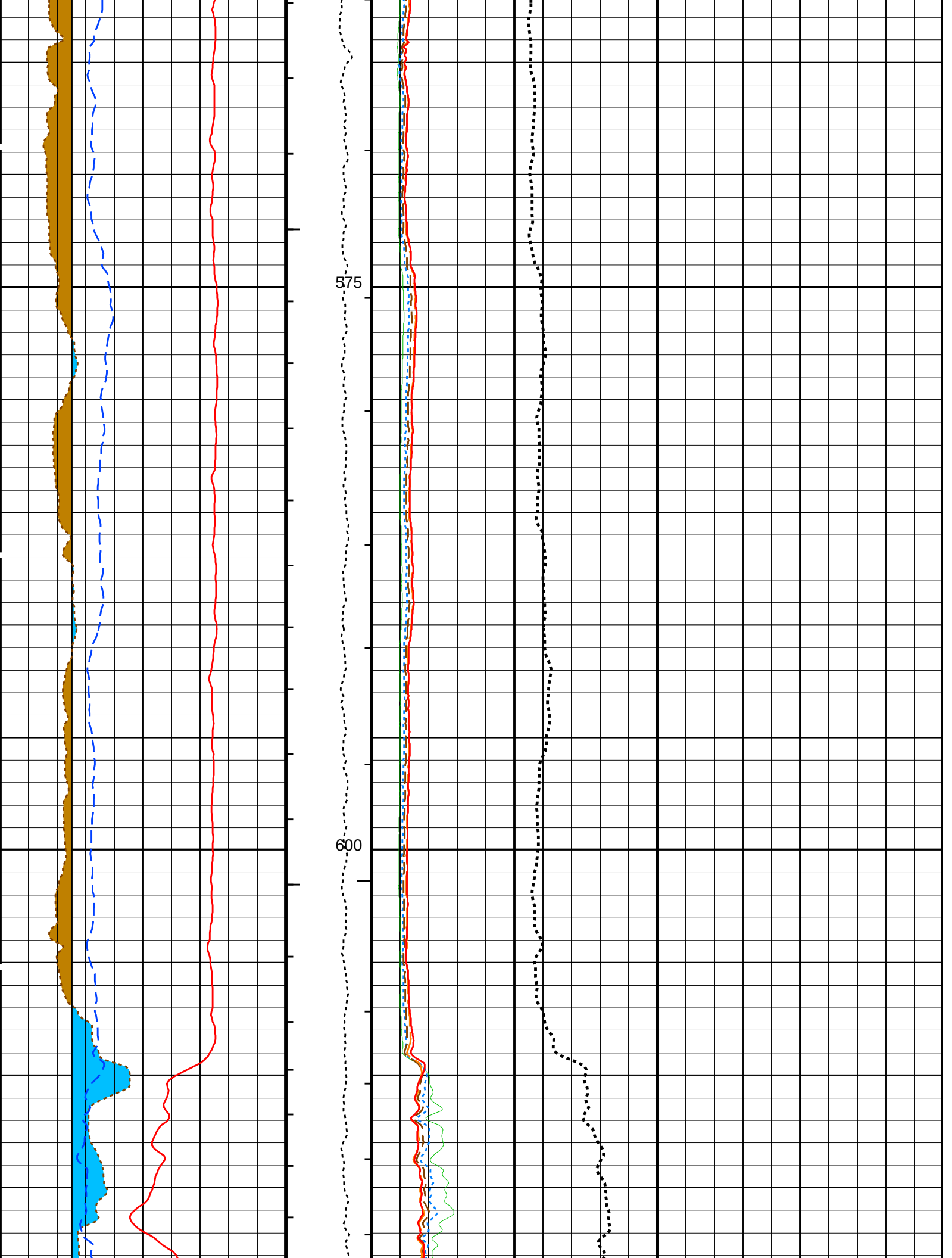
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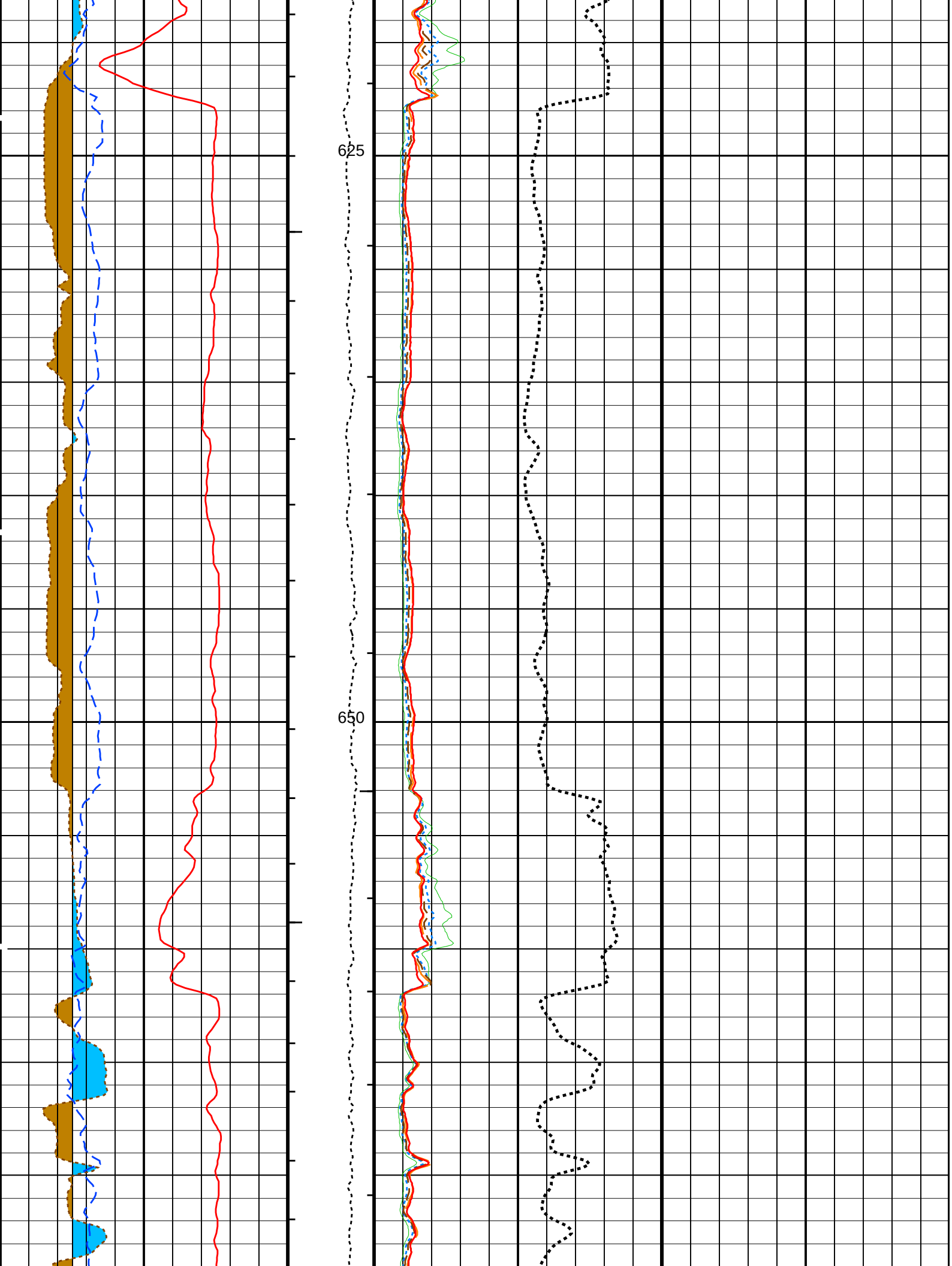
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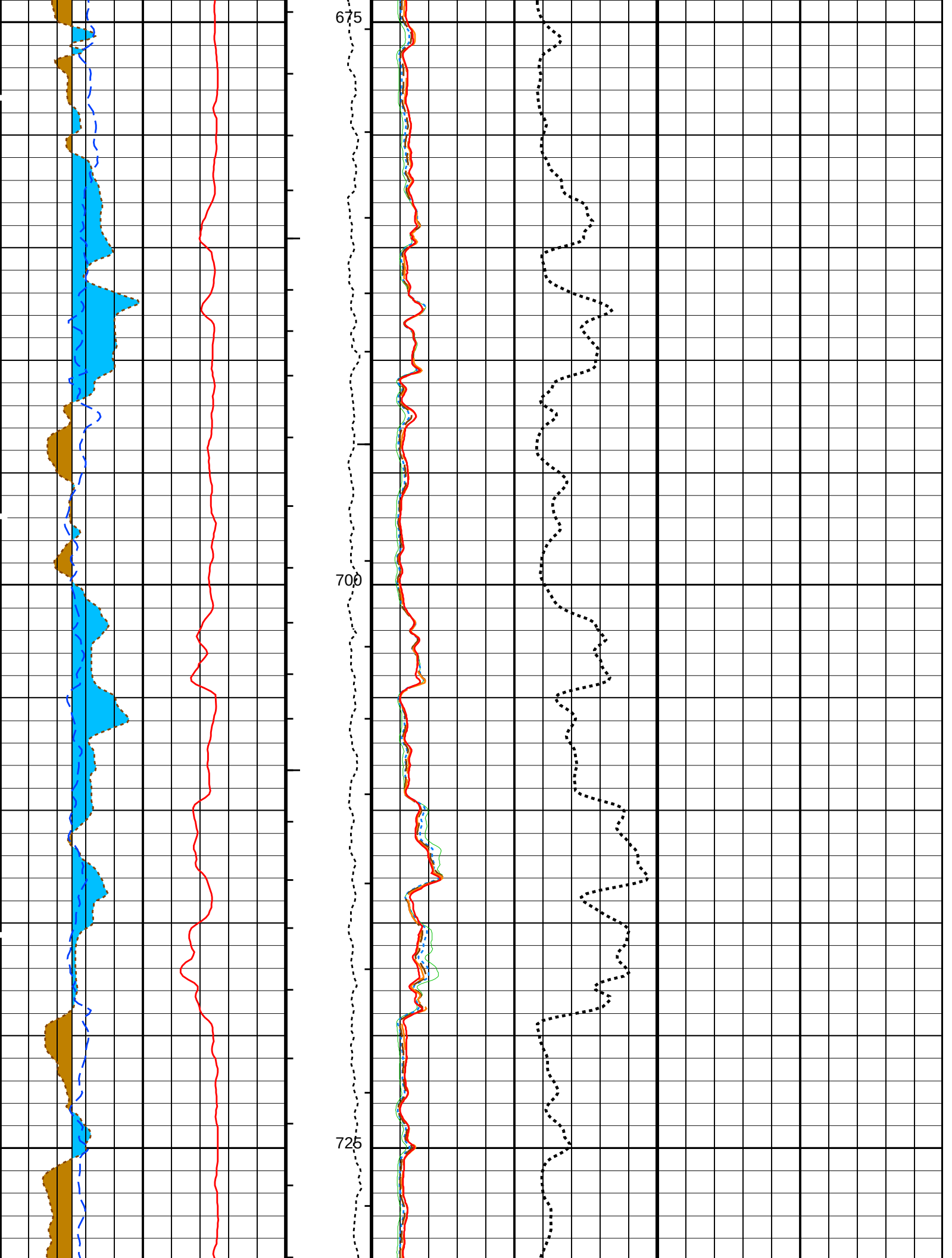
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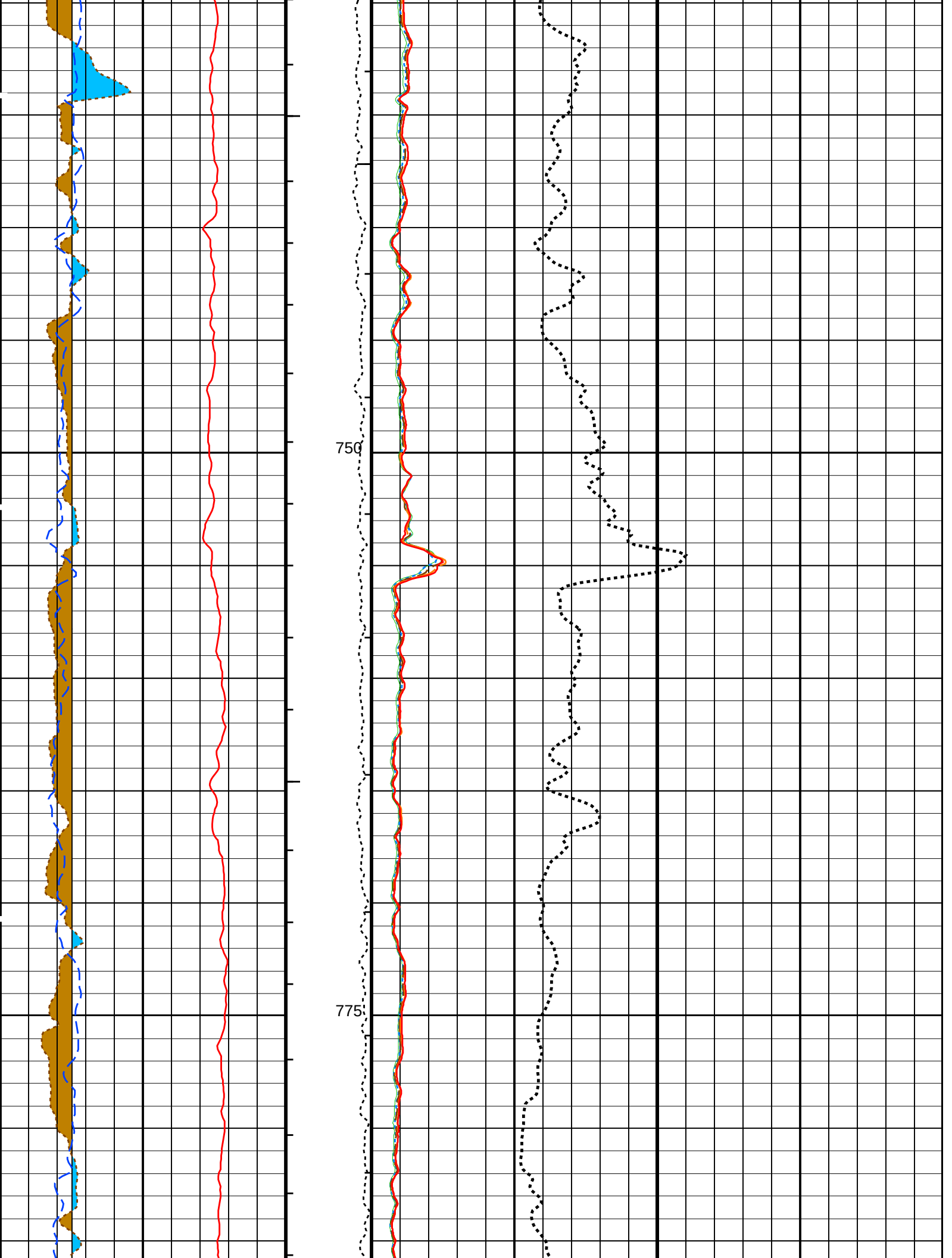
725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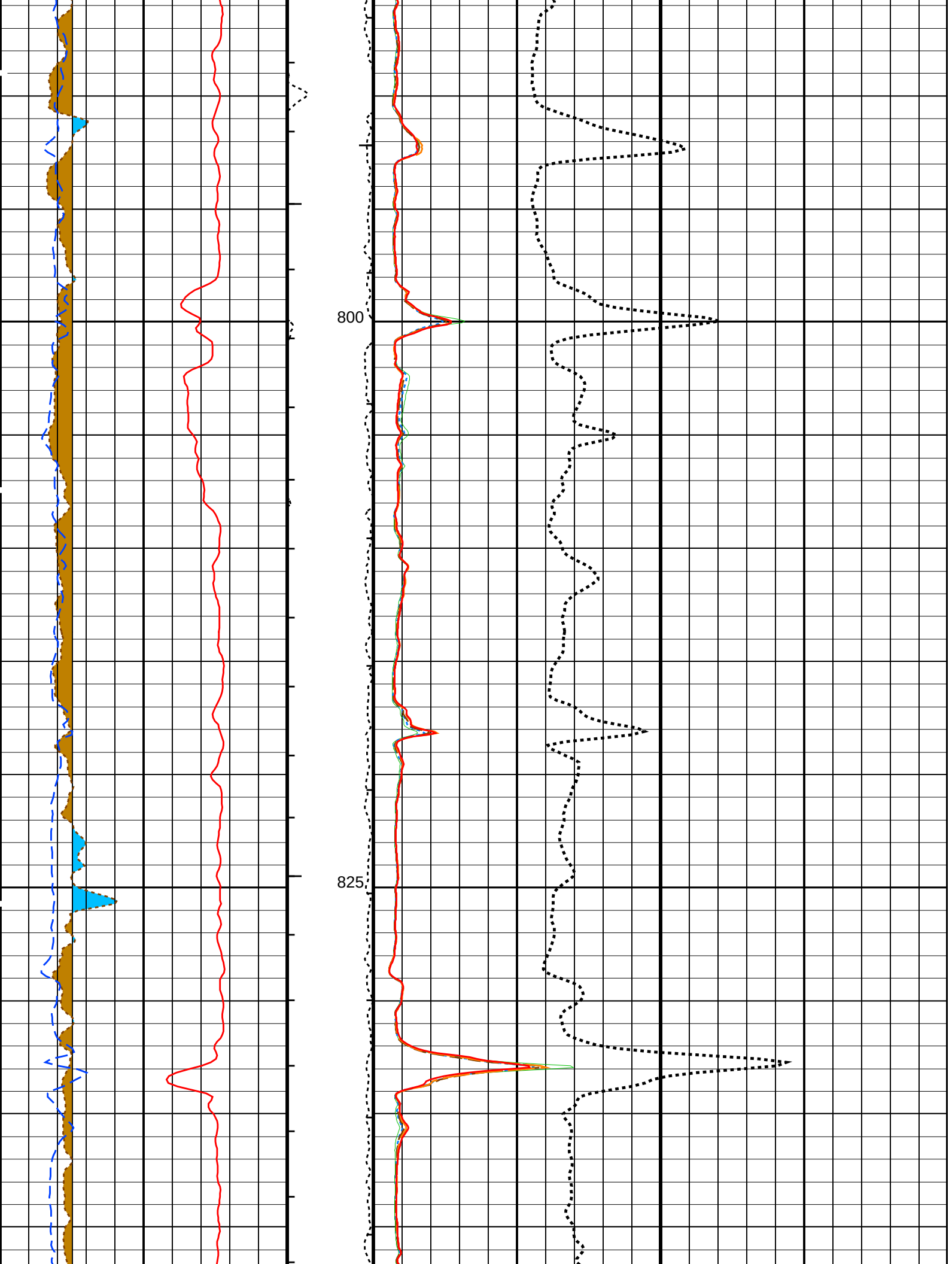
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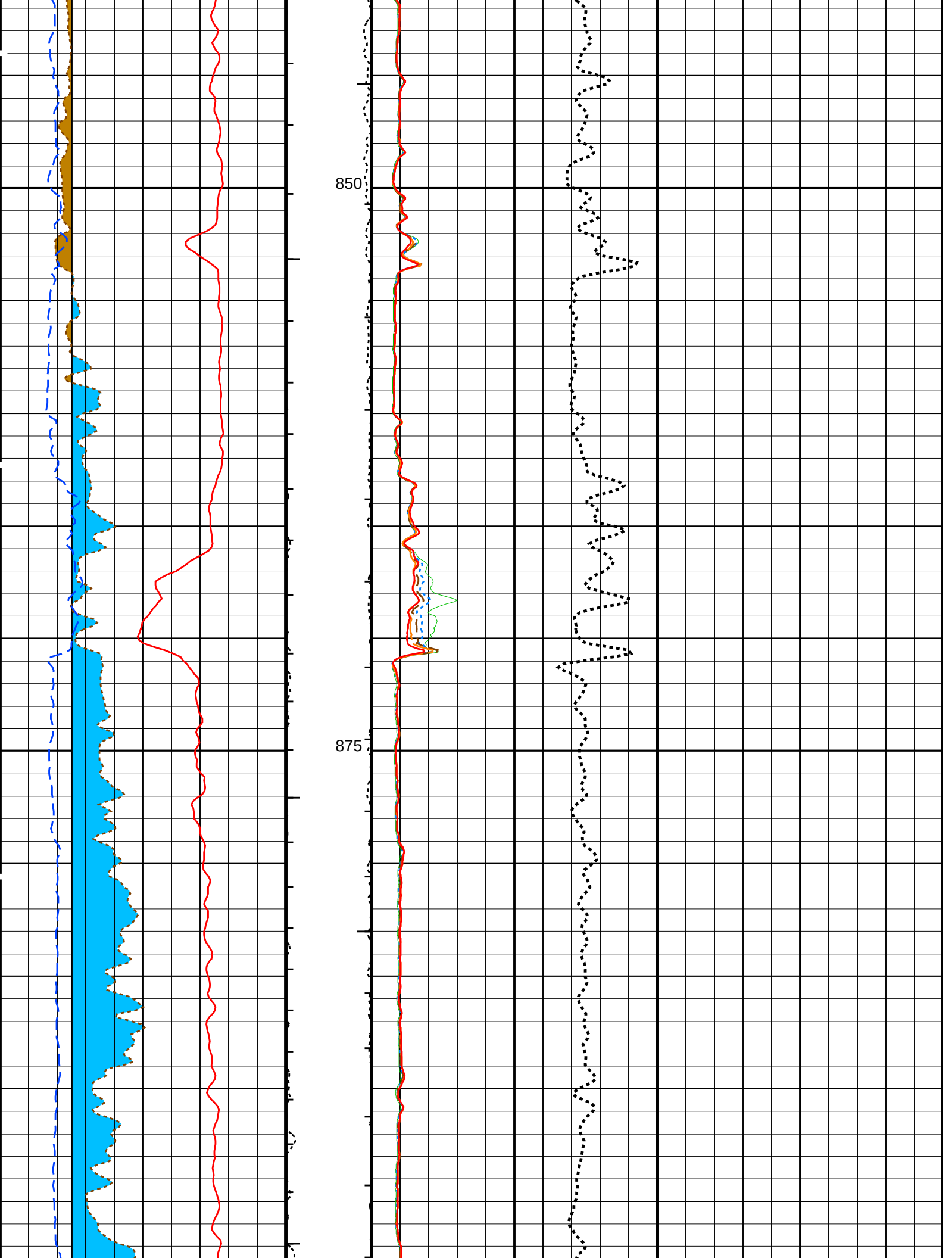
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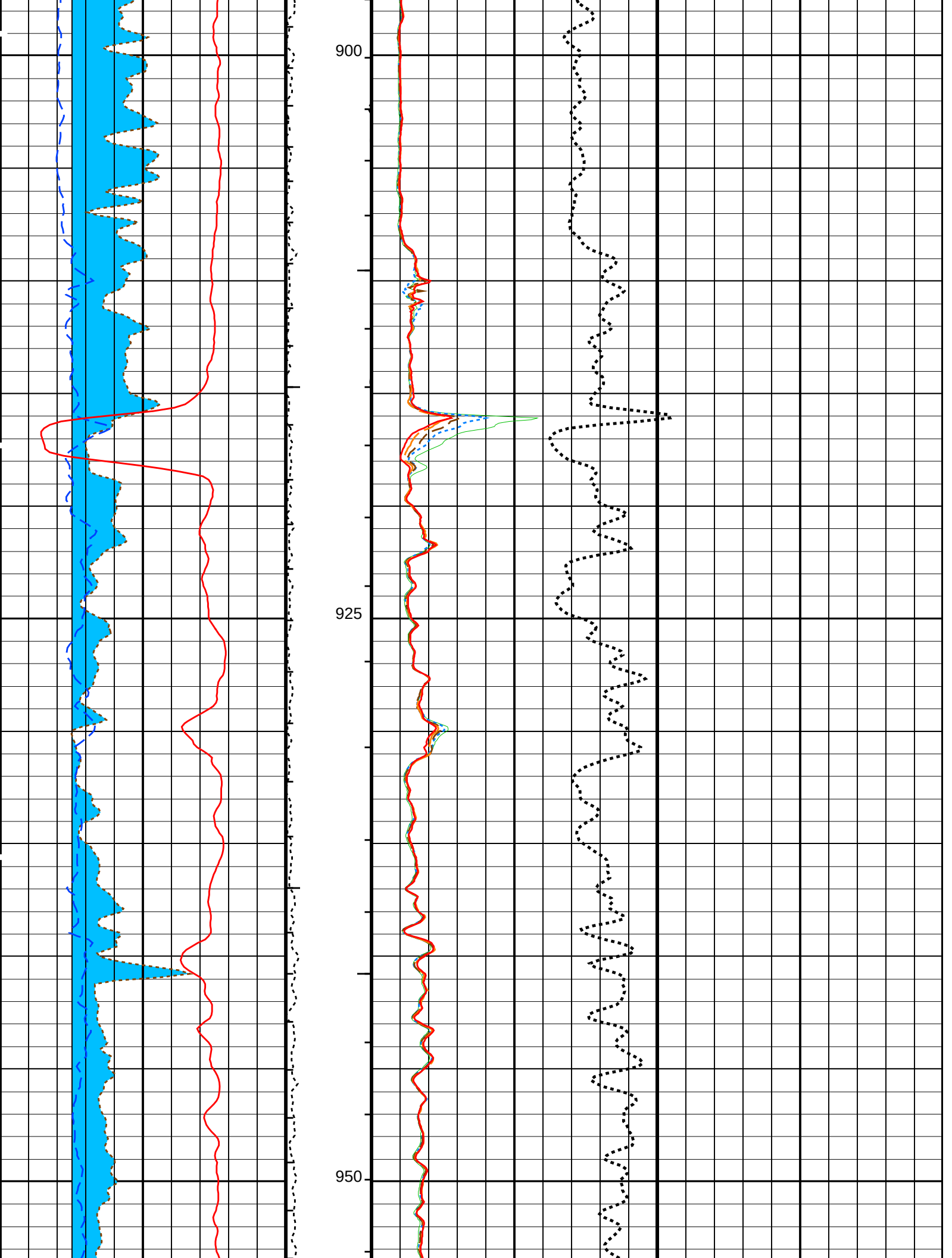
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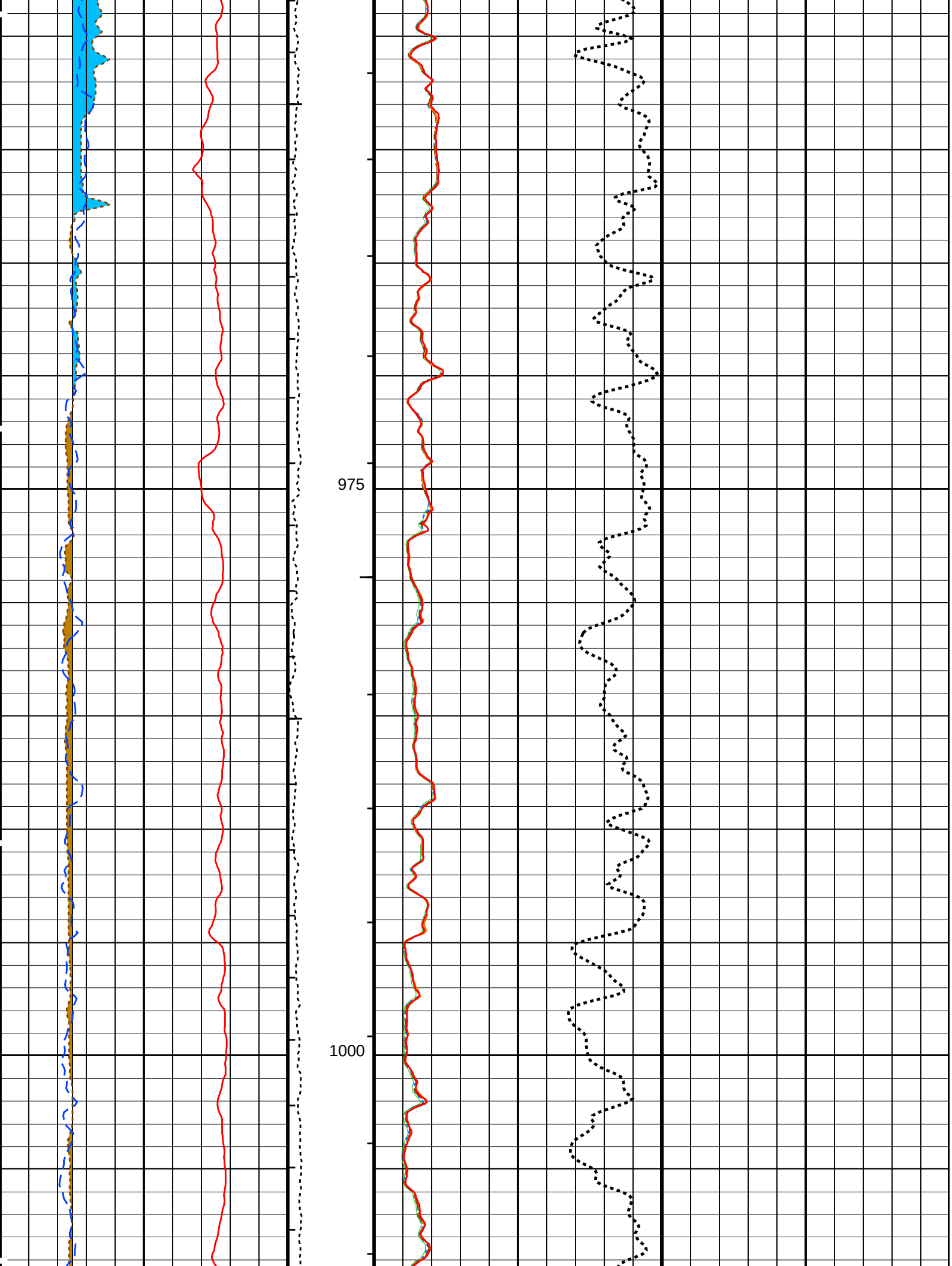
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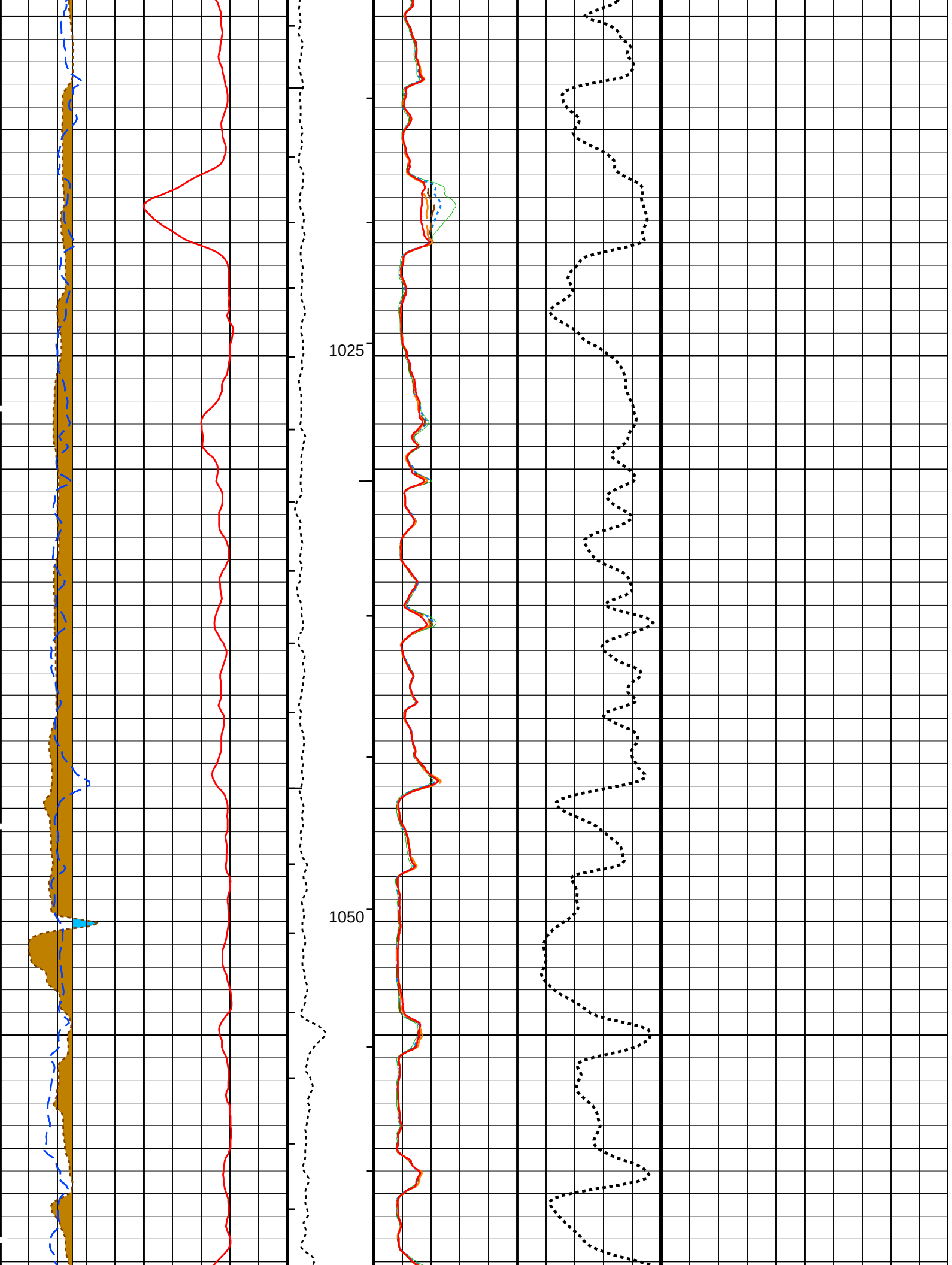
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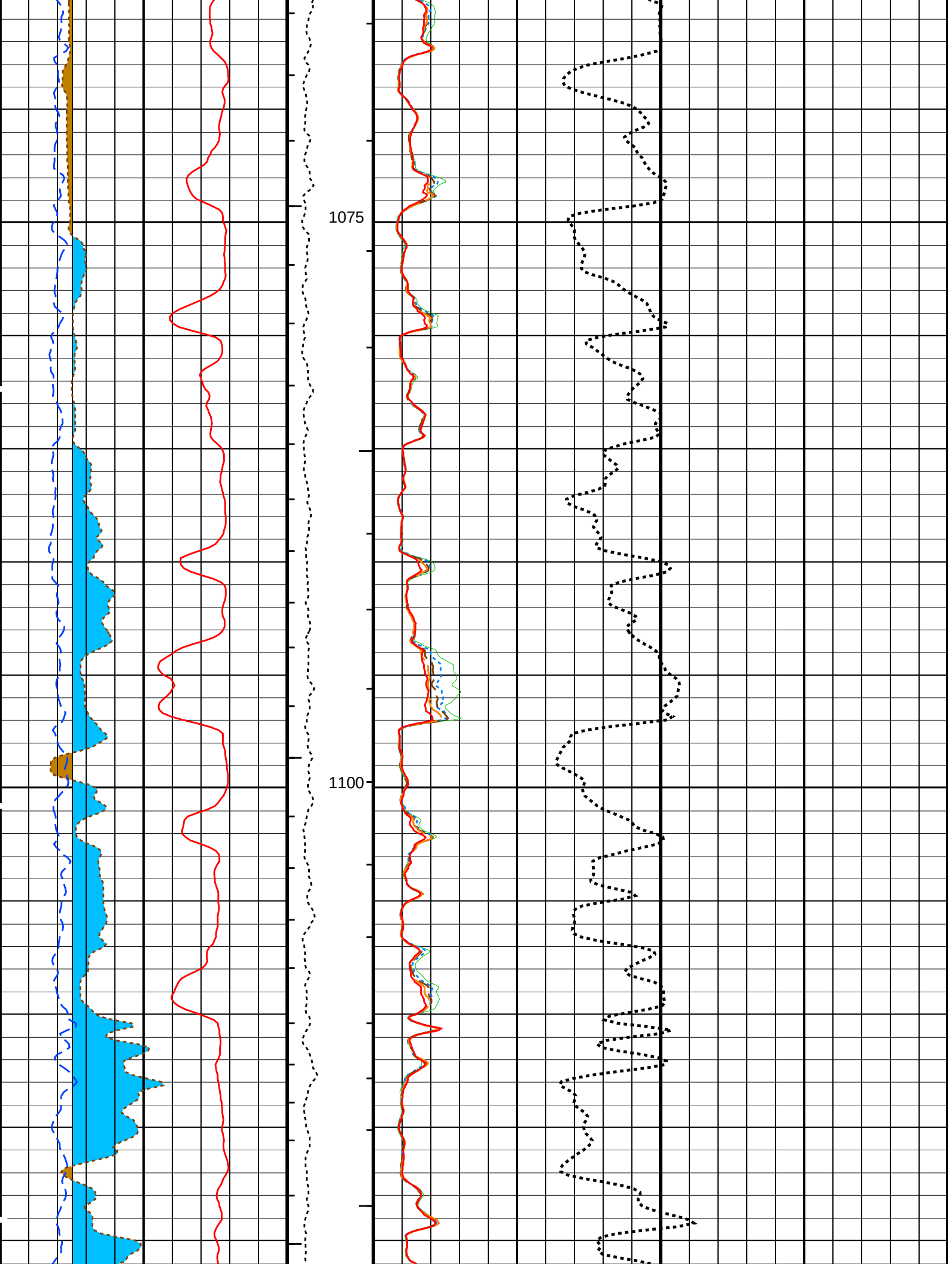
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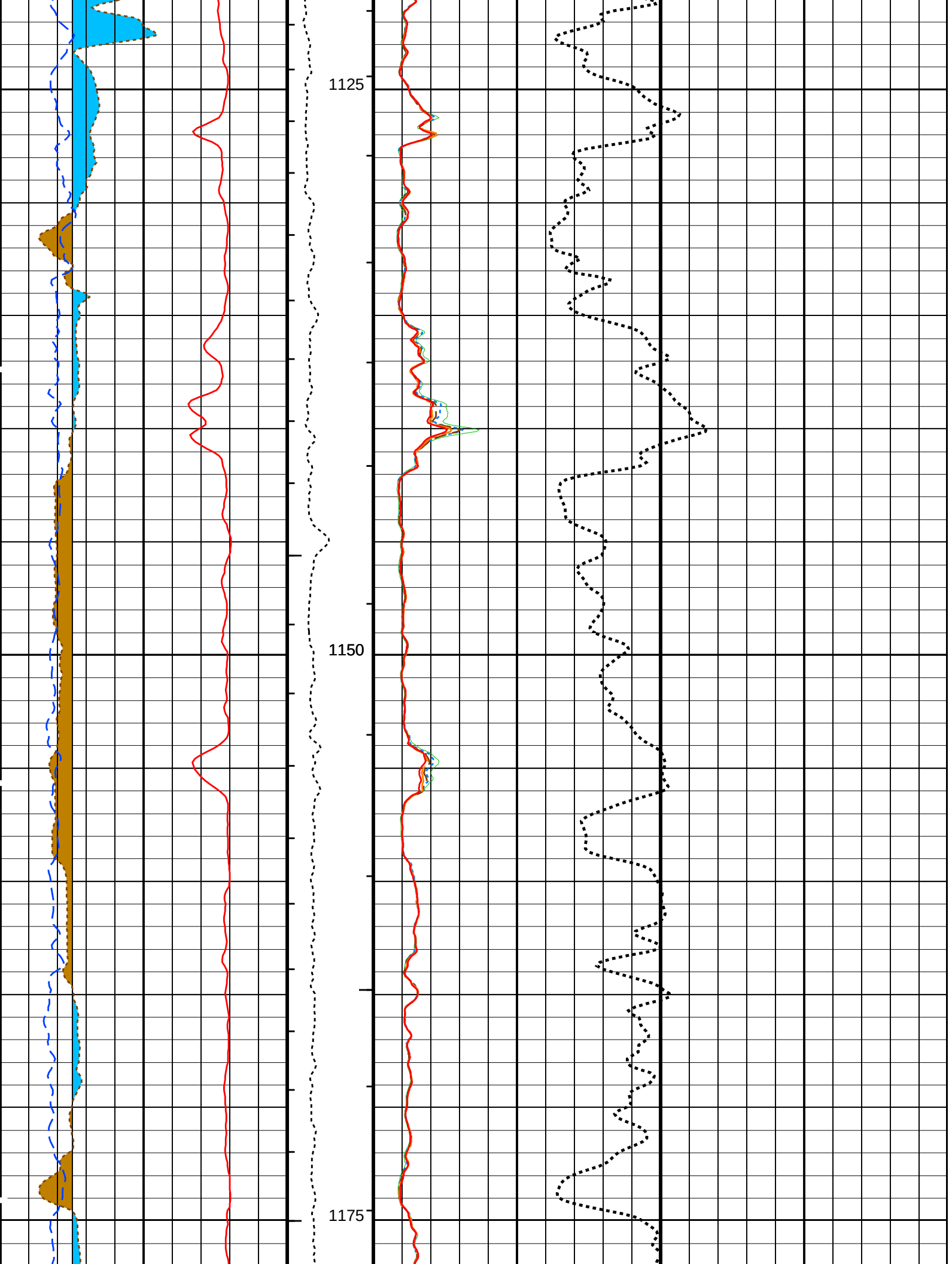
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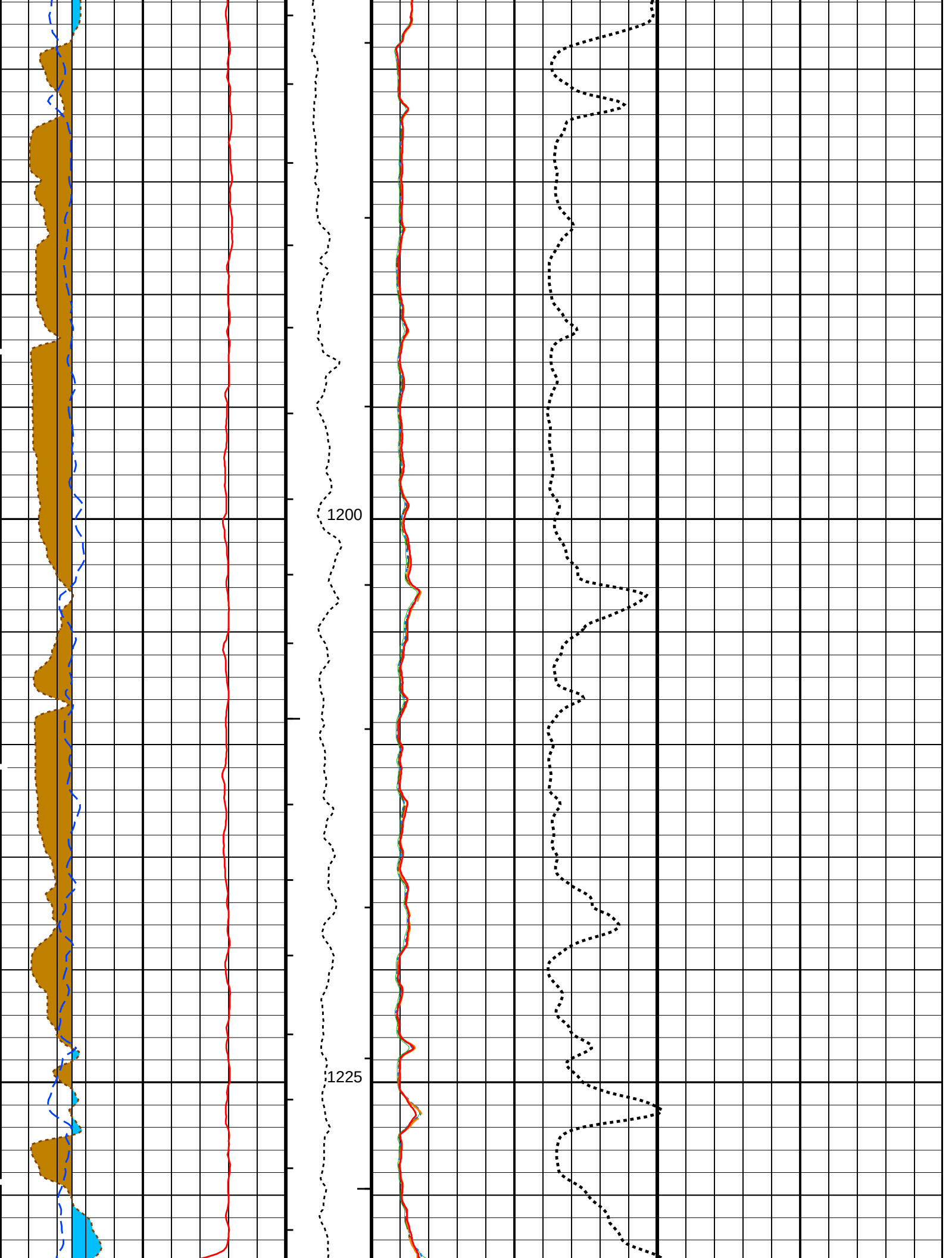
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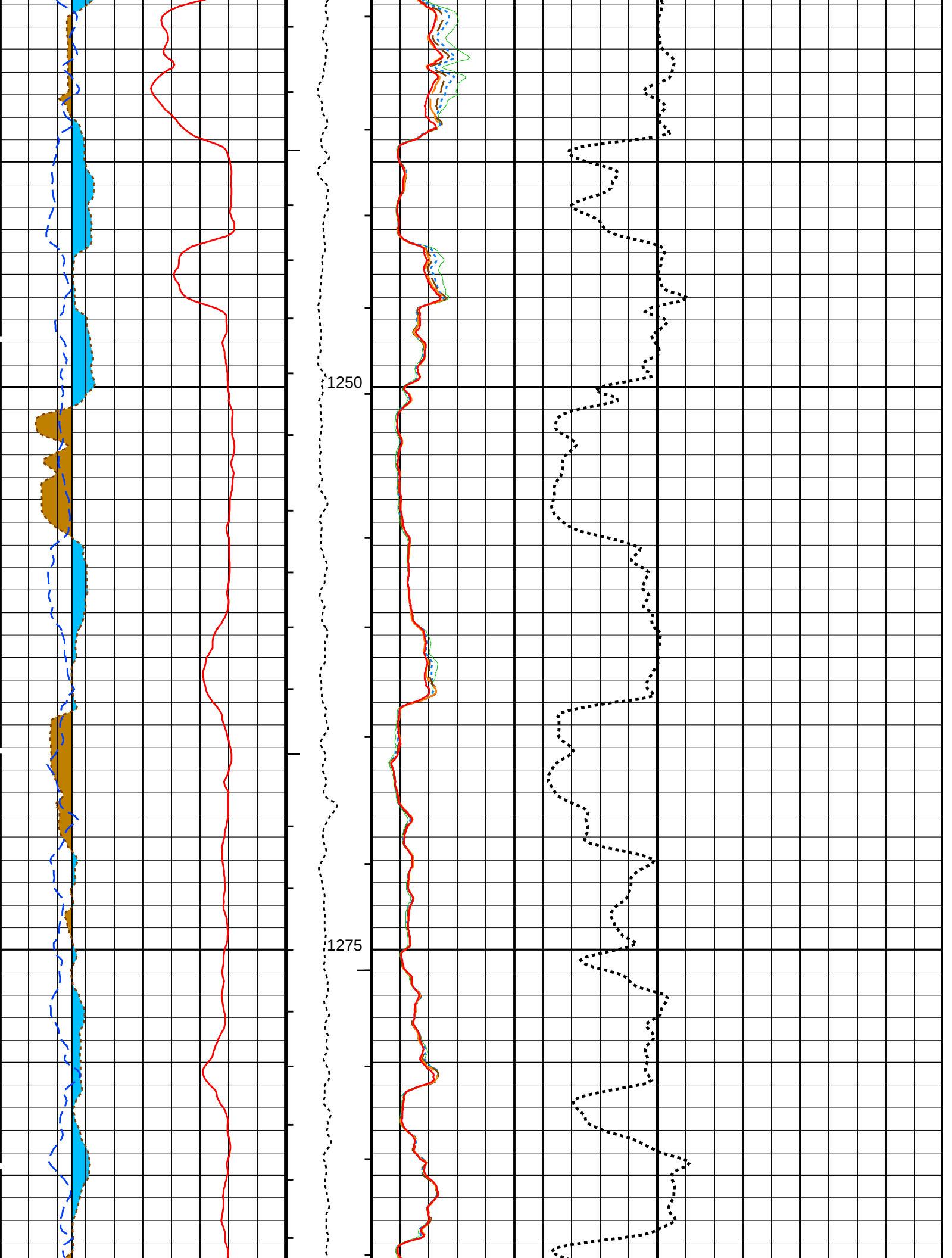
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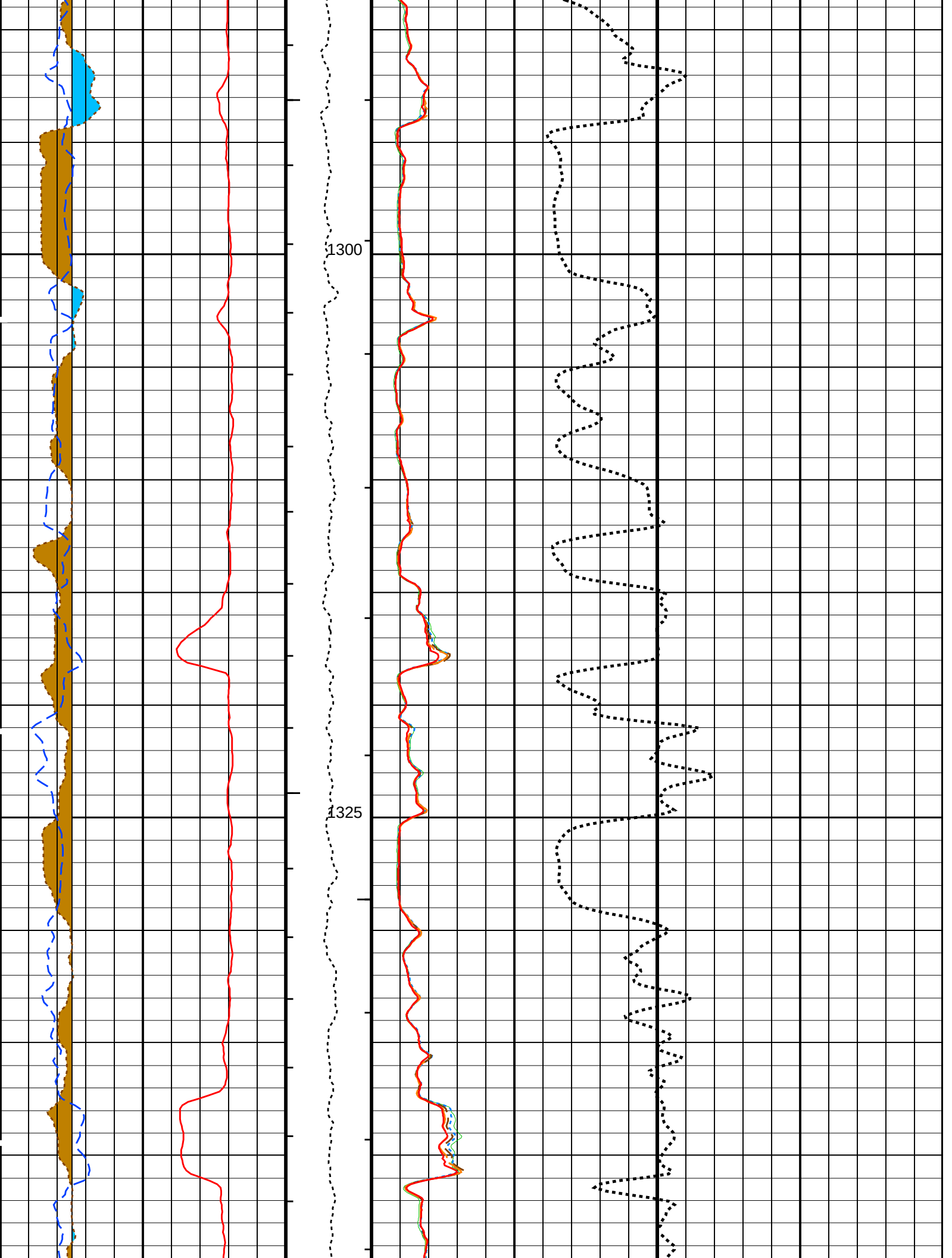
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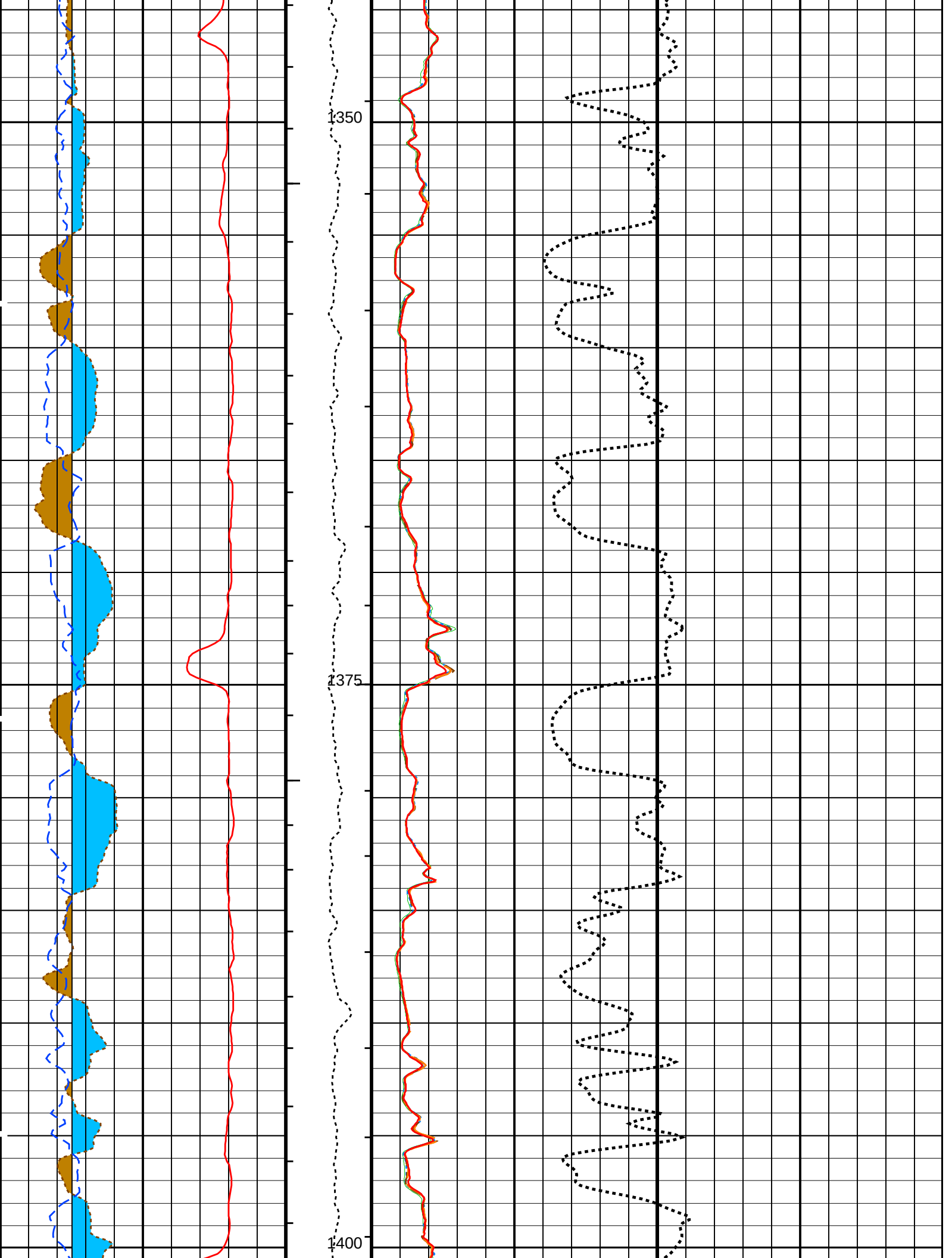
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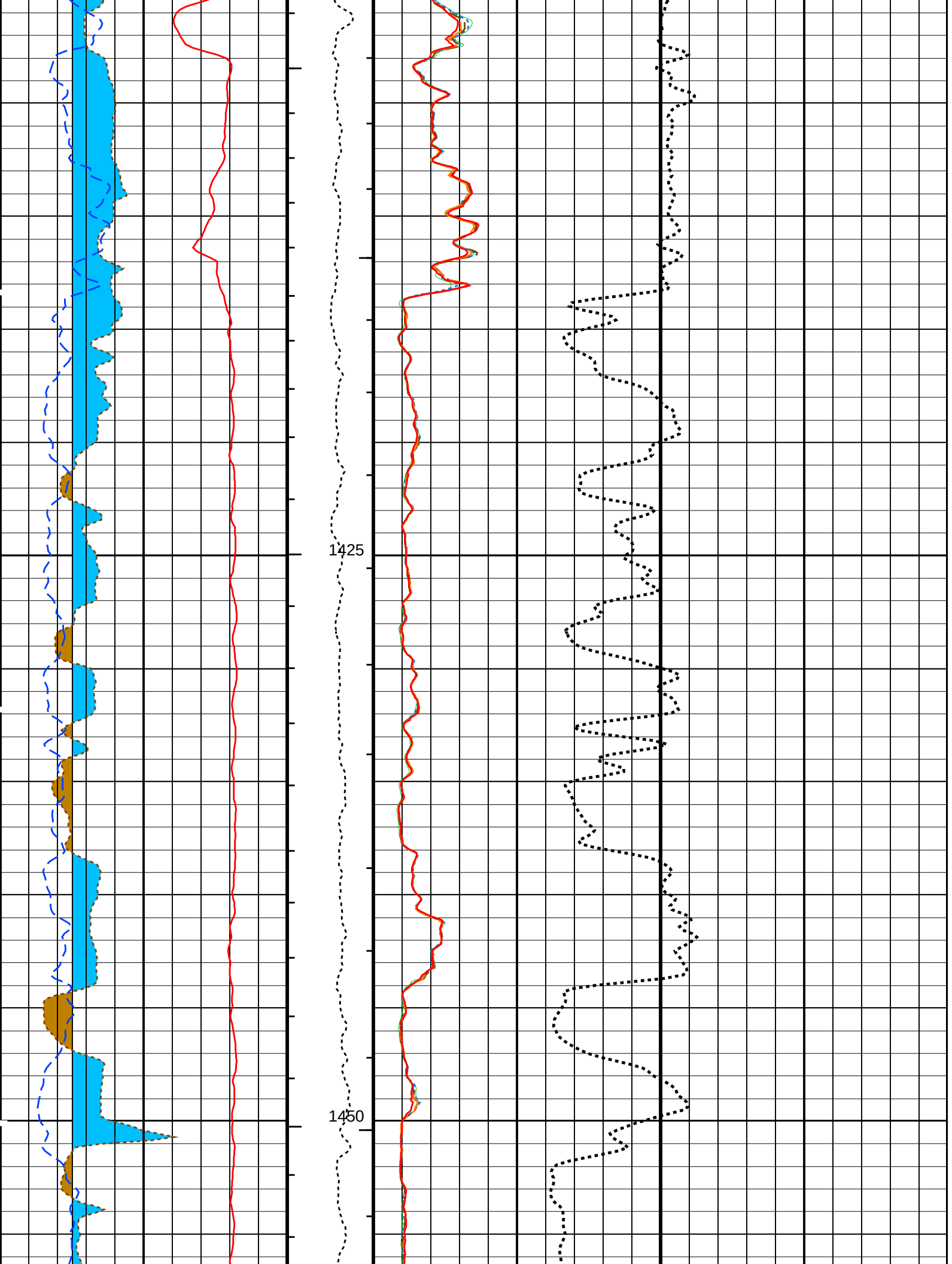
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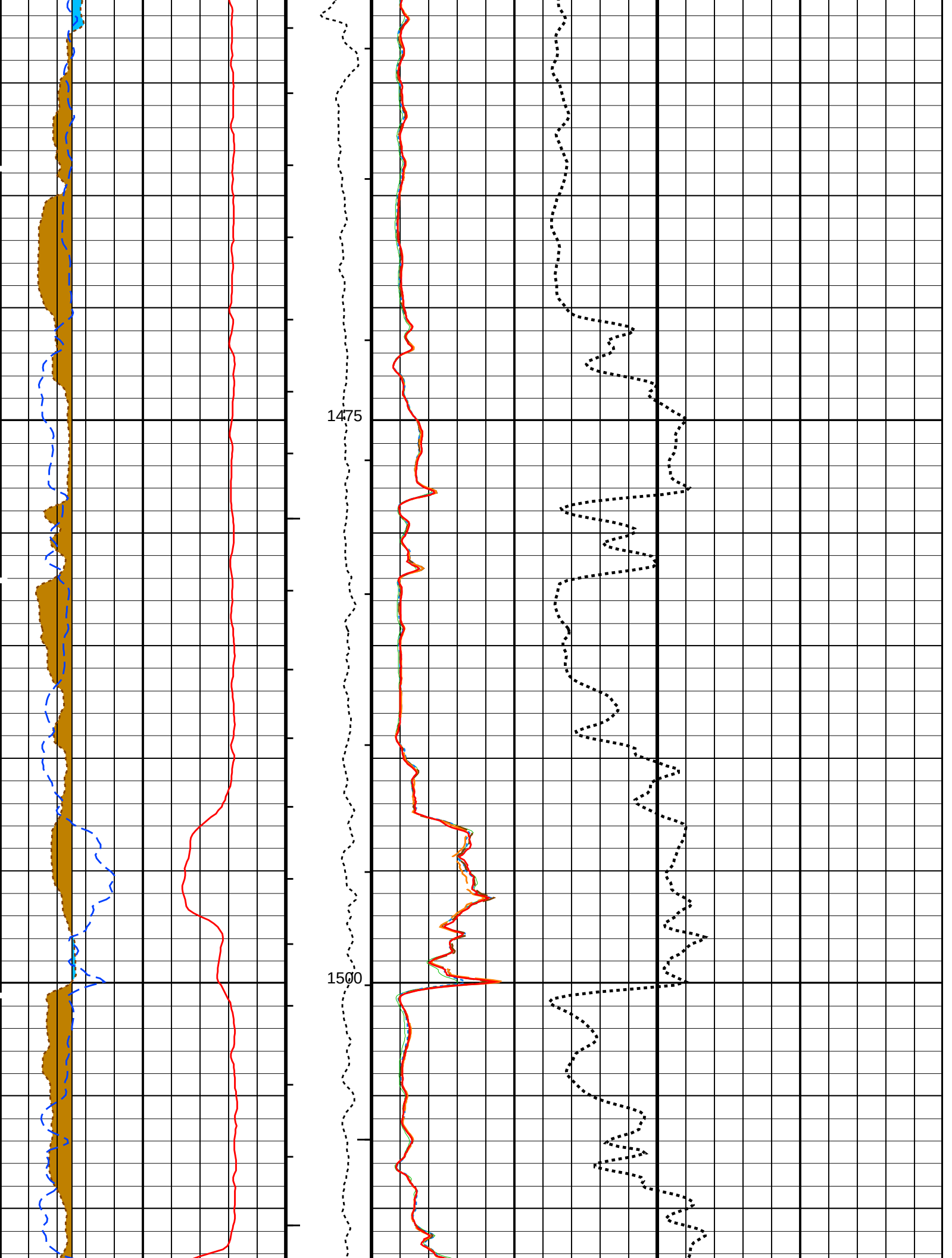
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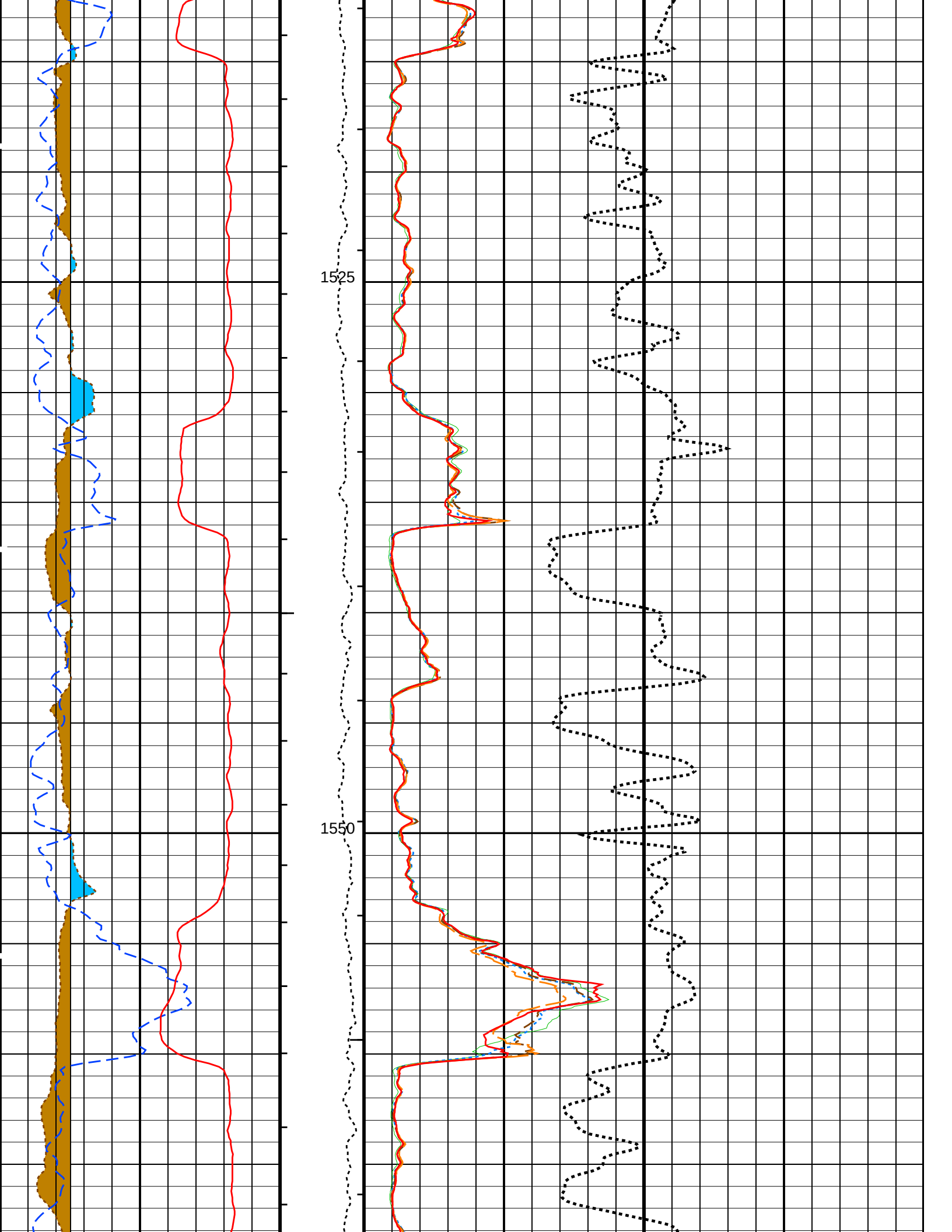
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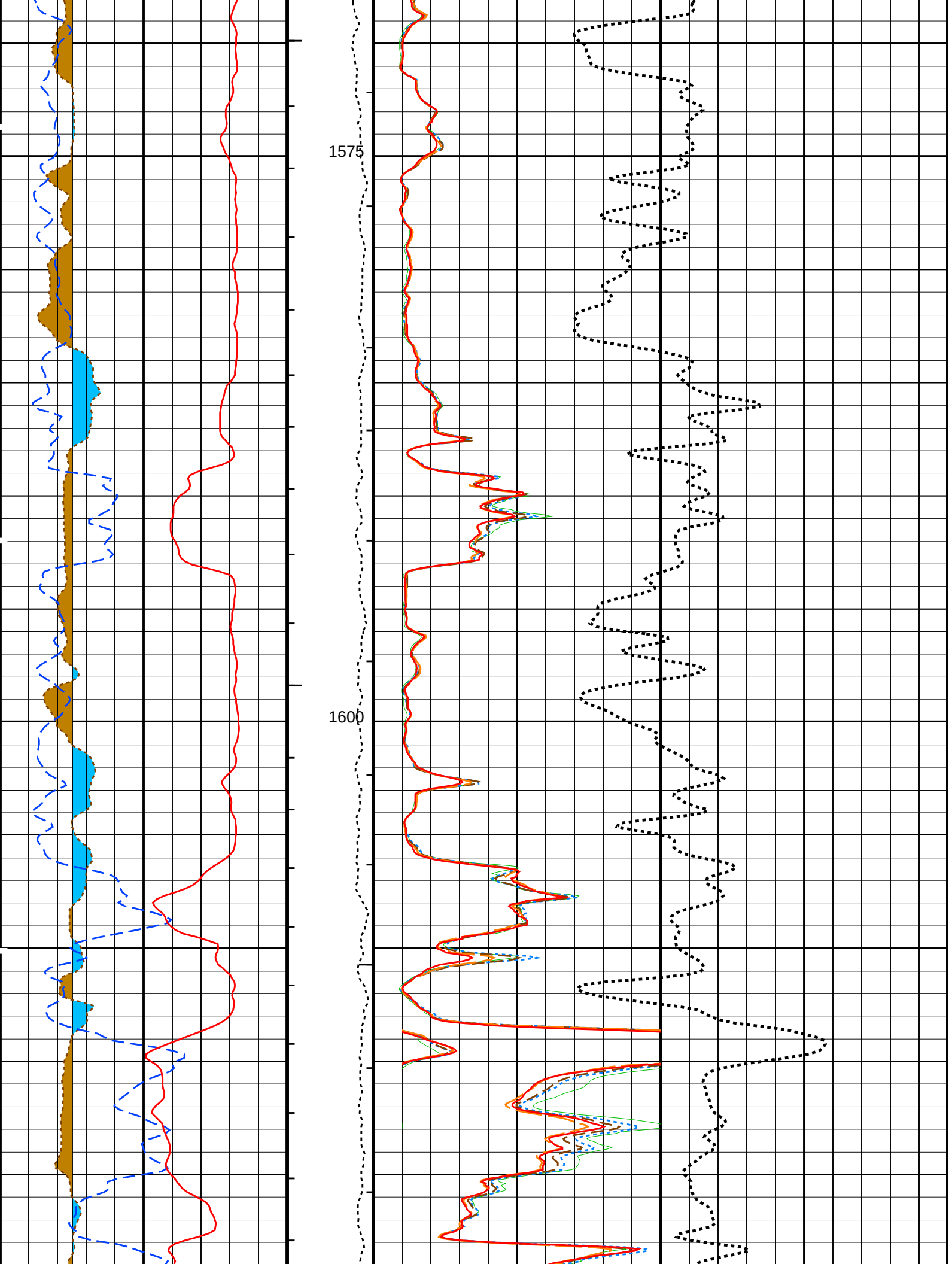
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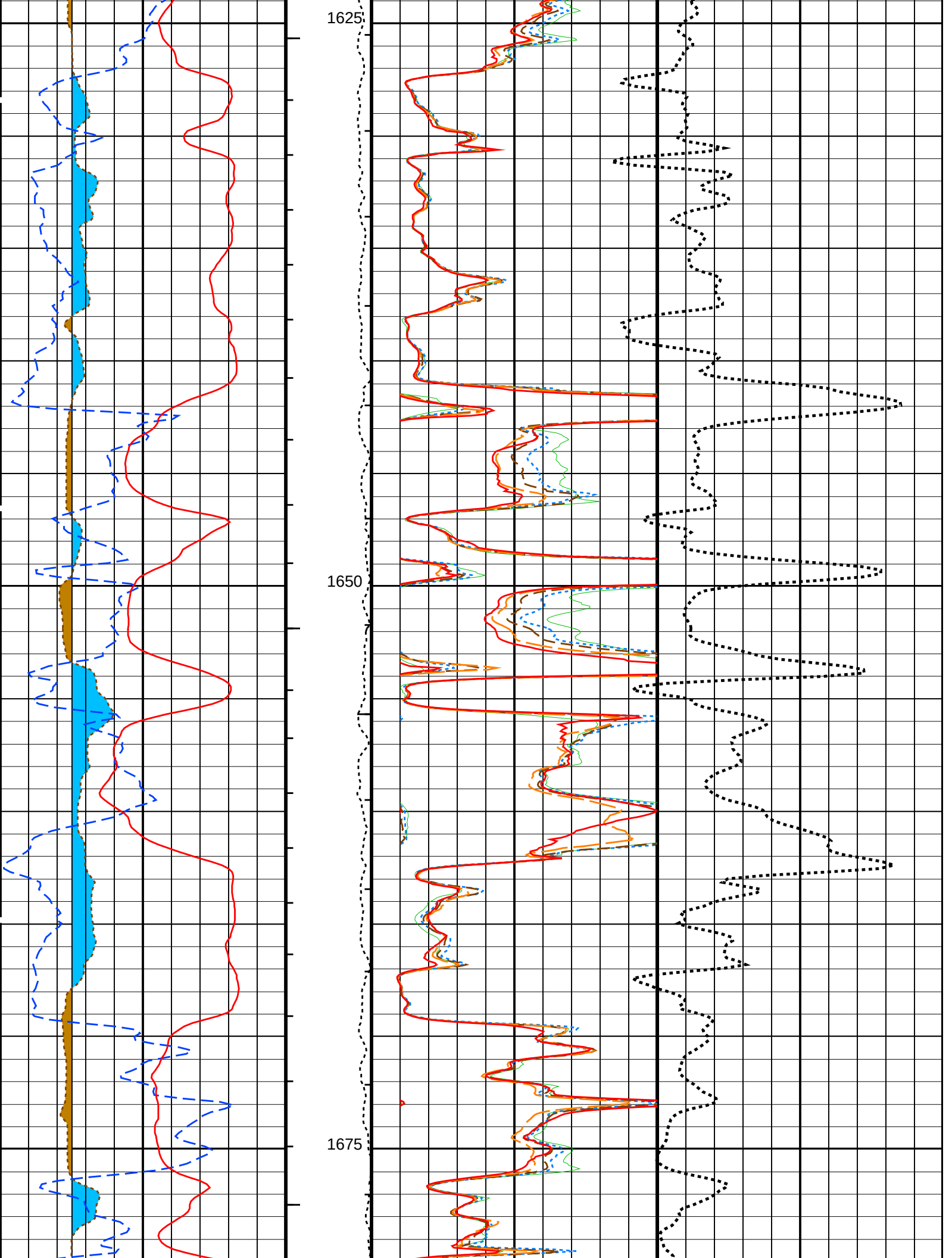
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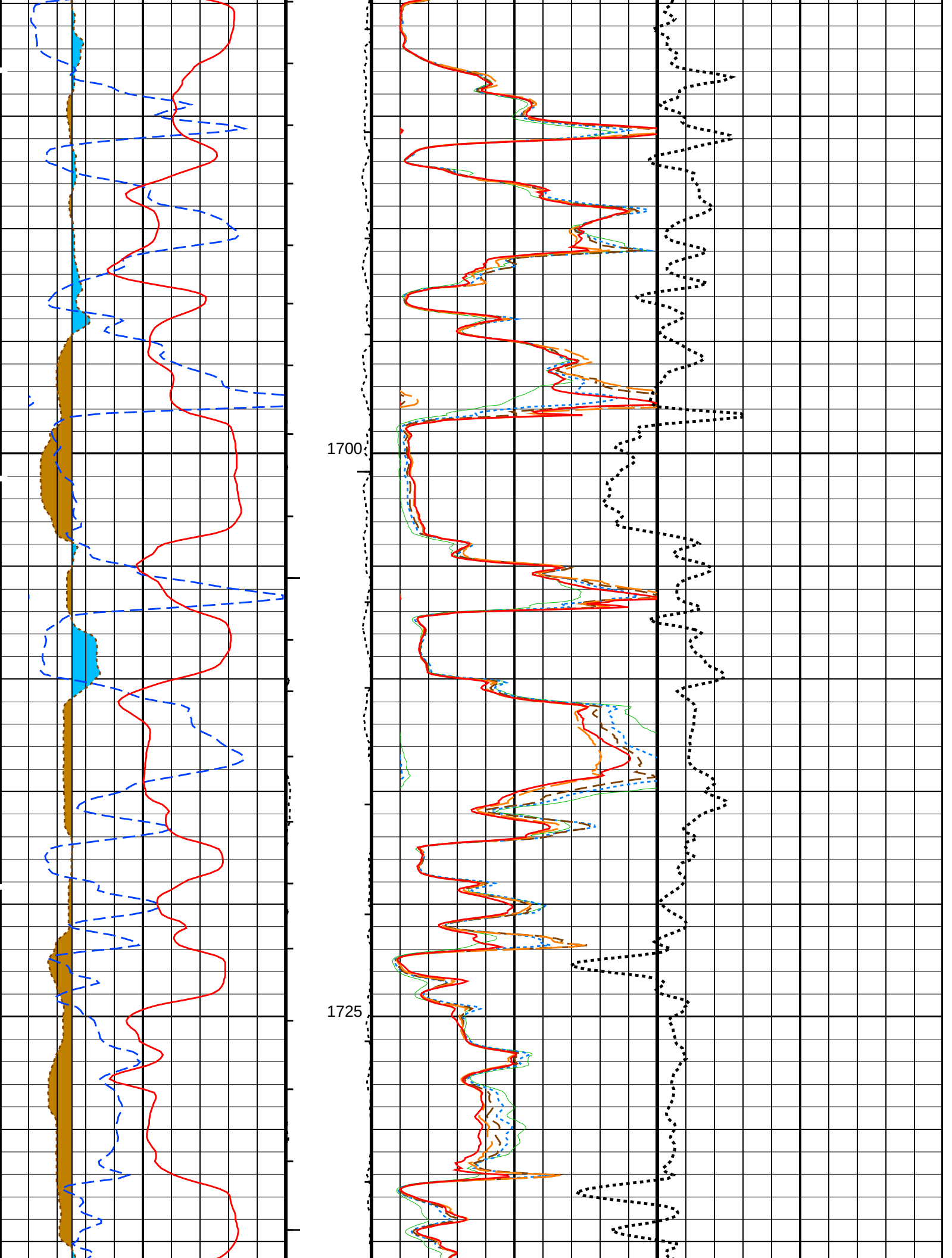
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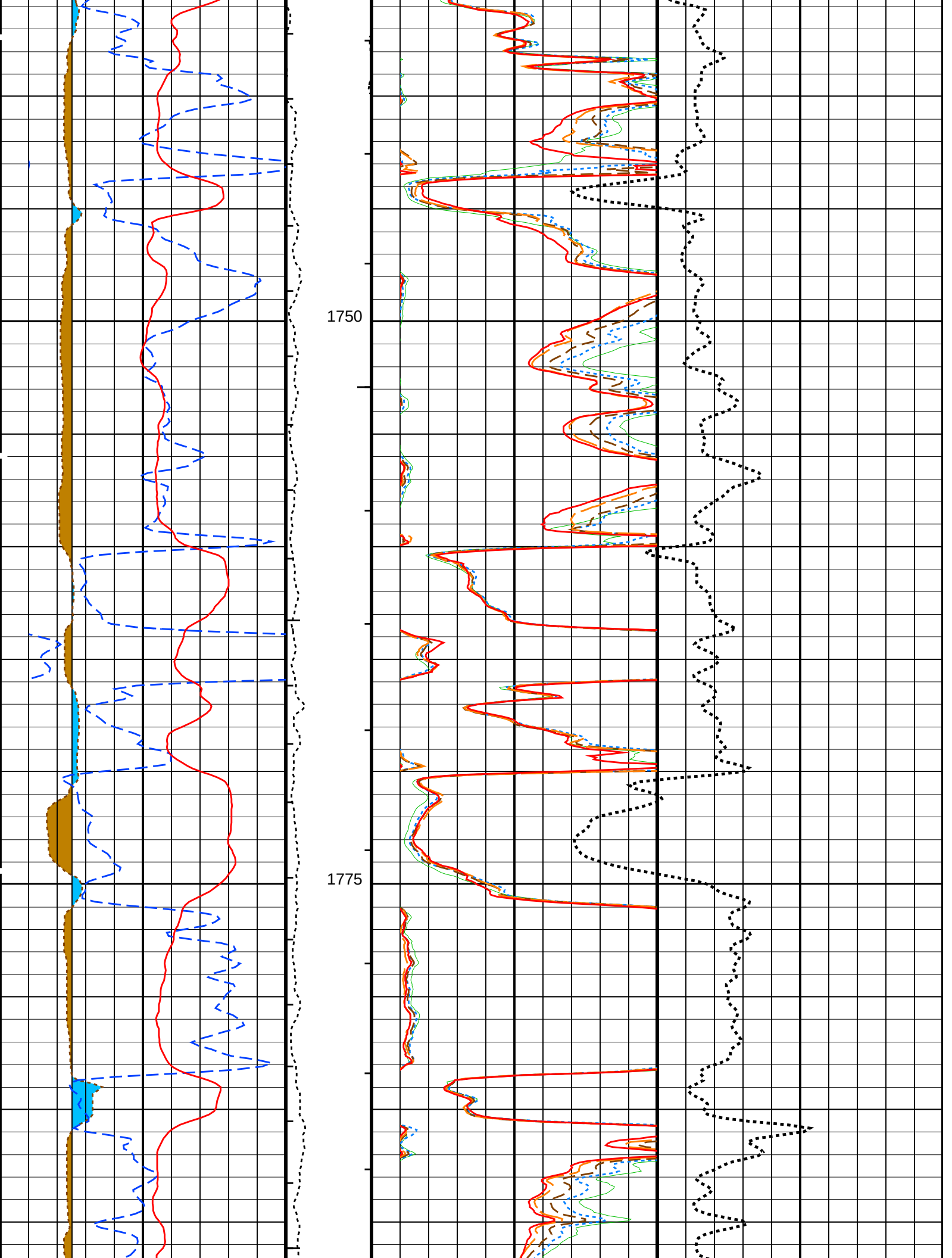
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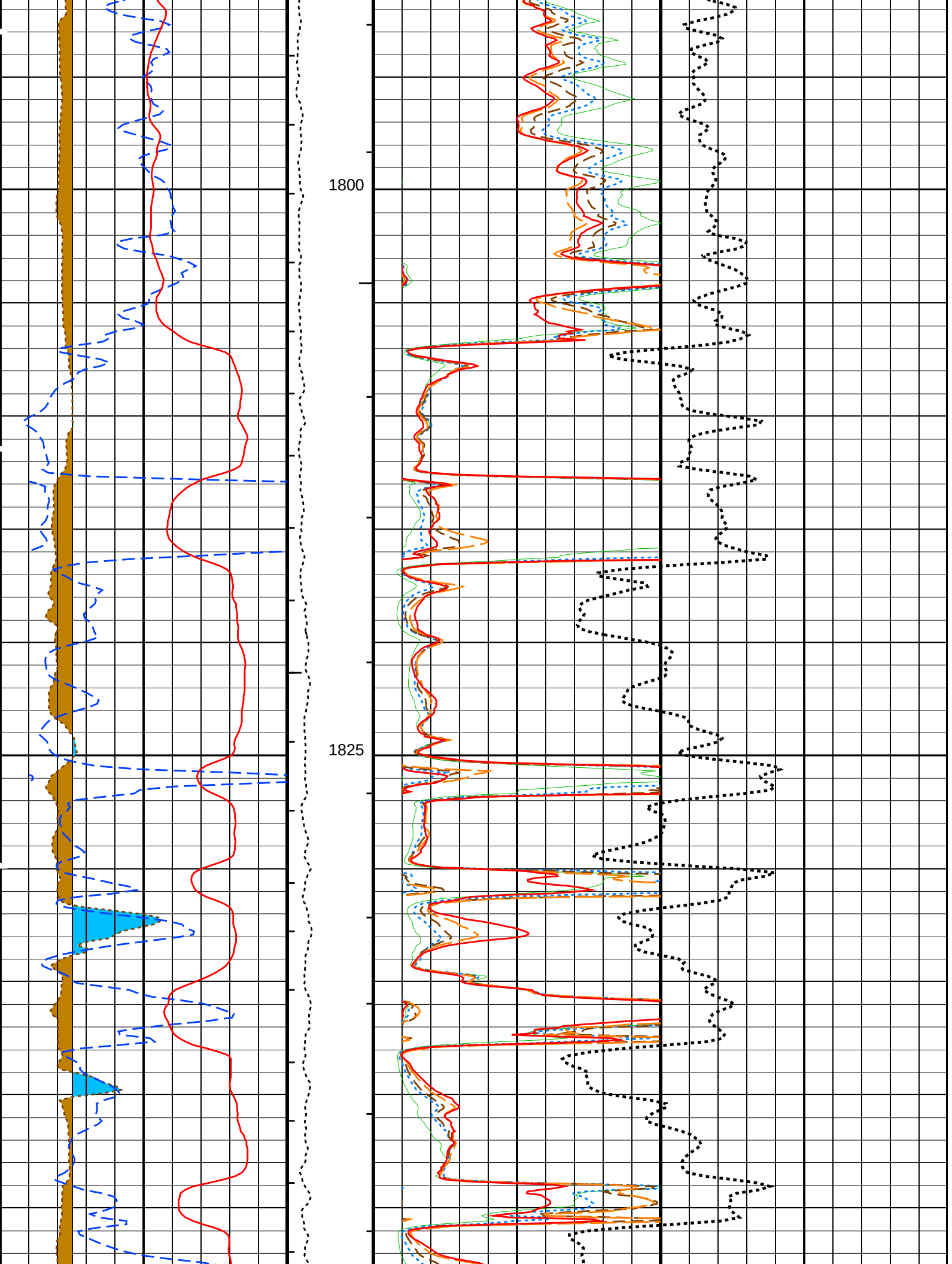
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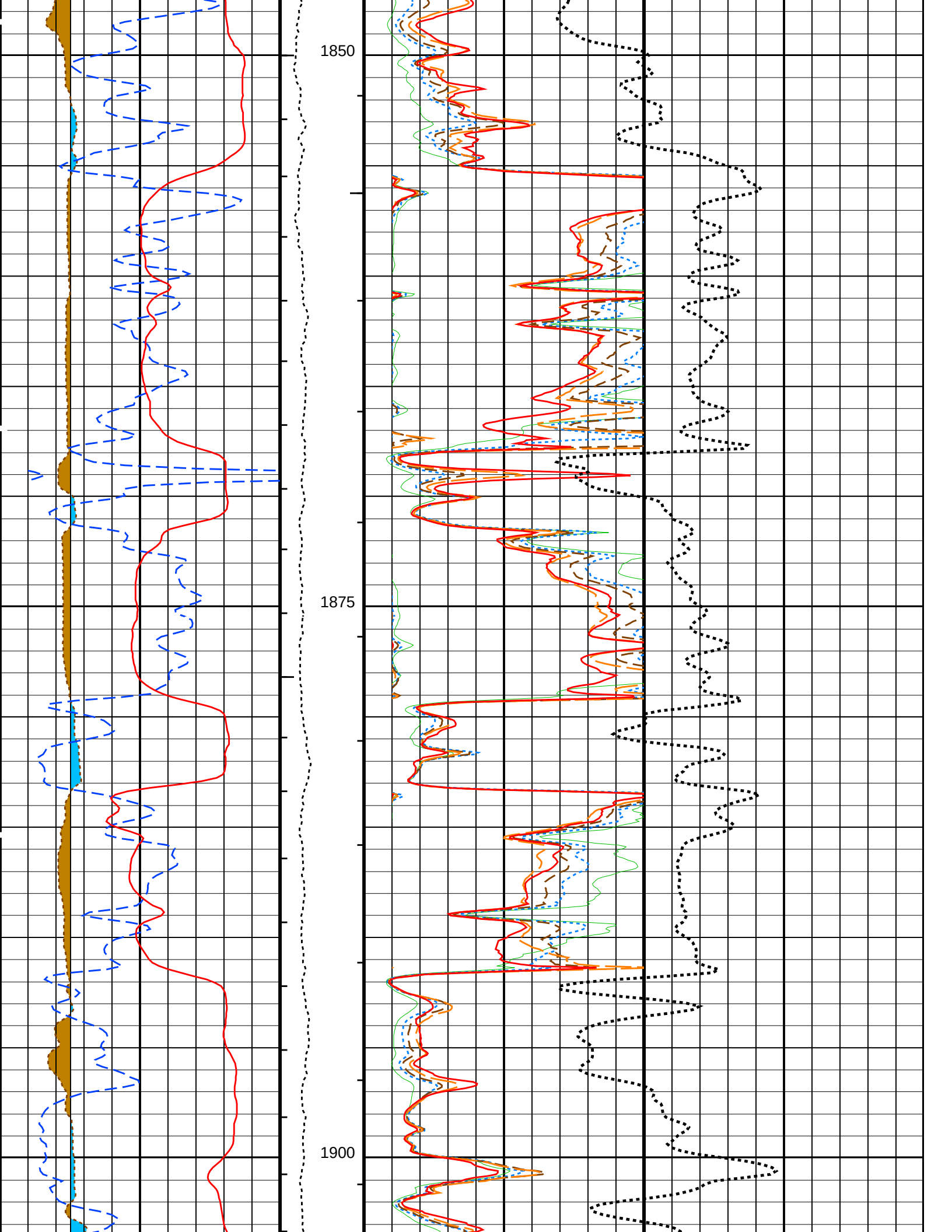
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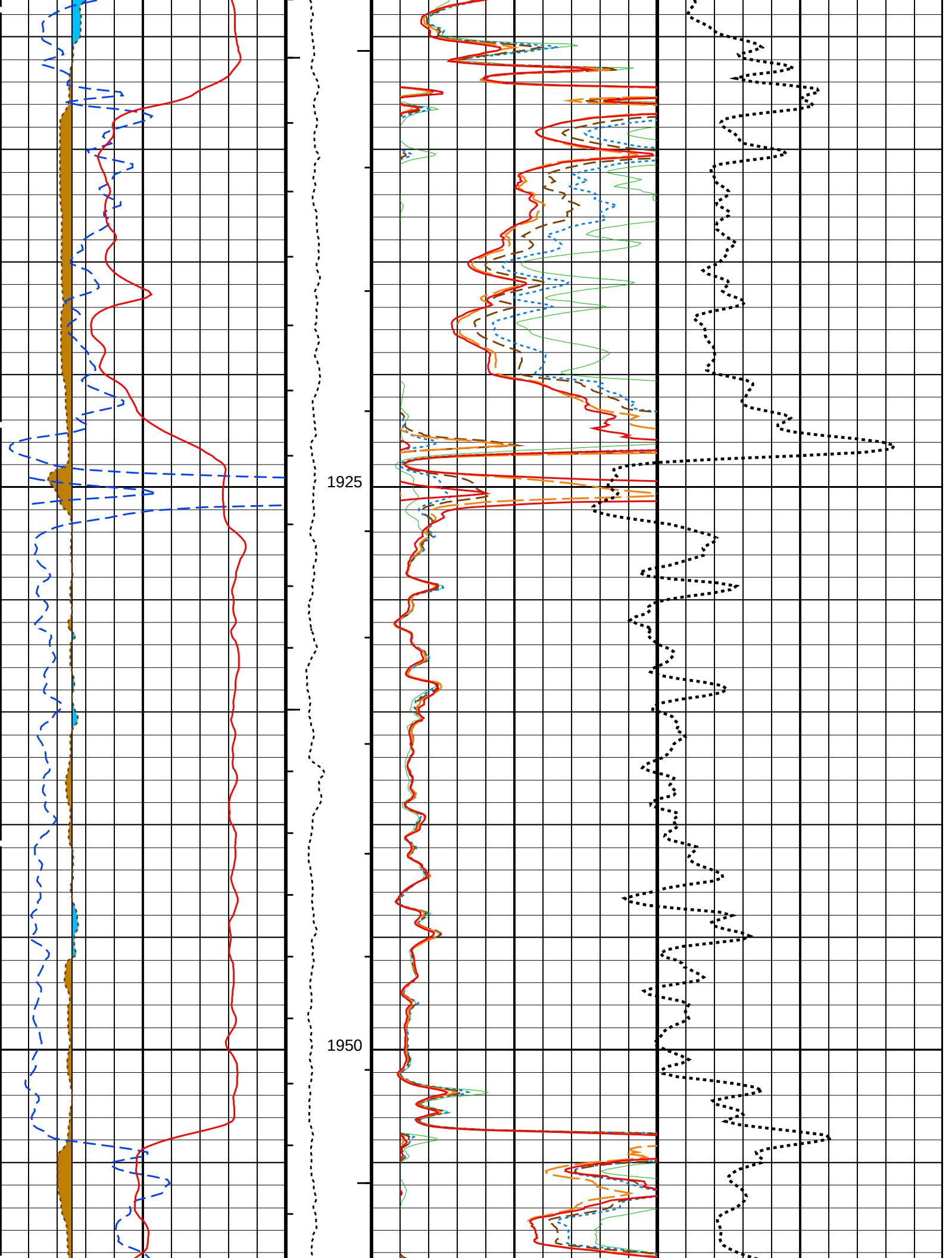
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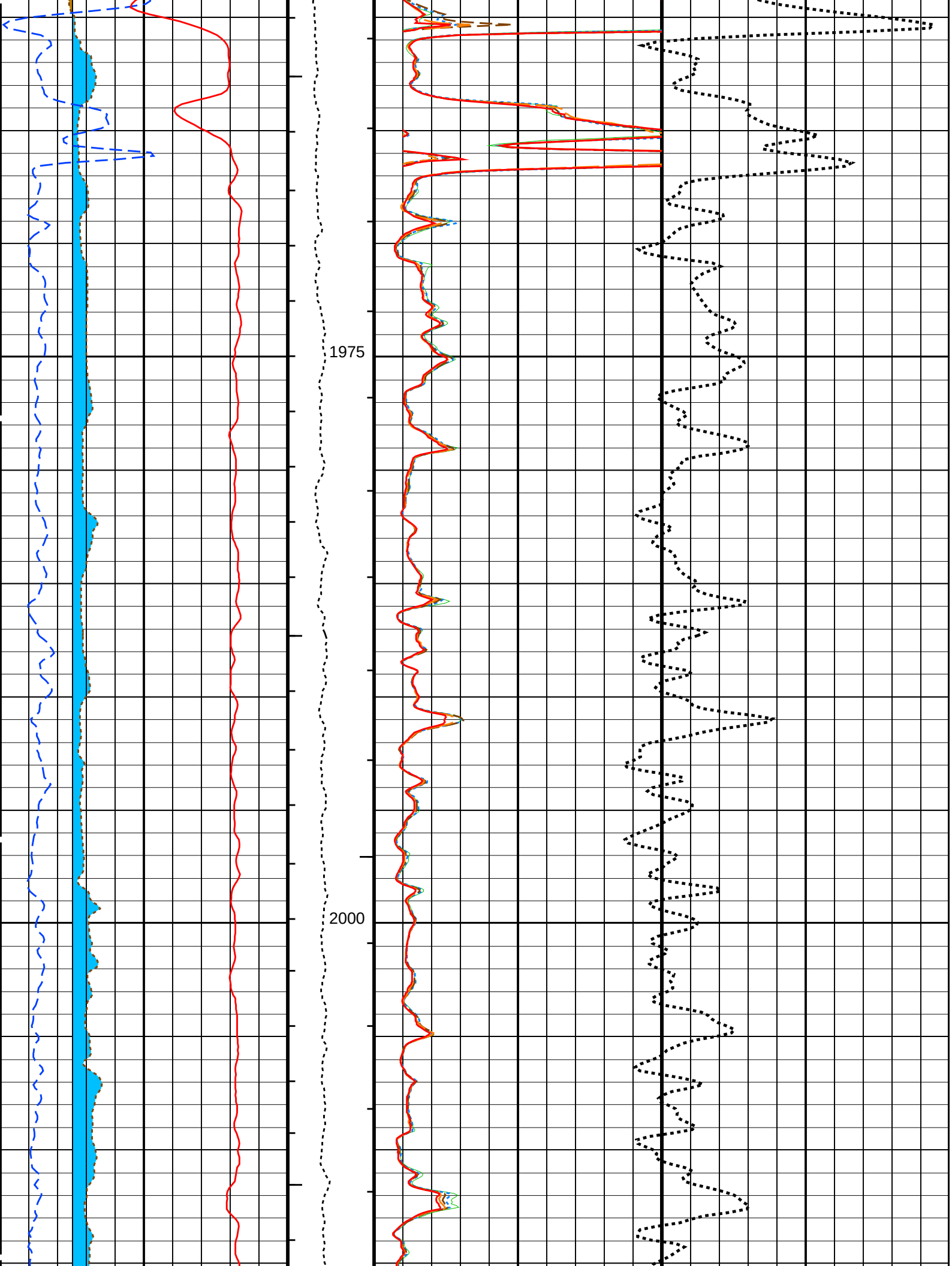
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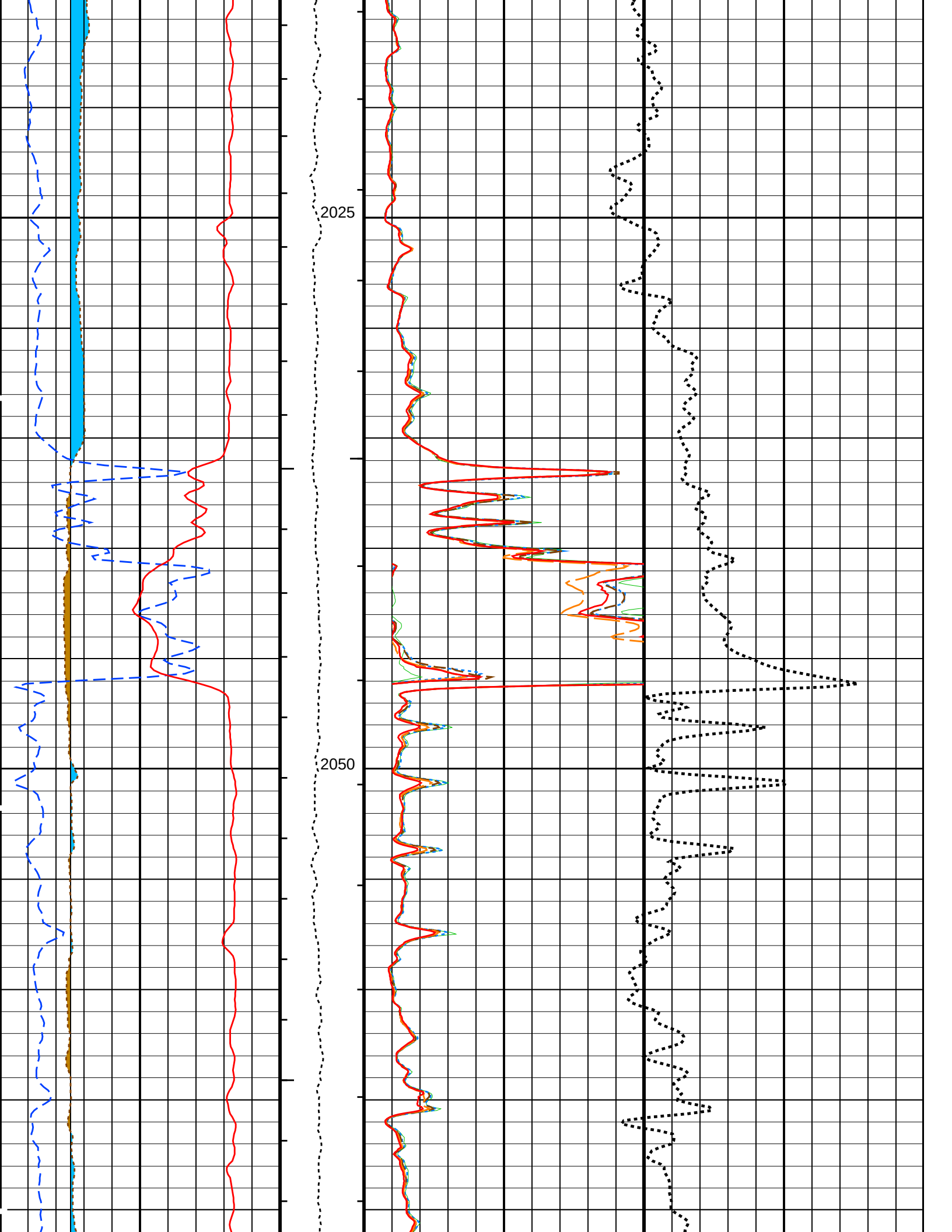
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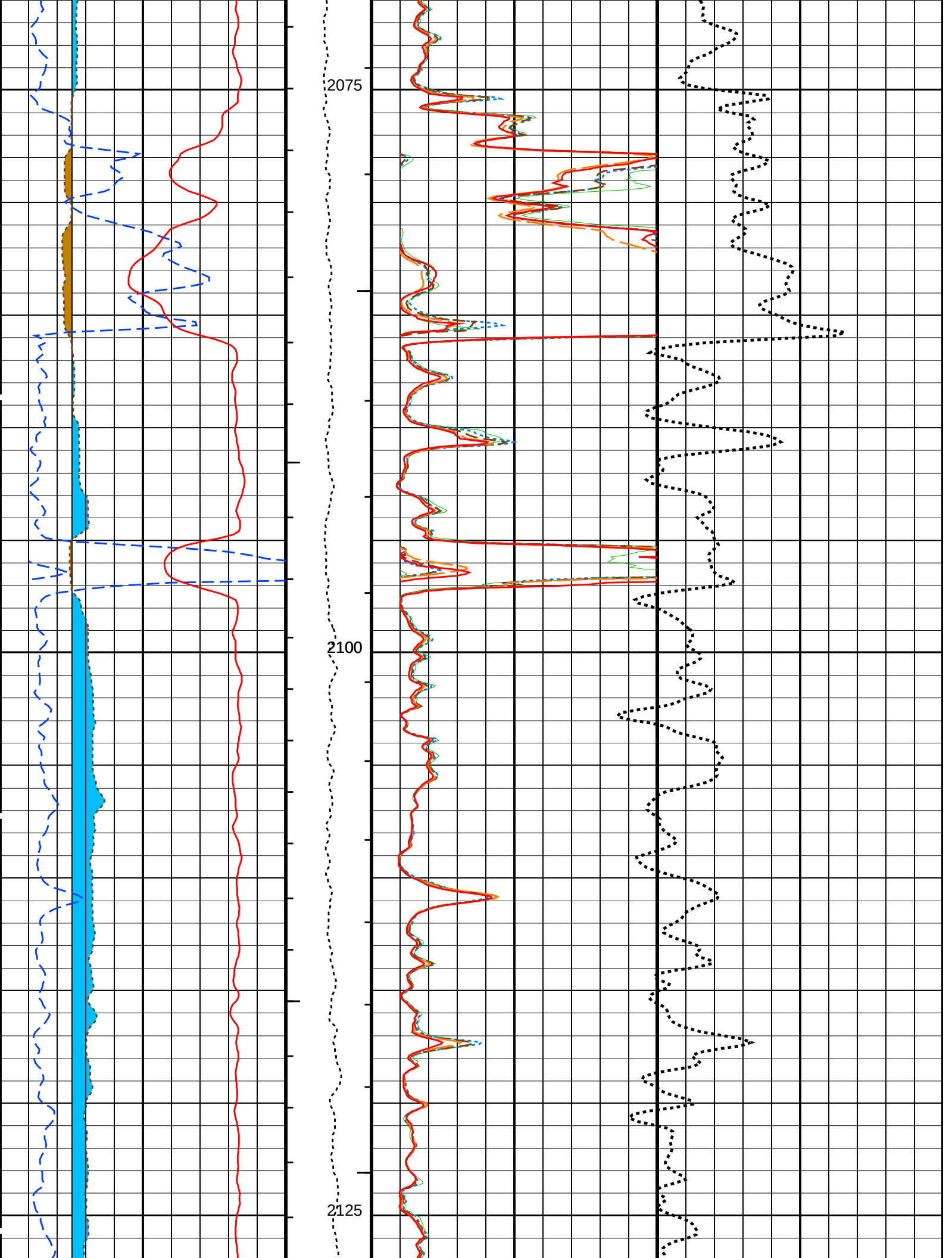
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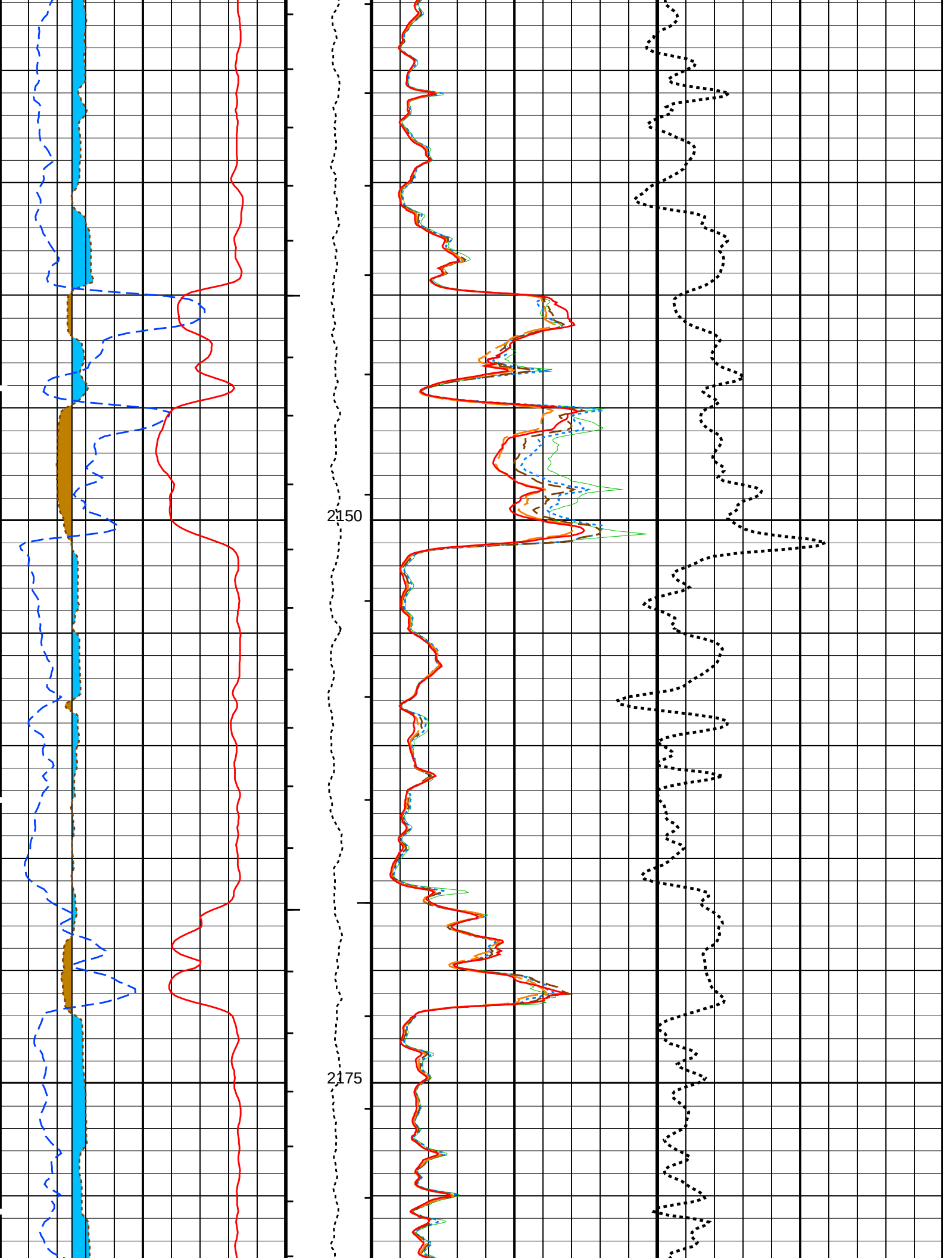
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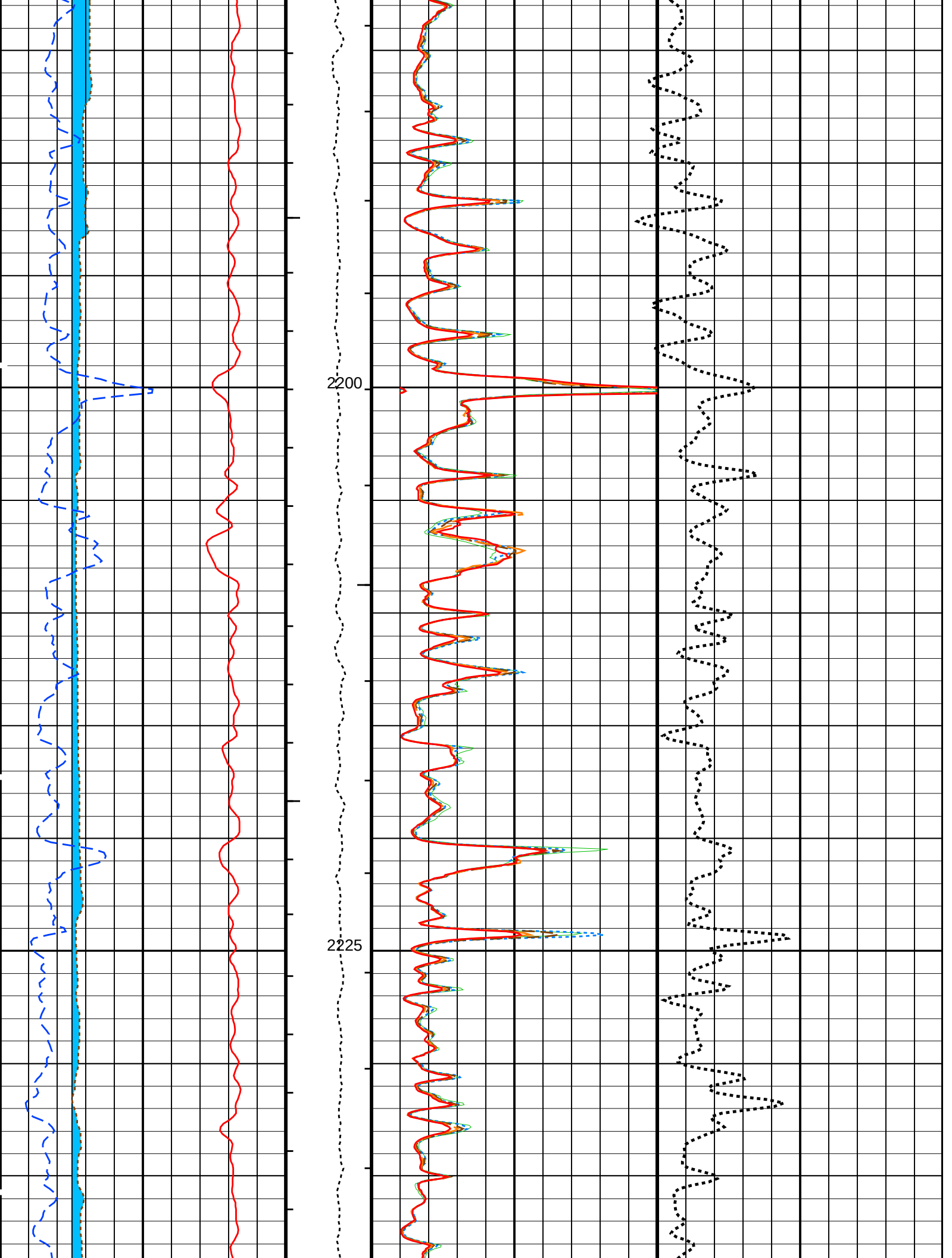
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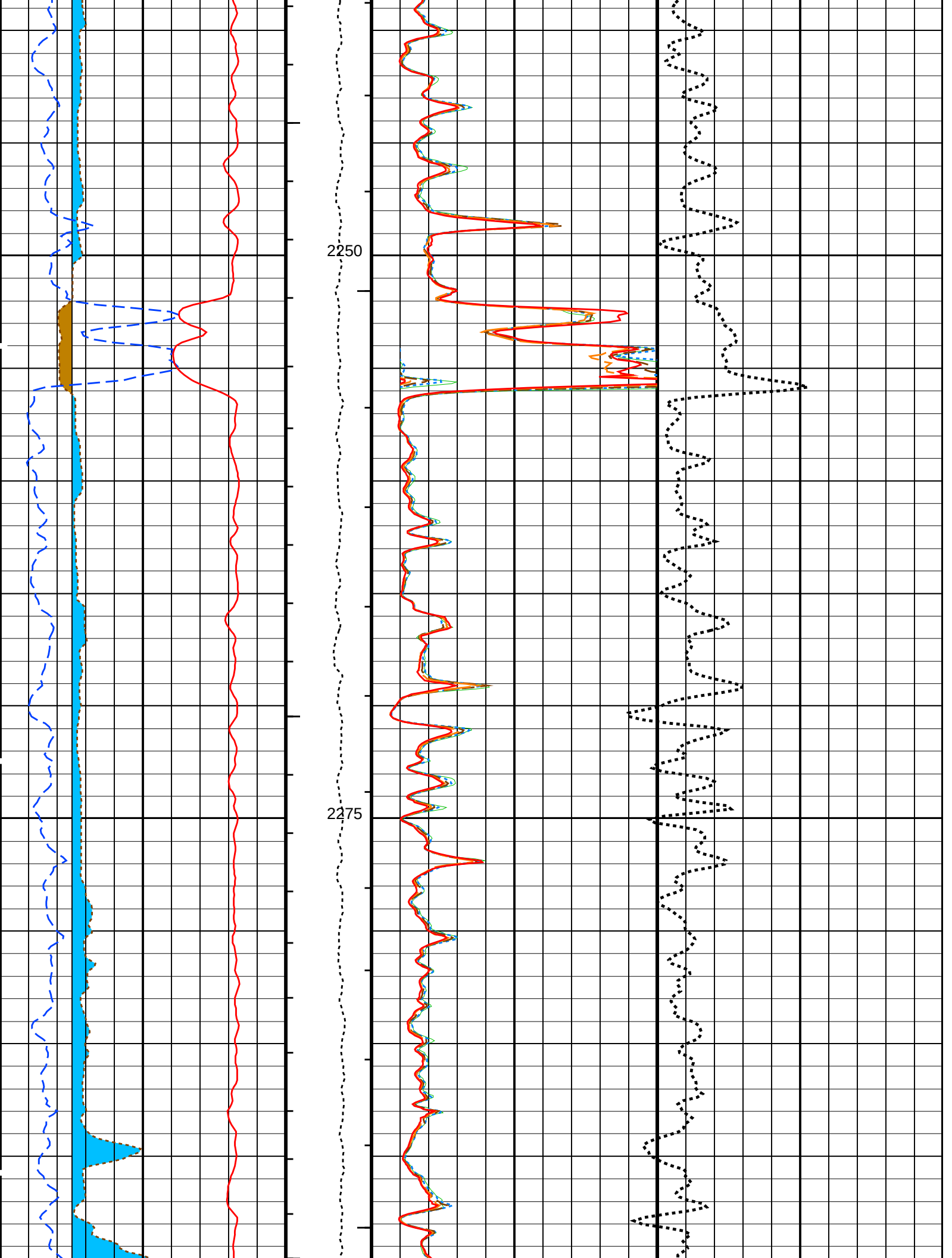
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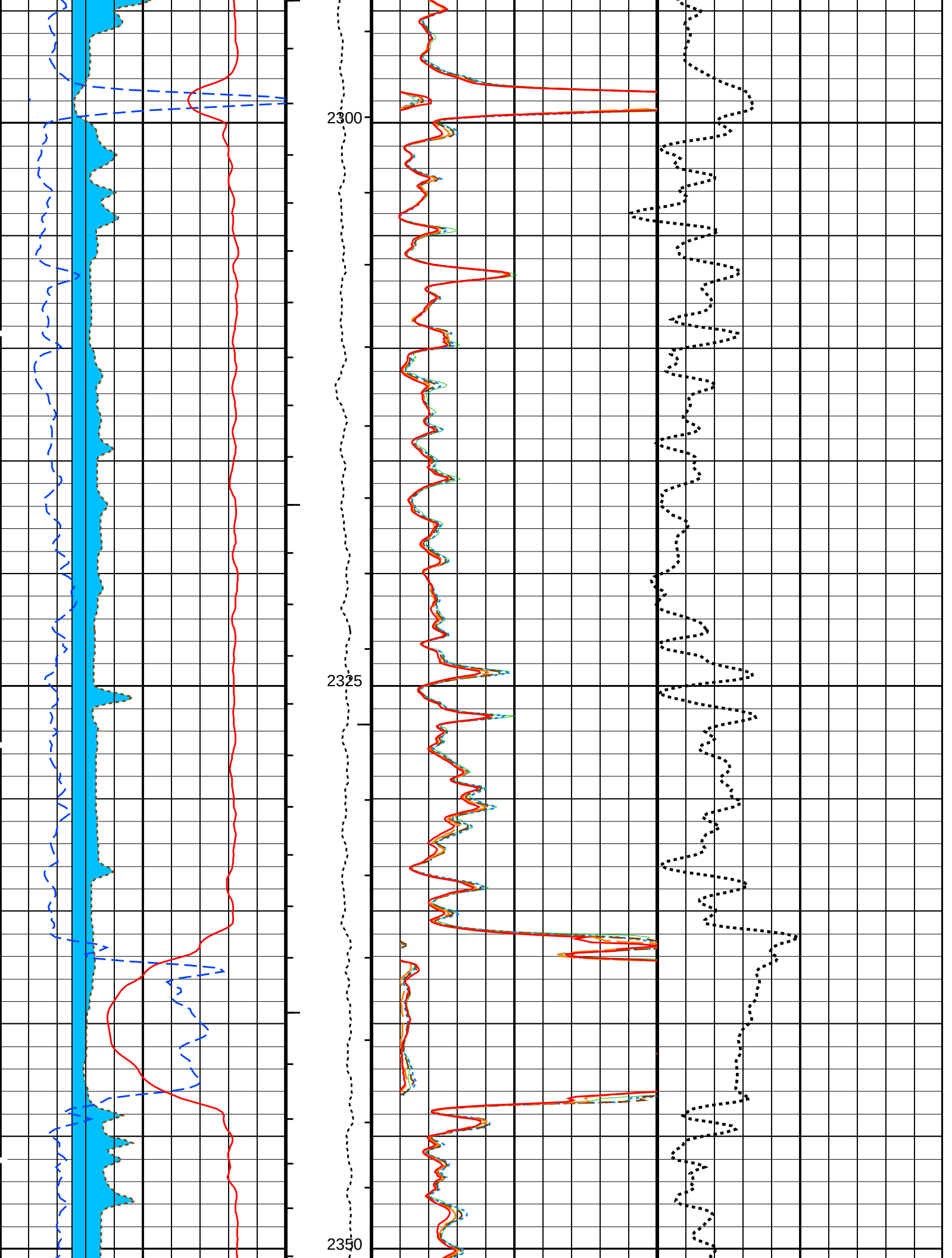
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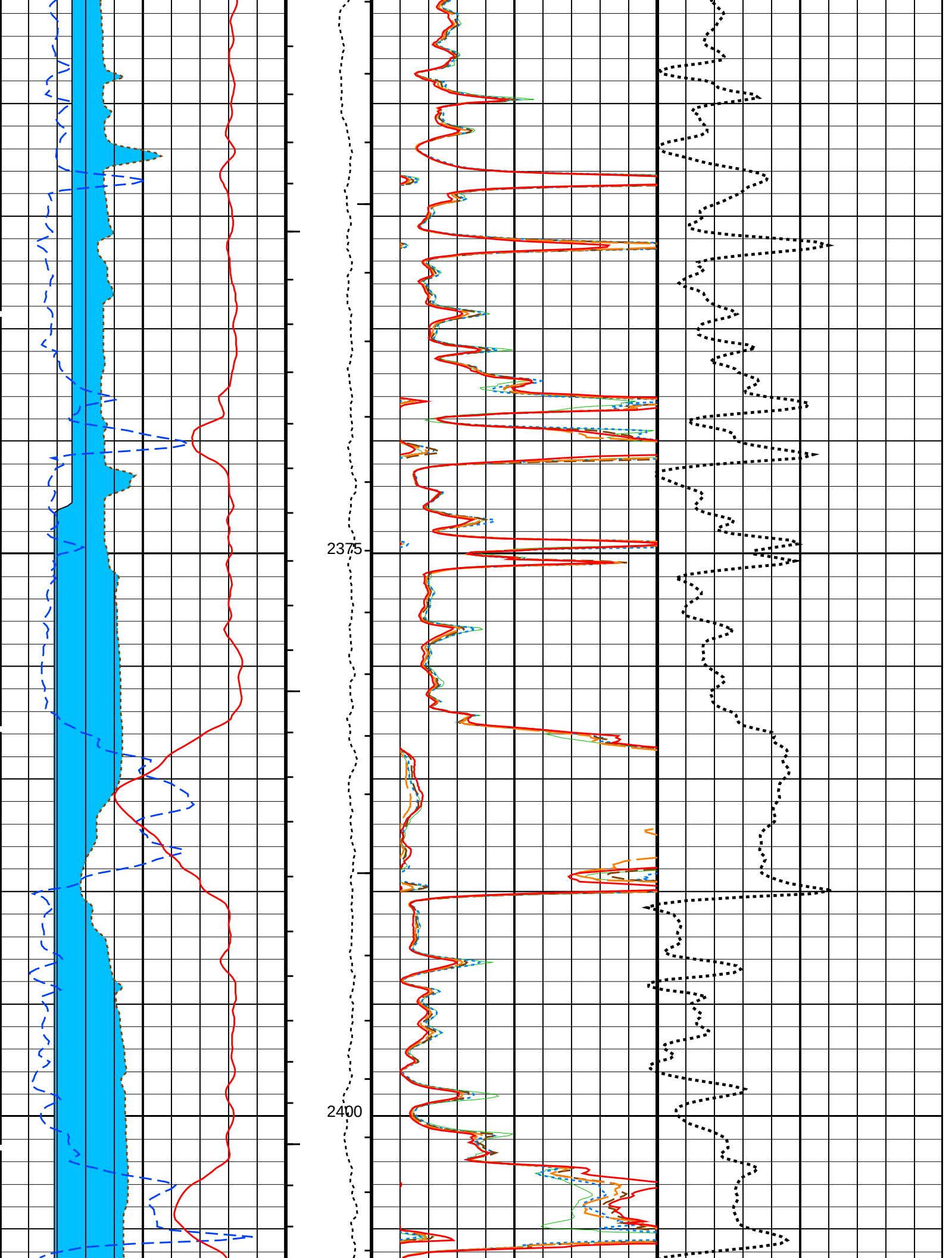
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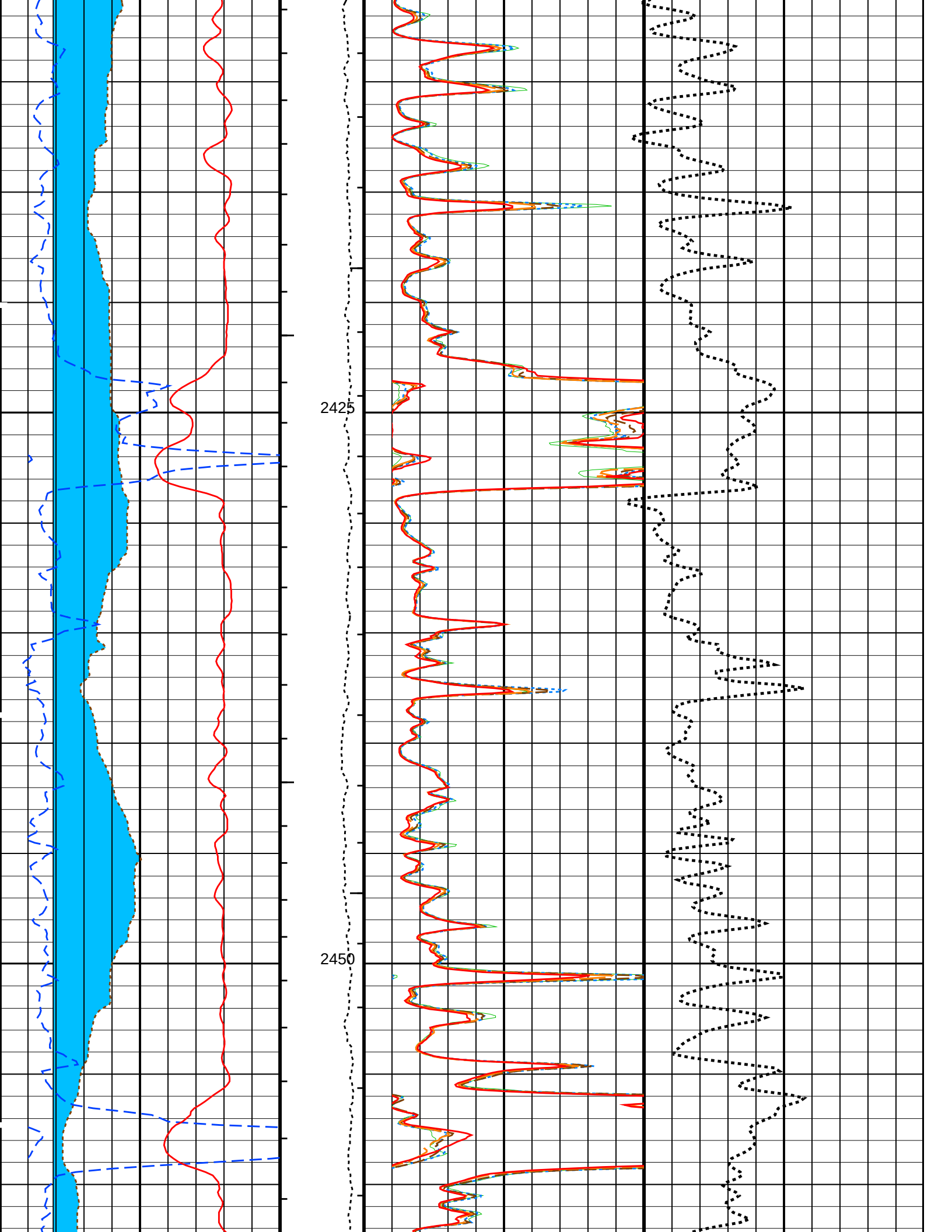
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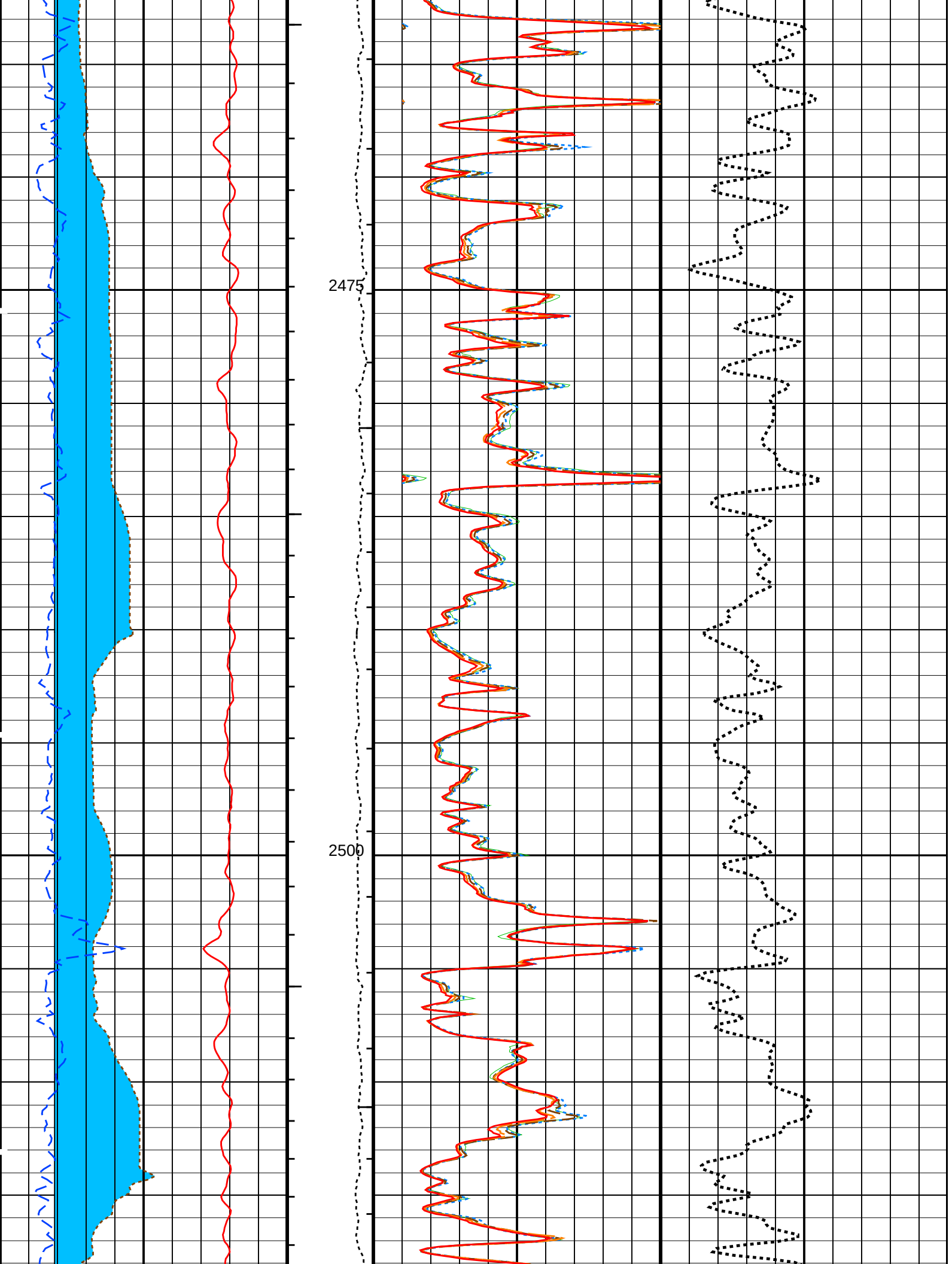
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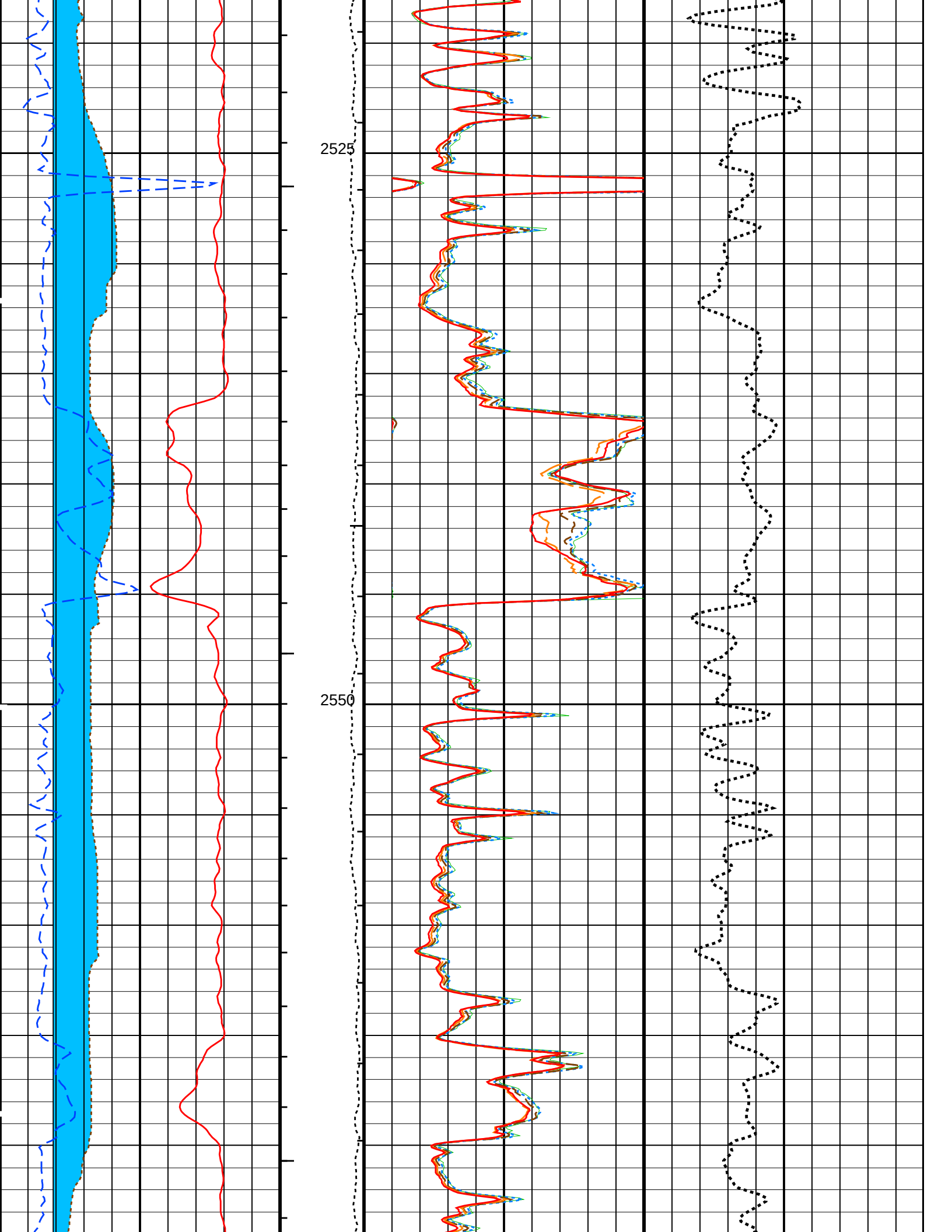
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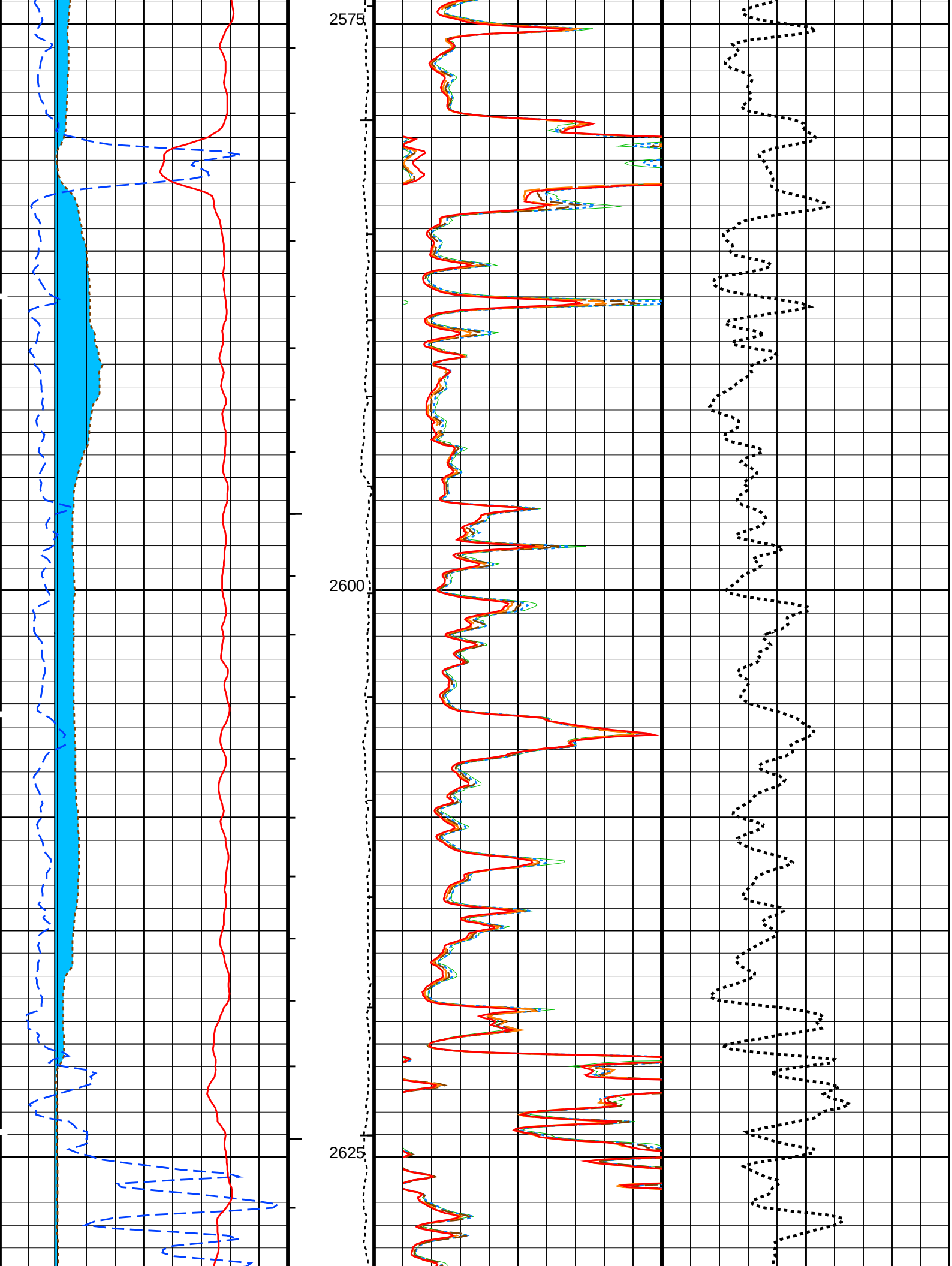
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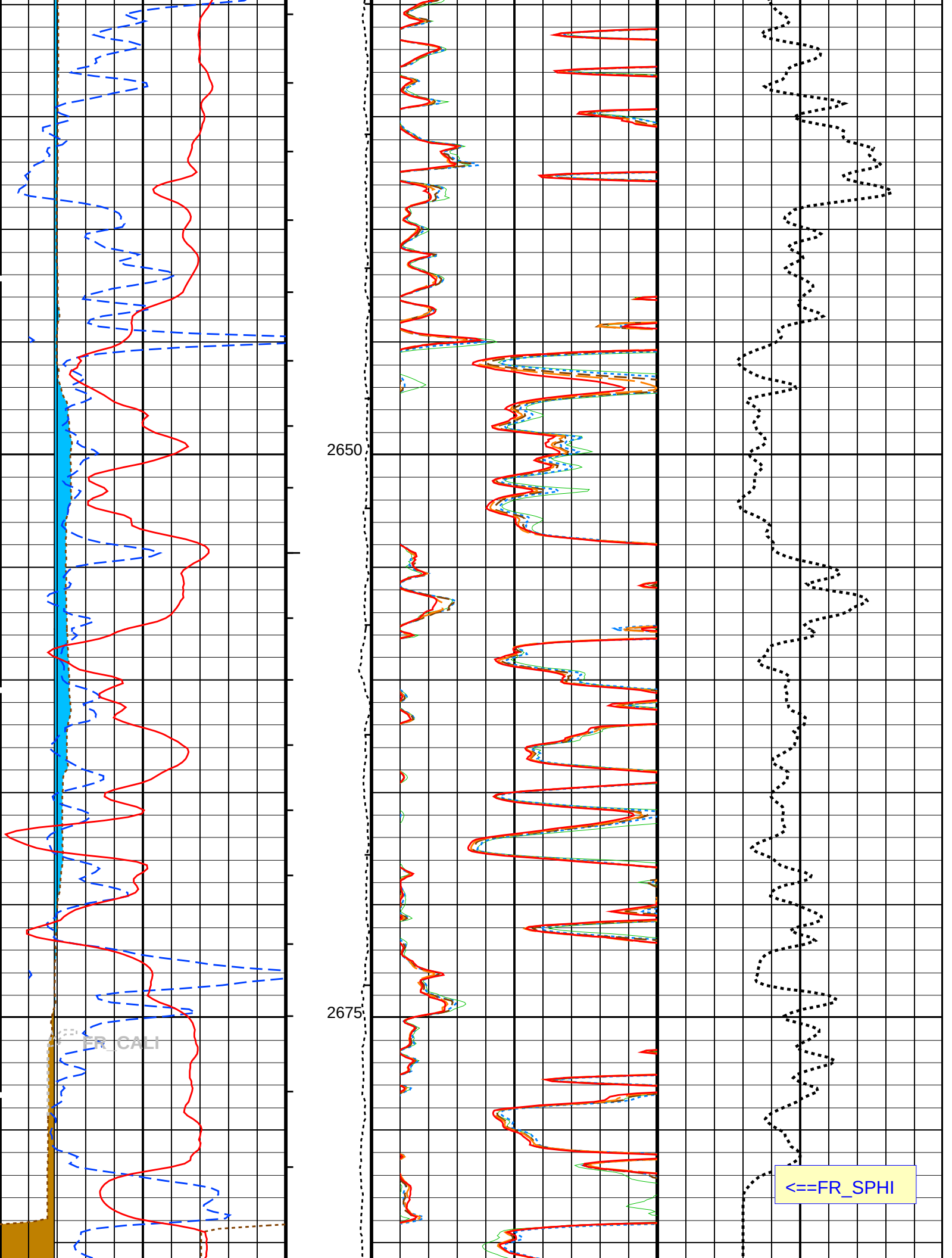
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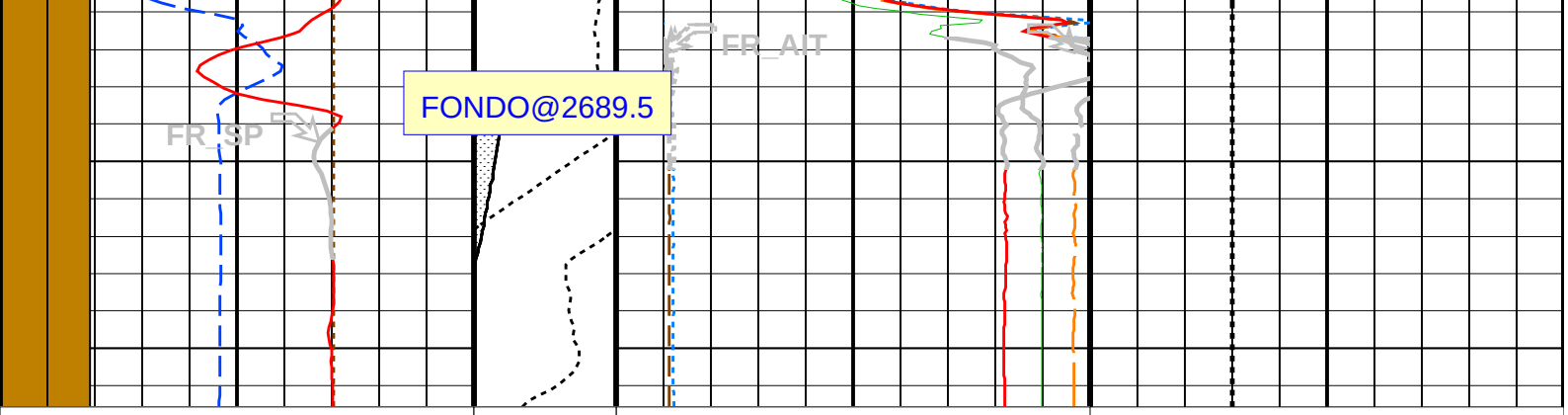


