

Company: Caerus Piceance LLC

Well: Puckett 42B-2

Field: Wildcat

County: Garfield State: Colorado

Reservoir Saturation Tool
Sigma

County:	Garfield			
Field:	Wildcat			
Location:	SHL: S2, T7S, R97W			
Well:	Puckett 42B-2			
Company:	Caerus Piceance LLC			
Location:		SHL: S2, T7S, R97W	Elev.:	K.B. 8509.00 ft
		2197' FNL & 65'1' FEL		G.L. 8479.00 ft
		LAT: 39.475758 / LONG: -108.180308		D.F. 8509.00 ft
Permanent Datum:		Ground Level	Elev.:	8479.00 f
Log Measured From:		Kelly Bushing	30.00 ft	above Perm.Datum
Drilling Measured From:		Kelly Bushing		
API Serial No.	Section:	2	Township:	Range:
05-045-22626			7S	97W
Logging Date	24-Jul-2015			

Run Number	ONE		
Depth Driller	8915.00 ft		
Schlumberger Depth	8874.00 ft		
Bottom Log Interval	8874.00 ft		
Top Log Interval	2500.00 ft		
Casing Fluid Type	3% KCl		
Salinity			
Density	9 lbm/gal		
Fluid Level	0.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.75 in		
From	2535.00 ft		
To	8915.00 ft		
Casing/Tubing Size	4.5 in		
Weight	11.6 lbm/ft		
Grade	P110		
From	0.00 ft		
To	8911.00 ft		
Max Recorded Temperatures	228 degF		
Logger on Bottom	24-Jul-2015	08:18:00	
Unit Number	Location:	Time	
2135	Benjamin Mammon	Fort Morgan, CO	
Recorded By			
Witnessed By	Natalie Naeve		

Disclaimer

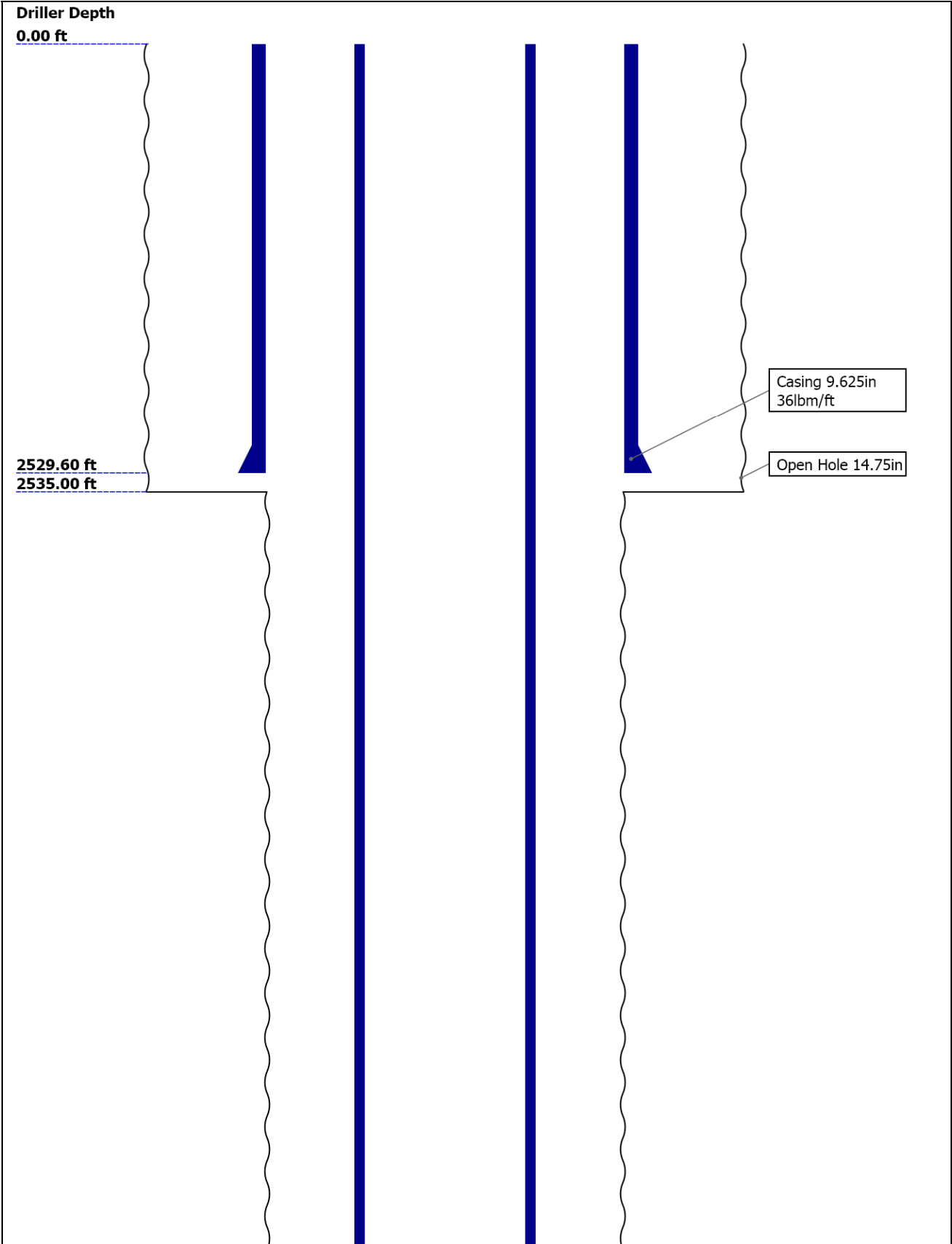
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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Well Sketch



8911.00 ft

8915.00 ft

Casing 4.5in
11.6lbm/ft

Open Hole 8.75in

Borehole Size/Casing/Tubing Record

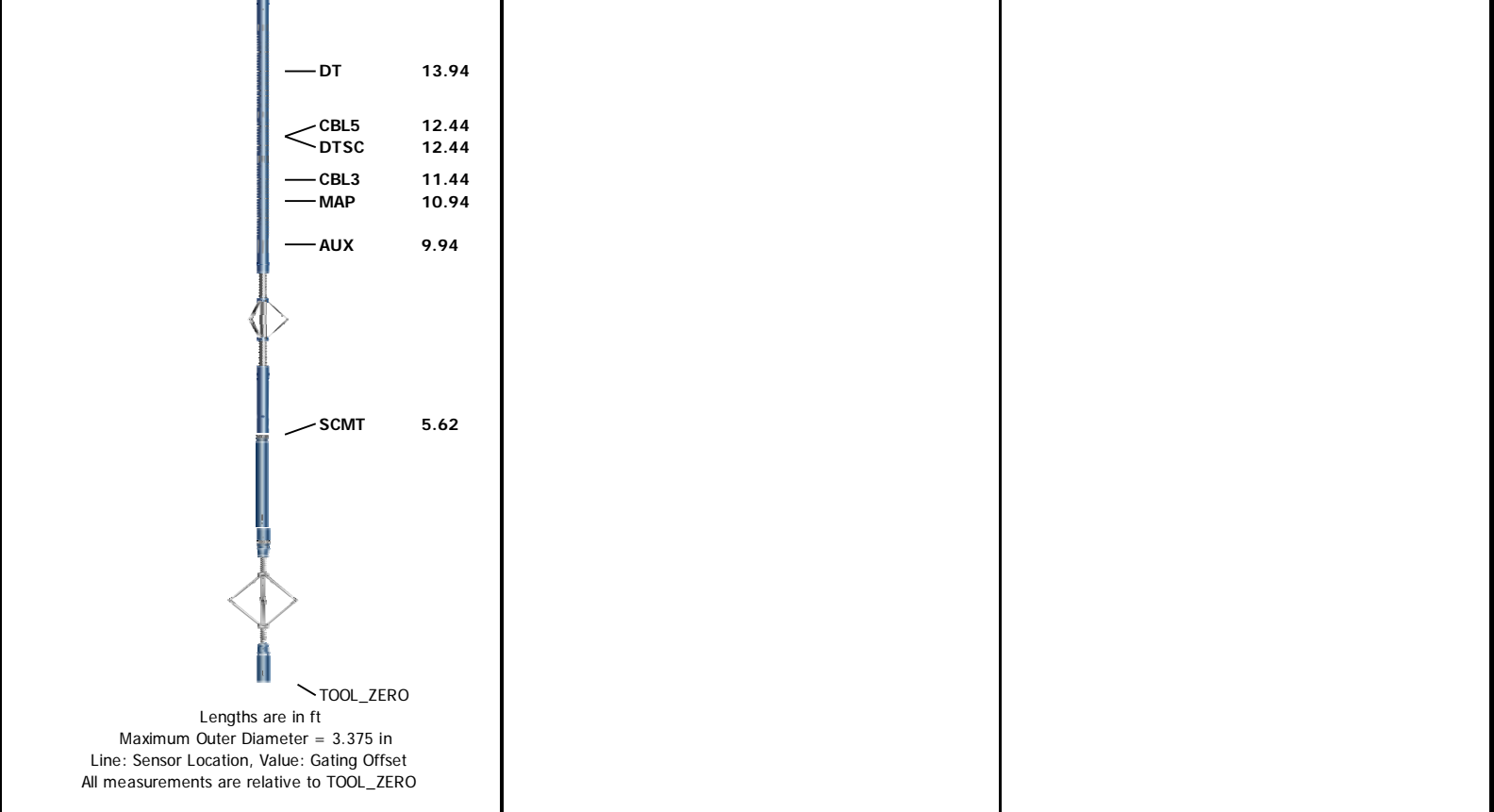
Bit						
Bit Size (in)	14.75	8.75				
Top Driller (ft)	0	2535				
Top Logger (ft)	0	2535				
Bottom Driller (ft)	2535	8915				
Bottom Logger (ft)	2535	8915				
Casing						
Size (in)	9.625	4.5				
Weight (lbm/ft)	36	11.6				
Inner Diameter (in)	8.921	4				
Grade	J55	P110				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	2529.6	8911				
Bottom Logger (ft)	2529.6	8911				

Operational Run Summary

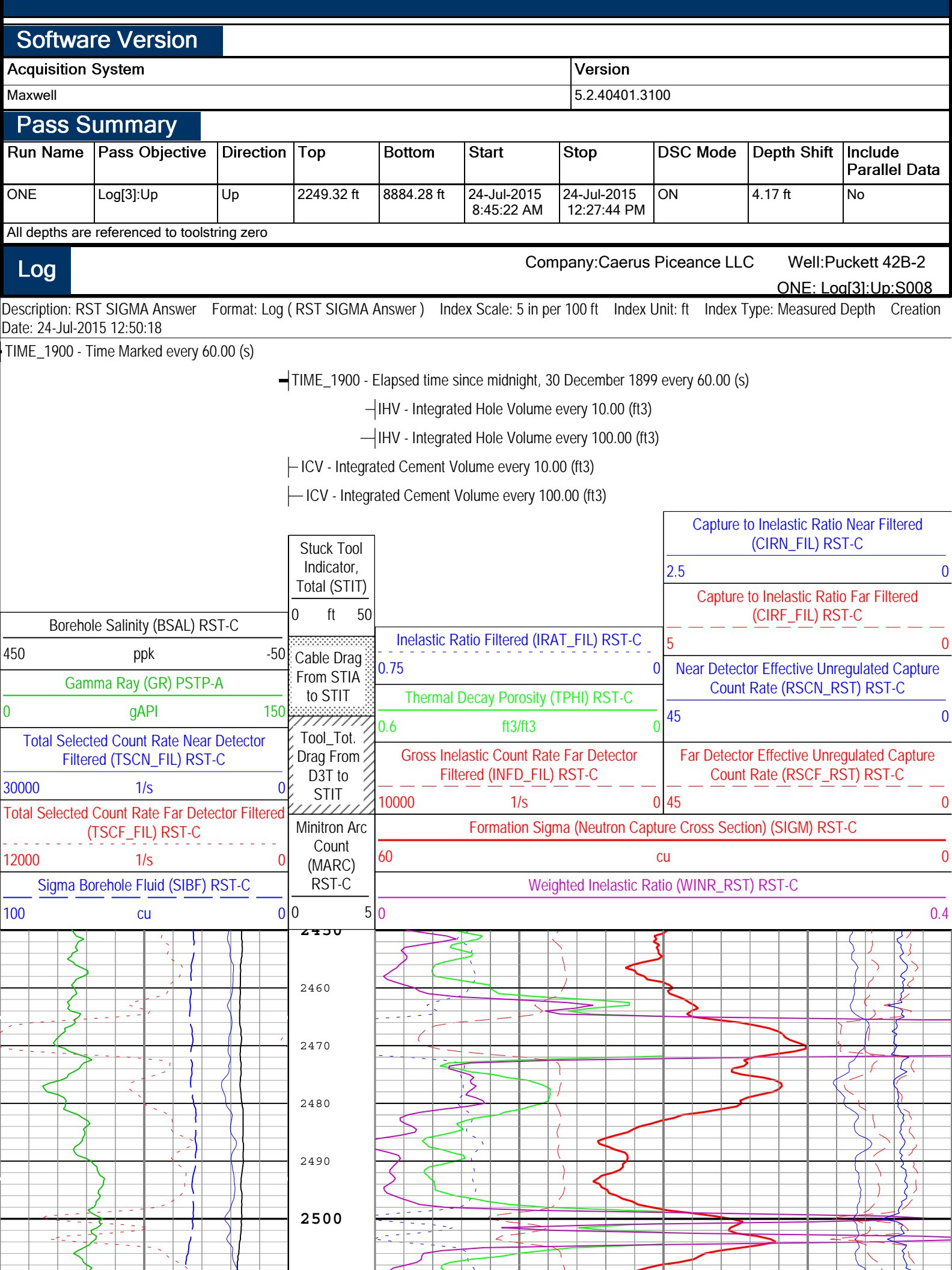
Parameter (unit)	ONE					
Date Log Started	24-Jul-2015					
Time Log Started	06:56:06					
Date Log Finished	24-Jul-2015					
Time Log Finished	12:36:37					
Top Log Interval (ft)	2500.00					
Bottom Log Interval (ft)	8874.00					
Total Depth (ft)	8874.00					
Max Hole Deviation (deg)	0.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.750					
Logging Unit Number	2135					
Logging Unit Location	Fort Morgan, CO					
Recorded By	Benjamin Marmon					

