HALLIBURTON

DUAL SPACED NEUTRON SPECTRAL DENSITY LOG

COMPANY SANDRIDGE ENERGY
WELL WINDSOR SWD 3404 1-29
FIELD/BLOCK BLUFF
COUNTY SUMNER
STATE KANSAS

COMPANY **SANDRIDGE ENERGY**

WELL **WINDSOR SWD 3404 1-29**

FIELD/BLOCK **BLUFF**

COUNTY **SUMNER** STATE **KANSAS**

API No. 15-191-22739-00-00

Location (SHL) 200' FNL & 2440' FEL
NW-NW-NW-NE

Sect. 29 Twp. 34S Rge. 4W

Other Services:
DSN / SDL
CSNG
MICROLOG
IDT / ICT
WAVESONIC
ACRT
MRIL

Permanent Datum	GL		Elev. 1232.0 ft	Elev.: K.B. 1244.0 ft
Log measured from	KB		12.0 ft above perm. Datum	D.F. 1243.0 ft
Drilling measured from	KB			G.L. 1232.0 ft

Date		20-May-14					
Run No.		ONE					
Depth - Driller		5240.00 ft					
Depth - Logger		5228.0 ft					
Bottom - Logged Interval		5145					
Top - Logged Interval		2500					
Casing - Driller		8.625 in	@ 510.0 ft		@		@
Casing - Logger		507.0 ft					
Bit Size		7.875 in			@		@
Type Fluid in Hole		Water Based Mud					
Density	Viscosity	8.7 ppg	41.00 s/qt				
PH	Fluid Loss	9.00 pH	4.0 cptm				
Source of Sample		MUD PIT					
Rm @ Meas. Temperature		0.102 ohmm	@ 106.00 degF		@		@
Rmf @ Meas. Temperature		0.09 ohmm	@ 106.00 degF		@		@
Rmc @ Meas. Temperature		0.117 ohmm	@ 106.00 degF		@		@
Source Rmf	Rmc	CALCULATED	CALCULATED				
Rm @ BHT		0.07 ohmm	@ 152.0 degF		@		@
Time Since Circulation		7.7500 hr					
Time on Bottom		20-May-14 20:16					
Max. Rec. Temperature		152.0 degF	@ 5228.0 ft		@		@
Equipment	Location	11230668	LIBERAL				
Recorded By		SHELDON INGERSOLL					
Witnessed By		D. LANGLEY					

Fold here

Service Ticket No.: 901357379 API Serial No.: 15-191-22739-00-00 PGM Version: WL INSITE R4.2.0 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

Date	Sample No.								
Depth-Driller									
Type Fluid in Hole									
Density	Viscosity								
Ph	Fluid Loss								
Source of Sample									
Rm @ Meas. Temp		@	@	@	@	@	@	@	@
Rmf @ Meas. Temp.		@	@	@	@	@	@	@	@
Rmc @ Meas. Temp.		@	@	@	@	@	@	@	@
Source Rmf	Rmc								
Rm @ BHT		@	@	@	@	@	@	@	@
Rmf @ BHT		@	@	@	@	@	@	@	@
Rmc @ BHT		@	@	@	@	@	@	@	@

RESISTIVITY SCALE CHANGES

	Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
	ONE	ACRT	N/A	1.5" S.O.	
		10800784			

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	10811258	Serial No.	10743396	Serial No.	10714945	Serial No.	10755066
Model No.	GTET	Model No.	WSTT	Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.	2	Diameter	5.3"	Diameter	3.625"
Detector Model No.	T-102	Spacing	.5'	Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	CS-137	Source Type	AM-241BE
Length	8"	LSA [Y/N]	YES	Serial No.	5073GW	Serial No.	DSN-436
Distance to Source	N/A	FWDA [Y/N]	YES	Strength	1.5 CI	Strength	15 CI

LOGGING DATA

GENERAL			GAMMA		ACOUSTIC			DENSITY			NEUTRON		
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	5228	507	REC	0	150	30	-10	47.6 us/ft	30	-10	2.71 gm/cc	30	-10	LIME

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.

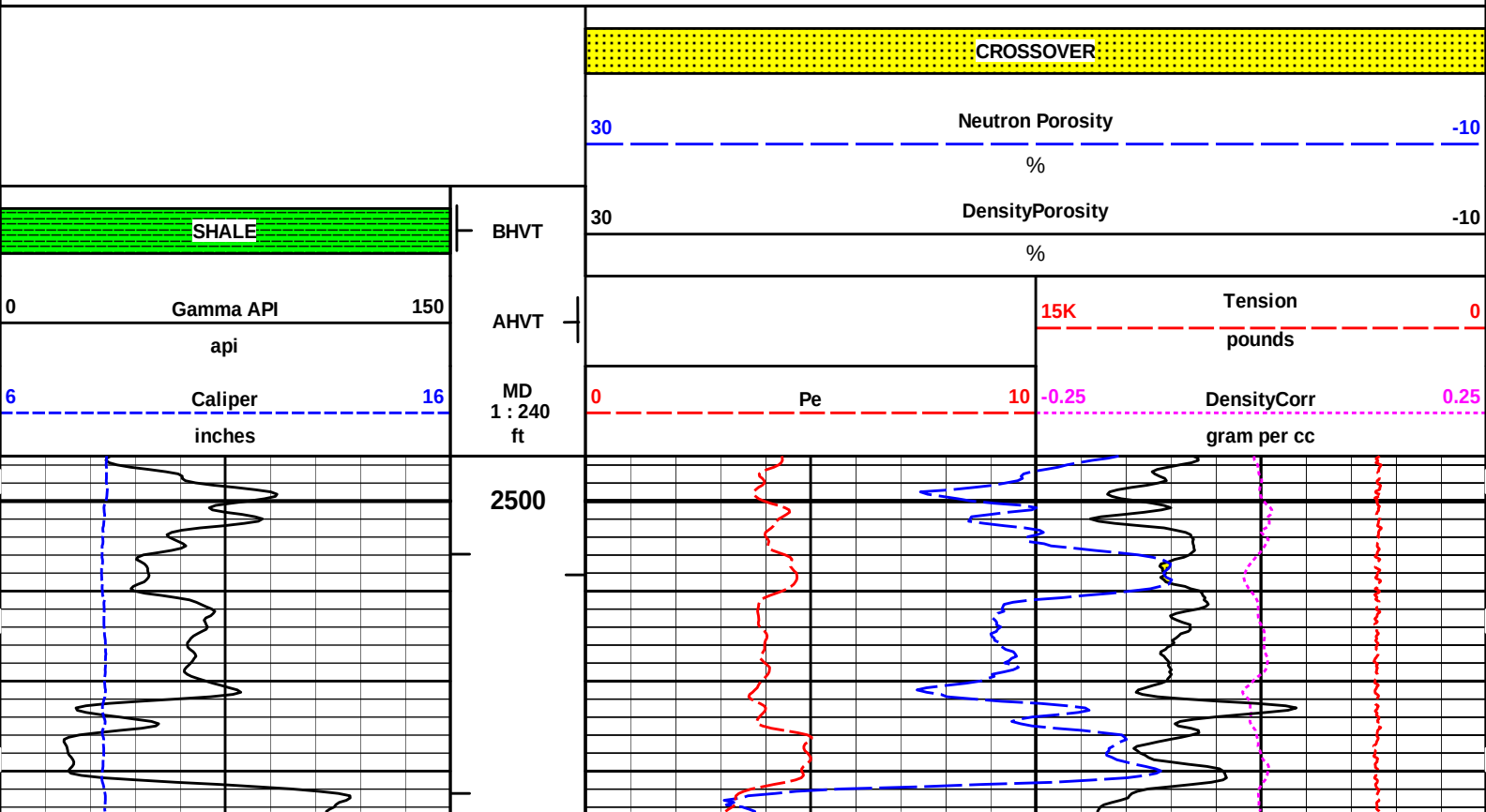
CHLORIDES REPORTED AT 3000mg/L.

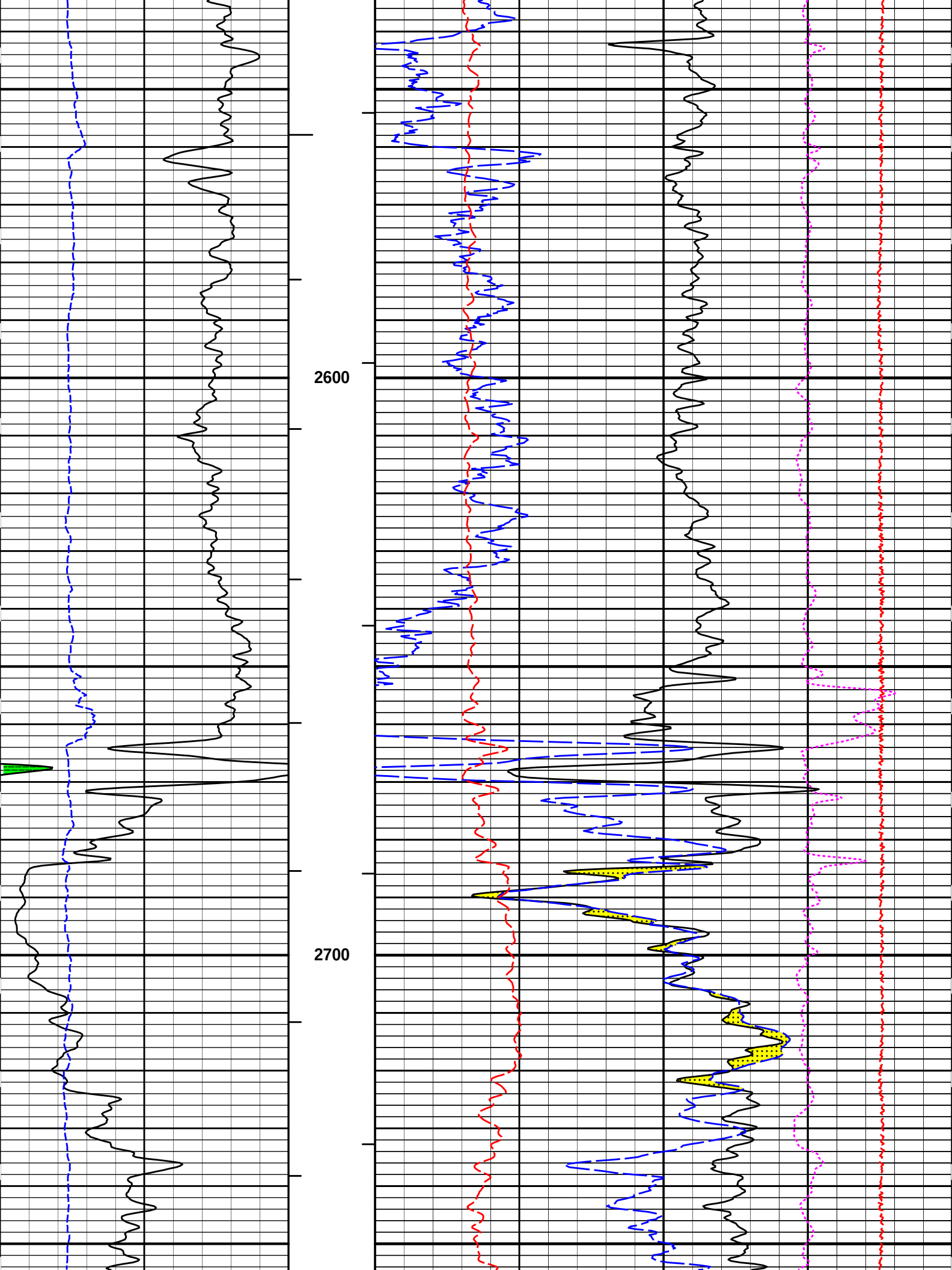
LCM REPORTED AT 12#/BBL AT LOGGING TIME. POSSIBLY MORE DUE TO FORMATION TAKING FLUID.

HALLIBURTON

Plot Time: 21-May-14 05:57:35
Plot Range: 2495 ft to 5230.5 ft
Data: WINDSOR3404_129\Well Based\R1 DETAIL
Plot File: \\POROSITY\Poro_IQ_5_MAIN_LIB