Bit Size (BS) 6 (IN) 16	Tension (TENS) (LBF) 0 1000	AIT−H 10 Inch Investigation (AHT10) 0 (OHMM) 10
Caliper (CALI) 6 (IN) 16	Stuck Stretch (STIT) 0 (M) 20	AIT−H 20 Inch Investigation (AHT20) 0 (OHMM) 10
RWA (RWA) 0 (OHMM) 1		AIT−H 30 Inch Investigation (AHT30) 0 (OHMM) 10
SP (SP) −80 (MV) 20		AIT−H 60 Inch Investigation (AHT60) 0 (OHMM) 10
CAVERNA From BS to CALI		AIT−H 90 Inch Investigation (AHT90) 0 (OHMM) 10
REVOQUE From CALI to BS		Sonic Porosity (SPHI) 0.6 (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	
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	880	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	108	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHCSED	Array Induction Casing Shoe Estimated Depth	−50000	M
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHRFV	Array Induction Radial Profiling Code Version Number	700	
AHRPV	Array Induction Radial Parametrization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHT	Bottom Hole Temperature (used in calculations)	96	DEGC
BS	Bit Size	8.500	IN
CDTS	C−Delta−T Shale	100	US/F
DFD	Drilling Fluid Density	1.16	G/C3
DO	Depth Offset for Playback	4.5	M
DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	53	US/F
FCD	Future Casing (Outer) Diameter	5.5	IN
FEXP	Form Factor Exponent	2.15	
FNUM	Form Factor Numerator	0.62	
FPHI	Form Factor Porosity Source	SPHI	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018237	DC/M

GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	CALI	
LBFR	Trigger for MAXIS First Reading Label	TDL	
MST	Mud Sample Temperature	20.00	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.8913	OHMM
RTCO	RTCO − Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPDR	SP Drift	0.01	MV/M
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPNV	SP Next Value	−10	MV
SPSO	Sonic Porosity Source	DT	
STKT	STI Stuck Threshold	0.762	M
TD	Total Depth	2689.5	M
TDD	Total Depth − Driller	2684.00	M
TDL	Total Depth − Logger	2689.50	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA_PORO_I Vertical Scale: 1:200 Graphics File Created: 27−Dec−2002 03:25

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_031LUP	FN:30	PRODUCER	27−Dec−2002 00:59	2692.0 M	363.3 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_039PUP	FN:32	PRODUCER	27−Dec−2002 03:25		

Schlumberger

TRAMO REPETIDO

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_030LUP	FN:29	PRODUCER	27−Dec−2002 10:36	2693.8 M	2580.9 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_054PUP	FN:12	PRODUCER	27−Dec−2002 15:42	2698.1 M	2596.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 3.02 M3

Cement Volume = 1.58 M3 (assuming 5.50 IN casing O.D.)

Computed from 2689.4 M to 2596.0 M using data channel(s) CALI

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	7.875 IN	7.875 IN	2698.1 15:42:53

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

REVOQUE
From CALI to BS

CAVERNA
From BS to CALI

SP (SP)
−80 (MV) 20

RWA (RWA)
0 (OHMM) 1

Caliper (CALI)
6 (IN) 16

Bit Size (BS)
6 (IN) 16

Stuck Stretch (STIT)
0 (M) 20

Tension (TENS)
(LBF)
0 1000

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

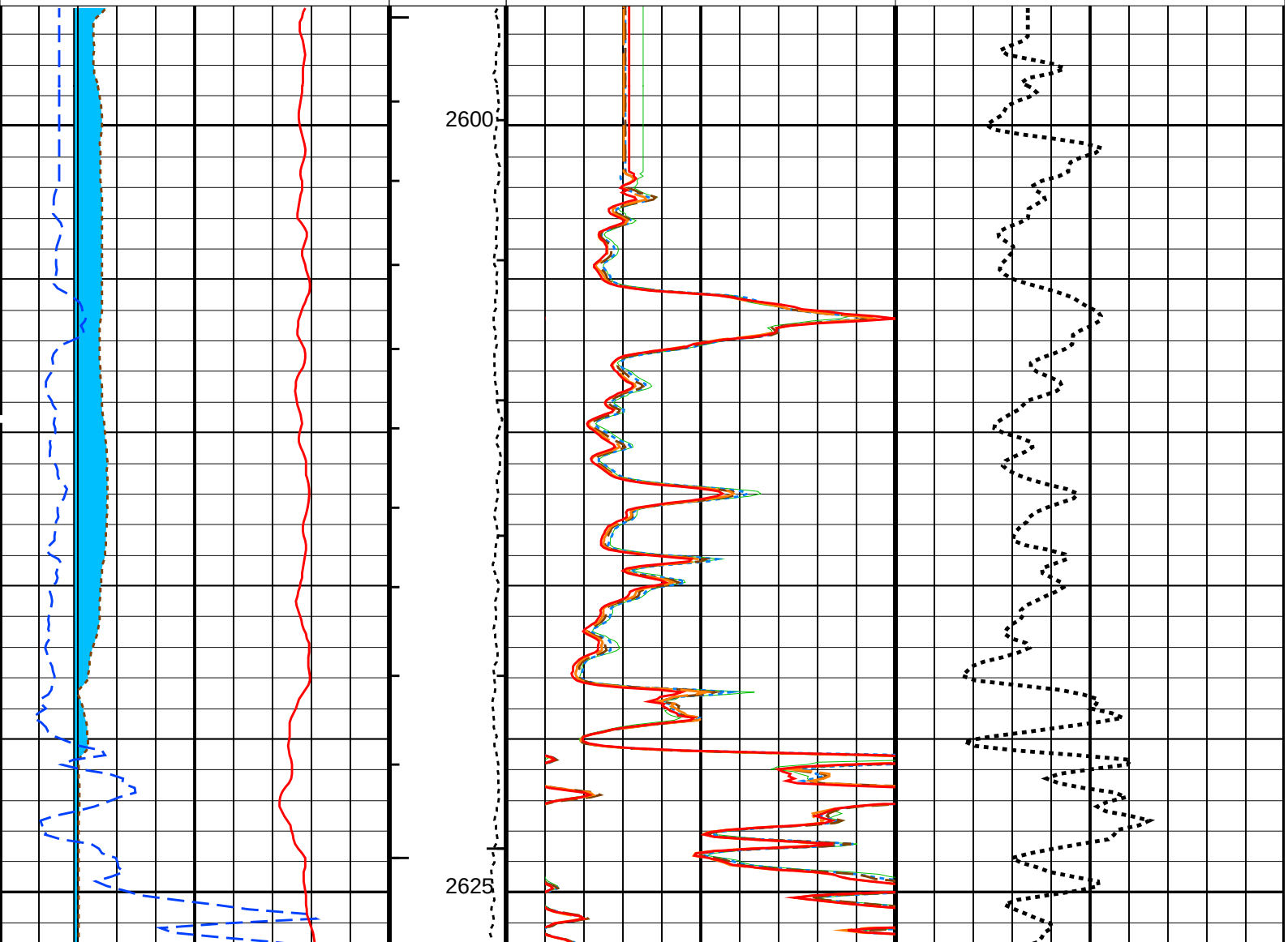
AIT−H 90 Inch Investigation (AHT90)
0 (OHMM) 10

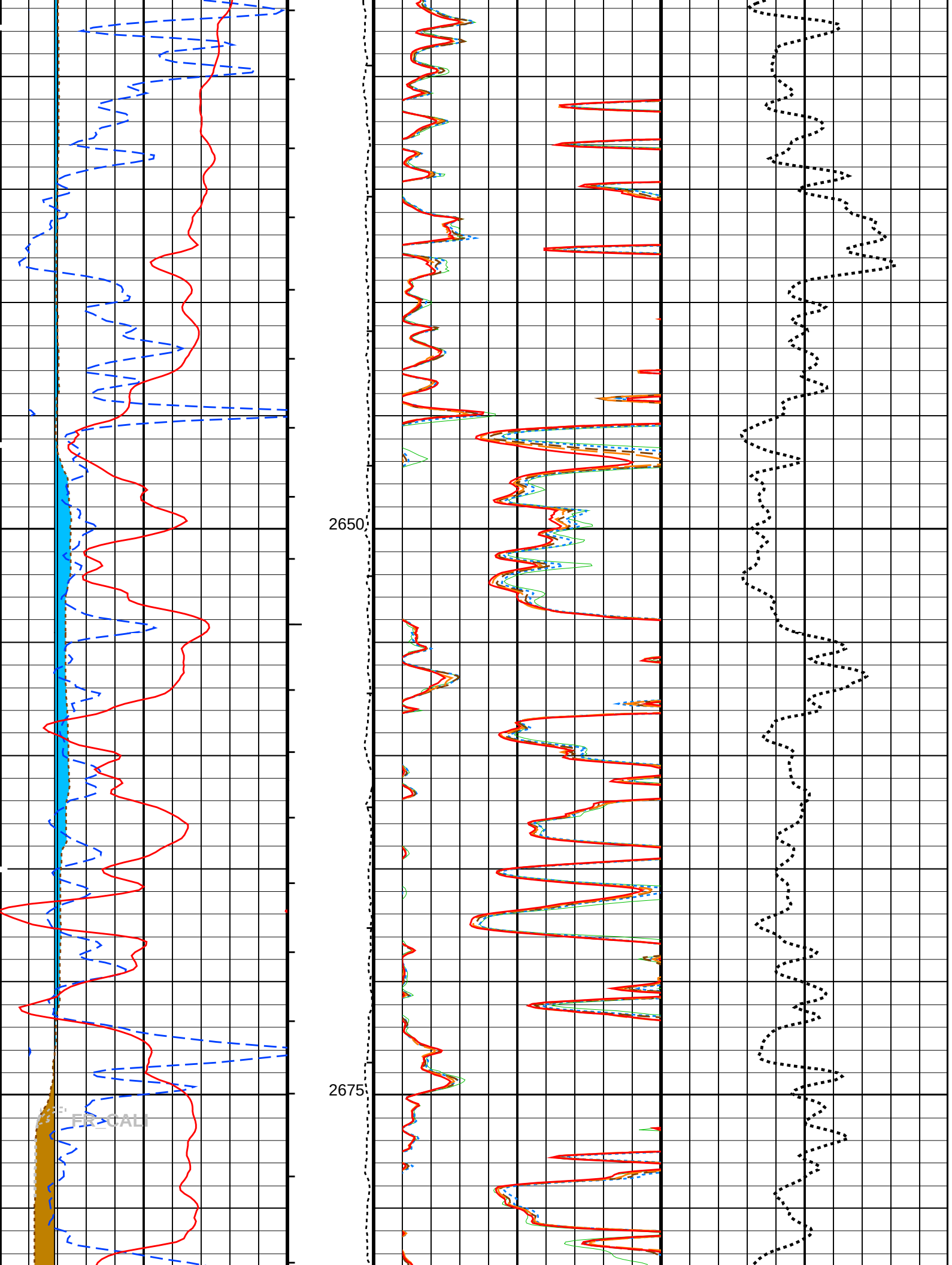
AIT−H 60 Inch Investigation (AHT60)
0 (OHMM) 10

AIT−H 30 Inch Investigation (AHT30)
0 (OHMM) 10

AIT−H 20 Inch Investigation (AHT20)
0 (OHMM) 10

AIT−H 10 Inch Investigation (AHT10)
0 (OHMM) 10

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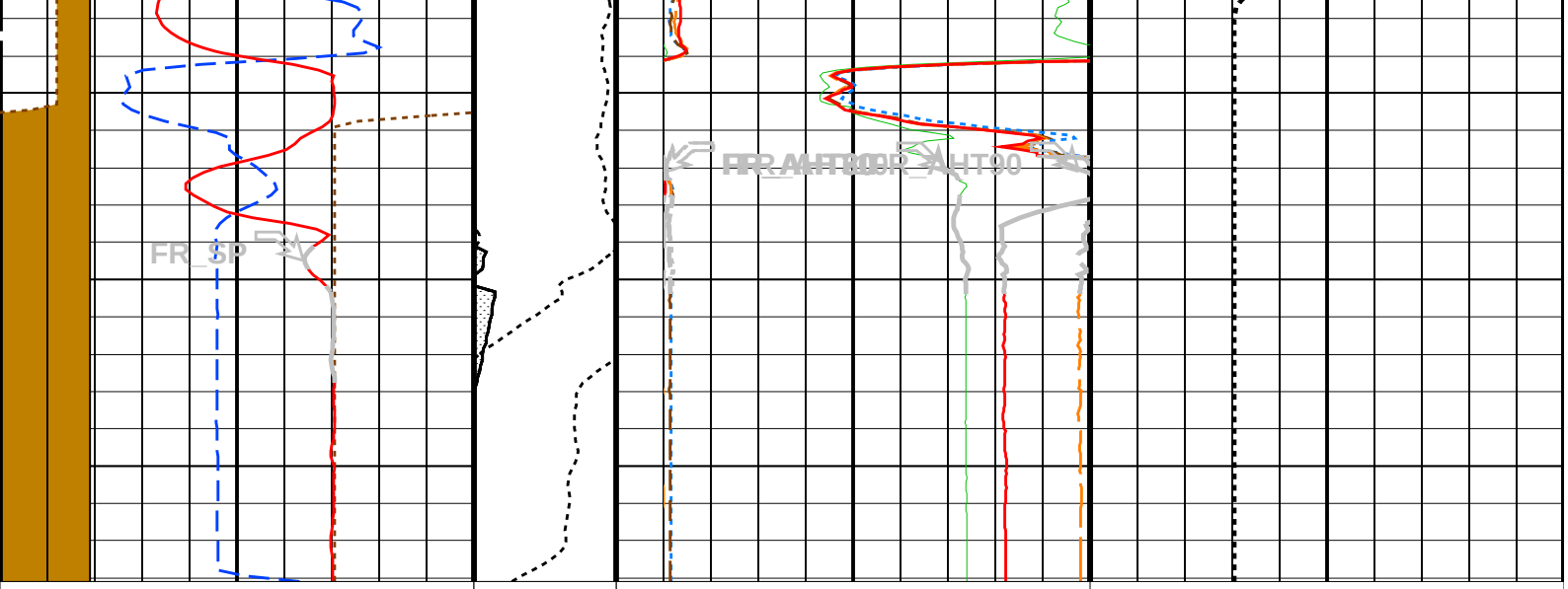


Bit Size (BS)	Tension (TENS)	AIT−H 10 Inch Investigation (AHT10)
6 (IN) 16	0 (LBF) 1000	0 (OHMM) 10
Caliper (CALI)	**Stuck Stretch (STIT)**	**AIT−H 20 Inch Investigation (AHT20)**
6 (IN) 16	0 (M) 20	0 (OHMM) 10
RWA (RWA)		**AIT−H 30 Inch Investigation (AHT30)**
0 (OHMM) 1		0 (OHMM) 10
SP (SP)		**AIT−H 60 Inch Investigation (AHT60)**
−80 (MV) 20		0 (OHMM) 10
CAVERNA From BS to CALI		**AIT−H 90 Inch Investigation (AHT90)**
		0 (OHMM) 10
REVOQUE From CALI to BS		**Sonic Porosity (SPHI)**
		0.6 (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	
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	880	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	108	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHCSED	Array Induction Casing Shoe Estimated Depth	−50000	M
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHRFV	Array Induction Radial Profiling Code Version Number	700	
AHRPV	Array Induction Radial Parametrization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHT	Bottom Hole Temperature (used in calculations)	96	DEGC
BS	Bit Size	7.875	IN
CDTS	C−Delta−T Shale	100	US/F
DFD	Drilling Fluid Density	1.16	G/C3
DO	Depth Offset for Playback	4.2	M
DORL	Depth Offset for Repeat Analysis	0.0	M
DTF	Delta−T Fluid	189	US/F

DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	53	US/F
FCD	Future Casing (Outer) Diameter	5.5	IN
FEXP	Form Factor Exponent	2.15	
FNUM	Form Factor Numerator	0.62	
FPHI	Form Factor Porosity Source	SPHI	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	CALI	
LBFR	Trigger for MAXIS First Reading Label	TDL	
MST	Mud Sample Temperature	20.00	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.8913	OHMM
RTCO	RTCO − Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPNV	SP Next Value	−10	MV
SPSO	Sonic Porosity Source	DT	
STKT	STI Stuck Threshold	0.762	M
TD	Total Depth	2689.5	M
TDD	Total Depth − Driller	2684.00	M
TDL	Total Depth − Logger	2689.50	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA_PORO_I Vertical Scale: 1:200 Graphics File Created: 27−Dec−2002 15:42

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_030LUP	FN:29	PRODUCER	27−Dec−2002 10:36	2693.8 M	2580.9 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_054PUP	FN:12	PRODUCER	27−Dec−2002 15:42		

Schlumberger

ANALISIS DE REPETIBILIDAD

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_030LUP	FN:29	PRODUCER	27−Dec−2002 10:36	2693.8 M	2580.9 M
DEFAULT	AIT_DSLT_LDL_039PUP	FN:32	PRODUCER	27−Dec−2002 10:35	2696.6 M	369.1 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_054PUP	FN:12	PRODUCER	27−Dec−2002 15:42	2698.1 M	2596.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 3.02 M3

Cement Volume = 1.58 M3 (assuming 5.50 IN casing O.D.)

Computed from 2689.4 M to 2596.0 M using data channel(s) CALI

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	7.875 IN	7.875 IN	2698.1 15:42:53

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

REVOQUE
From CALI to BS

CAVERNA
From BS to CALI

SP_REP Curve (SP_REP)
−80 (MV) 20

RWA_REP Curve (RWA_REP)
0 (OHMM) 1

CALI_REP Curve (CALI_REP)
6 (IN) 16

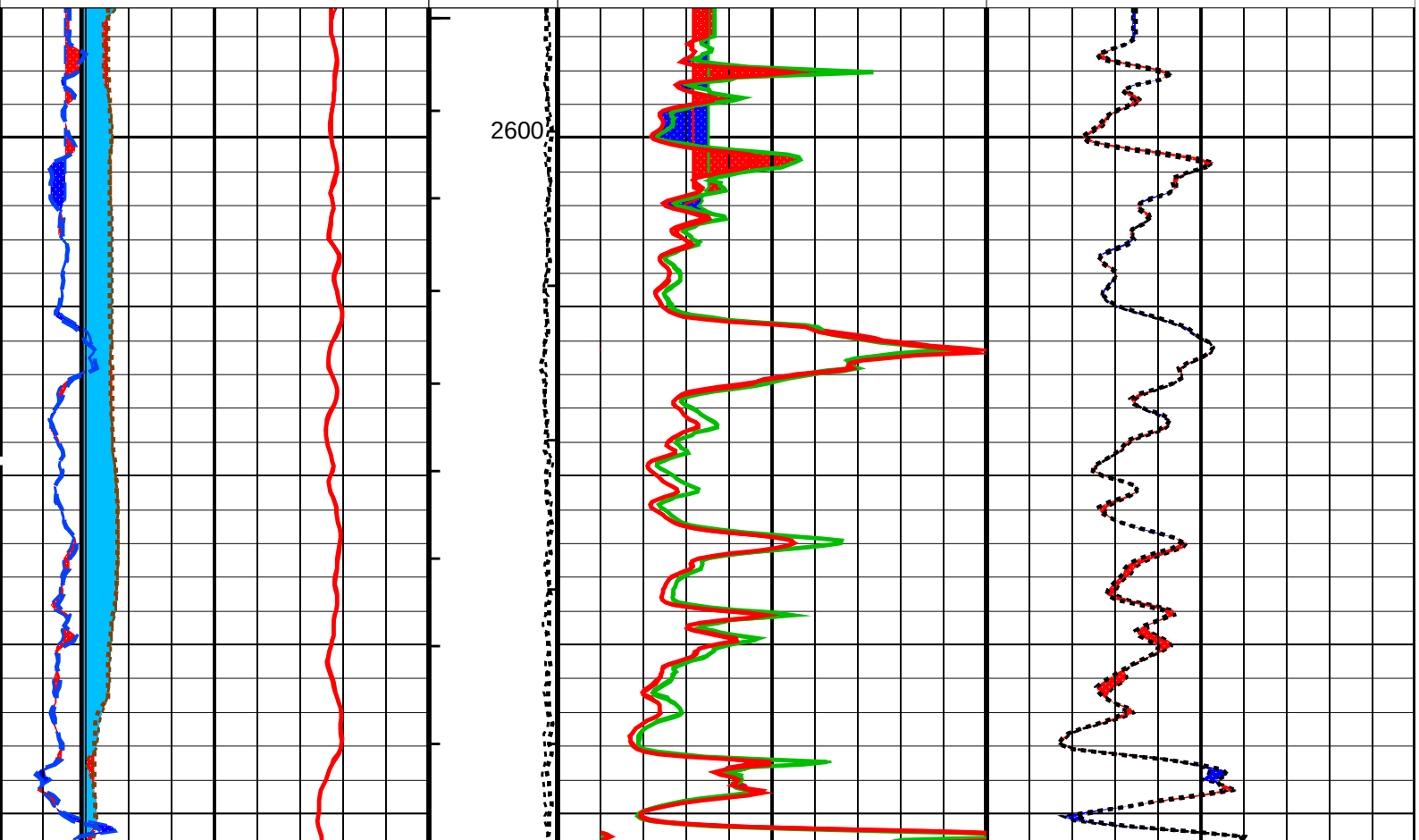
BS_REP Curve (BS_REP)
6 (IN) 16

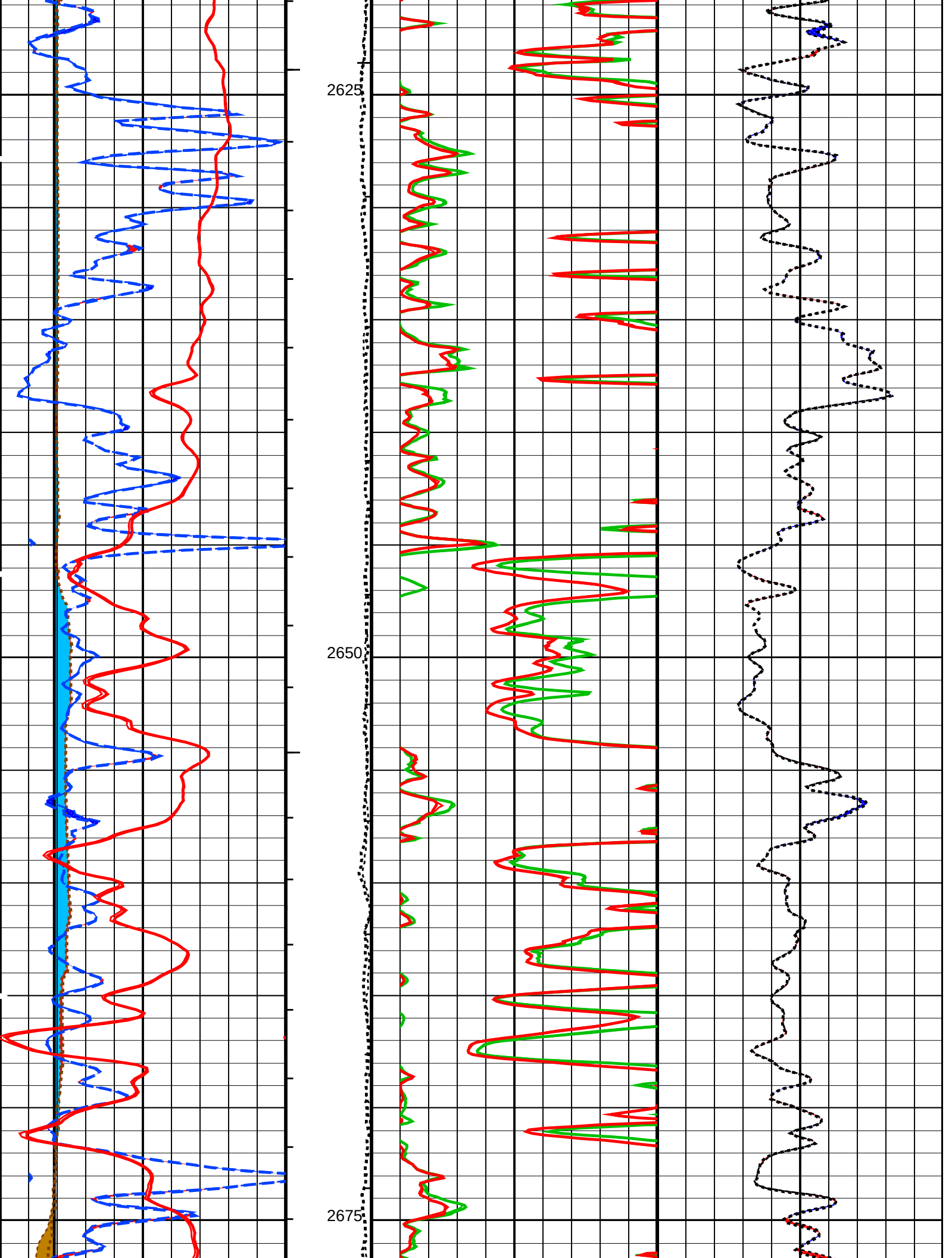
TENS_REP Curve (TENS_REP) (LBF)
0 1000

SPHI_REP Curve (SPHI_REP)
0.6 (V/V) 0

AHT90_REP Curve (AHT90_REP)
0 (OHMM) 10

AHT10_REP Curve (AHT10_REP)
0 (OHMM) 10

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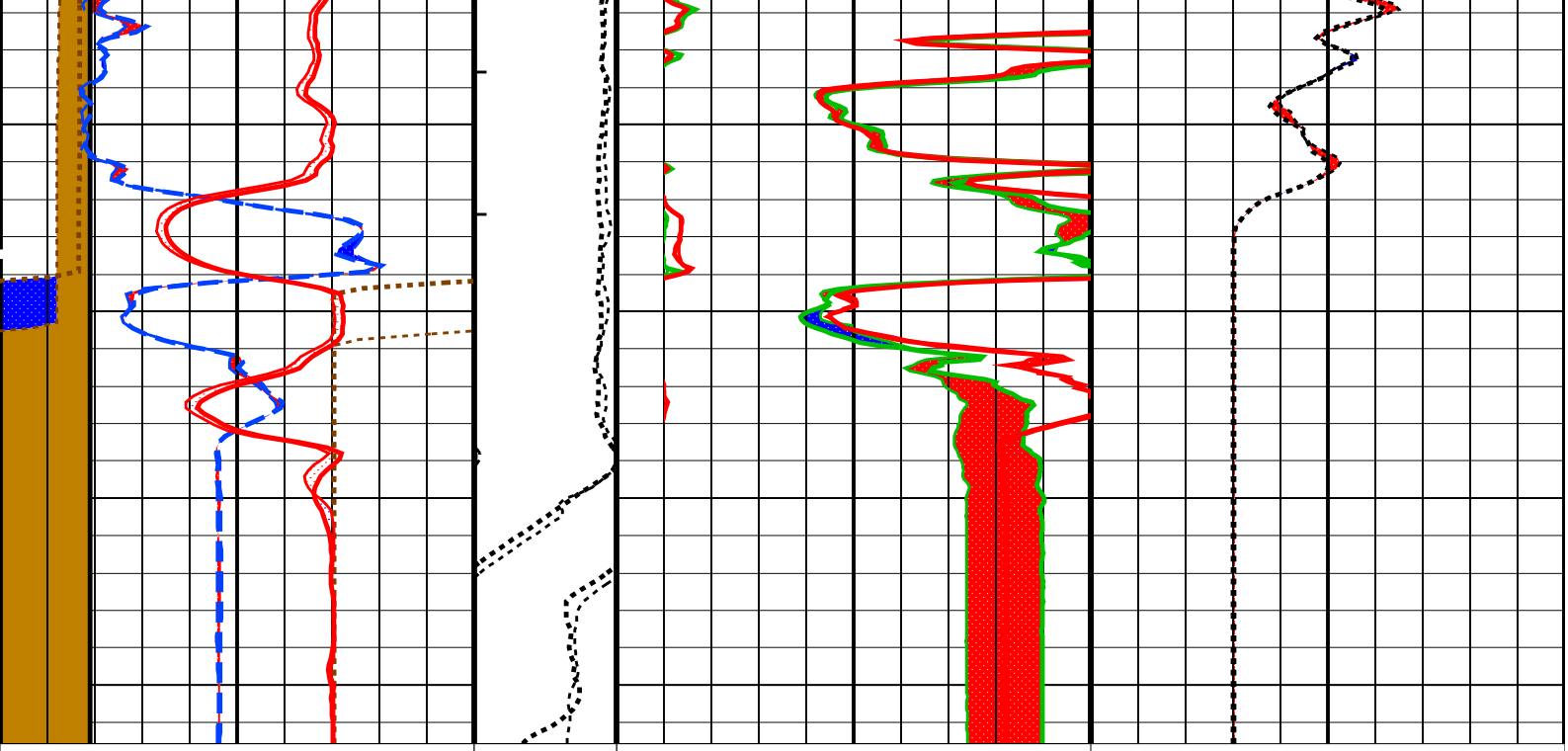

BS_REP Curve (BS_REP)
6 (IN) 16

TENS_REP Curve (TENS_REP) (LBF)
0 1000

AHT10_REP Curve (AHT10_REP)
0 (OHMM) 10

CALI_REP Curve (CALI_REP)
6 (IN) 16

AHT90_REP Curve (AHT90_REP)
0 (OHMM) 10

RWA_REP Curve (RWA_REP)
0 (OHMM) 1

SPHI_REP Curve (SPHI_REP)
0.6 (V/V) 0

SP_REP Curve (SP_REP)
−80 (MV) 20

CAVERNA
From BS to CALI

REVOQUE
From CALI to BS

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	
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	880	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	108	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHCSED	Array Induction Casing Shoe Estimated Depth	−50000	M
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHRFV	Array Induction Radial Profiling Code Version Number	700	
AHRPV	Array Induction Radial Parametrization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ARTS	AIT-Pt Selection (for ALL RES computation)	AITH_TwoResA90	

ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TWoResA90	
BHT	Bottom Hole Temperature (used in calculations)	96	DEGC
BS	Bit Size	7.875	IN
CDTS	C−Delta−T Shale	100	US/F
DFD	Drilling Fluid Density	1.16	G/C3
DO	Depth Offset for Playback	4.2	M
DORL	Depth Offset for Repeat Analysis	0.0	M
DTF	Delta−T Fluid	189	US/F
DTM	Delta−T Matrix	53	US/F
FCD	Future Casing (Outer) Diameter	5.5	IN
FEXP	Form Factor Exponent	2.15	
FNUM	Form Factor Numerator	0.62	
FPHI	Form Factor Porosity Source	SPHI	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	CALI	
MST	Mud Sample Temperature	20.00	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.8913	OHMM
RTCO	RTCO − Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPNV	SP Next Value	−10	MV
SPSO	Sonic Porosity Source	DT	
TD	Total Depth	2689.5	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA_PORO_I_REP Vertical Scale: 1:200 Graphics File Created: 27−Dec−2002 15:42

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Input DLIS Files

DEFAULT	AIT_DSLT_LDL_030LUP	FN:29	PRODUCER	27−Dec−2002 10:36	2693.8 M	2580.9 M
DEFAULT	AIT_DSLT_LDL_039PUP	FN:32	PRODUCER	27−Dec−2002 10:35	2696.6 M	369.1 M

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_054PUP	FN:12	PRODUCER	27−Dec−2002 15:42

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CHEQUEO EN CAÑERIA

MAXIS Field Log

Output DLIS Files

DEFAULT	AIT_DSLT_LDL_028LUP	FN:27	PRODUCER	26−Dec−2002 23:16	395.0 M	348.8 M

OP System Version: 9C2−303

MCM

AIT−H	OP92−KP2	DSLT−TCC	OP92−KP2
LDT−D	OP92−KP2	TCC−BF	OP92−KP2

Changed Parameter Summary

DLIS Name	New Value	Previous Value, Depth & Time

DLIS Name	New Value	Previous Value	Depth & Time
MAHTR	40	120	365.4 23:19:05
MNHTR	30	100	364.4 23:19:09

PIP SUMMARY

Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S

Revoque
From CALI to BS

Caverna
From BS to CALI

Tool/Tot. Drag From D4T to STIA

Cable Drag From D4T to STIT

SP (SP)
−80 (MV) 20

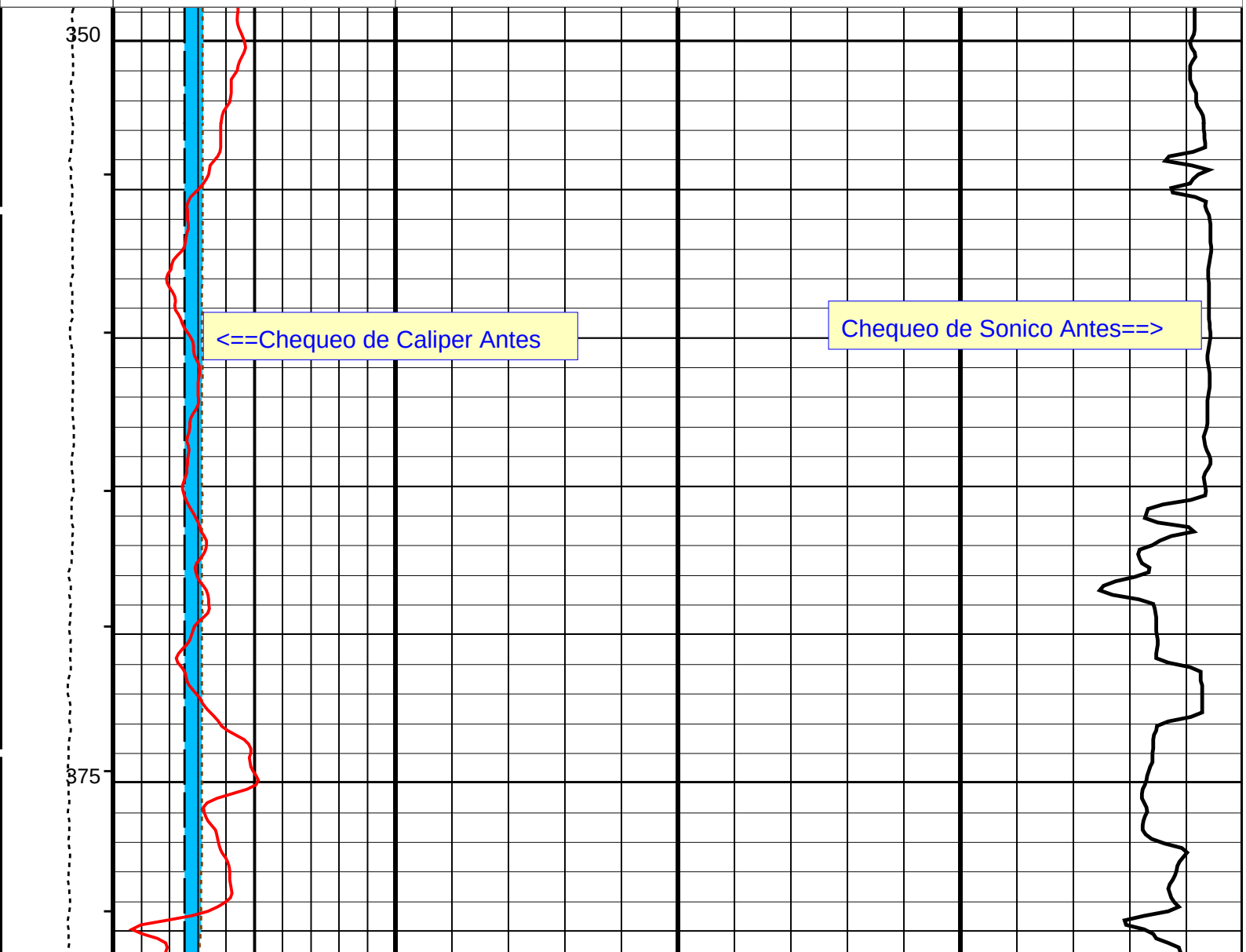
Stuck Stretch (STIT)
0 (M) 20

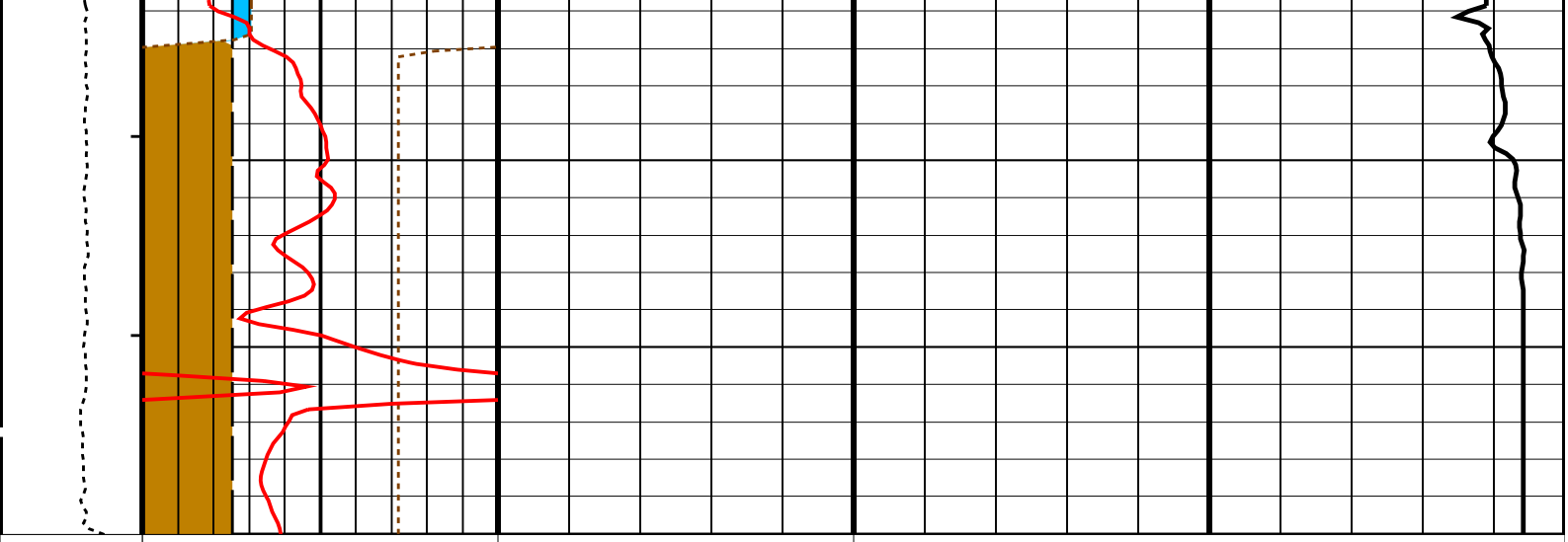
Caliper (CALI)
6 (IN) 16

Tension (TENS) (LBF)
1000 0

Bit Size (BS)
6 (IN) 16

Delta−T (DT)
150 (US/F) 50





Tension (TENS) (LBF) 1000 0	Bit Size (BS) 6 (IN) 16	Delta−T (DT) 150 (US/F) 50
Stuck Stretch (STIT) 0 (M) 20	Caliper (CALI) 6 (IN) 16	
Cable Drag From D4T to STIT	SP (SP) −80 (MV) 20	
Tool/Tot. Drag From D4T to STIA	Caverna From BS to CALI	
	Revoque From CALI to BS	

PIP SUMMARY

Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DSLT Firing Mode	BHC	
	Telemetry Mode	DSLC_TCC	
BS	Bit Size	8.500	IN
DDEL	Digitizing Delay	200	US
DFAD_TYPE	DFAD type	DFAD2	
DIVL	DSLT Depth Sampling Interval	20	
DRCS	DSLT DLIS Recording Size	100	
DSIN	Digitizing Sample Interval	10	
DTFS	DSLC Telemetry Frame Size	236	
DWCO	Digitizing Word Count	100	
GAI	Manual Gain	40	
ITTS	Integrated Transit Time Source	DT	
LBFR	Trigger for MAXIS First Reading Label	STI	
MAHTR	Manual High Threshold Reference	120	
MGAI	Maximum Gain	60	
MNHTR	Minimum High Threshold Reference	100	
NMSG	Near Minimum Sliding Gate	250	US
NMXG	Near Maximum Sliding Gate	750	US
RATE	Firing Rate	R15	
SFAF	Sonic Formation Attenuation Factor	0	DB/M
SGCL	Sliding Gate Closing Delta−T	250	US/F
SGDT	Sliding Gate Delta−T	50	US/F
SGW	Sliding Gate Width	80	US
SLEV	Signal Level for AGC	5000	
SPNV	SP Next Value	0	MV

SPNV	SP Next Value	0	MV
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth − Driller	2684.00	M
TDL	Total Depth − Logger	2684.00	M
WMOD	Waveform Firing Mode	FULL	

Format: CALI_CHECK **Vertical Scale: 1:200** **Graphics File Created: 26−Dec−2002 23:16**

OP System Version: 9C2−303

MCM

AIT−H	**OP92−KP2**	**DSLT−TCC**	**OP92−KP2**
LDT−D	**OP92−KP2**	**TCC−BF**	**OP92−KP2**

Output DLIS Files

DEFAULT **AIT_DSLT_LDL_028LUP** **FN:27** **PRODUCER** **26−Dec−2002 23:16**

Schlumberger

CALIBRACIONES

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool − H Wellsite Calibration − Electronics Calibration Check − Thru Cal Mag. & Phase							
Master: 25−Oct−2002 10:40 Before: 26−Dec−2002 23:12							
Thru Cal Magnitude − 0	0	0.6598	0.6673	N/A	N/A	N/A	V
Thru Cal Magnitude − 1	0	1.354	1.369	N/A	N/A	N/A	V
Thru Cal Magnitude − 2	0	0.6742	0.6819	N/A	N/A	N/A	V
Thru Cal Magnitude − 3	0	0.7615	0.7701	N/A	N/A	N/A	V
Thru Cal Magnitude − 4	0	1.430	1.446	N/A	N/A	N/A	V
Thru Cal Magnitude − 5	0	2.084	2.107	N/A	N/A	N/A	V
Thru Cal Magnitude − 6	0	2.083	2.107	N/A	N/A	N/A	V
Thru Cal Magnitude − 7	0	1.536	1.553	N/A	N/A	N/A	V
Phase − 0	0	63.78	64.22	N/A	N/A	N/A	DEG
Phase − 1	0	62.75	63.18	N/A	N/A	N/A	DEG
Phase − 2	0	58.87	59.30	N/A	N/A	N/A	DEG
Phase − 3	0	58.05	58.49	N/A	N/A	N/A	DEG
Phase − 4	0	51.52	51.94	N/A	N/A	N/A	DEG
Phase − 5	0	49.54	49.95	N/A	N/A	N/A	DEG
Phase − 6	0	49.60	50.02	N/A	N/A	N/A	DEG
Phase − 7	0	46.02	46.40	N/A	N/A	N/A	DEG
Array Induction Tool − H Wellsite Calibration − Electronics Calibration Check − Auxilliary							
Master: 25−Oct−2002 10:40 Before: 26−Dec−2002 23:12							
Array Induction SPA Plus	990.5	993.5	993.4	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	−0.2641	−0.2995	N/A	N/A	N/A	MV
Array Induction Temperature Pl	0.9150	0.9204	0.9203	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	−0.0002619	−0.0002904	N/A	N/A	N/A	V
Array Induction Tool − H Wellsite Calibration − Test Loop Gain Correction							
Master: 25−Oct−2002 10:40							
Test Loop Gain Magnitude − 0	0	1.019	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 1	0	1.023	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 2	0	1.019	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 3	0	1.021	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 4	0	0.9973	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 5	0	0.9981	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 6	0	1.007	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude − 7	0	1.028	N/A	N/A	N/A	N/A	V
Phase − 0	0	0.4769	N/A	N/A	N/A	N/A	DEG
Phase − 1	0	0.5447	N/A	N/A	N/A	N/A	DEG
Phase − 2	0	−0.04580	N/A	N/A	N/A	N/A	DEG