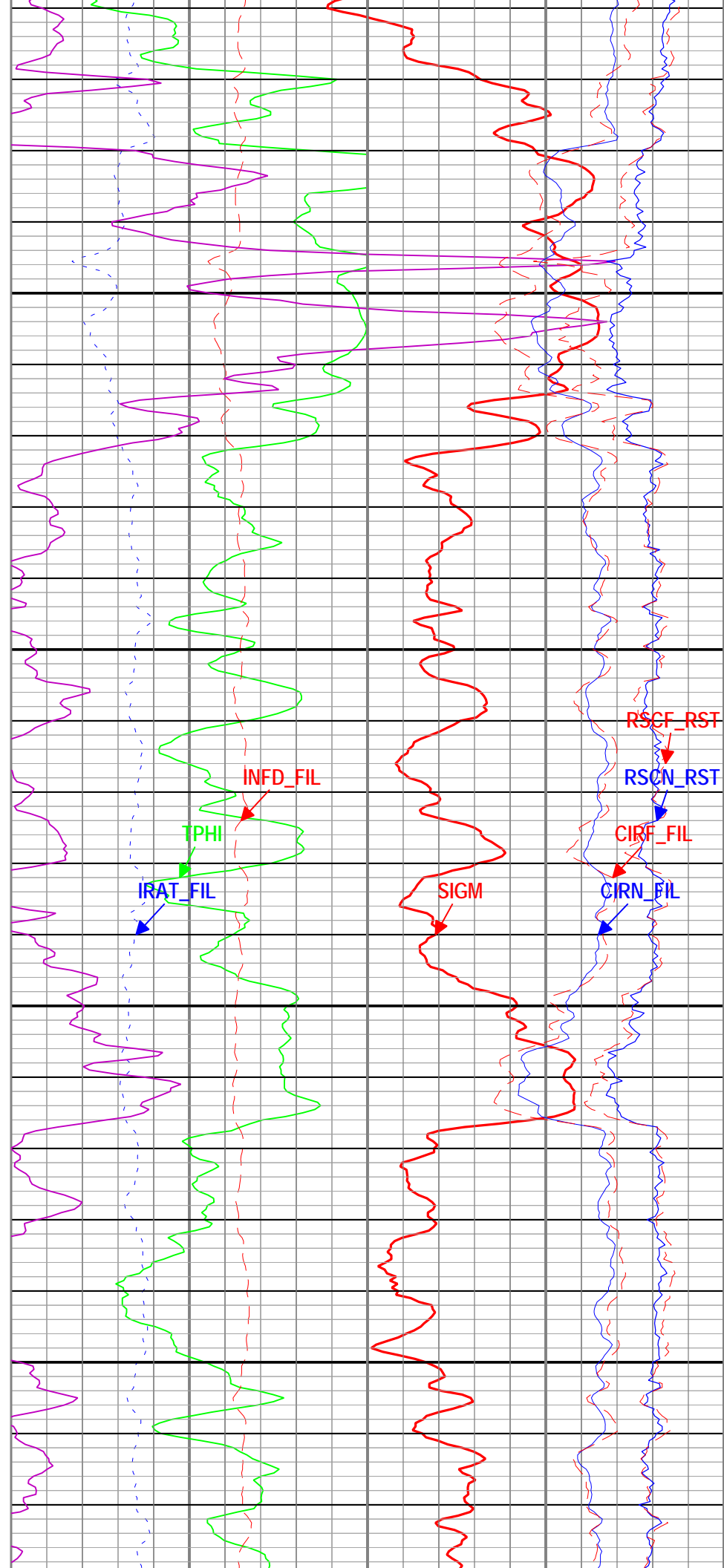
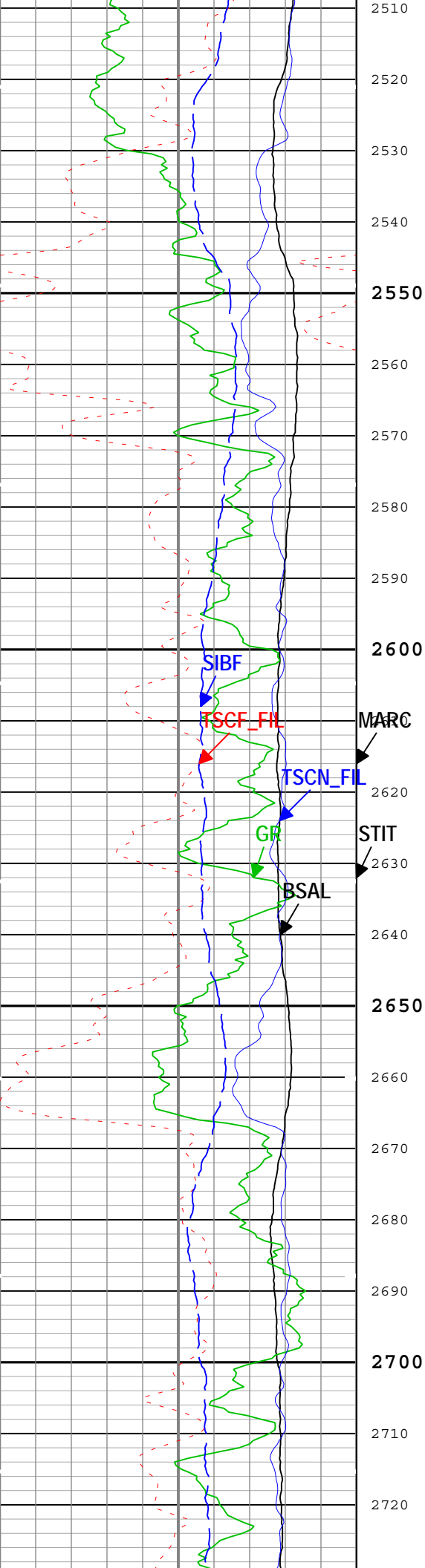
Remarks and Equipment Summary