5 INCH MAIN LOG

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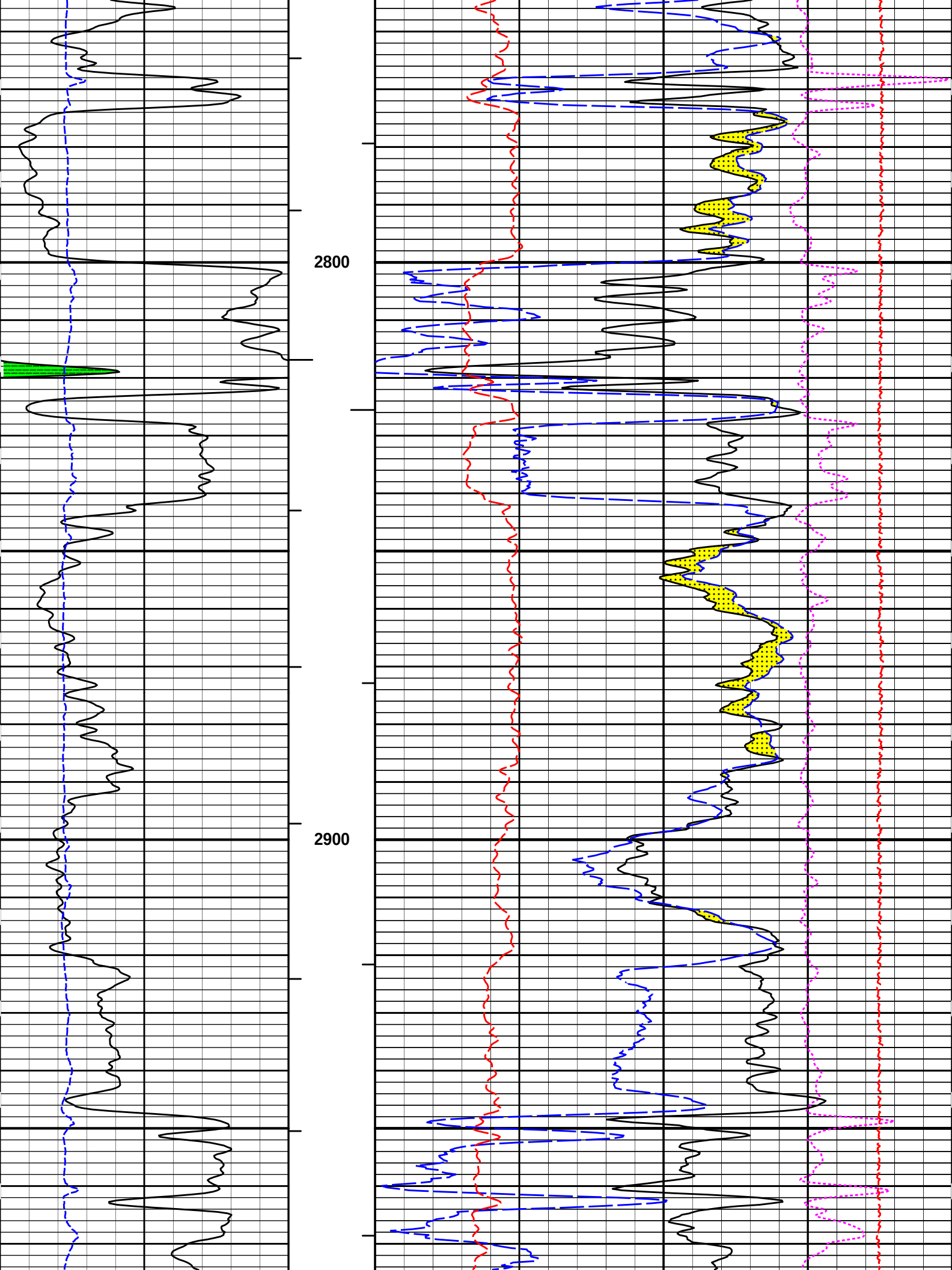
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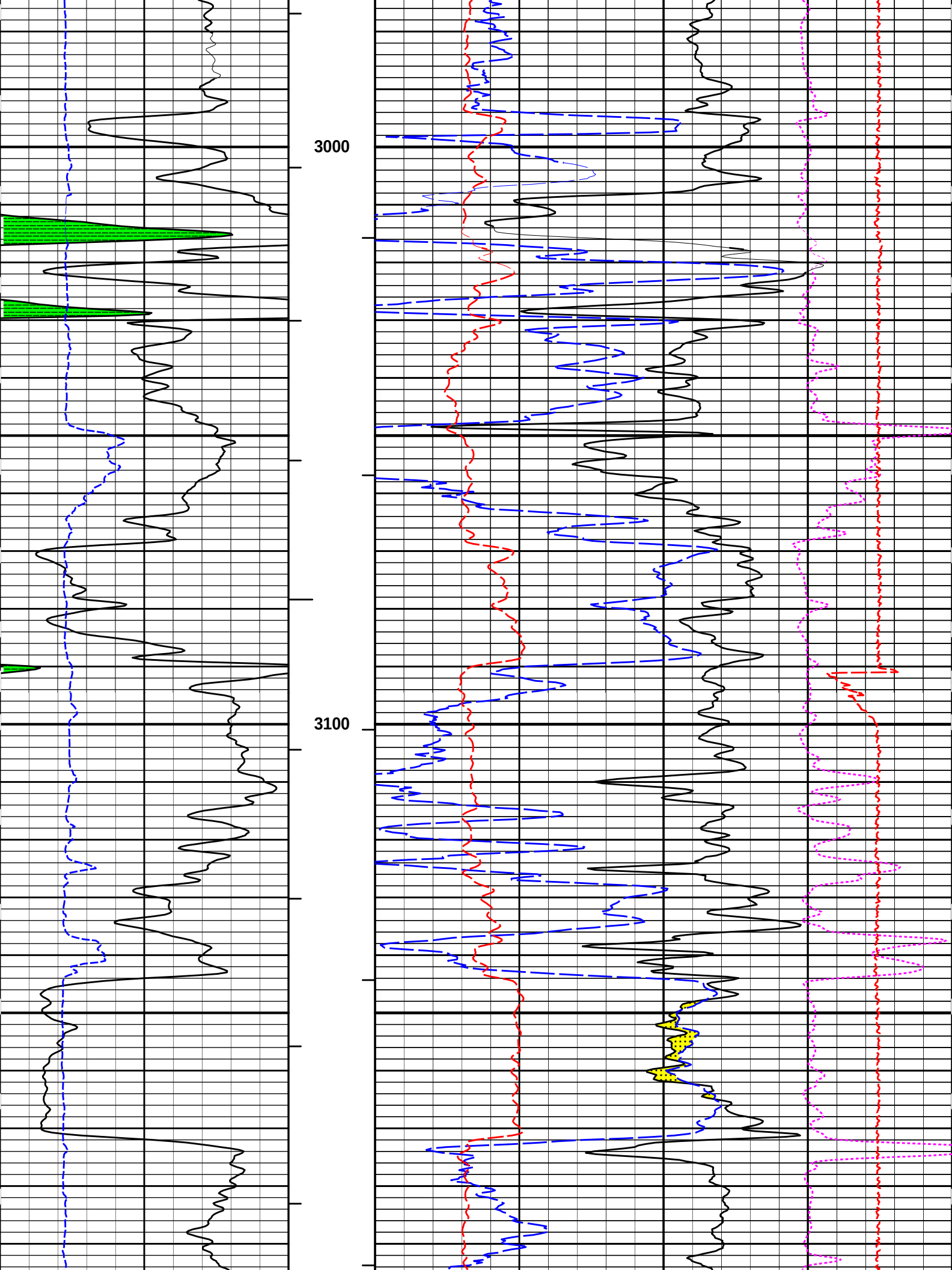
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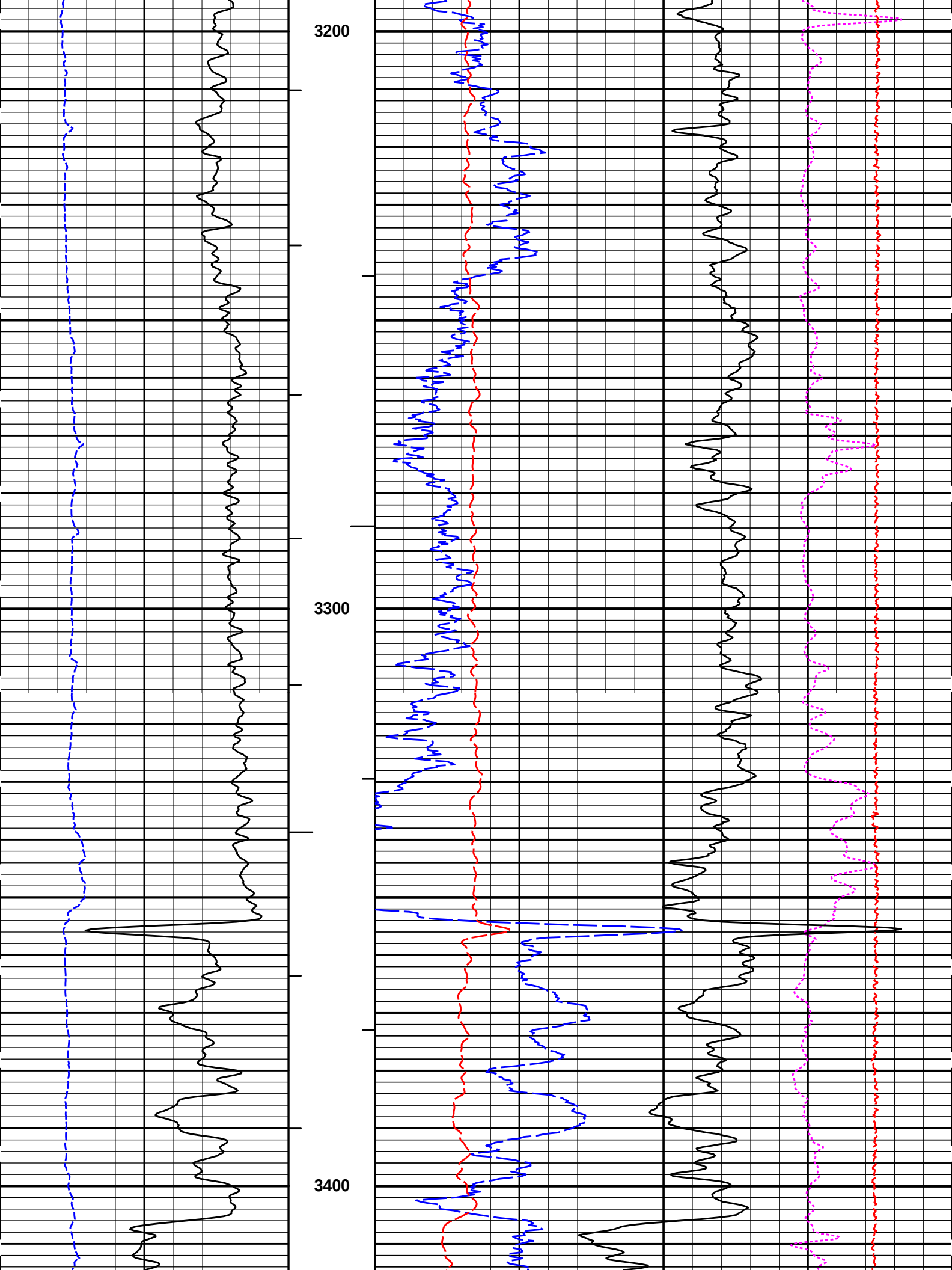
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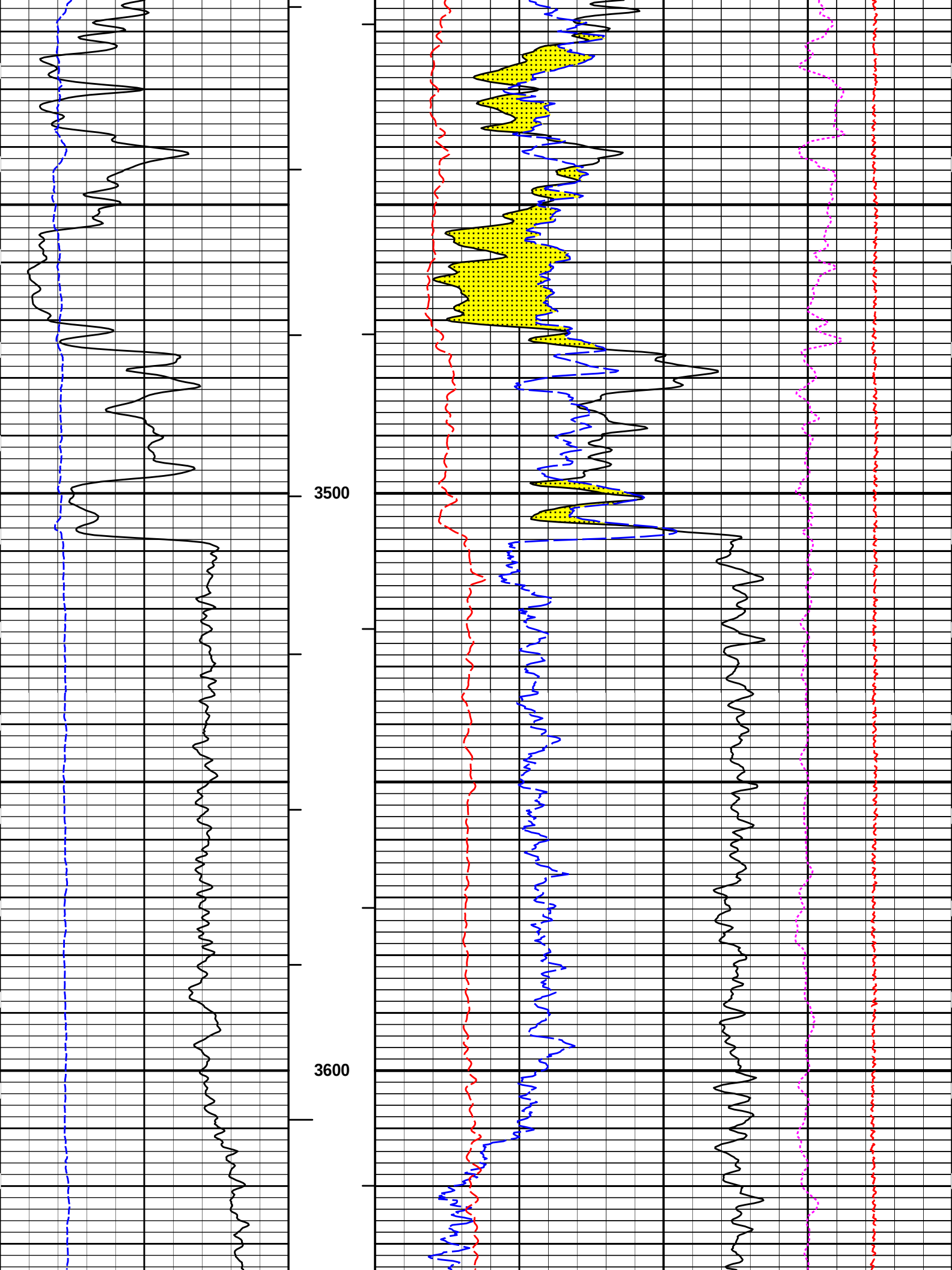
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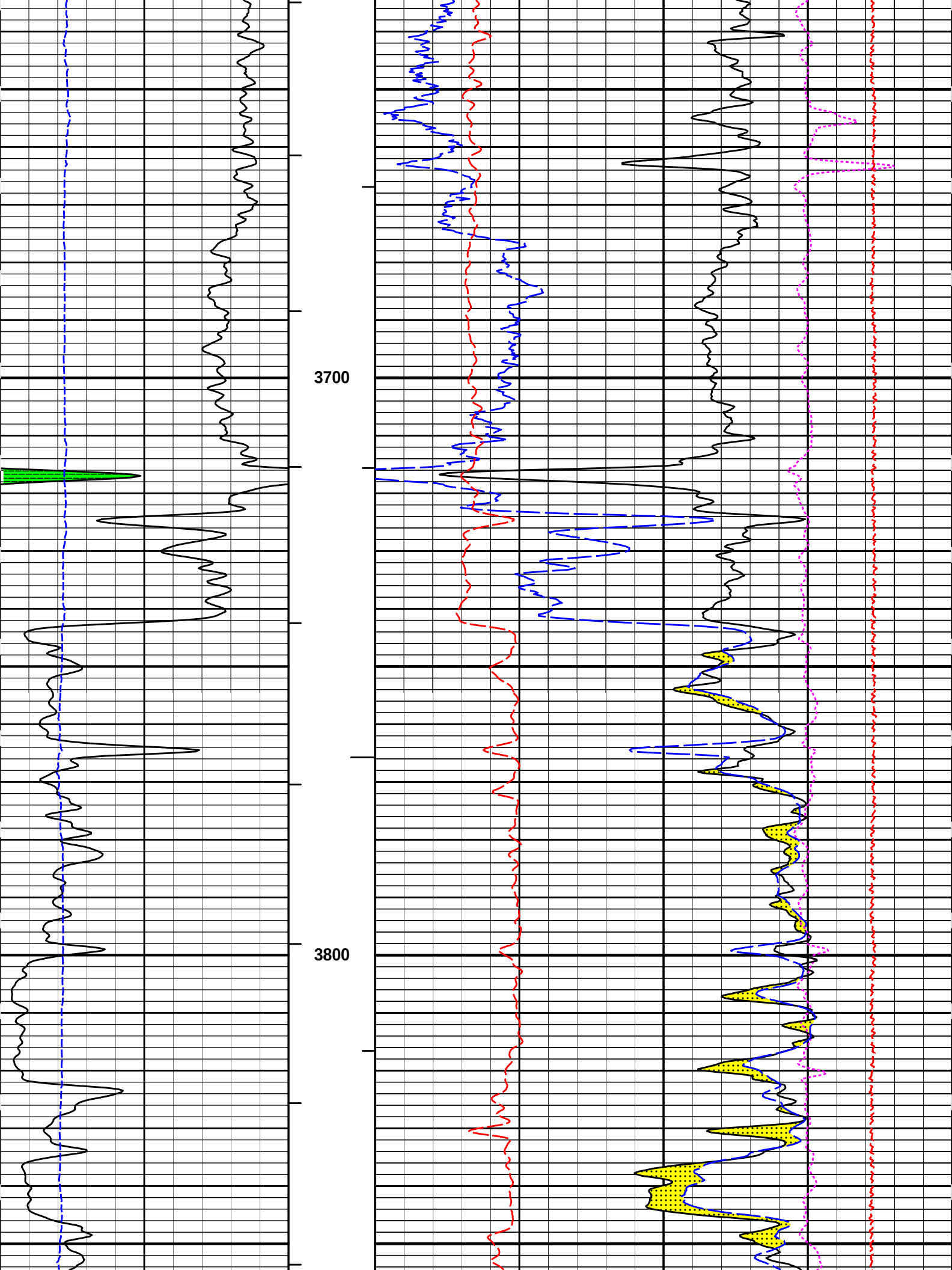
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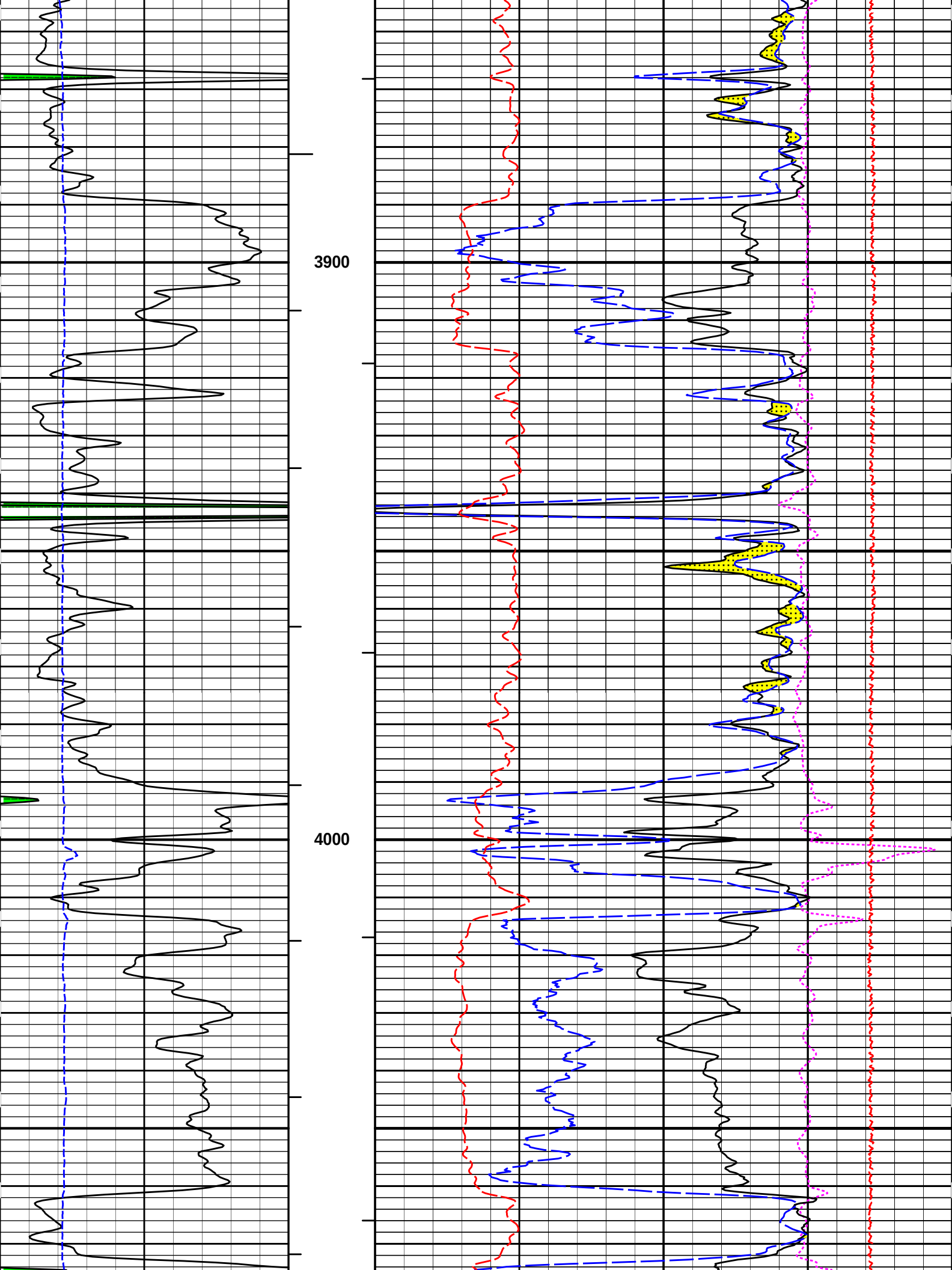
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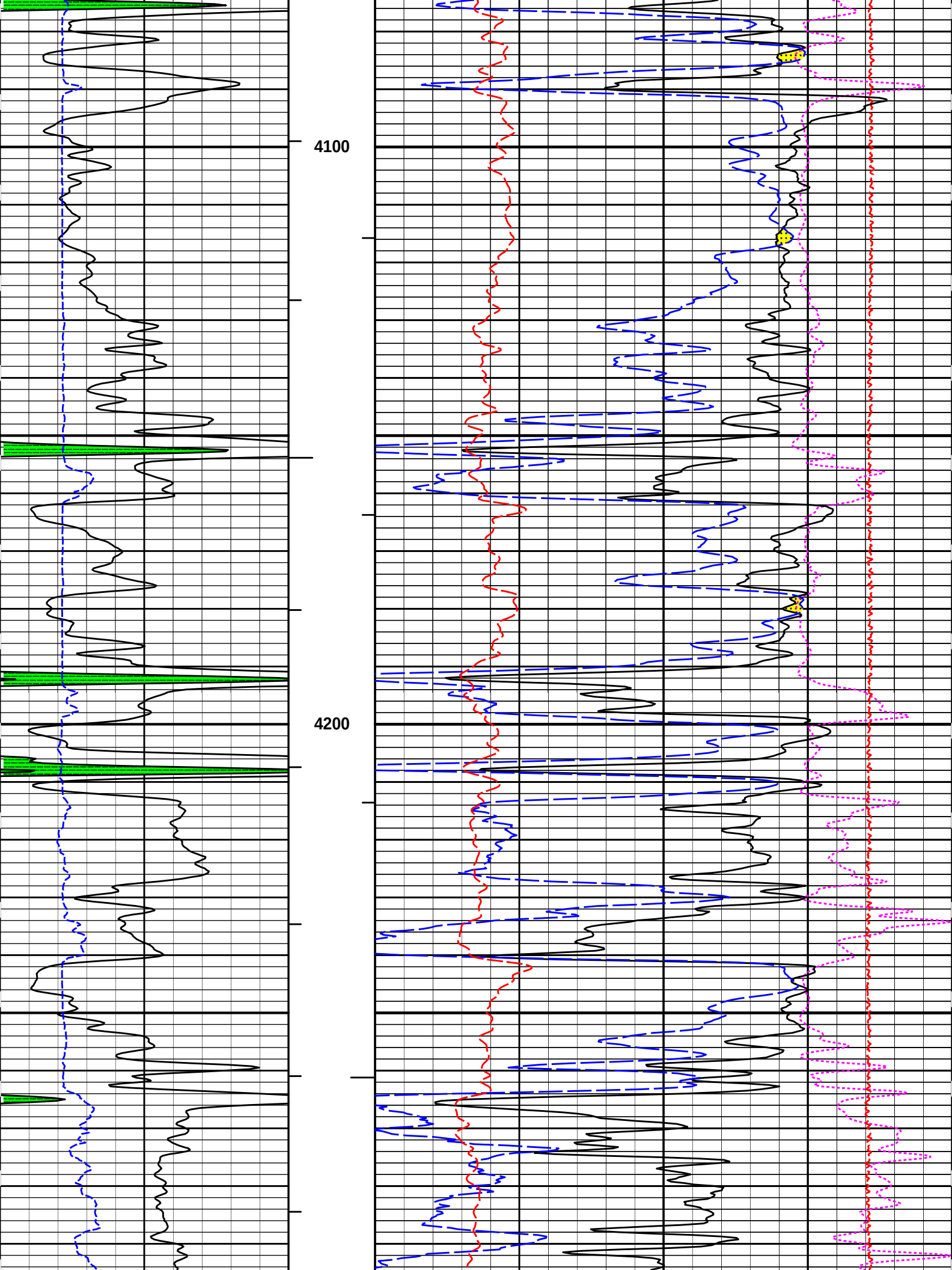
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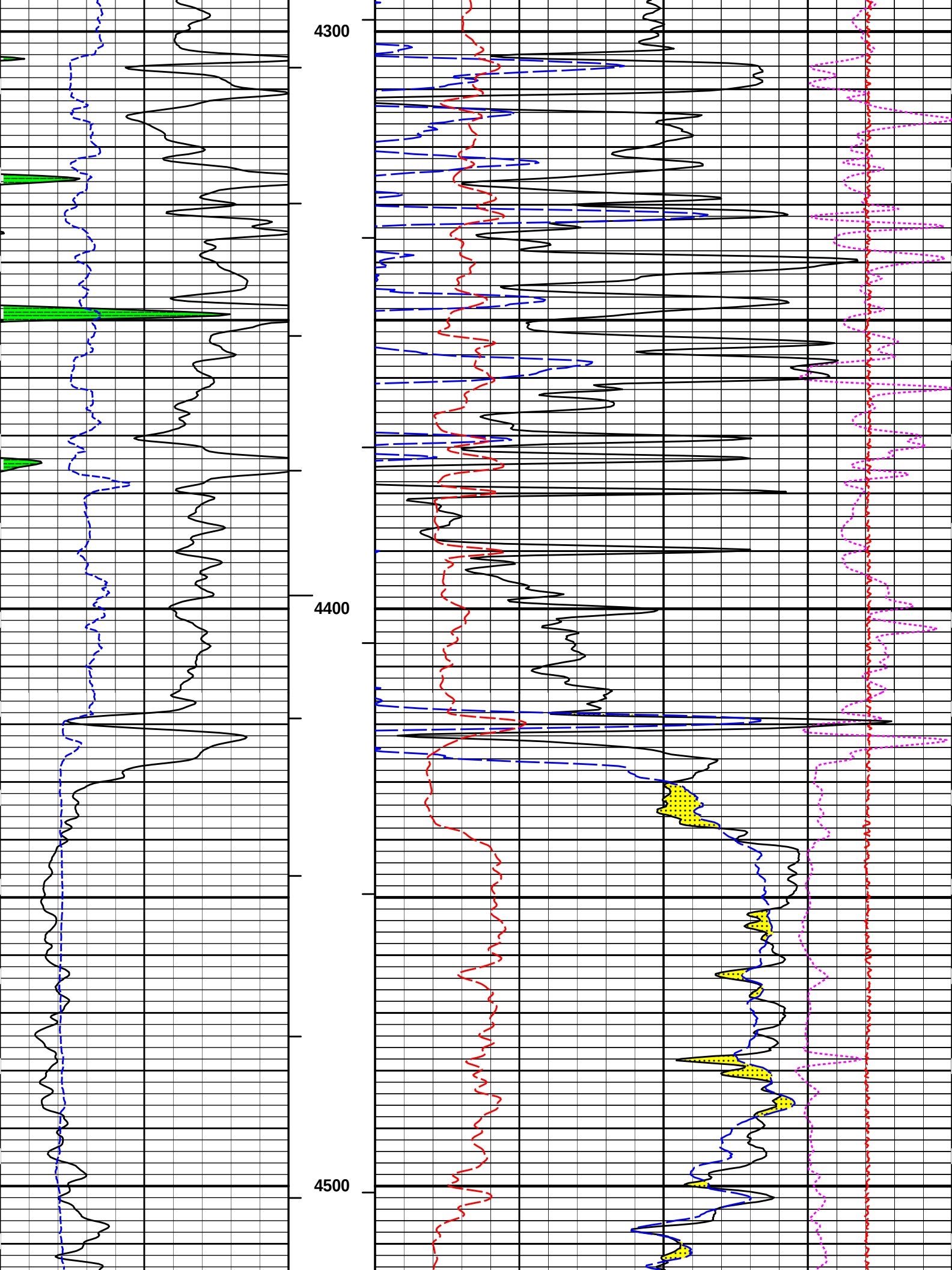
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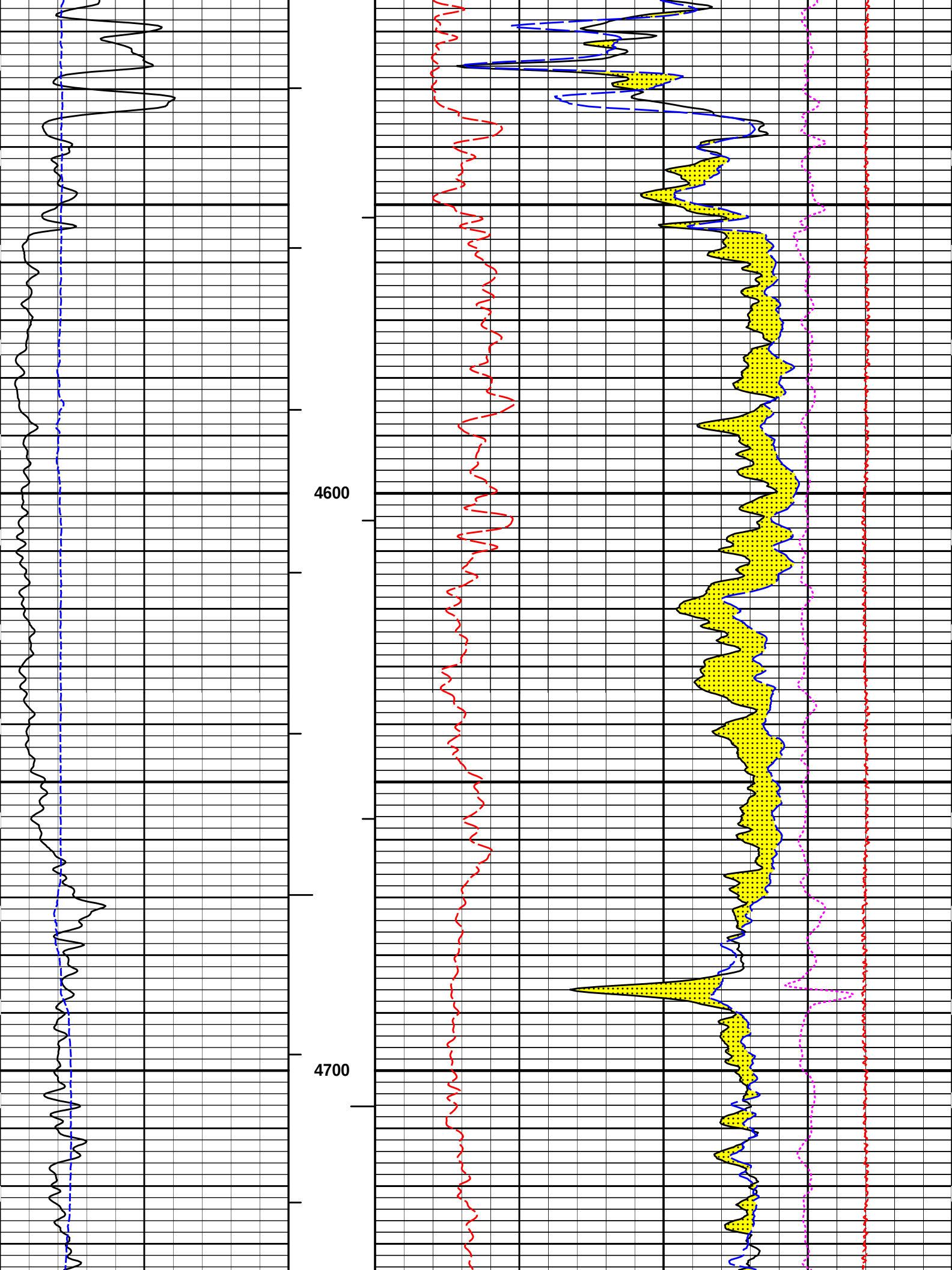
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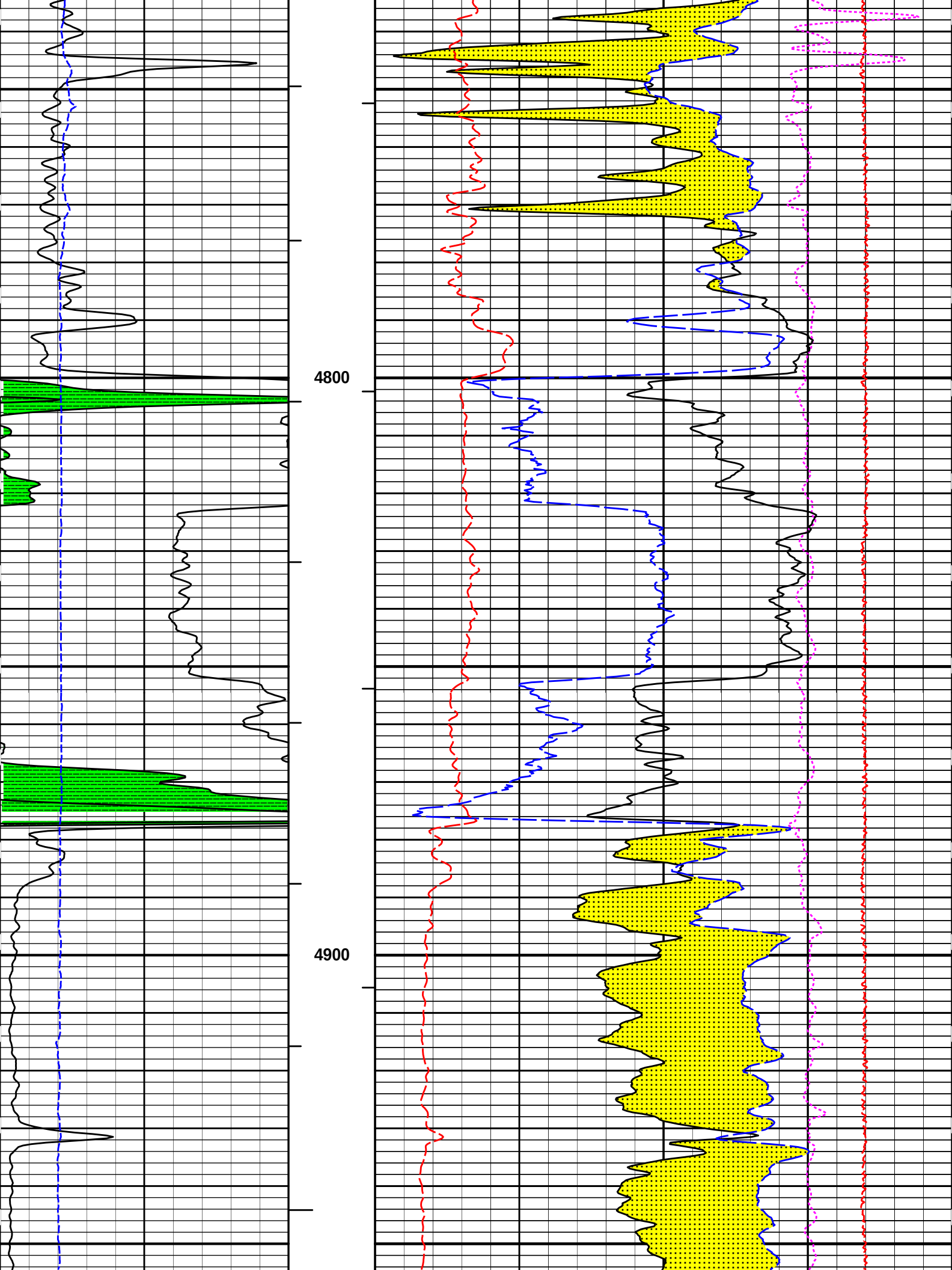
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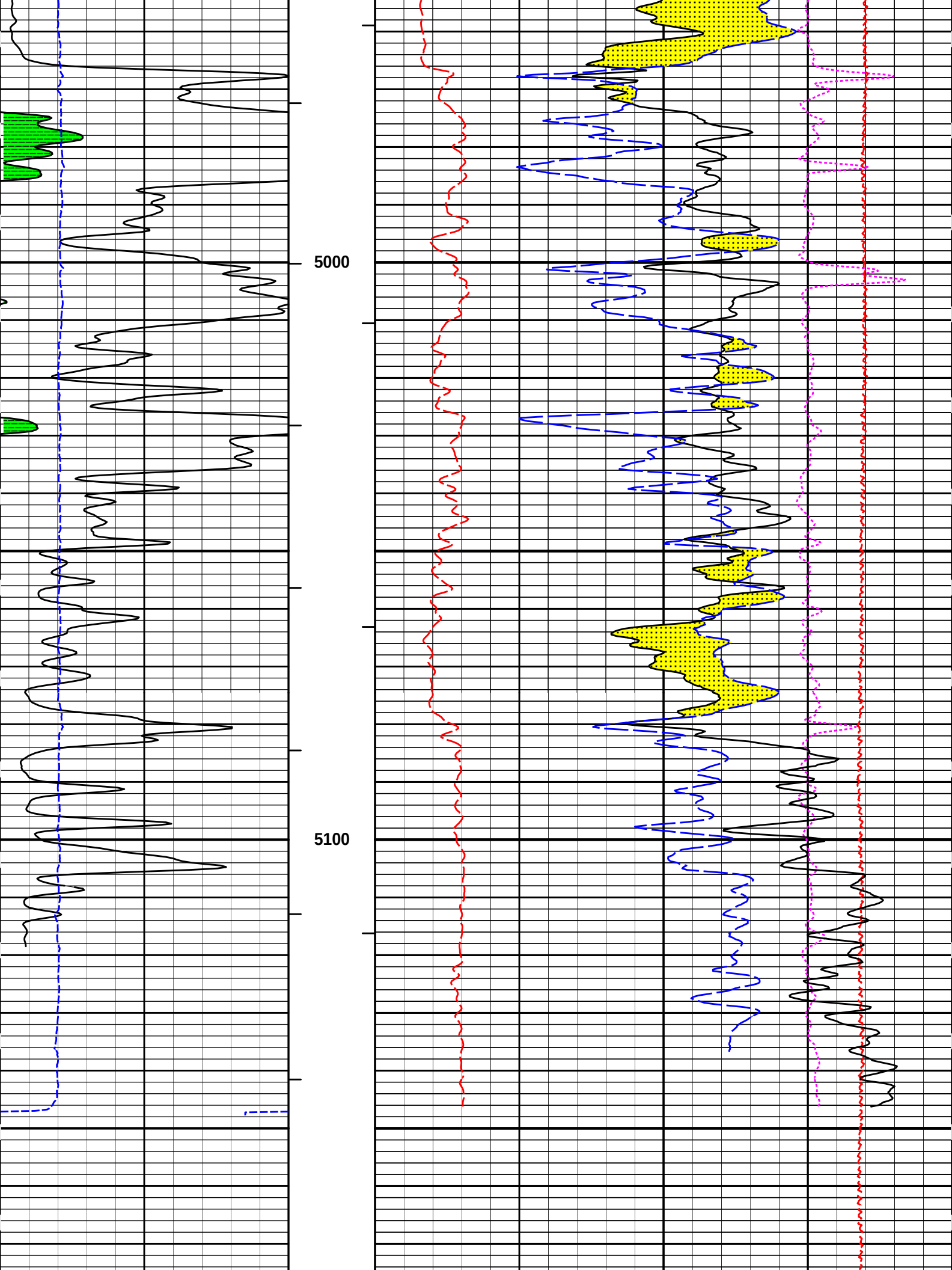
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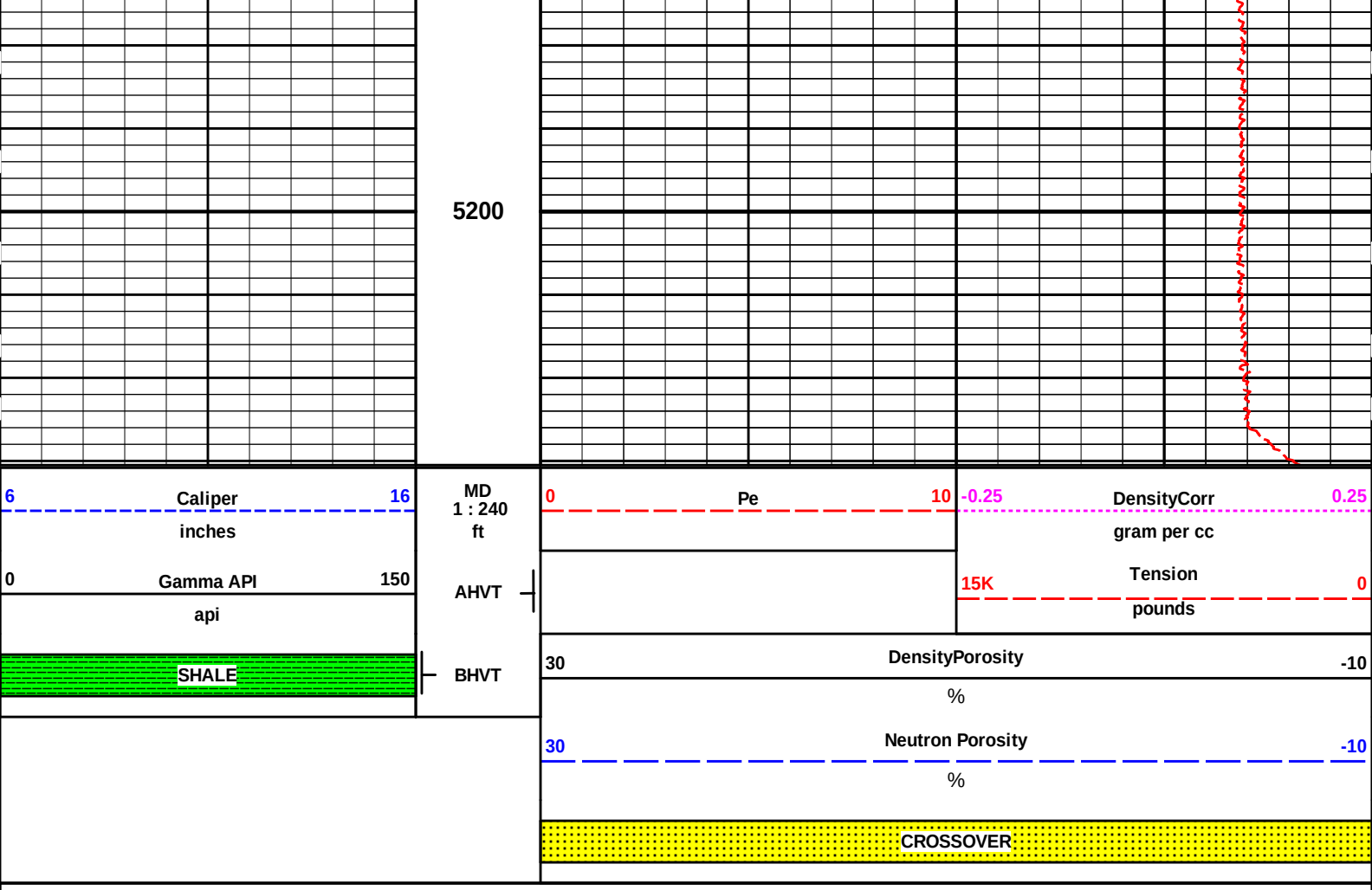