Phase − 3	0	0.05149	N/A	N/A	N/A	N/A	DEG
Phase − 4	0	−0.01958	N/A	N/A	N/A	N/A	DEG
Phase − 5	0	−0.2008	N/A	N/A	N/A	N/A	DEG
Phase − 6	0	0.1850	N/A	N/A	N/A	N/A	DEG
Phase − 7	0	−0.3662	N/A	N/A	N/A	N/A	DEG

Array Induction Tool − H Wellsite Calibration − Sonde Error Correction
Master: 25−Oct−2002 10:40

R Sonde Error Correction − 0	0	−74.88	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 1	0	151.1	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 2	0	105.0	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 3	0	61.90	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 4	0	25.67	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 5	0	12.05	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 6	0	8.573	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction − 7	0	−2.150	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 0	0	102.8	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 1	0	340.7	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 2	0	114.4	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 3	0	7.149	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 4	0	23.19	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 5	0	7.483	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 6	0	−0.5300	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction − 7	0	6.953	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool − H Wellsite Calibration − Mud Gain Correction
Master: 25−Oct−2002 10:40

Coarse − Mag, Real, Imag − 0	0	1.047	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 1	0	1.047	N/A	N/A	N/A	N/A	
Coarse − Mag, Real, Imag − 2	0	1.047	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 0	0	1.052	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 1	0	1.052	N/A	N/A	N/A	N/A	
Fine − Mag, Real, Imag − 2	0	1.052	N/A	N/A	N/A	N/A	

Litho Density − D Wellsite Calibration − Background Measurement
Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

LL Background	20.00	17.53	17.35	N/A	N/A	1.000	CPS
LU Background	76.00	67.23	67.08	N/A	N/A	1.000	CPS
LS Background	57.00	51.15	50.89	N/A	N/A	1.000	CPS
LITH Background	5.500	4.990	5.027	N/A	N/A	0.3000	CPS
SS1 Background	16.00	15.96	16.06	N/A	N/A	0.5000	CPS
SS2 Background	11.00	10.72	10.73	N/A	N/A	0.5000	CPS

Litho Density − D Wellsite Calibration − Tool Quality Control Information HV
Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

LSHV Background	1500	1375	1378	N/A	N/A	N/A	V
SSHV Background	1500	1302	1303	N/A	N/A	N/A	V

Litho Density − D Wellsite Calibration − Detectors Resolution From BKG Measurments
Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

LS Resolution Background	8.000	9.038	9.066	N/A	N/A	N/A	
SS Resolution Background	8.000	8.771	8.776	N/A	N/A	N/A	

Litho Density − D Wellsite Calibration − Caliper Calibration
Before: 26−Dec−2002 15:28

Caliper Small Ring	8.000	N/A	7.990	N/A	N/A	N/A	IN
Caliper Large Ring	12.00	N/A	12.68	N/A	N/A	N/A	IN

Litho Density − D Master Calibration − Aluminum Measurement
Master: 20−Dec−2002 11:43

LL Aluminum	90.00	88.06	−−	−−	−−	−−	CPS
LU Aluminum	135.0	132.3	−−	−−	−−	−−	CPS
LS Aluminum	155.0	154.2	−−	−−	−−	−−	CPS
LITH Aluminum	50.00	53.41	−−	−−	−−	−−	CPS
SS1 Aluminum	175.0	194.3	−−	−−	−−	−−	CPS
SS2 Aluminum	260.0	258.9	−−	−−	−−	−−	CPS

Litho Density − D Master Calibration − Litholog Measurement
Master: 20−Dec−2002 11:54

LL Iron	80.00	78.03	−−	−−	−−	−−	CPS
LU Iron	120.0	117.4	−−	−−	−−	−−	CPS
LS Iron	135.0	136.8	−−	−−	−−	−−	CPS
LITH Iron	30.00	34.76	−−	−−	−−	−−	CPS
SS1 Iron	155.0	172.5	−−	−−	−−	−−	CPS
SS2 Iron	245.0	234.4	−−	−−	−−	−−	CPS

Litho Density − D Master Calibration − Spectrum Quality Ratios
Master: 20−Dec−2002 11:54

QRLS Calculated	0.6500	0.6654	−−	−−	−−	−−	
QRSS Calculated	0.7200	0.7504	−−	−−	−−	−−	
QRLI Calculated	0.3900	0.3463	−−	−−	−−	−−	

QLIR Calculated	1.390	1.362	--	--	--	--
QR Calculated	1.000	1.001	--	--	--	--

Array Induction Tool − H / Equipment Identification

Primary Equipment:

Rm/SP Bottom Nose	AHRM − A	
Array Induction Sonde	AHIS − BA	265

Auxiliary Equipment:

Array Induction Tool − H Wellsite Calibration

Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6598		0.6050	63.78		71.00
	Before	0.6673			64.22		
1	Master	1.354		1.270	62.75		70.00
	Before	1.369			63.18		
2	Master	0.6742		0.6230	58.87		66.00
	Before	0.6819			59.30		
3	Master	0.7615		0.7040	58.05		65.00
	Before	0.7701			58.49		
4	Master	1.430		1.337	51.52		59.00
	Before	1.446			51.94		
5	Master	2.084		1.955	49.54		57.00
	Before	2.107			49.95		
6	Master	2.083		1.955	49.60		57.00
	Before	2.107			50.02		
7	Master	1.536		1.415	46.02		53.00
	Before	1.553			46.40		
		60.00 % (Minimum)	140.0 % (Maximum)	(Nominal)	Nom −60.00 (Minimum)	Nom + 60.00 (Maximum)	(Nominal)

Master: 25−Oct−2002 10:40 Before: 26−Dec−2002 23:12

Array Induction Tool − H Wellsite Calibration

Electronics Calibration Check − Auxilliary

Phase	Array Induction SPA Plus MV	Value
Master		993.5
Before		993.4
	941.0 (Minimum) 990.5 (Nominal) 1040 (Maximum)	

Phase	Array Induction SPA Zero MV	Value
Master		−0.2641
Before		−0.2995
	−50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Array Induction Temperature Plus V	Value
Master		0.9204
Before		0.9203
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)	

Phase	Array Induction Temperature Zero V	Value
Master		−0.0002619
Before		−0.0002904
	−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 25−Oct−2002 10:40 Before: 26−Dec−2002 23:12

Array Induction Tool − H Wellsite Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
0	1.019		0.4769	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
1	1.023		0.5447	

	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
2	1.019				−0.04580			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
3	1.021				0.05149			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
4	0.9973				−0.01958			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
5	0.9981				−0.2008			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
6	1.007				0.1850			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
7	1.028				−0.3662			
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	

Master: 25−Oct−2002 10:40

Array Induction Tool − H Wellsite Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	−74.88				102.8			
		−231.0 (Minimum)	−56.00 (Nominal)	119.0 (Maximum)		−2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	151.1				340.7			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	105.0				114.4			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	61.90				7.149			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	25.67				23.19			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	12.05				7.483			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	8.573				−0.5300			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	−2.150				6.953			
		−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 25−Oct−2002 10:40

Array Induction Tool − H Wellsite Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	1.047				1.052			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.047				1.052			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.047				1.052			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration

Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6598		0.6050	63.78		71.00
1	Master	1.354		1.270	62.75		70.00
2	Master	0.6742		0.6230	58.87		66.00
3	Master	0.7615		0.7040	58.05		65.00
4	Master	1.430		1.337	51.52		59.00
5	Master	2.084		1.955	49.54		57.00
6	Master	2.083		1.955	49.60		57.00
7	Master	1.536		1.415	46.02		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom −60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration
Electronics Calibration Check − Auxilliary

Phase	Array Induction SPA Plus MV	Value
Master		993.5
	941.0 (Minimum) 990.5 (Nominal) 1040 (Maximum)	

Phase	Array Induction SPA Zero MV	Value
Master		−0.2641
	−50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Array Induction Temperature Plus V	Value
Master		0.9204
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)	

Phase	Array Induction Temperature Zero V	Value
Master		−0.0002619
	−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
0	1.019		0.4769	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
1	1.023		0.5447	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
2	1.019		−0.04580	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
3	1.021		0.05149	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
4	0.9973		−0.01958	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
5	0.9981		−0.2008	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
6	1.007		0.1850	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
7	1.028		−0.3662	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		−3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration
Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M	Value	X Sonde Error Correction MM/M
0	−74.88		102.8	
	−231.0 (Minimum) −56.00 (Nominal) 119.0 (Maximum)		−2250 (Minimum) 0 (Nominal) 2250 (Maximum)	
1	151.1		340.7	

	114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)	
2	105.0				114.4			
	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)	
3	61.90				7.149			
	39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)	
4	25.67				23.19			
	15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)	
5	12.05				7.483			
	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)	
6	8.573				−0.5300			
	5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)	
7	−2.150				6.953			
	−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)	

Master: 25−Oct−2002 10:40

Array Induction Tool − H Master Calibration

Mud Gain Correction

Idx	Value	Coarse − Mag, Real, Imag			Value	Fine − Mag, Real, Imag		
0	1.047				1.052			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
1	1.047				1.052			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
2	1.047				1.052			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	

Master: 25−Oct−2002 10:40

Litho Density − D / Equipment Identification

Primary Equipment:		
Nuclear Services Cartridge	NSC − E	2733
Powered Gamma Detector	PGD − G	
Gamma Source Radioactive	GSR − J	3765
Auxiliary Equipment:		
Density Resistivity Sonde	DRS − C	3968
Electronics Cartridge Housing	ECH − MKA	2729
Powered Detector Housing	PDH − L	4897

Litho Density − D Wellsite Calibration

Background Measurement

Phase	LL Background CPS	Value	Phase	LU Background CPS	Value	Phase	LS Background CPS	Value
Master		17.53	Master		67.23	Master		51.15
Before		17.35	Before		67.08	Before		50.89
	15.00 (Minimum) 20.00 (Nominal) 25.00 (Maximum)			58.00 (Minimum) 76.00 (Nominal) 94.00 (Maximum)			43.00 (Minimum) 57.00 (Nominal) 72.00 (Maximum)	

Phase	LITH Background CPS	Value	Phase	SS1 Background CPS	Value	Phase	SS2 Background CPS	Value
Master		4.990	Master		15.96	Master		10.72
Before		5.027	Before		16.06	Before		10.73
	4.000 (Minimum) 5.500 (Nominal) 7.000 (Maximum)			12.00 (Minimum) 16.00 (Nominal) 19.50 (Maximum)			8.000 (Minimum) 11.00 (Nominal) 13.50 (Maximum)	

Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

Litho Density − D Wellsite Calibration

Detectors Resolution From BKG Measurments

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value
Master		9.038	Master		8.771
Before		9.066	Before		8.776
	5.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)			5.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)	

Master: 20−Dec−2002 11:34 Before: 26−Dec−2002 15:57

Litho Density − D Master Calibration

Aluminum Measurement

Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LS Aluminum CPS	Value
Master		88.06	Master		132.3	Master		154.2
	70.00 (Minimum) 90.00 (Nominal) 125.0 (Maximum)			100.0 (Minimum) 135.0 (Nominal) 194.0 (Maximum)			120.0 (Minimum) 155.0 (Nominal) 217.0 (Maximum)	
Phase	LITH Aluminum CPS	Value	Phase	SS1 Aluminum CPS	Value	Phase	SS2 Aluminum CPS	Value
Master		53.41	Master		194.3	Master		258.9
	35.00 (Minimum) 50.00 (Nominal) 74.00 (Maximum)			125.0 (Minimum) 175.0 (Nominal) 256.0 (Maximum)			210.0 (Minimum) 260.0 (Nominal) 353.0 (Maximum)	

Master: 20−Dec−2002 11:43

Litho Density − D Master Calibration

Litholog Measurement

Phase	LL Iron CPS	Value	Phase	LU Iron CPS	Value	Phase	LS Iron CPS	Value
Master		78.03	Master		117.4	Master		136.8
	60.00 (Minimum) 80.00 (Nominal) 114.0 (Maximum)			85.00 (Minimum) 120.0 (Nominal) 177.0 (Maximum)			100.0 (Minimum) 135.0 (Nominal) 193.0 (Maximum)	
Phase	LITH Iron CPS	Value	Phase	SS1 Iron CPS	Value	Phase	SS2 Iron CPS	Value
Master		34.76	Master		172.5	Master		234.4
	15.00 (Minimum) 30.00 (Nominal) 51.00 (Maximum)			105.0 (Minimum) 155.0 (Nominal) 234.0 (Maximum)			190.0 (Minimum) 245.0 (Nominal) 325.0 (Maximum)	

Master: 20−Dec−2002 11:54

Litho Density − D Master Calibration

Spectrum Quality Ratios

Phase	QRLS Calculated	Value	Phase	QRSS Calculated	Value	Phase	QRLI Calculated	Value
Master		0.6654	Master		0.7504	Master		0.3463
	0.6000 (Minimum) 0.6500 (Nominal) 0.7000 (Maximum)			0.6200 (Minimum) 0.7200 (Nominal) 0.8200 (Maximum)			0.2900 (Minimum) 0.3900 (Nominal) 0.4500 (Maximum)	
Phase	QLIR Calculated	Value	Phase	QR Calculated	Value			
Master		1.362	Master		1.001			
	1.290 (Minimum) 1.390 (Nominal) 1.450 (Maximum)			0.9800 (Minimum) 1.000 (Nominal) 1.020 (Maximum)				

Master: 20−Dec−2002 11:54

COMPANIA:	**YPF S.A**
POZO:	**YPF.Ch.PCN−605**
CAMPO:	**PAMPA DEL CASTILLO NORTE**
PROVINCIA:	**CHUBUT**
PAIS:	**ARGENTINA**

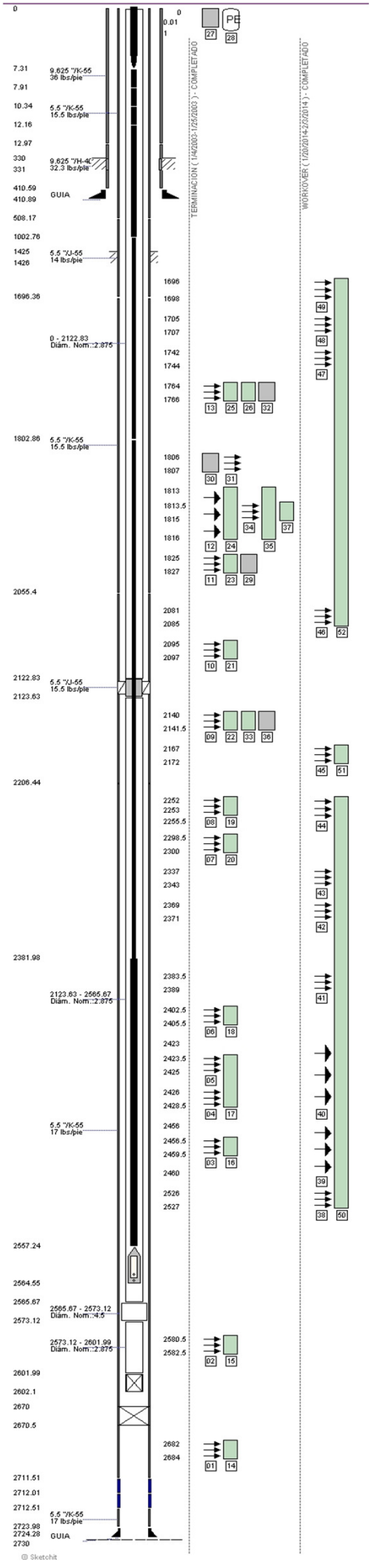
PRIMERA LECTURA	2687.1 m
PROFUNDIDAD PERFIL	2689.5 m
PROF. PERFORADOR	2684 m
BUJE DE VASTAGO	678.04 m
MESA ROTATIVA	677.74 m
NIVEL TERRENO	673.14 m

Schlumberger

COMBINADA

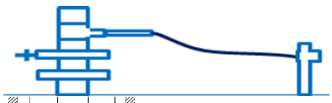
ESCALA 1:200

Esquema Actual
PCN-605



YPF

ESQUEMA DE INYECCCIÓN PROPUESTO
CONVERSIÓN A INYECTOR
POZO PCN-605



Cañería Guía 9 5/8"
K55 / 36 lb/pie

Zpto. Guía: 410.89 mbbp

Cañería Aislación 5 1/2"
15.5 - 17 lb/pie

TOPES COMPLEJOS

CII	1219 mbbp

Tubing 2-7/8" J-55

Tope Cemento

CIII	1472 mbbp

NIPLE DE ASIENTO
ON OFF

Packer 10 a 1650 mbbp

1696.0	1698.0
1705.0	1707.0
1742.0	1744.0
1764.0	1766.0

Packer 9 a 1790 mbbp

Auxiliar cementado

1806.0	1807.0
1813.0	1816.0

1813.0 1816.0 CAPA 93

Mandril 5 @ 1815 mbbp

1825.0	1827.0

CIV	1982 mbbp

Packer 8 a 2070 mbbp

2081.0	2085.0

Packer 7 a 2090 mbbp

2095.0	2097.0

2095.0 2097.0 CAPA 142/141

Mandril 4 @ 2100 mbbp

Packer 6 a 2130 mbbp

ON OFF

2140.0	2141.5
2167.0	2172.0

Packer 5 a 2215 mbbp

2252.0	2255.5

2252.0 2255.5 CAPA 280

Mandril 3 @ 2255 mbbp

Packer 4 a 2290 mbbp

2298.5	2300.0
2337.0	2343.0
2369.0	2371.0
2383.5	2389.0

Packer 3 a 2395 mbbp

2402.5	2404.5

2401.5 2404.5 CAPA 370

Mandril 2 @ 2405 mbbp

Packer 2 a 2420 mbbp

2423.0	2428.5

Packer 1 a 2435 mbbp

2456.0	2460.0

2456.0 2460.0 CAPA 397

Mandril 1 @ 2460 mbbp

Dispositivo de Llenado a 2500 mbbp

Tapón N a 2520 mbbp

2526.0	2527.0
2580.5	2582.5

Tapón N a 2670 mbbp

D129	2613 mbbp
2682.0	2684.0

Collar: 2712.00 mbbp
Zapato: 2724.28 mbbp
PF: 2730.00 mbbp

N. Rodríguez

PRE DRILLING DATA PACKAGE

Nombre del Pozo	PCN-605
Líder de Proyecto	
Fecha	05/11/2014
PDDP (Versión)	V 1

Información Básica (Nota: En caso que no se disponga completar (N/D) o bien no aplica (N/A))

Nombre del Yacimiento	Pampa del Castillo Norte
Bloque	Pampa del Castillo Norte
Provincia	Chubut
Tipo de Pozo	Productor
Coordenadas Superficie	X: 2577924 Y: 4939738
Objetivo de la Intervención	Convertir a inyector
Trayectoria del Pozo	Vertical
PEPA/OI/CC	RS1PC.13Y4.98.R4001
Datos de CGS de aislación:	
Costo Lifting (Etapa 30)	
Costo IAP (Etapa 30)	

Datos Pozos actual

Año de perforación	2003
Estado Actual	Productor de petróleo
Ultima intervención	Feb/2014 - Reparación.
Instalación actual	Sistema extractivo: BM.
Instalación de superficie	Aparato de Bombeo
Ultimo control	26-06-2014: 20 m3/d líquido, 3 m3/d petróleo, 150 m3/d gas.
Estado del pozo	
Pozos cercanos	Sin inyectores en la zona.
Notas adicionales	

Capas existentes:

Tope	Base	Metros	Estado
1696,0	1698,0	2,0	Abierta
1705,0	1707,0	2,0	Abierta
1742,0	1744,0	2,0	Abierta
1764,0	1766,0	2,0	Cementada
1806,0	1807,0	1,0	Aux Cementado
1813,0	1816,0	3,0	Abierta
1825,0	1827,0	2,0	Cementada
2081,0	2085,0	4,0	Abierta
2095,0	2097,0	2,0	Abierta
2140,0	2141,5	1,5	Cementada
2167,0	2172,0	5,0	Abierta
2252,0	2255,5	3,5	Abierta
2298,5	2300,0	1,5	Abierta
2337,0	2343,0	6,0	Abierta
2369,0	2371,0	2,0	Abierta
2383,5	2389,0	5,5	Abierta
2402,5	2405,5	3,0	Abierta
2423,0	2428,5	5,5	Abierta
2456,0	2460,0	4,0	Abierta
2526,0	2527,0	1,0	Abierta
2580,5	2582,5	2,0	Abierta
2682,0	2684,0	2,0	Bajo tapón. Gas con alto %CO2

Propuesta Perfilaje, Punzados y Ensayos

Perfilaje: Perfil de corrosión y cemento desde 2660 mbbp hasta BP.
Perfil neutrón-CCL desde entre 2470 y 1500 m, aproximadamente (se definirá con el diseño de instalación).
Tránsito de fluidos.

Método de Punzado: REPUNZADO: Carga: 32 gr. Densidad: 2 tpp. Fase: 180°.

Fluido de Completación:

Ensayos: **Prueba de admisión, como se detalla en la secuencia operativa.**

Comentarios: **Prever cía de servicio para realizar movimiento de válvulas.**

Tope	Base	Metros	TPP	Carga	Defasaje	Ensayo	Presión (psi)	Fluido esperado	Comentarios	Densidad
2401,5	2404,5	3,0	2	32	180°		S/D		PRUEBA DE ADMISIÓN	
2095,0	2097,0	2,0	2	32	180°		S/D		PRUEBA DE ADMISIÓN	
Total		5,0								

Propuesta de Estimulación / Cementación

Tipo de Tratamiento:
Fracturas:
Ácidos: Prever una estimulación ácida
Cementación:
Post Estimulación:

Comentarios:

Gradiente de Fractura de Pozos Vecinos y/o Gradiente Estimado

Formación	Tope	Base	Presión psi/ft			Candidata o Confirmada	Comentario	Ensayo PostFract	
			Min Estimada	Probable	Max Posible				

Secuencia Operativa

Etapa	Descripción
1	Montar equipo de acuerdo a los procedimientos.
2	Sacar instalación de producción.
3	Calibrar desde BP hasta tapón a 2670 mbbp (**NO ROTAR TAPÓN**).
4	Probar hermeticidad de casing desde 1680 m hasta BP con 300 PSI. En caso de dar negativa, localizar pérdida y notificar a Ing Reservorios MB.
5	Correr perfil de corrosión y cemento desde 2660 m hasta BP. Enviar información a Ing de Reservorios MB.
6	Repunzar los intervalos propuestos.
7	Fijar tapón N en 2520 m y probar de acuerdo a los procedimientos.
8	Realizar prueba de admisión a los intervalos siguientes, con las presiones que se detallan en la tabla y en el tiempo requerido. Debe verificarse limpieza de las piletas. **IMPORTANTE: ROMPER FORMACIÓN DE CADA INTERVALO ANTES DE LA PRUEBA DE ADMISIÓN.**

TOPE mbbp	BASE mbbp	PRESION (PSI)			DURACIÓN
2.456,0	2.460,0	1400	1500	1600	20 min estabilizado por cada presión
2.401,5	2.404,5	1400	1500	1600	20 min estabilizado por cada presión
2.252,0	2.255,5	1400	1500	1600	20 min estabilizado por cada presión
2.095,0	2.097,0	1400	1500	1600	20 min estabilizado por cada presión
1.813,0	1.816,0	1400	1500	1600	20 min estabilizado por cada presión

DE ACUERDO A LOS RESULTADOS DE LAS PRUEBAS DE ADMISIÓN, EL ING. DE RESERVORIOS DE GUARDIA PODRÍA SOLICITAR LA ACIFICACIÓN DE ALGÚN INTERVALO.

9	Bajar Instalación de inyección a diseñar por Ing de Reservorios MB, probando hermeticidad de tbg.
10	Probar hermeticidad de tubing desde BHD con 2200 PSI durante 30 min, registrando en carta, siguiendo los procedimientos.
11	Completar instalación en superficie (PAG + válvula maestra 2 7/8").
12	Realizar Neutrón-CCL y Correlar con Perfil de Inducción y Cuplas de Casing.
13	Circular pozo con bactericida de acuerdo a los procedimientos.
14	Con prueba de hermeticidad por directa positiva (punto 10), fijar Instalación final de inyección.
15	Realizar prueba de hermeticidad de tbg desde BHD con 2200 PSI durante 2 hs con registro en carta, siguiendo los procedimientos.
16	Realizar prueba de hermeticidad de entrecaño con 200 PSI durante 30 min con registro en carta, siguiendo los procedimientos.
17	Con pruebas de hermeticidad positivas (puntos 15 y 16), realizar movimiento de válvulas y calibrar según caudal determinado por Ing de Reservorios MB.
18	Realizar tránsito de fluido con equipo de Wire Line.
19	Retirar equipo y montar instalación de superficie, de acuerdo a los procedimientos.

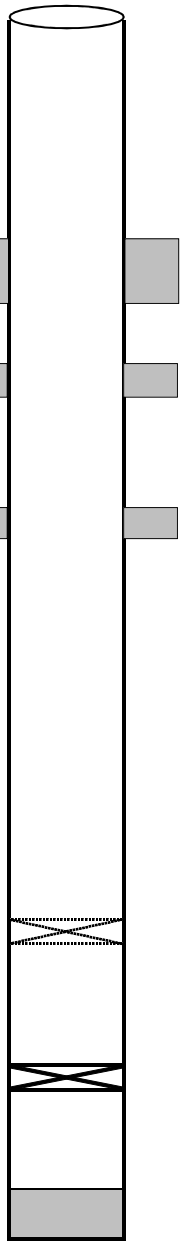
Otros/comentarios	

Instalación estimada

Tipo de instalación:	**DE INYECCIÓN**		
Profundidad			

Otros/comentarios	**SOLICITAR DISEÑO DE INYECCIÓN A ING DE RESERVORIOS MB**
Anexo N°1:	**Esquema Actual / Propuesto**

Anexo N° 1 PCN-605



9-5/8"

Zapato: 410.89 mbbp

	1.696,0	1.698,0
	1.705,0	1.707,0
	1.742,0	1.744,0
CEMENTADA	1.764,0	1.766,0
AUX CMTADO	1.806,0	1.807,0
	1.813,0	1.816,0
CEMENTADA	1.825,0	1.827,0
	2.081,0	2.085,0
	2.095,0	2.097,0
CEMENTADA	2.140,0	2.141,5
	2.167,0	2.172,0
	2.252,0	2.255,5
	2.298,5	2.300,0
	2.337,0	2.343,0
	2.369,0	2.371,0
	2.383,5	2.389,0
	2.402,5	2.405,5
	2.423,0	2.428,5
	2.456,0	2.460,0
	2.526,0	2.527,0
	2.580,5	2.582,5
	2.682,0	2.684,0

PROBAR ADMISIÓN EN 1813 - 16 m

2.095,0	**2.097,0**	**REPUNZAR / PROBAR ADMISIÓN**

PROBAR ADMISIÓN EN 2252 - 55.5 m

2.401,5	**2.404,5**	**REPUNZAR / AMPLIAR / PROBAR ADMISIÓN**

PROBAR ADMISIÓN EN 2456 - 60 m

Fijar tapón a 2520 m

Tapón a 2670 m (NO ROTAR)

Collar: 2.712,00 mbbp
Zapato: 2.724,28 mbbp
PF: 2730,00 mbbp

Otros/comentarios **POZO CON INSTALACIÓN DE PRODUCCIÓN.**

Firmas & Aprobaciones

	Preparado			Revisado			Aprobado		
Versión	Iniciales	Rol	Fecha	Iniciales	Rol	Fecha	Iniciales	Rol	Fecha
	NR	Proyectista	05/11/2014		Jefe de Proyecto			Líder de Proyecto	

A: CARDENAS, ARTURO EDGARDO

DE: JIMMY APARICIO

Activos MANTIALES BEHR Norte y MANANTIALES BEHR Sur

POZO: PCN-605

ZONA: ESCALANTE NORTE 3 **FECHA:** 29/01/2015

EQUIPO: Y-202

PROGRAMA: Reparación

FONDO: 2664,63 [m]

DISEÑO:

TUBING					
Cantidad	Elemento	Condición	Diámetro	Profundidad	
1	Tapon ciego	Nuevo	2 7/8"	2600,94	
3	TUBING EUE J-55 6.5 lbm/ft	Nuevo	2 7/8"		
1	Separador de gas (Provee Bolland 7.2 metros)	Nuevo	4"		
1	Niple Asiento N11-25	Nuevo	2 7/8"	2564,62	m
46	TUBING EUE J-55 6.5 lbm/ft	Nuevo	2 7/8"		
1	Ancla de Tensión 2 7/8" x 5 1/2" Modelo AT-4	Nuevo	5 1/2"	2125,99	m
± 223	TUBING EUE J-55 6.5 lbm/ft	Nuevo	2 7/8"		

VARILLAS				
Cantidad	Elemento	Grado	Condición	Longitud (Pies)
1	Bomba Mecánica Insertable	-	Nueva	24
23	Barras de Peso 1,50"	GII	Nuevas	25
76	Varillas 3/4"	MMS	Nuevas	25
105	Varillas 7/8"	MMS	Nuevas	25
132	Varillas 1"	MMS	Nuevas	25
-	Trozos 1"	MMS	Nuevos	-
1	Cupla para Vástago 1 1/2" x 1"	-	Nueva	-
1	Vástago Cromado 1,5" x 24'	PC	Nuevo	24

CARACTERíSTICAS DE LA BOMBA

Bomba mecánica insertable provista por BOLLAND

25-150-RHBC-24-4-0-0

Barril de acero cromado interior.
Pistón liso metalizado de 4 ft
Luz total: 0.006".
Espacio nocivo mínimo.
Válvula fija Carburo tungsteno california
Válvula móvil: carburo titanio
Asientos de Carburo de Tungsteno.
Guía de Vástago sin encastre.
Incluir RING VALVE.

AIB **LUFKIN MII 640D-305-168 (Esta a un costado de locación de pozo)**

Arrancar en Carrera minima 130" a 6.1 GPM.

MOTOR **Motor 100 HP 945 RPM**

Colocar polea 205 mm

OBSERVACIONES

El WO sólo deberá bajar la instalación de la Columna de Caños.

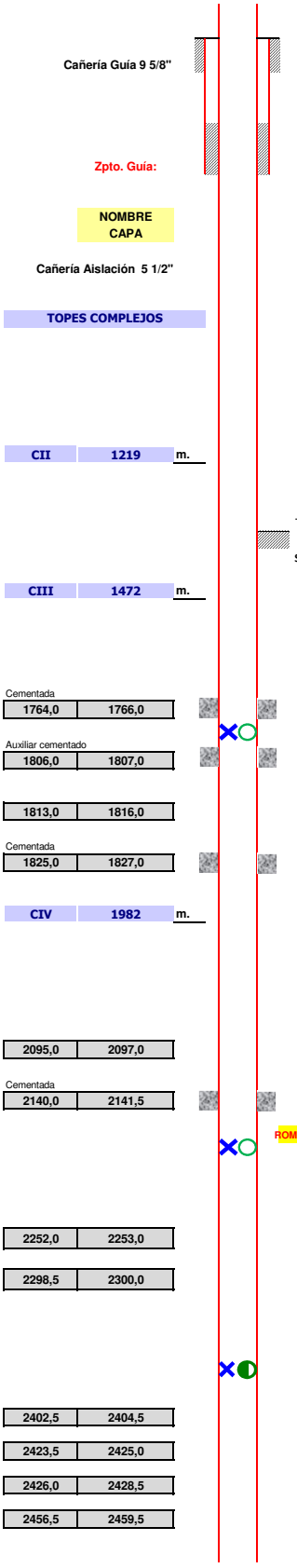
La sarta de v/b y bomba insertable se bajarán con Flush-By.

PROYECTO :	Pampa Castillo Norte
ESTADO ACTUAL :	EN ESPERA DE REPARACION
OBJETIVO :	REPARACIÓN DE PRIMARIA
FECHA INICIO :	20 de enero de 2014
FECHA FINAL :	3 de Febrero de 2014
RESULTADO :	PRODUCTOR DE PETROLEO
ESTADO FINAL :	EN EXTRACCION PETROLEO

P.E.P:	RS1PC.10Y4.58.R0034
ORDEN INTERNA:	
PRESUPUESTO IAP U$S:	193.676
PRESUPUESTO WO U$S:	139.309
ACTUAL U$S:	198.136

Pozo Comprometido del Proyecto				
Pozo Tipo (m3)	% Éxito	Qi Oil (m3/d)	Qoi Risk (m3/d)	Responsable de Propues
2.537	80%	2,6	2,08	Aceto Carlos

FLUIDO DE REPARACIÓN DE PRIMARIA	Agua Dulce con MARCAT 0,4 % (MARBAR)

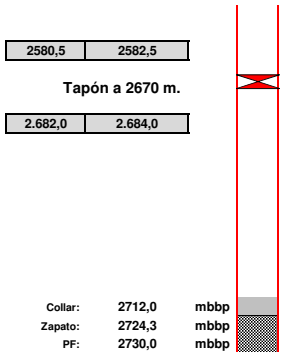


Prof. Inducción PUNZADOS TOPE	BASE	Secuencia Ensayos
1696,0	1698,0	
1705,0	1707,0	
1742,0	1744,0	C
2081,0	2085,0	
2167,0	2172,0	B
2252,0	2255,5	
2337,0	2343,0	
2369,0	2371,0	
2383,5	2389,0	A
2423,0	2428,5	
2456,0	2460,0	

Plan de Trabajos:

1. Montar equipo de acuerdo a procedimientos.
2. Sacar instalación de producción. Importante: Tomar muestra de sustancia obtenida al sacar inst (relleno/hidrocarburo) y enviar a Desarrollo MB.
3. Calibrar pozo hasta tapón a 2670 m.
4. Punzar / repunzar los intervalos previstos según programa (primera etapa de punzados).
5. Realizar el ensayo previsto hasta estabilizar porcentaje de fluidos, caudal y sumergencia.
6. Bajar instalación de producción.
7. Acondicionar boca de pozo, retirar BOP y desmontar equipo.

Petrofísica			Presión		Ensayos de capa			
Hu (m)	Sw %	Φeff %	Presión [kg/cm2]	% PN	CAUDAL (lts/hs)	FLUIDO	NIVEL (m)	Hrs Form
0,5	52,7%	13,2%	S/D	S/D				
2,2	47,9%	15,1%	S/D	S/D				
1,3	57,8%	16,6%	S/D	S/D				
					600	ACLRP	1479	4
					1 carr/hr	Sum.	217	
0,1	76,8%	12,4%	S/D	S/D				
					Ensayo B BOMBEA 2300 Lts DE AGUA TRATADA Y COMPLETA CAPACIDAD DE ROMPE FORMACION C/ 1700 PSI OBSERVANDO QUE ZONA ADMITE TOTAL INYECTADO 780 LTS. CORTA BOMBEO Y OBSERVA QUE ZO			
0,5	60,9%	15,7%	S/D	S/D	2400	ACLRP	1600	6
					4 carr/hr	Sum.	567	
2,25	59,0%	16,1%	S/D	S/D				
0	74,2%	16,3%	S/D	S/D				
0	90,7%	17,1%	S/D	S/D				
0	89,8%	12,2%	S/D	S/D				
					2400	ACP	1700	4
					4 carr/hr	Sum.	552	
0,4	68,5%	20,5%	S/D	S/D				
0,3	78,6%	17,7%	S/D	S/D				



2526,0	2527,0

0,8	54,3%	26,2%	S/D	S/D

Instalación Final:

REFERENCIAS

- **Petróleo Surgente**
- **Petróleo > a 500 l/hs**
- **Petróleo < a 500 l/hs**
- **Rastros de Pet.**
- **Agua de Formación**
- **GAS** — **Emanaciones de GAS**
- SE — **Sin Entrada (Dry)**
- **Tapon fijo con Dump Bailer**
- **Probable Fractura**
- **Fracturada**
- **CEMENTO Cia……**
- **Packer**
- **Tapon recuperable**
- **Bomba mecánica**
- **Bomba PCP**

Consideraciones para la confección del Esquema

Colocar horas de ensayo de Formación (descontar hs de extracción de carga)

Capas surgentes usar factor: 0.5

En capas surgentes: colocar en el esquema Presión Dinámica y Presión Estática (además de los tiempos de recuperacion de Presion Estatica 1´, 5´, 15´, 30´, 45´ y 60´ min.

Todos los ensayos que resulten con fluido líquido agregar la sumergencia del ensayo.

Colocar los metros de arena decantados sobre Tapón constatados luego del ensayo.

FLUIDOS

PF	Petroleo de formación - Petróleo Viscoso
PVF	Petroleo viscoso de formación
PMV	Petróleo muy viscoso
PCA	Petróleo con agua
ACP	Agua con petróleo
ACPV	Agua con petróleo viscoso
ACRP	Agua con rastro de petróleo
ACARP	Agua con abundante rastro de petróleo
ACG	Agua de formación con gas
PCAG	Petróleo con agua y gas
PCG	Petróleo con gas
GS	Gas Seco
GH	Gas Humedo

AREA:	**MANANTIALES BEHR**	
Yacimiento:	**Pampa Castillo Norte**	
POZO:	**PCN-605**	
Equipo :	**YY-202**	
Coordenadas X:	**4939737.76**	Coordenadas Pampa del Castillo (Faja 2)
Coordenadas Y:	**2577923.41**	
Cota:	**673,00**	

sta	**Estimación de Caudal Inicial**	**Qbruto (m3/día):**	**38,88**
		Qneto (m3/día):	**0,80**
		% AGUA:	**98**

COMPAÑÍAS	
Cable	
Cementación	
Punzado	
Fractura	
Acido	
Motor Fondo	
Pesca	
Geles	
Densificantes	
Inhibidores	
Neutrón	
Filtrado	
Cuerda explos.	
Fresas	
Trepanos	

Análisis de Fluido					QBr (m3/d)	QNet (m3/d)
I.T. (%)	DEN (gr/cm3)	Temp (°C)	% AGUA SEP	SAL (gr/lts)		
99,5			99,5		4,32	0,02
E TBG. CONTINUA BOMBEANDO AGUA TRATADA Y E C/ 1300 PSI 360 LTS/MIN. PRUEBA ADMISION x 2 MIN, VOLUMEN NA QUEDA PRESURIZADA C/ 180 PSI. REGISTRA Y DESCARGA PRESION.						
99,5		27,0	99,5	4,9	17,28	0,09
96,0		28,0	95,5	4,1	17,28	0,69

	38,88	0,80

Preparó:

(Vol ext*24*0.5)/1000

OBJETIVO	ESTADO ACTUAL / ESTADO FINAL	RESULTADO	FLUIDO ENSAYO
TERMINACIÓN	EN ESPERA DE TERMINACION	PRODUCTOR DE PETROLEO	**PF**
REPARACIÓN DE PRIMARIA	A ABANDONAR	PRODUCTOR DE AGUA	**PVF**
REPARACIÓN DE SECUNDARIA	A ABANDONAR POR ALTA RAP	PRODUCTOR DE GAS	**PMV**
ABANDONO	A ABANDONAR POR BAJA PRODUCCION	IMPRODUCTIVO	**PCA**
	A ABANDONAR POR RAZONES TECNICAS	EN PESCA	**ACP**
	ABANDONADO	COLAPSADO	**ACPV**
	ABANDONADO POR RAZONES TECNICAS	TRABAJO INCONLUSO	**ACRP**
	EN ESPERA DE REPARACION		**ACARP**
	EN ESTUDIO		**ACG**
	EN EXTRACCION DE GAS		**PCAG**
	EN EXTRACCION PETROLEO		**PCG**
	EN REPARACION		**GS**
	EN RESERVA DE GAS		**GH**
	POZO INYECTOR DE AGUA		**ASF**
	PARADO ALTA RELACION AGUA PETROLEO		
	PARADO ALTA RELACION GAS PETROLEO		
	PARADO TRANSITORIAMENTE DE GAS		
	PARADO TRANSITORIAMENTE DE PETROLEO		
	PARADO TRANSITORIO INYECCION DE AGUA		
	PARADO ZONA ALEJADA (PETROLEO)		
	EN EXTRACCIÓN DE AGUA		
	RESERVA RECUPERACION SECUNDARIA		

PRE DRILLING DATA PACKAGE

Nombre del Pozo	PCN-605
Líder de Proyecto	Fernando Lapania
Fecha	18/09/2013
PDDP (Versión)	V.1

Información Básica (Nota: En caso que no se disponga completar (N/D) o bien no aplica (N/A))

Nombre del Yacimiento	Manantiales Behr
Bloque	Pampa Castillo Norte
Provincia	Chubut
Tipo de Pozo	Productor
Coordenadas Superficie	x=4939737.76 ; y=2577923.41; Cota: 673
Objetivo de la Intervención	REPARACION DE PRIMARIA
Trayectoria del Pozo	Vertical
PEPA/OI/CC	RS1PC.10Y4.58.R0034
Datos de CGS de aislación:	
Costo Lifting (Etapa 30)	
Costo IAP (Etapa 30)	193,676.36 USD

Datos Pozos actual

Año de perforación	2002
Estado Actual	En Extracción de Petróleo
Ultima intervención	14/12/2012. Pulling para cambiar bomba sin complicaciones.
Instalación actual	Bombeo Mecánico
Instalación de superficie	Ok
Ultimo control	21/05/2013 con 9,65 m3/d bruta, 1,15 m3/d de neta y 119,25 m3/d de gas.
Estado del pozo	Ok
Pozos cercanos	Sin inyectores cercanos. Productores cercanos: APC-407, PCN-615 y PCN-639.
Notas adicionales	No se le realizó ningún WO.

Capas existentes:

tope	base	metros	
1.764,0	1.766,0	2,0	**Cementada**
1.806,0	1.807,0	1,0	**Auxiliar cementado.**
1.813,0	1.816,0	3,0	
1.825,0	1.827,0	2,0	**Cementada**
2.095,0	2.097,0	2,0	
2.140,0	2.141,5	1,5	**Cementada**
2.252,0	2.253,0	1,0	
2.298,5	2.300,0	1,5	
2.402,5	2.404,5	2,0	
2.423,5	2.425,0	1,5	
2.426,0	2.428,5	2,5	
2.456,5	2.459,5	3,0	
2.580,5	2.582,5	2,0	
2.682,0	2.684,0	2,0	**Aislada. Bajo tapón a 2670 m.**

PRE DRILLING DATA PACKAGE

Nombre del Pozo	PCN-605
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Propuesta Perfilaje, Punzados y Ensayos

Perfilaje:

Método de Punzado: Punzado en balance, con cañón 4", 32 gr: 4TPP - 0-90° punzados y 2TPP- 0-180° repunzados.

Fluido de Completación: Agua Dulce con MARCAT 0,4 % (MARBAR) o similar

Ensayos: Considerar 12 hrs totales de ensayo: 4 hrs de carga y 8 hrs de formación.

No se registró perfil de presiones

Comentarios:

Tope	Base	Metros	TPP	Carga	Defasaje	Ensayo	Presión (psi)	Fluido esperado	Comentarios
2526,0	2527,0	1,0	4,0	32,0	0 - 90°		-	Petróleo	Punzar
2456,0	2460,0	4,0	2,0	32,0	0 - 180°		-	Petróleo	Repunzar y ampliar
2423,0	2428,5	5,5	2,0	32,0	0 - 180°		-	Petróleo	Repunzar y ampliar
2383,5	2389,0	5,5	4,0	32,0	0 - 90°	A	-	Petróleo	Punzar
2369,0	2371,0	2,0	4,0	32,0	0 - 90°		-	Petróleo	Punzar
2337,0	2343,0	6,0	4,0	32,0	0 - 90°		-	Petróleo	Punzar
2252,0	2255,5	3,5	2,0	32,0	0 - 180°		-	Petróleo	Repunzar y ampliar
2167,0	**2172,0**	**5,0**	**4,0**	**32,0**	**0 - 90°**	**B**	**-**	**Petróleo**	**Romper formación antes del ensayo**
2081,0	2085,0	4,0	4,0	32,0	0 - 90°		-	Petróleo	Punzar
1742,0	1744,0	2,0	4,0	32,0	0 - 90°	C	-	Petróleo	Punzar
1705,0	1707,0	2,0	4,0	32,0	0 - 90°		-	Petróleo	Punzar
1696,0	1698,0	2,0	4,0	32,0	0 - 90°		-	Petróleo	Punzar
		42,5							

Propuesta de Estimulación / Cementación

Tipo de Tratamiento:

Fracturas:

Ácidos:

Cementación:

Post Estimulación:

Comentarios:

Gradiente de Fractura de Pozos Vecinos y/o Gradiente Estimado

Formación	Tope	Base	Presión psi/ft			Candidata o Confirmada	Comentario		Ensayo PostFract
			Min Estimada	Probable	Max Posible				

PRE DRILLING DATA PACKAGE

Nombre del Pozo	PCN-605
Líder de Proyecto	Fernando Lapania
Fecha	18/09/2013
PDDP (Versión)	V.1

Secuencia Operativa

Etapa	Descripción
1	Montar equipo de acuerdo a procedimientos.
2	Sacar instalación de producción. **Verificar si las varillas de bombeo fueron retiradas con equipo flush by. Importante:** Tomar muestra de sustancia obtenida al sacar inst (relleno/hidrocarburo) y enviar a Desarrollo MB.
3	Calibrar pozo hasta tapón a 2670 m.
4	Punzar/repunzar los intervalos previstos. Ver tabla.
5	Ensayar el pozo según lo previsto en la tabla, hasta estabilizar Q - N e IT% . **IMPORTANTE: ROMPER FORMACIÓN DEL INTERVALO 2167-2172 m ANTES DE REALIZAR EL ENSAYO "B". SI ESTE ENSAYO ("B") RESULTA SIN ENTRADA, CONTINUAR CON EL PROGRAMA.**
	En caso de extraer HIDROCARBURO en los ensayos, tomar muestras para análisis y enviar a Epsilon.
	En caso de extraer AGUA DE FORMACIÓN o AGUA DE FORMACIÓN CON LEVES RASTROS con caudales mayores a 600 lt/hr, tomar muestras para análisis y enviar a Epsilon.
	En caso de obtener ensayo con GAS, medir presiones dinámicas por distintos orificios y medir presión estática. Tomar muestra de gas con bamboleta para análisis.
6	Bajar instalación de producción según diseño proporcionado por Ing de Producción. Bajar solamente la instalación de tubing **(las varillas de bombeo se bajarán con equipo flush by).**
7	Desmontar equipo de acuerdo a procedimientos.

Otros/comentarios

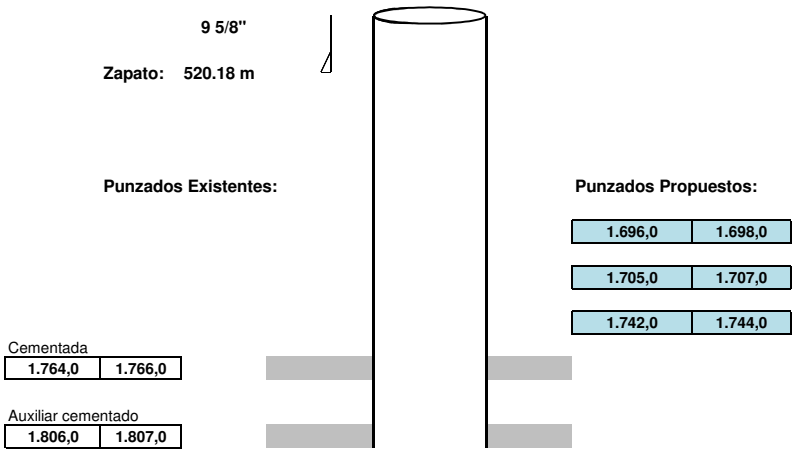
Instalación estimada

Tipo de instalación: Asistida

Profundidad	Descripción de herramienta

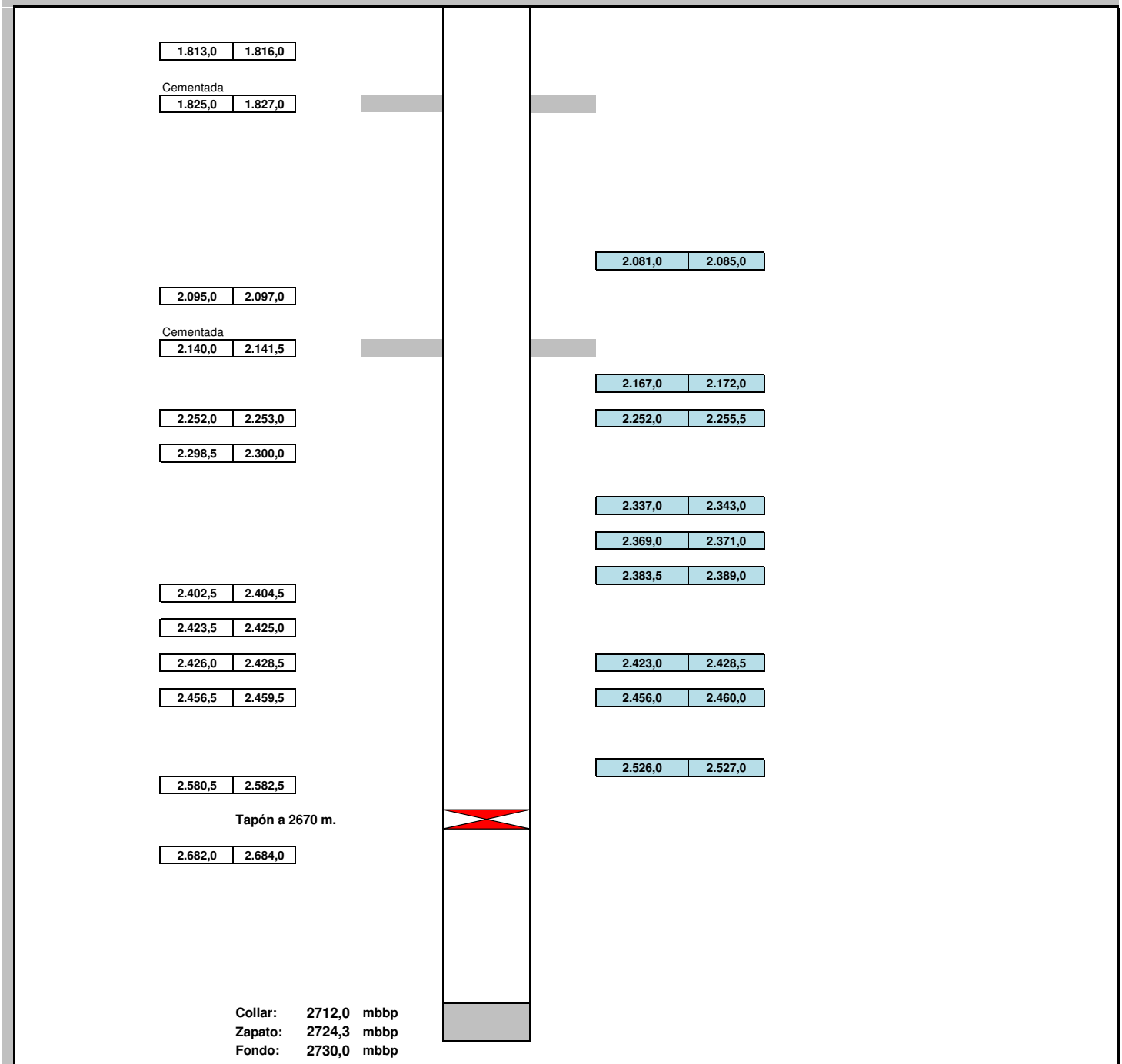
Otros/comentarios **CONSULTAR A INGENIERÍA DE PRODUCCIÓN MANANTIALES BEHR SUR EL DISEÑO ESTIMADO**

Anexo N° 1 ESQUEMA PROPUESTO



PRE DRILLING DATA PACKAGE

Nombre del Pozo	PCN-605
Líder de Proyecto	Fernando Lapania
Fecha	18/09/2013
PDDP (Versión)	V.1



Otros/comentarios

2456 2460

Firmas & Aprobaciones

	Preparado			Revisado			Aprobado	
Versión	**Iniciales**	**Rol**	**Fecha**	**Iniciales**	**2526**	**2527**	**Iniciales**	**Rol**
		Proyectista			Jefe de Proyecto			Líder de Proyecto

PRE DRILLING DATA PACKAGE

Nombre del Pozo	PCN-605
Líder de Proyecto	Fernando Lapania
Fecha	18/09/2013
PDDP (Versión)	V.1

A: P. TEMPRANO
DE:G. JANZEN

DISTRITO. M. BEHR / R. ALI

POZO: PCNa-605
ZONA: ESCALANTE III

FECHA: 17/01/2003
CUENTA:

PROGRAMA:

DISEÑO:

TBG

1 TAPON CIEGO 2.7/8" ± 2610 m
3 TBG 2 7/8" LISO
1 SEPARADOR DE GAS (6 MTS)
1 ASIENTO BHD 2 7/8" EN ± 2580 m
87 TBG 2 7/8"
1 ANCLA ATSA 5 1/2" x 42.000 LBS EN ± 1750 m
± 184 TBG 2 7/8"

B/B

BBA 25-200-RW-BC-PG- 24 5´
15 B/B 7/8 " UHS
77 'B/B 3/4" UHS
122 'B/B 7/8" UHS
± 125 B/B 1" UHS
TROZOS 1" UHS
VASTAGO CROMADO 1 1/2" x 22´

Accesiorios: Grampa+leutert+tee prensa+rattigan+ cupla de vgo+ red uhs 1 de 7/8" a 1"+ 3 7/8" a 3/4"+valvula con niple sch-80+espaciadores+bhd

AIB **LUFKIN M-640-305-168**
CARRERA **149"**
REGIMEN **7 GPM**
CONTRAPESO **4 CONTRAPESOS AL EXTREMO DE LAS MANIVELAS**
MOTOR **100 hp**
PROGRAMA

TORQUEAR VARILLAS CON PLANTILLA UHS

REPSOL YPF

UE CH-CS

DIST. MANANTIALES BEHR

PROGRAMA de TERMINACION

Pozo: PCN-605

FECHA: 27-dic-02

A. Montar equipo PI xxx

B. Correr perfil cemento con neutrón de correlación.

C. Punzar con cañón de 4", 4TPP las siguientes zonas:

	Profundidad induccion		Ensayo	Prof Neutron	Angulo	Carga
1	2682,0-84,0	2	Individual	2682,0-84,0	0-180°	32gr
2	2580,5-82,5	2	Individual	2580,5-82,5	0-180°	32gr
3	2456,5-59,5	3	Individual	2456,5-59,5	0-180°	32gr
4	2426,0-28,5	2,5	Conjunto	2425,9-28,4	0-90°	32gr
	2423,5-25,0	1,5		2423,4-24,9		
5	2402,5-05,5	3	Individual	2402,4-05,4	0-180°	32gr
6	2298,5-300,0	1,5	Individual	2298,2-99,7	0-90°	32gr
7	2252,0-53,0 ver cem	1	Individual	2251,7-52,7	0-90°	32gr
7	2140,0-41,5	1,5	Individual	2139,7-41,2	0-90°	32gr
8	2095,0-97,0	2	Individual	2094,5-96,5	0-180°	32gr
9	1825,0-27,0	2	Individual	1824,1-26,1	0-90°	22gr
10	1813,0-16,0	3	Individual	1812,1-15,1	0-180°	22gr
11	1764,0-66,0	2	Individual	1763,0-65,0	0-90°	22gr
	TOTAL:	27	m			

Probar circulación entre punzados. Si circula, ensayar las 3 en conjunto.

C. Ensayar como se indica las zonas punzadas.

D. Realizar punzado auxiliar 1806/07 para aislar capa 10 (1813/16)

Diseño de Csg :

Caños Marca: m — **Zapato:2724.28 m**

Collar Diferencial: 2711.51 m — **Fondo: 2730 m**

Preparado por:	Revisado por:	Aprobado:
R. Delupí	R. Kirn	D. Cocordano

PROFUNDIDAD POZO:	1698,00
PROFUNDIDAD ZTO:	#¡REF!
PROFUNDIDAD COLLAR:	#¡REF!

CAÑO MARCA:	10,51	1297,89

T. E. 155922159 BAT.

POZO: **PCN-605**

EQUIPO: **PI-222**

TE.155922159

Inicio:	05/01/2003
Termino:	25/01/2003

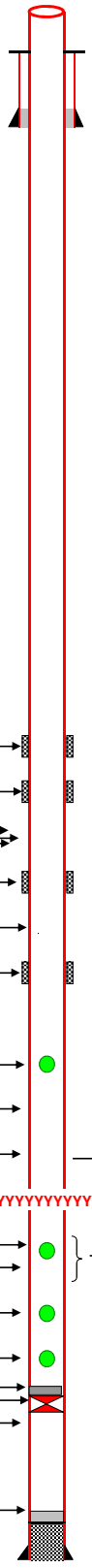
Casing
Ø 13-3/8"
Ø 9-5/8" m 410,89
Ø 7"
Ø 5½" m 2711,51

OBJETO:	TERMINACION				Prox.	1°		
Est.Actual :					Prox.	2°		
PROYECTO:					N° de GRAFO			
Fluído	Cable	Cta	Frac	Acid.	N° de PEP	S1EC.5300121		
AGUA REC.	COPGO	BJ/S	BJ	BJ	COSTO OBJETIVO:			
SECUND.					PRESUPUESTO:	60.583	36.865	

Montó equipo
Probó boca de pozo con pérdida , suelda cupla en boca de pozo,.monta BOP. Prueba con , con buen resultado,
Monta Cia.Copgo punza: 2682,0/84,0-2580,5/82,5-2456,5/59,5-2426,0/28,5-2423,5/25,0-2402,5/05,5-2298,5/300,0-2252,0/53,0-2140,0/41,5-2095,0/97,0-1825,0/27,0-1813,0/16,0 1764,0/66,0.-
Baja hta. Ensayo con tubing armando.-
Zonas ensayadas: A - B - C - D - E - F - G - H -I - J - K - L.-
Cia, Copgo fija tapónes N" en 2670m. Y 2170m.
Dowell cementa zona 2140,/41,5m. 30 bolsas (1150/2600/3500 psi.)
Cía.Copgo Fijó tapón N" en 1845m. Y Tapón K" en 1820m.Punza aux. 1806/07m.
BJ. Cementa con Stinger zona 1825/27m, 10 bolsas (2630/3200/2240psi.)
Saca hta.
Baja Pkr, vierte arena dejando tope en 1809m. Dowell cementa aux.1806/07 con 30 bolsas, con 1 bls. De lechada en formación cierra con 4000 psi.
Cementa zona 1764,0/66,0 con 30 bolsas (1400/3300/3500 psi.)
Saca hta. Baja motor de fondo Constata cielo en 1755,68mts. Rota hasta.2170,60m. P/libre
Realiza hermeticidad zonas cementadas (2140,0/41,5 con entrada - 1825,0/27,0 positivo - 1813,0/16,0 S/E. Aux-1806/07 y 1764,0/66,0 positivo)
Cia.Copgo repunza zona 1813,5/15,0(REENSAYA)
Cia. BJ. Cementa zona 2140,0/41,5 (10 bolsas - 1700/3000/3000 psi.-
Rota cemento de 2128m. Hasta 2142m.
Realiza hermeticidad zona cementada (2140,0/41,5 positivo)
saca hta. Baja Instalación final de producción.-

Actual: DTM. AEA-493

Capa N° | CAPAS NUEVAS | CAPAS VIEJAS



1764.0/66.0	L	3000 l/h. N.850m. 100% agua sal 6,4 g/l. Ph9. Con rast.petróleo	
Auxiliar 1806/07			
Repunzó 1813,5/15,0 4tpp.22gr — 1813.0/16.0	K	3000 l/h. N. 500m. 100% agua sal 8,1 g/l. Ph9.-(CEMENTÓ AUXILIAR)	
		Reensaya: 1060 l/h. N. 1620m. 12% agua sal 6,4 D.0,875g/l. Ph8	1060
1825.0/27.0	J	1260 l/h. N. 1680m. 100% agua sal 4,0 g/l. Ph9, (**15mts.arena s/tapón**)	
2095.0/97.0	I	**2400 l/h. N.1650m. 20% agua sal 6,4g/l. D.0,935g/l.**	2400
2140.0/41.5	H	S/Nat. 1" 12,700 l/h. Agua con rastros pet. 22/24 kg/cn2. Sal 5,8 g/l. **94% agua**	
		S/Nat. 1/2" 7680 l/h. Agua con rastros pet. 38 kg/cn2. Sal 5,8 g/l. **P.Est. 72 kg/cn2**	
		Ensaya herm.negativo(1400l/h. N. 1969m.) cementa con 10 bolsas (1700/3000/3000psi)	
2252.0/53.0	G	340 l/h. N. 2117m. 20% agua D.0,900 g/l. Sal 8,7g/l. Ph8 c/rast, gas	340
2298.5/300.0	F	400 l/h. N.2146m. 1c. 100% agua sal 9,3g/l. Ph7 con rastros de pet.y gas	400
2402.5/05.5	E	S/Nat. 50mm. Con 2 kg/cn2. 440 lts.	
probó con 500psi circulación entre punzados, no circuló.- Mal Cemento YYYYYYYYYYYYYYYYYYYYYYYY		" 19mm. Con 6kg/cn2. 400 lts **4% agua sal 8,8g/l. Ph7.D.0,910 g/l.**	
		" 12mm.Con 10 kg/cn2. 360 lts.	
		Estática ; 65 KG/CN2 EN 90´	
2423.5/25.0 — 2426.0/28.5	D	320 l/h. N.2309m. 45% agua s/estab. D.0,925 g/l. Sal 7,0g/l- ph8	
2456.5/59.5	C	1800 l/h. N.2100m. 8% agua sal 4,9 g/l. D,0,850 ph8	1800
2580.5/82.5	B	2400 L/H n.1700m. 4c. 4% agua ph7 sal 4 g/l. D.0,840 g/l. Con rast. Gas	2400
Cuchara cemento			
Tapón N" 2670m.			
2682.0/84.0	A	S/N. Gas húmedo por 50mm. 5kgr/cn2.-(No enciende el mechero)	
		S/N. Gas húmedo por 19mm. 8kgr/cn2.-(No enciende el mechero)	
		S/N. Gas húmedo por12mm. 20kgr/cn2.-(No enciende el mechero)	
		Presión estática: 82 kg/cn2.- CO2= 80,4 %	

C.Cto.	0,00
Collar:	2.711,51
Zap.:	2.724,28
Prof.final	2.730,00

INST.FINAL: Cupla tapón+3tbg2.7/8"+sep.gas+bhd(2575.46m)+86T.2.7/8" +ancla AT (1745.39)+181 tubing 2.7/8"
MAT.BBEO: Bba.RWBC+15 7/8"+77 3/4"+122 7/8"+122 1" +4trozos+vast.1.1/2"

Tapón Fijo | Repasada | Ctda. | Cto.en Csg
CSG Roto | Acidificada | Pzda. | Fracturada

Legajos del Pozo PCN-621

LABORATORIO
BASE CHUBUT

EPSILON SRL
LABORATORIO INDUSTRIAL

Ruta 3, Km.1838, BºGral. Mosconi - (9005) C. Rivadavia -Chubut, Arg. * Tel/Fax: (0297)-4550825 / 4559365

Muestra de: Petróleo
Lugar de Muestreo: ***Pozo: PCN-621***
Fecha de Extracción: 18/04/05
Fecha de Recepción: 18/04/05
Solicitado Por: REPSOL - YPF SA. ***Sr. Rogerio Marquez***
Objetivo del Análisis: Control de calidad.