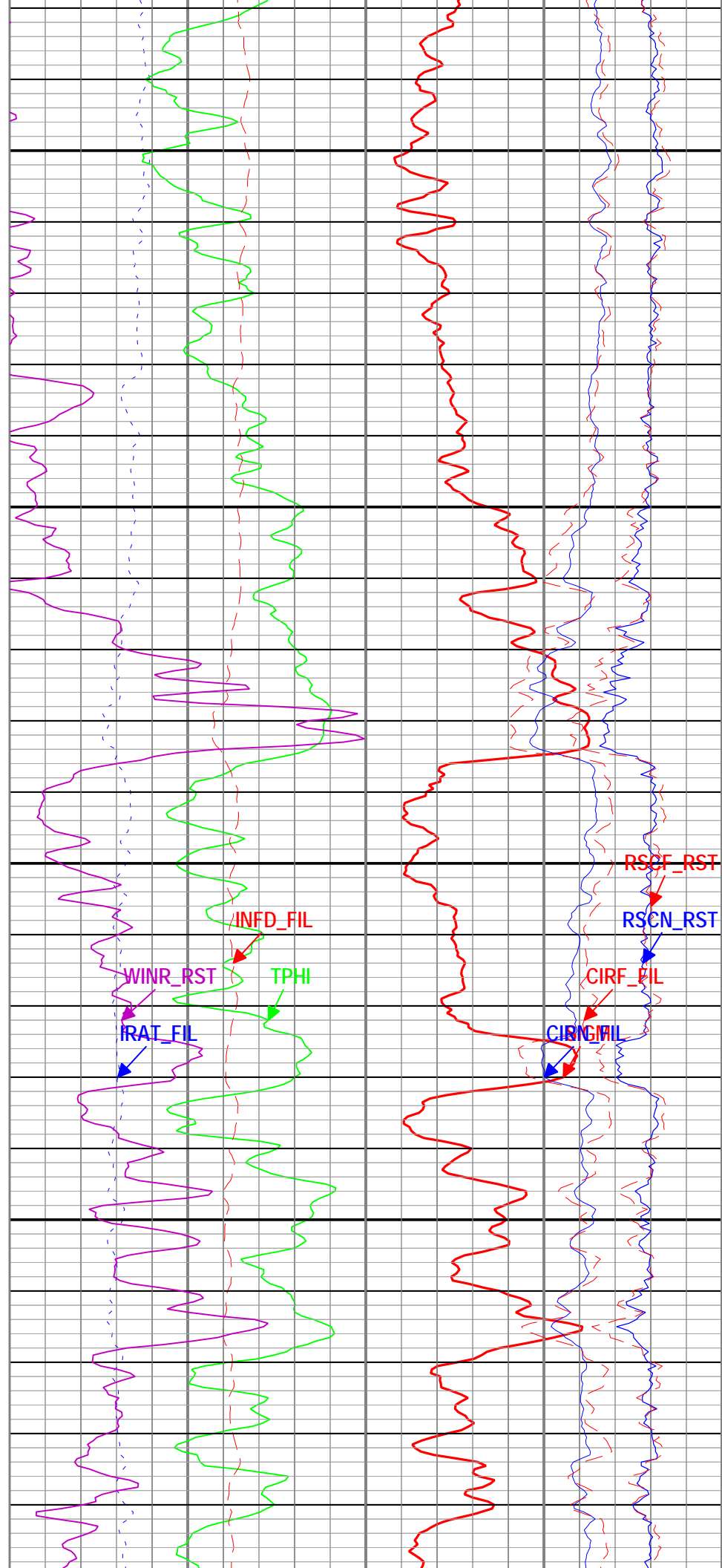
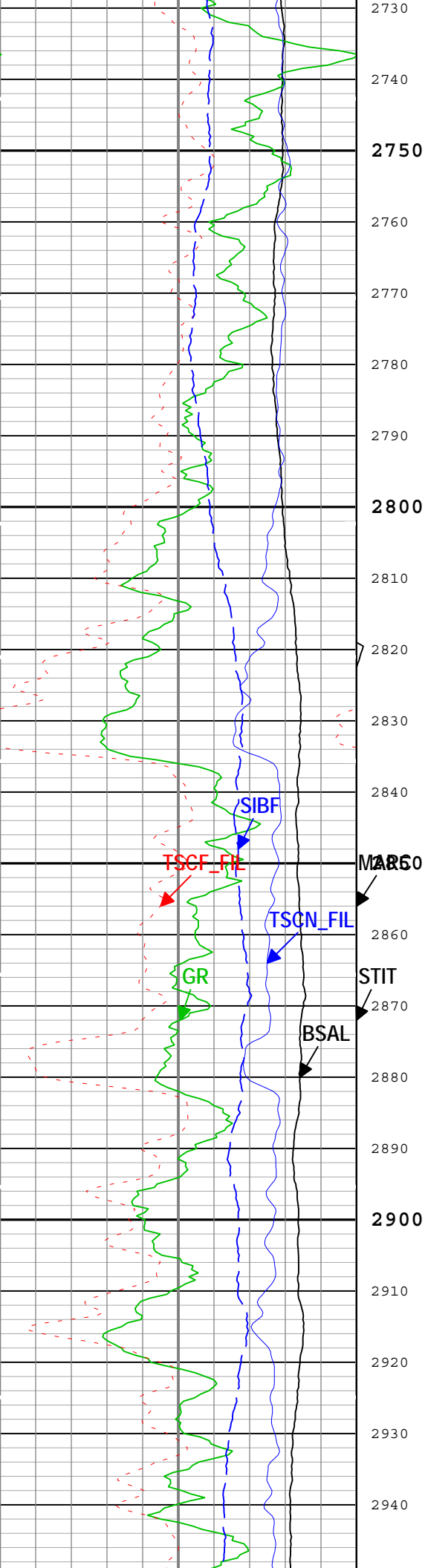
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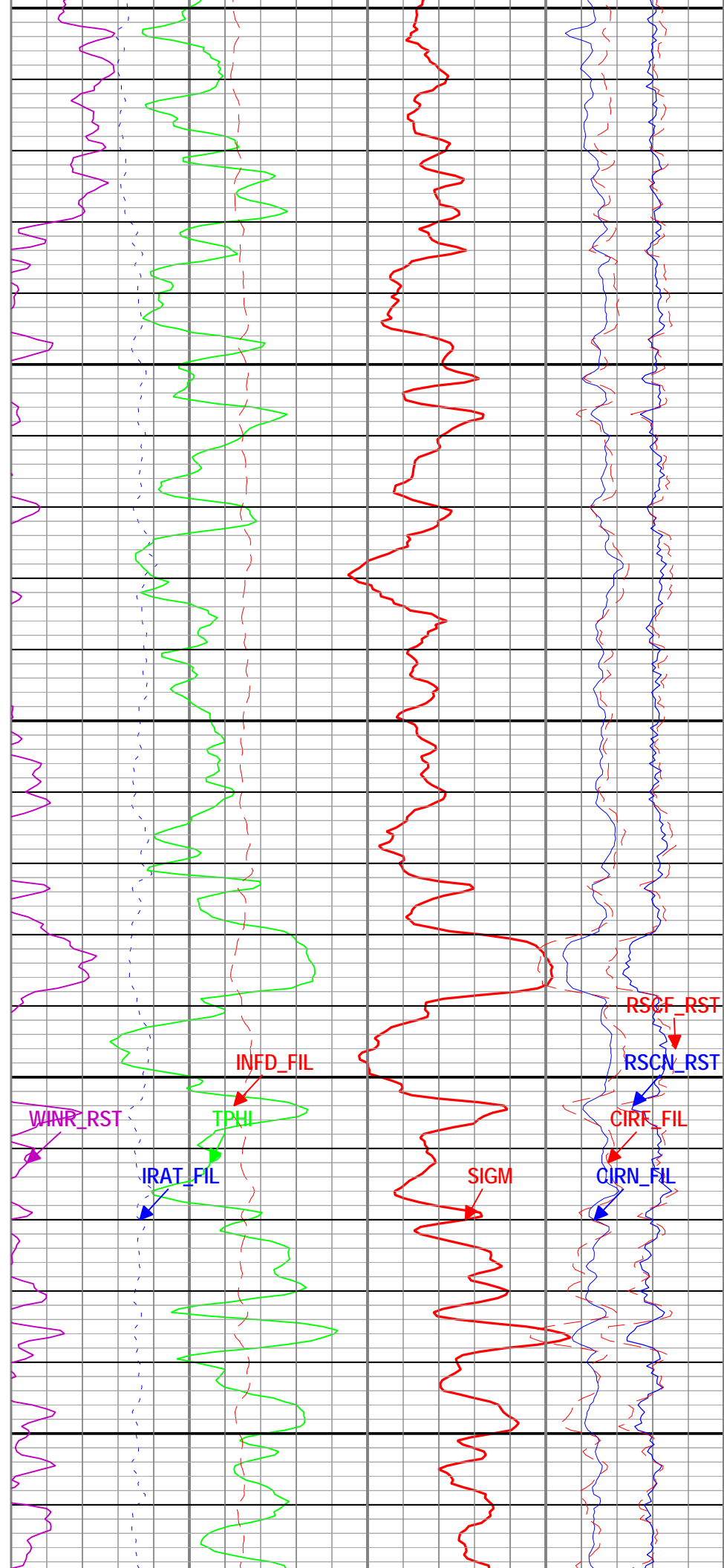
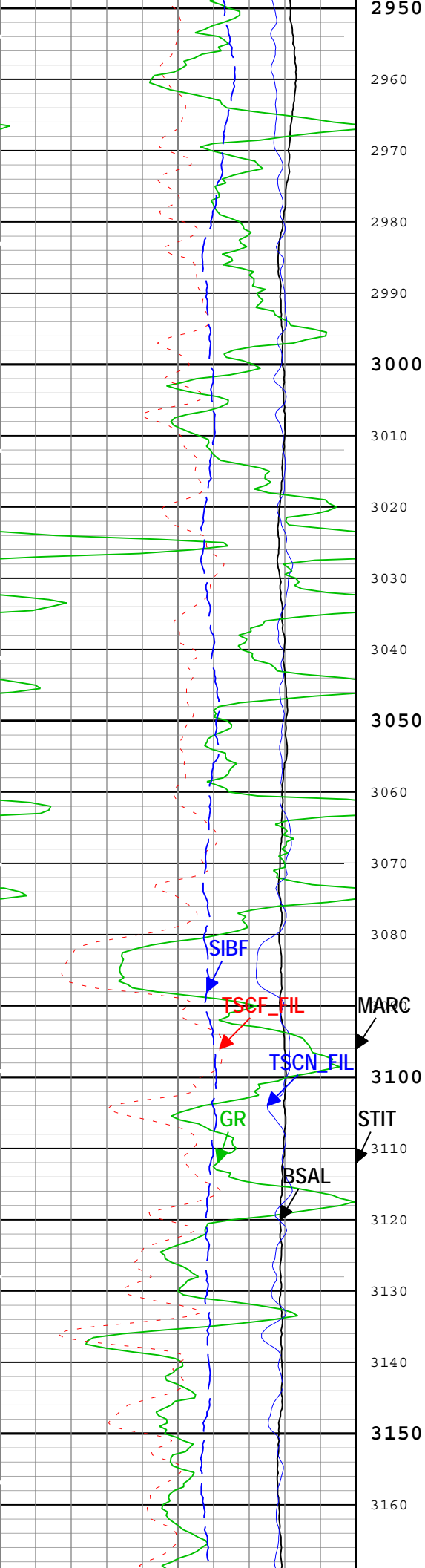


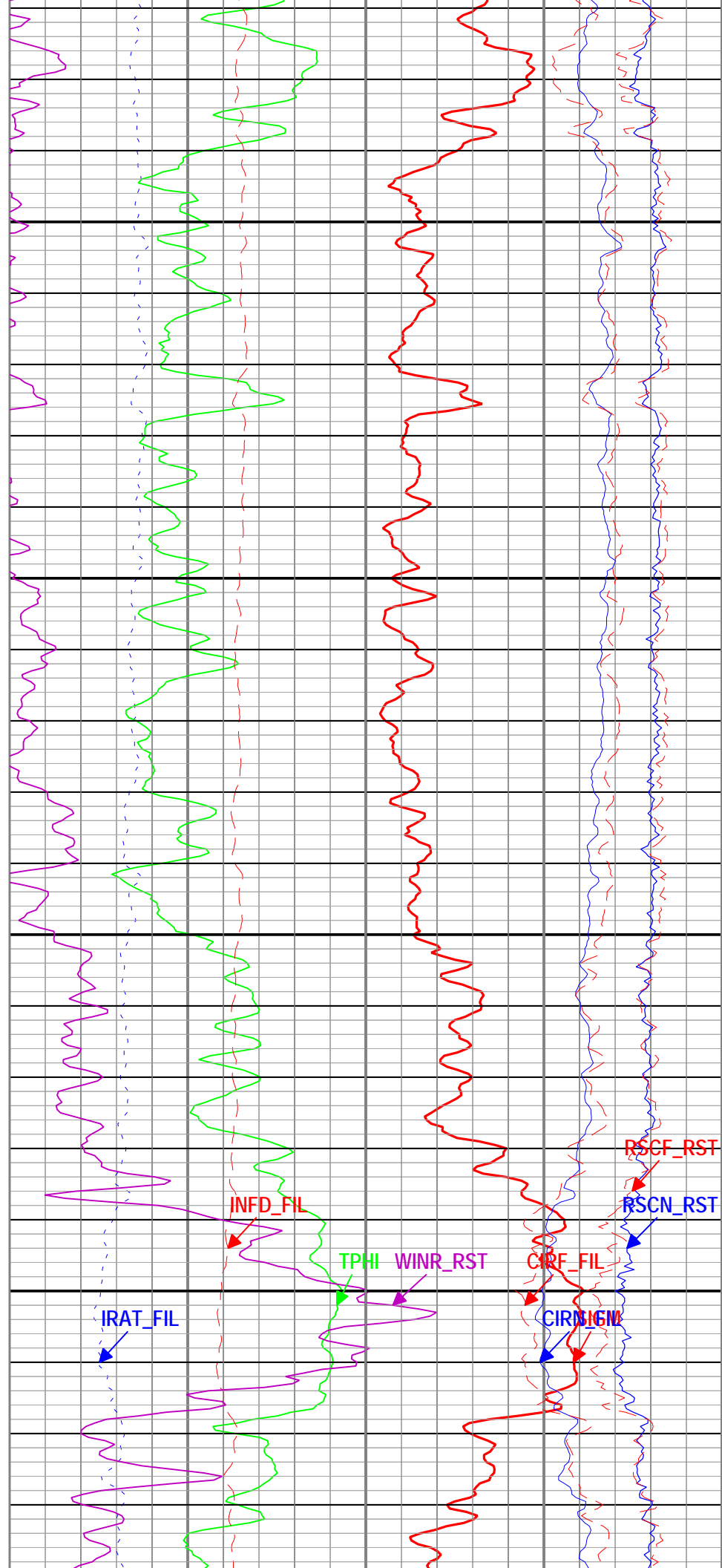
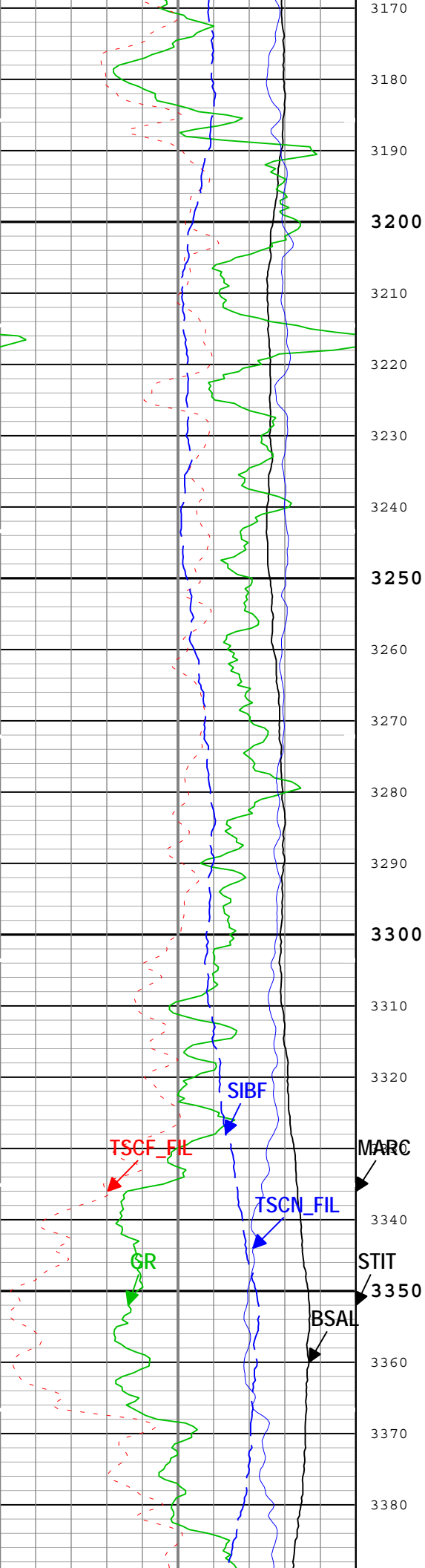
Depth Summary				
		ONE		
Depth Measuring Device				
Type	IDW-B			
Serial Number				
Calibration Date				
Calibrator Serial Number				
Calibration Cable Type				
Wheel Correction 1	0			
Wheel Correction 2	0			
Tension Device				
Type	CMTD-B/A			
Serial Number				
Calibration Date				
Calibrator Serial Number				
Number of Calibration Points	0			
Logging Cable				
Type	7-46A-XS			
Serial Number				
Length	21000.00 ft			
Conveyance Type	Wireline			
Rig Type	Crane			
ONE:Depth Control Parameters			Depth Control Remarks	
Log Sequence	First Log In the Well		All Schlumberger depth control procedures followed during logging operations.	
Rig Up Length At Surface			IDW used as primary depth control meausrement.	
Rig Up Length At Bottom			Z-Chart used as secondary depth control measure.	
Rig Up Length Correction				
Stretch Correction				
Tool Zero Check At Surface				