HALLIBURTON

Plot Time: 21-May-14 05:57:38
Plot Range: 2495 ft to 5230.5 ft
Data: WINDSOR3404_129\Well Based\R1 DETAIL\
Plot File: \\POROSITY\Poro_IQ_5_MAIN_LIB

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 21-May-14 05:57:38
Plot Range: 4890 ft to 5230.75 ft
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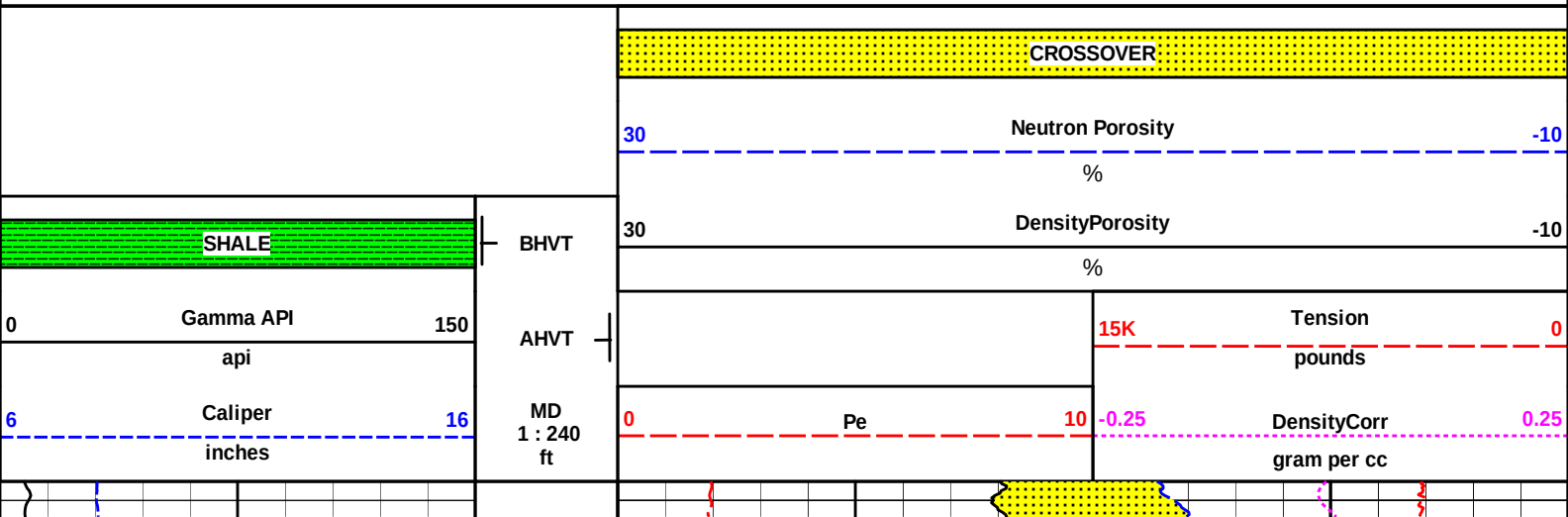
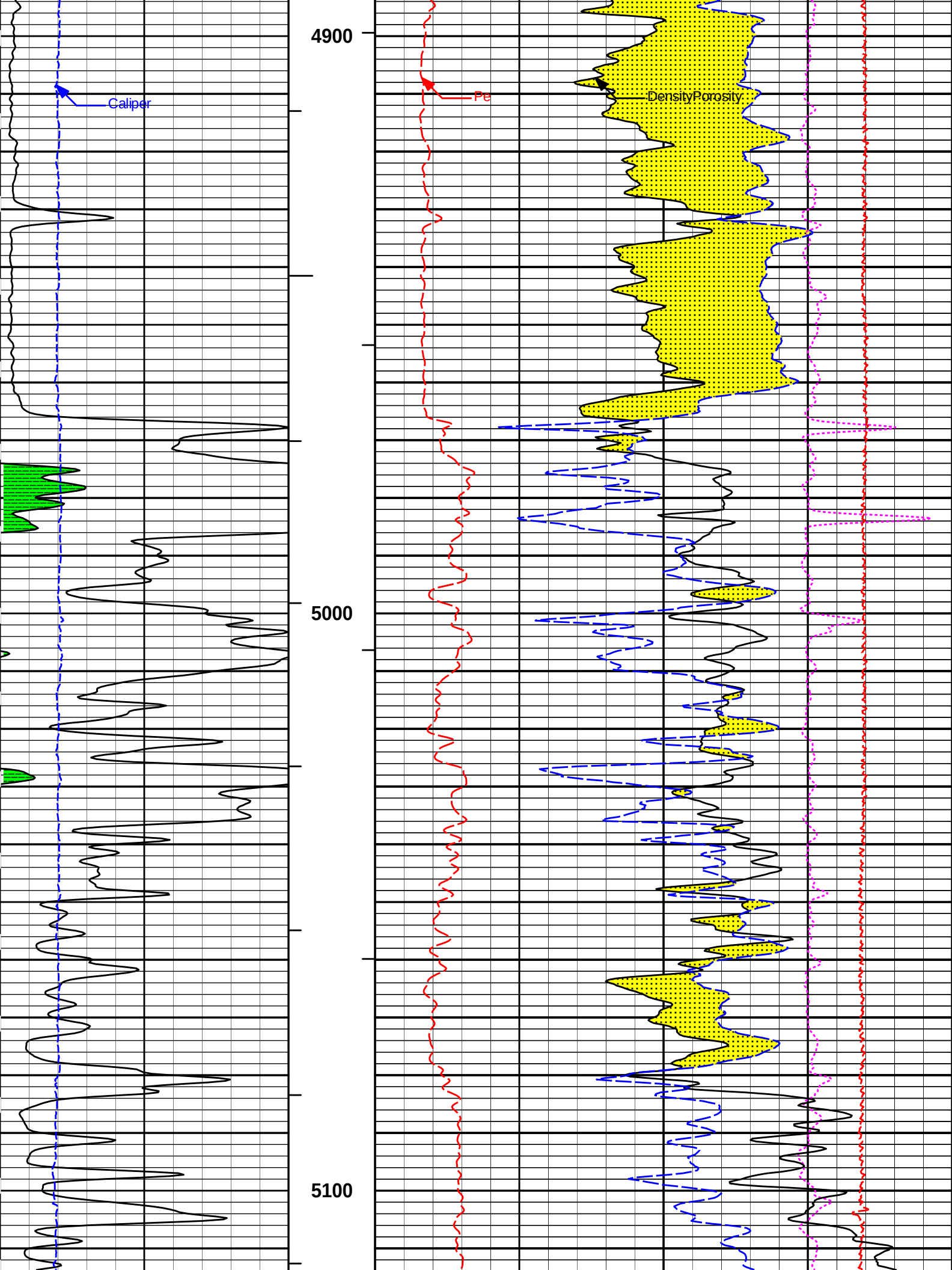
Plot File: \\POROSITY\Poro_IQ_5_REP_LIB

REPEAT SECTION

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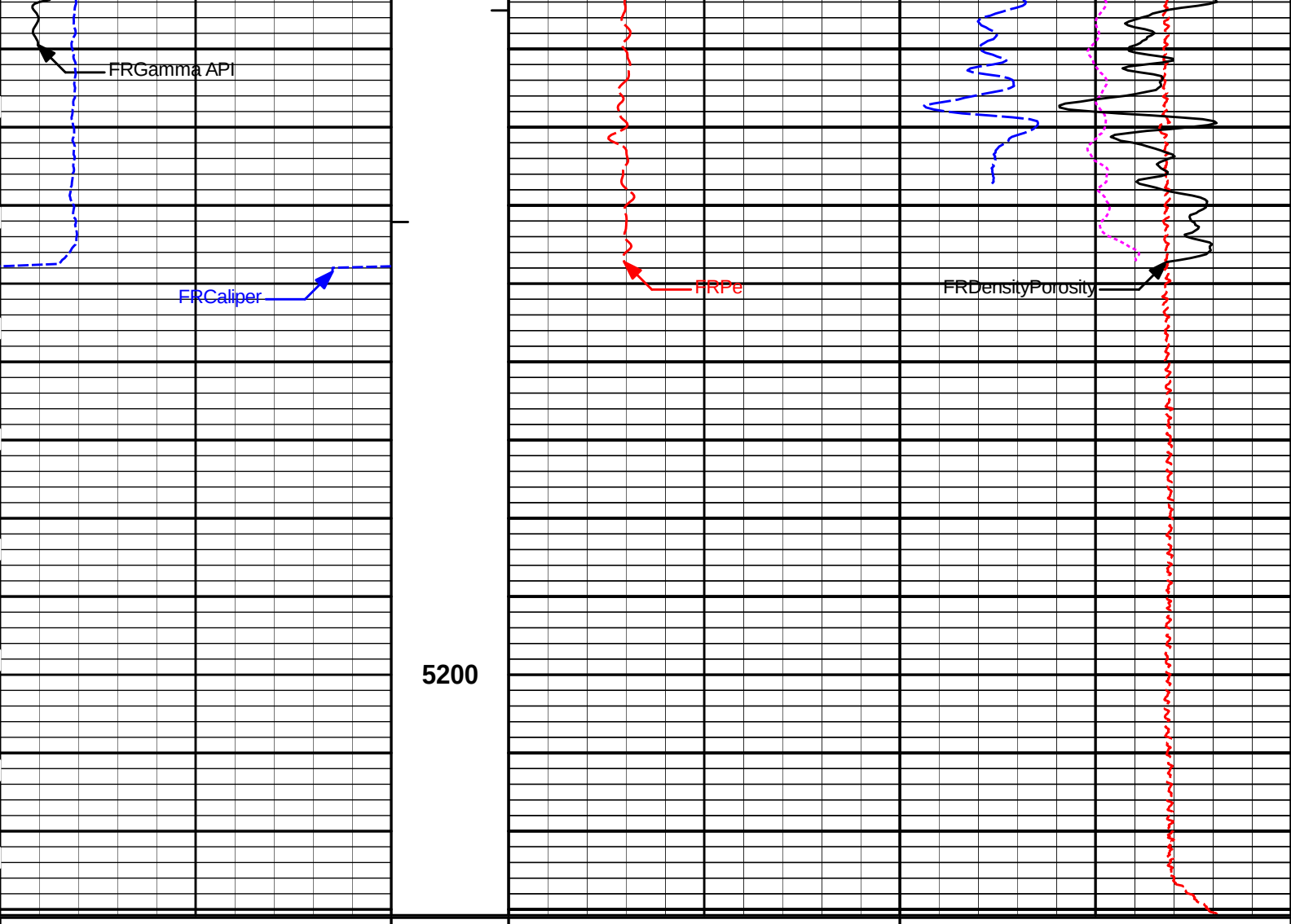
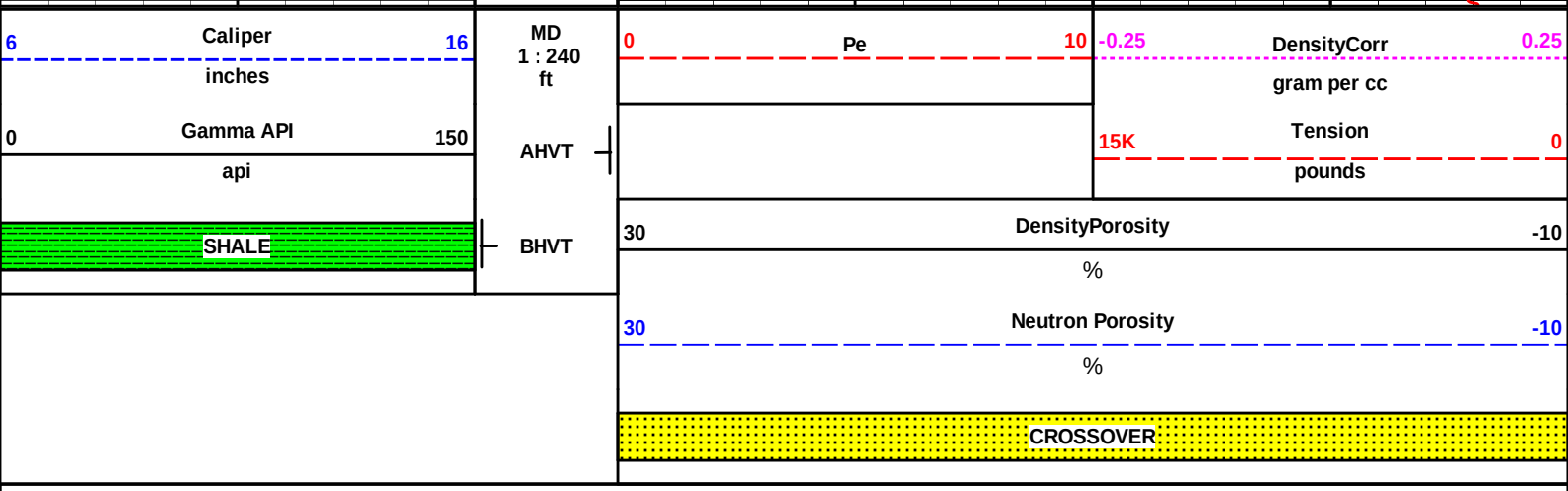
DensityPorosity