PROTOCOLO Nº: 1682-05CR

Fecha Informe: 26/04/05

ITEM Nº =	**1a**	**10e**								**Distrito Nº = M. Behr**
CANTIDAD =	**1**	**13**								**Nº Orden = RS1EC.5C05.53.P0003**

INFORME DE ENSAYO

PETROLEO HIDRATADO

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
% AT(%AL+D4007)	**S/N**	% $^{V}/_{V}$	6.0
% Agua Libre	**Procedimiento REPSOL YPF**	% $^{V}/_{V}$	0.0
Impureza Total	**ASTM D-4007 Mod.**	% $^{V}/_{V}$	6.0
Arena y Barro		% $^{V}/_{V}$	0.0
Agua Separada		% $^{V}/_{V}$	4.0
Emulsión		% $^{V}/_{V}$	2.0
Agua Exacta		% $^{V}/_{V}$	6.0
Densidad a 15ºC de petróleo	**ASTM D-5002**	g/cm^3	0.9024
Punto de escurrimiento	**ASTM D-97**	ºC	-4

VISCOSIDAD (**MU**) Y ESFUERZO DE CORTE (**TAU**) x REOMETRO

TEMP.	100 RPM		300 RPM		600 RPM	
	MU (cp)	**TAU** (Pas)	**MU** (cp)	**TAU** (Pas)	**MU** (cp)	**TAU** (Pas)
30°C	123	16	116	44	115	84
40°C	83	11	78	29	77	54
50°C	56	7	53	19	52	35

PETROLEO DESHIDRATADO

DETERMINACION	NORMA	UNIDAD	VALORES ENCONTRADOS
% de parafina	**UOP-86**	% $^{p}/_{p}$	2.2
% de Asfalteno	**SPE 23810**	% $^{p}/_{p}$	1.2

Analista: A.G/MB/GN.

.....
Ing. Miguel LIZZANO
Rep. Tec. Por ***EPSILON S.R.L.***

LODO

Provincia: CHUBUT

Campo: PAMPA DEL CASTILLO NORTE

COMPANIA: YPF S.A.

POZO: YPF.Ch.PCN–621

CAMPO: PAMPA DEL CASTILLO NORTE

PROVINCIA: CHUBUT **PAIS:** ARGENTINA

Schlumberger

COMBINADA

ESCALA: 1/200

AIT–BHC–LDL–CAL
RFT

Elev.: B.V. 677.89 m
N. T. 672.09 m
M. R. 677.59 m

LOCACION

Ref. Permanente: NIVEL TERRENO Elev.: 672.09 m
Reg. Medido Desde: NIVEL TERRENO 0.0 m sobre nivel ref.
Perforacion Medida Desde: NIVEL TERRENO

Compania: YPF S.A.
Pozo: YPF.Ch.PCN–621
Locacion: CAS

UWI: AR0100006241	Equipo PI–390	Longitud X: 4.939.776,85	Latitud Y: 2.578.586,41

	Run 1	Run 2	Run 3
Logging Date			
Run Number			
Depth Driller			
Logger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth		@	
Casing Logger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature		@	
RMF @ Measured Temperature		@	
RMC @ Measured Temperature		@	
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@	@	@
Maximum Recorded Temperatures			
Circulation Stopped / Time			
Logger On Bottom / Time			
Unit Number / Location			
Recorded By			
Witnessed By			

Fecha			27–Feb–2005				
Corrida No.			1				
Prof. Perforador			2650 m				
Prof. Registro			2654 m				
Primera Lectura			2651.6 m				
Ultima Lectura			427.6 m				
Fondo Tuberia Perforador			9.625 in	@	429.3 m	@	
Fondo Tuberia Registro			427.6 m				
Diametro Trepano			8.500 in				
Tipo De Lodo			IDCAP–YESO				
Densidad	Viscosidad		1.2 g/cm3	60 s			
Perdidas	PH		6.7 cm3	8.5			
Fuente Muestra De Lodo			PILETA				
RM @ Temp.			1.646 ohm.m	@	10 degC	@	
RMF @ Temp.			1.380 ohm.m	@	10 degC	@	
RMC @ Temp.			1.905 ohm.m	@	10 degC	@	
Fuente: RMF	RMC		PRENSA	PRENSA			
RM @ T. Fdo.	RMF @ T. Fdo.		0.425 @ 101	0.353 @ 101		@	@
Temp. Maxima Medida			101 degC				
Circulacion Final		Hora	27–Feb–2005		2:30		
Registro Fondo		Hora	27–Feb–2005		11:02		
Unidad No.	Locacion		3023	CAS			
Registrado por:			A.Georgi / R. Zerkowski				
Testigo			Anibal Silveira				

DEPTH SUMMARY LISTING

Date Created: 28–FEB–2005 0:00:39

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW–B	Type:	CMTD–B/A	Type:	7–42P
Serial Number:	4983	Serial Number:	2193	Serial Number:	4127
Calibration Date:	6–Jun–2003	Calibration Date:	3–Feb–2005	Length:	4821.02 M
Calibrator Serial Number:	5969	Calibrator Serial Number:	1028		
Calibration Cable Type:	7–42P	Calibration Gain:	1.02	Conveyance Method:	Wireline
Wheel Correction 1:	–4	Calibration Offset:	589.00	Rig Type:	LAND
Wheel Correction 2:	–4				

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	67.10 M
Rig Up Length At Bottom:	67.10 M
Rig Up Length Correction:	0.00 M
Stretch Correction:	1.80 M
Tool Zero Check At Surface:	0.05 M

Depth Control Remarks

1. Primera carrera en el pozo y perfil de referencia de profundidad.
2. Procedimientos de control de profundidad estandard de Schlumberger aplicados a esta carrera.
3. Estiramiento del cable entre perfil bajando y subiendo = 1.8 m
4.
5.
6.

OTROS SERVICIOS # 1		OTROS SERVICIOS # 2	
OS1:	AIT–BHC–LDL–CAL	OS1:	
OS2:	RFT	OS2:	
OS3:		OS3:	
OS4:		OS4:	
OS5:	PI–390	OS5:	

OBSERVACIONES: CORRIDA # 1	OBSERVACIONES: CORRIDA # 2
1. Primera carrera en el pozo y perfil de referencia de profundidad.	
2. Herramienta corrida segun diagrama.	
3. Esquema del pozo segun datos del perforador.	
4. AIT y DSLT corridos descentralizados usando stadoff de 1.5".	
5. Ultima circulacion termino en 27–Feb–2005 a las 2:30 hs y duro 1 h.	
6. Datos adicionales del lodo: Cl= 700 ppm, Ca= 480 ppm.	
7. Coordenadas definitivas.	
8. Maxima desviacion del pozo segun datos del perforador: 2.5 deg.	
9. Maxima temperatura registrada 101 degC, tomada desde termometro en la punta de la herramienta.	
10. Lectura de BHC y LDL afectadas en zonas de mal caliper.	

10. Lectura de BHC y LDL afectadas en zonas de mal caliper.

11. FPHI=SPHI, FEXP=2 y FNUM=0.81 utilizados para calculo de RWA.

12. Lectura de BHC y LDL registrados hasta 1200 m a pedido del cliente.

13. Trepano de 8−3/4" desde 1577 m hasta zapato. Trepano de 8−1/2" desde fondo hasta 1577 m.

CORRIDA #1			CORRIDA #2		
ORDEN DE SERVICIO:			ORDEN DE SERVICIO:		
VERSION DEL PROGRAMA:	12C0−301		VERSION DEL PROGRAMA:		
NIVEL DEL LODO:	0 m		NIVEL DEL LODO:		
INTERVALO REGISTRADO	COMIENZO	FINAL	INTERVALO REGISTRADO	COMIENZO	FINAL

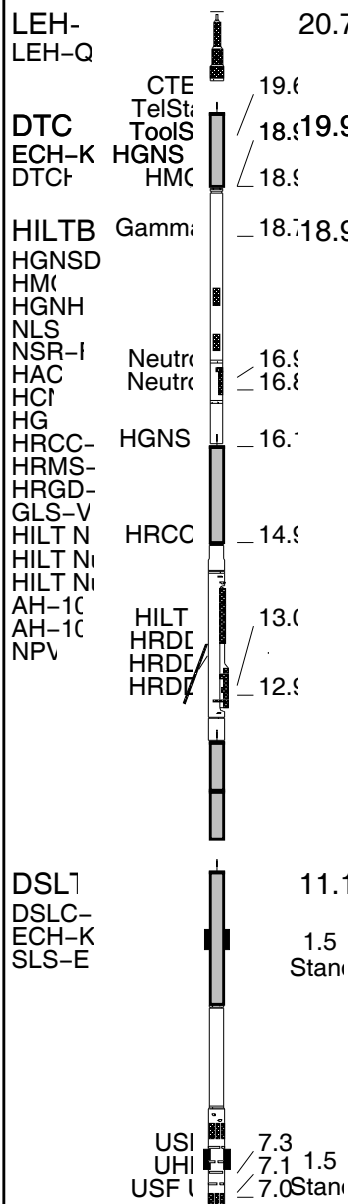
DESCRIPCION DEL EQUIPO

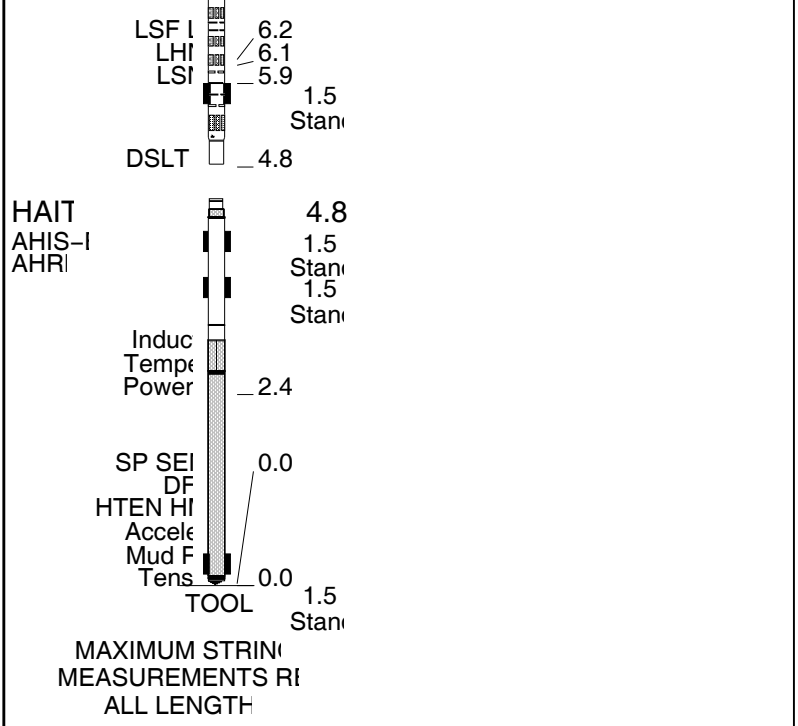
CORRIDA # 1

CORRIDA # 2

SURFACE I
GSR−U WITM (
NCT
CNB
NCS

DOWNHOLE





YPF.Ch.PCN

Schlumbe

PI–39

Altura Mesa: 5

Nivel Terr

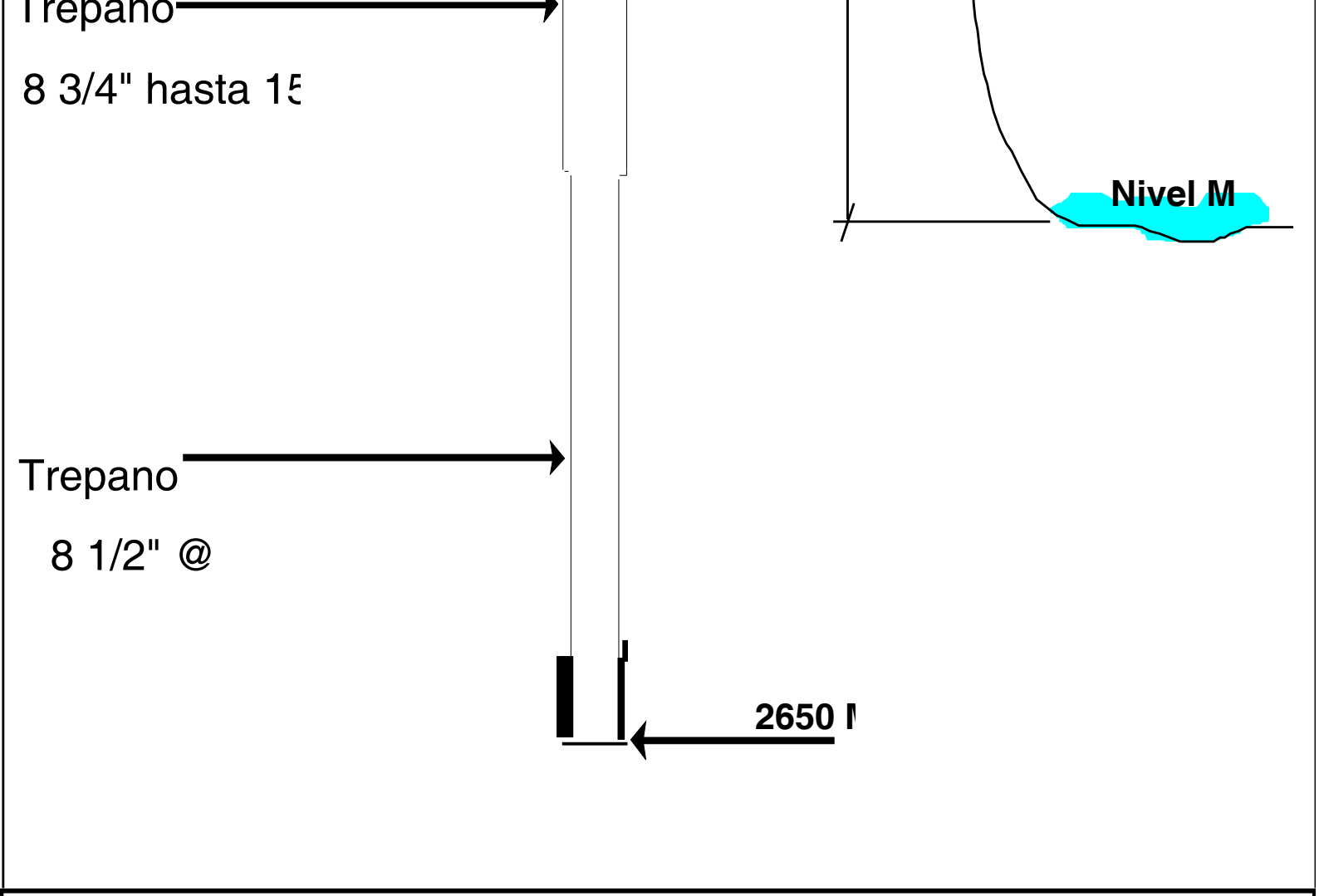
Nivel Refere

Casing 9 5

32.3 Lb/p

Zapato @ 429

Cota: 672.0



Schlumberger

TRAMO PRINCIPAL

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_078PUP	FN:3	PRODUCER	27–Feb–2005 22:45	2659.1 M	356.3 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_079PUP	FN:4	PRODUCER	27–Feb–2005 23:00	2659.1 M	417.9 M

Integrated Hole/Cement Volume Summary

Hole Volume = 97.35 M3

Cement Volume = 63.23 M3 (assuming 5.50 IN casing O.D.)

Computed from 2653.9 M to 427.6 M using data channel(s) HCAL

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

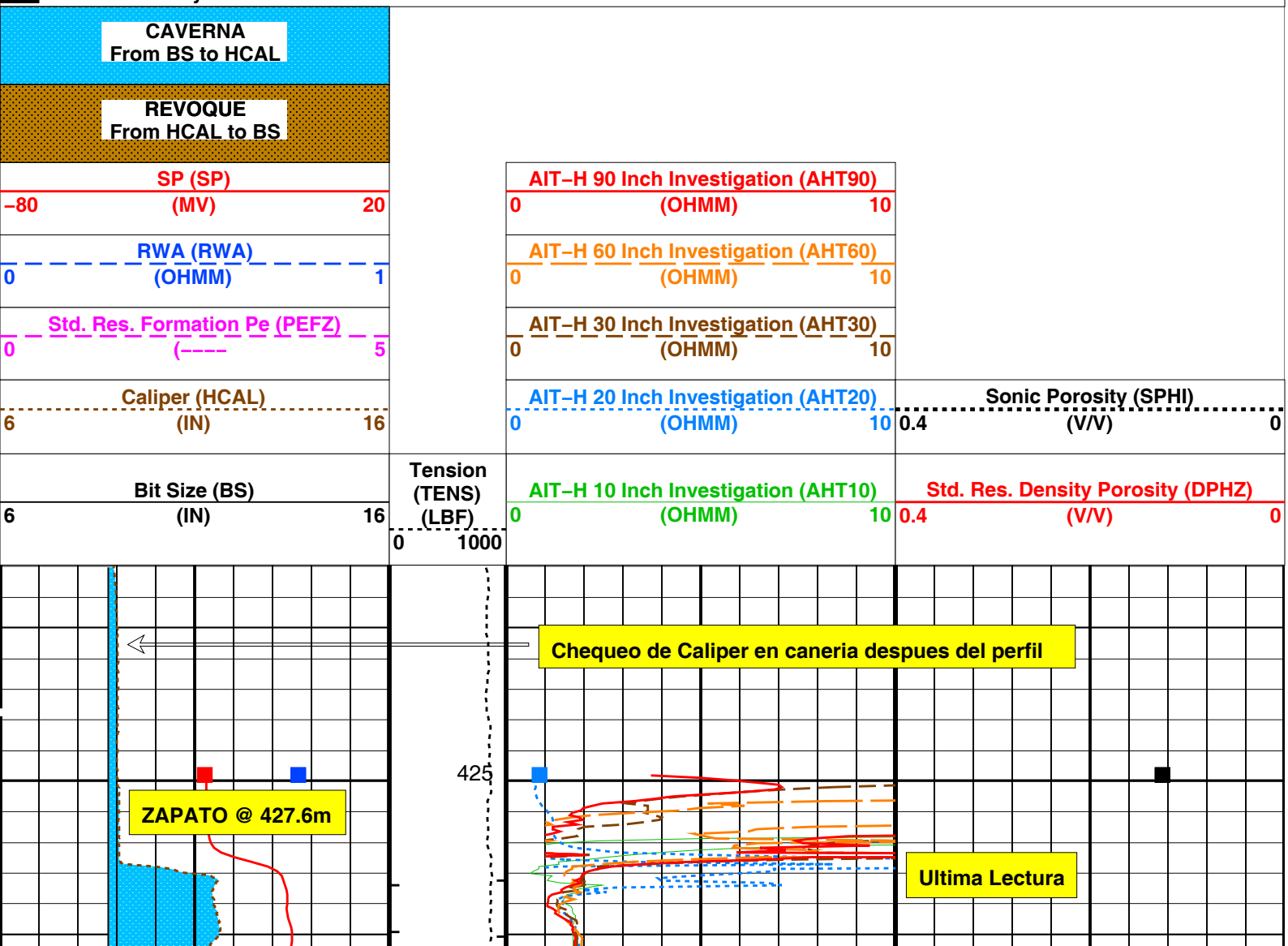
Changed Parameter Summary

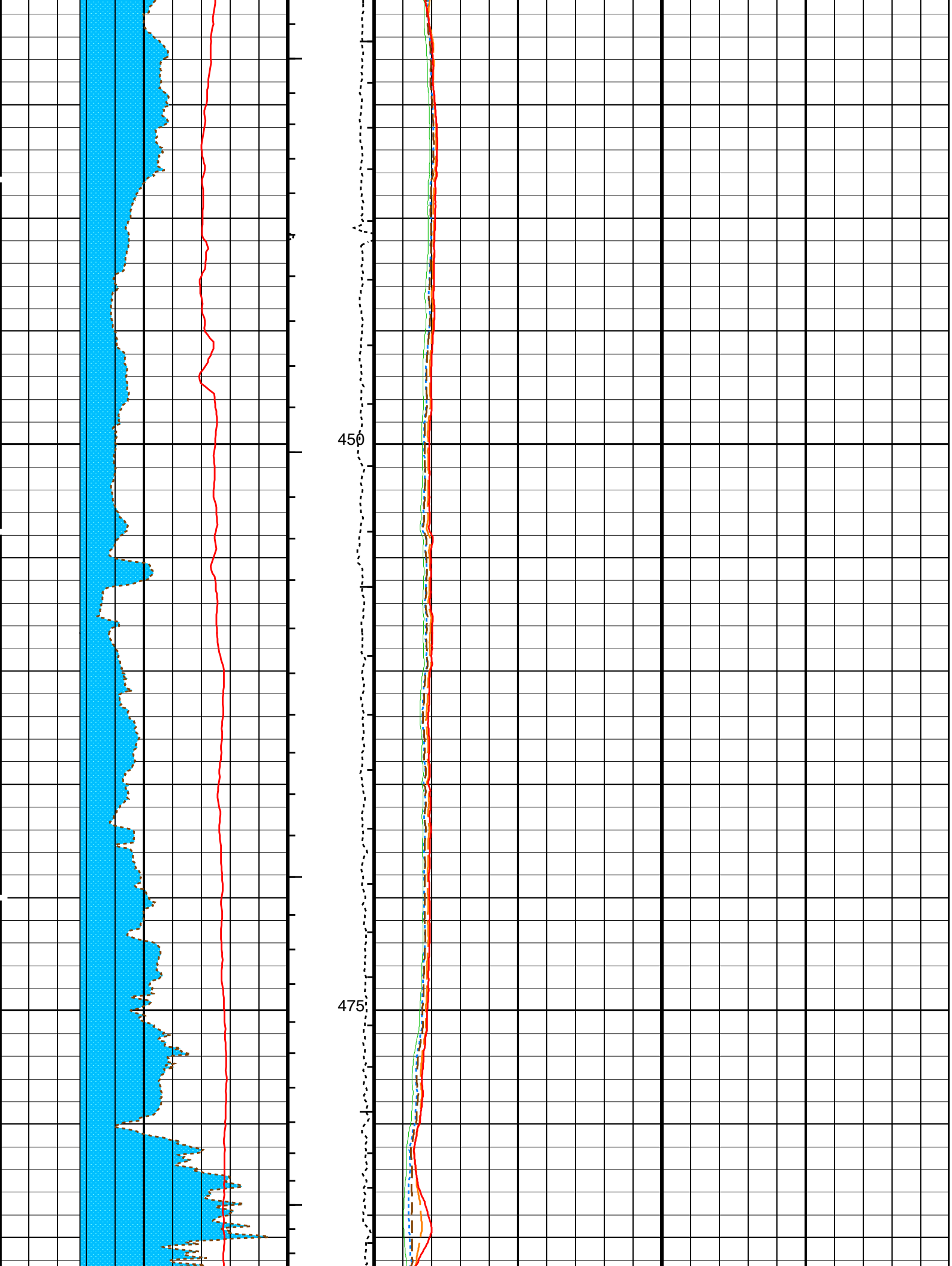
DLIS Name	New Value	Previous Value	Depth & Time
BS	8.500 IN	8.750 IN	2659.1 23:00:54
	8.500 IN	8.500 IN	2605.0 23:00:59
	8.500 IN	8.500 IN	2589.9 23:01:00
	8.750 IN	8.500 IN	1576.9 23:02:44
	8.750 IN	8.750 IN	1554.9 23:02:46
	8.750 IN	8.750 IN	1524.9 23:02:49
	8.750 IN	8.750 IN	1409.9 23:03:01
	8.750 IN	8.750 IN	1405.0 23:03:02
	8.750 IN	8.750 IN	1403.0 23:03:02
	8.750 IN	8.750 IN	1401.9 23:03:02
	8.750 IN	8.750 IN	1400.9 23:03:02
	8.750 IN	8.750 IN	1399.9 23:03:02
SPDR	0 MV/M	0 MV/M	2659.1 23:00:54
	−1 MV/M	0 MV/M	2605.0 23:00:59
	0 MV/M	−1 MV/M	2589.9 23:01:00
	0 MV/M	0 MV/M	1576.9 23:02:44
	0.17 MV/M	0 MV/M	1554.9 23:02:46
	0 MV/M	0.17 MV/M	1524.9 23:02:49
	0.6 MV/M	0 MV/M	1409.9 23:03:01
	0 MV/M	0.6 MV/M	1405.0 23:03:02
	−7 MV/M	0 MV/M	1403.0 23:03:02
	0 MV/M	−7 MV/M	1401.9 23:03:02
	9 MV/M	0 MV/M	1400.9 23:03:02
	0 MV/M	9 MV/M	1399.9 23:03:02