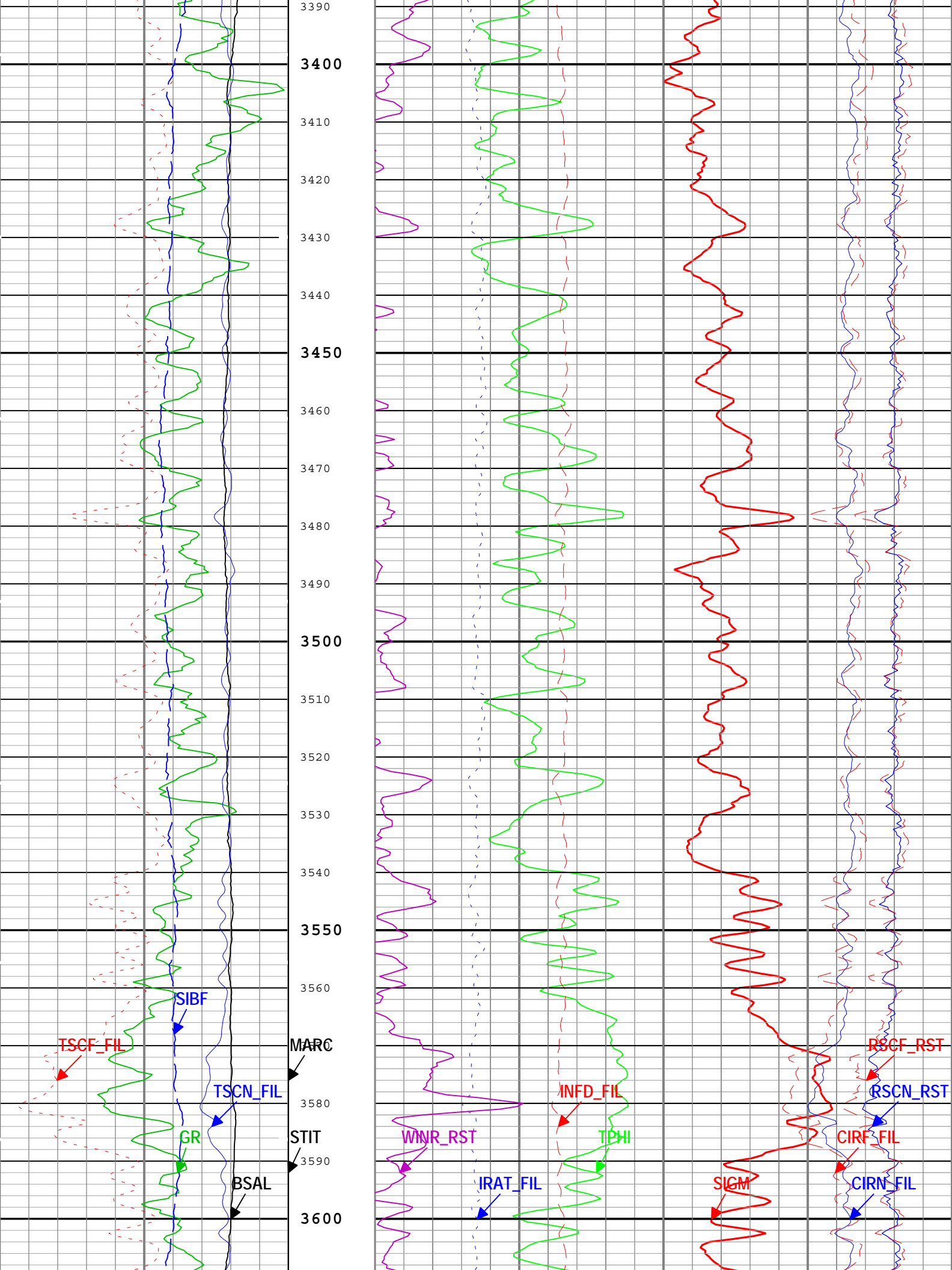


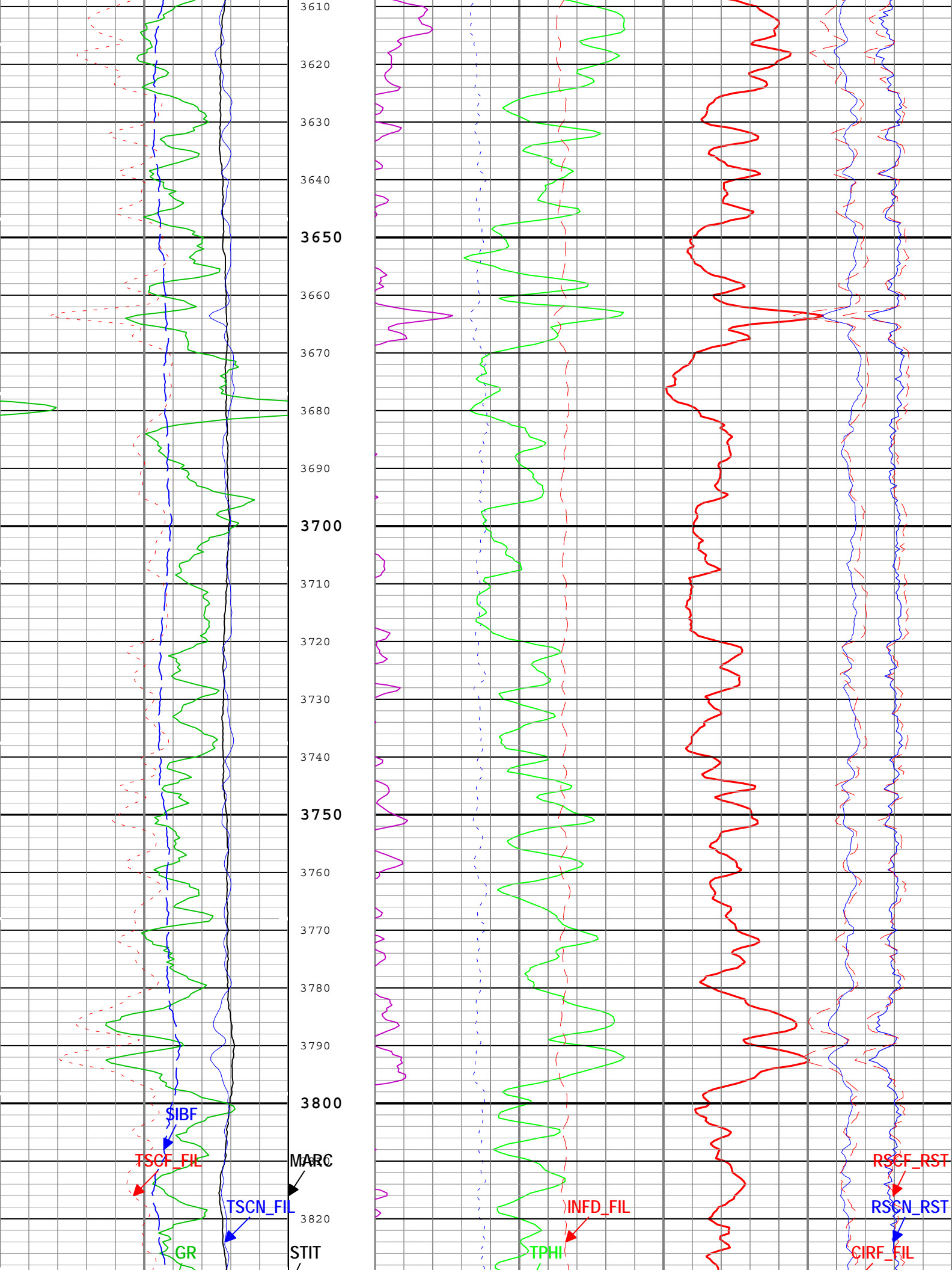


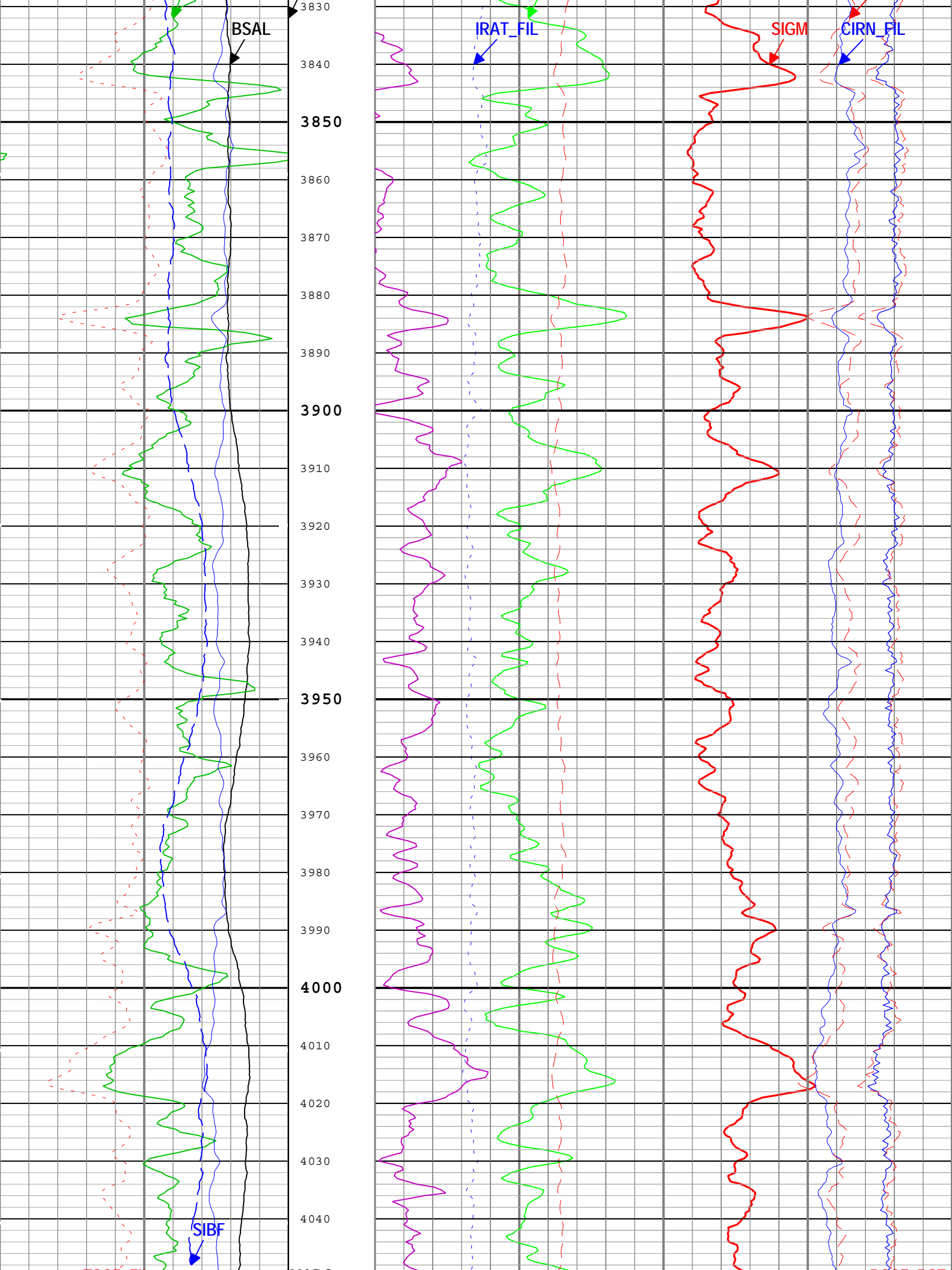