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REPEAT SECTION

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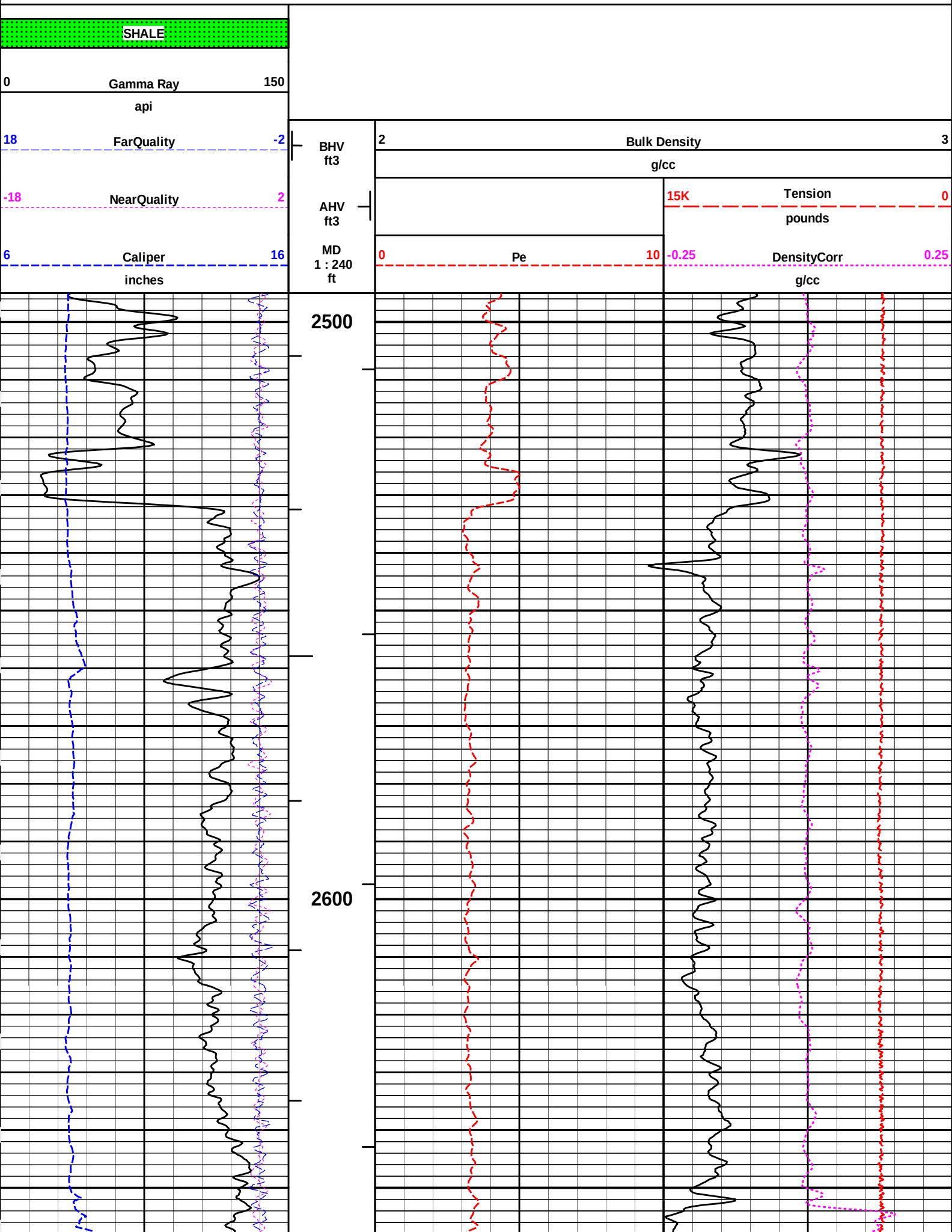
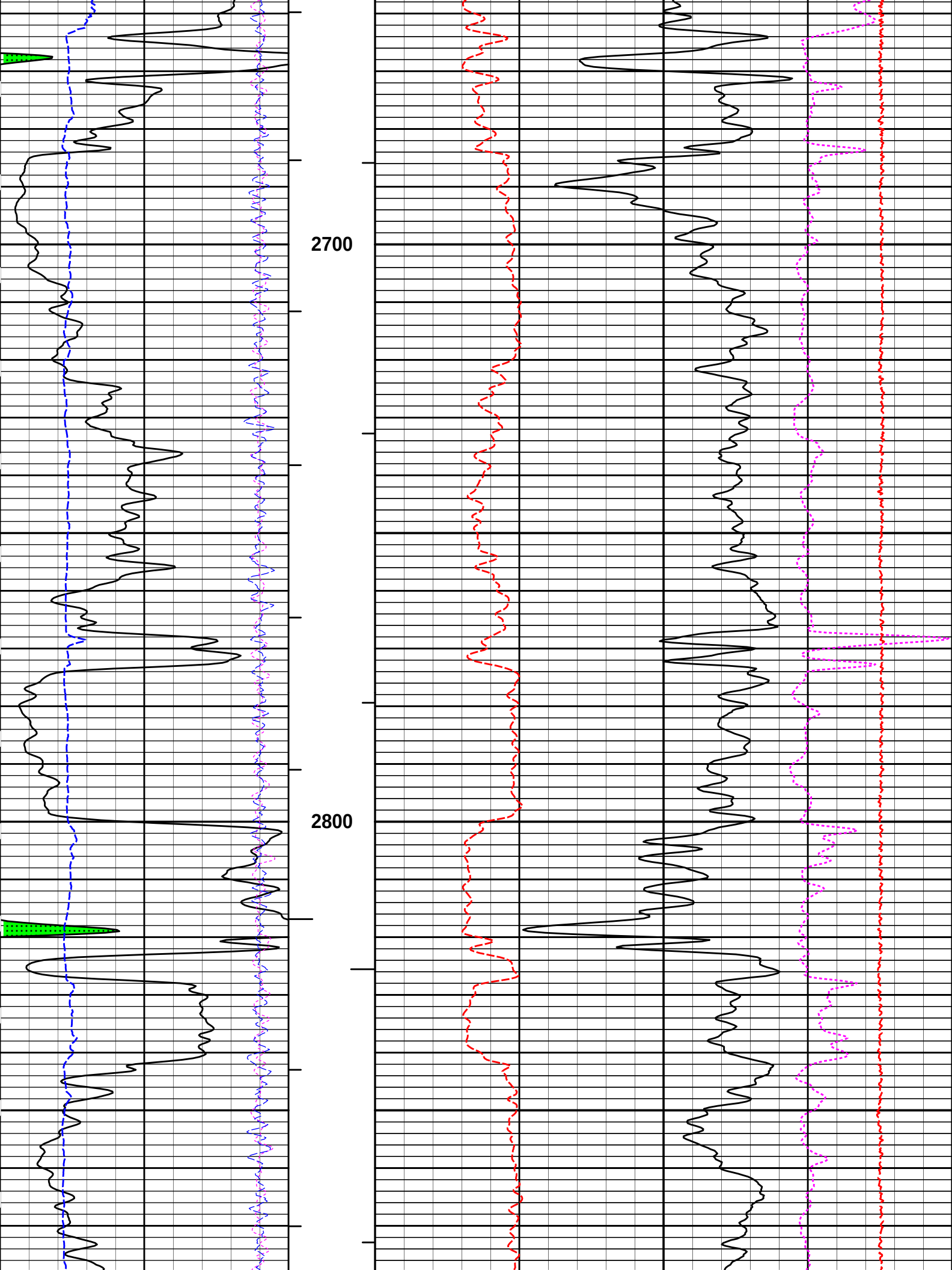
5 INCH MAIN LOG