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

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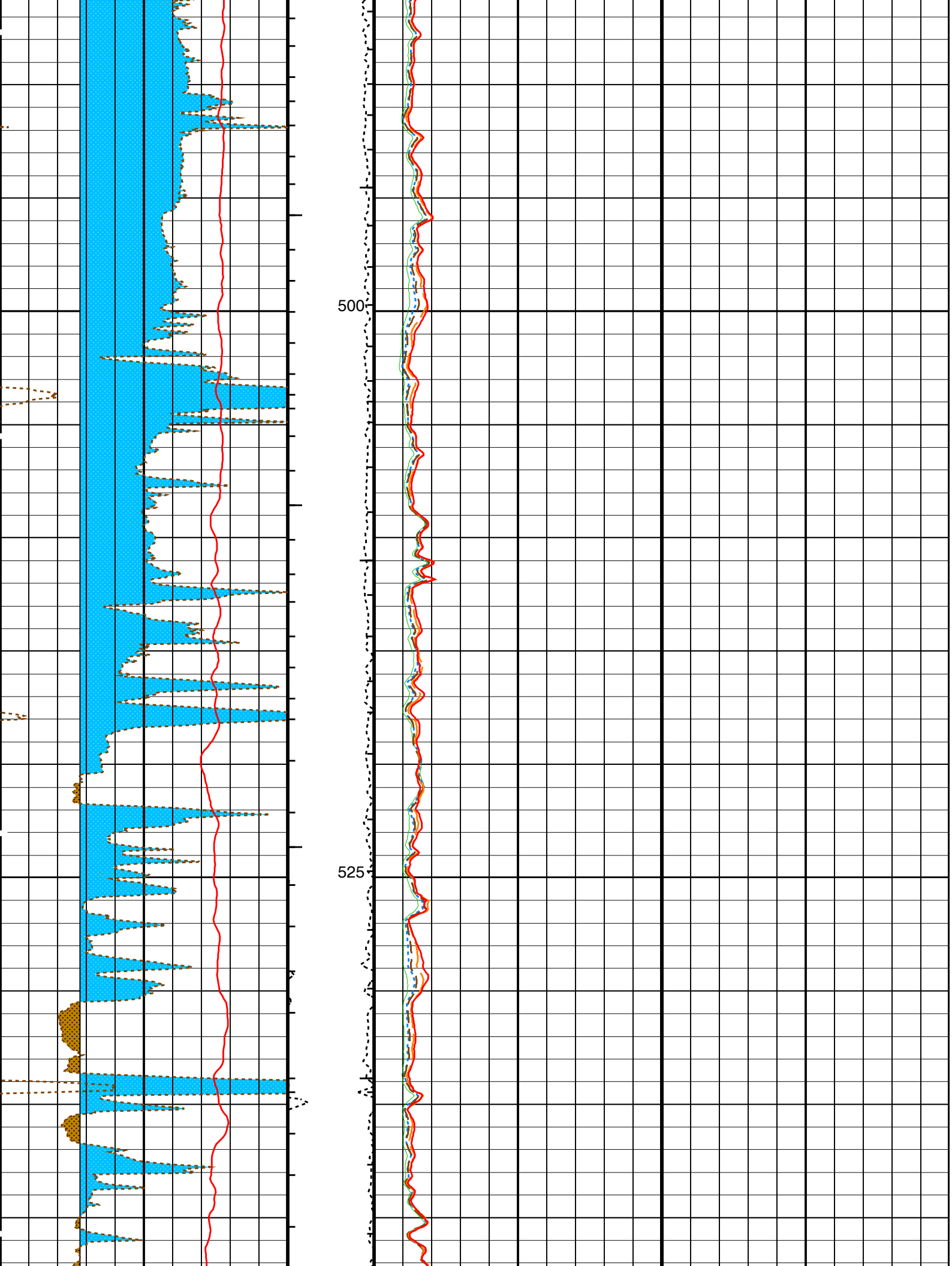
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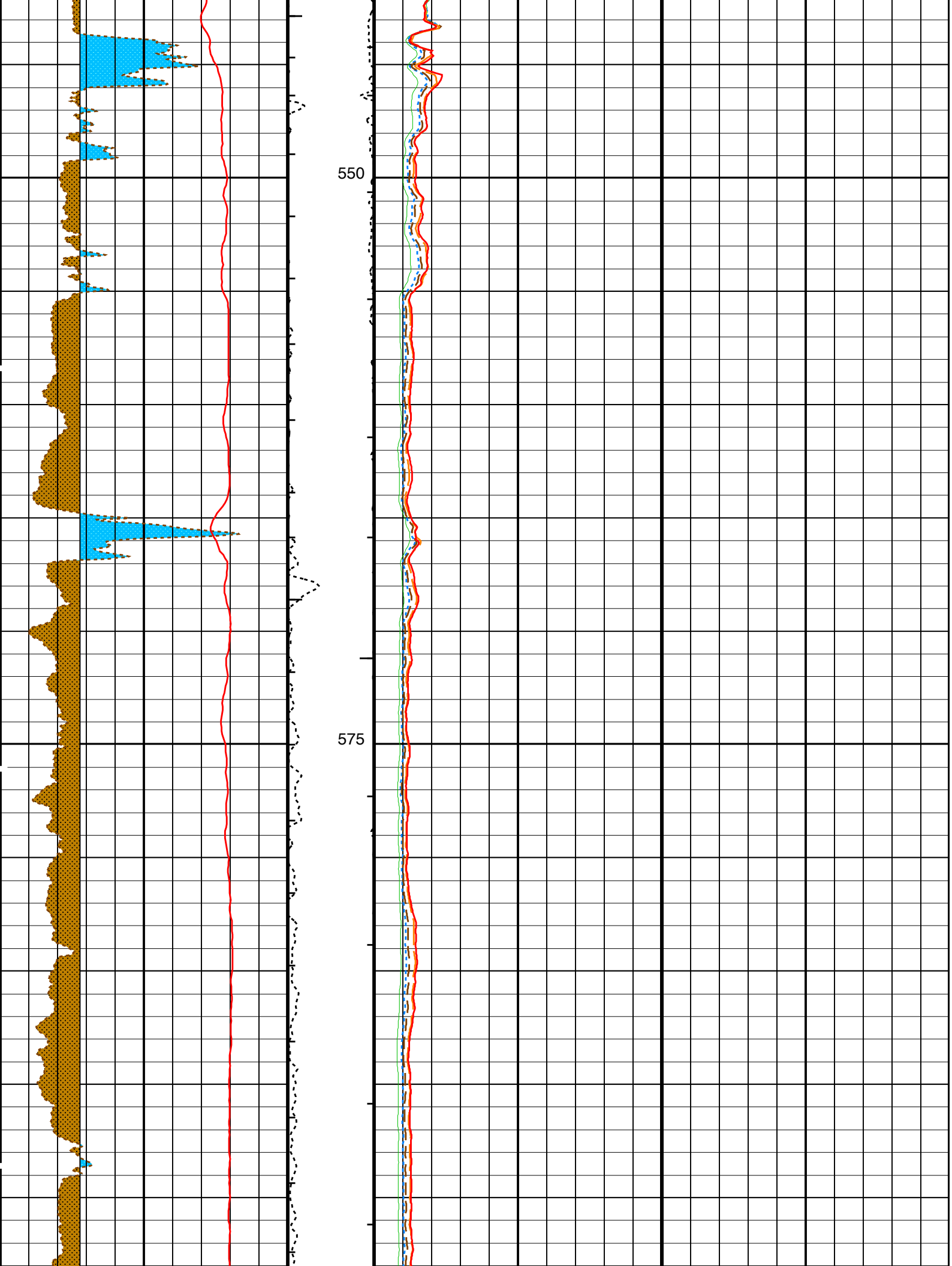
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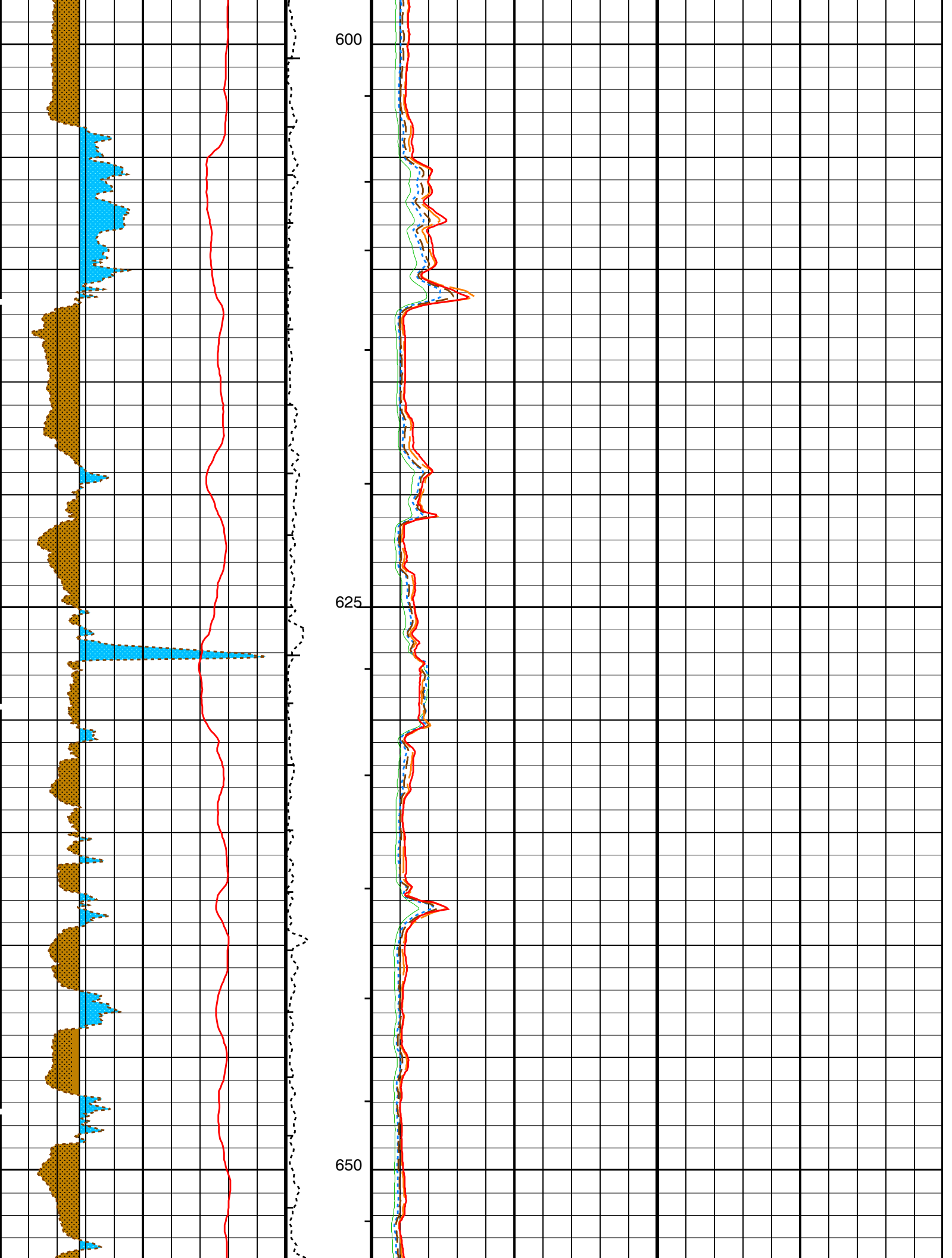
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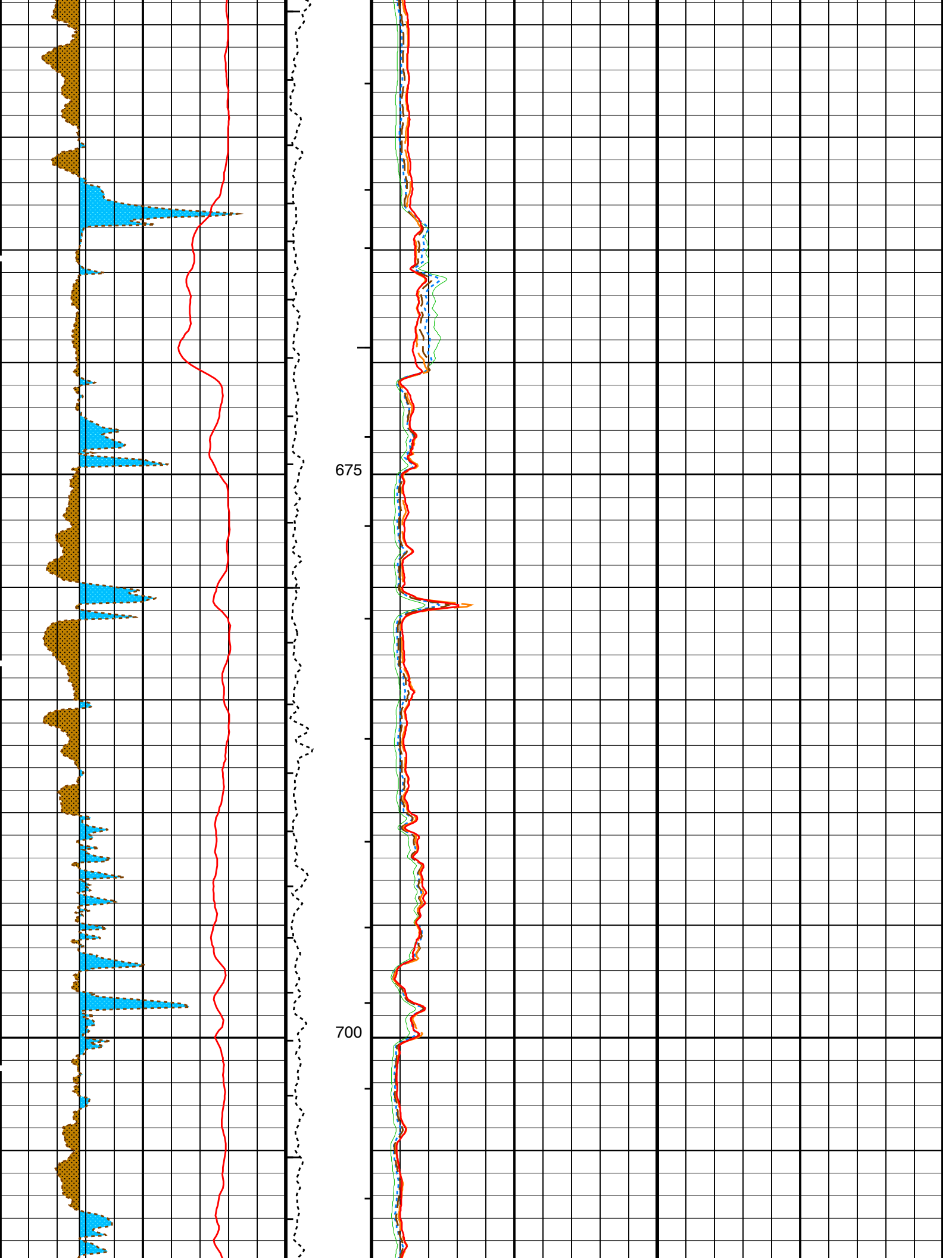
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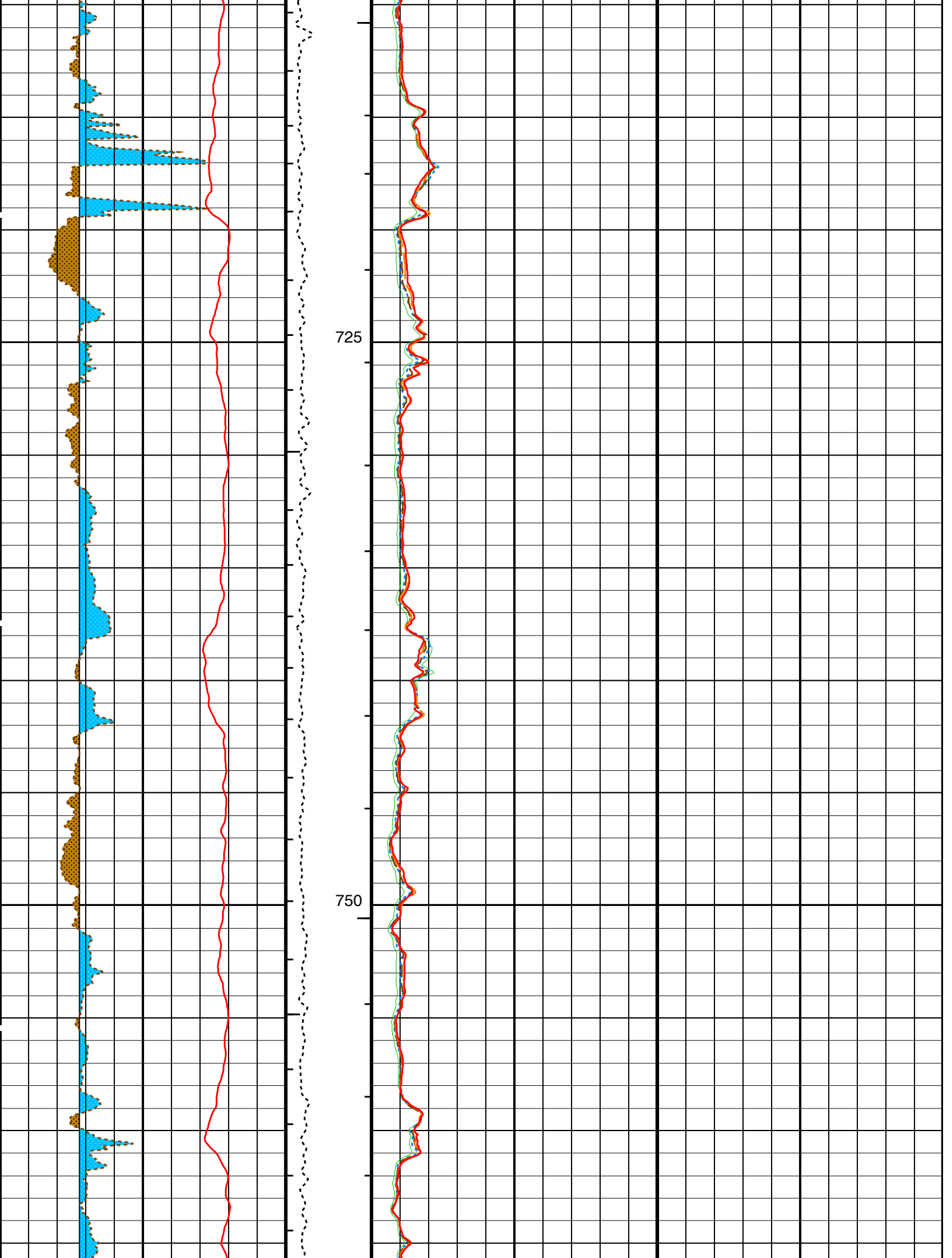
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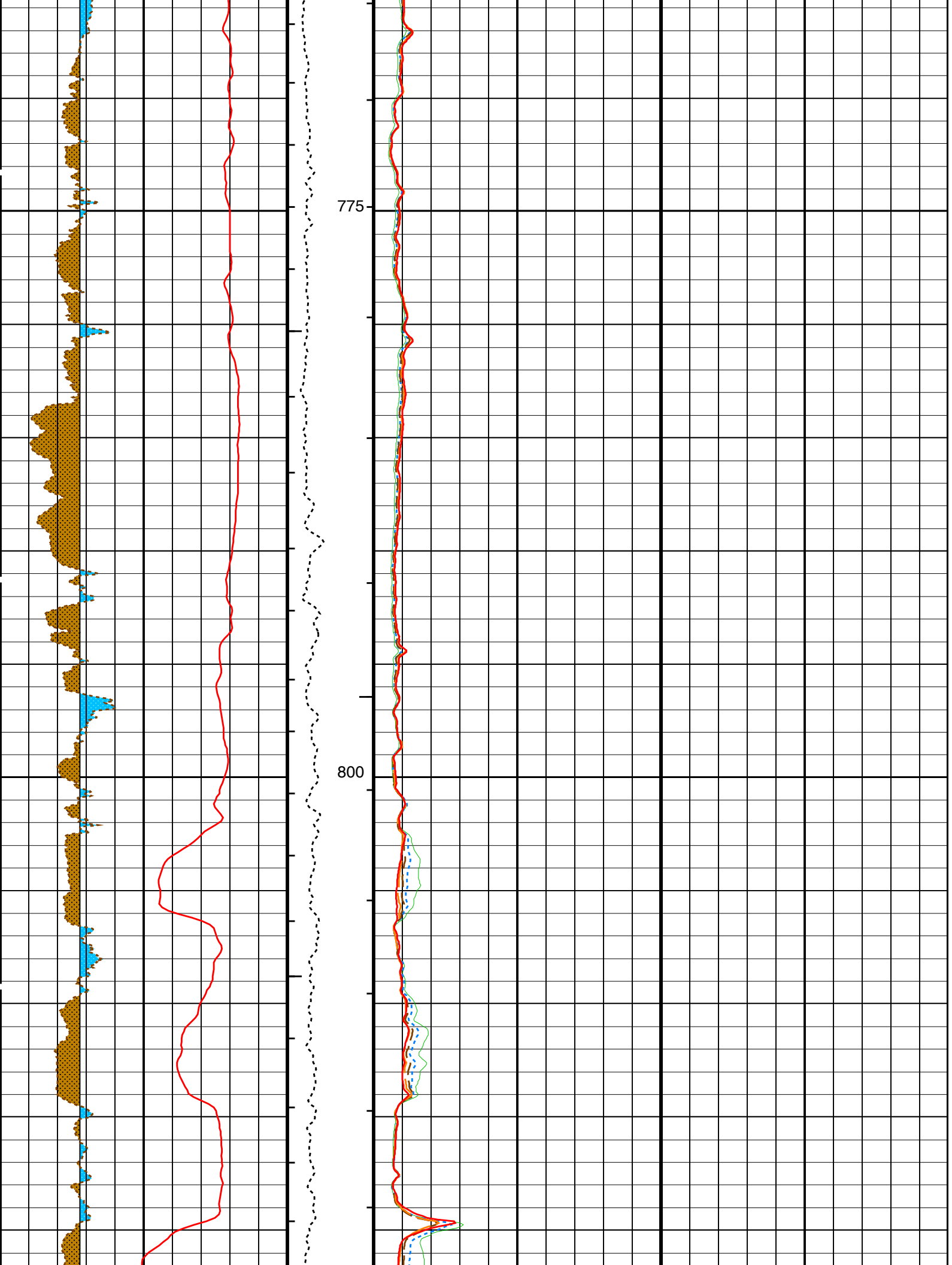
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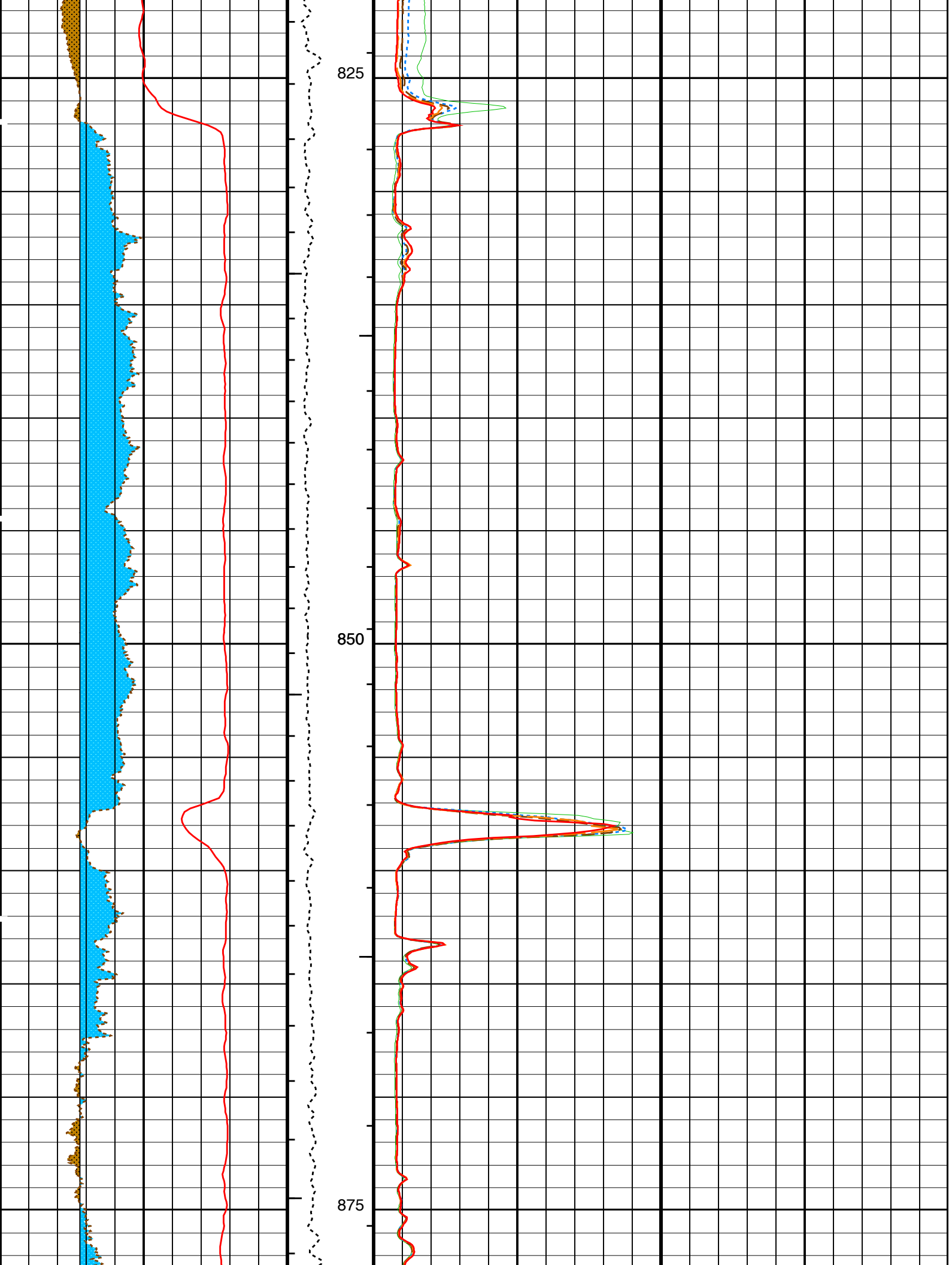
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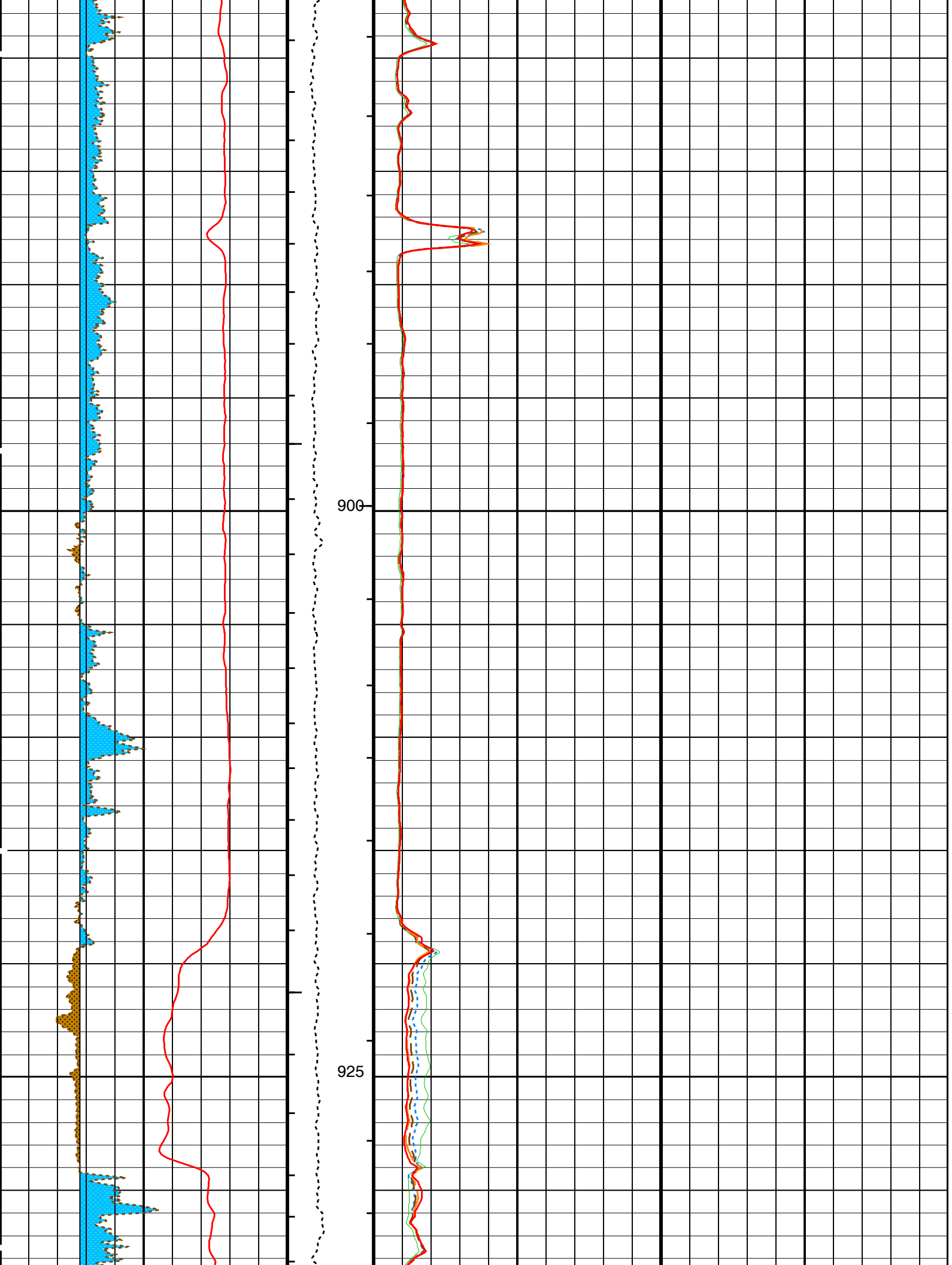
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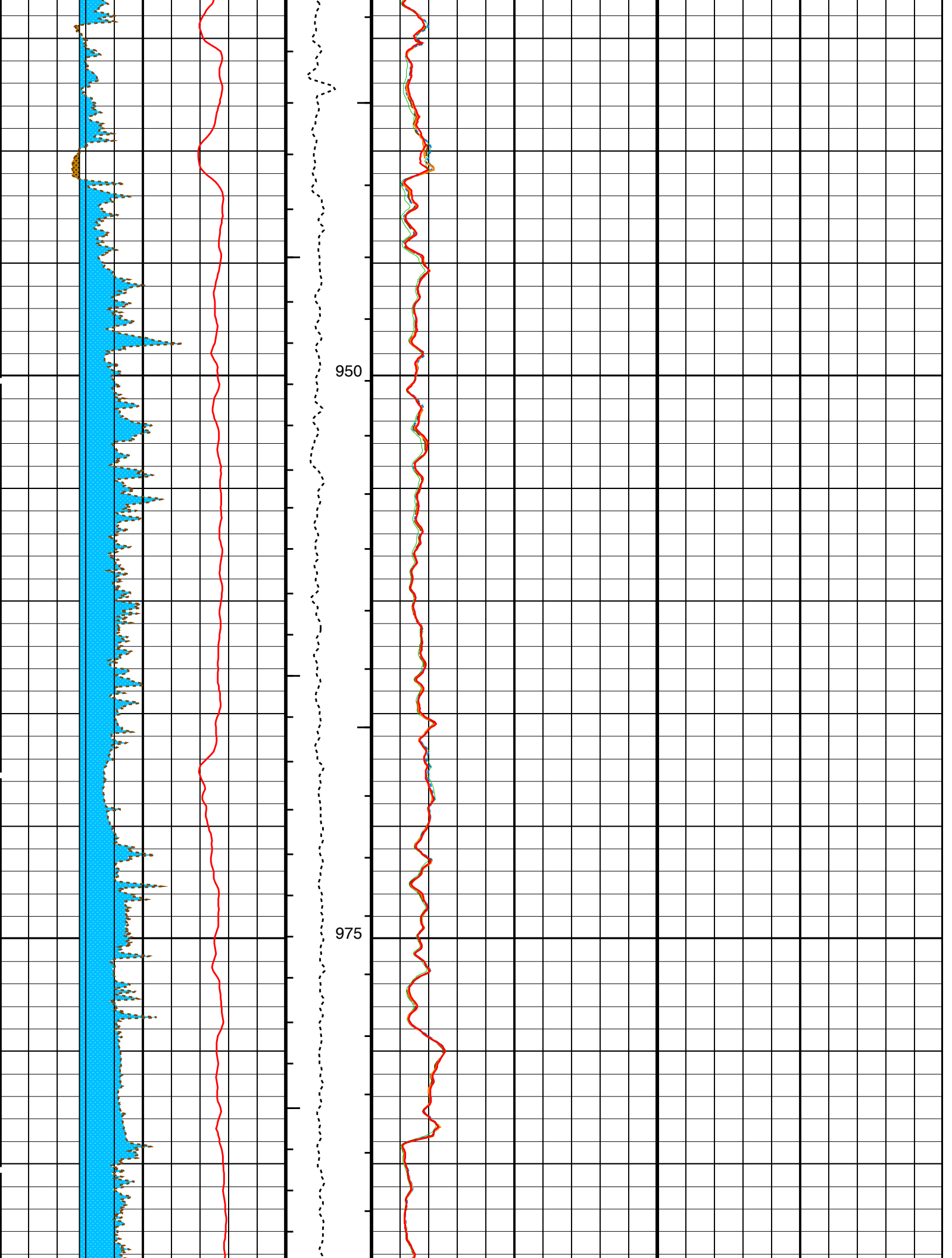
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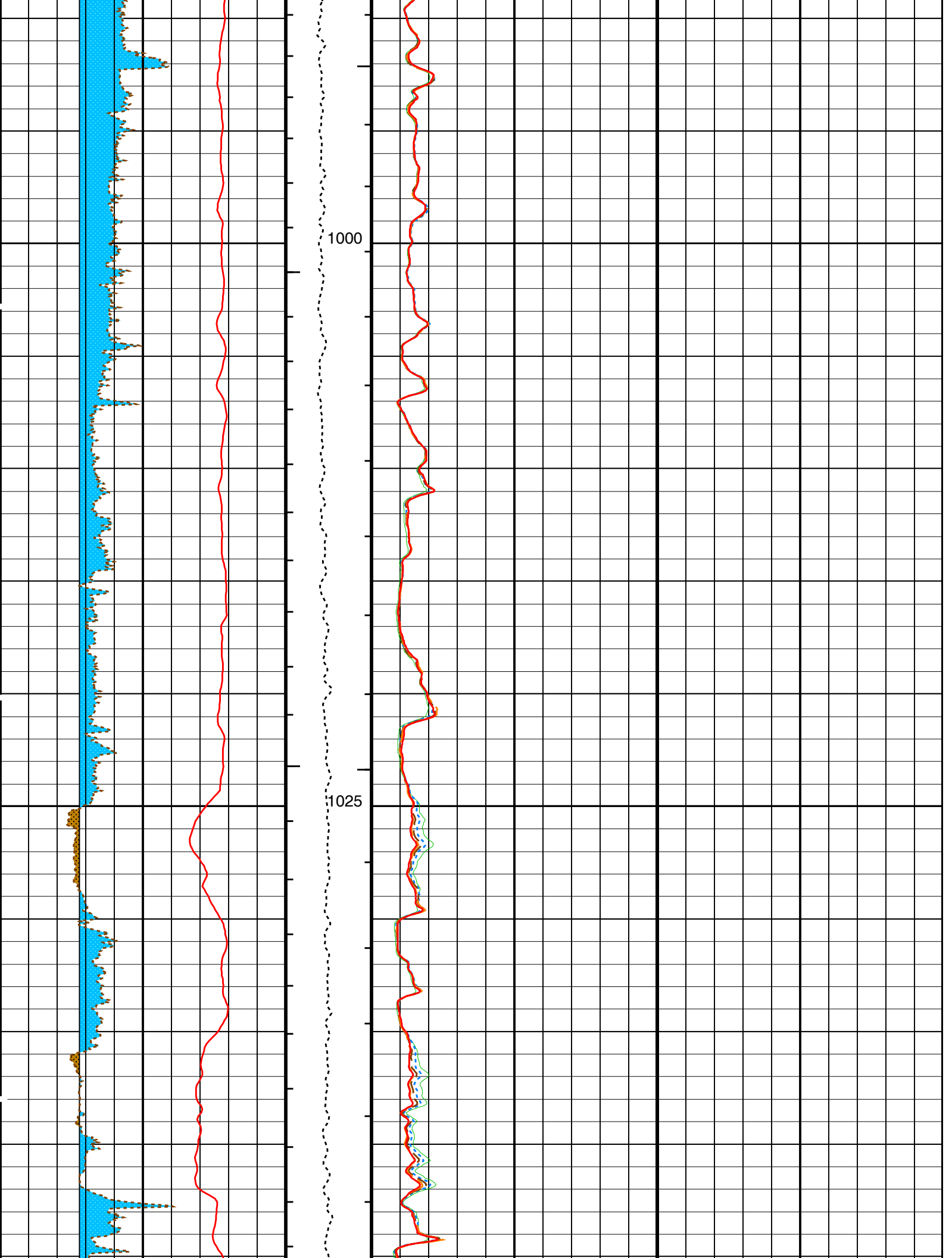
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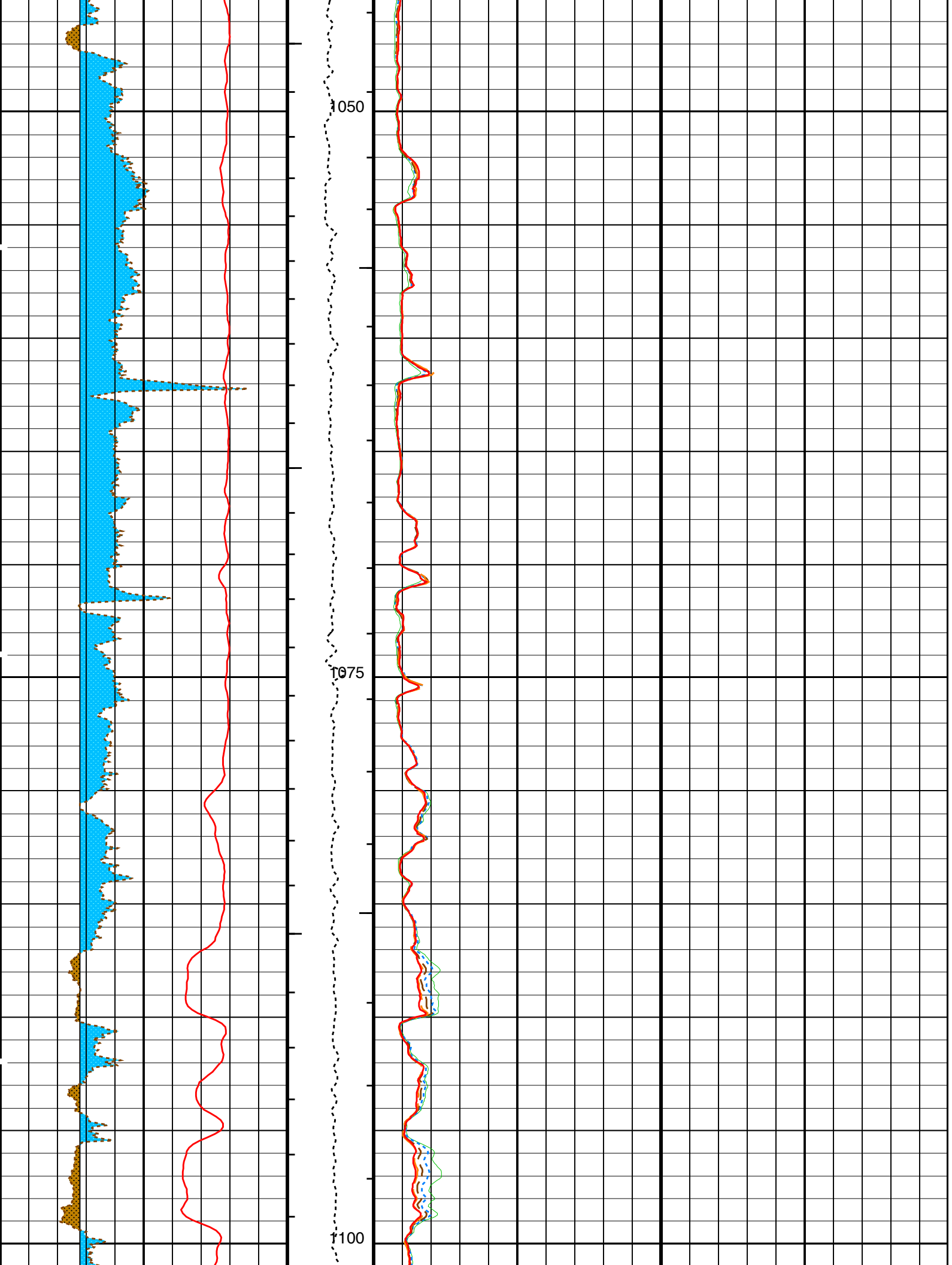
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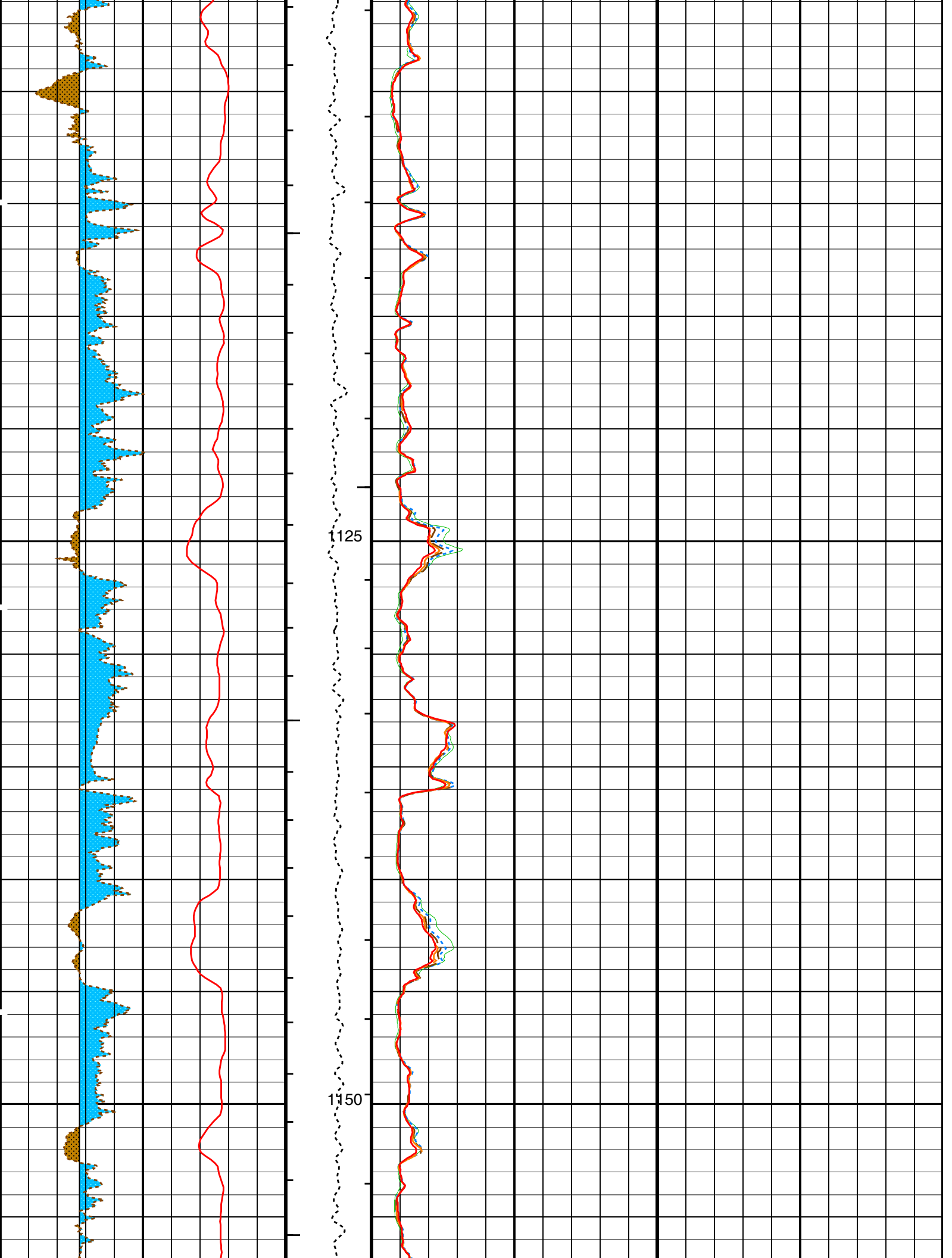
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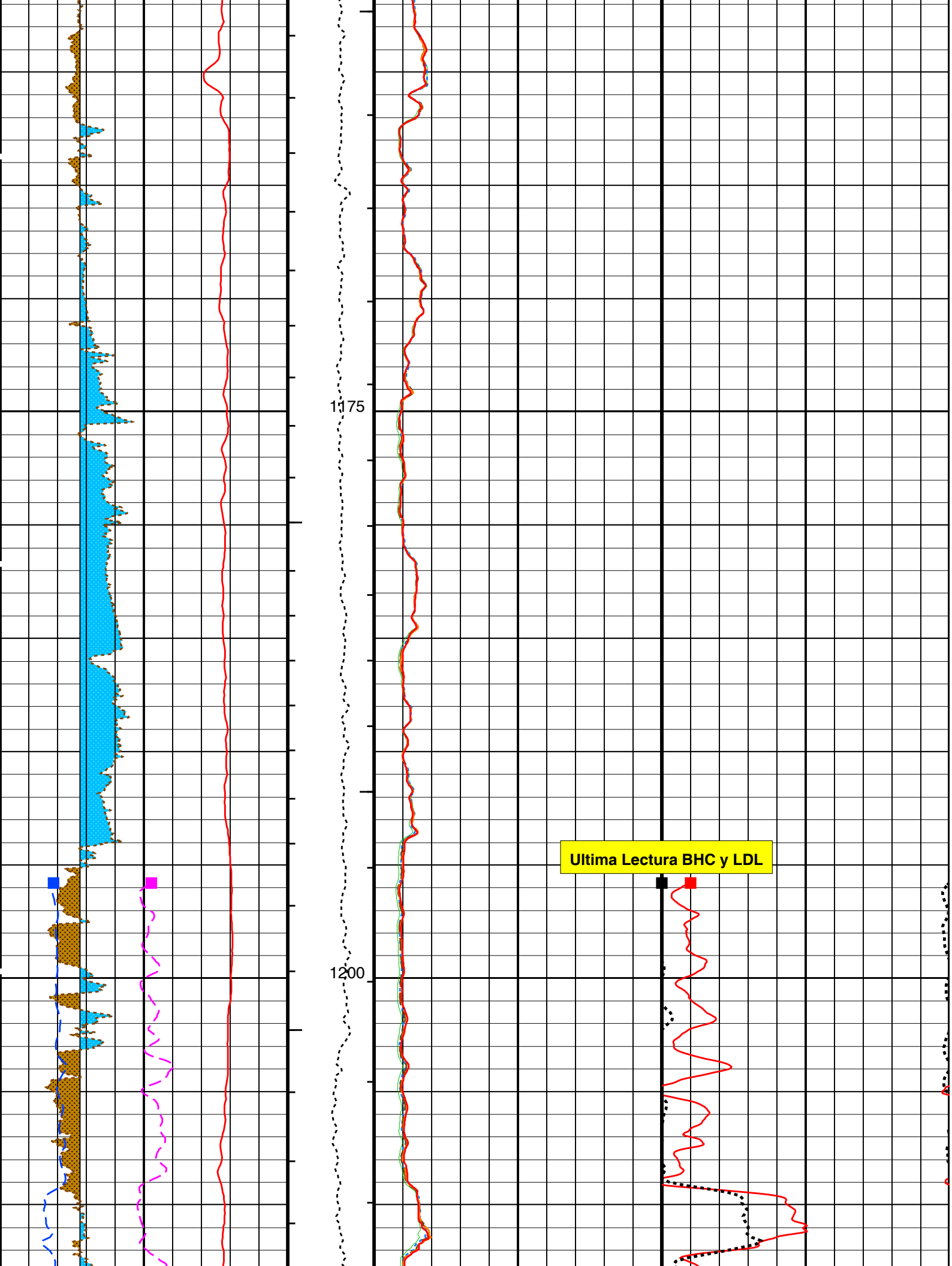
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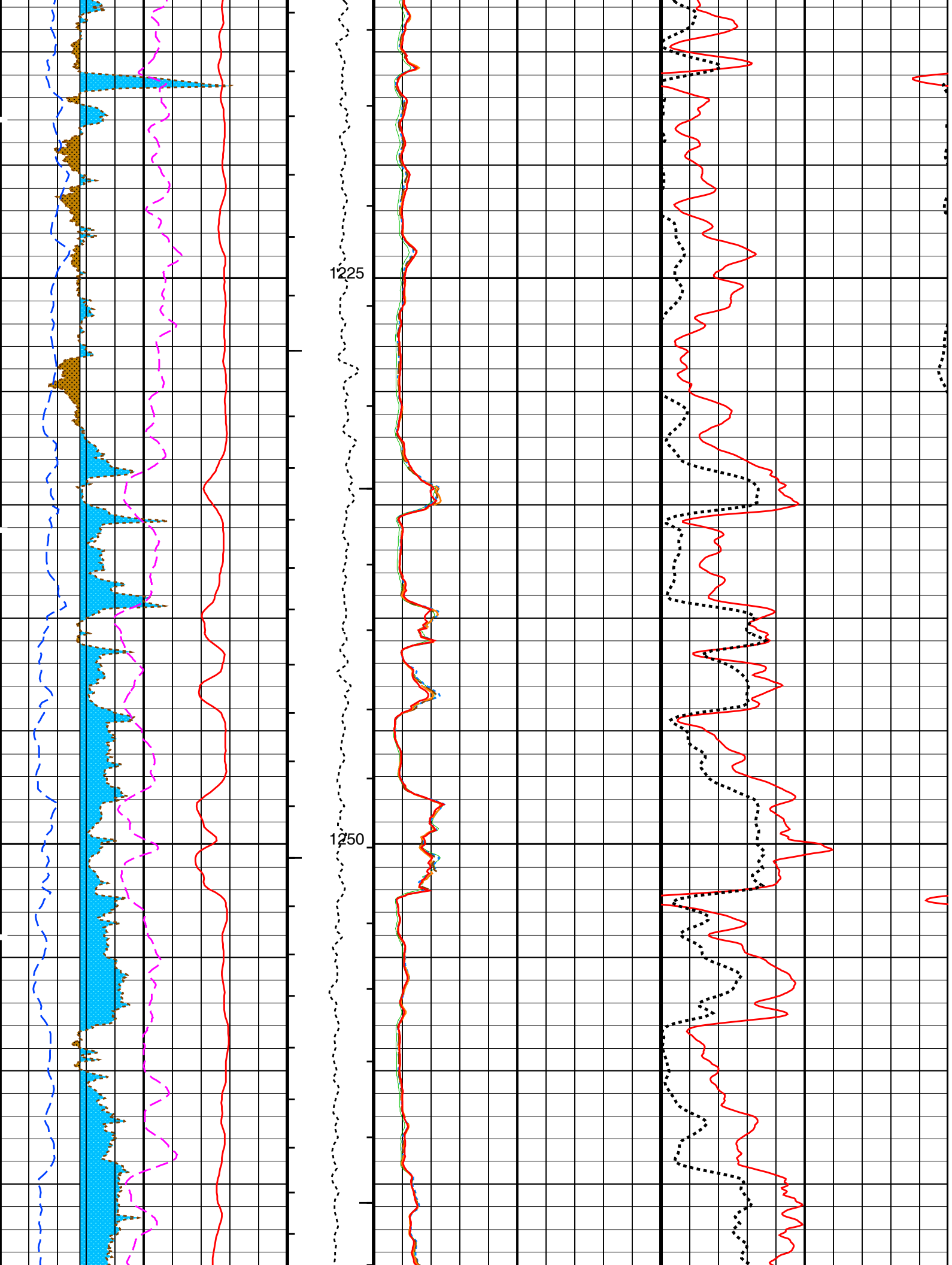
Ultima Lectura BHC y LDL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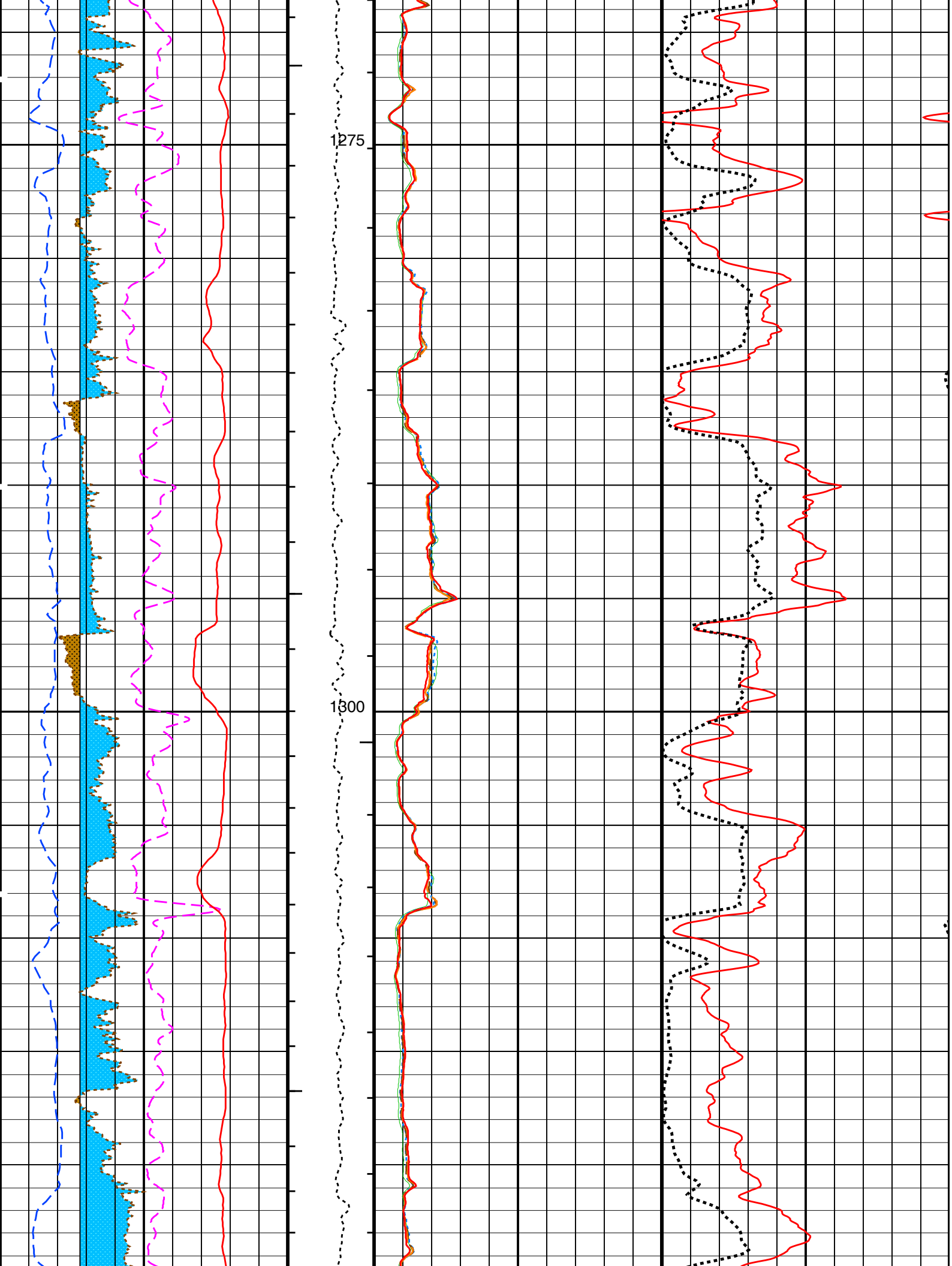
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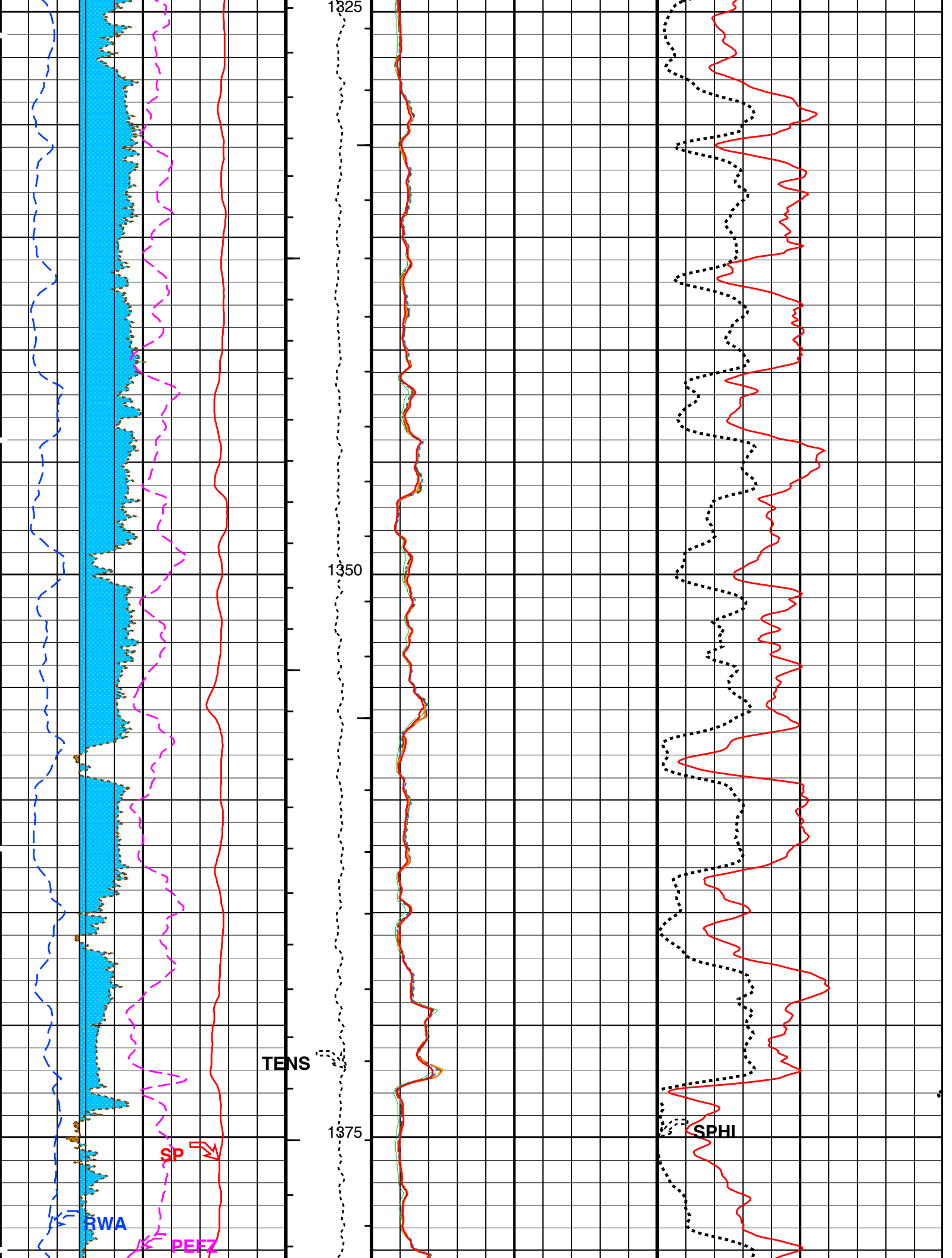
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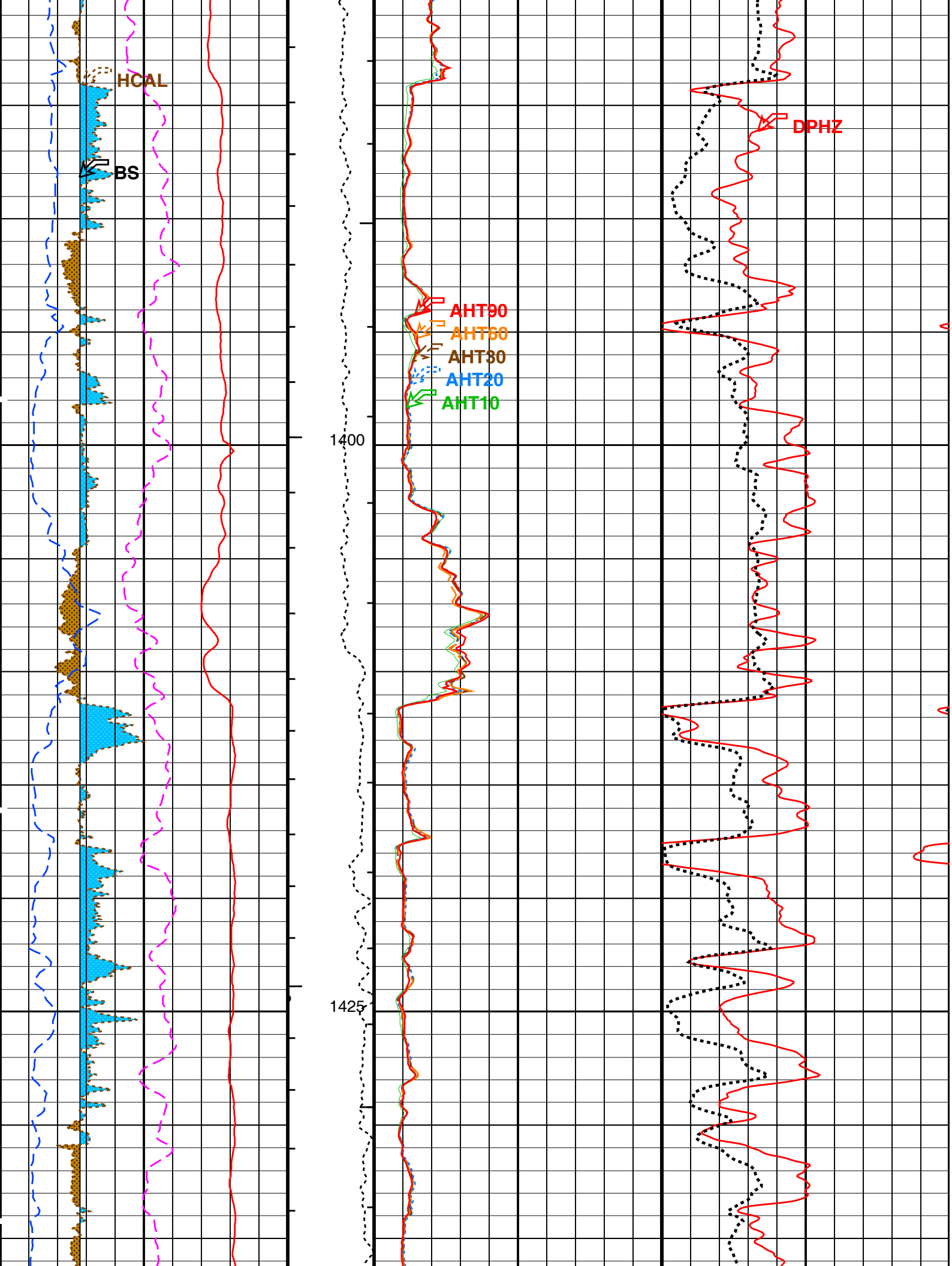
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DPHZ
1400
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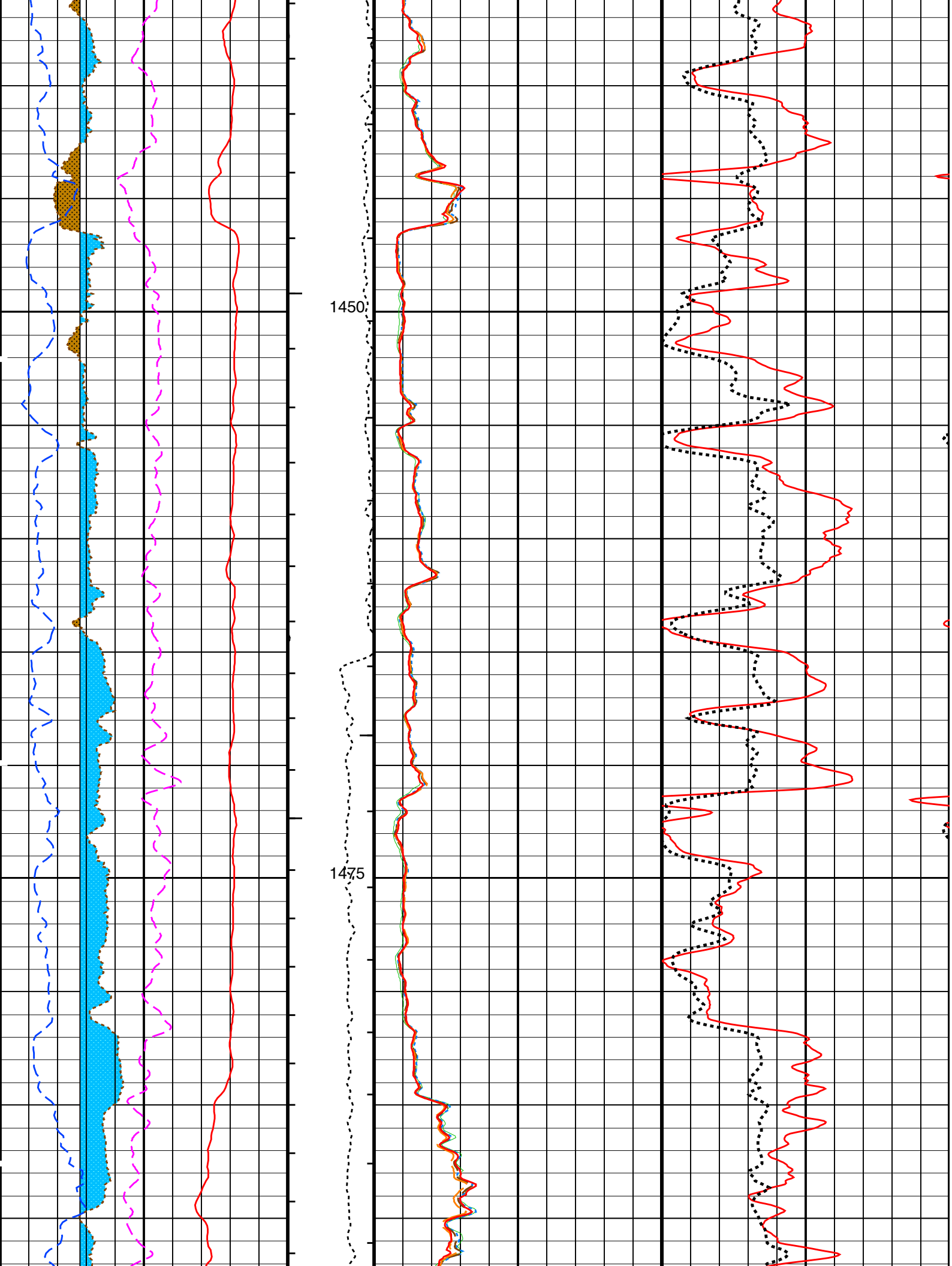
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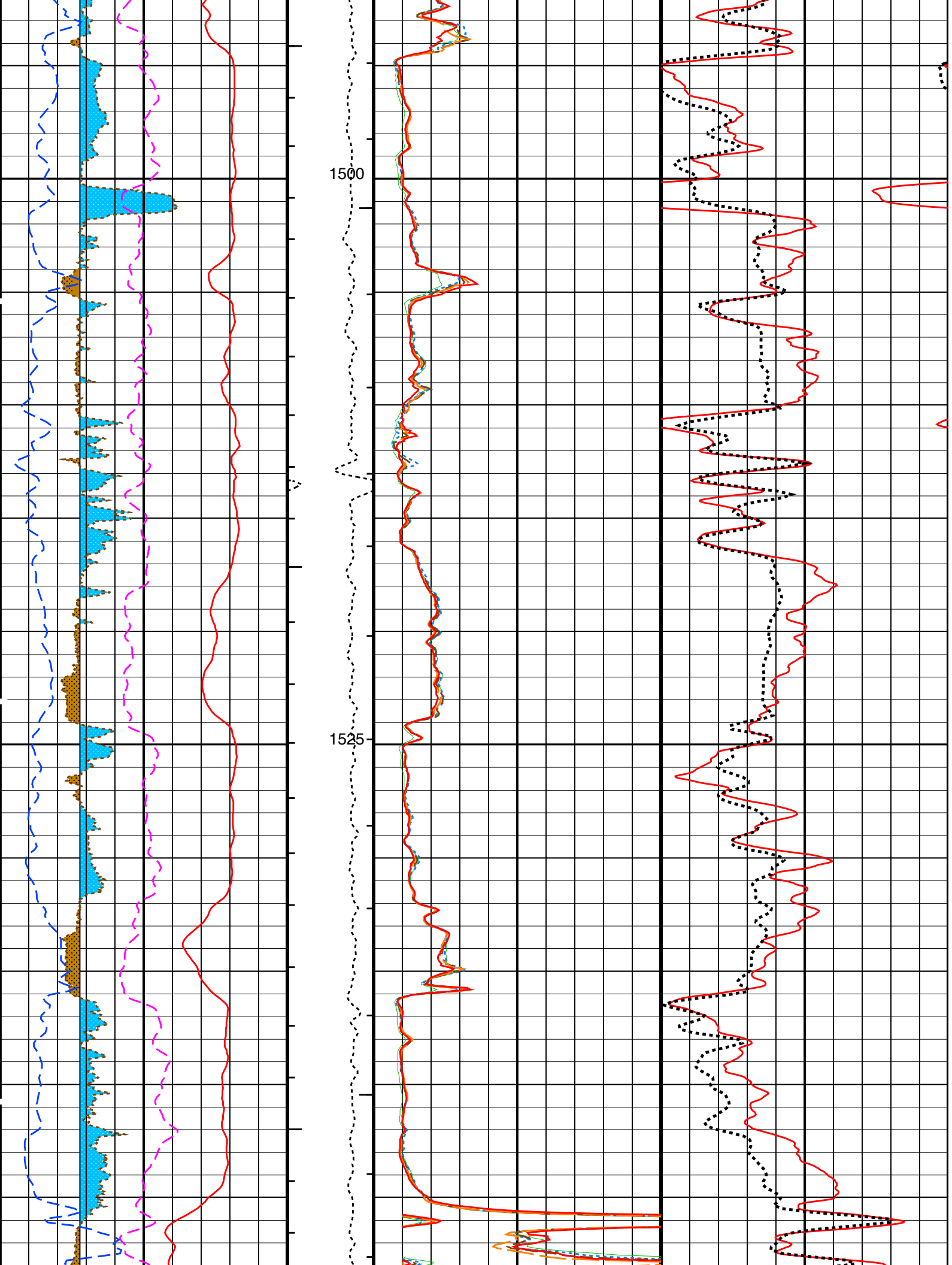
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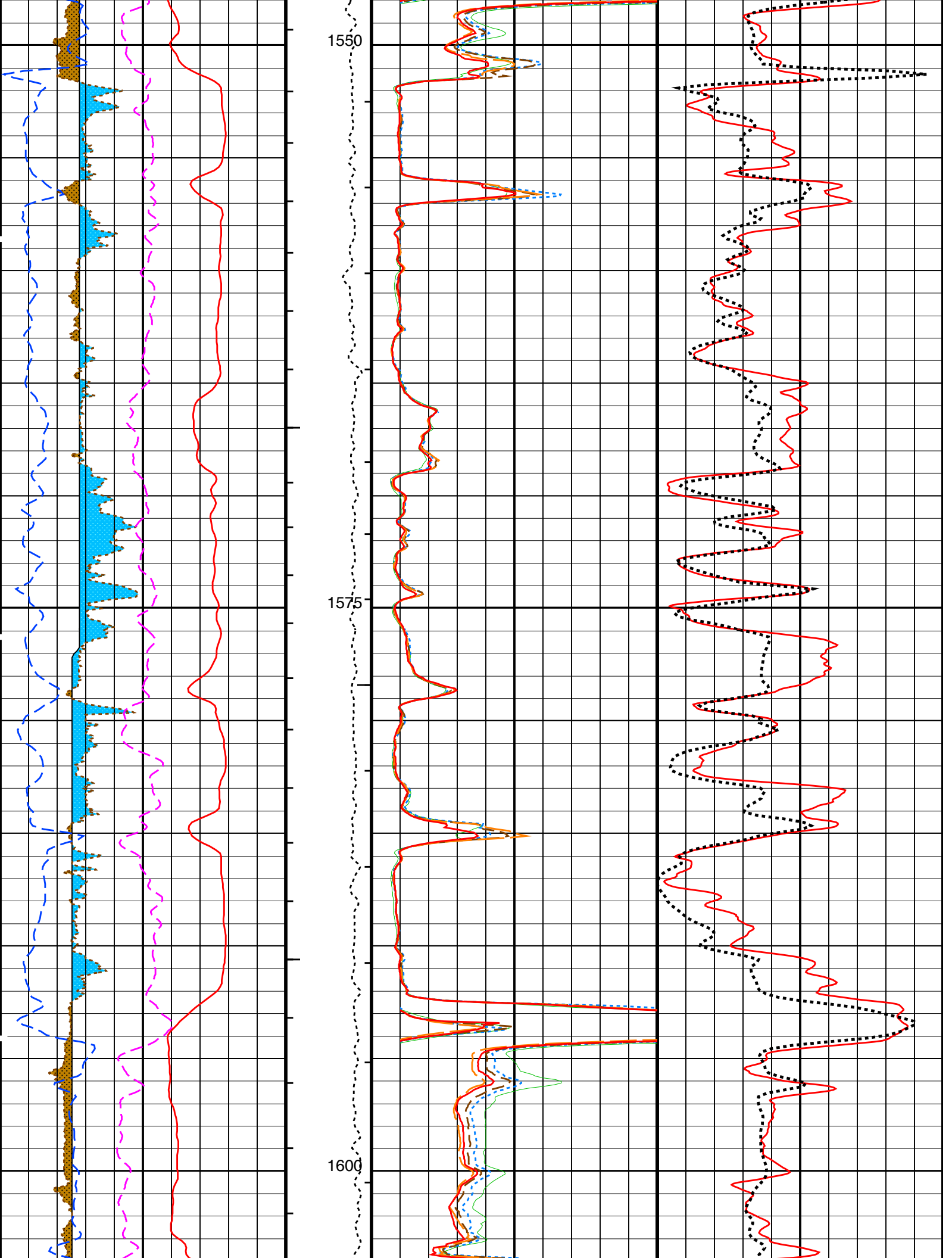
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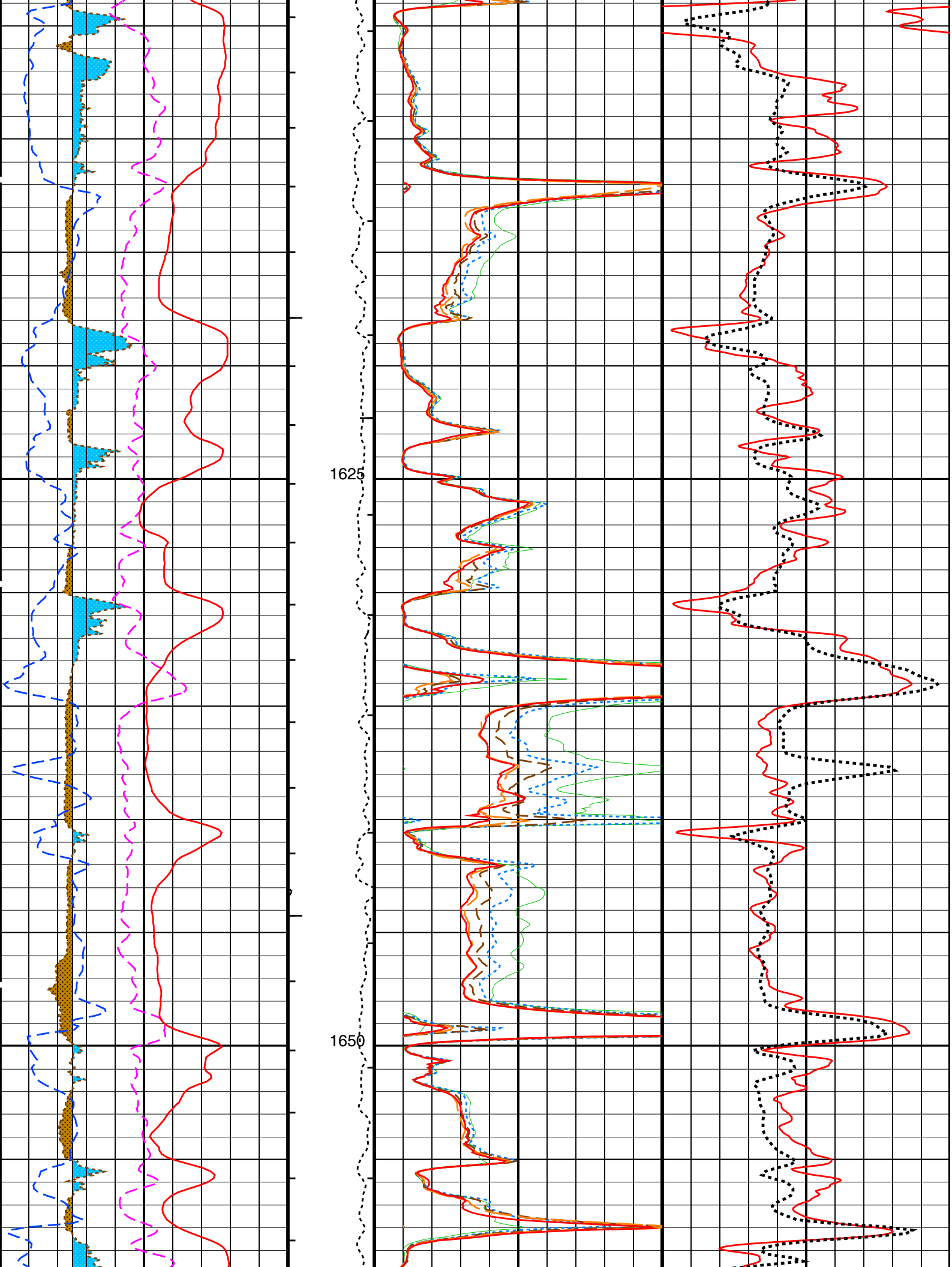
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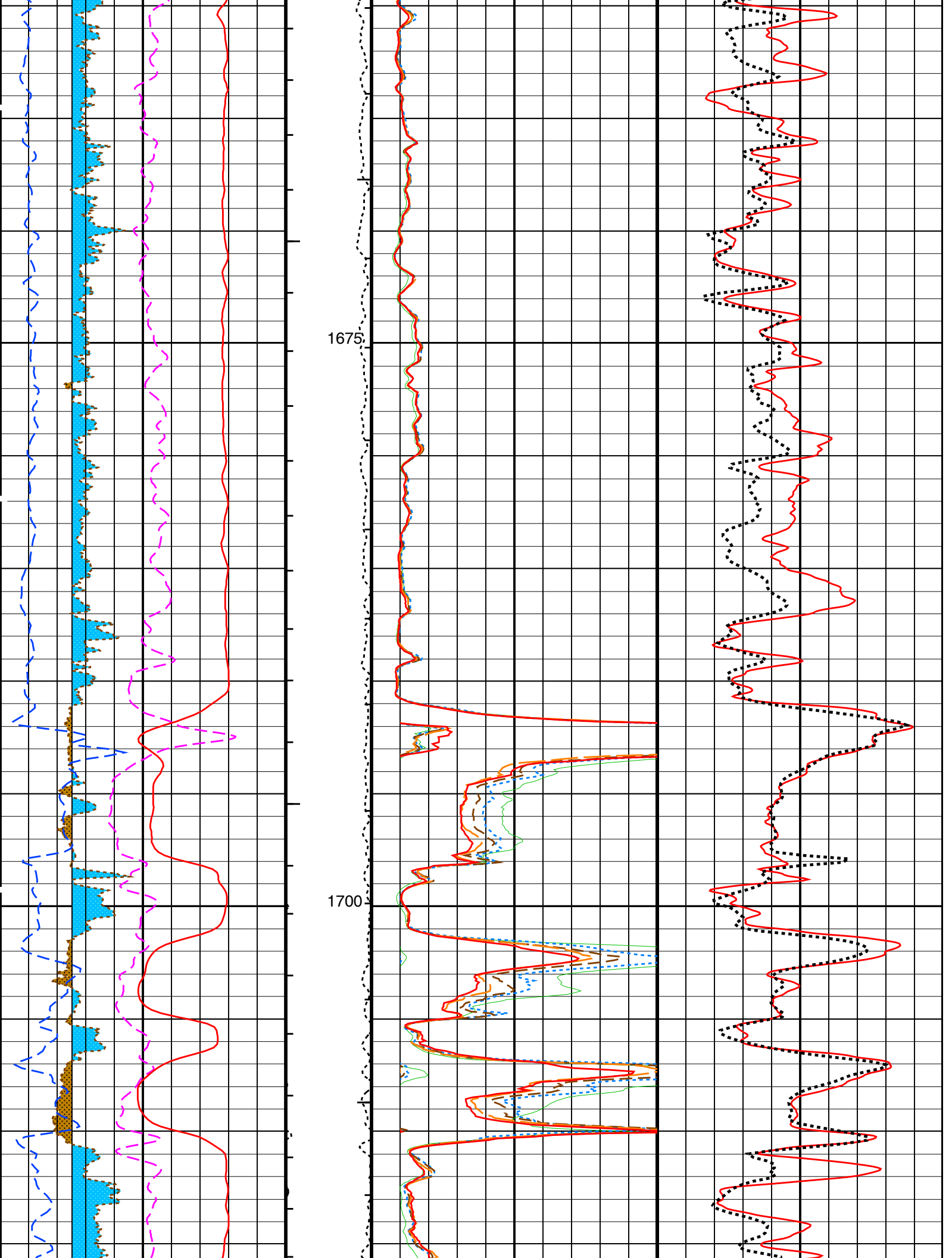
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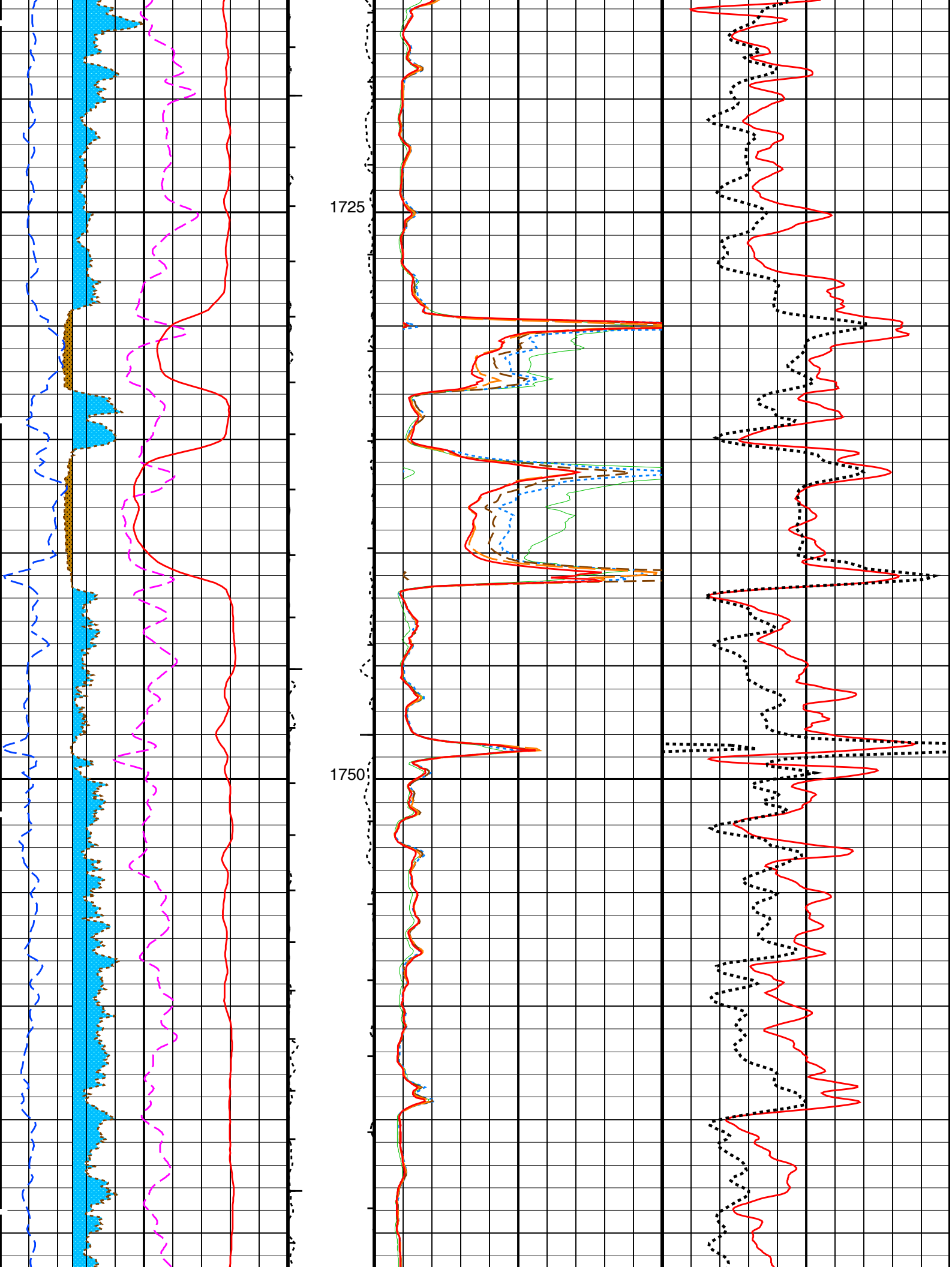
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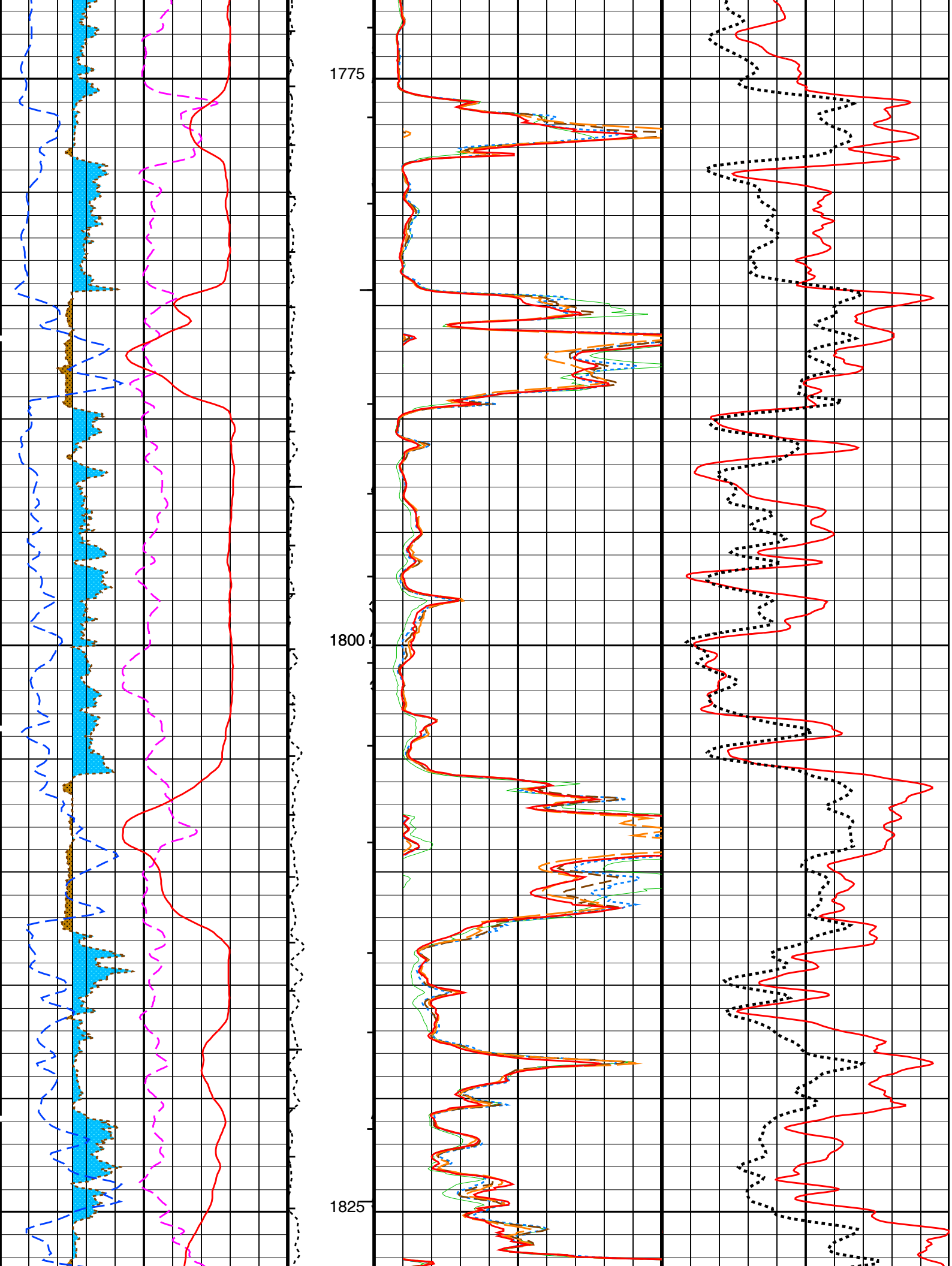
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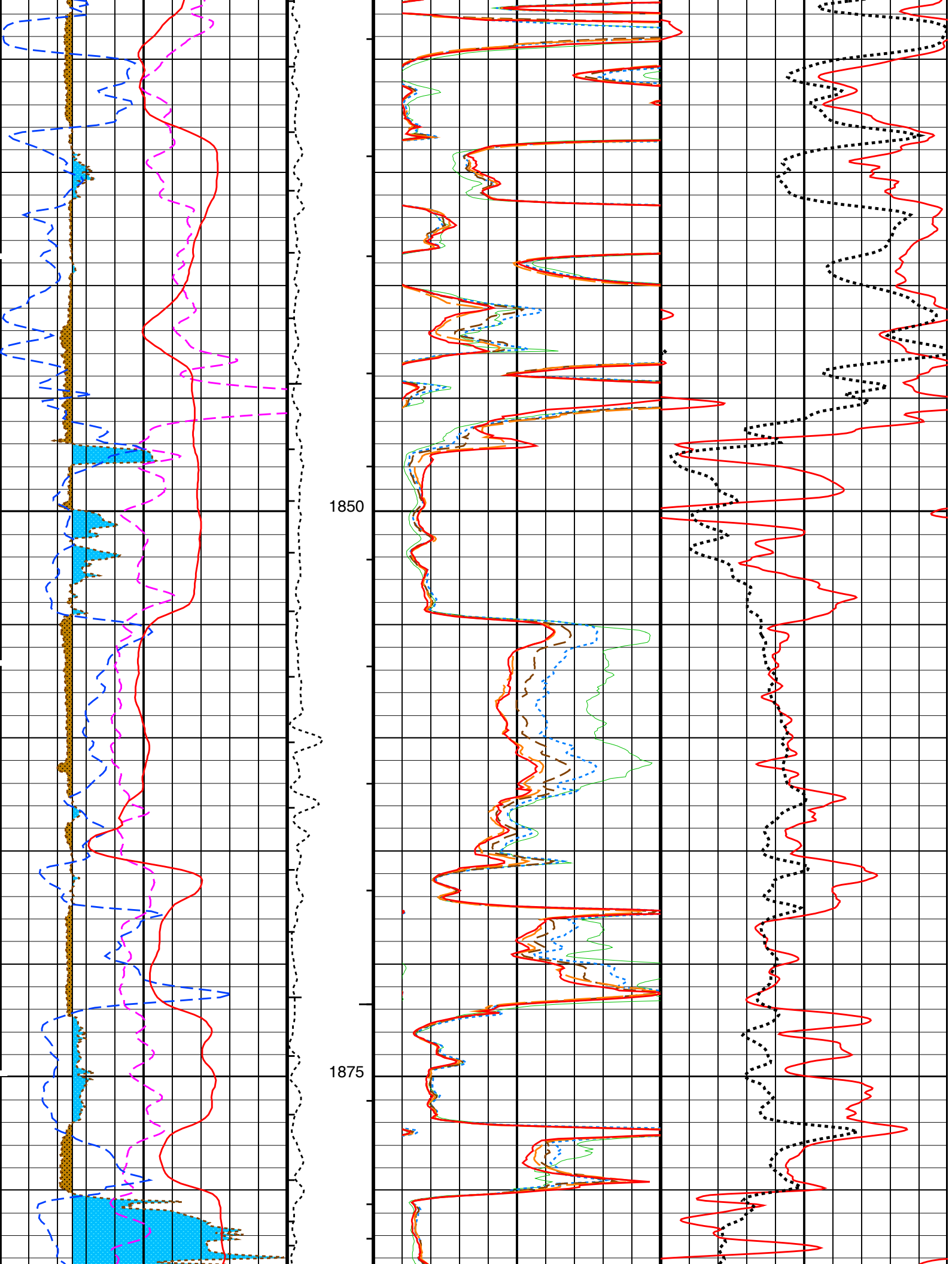
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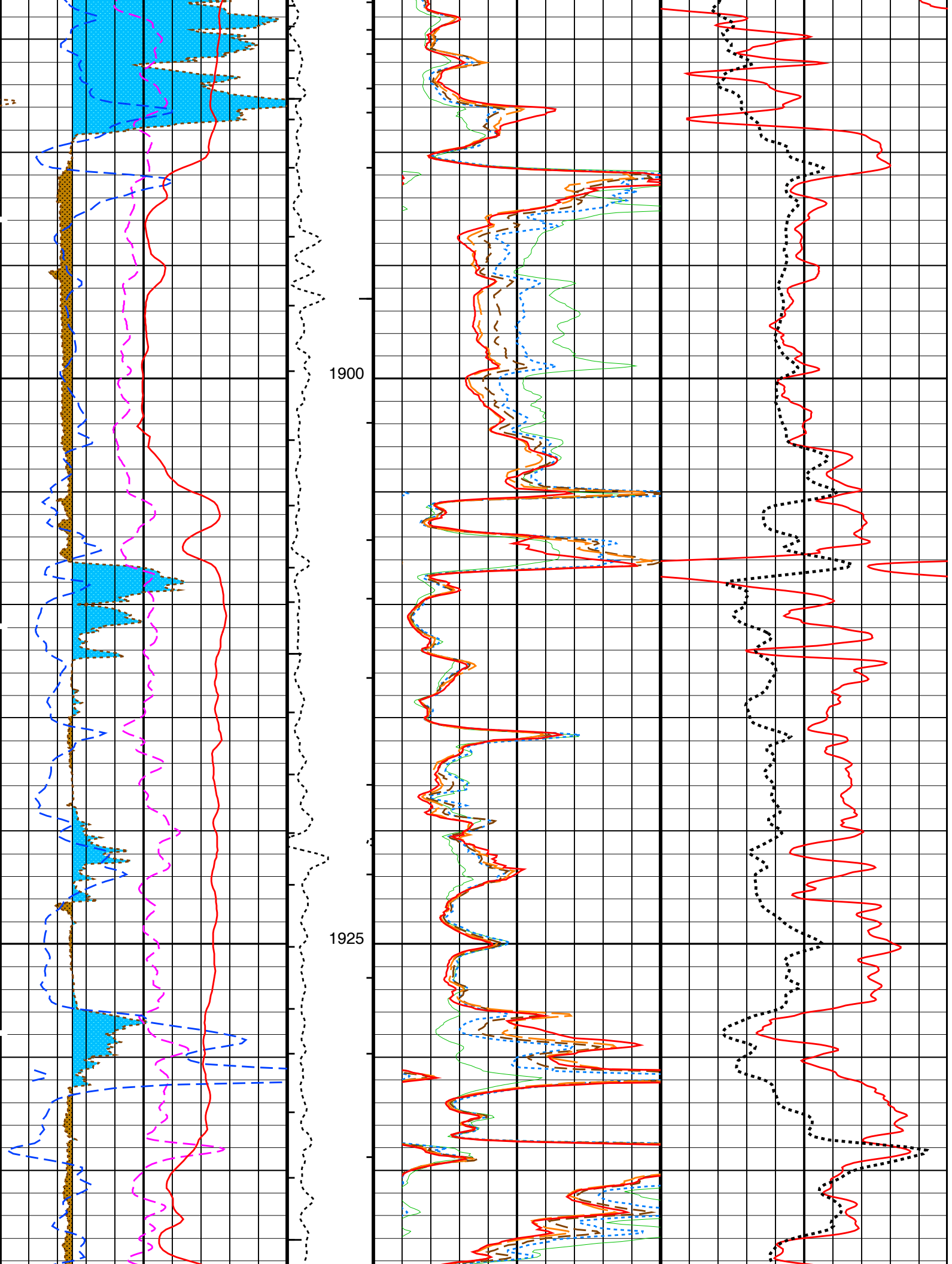
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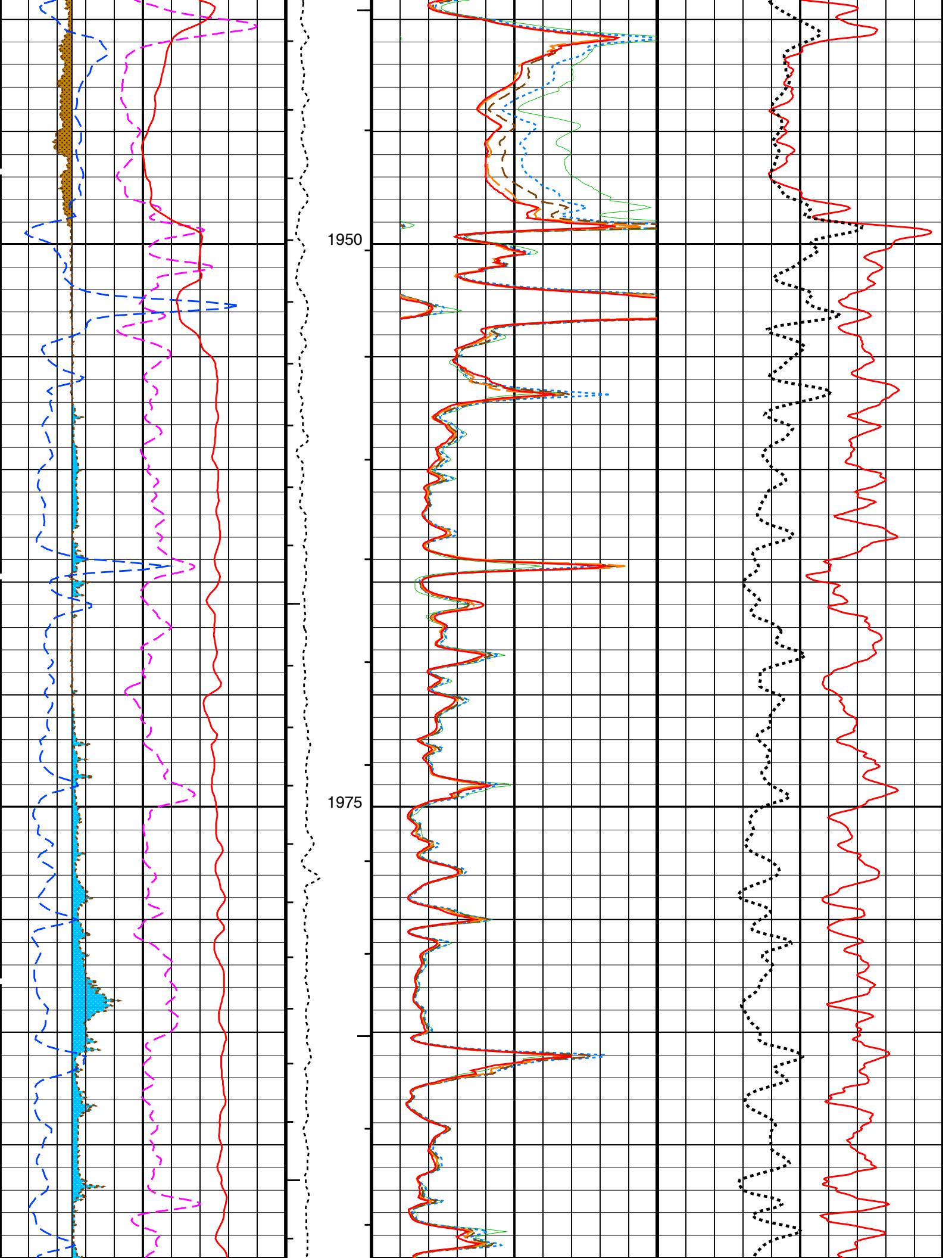
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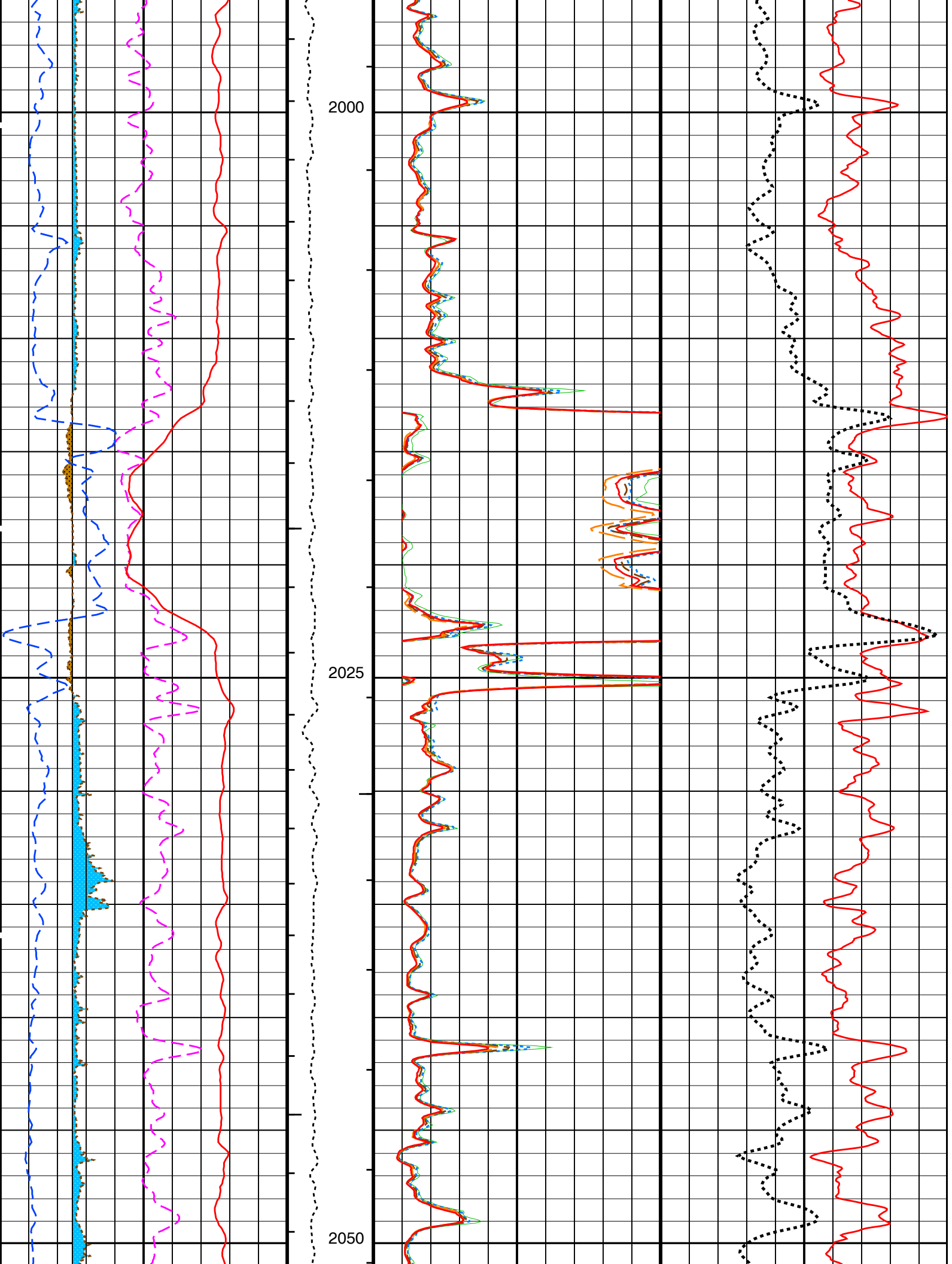
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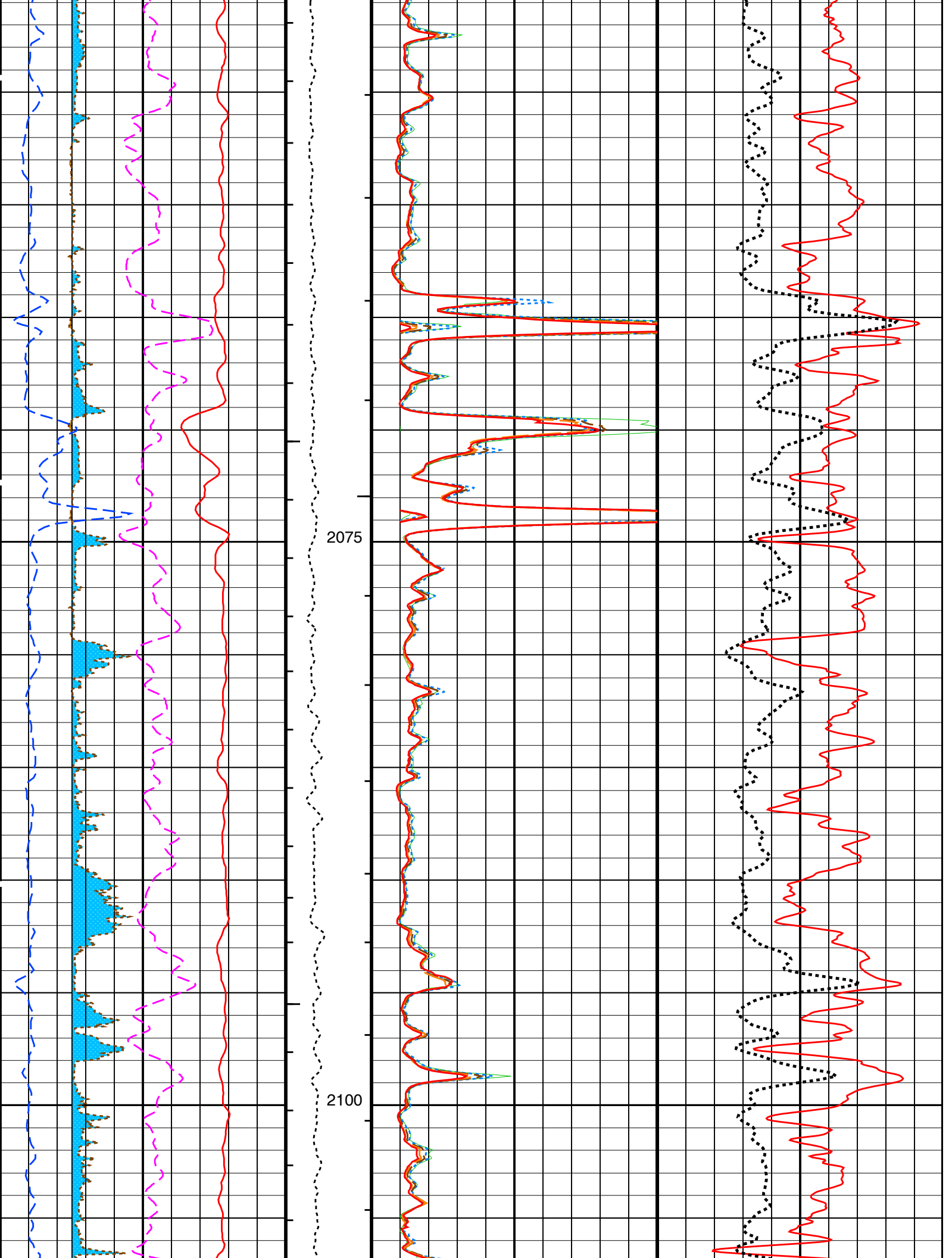
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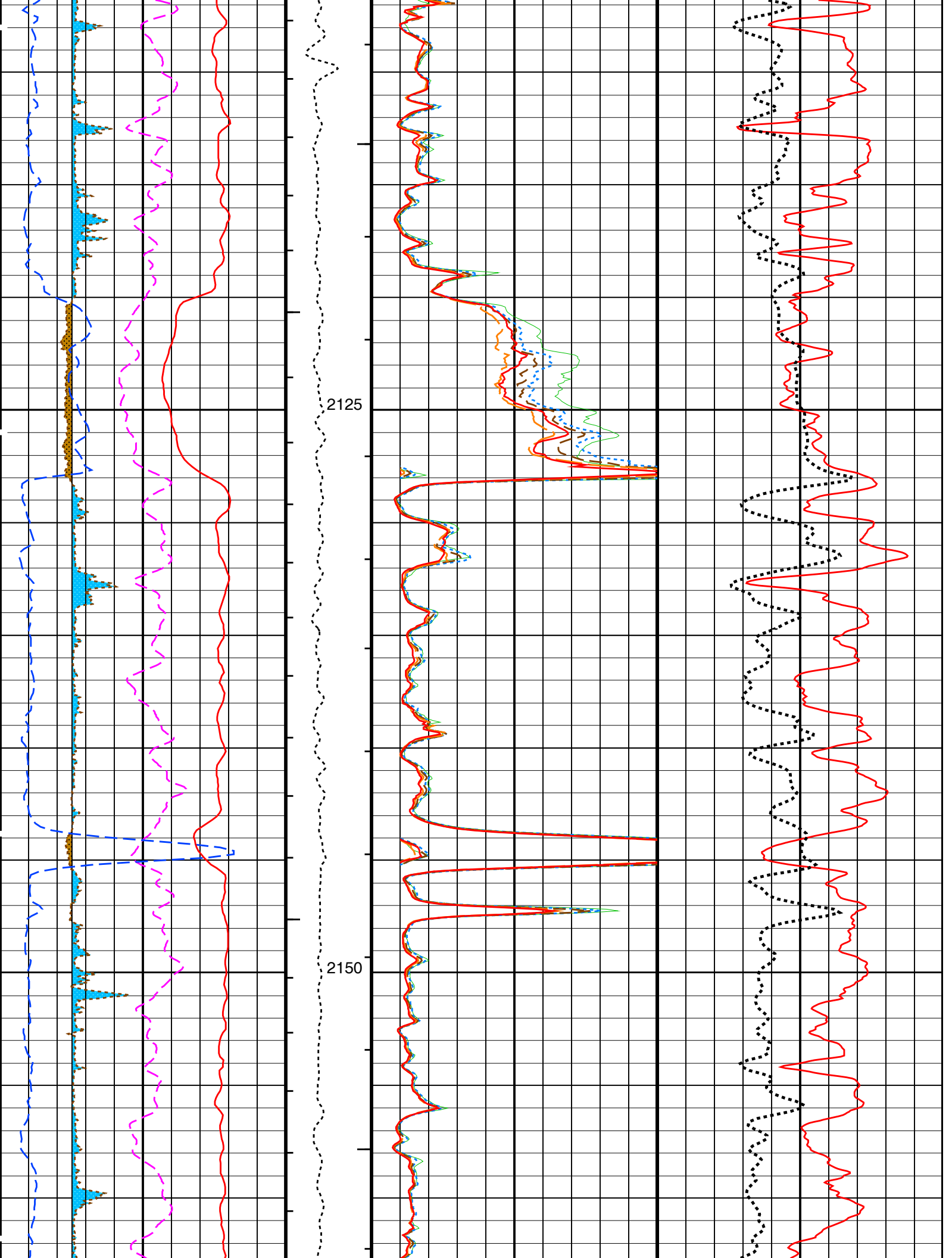
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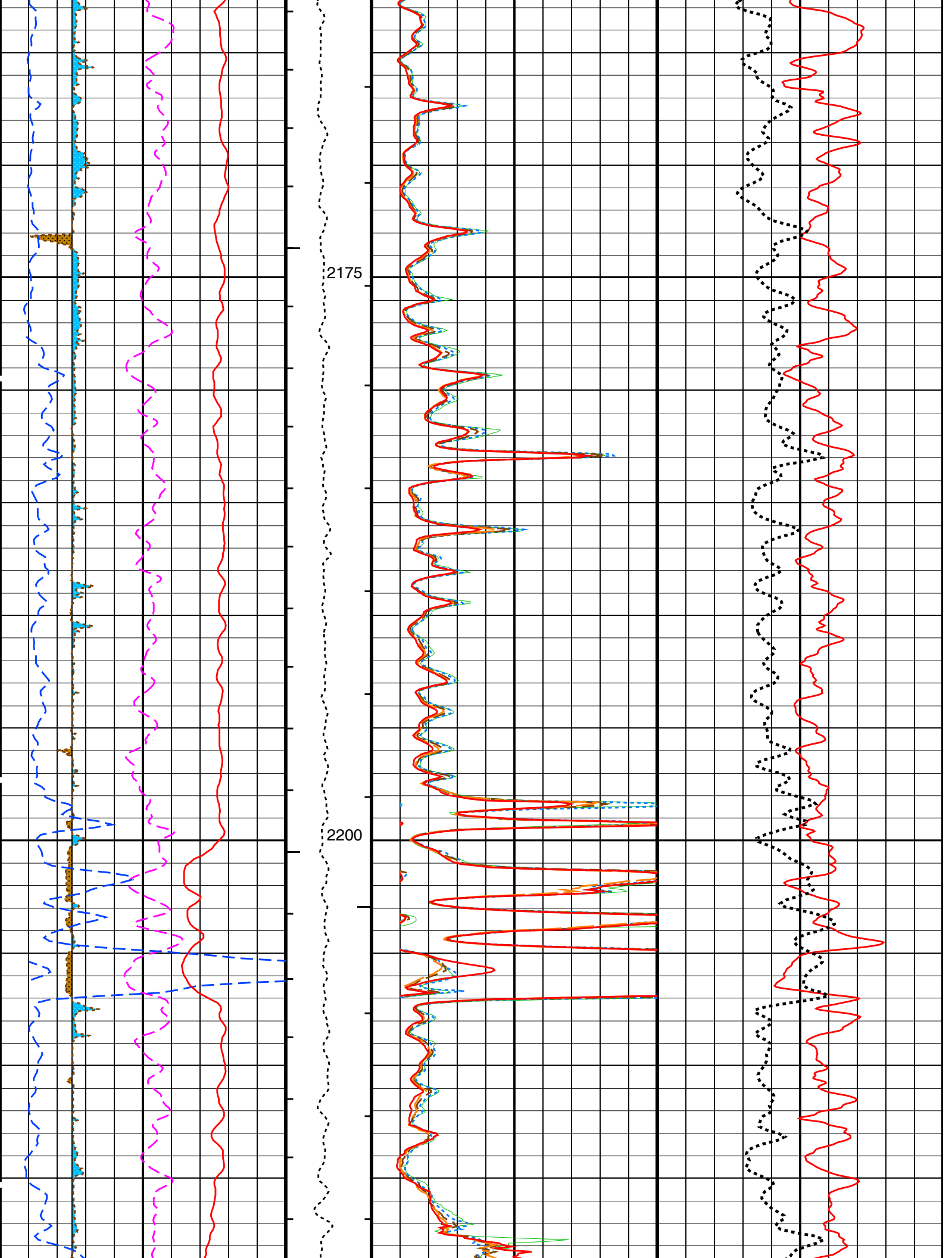
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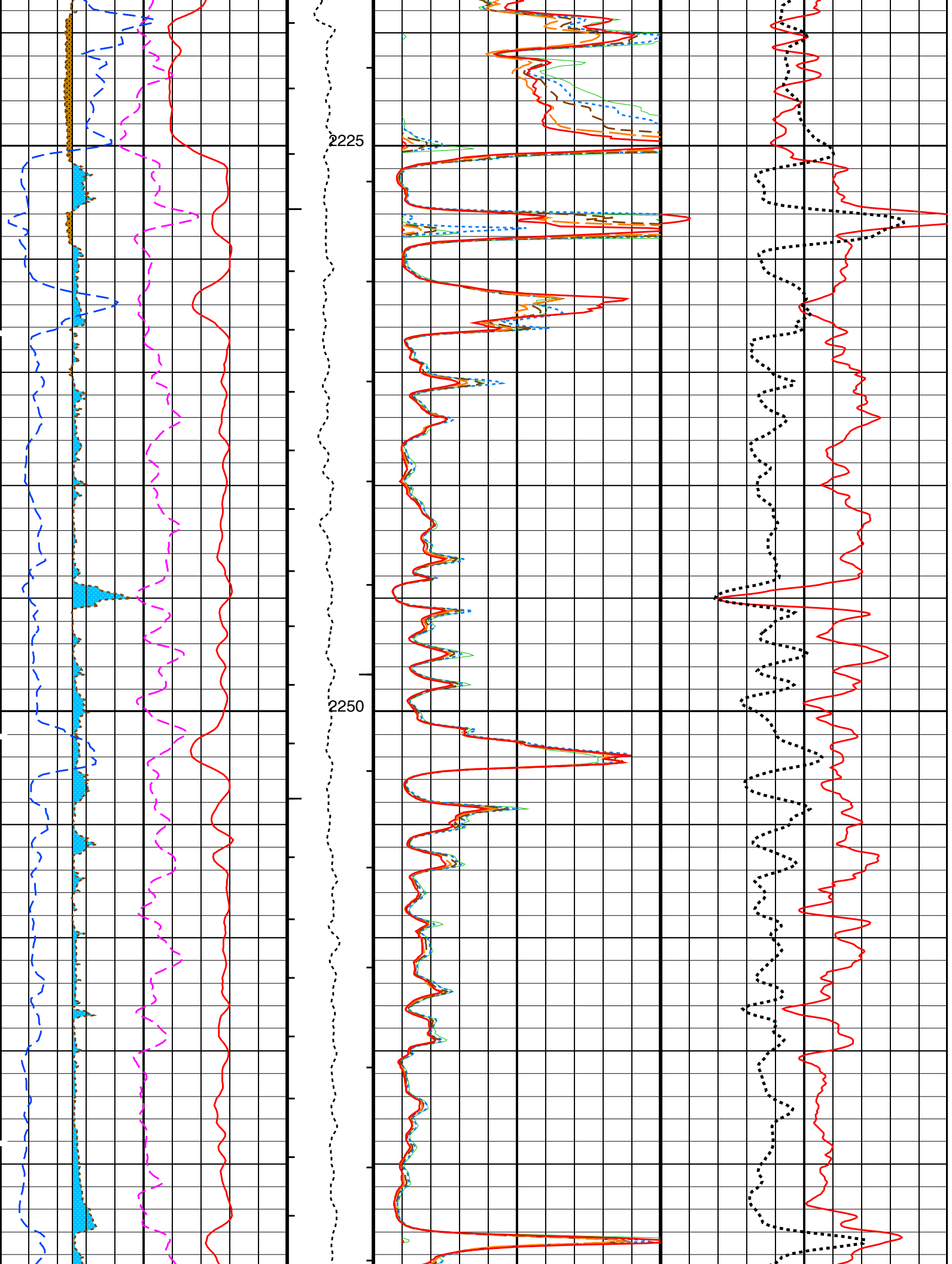
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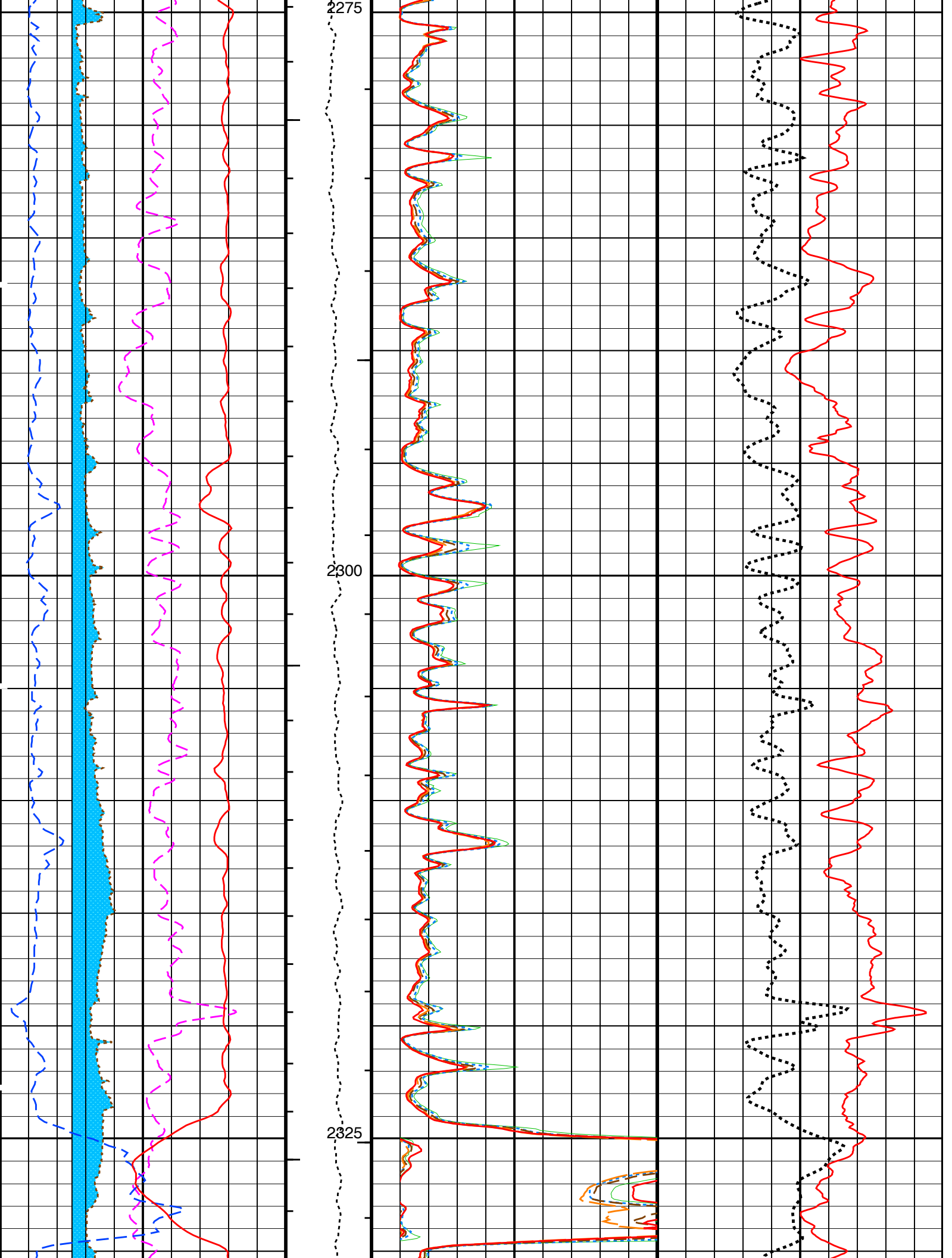
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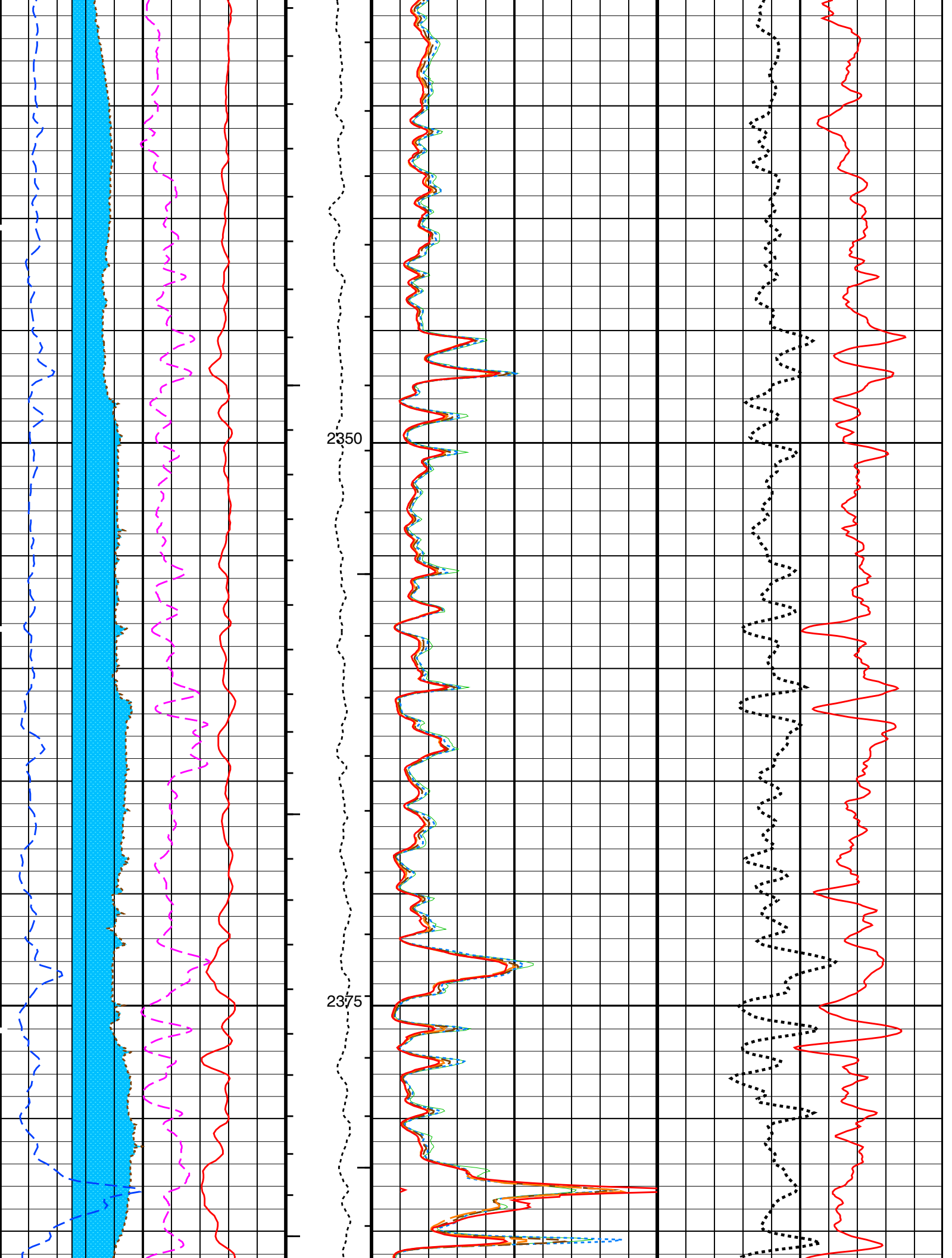
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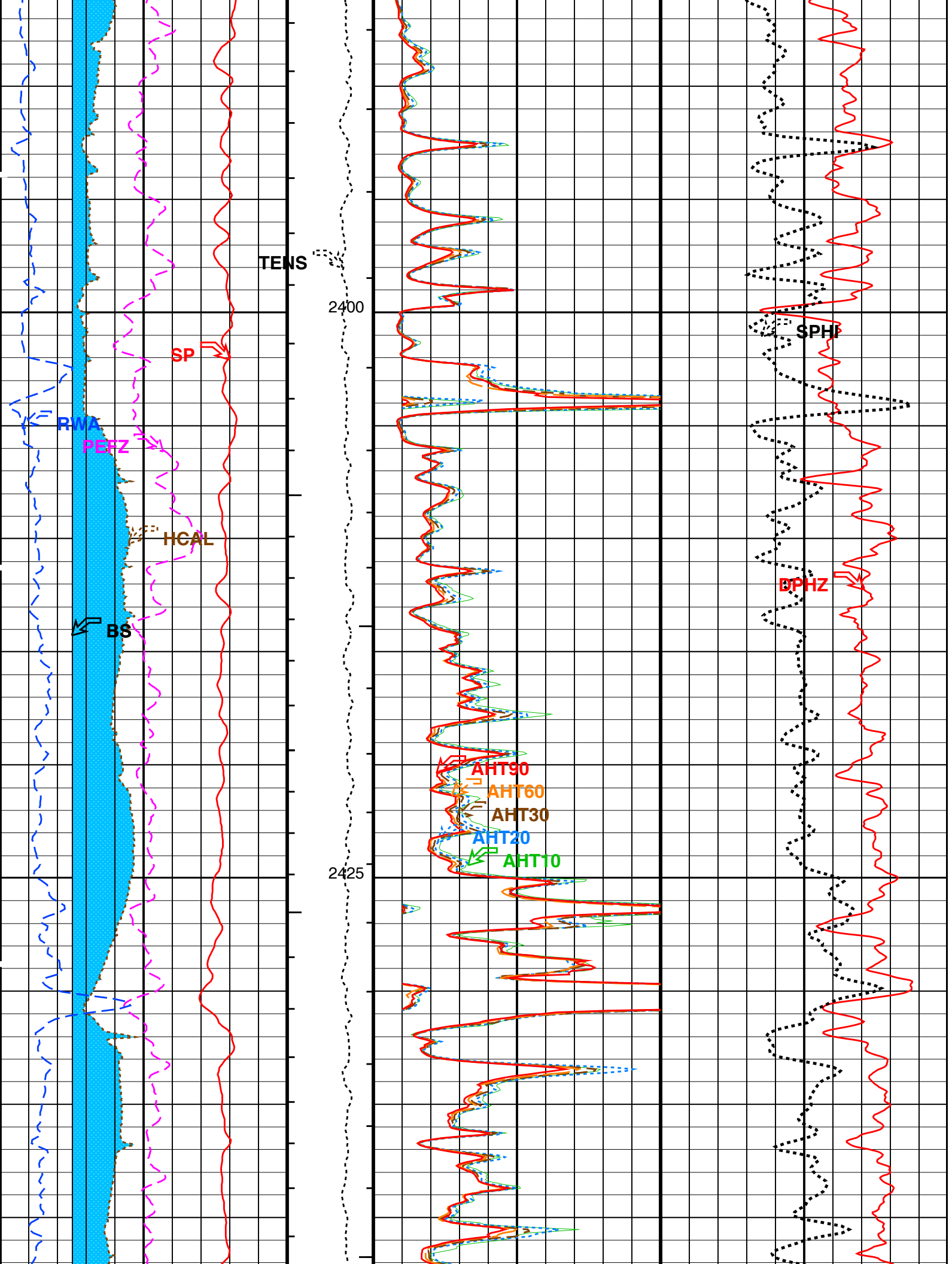
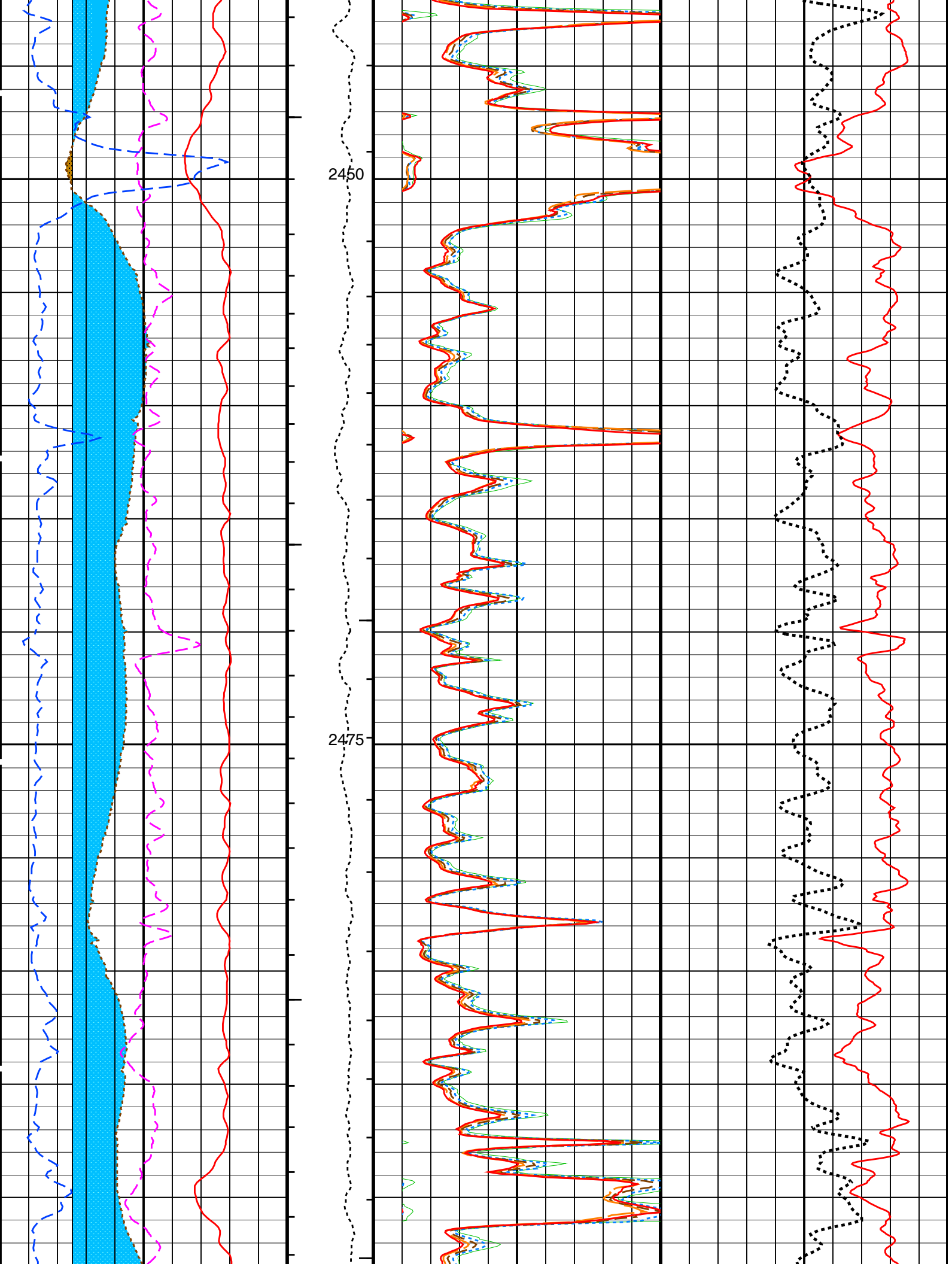