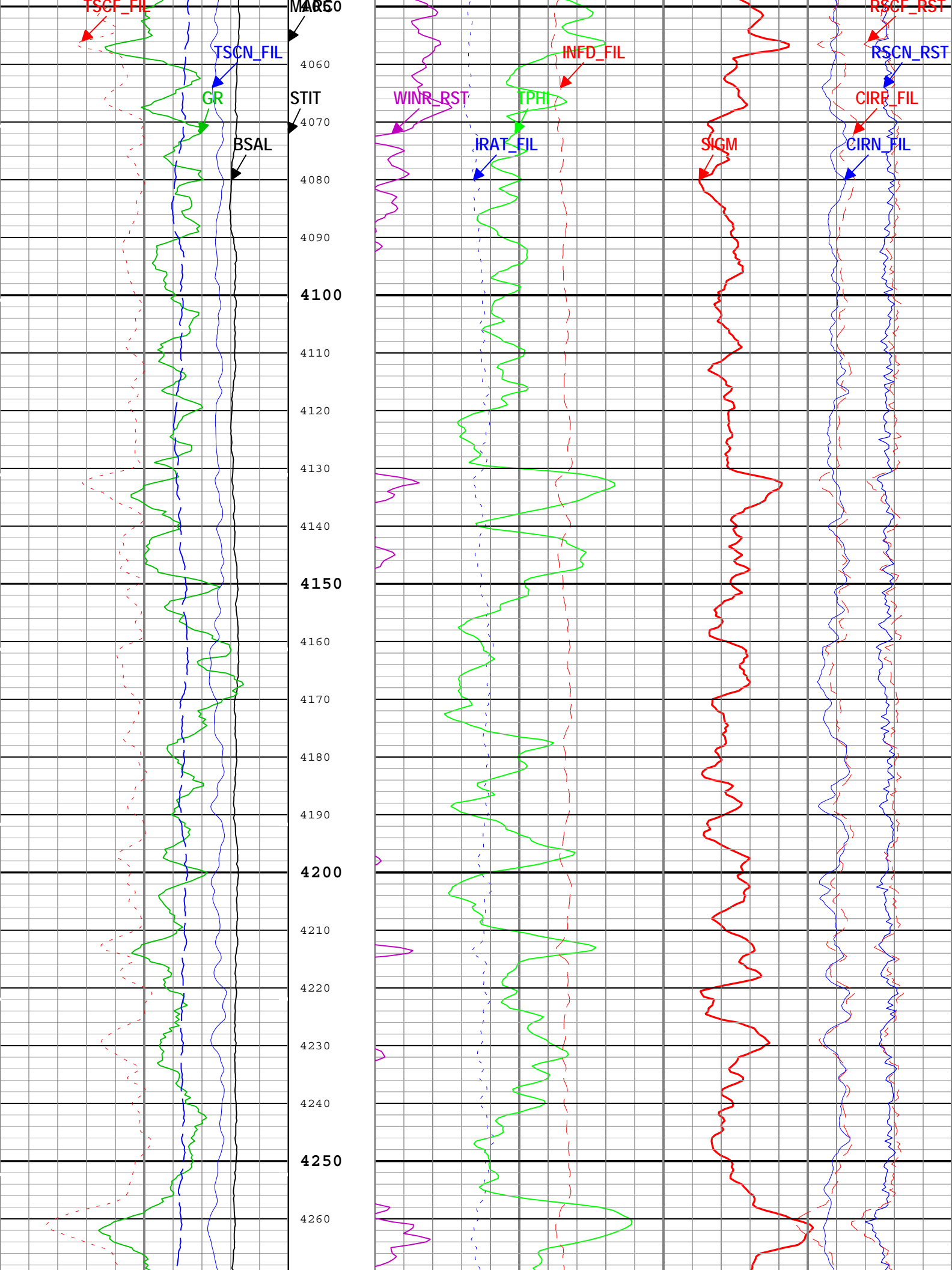


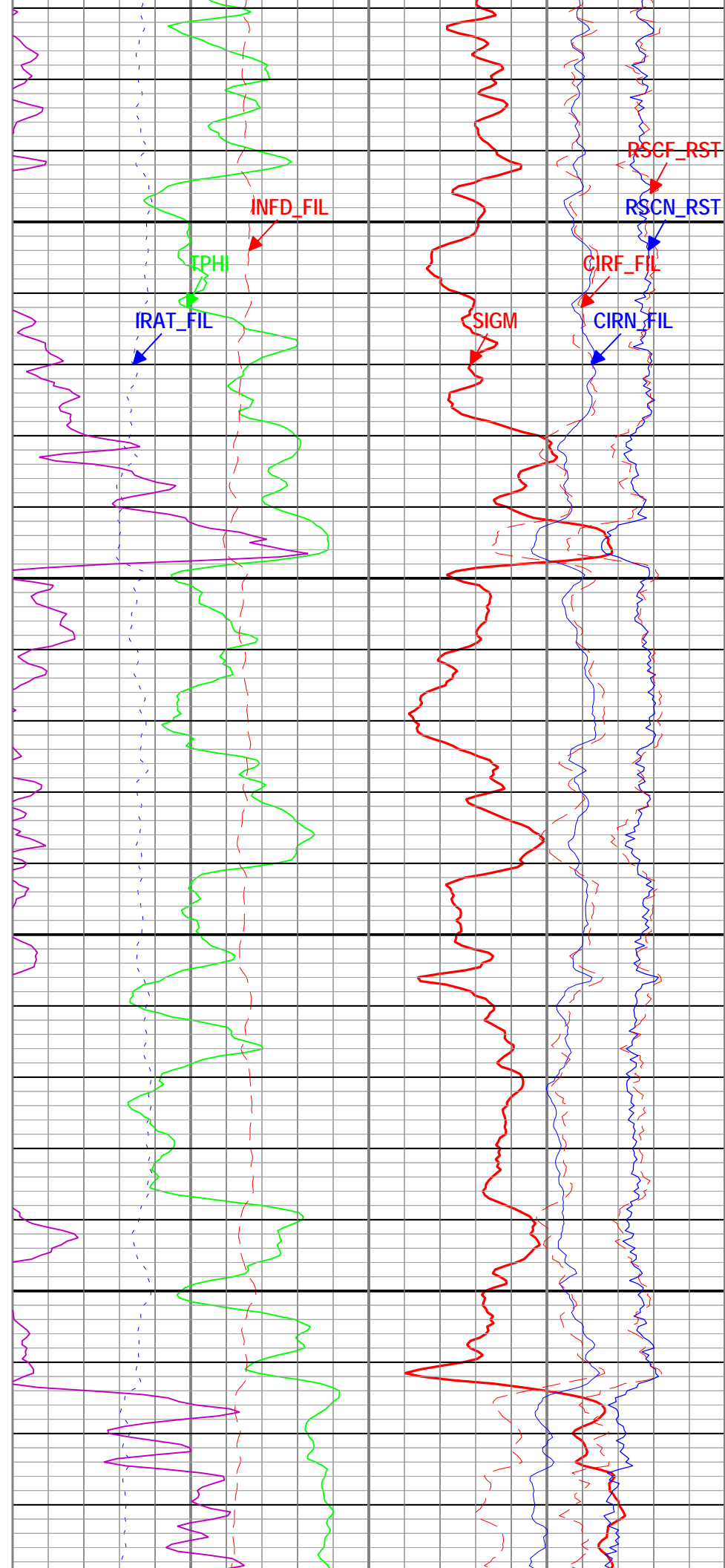
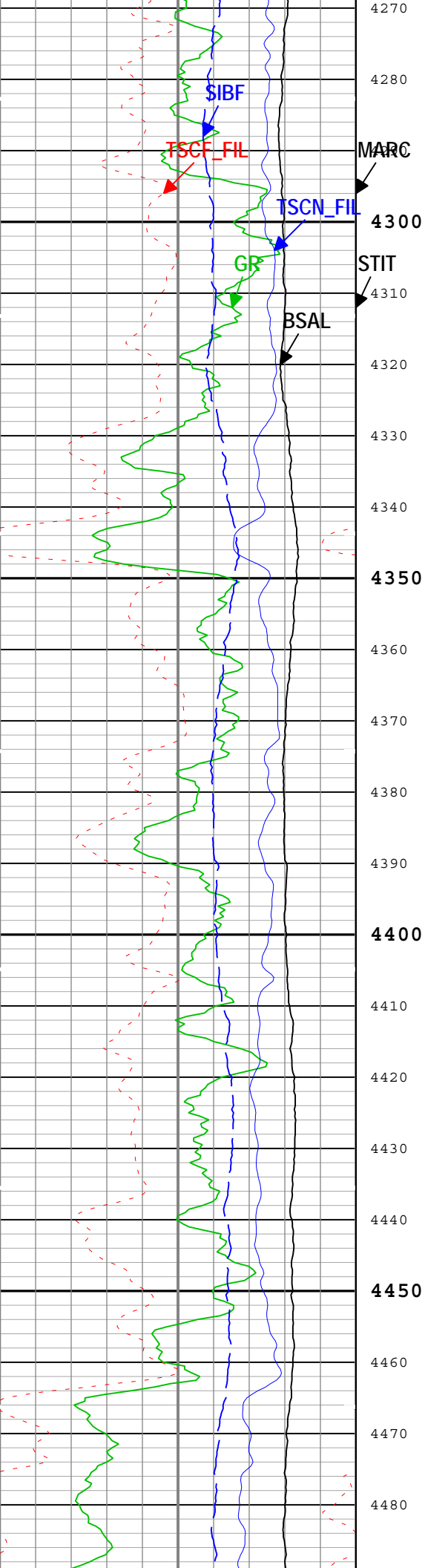