5 INCH MAIN LOG

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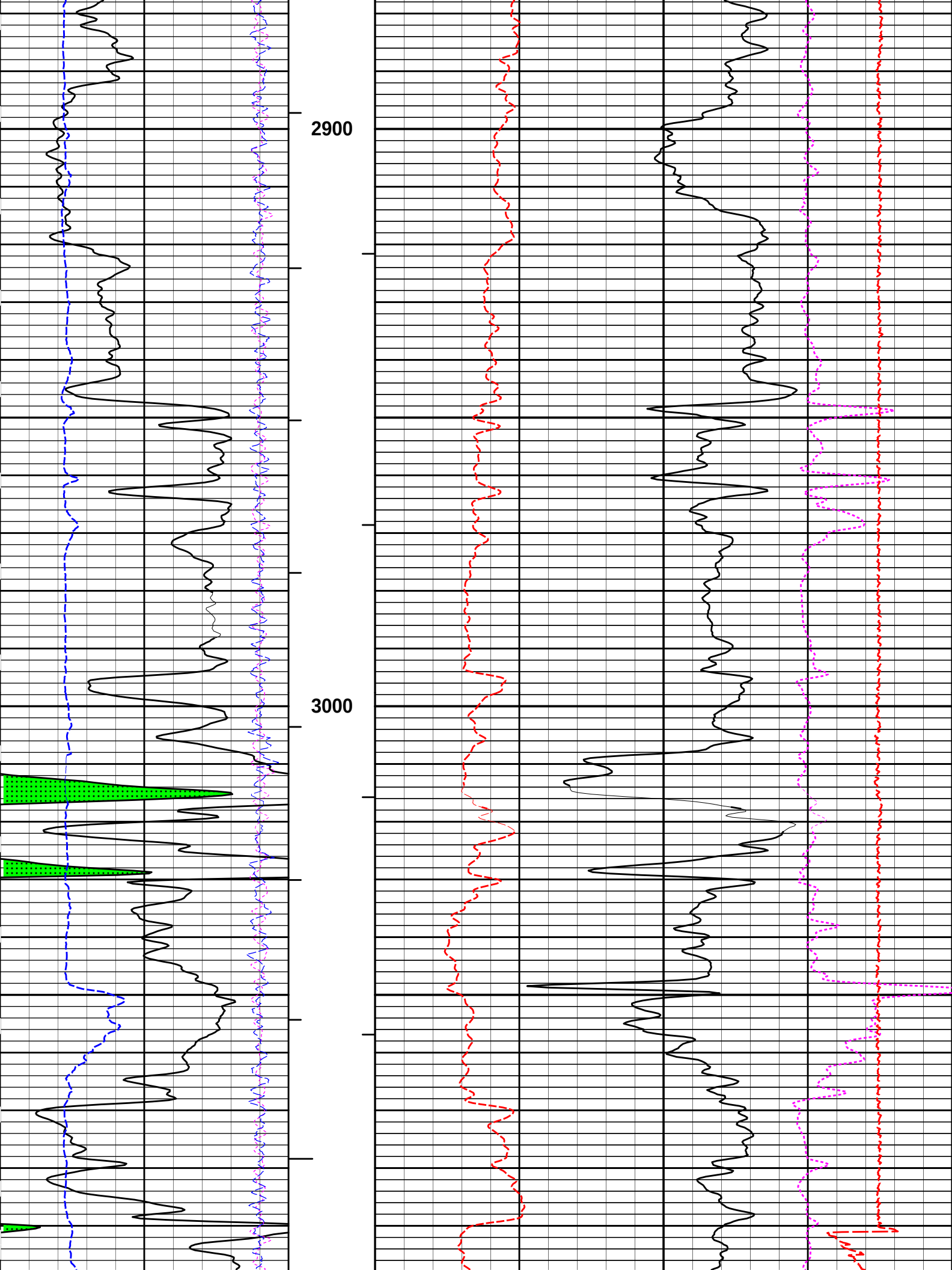
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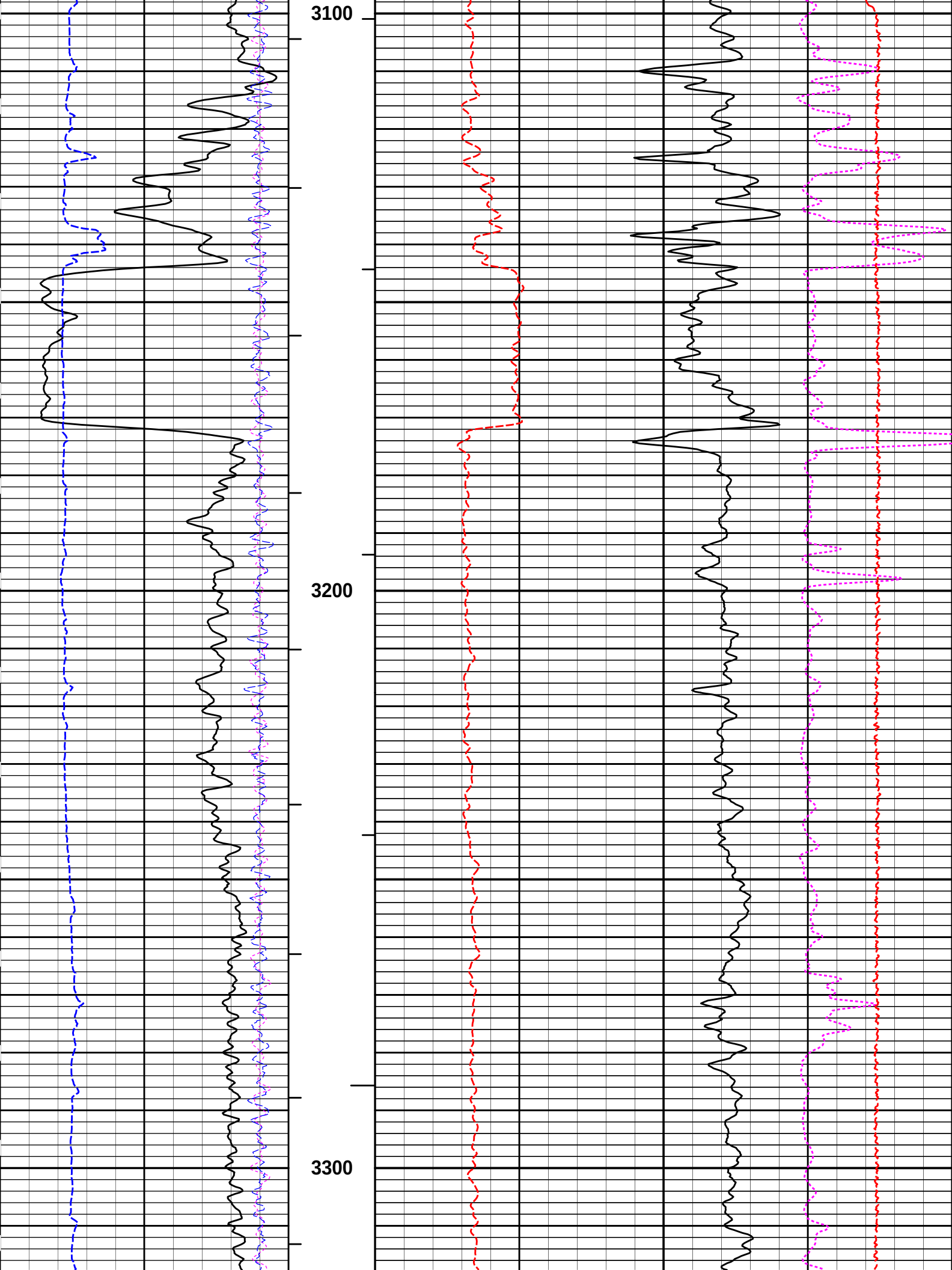
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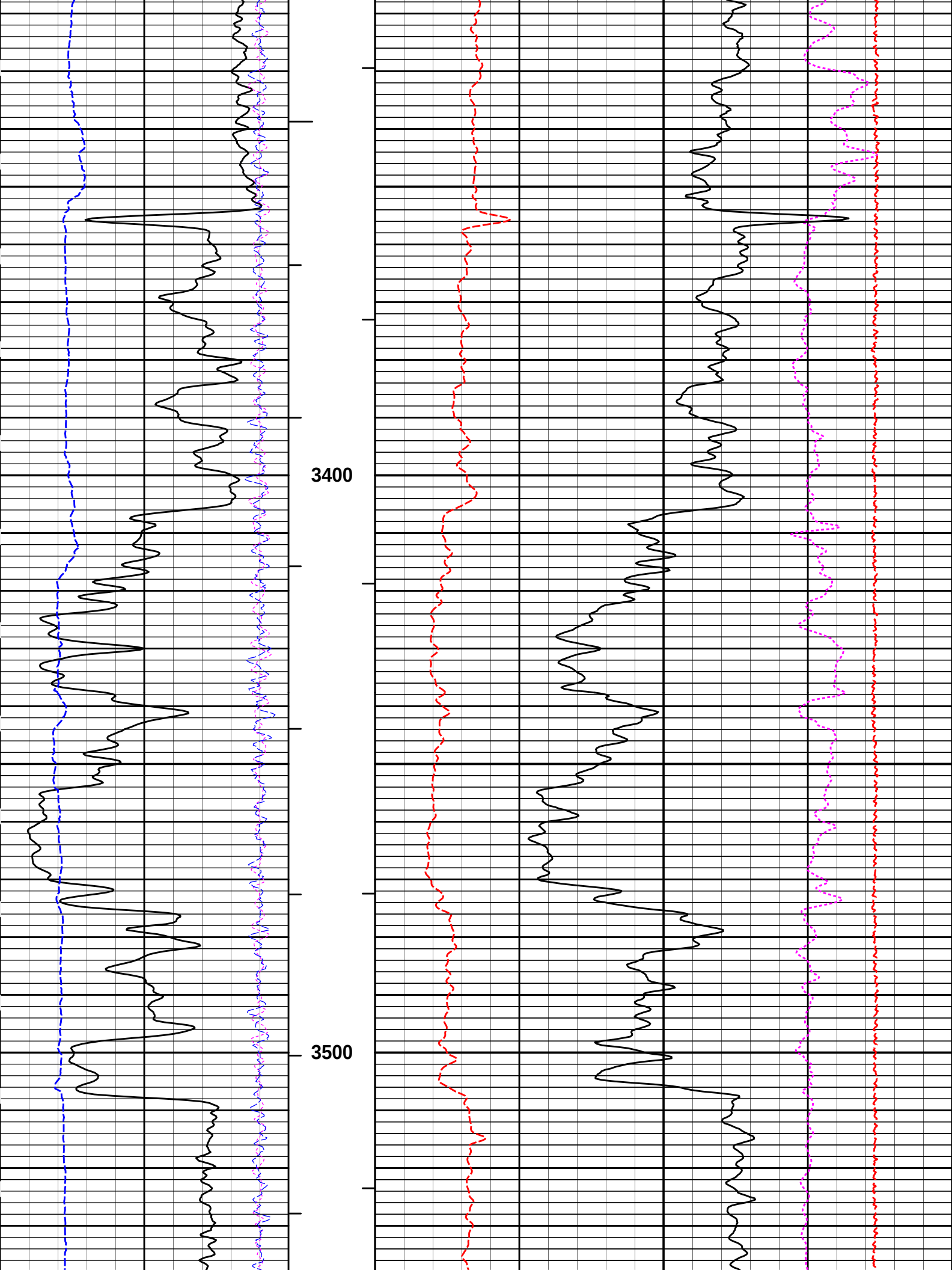
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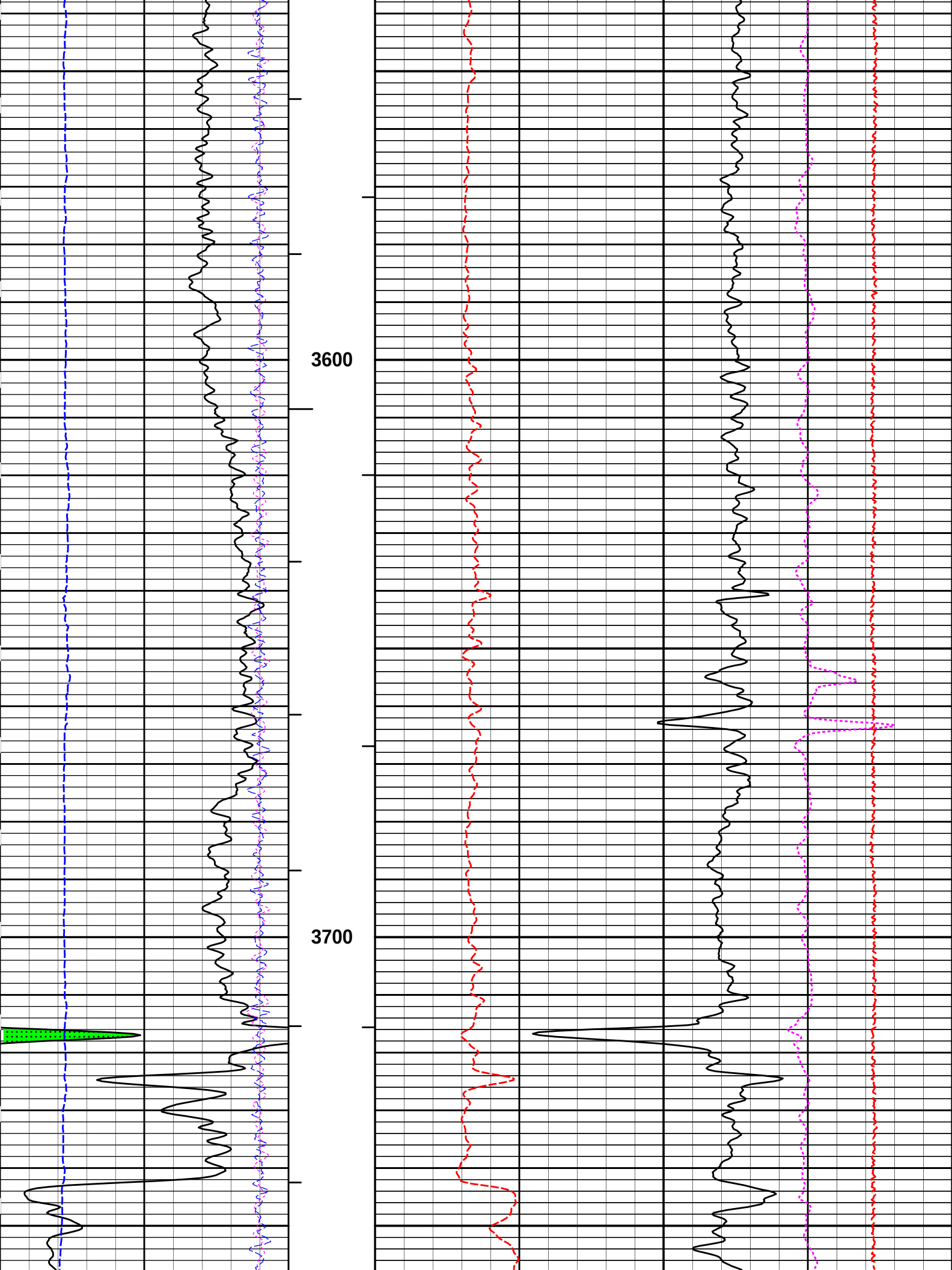
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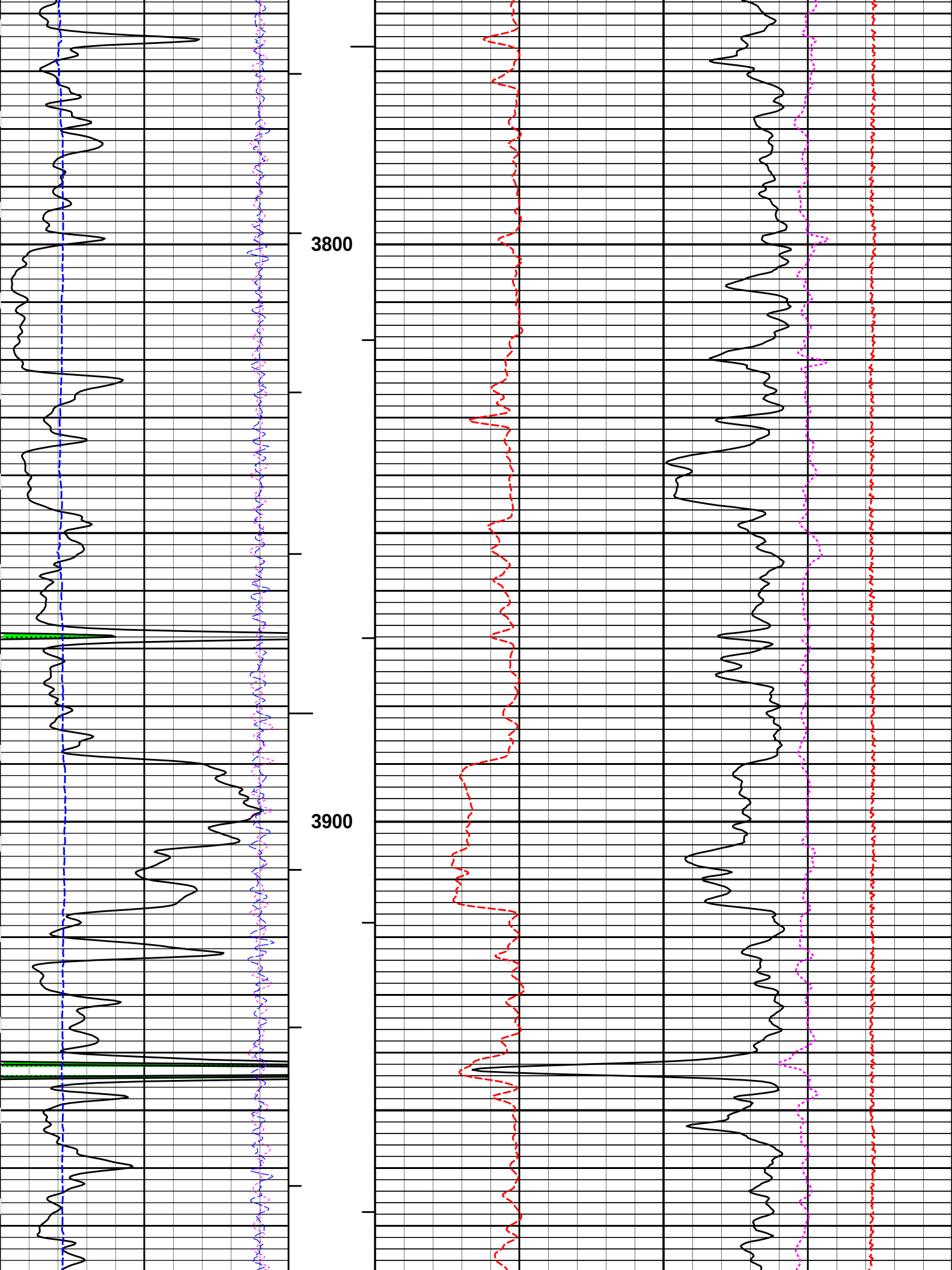
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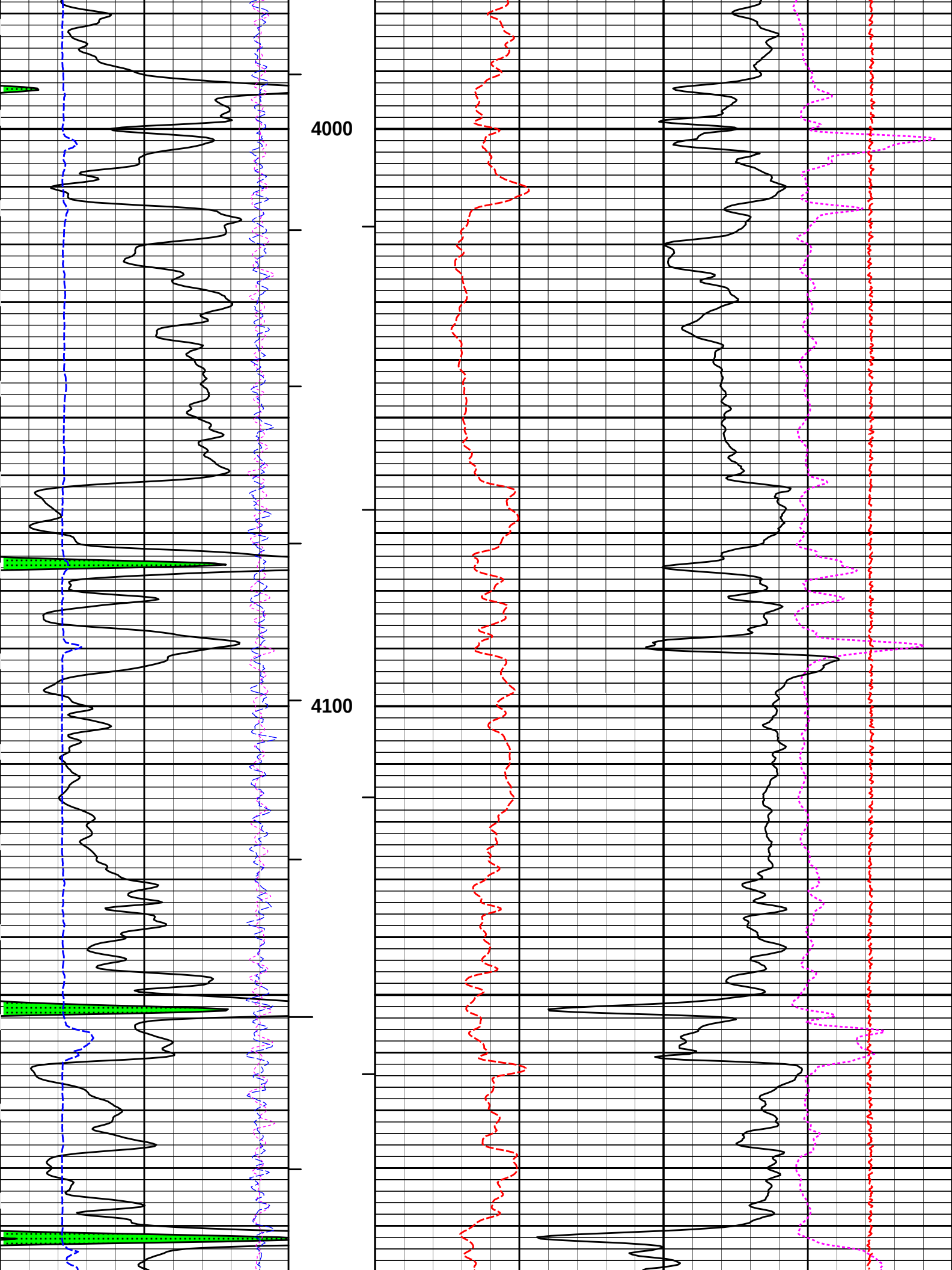
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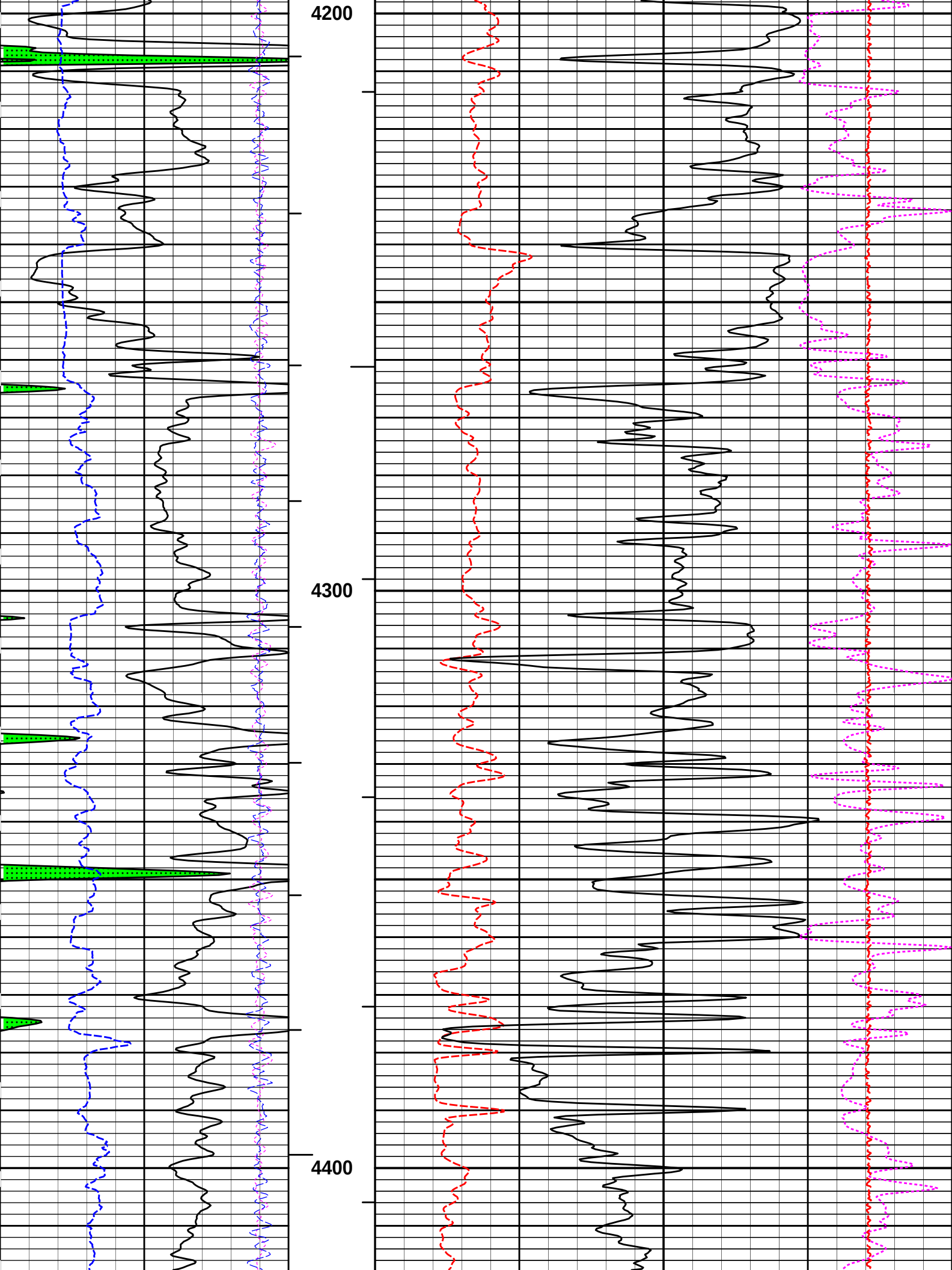
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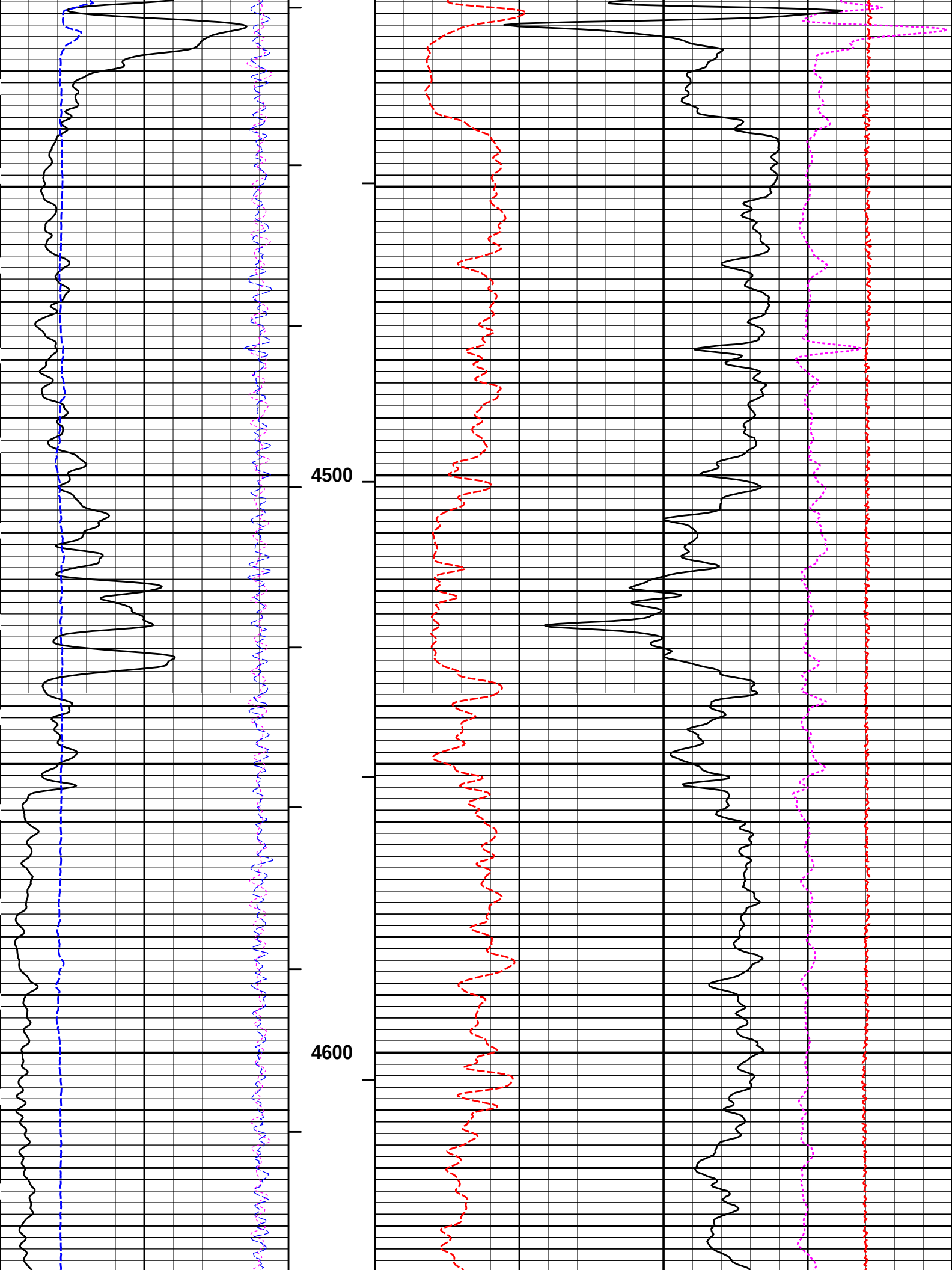
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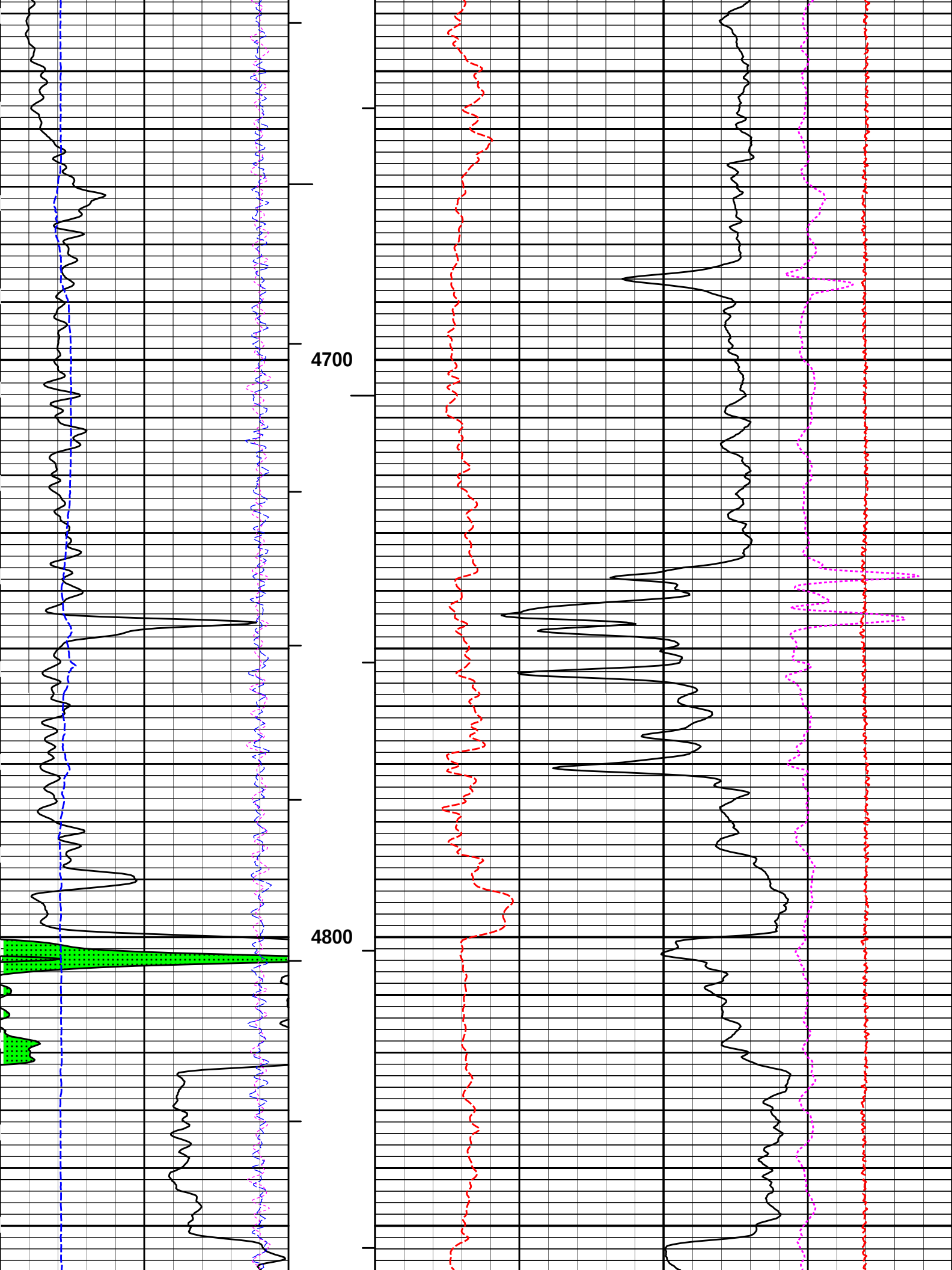
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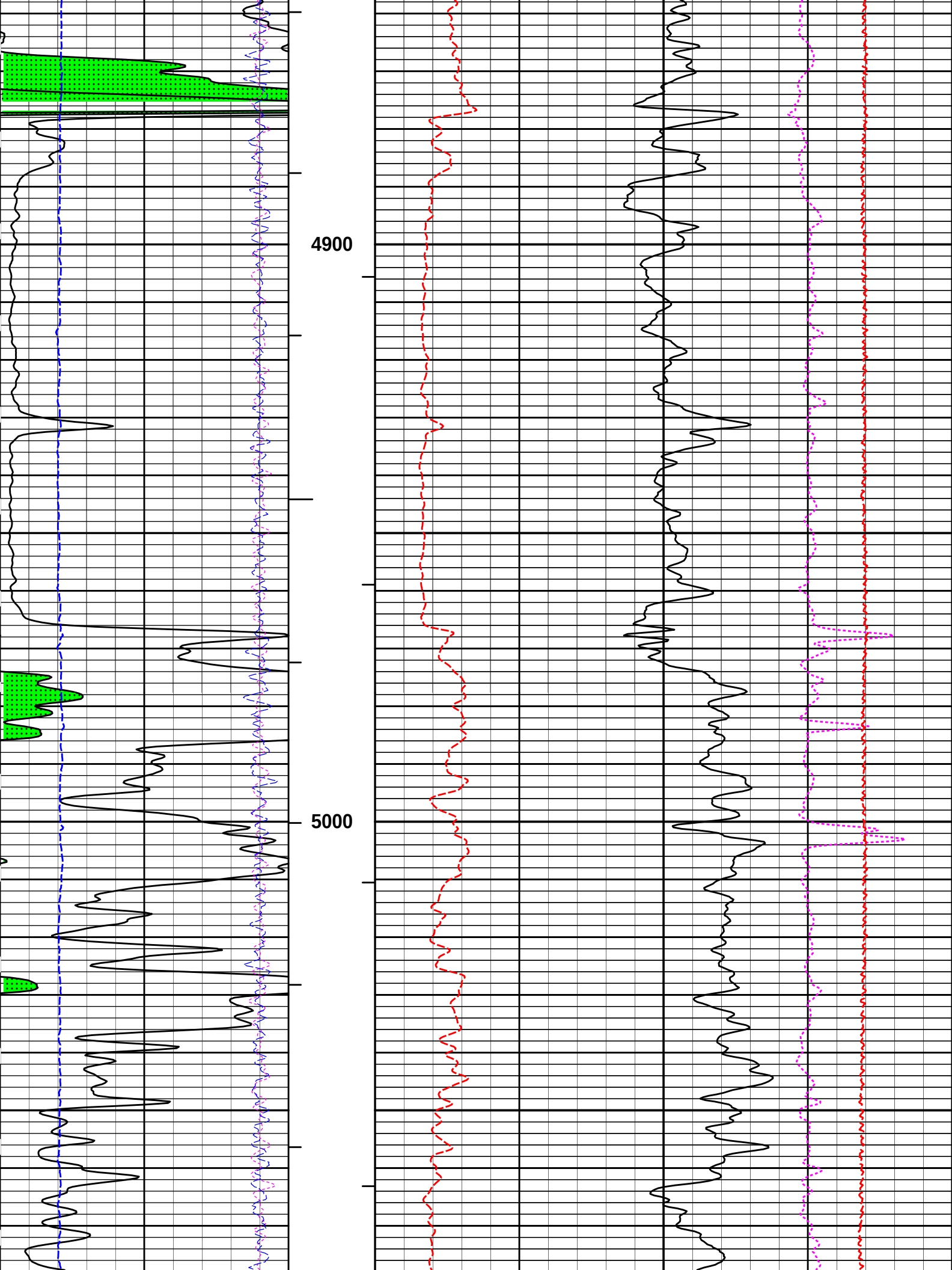
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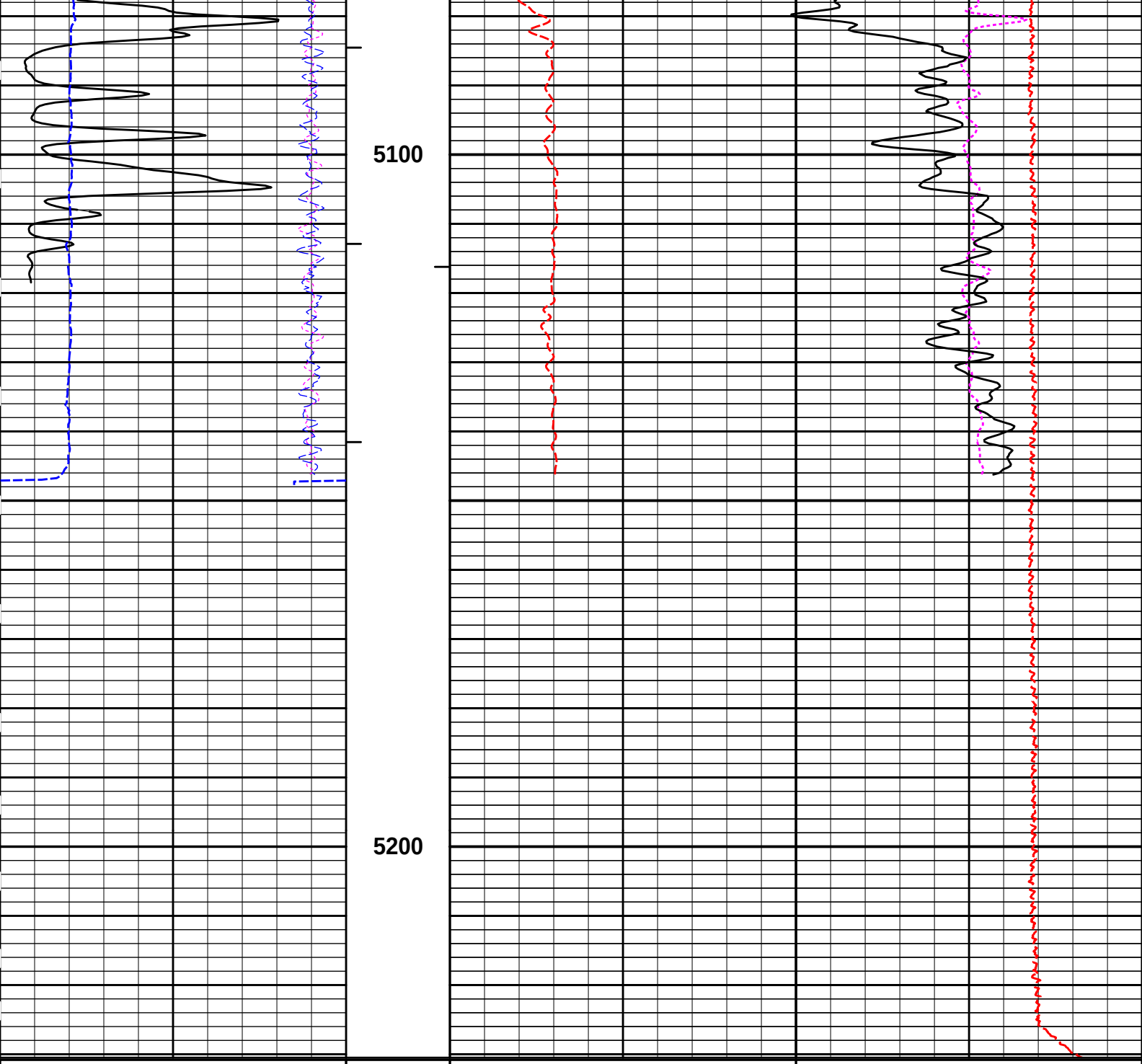