TENS
2400
SP
RWA
PEFZ
HCAL
BS
SPHI
DPHZ
AHT90
AHT60
AHT30
AHT20
AHT10
2425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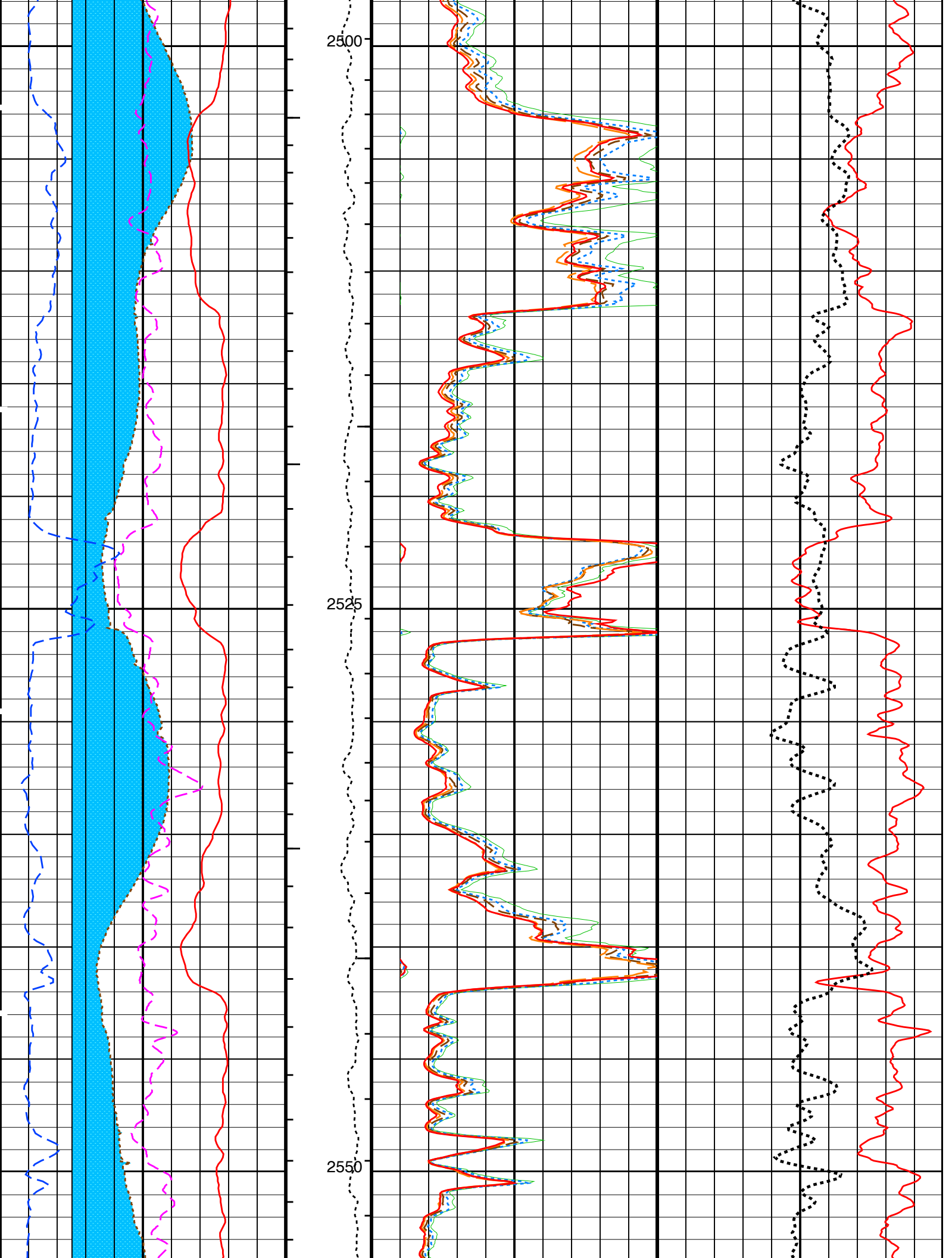
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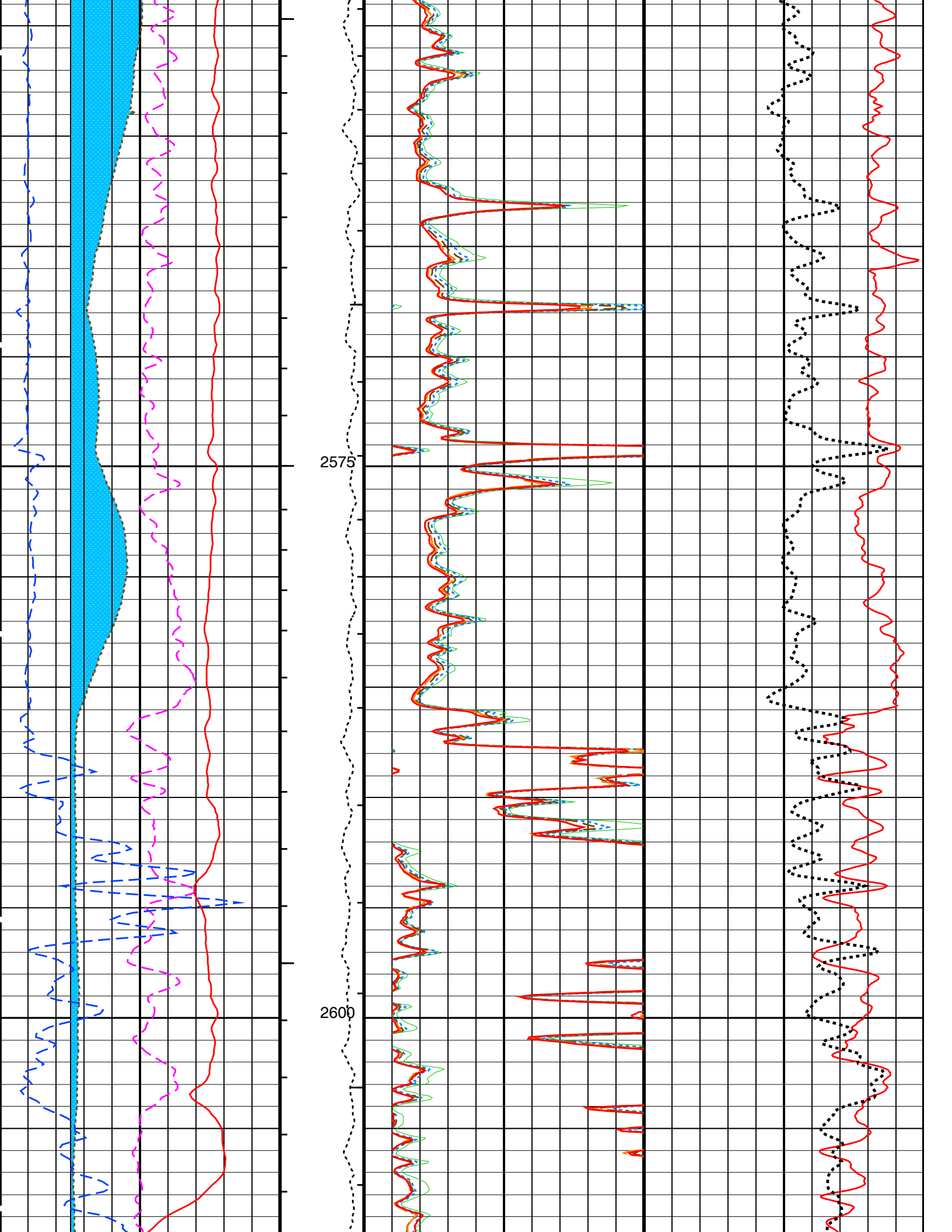
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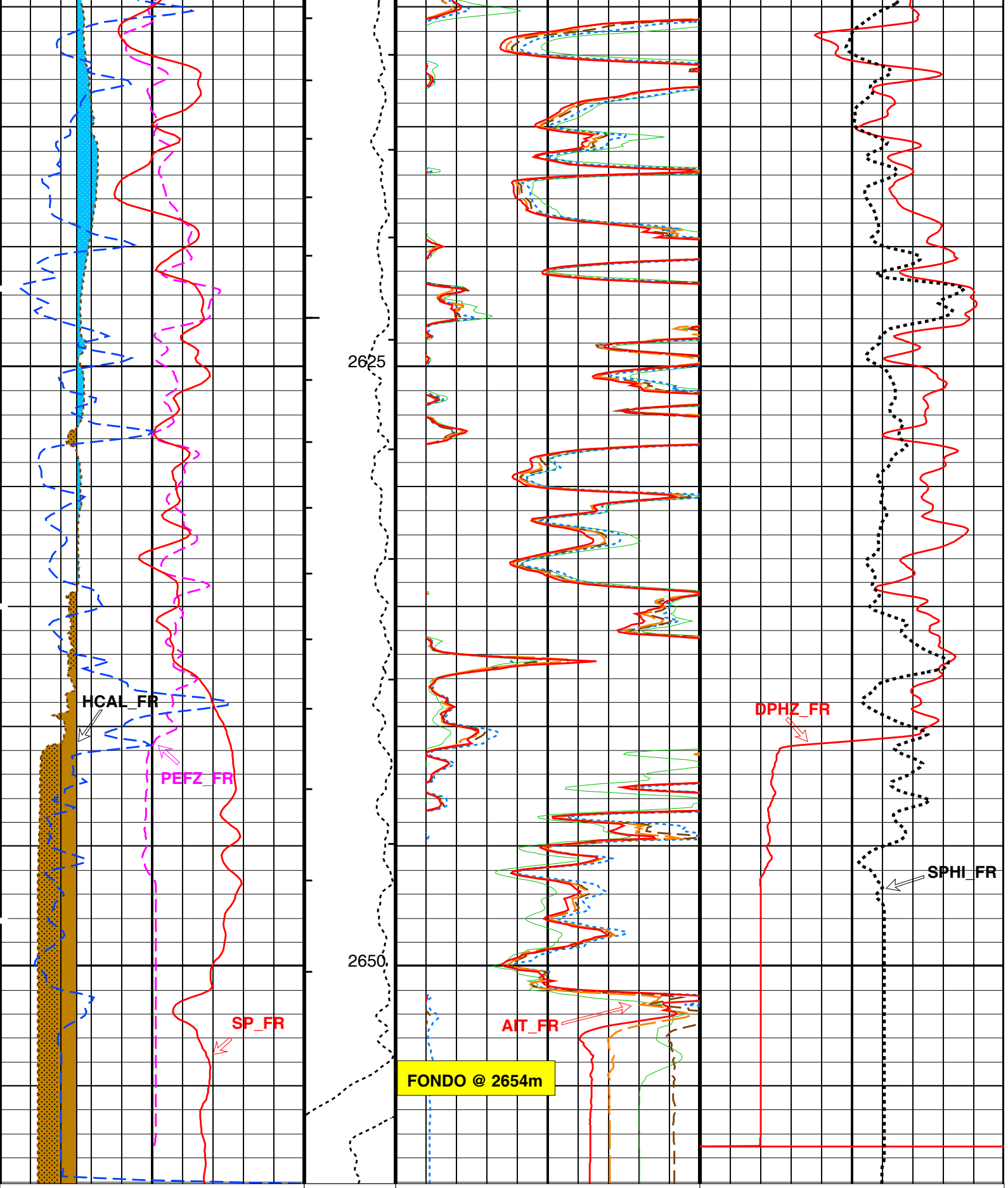
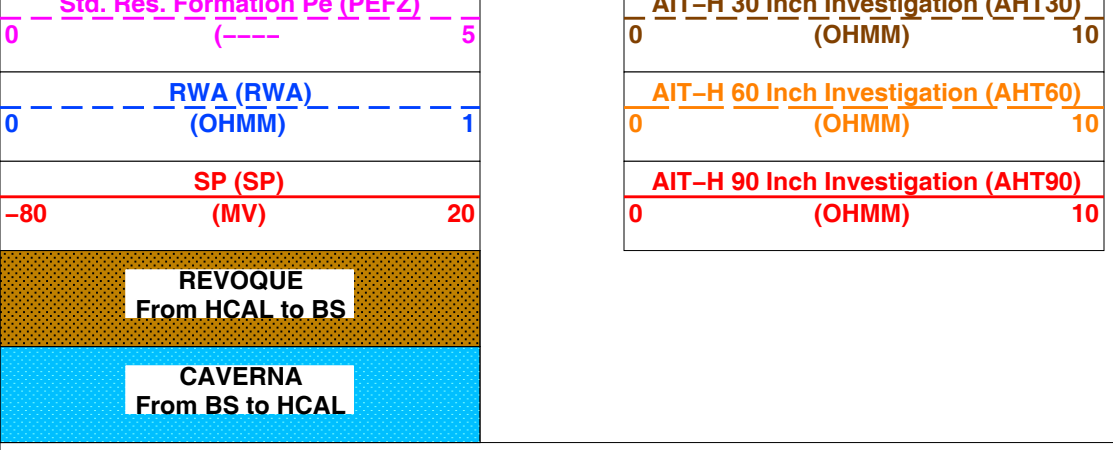


Bit Size (BS)	Tension (TENS)	AIT–H 10 Inch Investigation (AHT10)	Std. Res. Density Porosity (DPHZ)
6 (IN) 16	0 (LBF) 1000	0 (OHMM) 10	0.4 (V/V) 0
Caliper (HCAL)		AIT–H 20 Inch Investigation (AHT20)	Sonic Porosity (SPHI)
6 (IN) 16		0 (OHMM) 10	0.4 (V/V) 0
Std. Res. Formation Pe (PEFZ)		AIT–H 30 Inch Investigation (AHT30)	



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	
	HAIT-H: Array Induction Tool - H		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	880	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	108	
AHCDE	Array Induction Casing Detection Enable	No	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHRFV	Array Induction Radial Profiling Code Version Number	700	
AHRPV	Array Induction Radial Parametrization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHT	Bottom Hole Temperature (used in calculations)	101	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	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
RTCO	RTCO - Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	20	DEGC
SPDR	SP Drift	0	MV/M
SPNV	SP Next Value	-13	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	
	HILTB-FTB: High resolution Integrated Logging Tool-DTS		
BHT	Bottom Hole Temperature (used in calculations)	101	DEGC
DFB	HILT Nuclear Mud Base	Water	
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	
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	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MDEN	Matrix Density	2.65	G/C3
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
SHT	Surface Hole Temperature	20	DEGC
	RWA: Apparent Water Resistivity		

	RWA: Apparent Water Resistivity		
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_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)	AITH_TwoResA90	
RTCO	RTCO – Rt Invasion Correction	YES	
	HOLEV: Integrated Hole/Cement Volume		
BHT	Bottom Hole Temperature (used in calculations)	101	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	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
SHT	Surface Hole Temperature	20	DEGC
	System and Miscellaneous		
BS	Bit Size	8.750	IN
DFD	Drilling Fluid Density	1.20	G/C3
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	10.10	DEGC
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	1.3800	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2654	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA **Vertical Scale: 1:200** **Graphics File Created: 27–Feb–2005 23:00**

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_078PUP	FN:3	PRODUCER	27–Feb–2005 22:45	2659.1 M	356.3 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_079PUP	FN:4	PRODUCER	27–Feb–2005 23:00

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TRAMO REPETIDO

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_081PUP	FN:6	PRODUCER	27–Feb–2005 23:33	2659.1 M	2459.4 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_082PUP	FN:7	PRODUCER	27–Feb–2005 23:39	2560.9 M	2496.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 9.47 M3

Cement Volume = 6.49 M3 (assuming 5.50 IN casing O.D.)

Computed from 2653.9 M to 2459.6 M using data channel(s) HCAL

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	8.500 IN	8.500 IN	2560.9 23:39:24
SPDR	0 MV/M	0 MV/M	2560.9 23:39:24

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

RWA (RWA)
0 (OHMM) 1

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

AIT–H 90 Inch Investigation (AHT90)
0 (OHMM) 10

AIT–H 60 Inch Investigation (AHT60)
0 (OHMM) 10

AIT–H 30 Inch Investigation (AHT30)
0 (OHMM) 10

Caliper (HCAL)
6 (IN) 16

Stuck Stretch (STIT)
0 (M) 20

AIT–H 20 Inch Investigation (AHT20)
0 (OHMM) 10

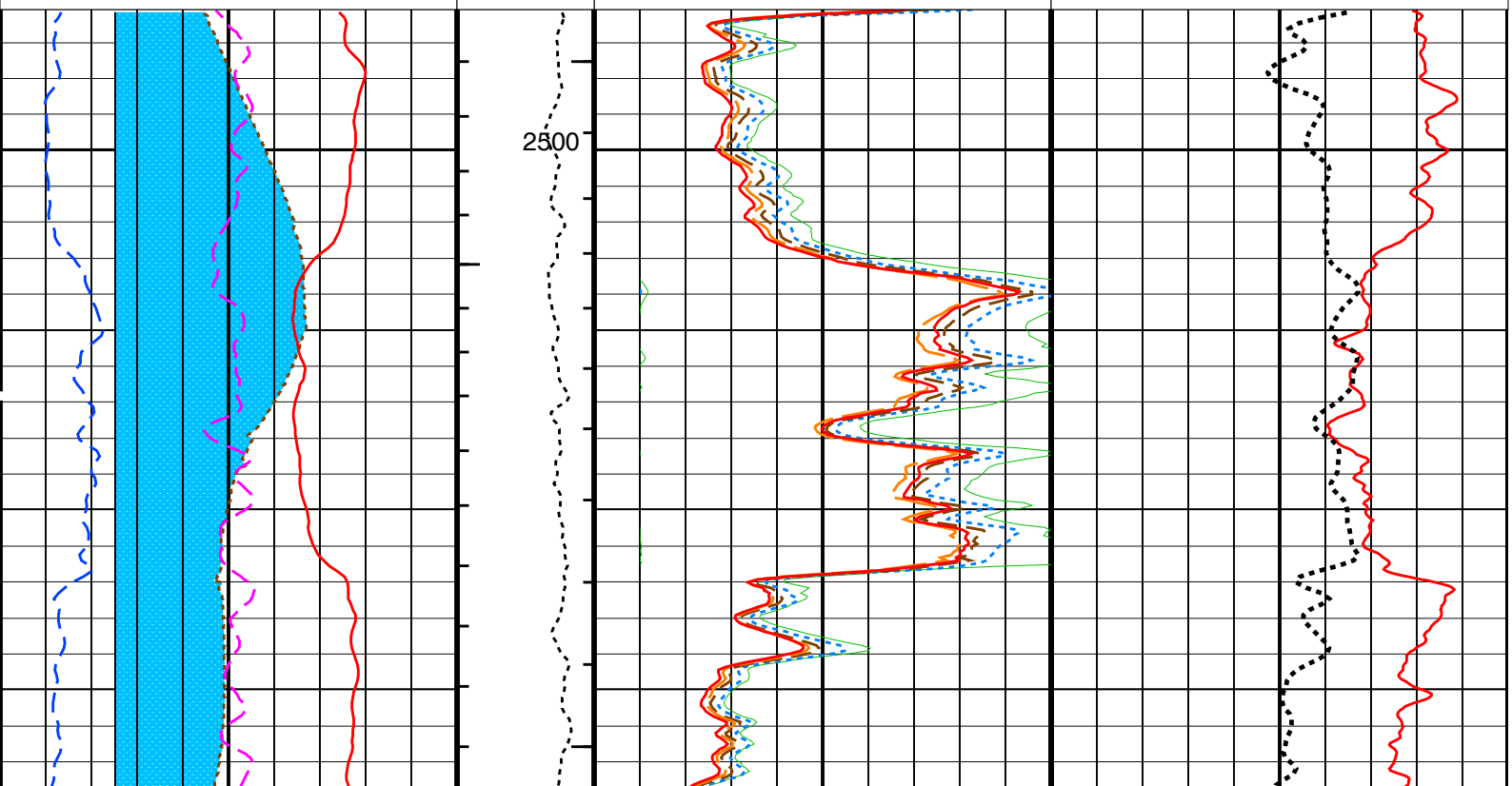
Sonic Porosity (SPHI)
0.4 (V/V) 0

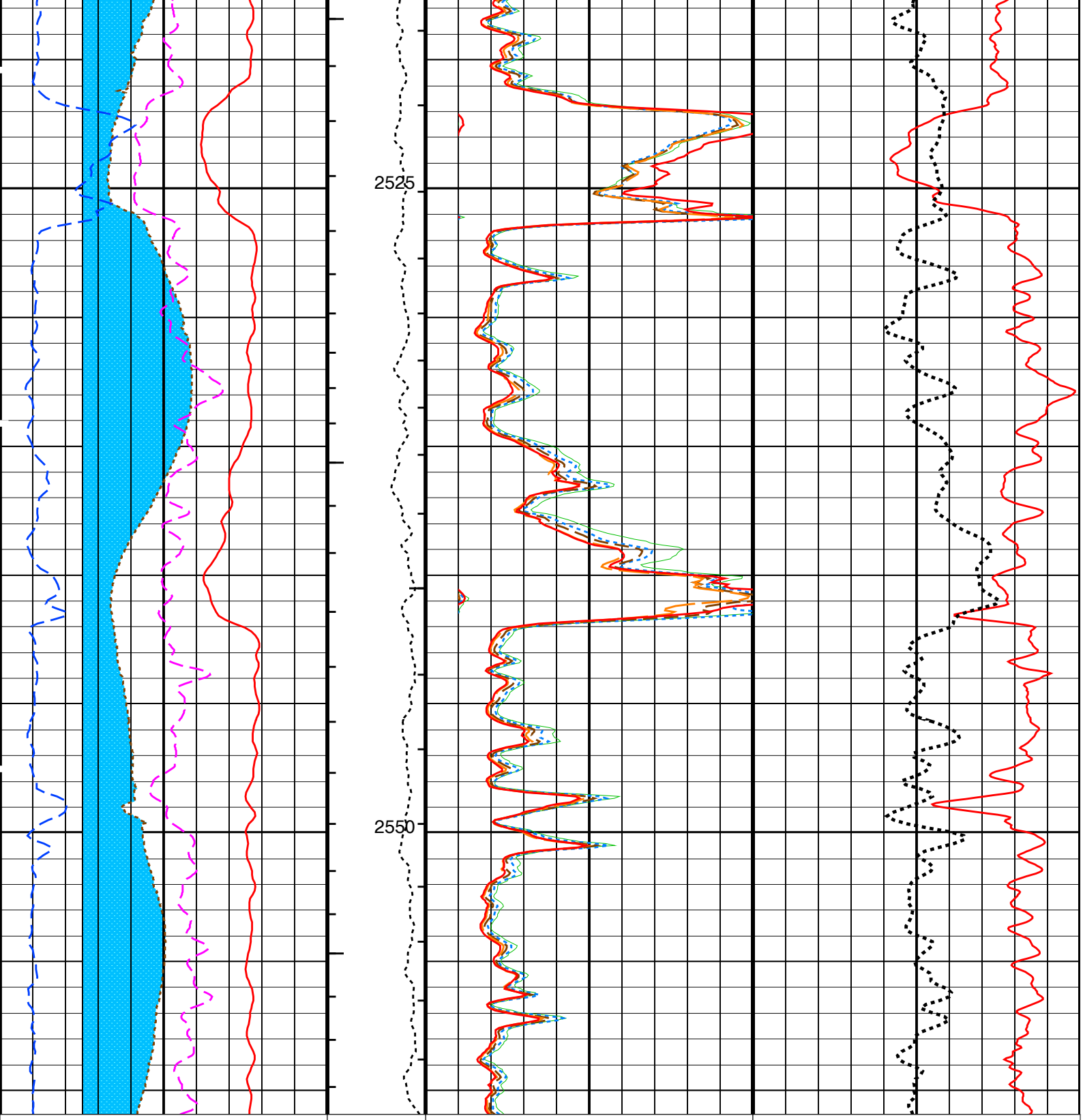
Bit Size (BS)
6 (IN) 16

Tension (TENS) (LBF)
0 1000

AIT–H 10 Inch Investigation (AHT10)
0 (OHMM) 10

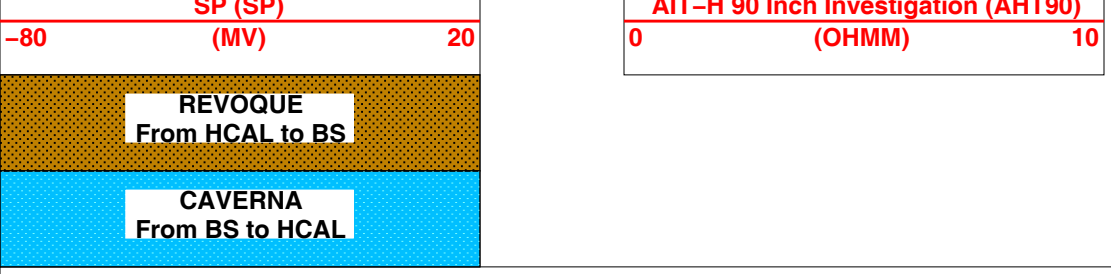
Std. Res. Density Porosity (DPHZ)
0.4 (V/V) 0





Bit Size (BS) 6 (IN) 16	Tension (TENS) (LBF) 0 1000	AIT–H 10 Inch Investigation (AHT10) 0 (OHMM) 10
Caliper (HCAL) 6 (IN) 16	Stuck Stretch (STIT) 0 (M) 20	AIT–H 20 Inch Investigation (AHT20) 0 (OHMM) 10
Std. Res. Formation Pe (PEFZ) 0 (---- 5		AIT–H 30 Inch Investigation (AHT30) 0 (OHMM) 10
RWA (RWA) 0 (OHMM) 1		AIT–H 60 Inch Investigation (AHT60) 0 (OHMM) 10

Std. Res. Density Porosity (DPHZ) 0.4 (V/V) 0
Sonic Porosity (SPHI) 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	
	HAIT-H: Array Induction Tool - H		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	880	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	108	
AHCDE	Array Induction Casing Detection Enable	No	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHRFV	Array Induction Radial Profiling Code Version Number	700	
AHRPV	Array Induction Radial Parametrization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHT	Bottom Hole Temperature (used in calculations)	101	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	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
RTCO	RTCO - Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	20	DEGC
SPDR	SP Drift	0	MV/M
SPNV	SP Next Value	-11	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	
	HILTB-FTB: High resolution Integrated Logging Tool-DTS		
BHT	Bottom Hole Temperature (used in calculations)	101	DEGC
DFB	HILT Nuclear Mud Base	Water	
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	
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	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MDEN	Matrix Density	2.65	G/C3
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
SHT	Surface Hole Temperature	20	DEGC
	RWA: Apparent Water Resistivity		
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_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)	AITH_TwoResA90	

ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TWOResA90	
RTCO	RTCO – Rt Invasion Correction	YES	
	HOLEV: Integrated Hole/Cement Volume		
BHT	Bottom Hole Temperature (used in calculations)	101	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	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
SHT	Surface Hole Temperature	20	DEGC
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	STI	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth – Driller	2650.00	M
TDL	Total Depth – Logger	2654.00	M
	System and Miscellaneous		
BS	Bit Size	8.500	IN
DFD	Drilling Fluid Density	1.20	G/C3
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	10.10	DEGC
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	1.3800	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2654	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA Vertical Scale: 1:200 Graphics File Created: 27–Feb–2005 23:39

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_081PUP	FN:6	PRODUCER	27–Feb–2005 23:33	2659.1 M	2459.4 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_082PUP	FN:7	PRODUCER	27–Feb–2005 23:39		

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MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_081PUP	FN:6	PRODUCER	27–Feb–2005 23:33	2659.1 M	2459.4 M
DEFAULT	AIT_SONIC_TLD_MCFL_078PUP	FN:3	PRODUCER	27–Feb–2005 22:45	2659.1 M	356.3 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_082PUP	FN:7	PRODUCER	27–Feb–2005 23:39	2560.9 M	2496.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 9.47 M3

Cement Volume = 6.49 M3 (assuming 5.50 IN casing O.D.)