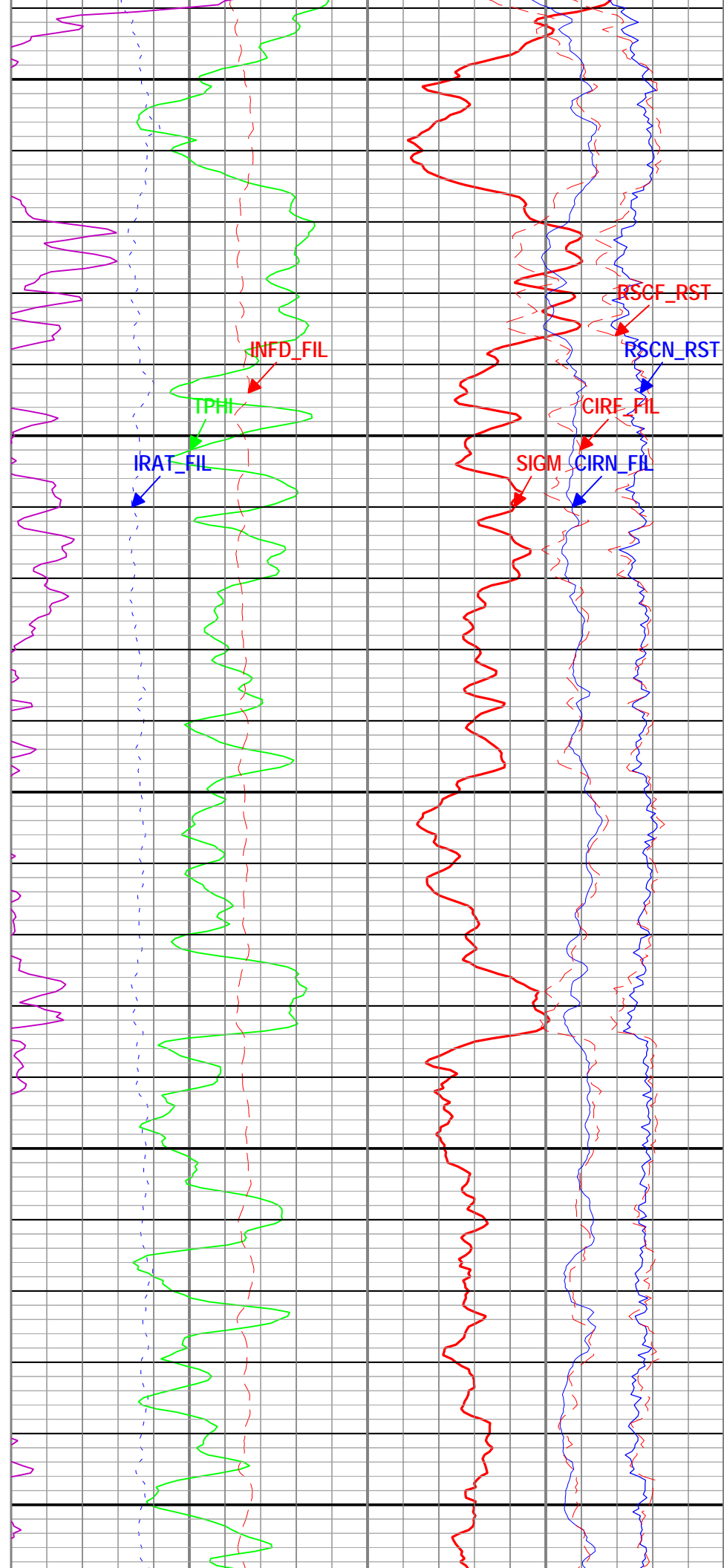
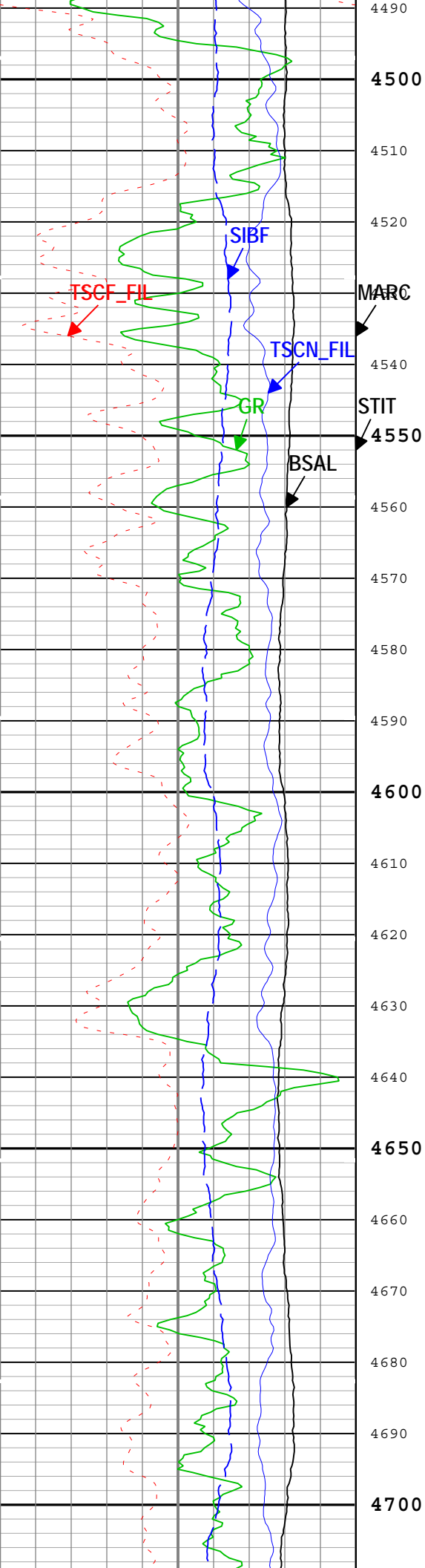


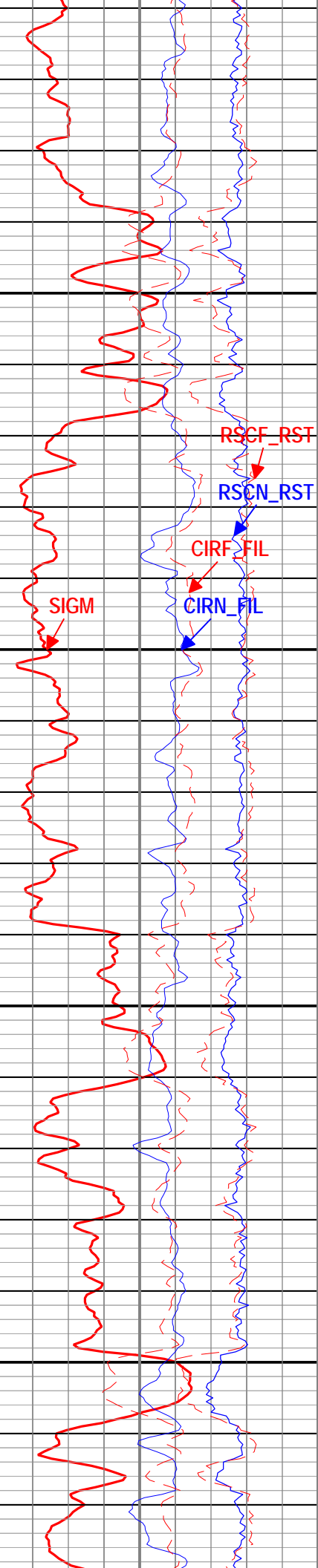
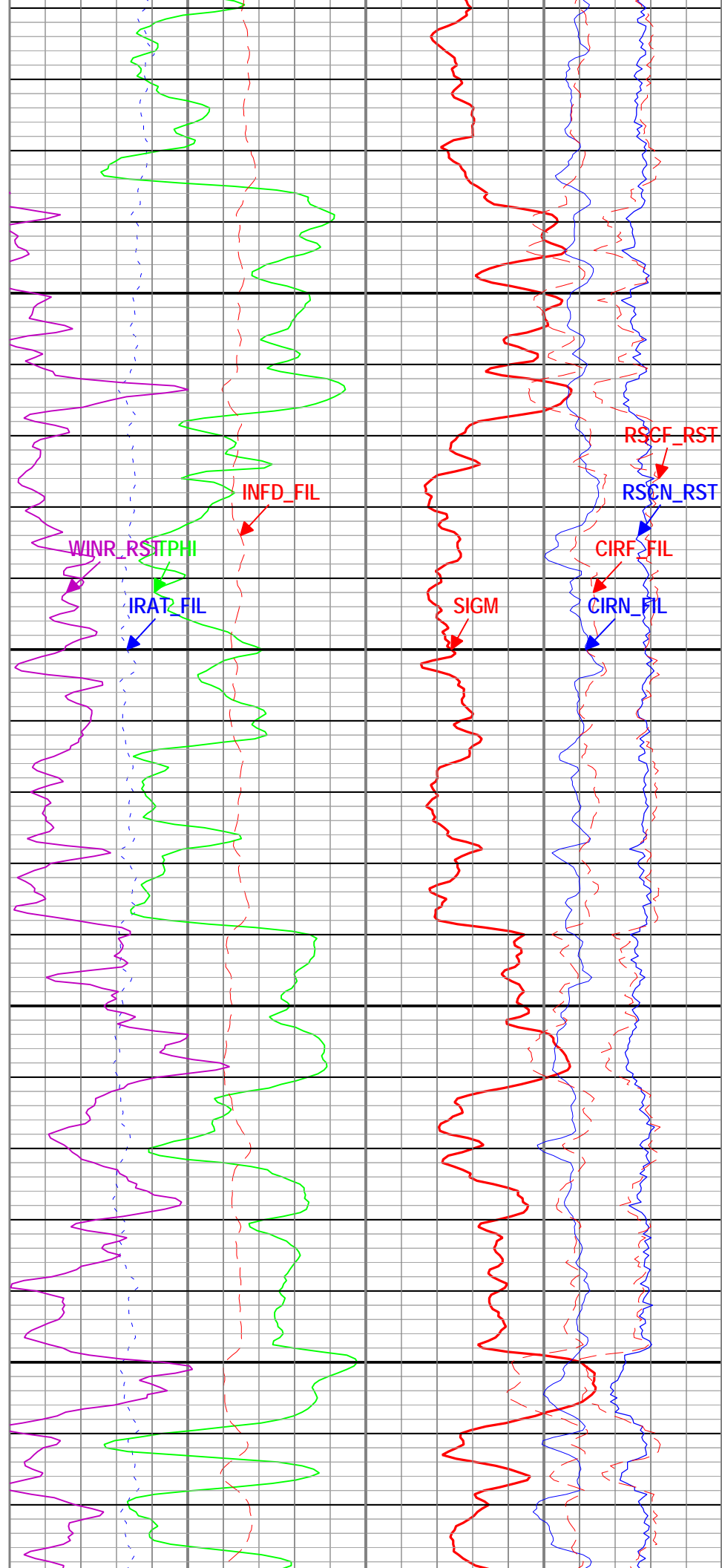
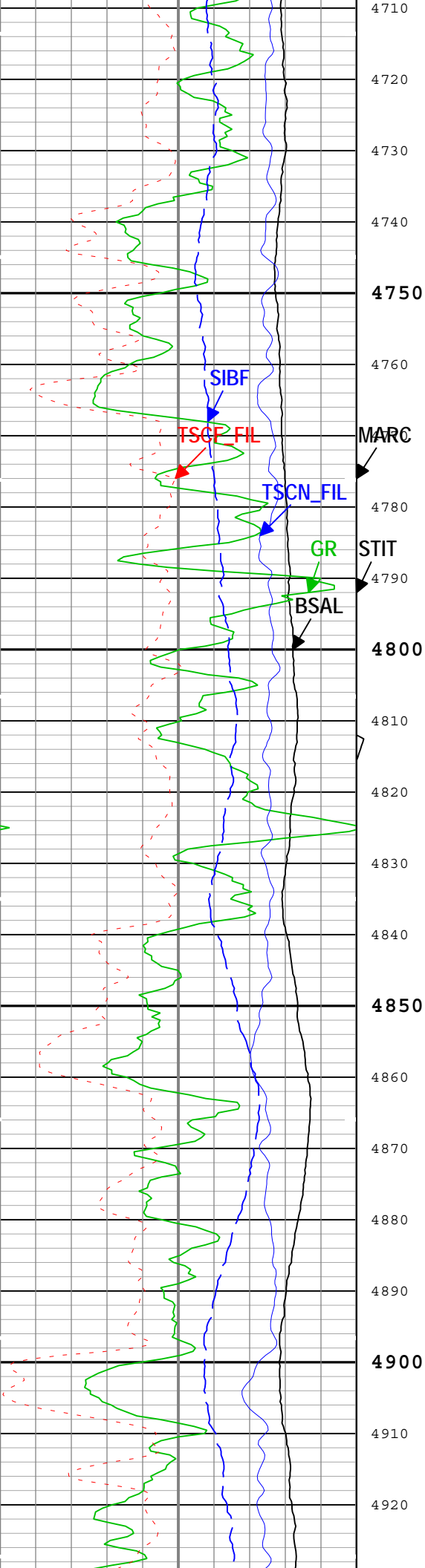