6 Caliper 16	MD 1 : 240 ft	0 Pe 10 / -0.25 DensityCorr 0.25
inches		g/cc
-18 NearQuality 2	AHV ft3	15K Tension 0
		pounds
18 FarQuality -2	BHV ft3	2 Bulk Density 3
		g/cc
0 Gamma Ray 150		
api		
SHALE		

HALLIBURTON

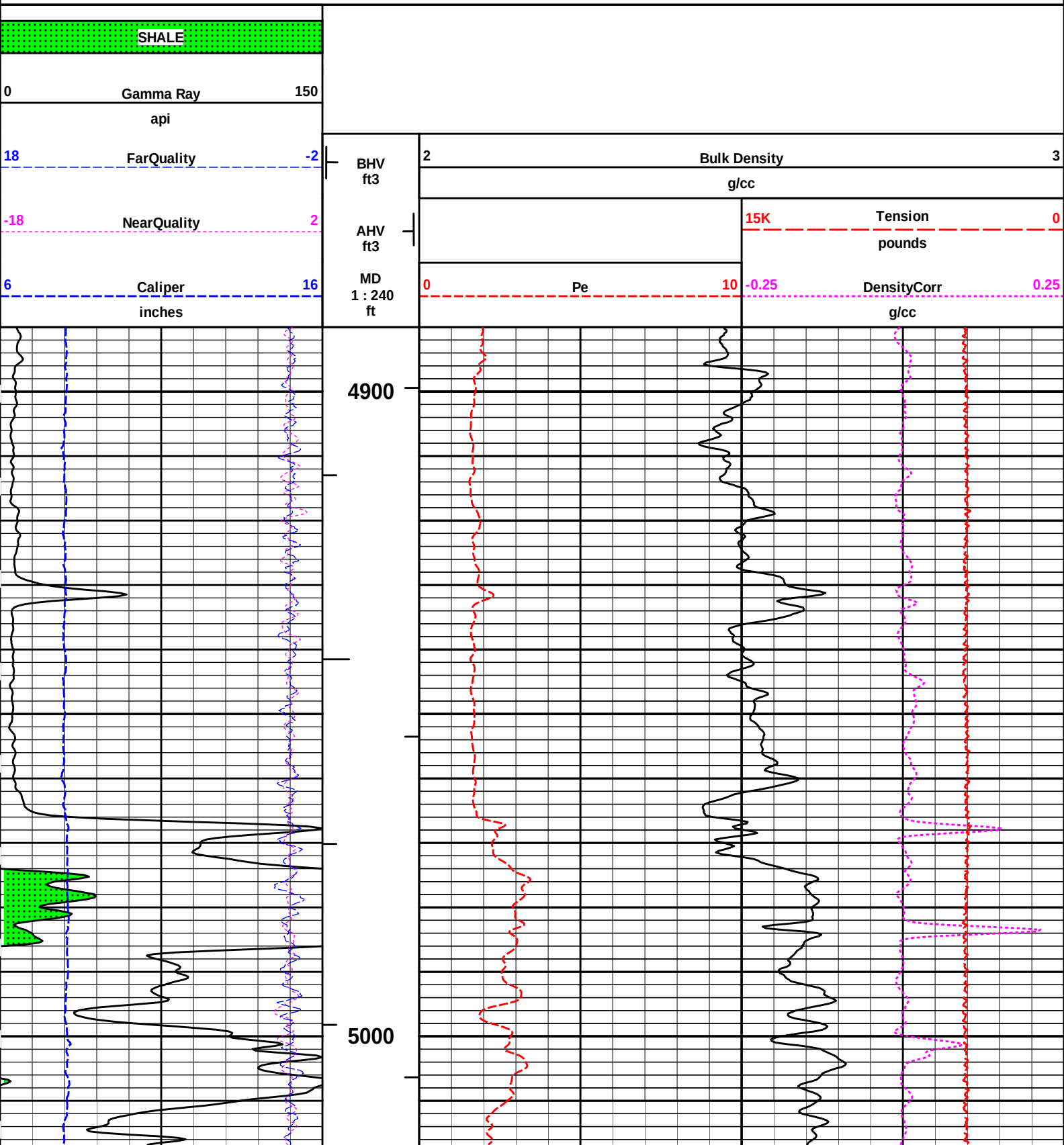
Plot Time: 21-May-14 05:57:42
Plot Range: 2495 ft to 5230.5 ft
Data: WINDSOR3404_129\Well Based\R1 DETAIL\
Plot File: \\-LOCAL-\WINDSOR3404_129\Well Based\POROSITY\BULKD_5_MAIN_LIB

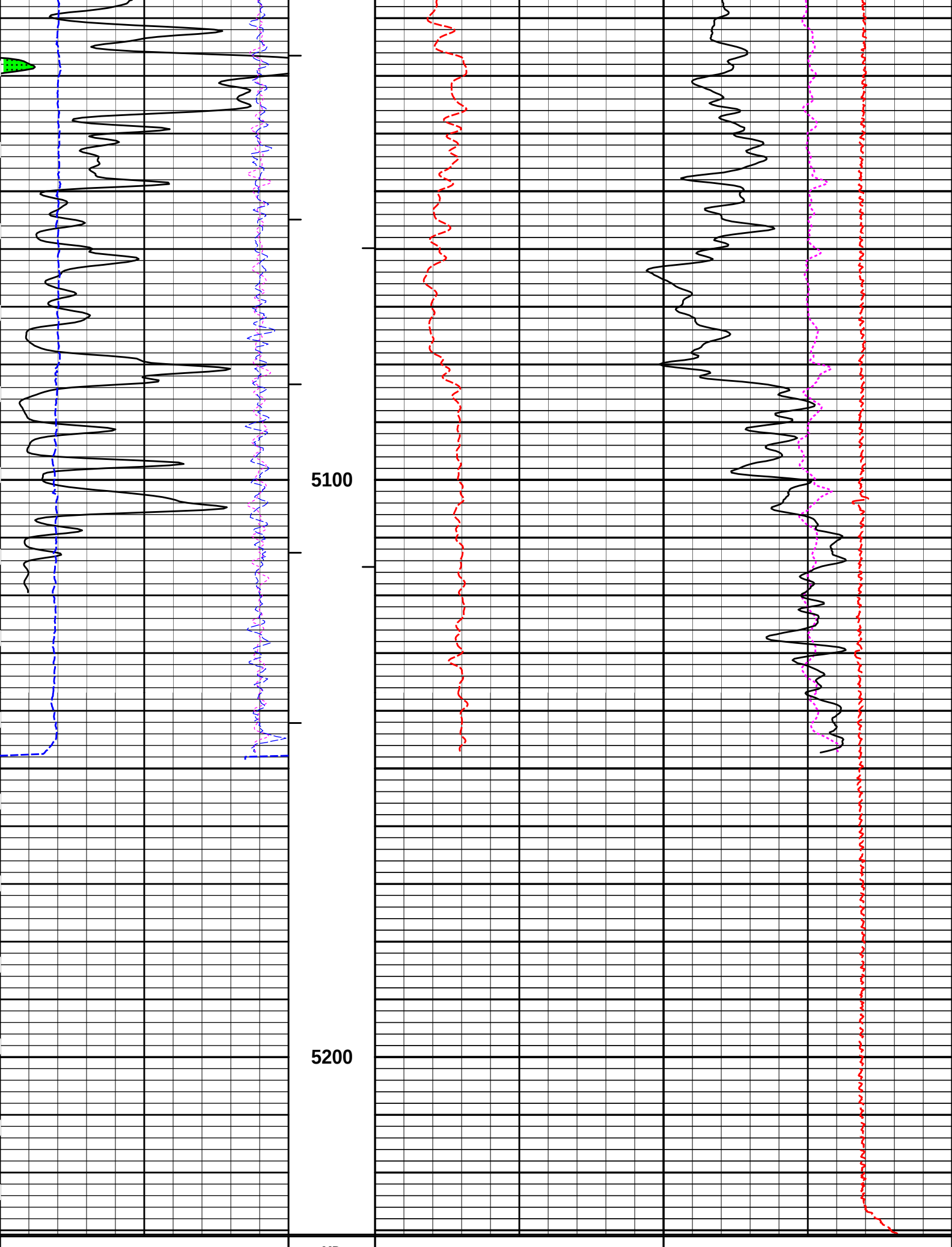
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 21-May-14 05:57:42
Plot Range: 4890 ft to 5230.75 ft
Data: WINDSOR3404_129\Well Based\R1 REPEAT\
Plot File: \\-LOCAL-\WINDSOR3404_129\Well Based\POROSITY\BULKD_5_REP_LIB

REPEAT SECTION

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5200
6
Caliper
16
MD
1 : 240
0
Pe
10
-0.25
DensityCorr
0.25

inches

-18 NearQuality 2

18 FarQuality -2

0 Gamma Ray 150

api

SHALE

ft

AHV ft3

BHV ft3

g/cc

15K Tension 0

pounds

2 Bulk Density 3

g/cc

HALLIBURTON

Plot Time: 21-May-14 05:57:44
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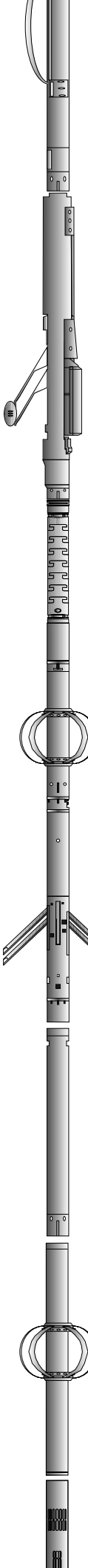
Data: WINDSOR3404_129\Well Based\R1 REPEAT\
Plot File: \\-LOCAL-\WINDSOR3404_129\Well Based\POROSITY\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						126.91 ft
RWCH-12156658 135.00 lbs		Ø 3.625 in		Load Cell @ 123.23 ft BH Temperature @ 122.66 ft	6.25 ft	
						120.66 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in		SP @ 118.88 ft	3.74 ft	
						116.92 ft
GTET-10811258 165.00 lbs		Ø 3.625 in		GammaRay @ 110.86 ft	8.52 ft	
						108.40 ft
CSNG-11830417 114.00 lbs		Ø 3.625 in		CSNG @ 102.78 ft	8.17 ft	
						100.24 ft



DSN Decentralizer-10735145
6.60 lbs

DSNT-10755066
174.00 lbs

Ø 5.000 in*

Ø 3.625 in

9.69 ft

DSN Far @ 93.30 ft

DSN Near @ 92.55 ft

90.55 ft

SDLT-10685803
360.00 lbs

Ø 4.500 in

10.81 ft

SDLT Pad-10714945
65.00 lbs

Microlog Pad-10685803
8.00 lbs

Ø 4.750 in*

Ø 4.750 in*

Microlog @ 82.74 ft

SDL Caliper @ 82.55 ft

SDL @ 82.54 ft

79.74 ft

IQ Flex-00000668
140.00 lbs

Ø 3.625 in

5.67 ft

74.07 ft

Centralizer 25-00000003
8.00 lbs

Ø 4.000 in*

ICT-11204020
330.00 lbs

Ø 3.625 in

12.83 ft

ICT Caliper @ 64.03 ft

61.24 ft

IDT-10967514
150.00 lbs

Ø 3.625 in

7.58 ft

53.65 ft

WSTT-I Upper Electronics-10753397
115.00 lbs

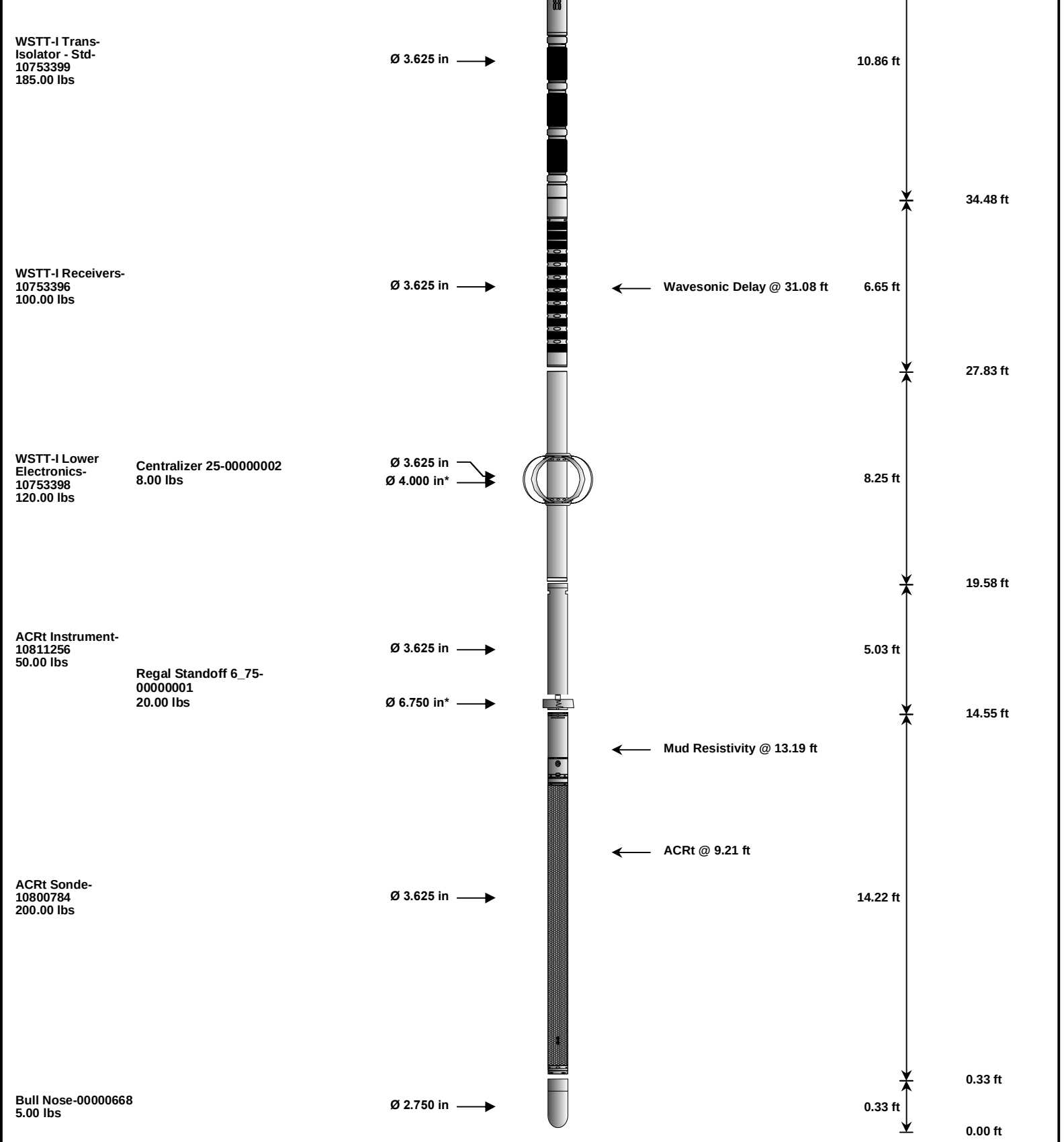
Centralizer 25-00000001
8.00 lbs

Ø 4.000 in*

Ø 3.625 in

8.31 ft

45.34 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	12156658	135.00	6.25		120.66	300.00
SP	SP Sub	12345678	60.00	3.74		116.92	300.00
GTET	Gamma Telemetry Tool	10811258	165.00	8.52		108.40	60.00
CSNG	Compensated Spectral Natural Gamma	11830417	114.00	8.17		100.24	15.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69		90.55	60.00
DCNT	DSN Decentralizer	10735145	6.60	5.13	*	93.88	300.00
SDLT	Spectral Density Tool	10685803	360.00	10.81		79.74	60.00
SDLP	Density Insite Pad	10714945	65.00	2.55	*	81.95	60.00
MICP	Microlog Pad	10685803	8.00	1.00	*	82.24	60.00
IQF	IQ Flex tool	00000668	140.00	5.67		74.07	300.00

ICT	Six Independent Arm Caliper	11204020	330.00	12.83		61.24	60.00
OBCEN	Centralizer - 25 in. Overbody	00000003	8.00	2.08	*	70.39	300.00
IDT	Insite Directional Tool	10967514	150.00	7.58		53.65	30.00
WSTT	WaveSonic Insite - Upper Electronics	10753397	115.00	8.31		45.34	100.00
OBCEN	Centralizer - 25 in. Overbody	00000001	8.00	2.08	*	48.77	300.00
WSTT	WaveSonic Insite - Trans-Isolator - Std	10753399	185.00	10.86		34.48	100.00
WSTT	WaveSonic Insite - Receivers	10753396	100.00	6.65		27.83	30.00
WSTT	WaveSonic Insite - Lower Electronics	10753398	120.00	8.25		19.58	100.00
OBCEN	Centralizer - 25 in. Overbody	00000002	8.00	2.08	*	22.51	300.00
ACRt	Array Compensated True Resistivity Instrument Section	10811256	50.00	5.03		14.55	120.00
RSOF	Regal Standoff 6.75in	00000001	20.00	0.52	*	14.71	300.00
ACRt	Array Compensated True Resistivity Sonde Section	10800784	200.00	14.22		0.33	120.00
BLNS	Bull Nose	00000668	5.00	0.33		0.00	300.00
Total			**2,526.60**	**126.91**			

* Not included in Total Length and Length Accumulation.