Computed from 2653.9 M to 2459.6 M using data channel(s) HCAL

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

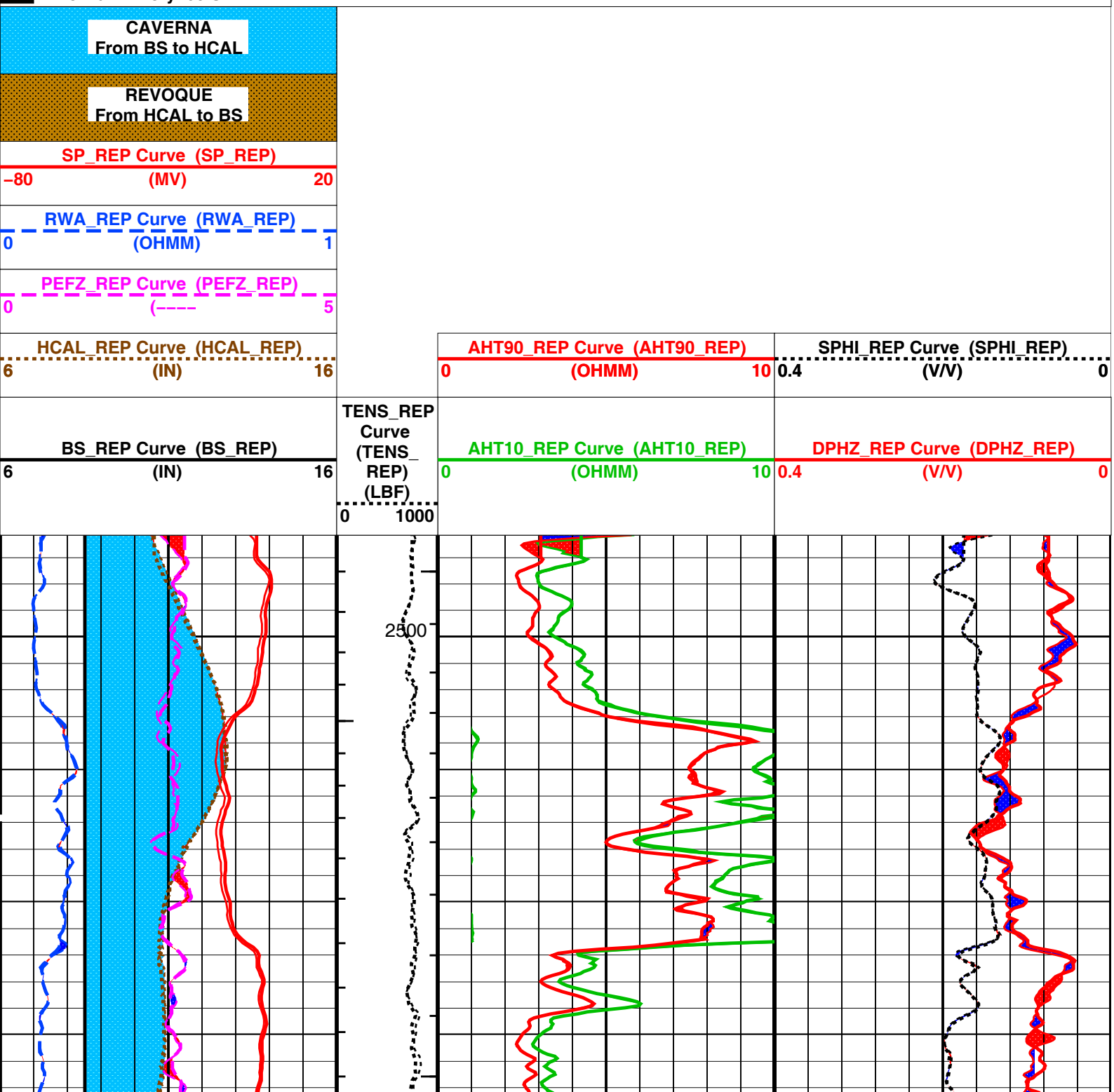
Changed Parameter Summary

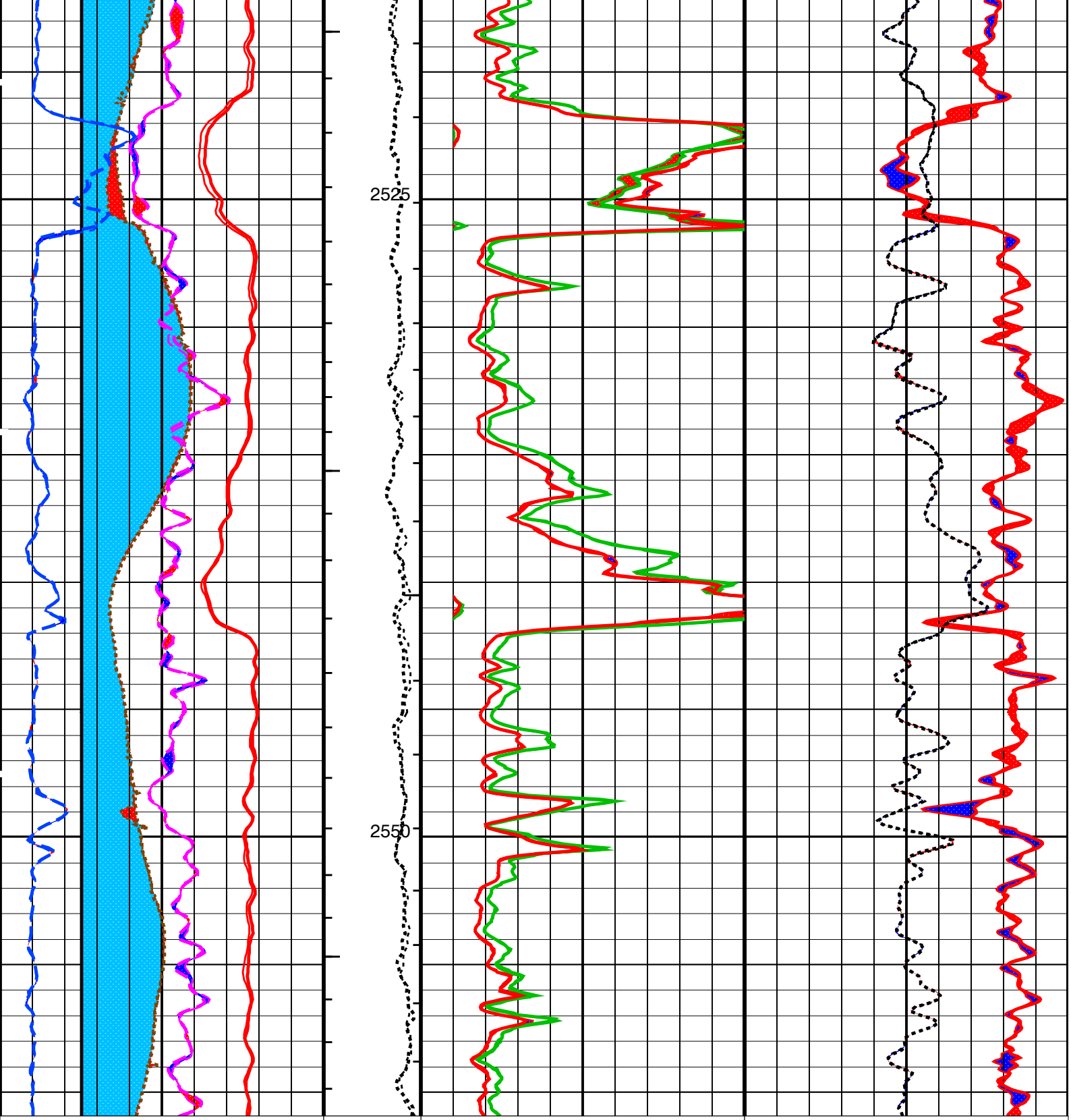
DLIS Name	New Value	Previous Value	Depth & Time
BS	8.500 IN	8.500 IN	2560.9 23:39:24
SPDR	0 MV/M	0 MV/M	2560.9 23:39:24

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





BS_REP Curve (BS_REP)
6 (IN) 16

HCAL_REP Curve (HCAL_REP)
6 (IN) 16

PEFZ_REP Curve (PEFZ_REP)
0 (---- 5

RWA_REP Curve (RWA_REP)
0 (OHMM) 1

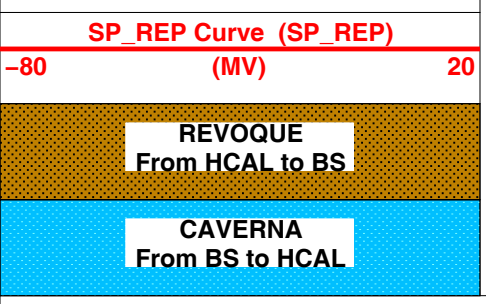
TENS_REP Curve (TENS_REP) (LBF)
0 1000

AHT10_REP Curve (AHT10_REP)
0 (OHMM) 10

AHT90_REP Curve (AHT90_REP)
0 (OHMM) 10

DPHZ_REP Curve (DPHZ_REP)
0.4 (V/V) 0

SPHI_REP Curve (SPHI_REP)
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	
	HAIT–H: Array Induction Tool – H		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	880	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	108	
AHCDE	Array Induction Casing Detection Enable	No	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHRFV	Array Induction Radial Profiling Code Version Number	700	
AHRPV	Array Induction Radial Parametrization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHT	Bottom Hole Temperature (used in calculations)	101	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	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
RTCO	RTCO – Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	20	DEGC
SPDR	SP Drift	0	MV/M
SPNV	SP Next Value	–11	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	
	HILTB–FTB: High resolution Integrated Logging Tool–DTS		
BHT	Bottom Hole Temperature (used in calculations)	101	DEGC
DFB	HILT Nuclear Mud Base	Water	
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	
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	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MDEN	Matrix Density	2.65	G/C3
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
SHT	Surface Hole Temperature	20	DEGC
	RWA: Apparent Water Resistivity		
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_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		

	ALLRES: Basic Resistivity Transforms		
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
RTCO	RTCO – Rt Invasion Correction	YES	
	HOLEV: Integrated Hole/Cement Volume		
BHT	Bottom Hole Temperature (used in calculations)	101	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	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
SHT	Surface Hole Temperature	20	DEGC
	System and Miscellaneous		
BS	Bit Size	8.500	IN
DFD	Drilling Fluid Density	1.20	G/C3
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	10.10	DEGC
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	1.3800	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2654	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA_REP Vertical Scale: 1:200 Graphics File Created: 27–Feb–2005 23:39

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_081PUP	FN:6	PRODUCER	27–Feb–2005 23:33	2659.1 M	2459.4 M
DEFAULT	AIT_SONIC_TLD_MCFL_078PUP	FN:3	PRODUCER	27–Feb–2005 22:45	2659.1 M	356.3 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_082PUP	FN:7	PRODUCER	27–Feb–2005 23:39

Schlumberger

CHEQUEO EN CAÑERIA

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_021LUP	FN:30	PRODUCER	27–Feb–2005 21:07	459.0 M	371.1 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_085PUP	FN:10	PRODUCER	27–Feb–2005 23:51	436.0 M	418.3 M

Integrated Hole/Cement Volume Summary

Hole Volume = 9.47 M3

Cement Volume = 6.49 M3 (assuming 5.50 IN casing O.D.)

Computed from 2653.9 M to 2459.6 M using data channel(s) HCAL

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

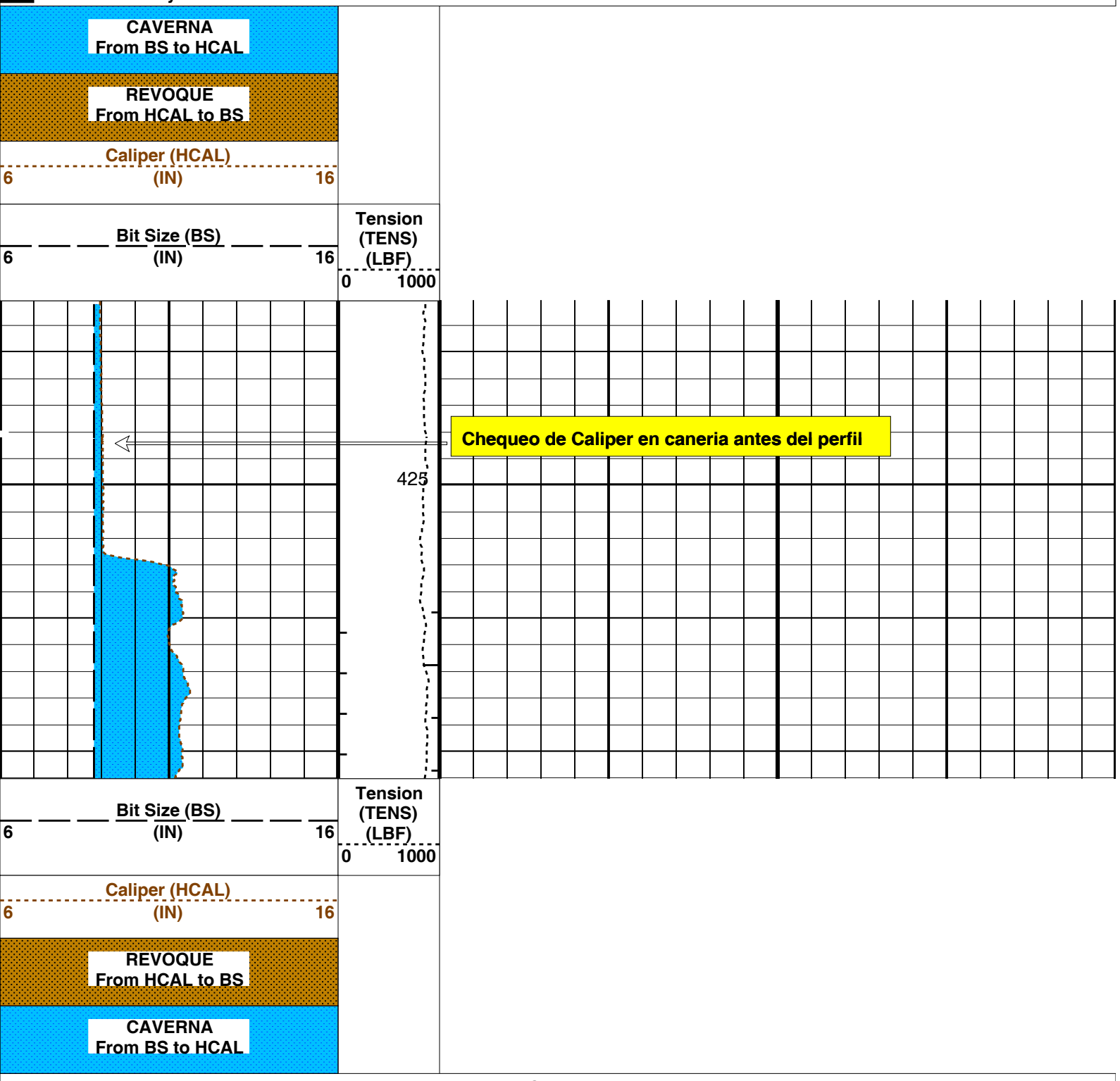
Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	8.750 IN	8.750 IN	436.0 23:51:30

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



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	
	HOLEV: Integrated Hole/Cement Volume		
FCD	Future Casing (Outer) Diameter	5.5	IN
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
	System and Miscellaneous		
BS	Bit Size	8.750	IN
DO	Depth Offset for Playback	−0.1	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	OFF	
TD	Total Depth	2654	M

Format: CALIPER Vertical Scale: 1:200 Graphics File Created: 27−Feb−2005 23:51

OP System Version: 12C0−301

MCM

HAIT−H	SRPC−2699−HILT	DSLT−H	12C0−301
HILTB−FTB	SRPC−2699−HILT	DTC−H	12C0−301

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_021LUP	FN:30	PRODUCER	27−Feb−2005 21:07	459.0 M	371.1 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_085PUP	FN:10	PRODUCER	27−Feb−2005 23:51		

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_021LUP	FN:30	PRODUCER	27−Feb−2005 21:07	459.0 M	371.1 M
DEFAULT	AIT_SONIC_TLD_MCFL_078PUP	FN:3	PRODUCER	27−Feb−2005 22:45	2659.1 M	356.3 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_085PUP	FN:10	PRODUCER	27−Feb−2005 23:51	436.0 M	418.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 9.47 M3

Cement Volume = 6.49 M3 (assuming 5.50 IN casing O.D.)

Computed from 2653.9 M to 2459.6 M using data channel(s) HCAL

OP System Version: 12C0−301

MCM

HAIT−H	SRPC−2699−HILT	DSLT−H	12C0−301
HILTB−FTB	SRPC−2699−HILT	DTC−H	12C0−301

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BS	8.750 IN	8.750 IN	436.0 23:51:30

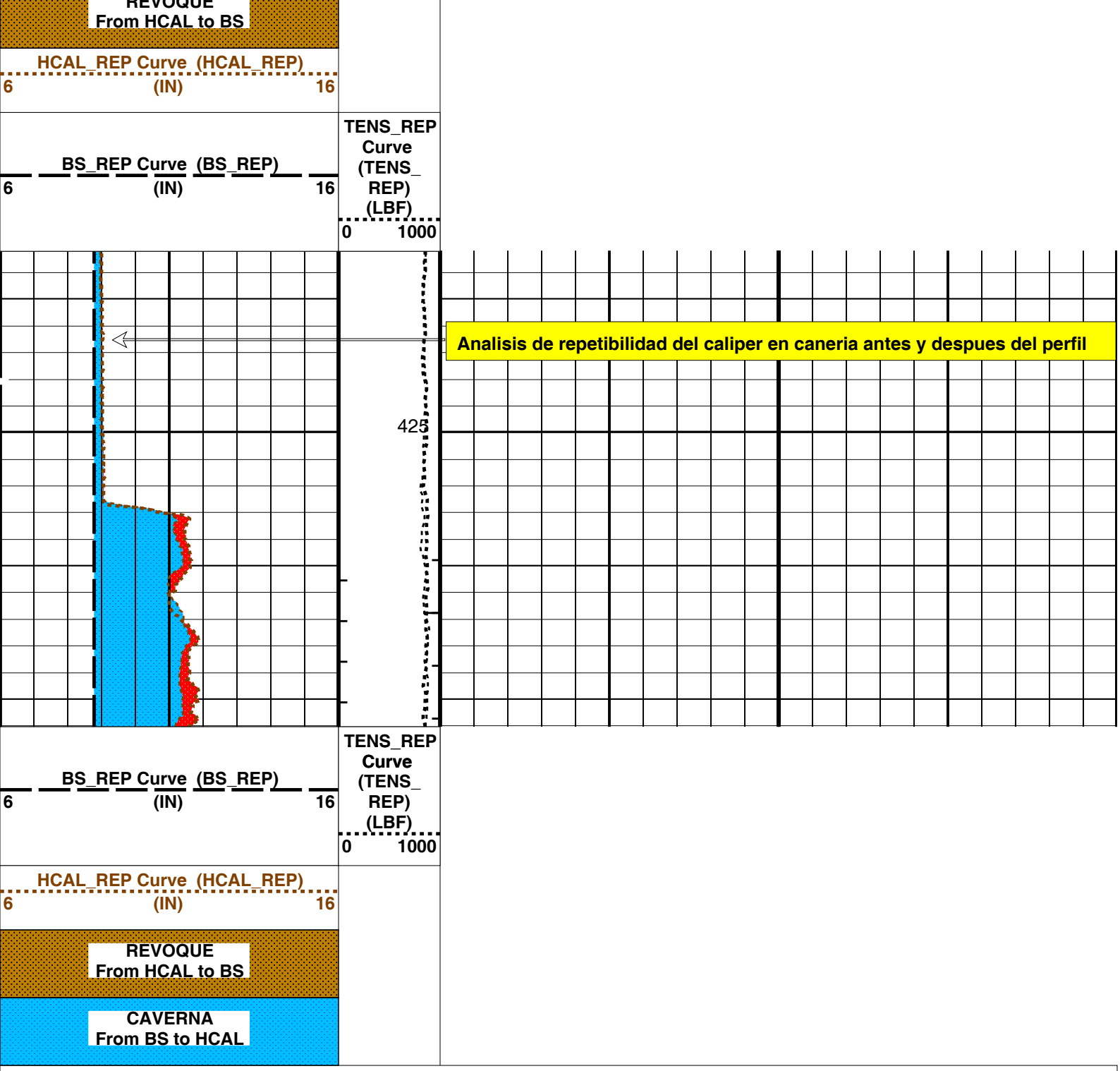
PIP SUMMARY

- 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



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	
	HOLEV: Integrated Hole/Cement Volume		
FCD	Future Casing (Outer) Diameter	5.5	IN
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
	System and Miscellaneous		
BS	Bit Size	8.750	IN
DO	Depth Offset for Playback	−0.1	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	OFF	
TD	Total Depth	2654	M

Format: CALIPER_REP Vertical Scale: 1:200 Graphics File Created: 27−Feb−2005 23:51

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_021LUP	FN:30	PRODUCER	27–Feb–2005 21:07	459.0 M	371.1 M
DEFAULT	AIT_SONIC_TLD_MCFL_078PUP	FN:3	PRODUCER	27–Feb–2005 22:45	2659.1 M	356.3 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_085PUP	FN:10	PRODUCER	27–Feb–2005 23:51		

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_078PUP	FN:3	PRODUCER	27–Feb–2005 22:45	2659.1 M	356.3 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_087PUP	FN:12	PRODUCER	27–Feb–2005 23:55	413.0 M	403.9 M

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

Changed Parameter Summary

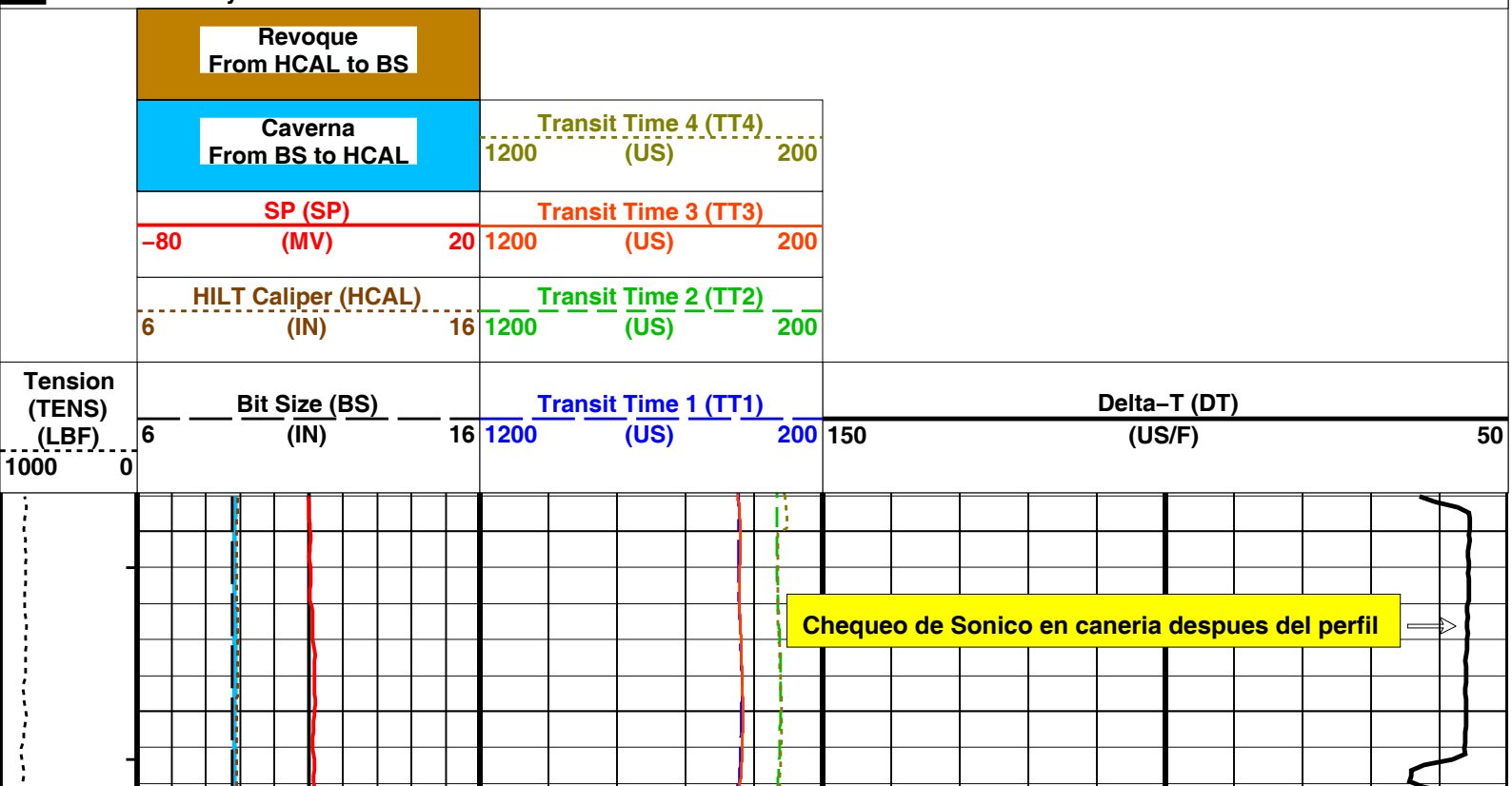
DLIS Name	New Value	Previous Value	Depth & Time
BS	8.750 IN	8.750 IN	413.0 23:55:50
SPDR	0 MV/M	0 MV/M	413.0 23:55:50

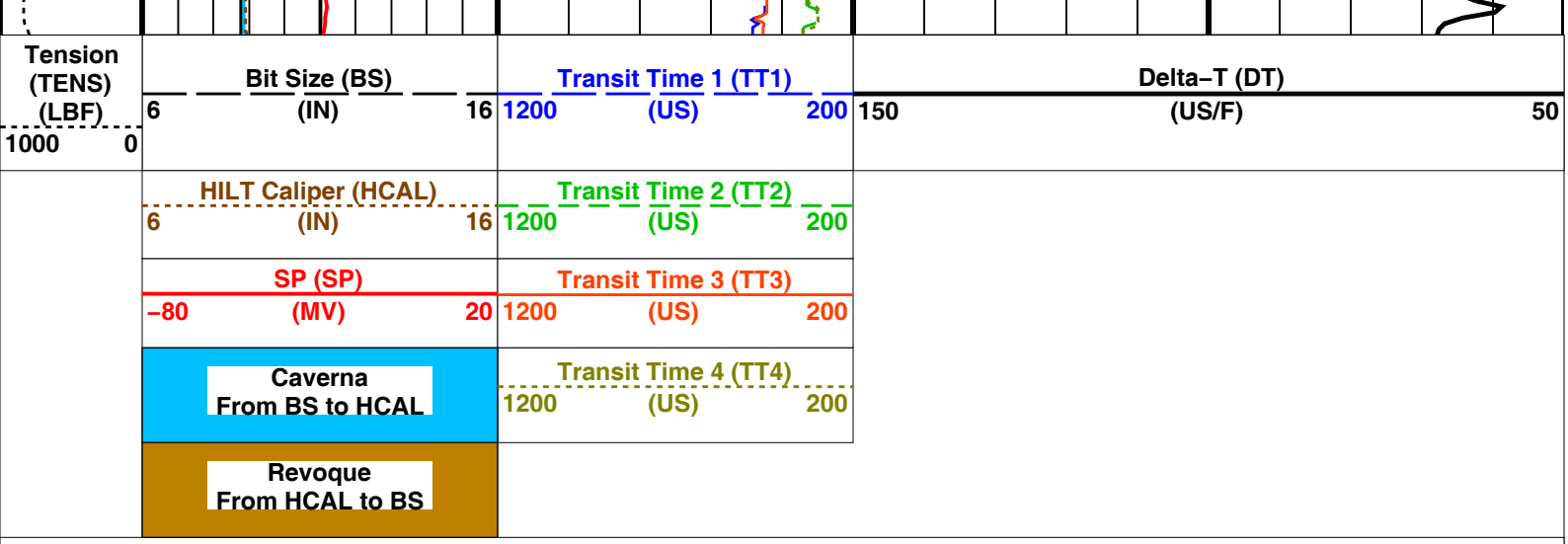
PIP SUMMARY

Integrated Transit Time Minor Pip Every 1 MS

Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S





PIP SUMMARY

Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HAIT–H: Array Induction Tool – H		
SPDR	SP Drift	0	MV/M
SPNV	SP Next Value	–11	MV
	DSLT–H: Digitizing Sonic Logging Tool		
	DSLT Firing Mode	BHC	
	Telemetry Mode	DSLC_FTB	
AMSG	Auxiliary Minimum Sliding Gate	140	US
CBAF	CBL Adjustment Factor	1	
CBCF	CBL Correction Factor	4	
CBLG	CBL Gate Width	45	US
DDEL	Digitizing Delay	200	US
DIVL	DSLT Depth Sampling Interval	20	
DRCS	DSLT DLIS Recording Size	100	
DSIN	Digitizing Sample Interval	10	
DTFS	DSLC Telemetry Frame Size	300	
DWCO	Digitizing Word Count	100	
GAI	Manual Gain	40	
ITTS	Integrated Transit Time Source	DT	
MAHTR	Manual High Threshold Reference	140	
MGAI	Maximum Gain	60	
MNHTR	Minimum High Threshold Reference	120	
NMSG	Near Minimum Sliding Gate	260	US
NMXG	Near Maximum Sliding Gate	750	US
RATE	Firing Rate	R15	
SFAF	Sonic Formation Attenuation Factor	0	DB/M
SGCL	Sliding Gate Closing Delta–T	250	US/F
SGDT	Sliding Gate Delta–T	65	US/F
SGW	Sliding Gate Width	80	US
SLEV	Signal Level for AGC	5000	
WAGC	Waveform AGC Allow/Disallow	OFF	
WMOD	Waveform Firing Mode	FULL	
	System and Miscellaneous		
BS	Bit Size	8.750	IN
DO	Depth Offset for Playback	–0.1	M
PP	Playback Processing	OFF	

Format: SONIC Vertical Scale: 1:200 Graphics File Created: 27–Feb–2005 23:55

OP System Version: 12C0–301

MCM

HAIT–H	SRPC–2699–HILT	DSLT–H	12C0–301
HILTB–FTB	SRPC–2699–HILT	DTC–H	12C0–301

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_078PUP	FN:3	PRODUCER	27–Feb–2005 22:45	2659.1 M	356.3 M

Output DLIS Files

Schlumberger

CALIBRACIONES

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase							
Master: 6–Jan–2005 10:30 Before: 27–Feb–2005 9:06							
Thru Cal Magnitude – 0	0	0.6630	0.6694	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.360	1.373	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6774	0.6841	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7651	0.7725	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.437	1.450	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	2.093	2.114	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	2.093	2.113	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.543	1.557	N/A	N/A	N/A	V
Phase – 0	0	63.95	64.30	N/A	N/A	N/A	DEG
Phase – 1	0	62.92	63.27	N/A	N/A	N/A	DEG
Phase – 2	0	59.03	59.37	N/A	N/A	N/A	DEG
Phase – 3	0	58.22	58.56	N/A	N/A	N/A	DEG
Phase – 4	0	51.68	52.01	N/A	N/A	N/A	DEG
Phase – 5	0	49.70	50.02	N/A	N/A	N/A	DEG
Phase – 6	0	49.76	50.08	N/A	N/A	N/A	DEG
Phase – 7	0	46.17	46.42	N/A	N/A	N/A	DEG
Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Auxilliary							
Master: 6–Jan–2005 10:30 Before: 27–Feb–2005 9:06							
Array Induction SPA Plus	990.5	993.3	993.3	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	–0.2850	–0.2904	N/A	N/A	N/A	MV
Array Induction Temperature Pl	0.9150	0.9203	0.9202	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	–0.0002825	–0.0002940	N/A	N/A	N/A	V
Array Induction Tool – H Wellsite Calibration – Test Loop Gain Correction							
Master: 6–Jan–2005 10:30							
Test Loop Gain Magnitude – 0	0	1.017	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 1	0	1.016	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 2	0	1.019	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 3	0	1.020	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 4	0	0.9988	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 5	0	1.015	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 6	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 7	0	1.044	N/A	N/A	N/A	N/A	V
Phase – 0	0	0.5577	N/A	N/A	N/A	N/A	DEG
Phase – 1	0	0.5624	N/A	N/A	N/A	N/A	DEG
Phase – 2	0	0.03268	N/A	N/A	N/A	N/A	DEG
Phase – 3	0	0.01949	N/A	N/A	N/A	N/A	DEG
Phase – 4	0	–0.05774	N/A	N/A	N/A	N/A	DEG
Phase – 5	0	–0.2285	N/A	N/A	N/A	N/A	DEG
Phase – 6	0	0.1720	N/A	N/A	N/A	N/A	DEG
Phase – 7	0	–0.2652	N/A	N/A	N/A	N/A	DEG
Array Induction Tool – H Wellsite Calibration – Sonde Error Correction							
Master: 6–Jan–2005 10:30							
R Sonde Error Correction – 0	0	–73.88	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	150.7	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	105.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	62.47	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	26.35	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	13.10	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	9.690	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	–0.2998	N/A	N/A	N/A	N/A	MM/M

R Sonde Error Correction – 7	0	–0.3998	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	–15.53	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	307.0	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	101.1	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	–6.620	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	22.42	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	6.444	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	–1.112	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	7.314	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool – H Wellsite Calibration – Mud Gain Correction
Master: 6–Jan–2005 10:30

Coarse – Mag, Real, Imag – 0	0	1.179	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 1	0	1.179	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 2	0	1.179	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 0	0	1.169	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 1	0	1.169	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 2	0	1.169	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary
Before: 26–Feb–2005 13:23

BS Window Ratio	0.7606	N/A	0.7605	N/A	N/A	N/A	
BS Window Sum	12450	N/A	12430	N/A	N/A	N/A	CPS
SS Window Ratio	0.4780	N/A	0.4778	N/A	N/A	N/A	
SS Window Sum	10910	N/A	10940	N/A	N/A	N/A	CPS
LS Window Ratio	0.2922	N/A	0.2930	N/A	N/A	N/A	
LS Window Sum	1332	N/A	1325	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations
Before: 26–Feb–2005 13:23

BS PM High Voltage (Command)	1804	N/A	1820	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1978	N/A	1963	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1922	N/A	1912	N/A	N/A	N/A	V

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration
Before: 26–Feb–2005 13:23

BS Crystal Resolution	12.88	N/A	13.05	N/A	N/A	N/A	%
SS Crystal Resolution	10.99	N/A	10.82	N/A	N/A	N/A	%
LS Crystal Resolution	9.622	N/A	9.947	N/A	N/A	N/A	%

High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration
Before: 26–Feb–2005 13:22

HILT Caliper Zero Measurement	8.000	N/A	7.911	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.31	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration
Before: 26–Feb–2005 13:18

Gamma Ray Background	30.00	N/A	19.10	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	195.1	N/A	195.1	N/A	N/A	17.74	GAPI
Gamma Ray (Calibrated)	177.0	N/A	177.0	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement
Master: 26–Jan–2005 10:45 Before: 26–Feb–2005 13:22

CNTC Background	26.47	26.47	27.90	N/A	N/A	3.970	CPS
CFTC Background	26.11	26.11	25.80	N/A	N/A	3.917	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement
Master: 26–Jan–2005 10:45

Thermal Near Corr. (Tank)	6031	5476	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2793	2248	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.436	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration
Before: 26–Feb–2005 13:23

Z–Axis Acceleration	9.810	N/A	9.788	N/A	N/A	N/A	M/S2

High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results
Master: 23–Feb–2005 15:22

Rho Aluminum	2.596	2.605	––	––	––	––	G/C3
Rho Magnesium	1.686	1.685	––	––	––	––	G/C3
Pe Aluminum	2.570	2.576	––	––	––	––	
Pe Magnesium	2.650	2.632	––	––	––	––	

High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary
Master: 23–Feb–2005 15:22

BS Average Deviation	0	0.6000	––	––	––	––	%
BS Max Deviation	0	1.423	––	––	––	––	%
SS Average Deviation	0	0.3961	––	––	––	––	%
SS Max Deviation	0	1.390	––	––	––	––	%
LS Average Deviation	0	1.224	––	––	––	––	%
LS Max Deviation	0	2.493	––	––	––	––	%

The GLS−VJ source activity is acceptable.

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

NCT−B Water Temperature 21.0 DEGC.
Thermal Housing Size 3.374 IN.
NSR−F serial number 1577

Array Induction Tool − H / Equipment Identification

Primary Equipment:

Rm/SP Bottom Nose	AHRM − A	
Array Induction Sonde	AHIS − BA	265

Auxiliary Equipment:

Array Induction Tool − H Wellsite Calibration

Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6630		0.6050	63.95		71.00
	Before	0.6694			64.30		
1	Master	1.360		1.270	62.92		70.00
	Before	1.373			63.27		
2	Master	0.6774		0.6230	59.03		66.00
	Before	0.6841			59.37		
3	Master	0.7651		0.7040	58.22		65.00
	Before	0.7725			58.56		
4	Master	1.437		1.337	51.68		59.00
	Before	1.450			52.01		
5	Master	2.093		1.955	49.70		57.00
	Before	2.114			50.02		
6	Master	2.093		1.955	49.76		57.00
	Before	2.113			50.08		
7	Master	1.543		1.415	46.17		53.00
	Before	1.557			46.42		
		60.00 % (Minimum)	140.0 % (Maximum)	(Nominal)	Nom −60.00 (Minimum)	Nom + 60.00 (Maximum)	(Nominal)

Master: 6−Jan−2005 10:30 Before: 27−Feb−2005 9:06

Array Induction Tool − H Wellsite Calibration

Electronics Calibration Check − Auxilliary

Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		993.3	Master		−0.2850
Before		993.3	Before		−0.2904
	941.0 (Minimum) 990.5 (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		0.9203	Master		−0.0002825
Before		0.9202	Before		−0.0002940
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)			−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 6−Jan−2005 10:30 Before: 27−Feb−2005 9:06

Array Induction Tool – H Wellsite Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG		
0	1.017				0.5577			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.016				0.5624			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.019				0.03268			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.020				0.01949			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9988				−0.05774			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	1.015				−0.2285			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.024				0.1720			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.044				−0.2652			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master: 6–Jan–2005 10:30

Array Induction Tool – H Wellsite Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	−73.88				−15.53			
		−231.0 (Minimum)	−56.00 (Nominal)	119.0 (Maximum)		−2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	150.7				307.0			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	105.6				101.1			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	62.47				−6.620			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	26.35				22.42			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	13.10				6.444			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.690				−1.112			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	−0.3998				7.314			
		−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 6–Jan–2005 10:30

Array Induction Tool – H Wellsite Calibration

Mud Gain Correction

Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	1.179				1.169			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.179				1.169			

		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.179				1.169			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 6–Jan–2005 10:30

Array Induction Tool – H Master Calibration

Electronics Calibration Check – Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6630		0.6050	63.95		71.00
1	Master	1.360		1.270	62.92		70.00
2	Master	0.6774		0.6230	59.03		66.00
3	Master	0.7651		0.7040	58.22		65.00
4	Master	1.437		1.337	51.68		59.00
5	Master	2.093		1.955	49.70		57.00
6	Master	2.093		1.955	49.76		57.00
7	Master	1.543		1.415	46.17		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom –60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)

Master: 6–Jan–2005 10:30

Array Induction Tool – H Master Calibration

Electronics Calibration Check – Auxilliary

Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		993.3	Master		–0.2850
	941.0 (Minimum) 990.5 (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		0.9203	Master		–0.0002825
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)			–0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Master: 6–Jan–2005 10:30

Array Induction Tool – H Master Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
0	1.017		0.5577	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
1	1.016		0.5624	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
2	1.019		0.03268	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
3	1.020		0.01949	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
4	0.9988		–0.05774	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
5	1.015		–0.2285	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
6	1.024		0.1720	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
7	1.044		–0.2652	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	

Master: 6–Jan–2005 10:30

Array Induction Tool – H Master Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	−73.88				−15.53			
		−231.0 (Minimum)	−56.00 (Nominal)	119.0 (Maximum)		−2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	150.7				307.0			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	105.6				101.1			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		−350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	62.47				−6.620			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		−250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	26.35				22.42			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		−63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	13.10				6.444			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		−50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.690				−1.112			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	−0.3998				7.314			
		−5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		−30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 6–Jan–2005 10:30

Array Induction Tool – H Master Calibration

Mud Gain Correction

Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	1.179				1.169			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.179				1.169			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.179				1.169			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 6–Jan–2005 10:30

High resolution Integrated Logging Tool–DTS / Equipment Identification

Primary Equipment:		
HILT high–Resolution Mechanical Sonde	HRMS – B	1915
HILT Rxo Gamma–ray Device	HRGD – B	1940
GR Logging Source	GLS – VJ	3765
HILT High Res. Control Cartridge	HRCC – B	1918
HILT Gamma–Ray Neutron Sonde–DTS	HGNS – B	1931
HILT Gamma–Ray Device	HGR –	
HILT Neutron Detector with Alpha Source	HCNT –	
Z–Axis Accelerometer	HACC –	
Auxiliary Equipment:		
Neutron Calibration Tank	NCT – B	
Gamma Source Radioactive	GSR – U/Y	1391

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				0.7605	Before				0.4778	Before				0.2930
	0.7225 (Minimum)	0.7606 (Nominal)	0.7986 (Maximum)			0.4541 (Minimum)	0.4780 (Nominal)	0.5019 (Maximum)			0.2776 (Minimum)	0.2922 (Nominal)	0.3068 (Maximum)	
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value

Phase		Value
Before		12430
	11830 (Minimum) 12450 (Nominal) 13070 (Maximum)	

Phase		Value
Before		10940
	10370 (Minimum) 10910 (Nominal) 11460 (Maximum)	

Phase		Value
Before		1325
	1265 (Minimum) 1332 (Nominal) 1398 (Maximum)	

Before: 26–Feb–2005 13:23

High resolution Integrated Logging Tool–DTS Wellsite Calibration

Photo–multiplier High Voltages Calibrations

Phase	BS PM High Voltage (Command) V	Value
Before		1820
	1704 (Minimum) 1804 (Nominal) 1904 (Maximum)	

Phase	SS PM High Voltage (Command) V	Value
Before		1963
	1878 (Minimum) 1978 (Nominal) 2078 (Maximum)	

Phase	LS PM High Voltage (Command) V	Value
Before		1912
	1822 (Minimum) 1922 (Nominal) 2022 (Maximum)	

Before: 26–Feb–2005 13:23

High resolution Integrated Logging Tool–DTS Wellsite Calibration

Crystal Quality Resolutions Calibration

Phase	BS Crystal Resolution %	Value
Before		13.05
	11.88 (Minimum) 12.88 (Nominal) 13.88 (Maximum)	

Phase	SS Crystal Resolution %	Value
Before		10.82
	9.986 (Minimum) 10.99 (Nominal) 11.99 (Maximum)	

Phase	LS Crystal Resolution %	Value
Before		9.947
	8.622 (Minimum) 9.622 (Nominal) 10.62 (Maximum)	

Before: 26–Feb–2005 13:23

High resolution Integrated Logging Tool–DTS Wellsite Calibration

HILT Caliper Calibration

Phase	HILT Caliper Zero Measurement IN	Value
Before		7.911
	6.000 (Minimum) 8.000 (Nominal) 10.00 (Maximum)	

Phase	HILT Caliper Plus Measurement IN	Value
Before		12.31
	9.000 (Minimum) 12.00 (Nominal) 15.00 (Maximum)	

Before: 26–Feb–2005 13:22

High resolution Integrated Logging Tool–DTS Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value
Before		**19.10**
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)	

Phase	Gamma Ray (Jig – Bkg) GAPI	Value
Before		**195.1**
	177.4 (Minimum) 195.1 (Nominal) 212.9 (Maximum)	

Phase	Gamma Ray (Calibrated) GAPI	Value
Before		**177.0**
	162.0 (Minimum) 177.0 (Nominal) 192.0 (Maximum)	

Before: 26–Feb–2005 13:18

High resolution Integrated Logging Tool–DTS Wellsite Calibration

Zero Measurement

Phase	CNTC Background CPS	Value
Master		26.47
Before		27.90
	5.000 (Minimum) 26.47 (Nominal) 40.00 (Maximum)	

Phase	CFTC Background CPS	Value
Master		26.11
Before		25.80
	5.000 (Minimum) 26.11 (Nominal) 40.00 (Maximum)	

Master: 26–Jan–2005 10:45 Before: 26–Feb–2005 13:22

High resolution Integrated Logging Tool–DTS Wellsite Calibration

Ratio Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value
Master		5476
	5000 (Minimum) 6031 (Nominal) 7200 (Maximum)	

Phase	Thermal Far Corr. (Tank) CPS	Value
Master		2248
	2075 (Minimum) 2793 (Nominal) 3125 (Maximum)	

Phase	CNTC/CFTC (Tank)	Value
Master		2.436
	2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

Master: 26–Jan–2005 10:45

High resolution Integrated Logging Tool–DTS
Wellsite Calibration

Accelerometer Calibration

Phase	Z–Axis Acceleration M/S2	Value
Before		9.788
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 26–Feb–2005 13:23

High resolution Integrated Logging Tool–DTS Master Calibration

Inversion results

Phase	Rho Aluminum G/C3	Value
Master		2.605
2.586 (Minimum)	2.596 (Nominal)	2.606 (Maximum)

Phase	Rho Magnesium G/C3	Value
Master		1.685
1.676 (Minimum)	1.686 (Nominal)	1.696 (Maximum)

Phase	Pe Aluminum	Value
Master		2.576
2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)

Phase	Pe Magnesium	Value
Master		2.632
2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)

Master: 23–Feb–2005 15:22

High resolution Integrated Logging Tool–DTS Master Calibration

Deviation Summary

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

Phase	SS Average Deviation %	Value
Master		0.3961
–1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)

Phase	LS Average Deviation %	Value
Master		1.224
–1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)

Phase	BS Max Deviation %	Value
Master		1.423
–1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)

Phase	SS Max Deviation %	Value
Master		1.390
–2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)

Phase	LS Max Deviation %	Value
Master		2.493
–3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)

Master: 23–Feb–2005 15:22

High resolution Integrated Logging Tool–DTS Master Calibration

Zero Measurement

Phase	CNTC Background CPS	Value
Master		26.47
5.000 (Minimum)	26.47 (Nominal)	40.00 (Maximum)

Phase	CFTC Background CPS	Value
Master		26.11
5.000 (Minimum)	26.11 (Nominal)	40.00 (Maximum)

Master: 26–Jan–2005 10:45

High resolution Integrated Logging Tool–DTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value
Master		5476
5000 (Minimum)	6031 (Nominal)	7200 (Maximum)

Phase	Thermal Far Corr. (Tank) CPS	Value
Master		2248
2075 (Minimum)	2793 (Nominal)	3125 (Maximum)

Phase	CNTC/CFTC (Tank)	Value
Master		2.436
2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 26–Jan–2005 10:45

COMPANIA: **YPF S.A.**

POZO: **YPF.Ch.PCN–621**

CAMPO: **PAMPA DEL CASTILLO NORTE**

PROVINCIA: **CHUBUT**

PAIS: **ARGENTINA**

PRIMERA LECTURA	2651.6 m
PROFUNDIDAD PERFIL	2654 m
PROF. PERFORADOR	2650 m
BUJE DE VASTAGO	677.89 m
MESA ROTATIVA	677.59 m
NIVEL TERRENO	672.09 m

Schlumberger

COMBINADA

ESCALA: 1/200

Schlumberger

Compania: **YPF S.A.**

Pozo: **YPF.Ch.PCN−621**
Campo: **PAMPA DEL CASTILLO NORTE**
Provincia: **CHUBUT** Pais: **ARGENTINA**

Provincia: CHUBUT
Campo: PAMPA DEL CASTILLO NORTE
Locacion: CAS
Pozo: YPF.Ch.PCN−621
Compania: YPF S.A.

CONTROL DE CEMENTO
CBL VDL CNL COMPENSADO CCL
1/200

LOCACION

CAS
X:4.939.776,85
Y:2.578.586,41

Elev.: B.V. 677.89 m
N.T. 672.09 m
M.R. 677.59 m

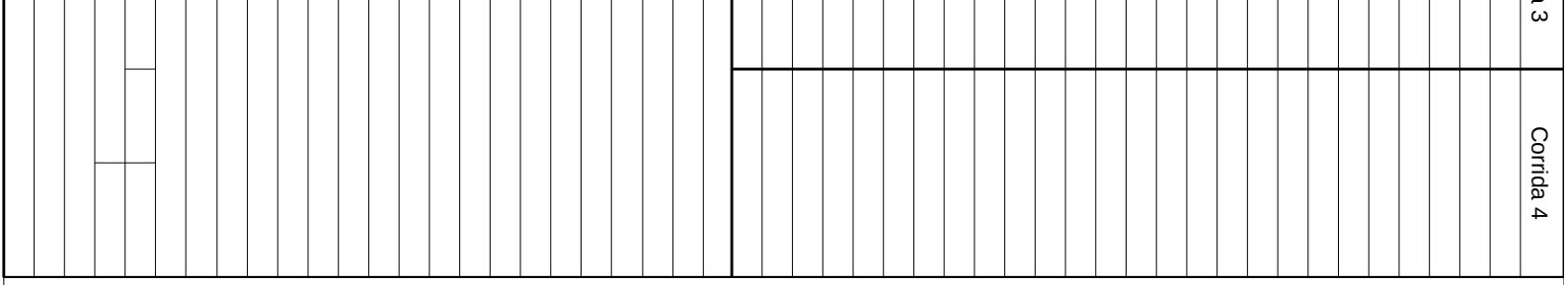
Ref. Permanente: NIVEL DE TERRENO Elev.: 672.09 m
Reg. Medido Desde: NIVEL DE TERRENO 0.0 m sobre Ref. Permanente
Perforacion Medida Desde: NIVEL DE TERRENO

Equipo	Desviacion Maxima del Hoyo	Longitud X:4.939.776,85	Latitud Y:2.578.586,41

Fecha de Registro	4−Mar−2005		
Corrida Numero	1		
Prof. Perforador	2650 m		
Prof. Schlumberger	2532 m		
Primera Lectura	2532 m		
Ultima Lectura	1350 m		
Tipo de Fluido en la Caneria	AGUA		
Salinidad			
Densidad	1 g/cm3		
Nivel del Fluido	0 m		
BROCA/CANERIA/TUBERIA			
Broca	8.500 in		
Desde	0 m		
Hasta	427.6 m		
Caneria / Tuberia	5.500 in		
Peso	15.5 lbm/ft		
Grado			
Desde	0 m		
Hasta	2650 m		
Temperaturas Maximas Medidas	112 degC		
Registro en Fondo / Hora	4−Mar−2005 / 15:00		
Unidad Numero / Locacion	8116 / CAS		
Registrado por	D.PEROTTI		
Testigo			

DATOS PVT	Corrida 1	Corrida 2	Corrida
Densidad del Crudo			
Salinidad del Agua			
Gravedad del Gas			
Bo			
Bw			
1/Bg			
Presion del Punto de Burbuja			
Temperatura del Punto de Burbuja			
GOR en Solucion			
Desviacion Maxima			
DATOS DE CEMENTACION			
Primaria/Reparacion	Primary		
Sarta de la Caneria No.			
Tipo de Cemento Primario			
Volumen			
Densidad			
Perdida de Agua			
Aditivos			
Tipo de Cemento Cola			
Volumen			
Densidad			
Perdidad de Agua			
Aditivos			
Tope de Cemento Esperado			

Fecha de Registro			
Corrida Numero			
Prof. Perforador			
Prof. Schlumberger			
Primera Lectura			
Ultima Lectura			
Tipo de Fluido en la Caneria			
Salinidad			
Densidad			
Nivel del Fluido			
BROCA/CANERIA/TUBERIA			
Broca			
Desde			
Hasta			
Caneria / Tuberia			
Peso			
Grado			
Desde			
Hasta			
Temperaturas Maximas Medidas			
Registro en Fondo / Hora			
Unidad Numero / Locacion			
Registrado por			
Testigo			



DEPTH SUMMARY LISTING

Date Created: 25−APR−2004 15:28:43

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−46P
Serial Number:	824	Serial Number:	1689	Serial Number:	77353
Calibration Date:		Calibration Date:	3−Ene−2004	Length:	6985.10 M
Calibrator Serial Number:		Calibrator Serial Number:	1077	Conveyance Method:	Wireline
Calibration Cable Type:	7−46P	Calibration Gain:	1.00	Rig Type:	LAND
Wheel Correction 1:	−2	Calibration Offset:	0.00		
Wheel Correction 2:	−2				

Depth Control Parameters

Log Sequence: Subsequent Log In the Well

Reference Log Name: Combinada
Reference Log Run Number: 1
Reference Log Date: 27−Fef−2005

Depth Control Remarks

1. IDW usado como sistema de profundidad primario.
2.
3.
4.
5.
6.

OTROS SERVICIOS #1	OTROS SERVICIOS #2
OS1: MASTIL	OS1:
OS2: PUNZADO 4"	OS2:
OS3:	OS3:
OS4:	OS4:
OS5: MASTIL	OS5:

OBSERVACIONES: CORRIDA #1	OBSERVACIONES: CORRIDA #2
−Perfil de correlacion de cia.Schlumberger del dia 27−Feb−2005	
−Herramienta corrida segun diagrama	
−Sonico centralizados con tres gemcos 5.5"	
−Primer tramo de registro sin correccion de profundidad	
−Trabajo con mastil de cia .Schlumberger	

CORRIDA #1			CORRIDA #2		
ORDEN DE SERVICIO:			ORDEN DE SERVICIO:		
VERSION DEL PROGRAMA:		11C0−305	VERSION DEL PROGRAMA:		
NIVEL DEL FLUIDO:		0 m	NIVEL DEL FLUIDO:		
INTERVALO REGISTRADO	COMIENZO	FINAL	INTERVALO REGISTRADO	COMIENZO	FINAL

DESCRIPCION DEL EQUIPO

CORRIDA #1

SURFACE EQUIPMENT

CNB−AB
NCT−B
NCS−VB
WITM (CTS)−A

DOWNHOLE EQUIPMENT

PEH−A 11.57
PEH−A 8116

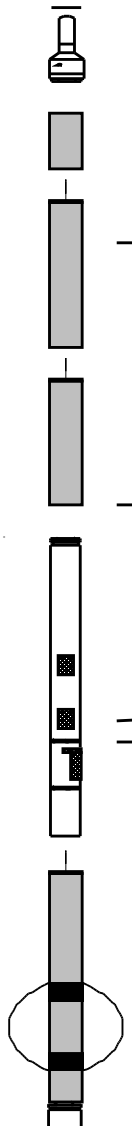
AH−64 11.03
AH−64 8116

CAL−Y 10.62
CAL−Y 489
CCL — 10.31

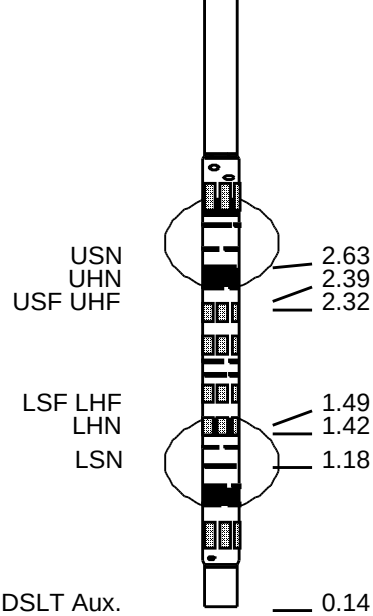
TCC−B 9.55
ECH−KC 2375
TCC−B
TelStatus
CTEM — 8.64

CNT−H 8.64
CND−NA
NLS−KL
NSR−F
CNC−HA
CNH−A 2021
NPV−N
CFTC — 7.29
CNTC — 7.14

DSLT−TCC 6.43
DSLC−B
ECH−KH 8181
SLS−W 367



CORRIDA #2



MAXIMUM STRING DIAMETER 7.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

NEUQUEN
MAXIS EXPRESS

Schlumberger

TRAMO PRINCIPAL

Company: **Well:**

Input DLIS Files

DEFAULT	SONIC_CNL_008PUP	FN:7	PRODUCER	04−Mar−2005 22:04	2534.4 M	1311.6 M

Output DLIS Files

DEFAULT	SONIC_CNL_016PUP	FN:15	PRODUCER	07−Mar−2005 12:05	2534.4 M	1312.0 M

OP System Version: 11C0−305

MCM

DSLT−TCC	OP11−KP1	CNT−H	OP11−KP1
TCC−B	OP11−KP1	CAL−Y	11C0−305

PIP SUMMARY

Time Mark Every 60 S

		Env.Corr.Thermal Neutron Porosity (TNPH)
		0.4 (V/V) 0
Fluid Compensated CBL Amplitude (CBLF)		Transit Time (TT)
0 (MV) 10		400 (US) 200