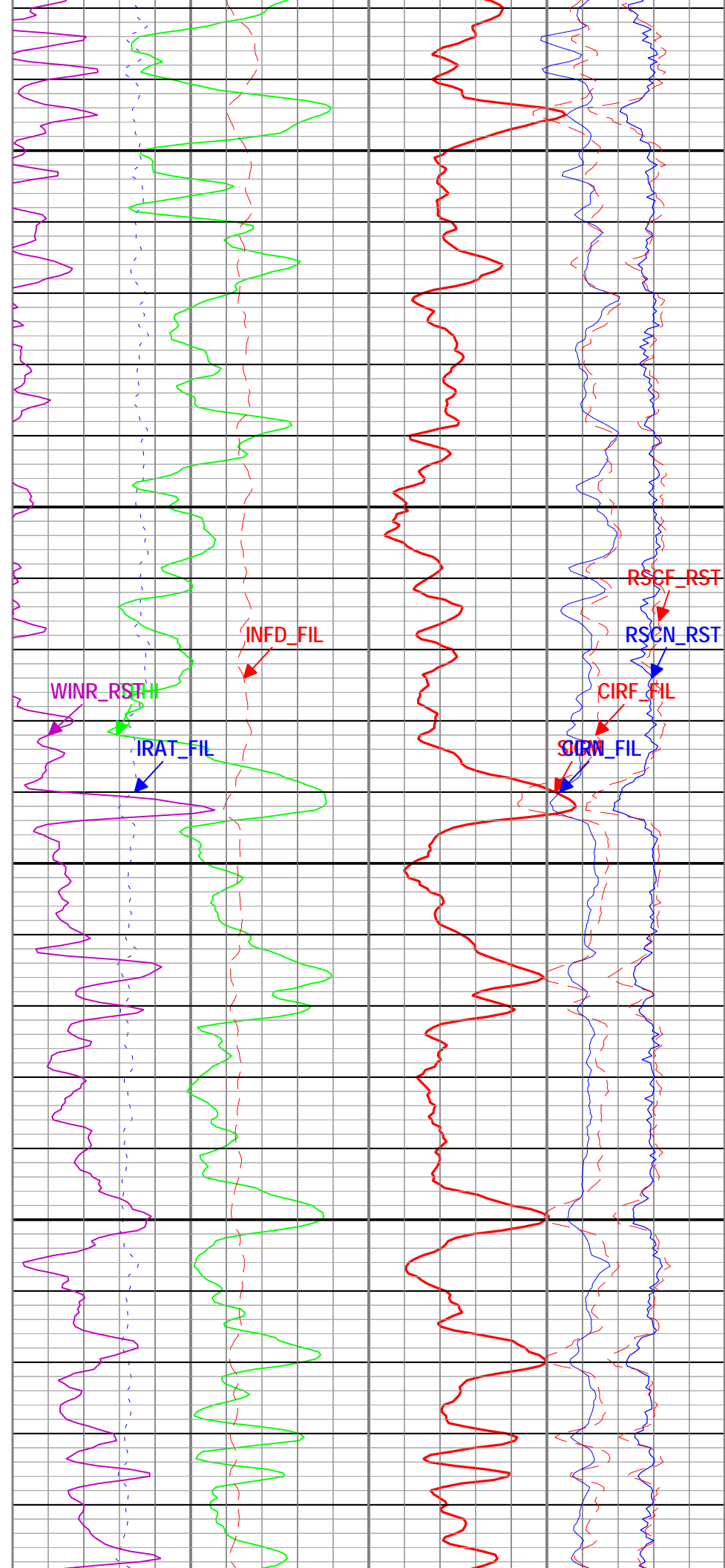
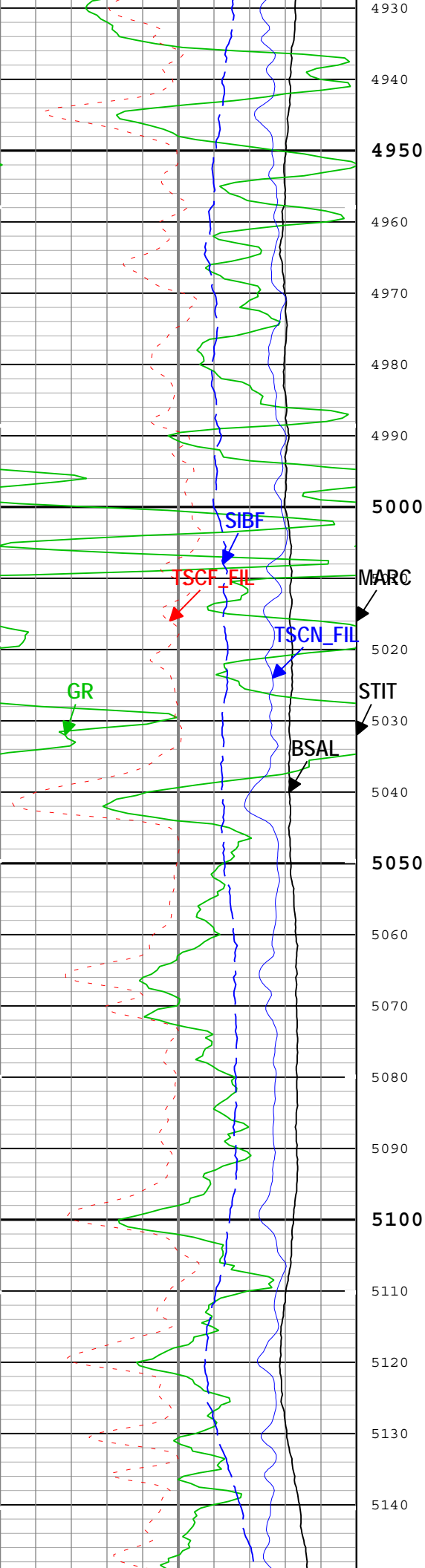


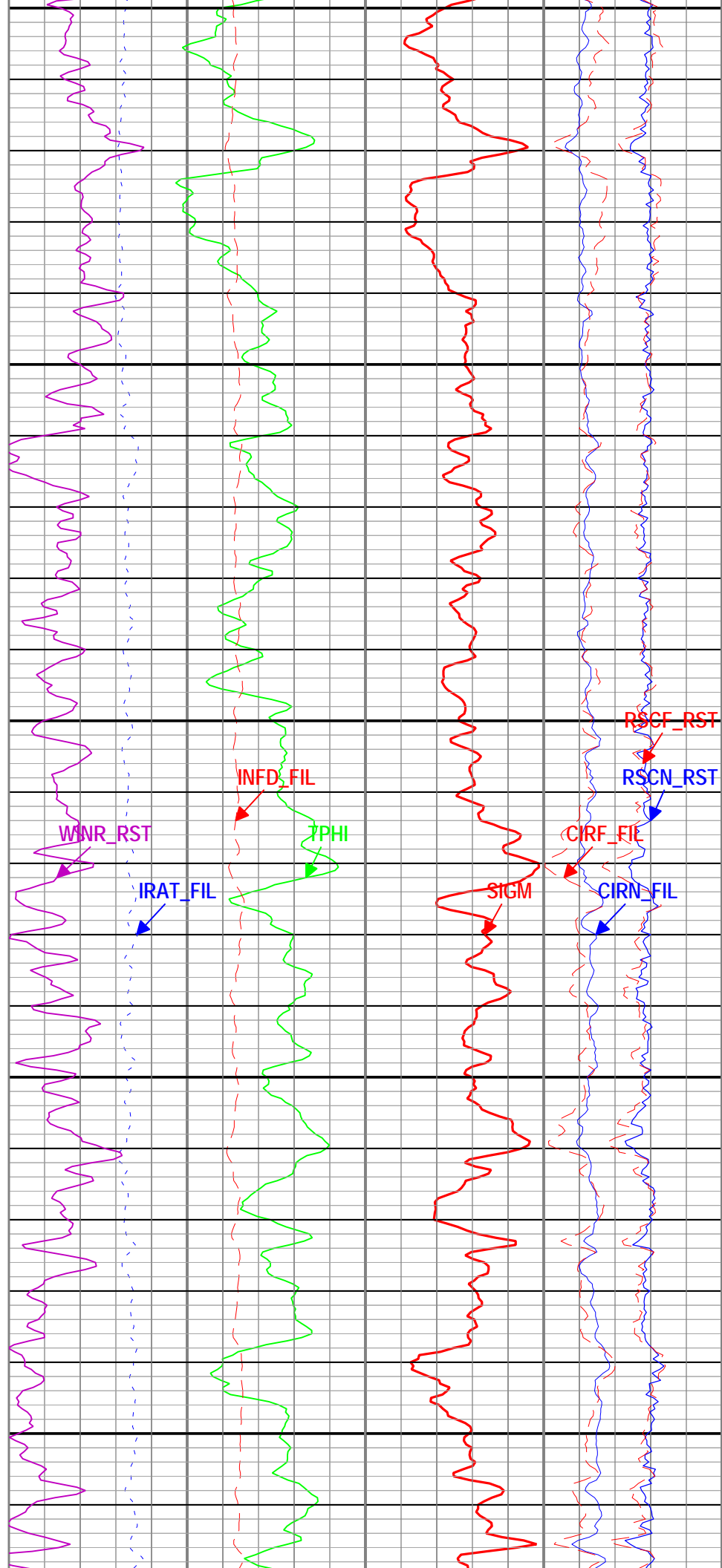
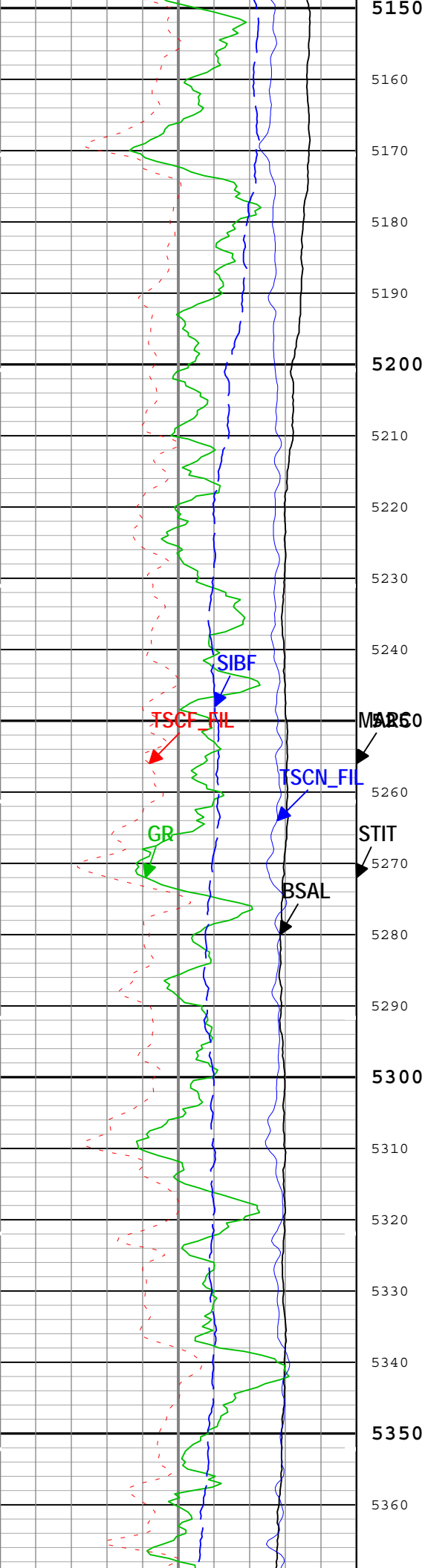