Data: WINDSOR3404_129\0001 SP-GTET-CSNG-DSNT-SDLT-FLEX-ICT-IDT-WAVE-ACRT-BN\IDLE **Date: 20-May-14 17:35:07**

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	8.700	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	0.102	ohmm
	SHARED	TRM	Temperature of Mud	106.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5240.00	ft
	SHARED	BHT	Bottom Hole Temperature	145.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	IDT	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	IDT	
	SHARED	TEMM	Temperature Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	Rwa / CrossPlot	BHSM	Borehole Size Source Tool	ICT	

CrossPlot				
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
GTET	BHSM	Borehole Size Source Tool	ICT	
CSNG	CGOK	Process CSNG Data?	Yes	
CSNG	CENT	Is Tool Centralized?	No	
CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
CSNG	BARF	Barite Correction Factor	1.00	
CSNG	ORDG	Use Fixed Gain	No	
CSNG	ORDO	Use Fixed Offset	No	
CSNG	ORDR	Use Fixed Resolution Degradation Factor	No	
CSNG	BHSM	Borehole Size Source Tool	ICT	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
DSNT	BHSM	Borehole Size Source Tool	ICT	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
ICT	CLOK	Process Caliper Outputs?	Yes	
ICT	DARM	Disable Caliper Arm	No	
ICT	ATDS	Arm To Disable	0	
ICT	REPM	Method to replace arm?	Caliper Average	
ICT	ARMV	Diameter to use for disabled arm	0.00	in
ICT	DARM	Disable Second Caliper Arm	No	
ICT	ATDS	Second Arm To Disable	0	
ICT	REPM	Method to replace second arm?	Caliper Average	
ICT	ARMV	Diameter to use for second disabled arm	0.00	in
ICT	NAVS	Navigation Source Tool	IDT	
ICT	CL1O	Radius 1 Offset	0.0	in
ICT	CL2O	Radius 2 Offset	0.0	in
ICT	CL3O	Radius 3 Offset	0.0	in
ICT	CL4O	Radius 4 Offset	0.0	in
ICT	CL5O	Radius 5 Offset	0.0	in
ICT	CL6O	Radius 6 Offset	0.0	in
ICT	BHVC	Radius type for borehole volume calcuations	Elliptical	
IDT	WRTI	Survey Writing Interval	30	ft
IDT	SOPT	Smoothing Option	None	
WSTT-I Receivers	WSOK	Process WSTT?	Yes	
WSTT-I Receivers	AFIL	Adaptive Filtering?	No	

WSTT-I Receivers	PINT	Process 1 Sample and Skip	0	
WSTT-I Receivers	PROM	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
WSTT-I Receivers	DTSH	Delta -T Shale	100.00	uspf
WSTT-I Receivers	DTMT	Delta -T Matrix Type	User define	
WSTT-I Receivers	DTMA	Delta -T Matrix	47.60	uspf
WSTT-I Receivers	DTFL	Delta -T Fluid	189.00	uspf
WSTT-I Receivers	RHOM	Matrix Density	2.7100	g/cc
WSTT-I Receivers	RHOF	Fluid Density	1.0000	g/cc
WSTT-I Receivers	SMTH	Semblance Threshold	0.25	
WSTT-I Receivers	VPVS	VPVS Ratio for Porosity	1.40	
WSTT-I Receivers	APEQ	Acoustic Porosity Equation	Wylie	
WSTT-I Receivers	NAVS	Navigation Source Tool	IDT	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	ICT	

BOTTOM

Data: WINDSOR3404_129\0001 SP-GTET-CSNG-DSNT-SDLT-FLEX-ICT-IDT-WAVE-ACRT-BN\007 20-May-14 20:16 Up @5230.5f **Date: 20-May-14 23:27:46**

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 10811258**	**Reference Calibration Date:**	**25-Apr-14 08:20:22**
Engineer:	**THOMAS K HYDE**	**Calibration Date:**	**25-Apr-14 08:23:37**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
Background	44.8	44.7	api
Background + Calibrator	277.2	276.7	api
Calibrator	232.4	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 10811258**	**Reference Calibration Date:**	**25-Apr-14 08:23:37**
Engineer:	**SHELDON INGERSOLL**	**Calibration Date:**	**18-May-14 00:23:59**

Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	44.7	25.8	api
Background + Calibrator	276.7	258.9	api
Calibrator	232.0	233.1	api

Shop	Field	Difference	Tolerance
232.0	233.1	-1.1	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	**DSNT - 10755066**	**Reference Calibration Date:**	**14-Apr-14 14:08:27**
Engineer:	**THOMAS K HYDE**	**Calibration Date:**	**05-May-14 09:55:54**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-436

Tank Serial Number: LIBERAL

Reference value assigned to Tank: 51.680

Snow Block S/N: 668

Calibration Tank Water Temperature: 70 degF

Min. Tool Housing Outside Diameter: 3.620 in

CALIBRATION CONSTANTS			
Measurement	**Prev. Value**	**New Value**	**Control Limit On New Value**
Gain:	0.948	0.945	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	**Current Reading (Previous Coef.)**	**Calibrated (New Coef.)**	**Change**	**Control Limit On Change**
Porosity (decp):	0.2114	0.2107	0.0007	+/- 0.0020
Calibrated Ratio:	9.74	9.72	0.025	+/- 0.050

VERIFIER		
Measurement	**Value**	**Control Limit**
Snow-Block Porosity (decp):	0.0575	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name:	**DSNT - 10755066**	**Reference Calibration Date:**	**05-May-14 09:55:54**
Engineer:	**SHELDON INGERSOLL**	**Calibration Date:**	**18-May-14 00:37:03**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-436

Snow Block S/N: 668

NEUTRON FIELD-CHECK SUMMARY				
	Shop	**Field**	**Difference**	**Control Limit On Change**

Snow-Block Porosity (decp):	0.0575	0.0521	-0.0054	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 10685803
Reference Calibration Date: 14-Apr-14 11:26:43
Engineer: J. BOLLOM
Calibration Date: 14-Apr-14 11:31:00
Software Version: WL INSITE R4.2.0 (Build 2)
Calibration Version: 1
Host Tool Name: DSNT - 10755066

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-4362.95	-4420.65	-7000.00 - -1000.00
Pad Gain	0.0003849	0.0003863	0.000200 - 0.000600
Arm Offset	-3135.46	-3304.43	-5000.00 - 3000.00
Arm Gain	0.0005085	0.0005300	0.000300 - 0.000700
Arm Power	-0.000004496	-0.000005774	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.01	2.00	-0.01	+/- 0.20
Medium Ring (in)	3.76	3.75	-0.01	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.53	6.50	-0.03	+/- 0.20
Medium Ring (in)	8.24	8.25	0.01	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 10685803
Reference Calibration Date: 14-Apr-14 11:31:00
Engineer: SHELDON INGERSOLL
Calibration Date: 18-May-14 00:30:57
Software Version: WL INSITE R4.2.0 (Build 2)
Calibration Version: 1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.82	0.07	+/- 0.10
Ring Diameter	8.25	8.31	0.06	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	**SDLT Pad - 10714945**	**Reference Calibration Date:**	**28-Apr-14 09:49:03**
Engineer:	**THOMAS K HYDE**	**Calibration Date:**	**28-Apr-14 10:11:22**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: 5073 GW

Aluminum Block S/N: LIBERAL Density: 2.598g/cc Pe: 3.170

Magnesium Block S/N: LIBERAL Density: 1.684g/cc Pe: 2.598

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0263	1.0429	0.90 - 1.10
Near Dens Gain	1.0042	1.0358	0.90 - 1.10
Near Peak Gain	0.9945	1.0562	0.90 - 1.10
Near Lith Gain	0.9704	1.0108	0.90 - 1.10
Far Bar Gain	1.0072	1.0071	0.90 - 1.10
Far Dens Gain	1.0006	0.9998	0.90 - 1.10
Far Peak Gain	0.9955	0.9930	0.90 - 1.10
Far Lith Gain	0.9708	0.9648	0.90 - 1.10
Near Bar Offset	0.0618	-0.0842	NONE
Near Dens Offset	0.2364	-0.0368	NONE
Near Peak Offset	0.2893	-0.2159	NONE
Near Lith Offset	0.4680	0.1368	NONE
Far Bar Offset	0.1401	0.1411	NONE
Far Dens Offset	0.1788	0.1856	NONE
Far Peak Offset	0.2120	0.2306	NONE
Far Lith Offset	0.3689	0.4131	NONE
Near Bar Background	949.73	950.42	700 - 1450
Near Dens Background	314.80	315.54	230 - 480
Near Peak Background	138.78	138.82	100 - 210
Near Lith Background	164.21	163.53	125 - 260
Far Bar Background	489.05	487.23	450 - 900
Far Dens Background	188.74	188.06	175 - 345
Far Peak Background	74.60	73.87	70 - 140
Far Lith Background	76.88	76.48	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.675	1.684	0.009	+/- 0.015
Pe	2.582	2.557	-0.025	+/- 0.150
ALUMINUM				
Density (g/cc)	2.599	2.598	-0.001	+/- 0.01500
Pe	3.104	3.126	0.022	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0010	+/- 0.0110	0.0008	+/- 0.0140

Background	0.0010	+/- 0.0110	0.0008	+/- 0.0140
Magnesium Block	-0.0007	+/- 0.0110	-0.0022	+/- 0.0140
Aluminum Block	-0.0006	+/- 0.0110	0.0008	+/- 0.0140
Resolution	9.94	6.00 - 11.50	9.20	6.00 - 11.50
Internal Verifier(B+D+P+L)	1568	1200 - 2700	826	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT Pad - 10714945
Reference Calibration Date: 28-Apr-14 10:11:22
Engineer: SHELDON INGERSOLL
Calibration Date: 18-May-14 00:34:23
Software Version: WL INSITE R4.2.0 (Build 2)
Calibration Version: 1

Pad Temperature: 61.1 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	**Shop**	**Field**	**Change**	**Control Limit +/-**
Near (B+D+P+L) cps	1568.312	1576.461	8.149	15.935
Far (B+D+P+L) cps	825.641	829.760	4.119	15.836
Near Resolution	9.94	9.96	0.020	0.50
Far Resolution	9.20	9.74	0.540	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10811258						
Gamma Ray Calibrator	232.0	233.1	----------	-1.1	+/- 9.00	api
DSNT-10755066						
Snow-Block Porosity	0.0575	0.0521	----------	0.0054	+/- 0.0150	decp
SDLT-10685803						
Pad Extension	3.75	3.82	----------	-0.07	+/-0.10	in
Ring Diameter	8.25	8.31	----------	-0.06	+/-0.15	in
SDLT Pad-10714945						
Near(B+D+P+L)	1568.312	1576.461	----------	-8.149	+/-15.935	cps
Far(B+D+P+L)	825.641	829.760	----------	-4.119	+/-15.836	cps

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INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)

		(ft)		(ft)
Depth Panel				
TENS	Tension	0.00	NO	
Rwa / CrossPlot				
TPUL	Tension Pull	126.91	NO	
BS	Bit Size	126.91	NO	
HDIA	Measured Hole Diameter	0.00	NO	
RWCH				
DHTN	DownholeTension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	118.88	NO	
SP	Spontaneous Potential	118.88	BLK	1.250
SPR	Raw Spontaneous Potential	118.88	NO	
SPO	Spontaneous Potential Offset	118.88	NO	
GTET				
TPUL	Tension Pull	110.86	NO	
GR	Natural Gamma Ray API	110.86	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	110.86	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	110.86	W	1.416 , 0.750
HDIA	Measured Hole Diameter	0.00	NO	
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
CSNG				
TPUL	Tension Pull	102.78	NO	
STAT	Status	102.78	NO	
FRMC	Tool Frame Count	102.78	BLK	0.250
TFRM	Total Frames	102.78	NO	
LSPD	Line Speed	102.78	BLK	0.250
CTIM	Accumulation time for sample	102.78	BLK	0.250
NOIS	Spectral Noise	102.78	BLK	0.250
STAB	Stabilizer Voltage in mv	102.78	BLK	0.250
STBP	Stabilizer 60 KEV Peak	102.78	BLK	0.250
AMER	Americium	102.78	BLK	0.250
FTMP	Flask PCB Temperature	102.78	BLK	0.250
SPEL	Low Energy Spectrum	102.78	BLK	0.250
SPEH	High Energy Spectrum	102.78	BLK	0.250
SSP	Stabilization Energy Spectrum	102.78	BLK	0.250
HDIA	Measured Hole Diameter	0.00	NO	
CSPC	CSNG Lo Hi Spectrum Data	102.78	NO	
DSNT				
TPUL	Tension Pull	92.45	NO	
RNDS	Near Detector Telemetry Counts	92.55	BLK	1.417
RFDS	Far Detector Telemetry Counts	93.30	TRI	0.583
DNTT	DSN Tool Temperature	92.55	NO	
DSNS	DSN Tool Status	92.45	NO	
ERND	Near Detector Telemetry Counts EVR	92.55	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	93.30	BLK	0.000
ENTM	DSN Tool Temperature EVR	92.55	NO	
HDIA	Measured Hole Diameter	0.00	NO	
SDLT				

TPUL	Tension Pull	82.55	NO	
PCAL	Pad Caliper	82.55	TRI	0.250
ACAL	Arm Caliper	82.55	TRI	0.250
	ICT			
TPUL	Tension Pull	64.03	NO	
	Arm Potentiometer excitation V	61.24	NO	
	Caliper 1 measurement	64.03	BLK	1.250
	Caliper 2 measurement	64.03	BLK	1.250
	Caliper 3 measurement	64.03	BLK	1.250
	Caliper 4 measurement	64.03	BLK	1.250
	Caliper 5 measurement	64.03	BLK	1.250
	Caliper 6 measurement	64.03	BLK	1.250
	Caliper Global measurement	64.03	BLK	1.250
MOTI	Motor Current	61.24	NO	
MOT1	Motor Voltage Monitor 1	61.24	NO	
STA1	Status word #1	61.24	NO	
STA2	Status word #2	61.24	NO	
PRES	Caliper percentage of total compression of the spring	61.24	NO	
HAZI	Hole Azimuth	64.03	NO	
RB	Relative Bearing	64.03	NO	
AZI1	PAD1 Azimuth	64.03	NO	
DEVI	Inclination	64.03	NO	
	IDT			
TPUL	Tension Pull	54.65	NO	
ACCX	Accelerometer X	54.65	NO	
ACCY	Accelerometer Y	54.65	NO	
ACCZ	Accelerometer Z	54.65	NO	
MAGX	magnetometer x with unit	54.65	NO	
MAGY	Magnetometer Y with unit	54.65	NO	
MAGZ	magnetometer z with unit	54.65	NO	
IAMP	Accelerometer Temperature	54.65	NO	
MTMP	Magnetometer Temperature	54.65	NO	
	WSTT-I Receivers			
TPUL	Tension Pull	31.08	NO	
DPSX	Dipole Source X Structurel	27.83	NO	
DPSY	Dipole Source Y Structurel	27.83	NO	
DPSM	Monopole Source Structure	27.83	NO	
WVST	Wavesonic Compressed Data	31.08	NO	
TPUL	Tension Pull	31.08	NO	
XMS1	Wave Sonic Status Word 1	27.83	NO	
XMS2	Wave Sonic Status Word 2	27.83	NO	
XMS1	Wave Sonic XMITStatus Word 1	27.83	NO	
XMS1	Wave Sonic XMITStatus Word 2	27.83	NO	
F1HA	Dipole 1 HV After	27.83	NO	
F1HB	Dipole 1 HV Before	27.83	NO	
F2HA	Dipole 2 HV After	27.83	NO	
F2HB	Dipole 2 HV Before	27.83	NO	
F3HA	Monopole HV After	27.83	NO	
F3HB	Monopole HV Before	27.83	NO	
INVT	Input Voltage	27.83	NO	
5VOL	5 Volts	27.83	NO	
MI5A	Minus 5 Volts Analog	27.83	NO	
ITMP	Instrument Temperature	27.83	NO	

ITMP	Instrument Temperature	27.83	NO
PL5A	Plus 5 Volts Analog	27.83	NO
5VD	Plus 5 Volts Digital	27.83	NO
TCUR	Tool Current	27.83	NO
SUPV	Supply Voltage	27.83	NO
PRVT	Preregulated voltage	27.83	NO
PRVT	Pre-regulated voltage Xmter	27.83	NO
TEMP	Temperature	27.83	NO
ACQN	Acquisition Number	27.83	NO
XDP	Delay Reference	31.08	NO
MITM	MIT Mode	31.08	NO
VERS	Version	27.83	NO
D1CT	Dipole 1 Compressed Word Count	31.08	NO
D2CT	Dipole 2 Compressed Word Count	31.08	NO
MCNT	Monopole Compressed Word Count	31.08	NO
SEQN	Sequence Number	27.83	NO
FREV	Firmware Revision	27.83	NO
MSMP	Monopole Sample Rate	27.83	NO
MSMP	Dipole Sample Rate	27.83	NO
MFWF	Monopole Firing Waveform	27.83	NO
MFRQ	Monopole Frequency	27.83	NO
MDLY	Monopole Delay	27.83	NO
DXWF	Dipole X Firing Waveform	27.83	NO
XFRQ	Dipole X Frequency	27.83	NO
XDLY	Dipole X Delay	27.83	NO
DYWF	Dipole Y Firing Waveform	27.83	NO
YFRQ	Dipole Y Frequency	27.83	NO
YDLY	Dipole Y Delay	27.83	NO
DPSX	Dipole Source X Structurel	27.83	NO
DPSY	Dipole Source Y Structurel	27.83	NO
DPSM	Monopole Source Structure	27.83	NO
WVST	Wavesonic Compressed Data	31.08	NO
AUTM	Auto Mode	27.83	NO
SONM	tool mode for sonic - 0 for normal or 3 for calibration	27.83	NO
MSL	Monopole Lower Travel Time	31.08	NO
MSH	Monopole Upper Travel Time	31.08	NO
MLFC	Monopole-1 Lower Filter Bandpass Frequency Cut-off	27.83	NO
MUFC	Monopole-1 Upper Filter Bandpass Frequency Cut-off	27.83	NO
DLTT	Dipole Lower Travel Time	27.83	NO
DUTT	Dipole Upper Travel Time	27.83	NO
DLFC	Dipole Lower Filter Bandpass Frequency Cut-off	27.83	NO
DUFC	Dipole Upper Filter Bandpass Frequency Cut-off	27.83	NO
MUTE	WaveSonic Mute/Enable Channels and Sides map	27.83	NO
MUTS	Mute/Enable Sides	27.83	NO
WSRB	Relative Bearing	31.08	NO
WSAZ	WSX Azimuth Pad 1	31.08	NO
TPUL	Tension Pull	31.08	NO
WMP	Summed array of Monopole for SIDES - A,B,C,D	31.08	NO
WXX	Dipole X for SIDES - A-C	31.08	NO
WYY	Dipole Y for SIDES - B-D	31.08	NO
WXY	Dipole X for SIDES - B-D	31.08	NO
WYX	Dipole Y for SIDES - A-C	31.08	NO
TPUL	Tension Pull	31.08	NO
WMA	Monopole Waveform Side A - Channel 1 to Channel 8 Receivers	31.08	NO
WMB	Monopole Waveform Side B - Channel 1 to Channel 8	31.08	NO

	Receivers			
WMC	Monopole Waveform Side C - Channel 1 to Channel 8 Receivers	31.08	NO	
WMD	Monopole Waveform Side D - Channel 1 to Channel 8 Receivers	31.08	NO	
WXA	Dipole X Waveform Side A - Channel 1 to Channel 8 Receivers	31.08	NO	
WXB	Dipole X Waveform Side B - Channel 1 to Channel 8 Receivers	31.08	NO	
WXC	Dipole X Waveform Side C - Channel 1 to Channel 8 Receivers	31.08	NO	
WXD	Dipole X Waveform Side D - Channel 1 to Channel 8 Receivers	31.08	NO	
WYA	Dipole Y Waveform Side A - Channel 1 to Channel 8 Receivers	31.08	NO	
WYB	Dipole Y Waveform Side B - Channel 1 to Channel 8 Receivers	31.08	NO	
WYC	Dipole Y Waveform Side C - Channel 1 to Channel 8 Receivers	31.08	NO	
WYD	Dipole Y Waveform Side D - Channel 1 to Channel 8 Receivers	31.08	NO	
GAR1	Gain Side A Receiver 1	27.83	NO	
GAR2	Gain Side A Receiver 2	27.83	NO	
GAR3	Gain Side A Receiver 3	27.83	NO	
GAR4	Gain Side A Receiver 4	27.83	NO	
GAR5	Gain Side A Receiver 5	27.83	NO	
GAR6	Gain Side A Receiver 6	27.83	NO	
GAR7	Gain Side A Receiver 7	27.83	NO	
GAR8	Gain Side A Receiver 8	27.83	NO	
GBR1	Gain Side B Receiver 1	27.83	NO	
GBR2	Gain Side B Receiver 2	27.83	NO	
GBR3	Gain Side B Receiver 3	27.83	NO	
GBR4	Gain Side B Receiver 4	27.83	NO	
GBR5	Gain Side B Receiver 5	27.83	NO	
GBR6	Gain Side B Receiver 6	27.83	NO	
GBR7	Gain Side B Receiver 7	27.83	NO	
GBR8	Gain Side B Receiver 8	27.83	NO	
GCR1	Gain Side C Receiver 1	27.83	NO	
GCR2	Gain Side C Receiver 2	27.83	NO	
GCR3	Gain Side C Receiver 3	27.83	NO	
GCR4	Gain Side C Receiver 4	27.83	NO	
GCR5	Gain Side C Receiver 5	27.83	NO	
GCR6	Gain Side C Receiver 6	27.83	NO	
GCR7	Gain Side C Receiver 7	27.83	NO	
GCR8	Gain Side C Receiver 8	27.83	NO	
GDR1	Gain Side D Receiver 1	27.83	NO	
GDR2	Gain Side D Receiver 2	27.83	NO	
GDR3	Gain Side D Receiver 3	27.83	NO	
GDR4	Gain Side D Receiver 4	27.83	NO	
GDR5	Gain Side D Receiver 5	27.83	NO	
GDR6	Gain Side D Receiver 6	27.83	NO	
GDR7	Gain Side D Receiver 7	27.83	NO	
GDR8	Gain Side D Receiver 8	27.83	NO	
	ACRt Sonde			
TPUL	Tension Pull	2.73	NO	
F1R1	ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	4.98	BLK	0.000

F1X3	ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	3.98	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	
TRBD	Receiver Board Temperature	2.73	NO	
HDIA	Measured Hole Diameter	0.00	NO	
	SDLT Pad			
TPUL	Tension Pull	82.54	NO	
NAB	Near Above	82.37	BLK	0.920
NHI	Near Cesium High	82.37	BLK	0.920
NLO	Near Cesium Low	82.37	BLK	0.920
NVA	Near Valley	82.37	BLK	0.920
NBA	Near Barite	82.37	BLK	0.920

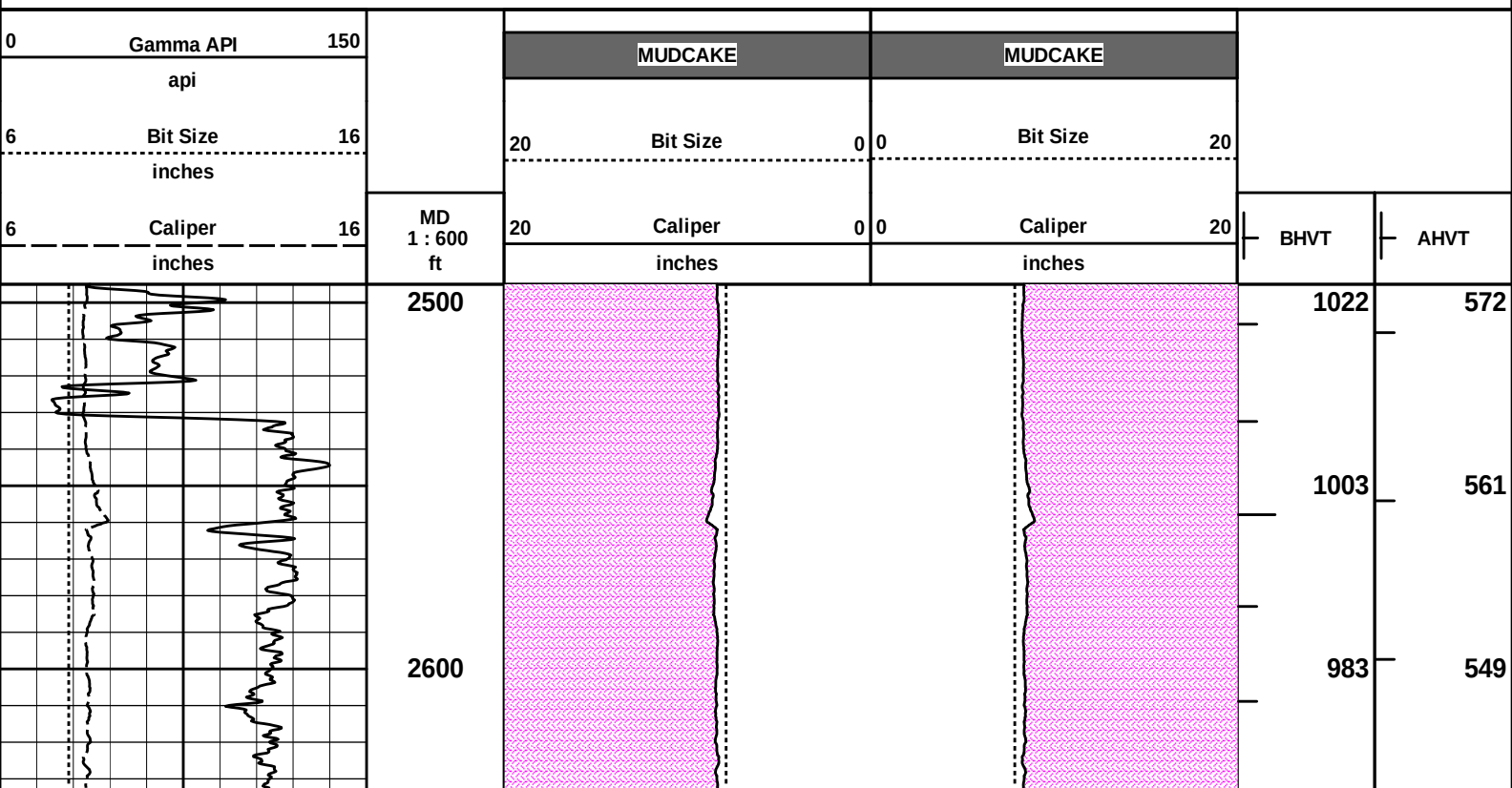
NDE	Near Density	82.37	BLK	0.920
NPK	Near Peak	82.37	BLK	0.920
NLI	Near Lithology	82.37	BLK	0.920
NBAU	Near Barite Unfiltered	82.37	BLK	0.250
NLIU	Near Lithology Unfiltered	82.37	BLK	0.250
FAB	Far Above	82.72	BLK	0.250
FHI	Far Cesium High	82.72	BLK	0.250
FLO	Far Cesium Low	82.72	BLK	0.250
FVA	Far Valley	82.72	BLK	0.250
FBA	Far Barite	82.72	BLK	0.250
FDE	Far Density	82.72	BLK	0.250
FPK	Far Peak	82.72	BLK	0.250
FLI	Far Lithology	82.72	BLK	0.250
PTMP	Pad Temperature	82.55	BLK	0.920
NHV	Near Detector High Voltage	81.95	NO	
FHV	Far Detector High Voltage	81.95	NO	
ITMP	Instrument Temperature	81.95	NO	
DDHV	Detector High Voltage	81.95	NO	
HDIA	Measured Hole Diameter	0.00	NO	
	Microlog Pad			
TPUL	Tension Pull	82.74	NO	
MINV	Microlog Lateral	82.74	BLK	0.750
MNOR	Microlog Normal	82.74	BLK	0.750

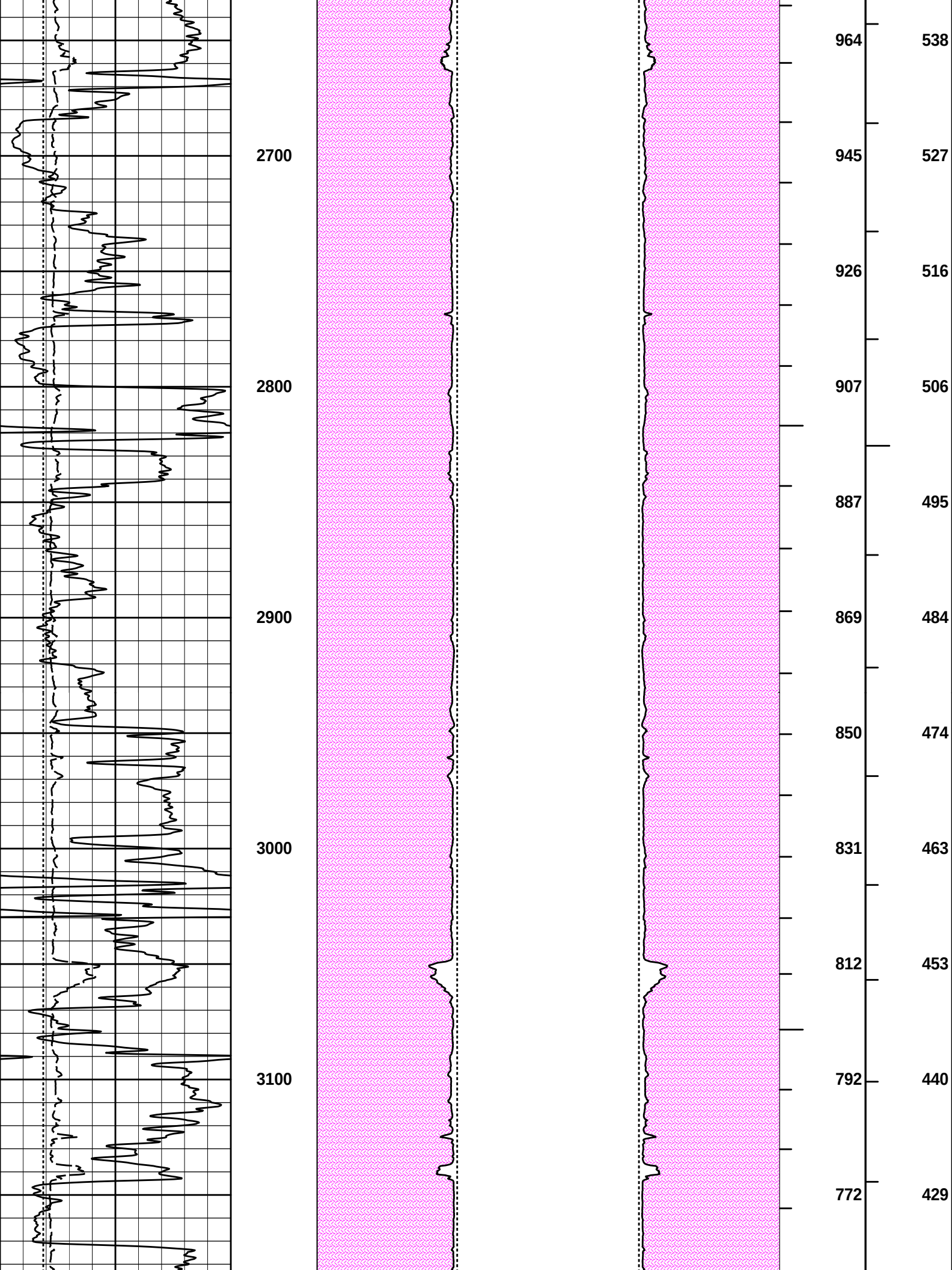
Data: WINDSOR3404_129\0001 SP-GTET-CSNG-DSNT-SDLT-FLEX-ICT-IDT-WAVE-ACRT-BN\007 20-May-14 20:16 Up @5230.5f **Date: 20-May-14 23:27:03**

HALLIBURTON

Plot Time: 21-May-14 05:57:44
Plot Range: 2495 ft to 5230.5 ft
Data: WINDSOR3404_129\Well Based\R1 DETAIL
Plot File: \\-LOCAL-\WINDSOR3404_129\Well Based\POROSITY\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT

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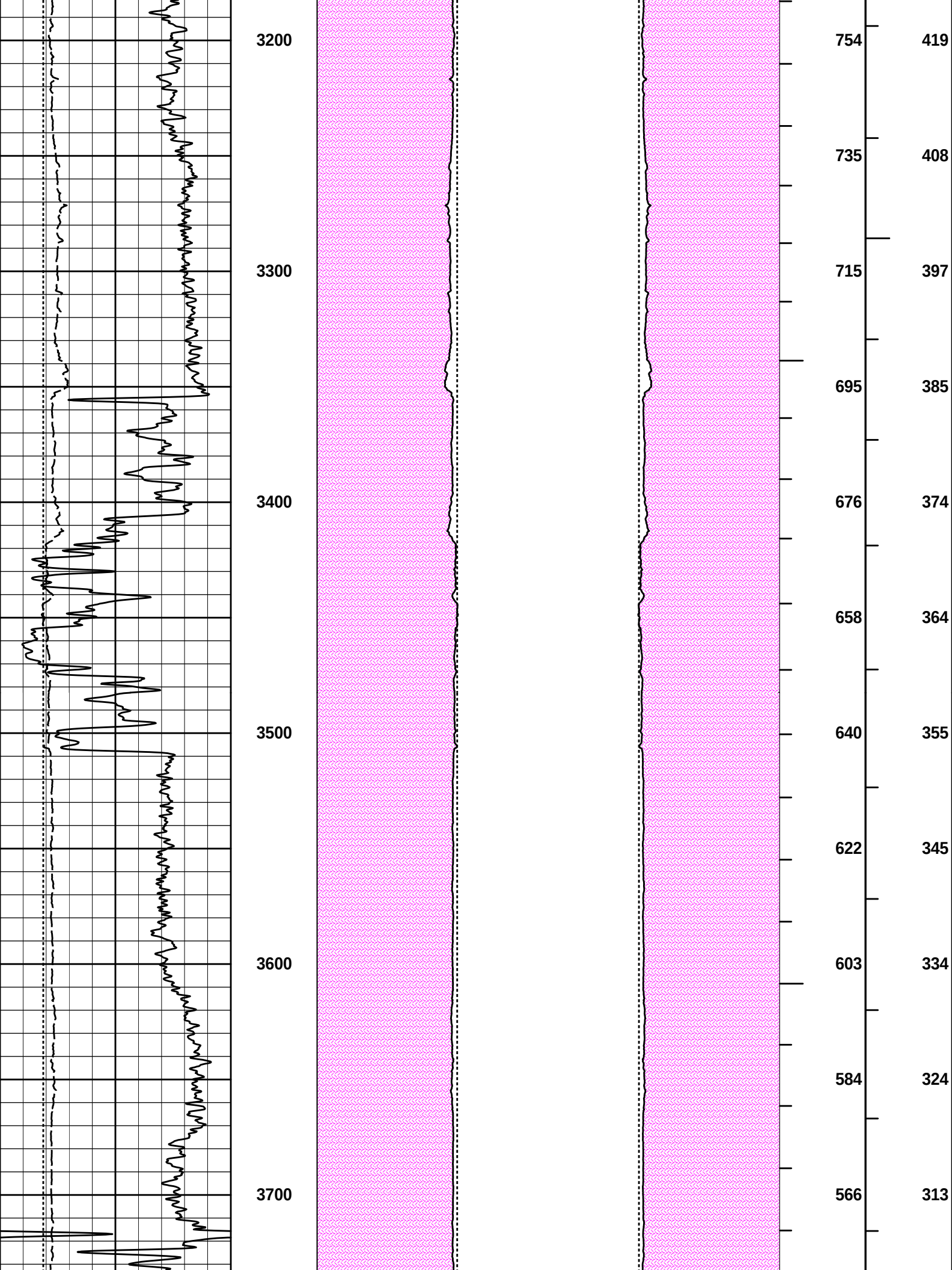
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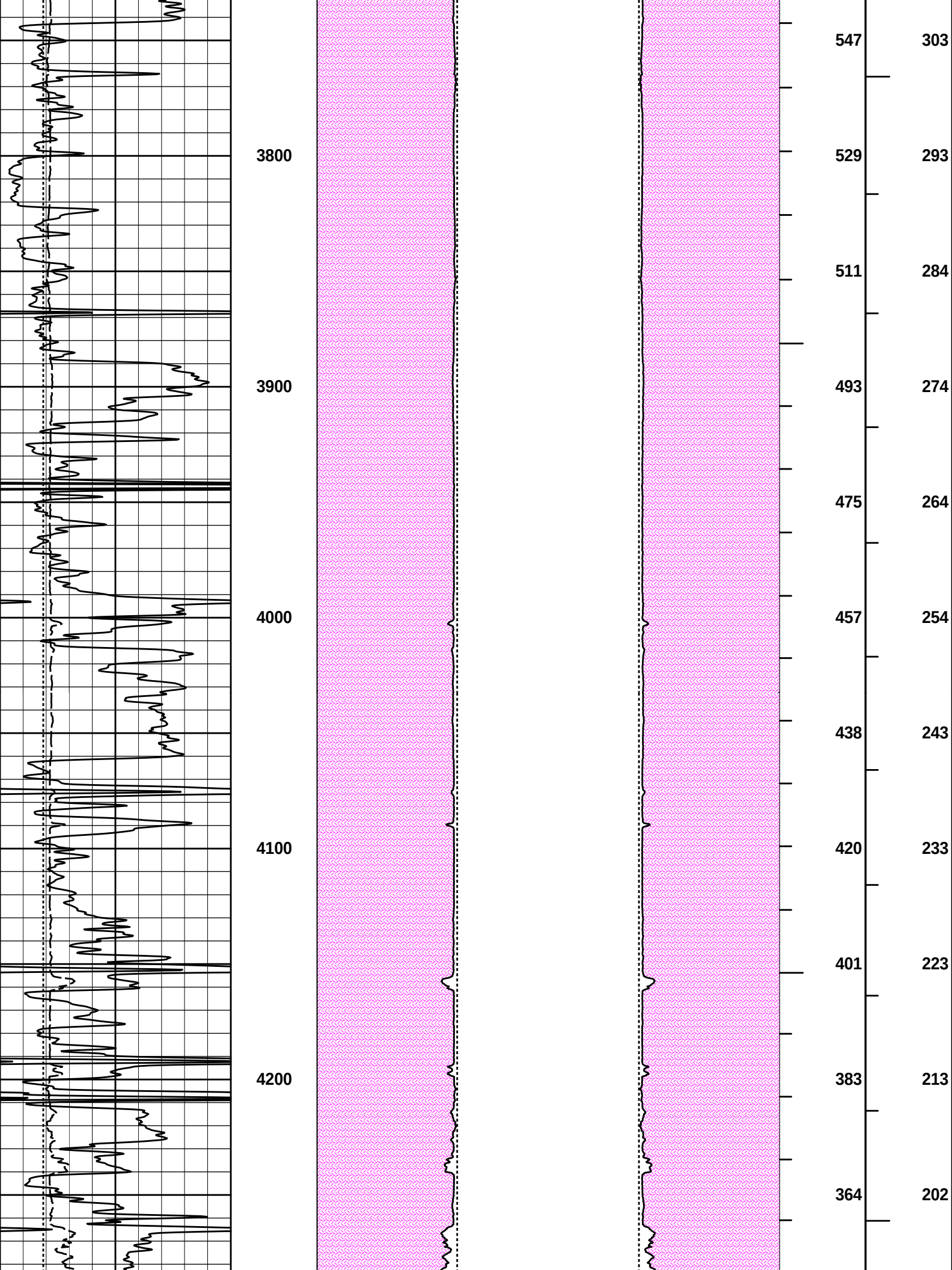
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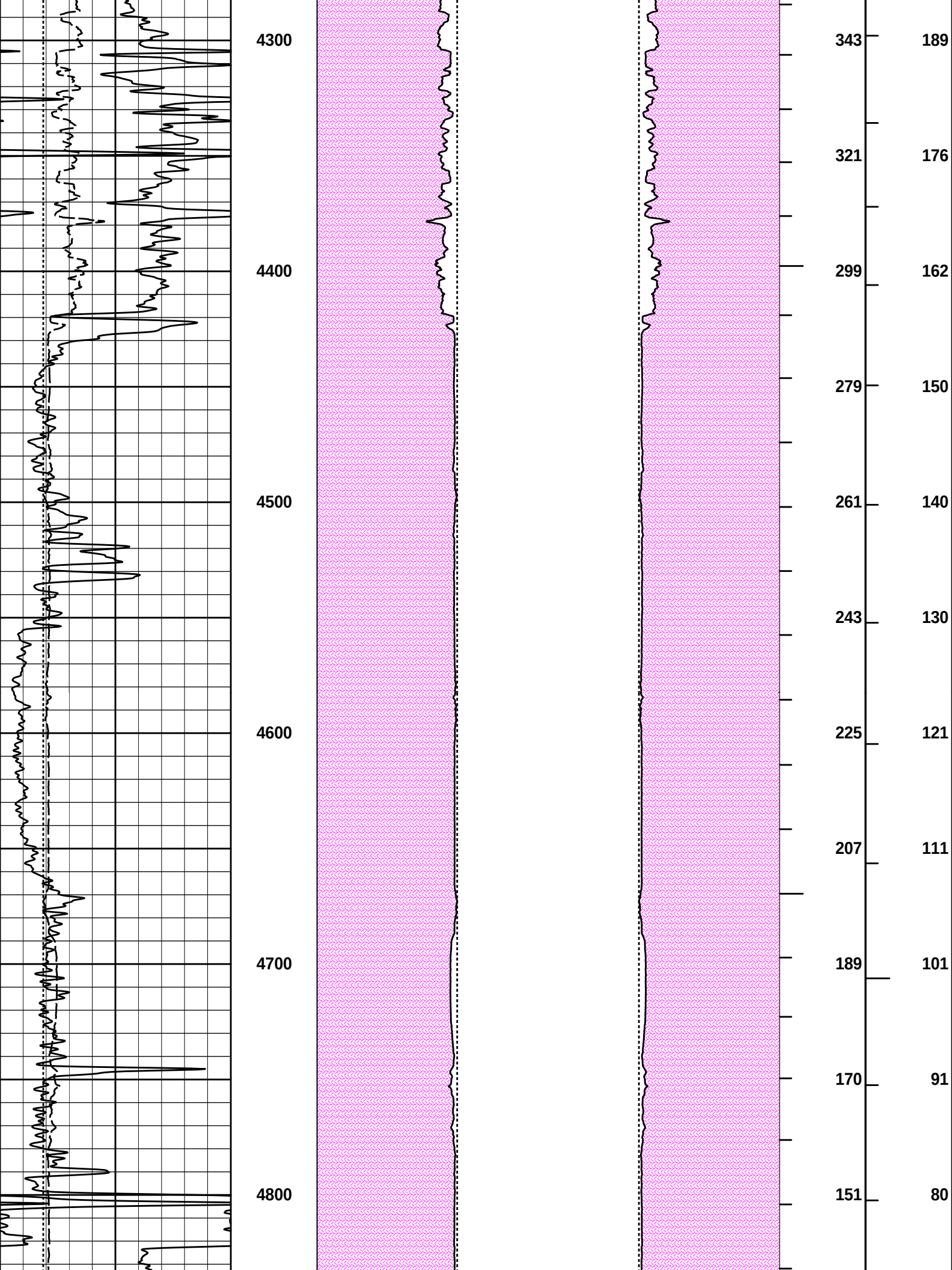
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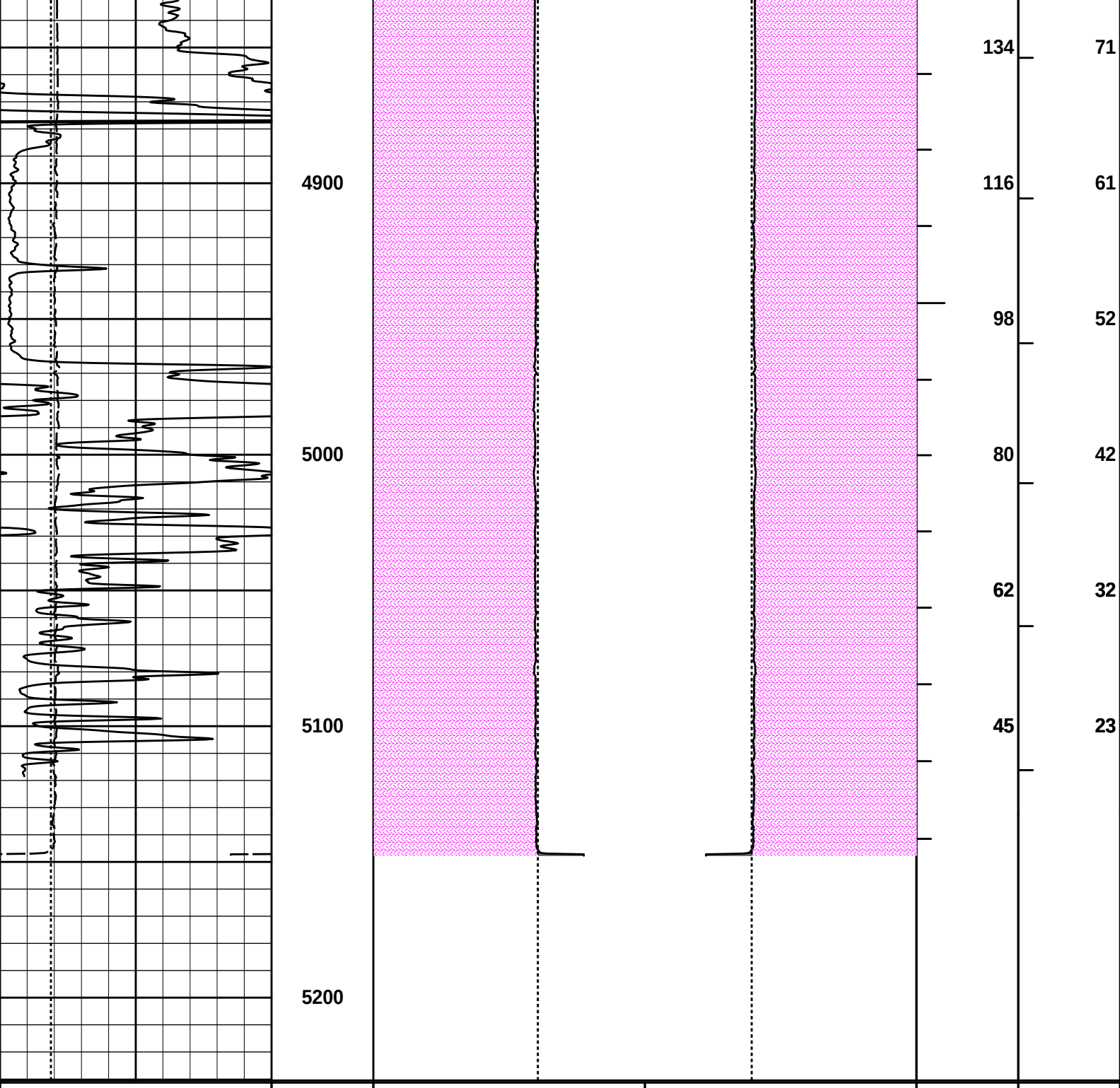

6 Caliper 16	MD 1 : 600 ft	20 Caliper 0	0 Caliper 20	BHVT	AHVT
inches		inches	inches		
6 Bit Size 16		20 Bit Size 0	0 Bit Size 20		
inches					
0 Gamma API 150		MUDCAKE	MUDCAKE		
api					

HALLIBURTON

Plot Time: 21-May-14 05:57:46
Plot Range: 2495 ft to 5230.5 ft
Data: WINDSOR3404_129\Well Based\R1 DETAIL\
Plot File: \\-LOCAL-\WINDSOR3404_129\Well Based\POROSITY\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT

COMPANY	**SANDRIDGE ENERGY**		
WELL	**WINDSOR SWD 3404 1-29**		
FIELD	**BLUFF**		
COUNTY	**SUMNER**	STATE	**KANSAS**

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
LOG