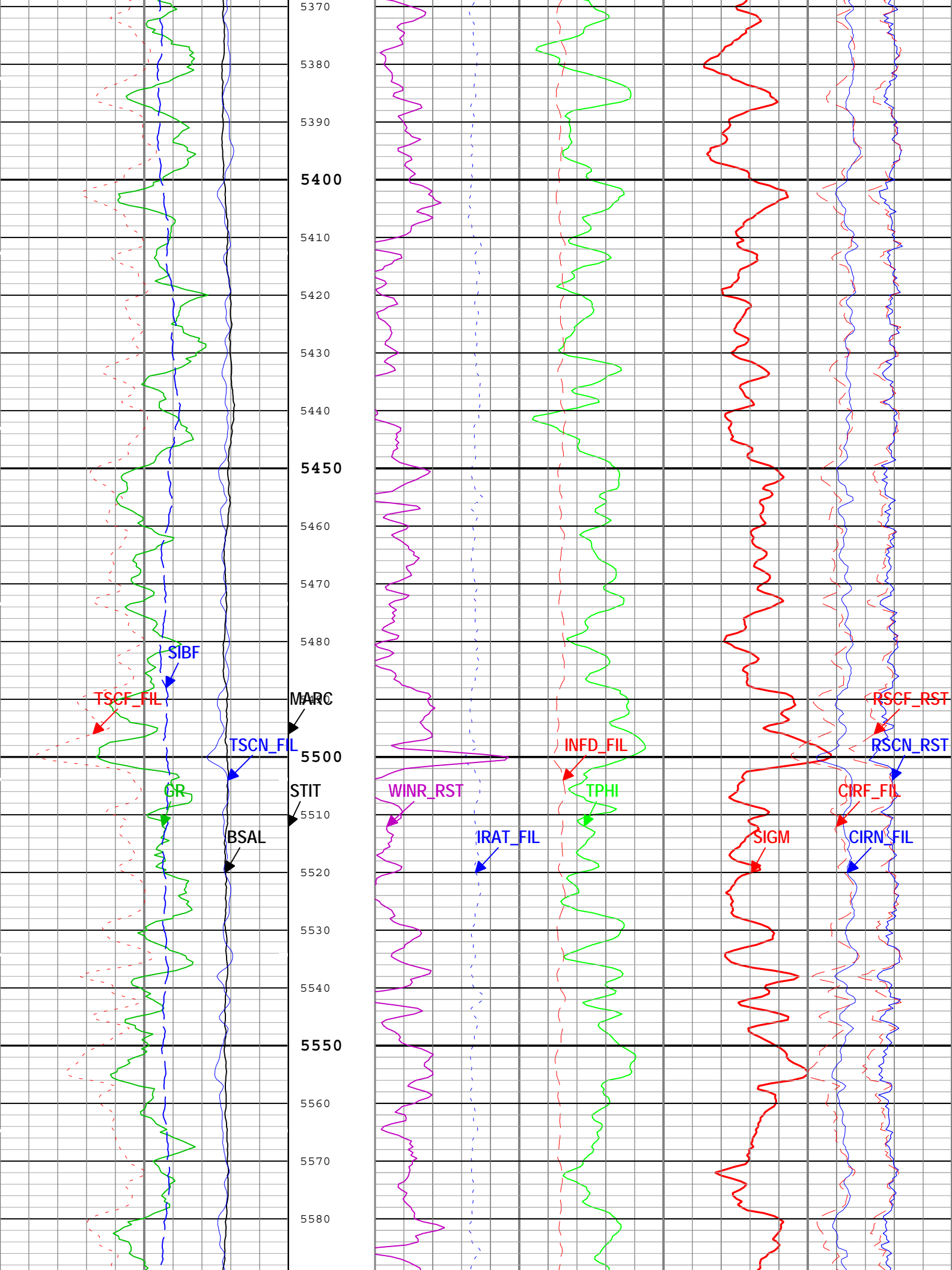


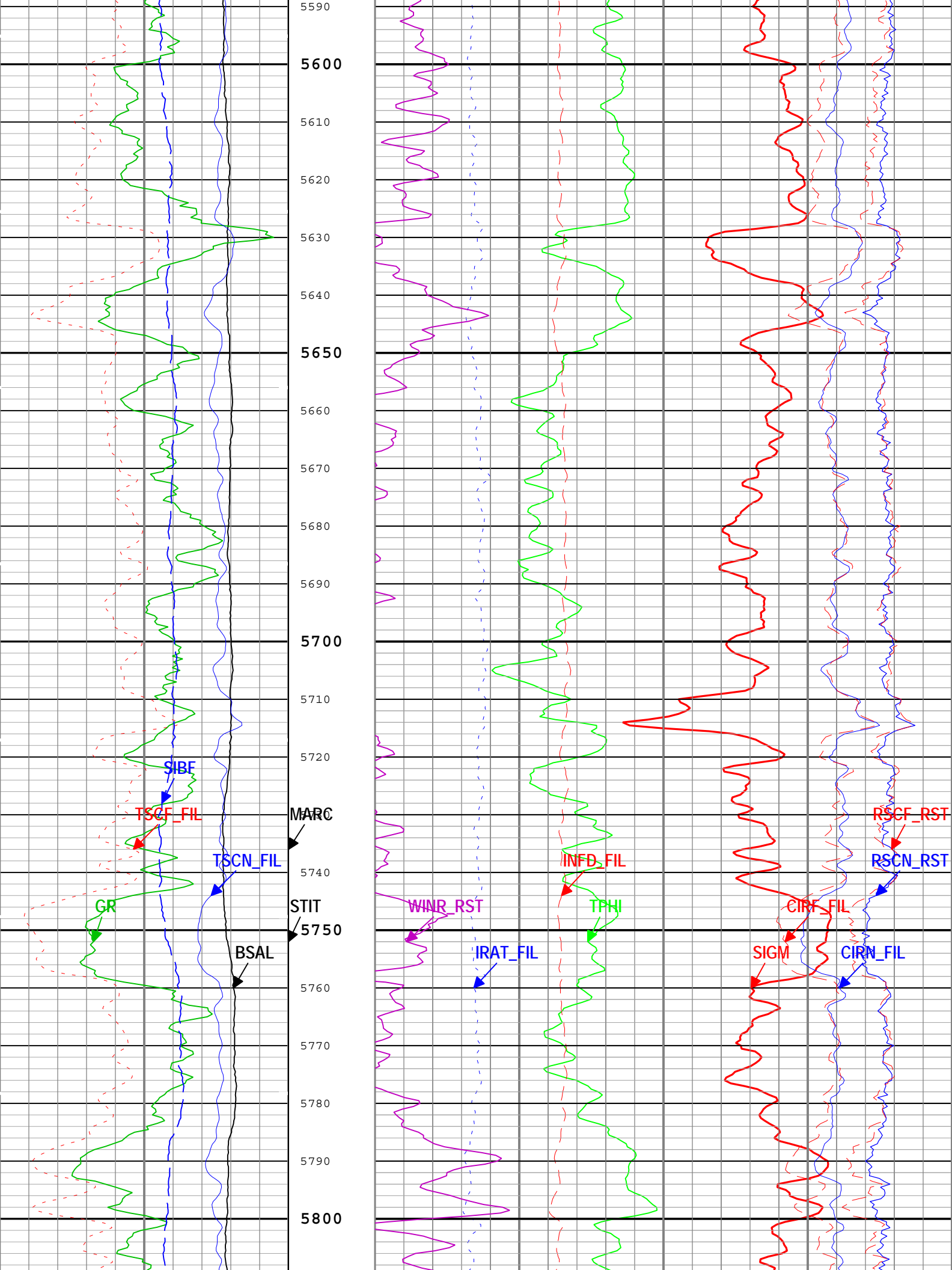


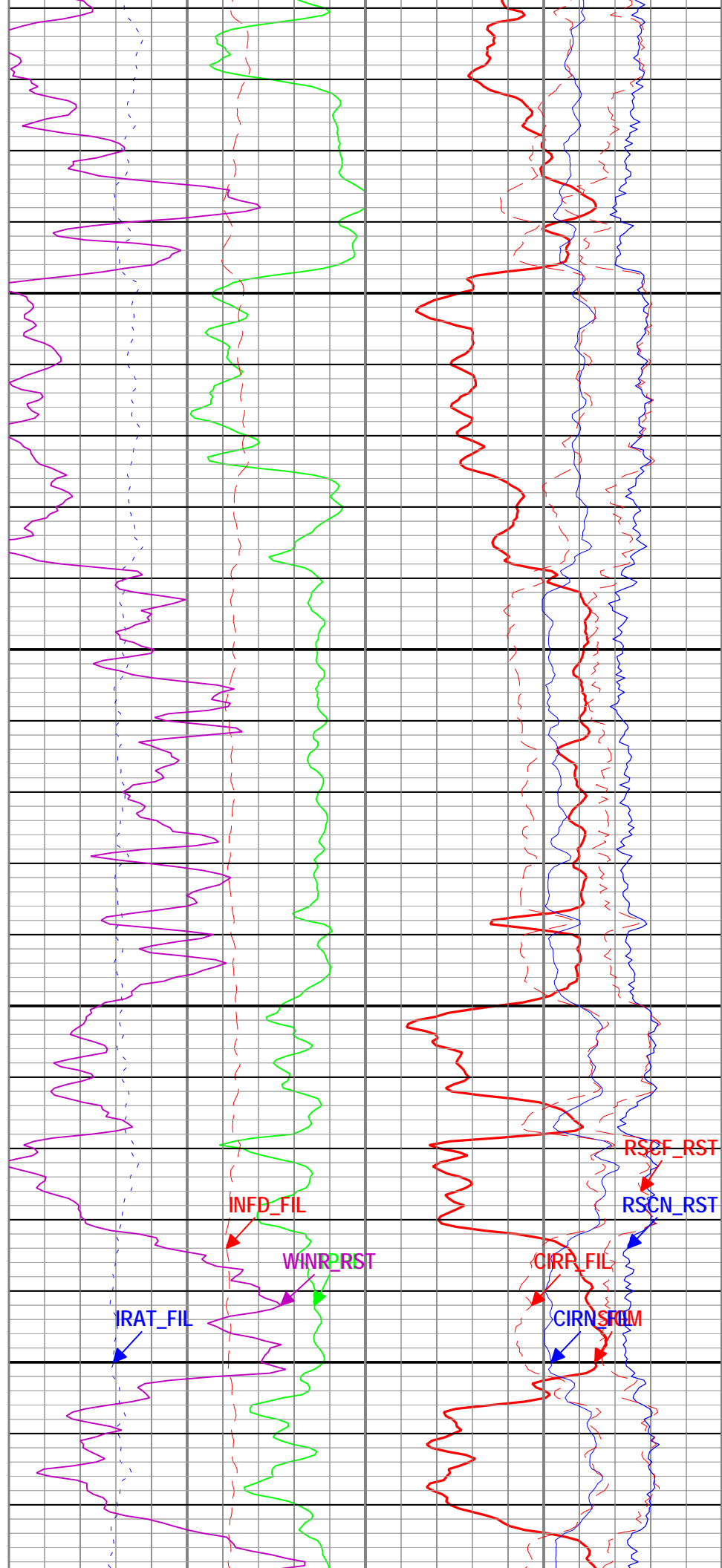
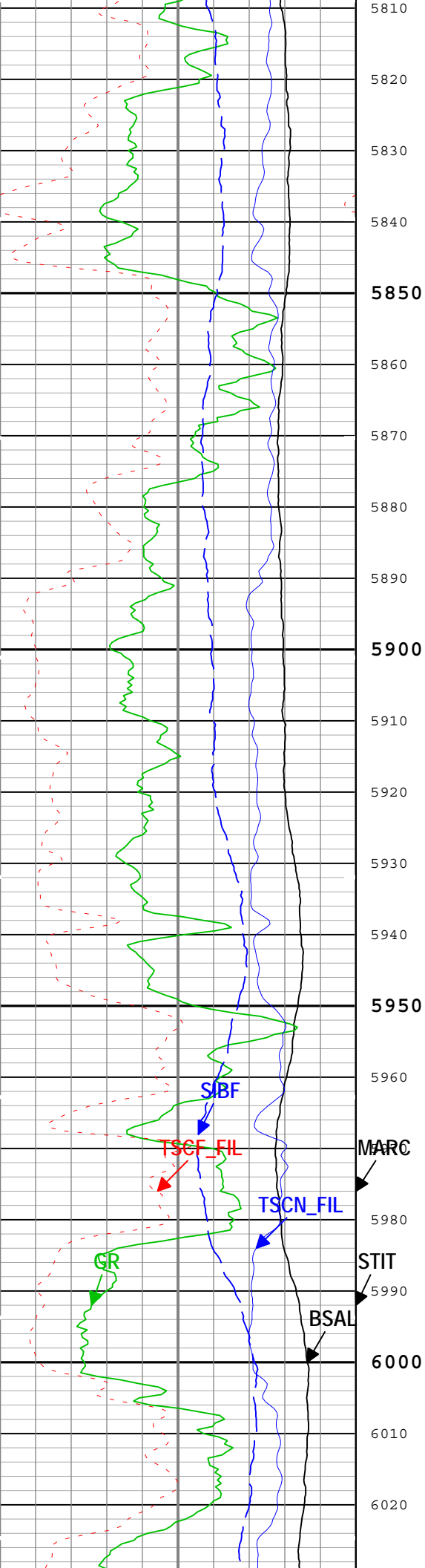


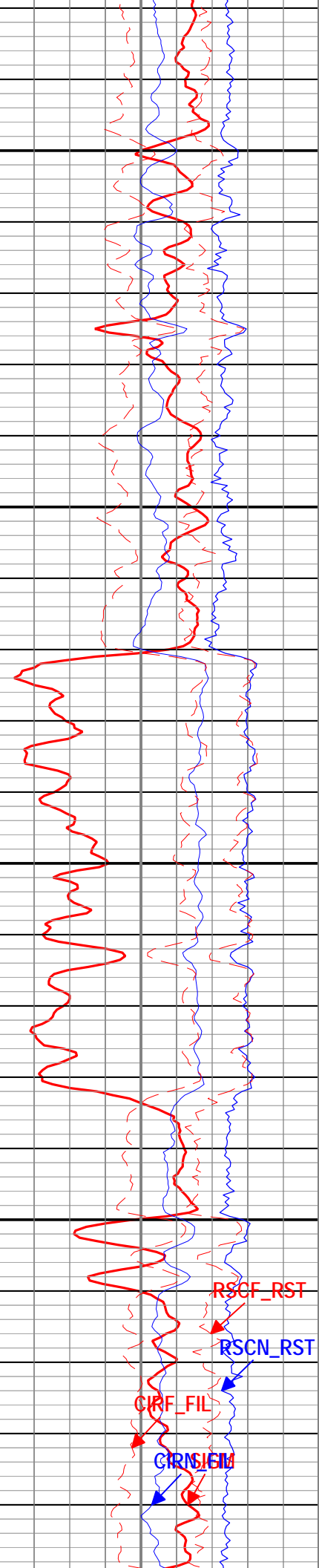
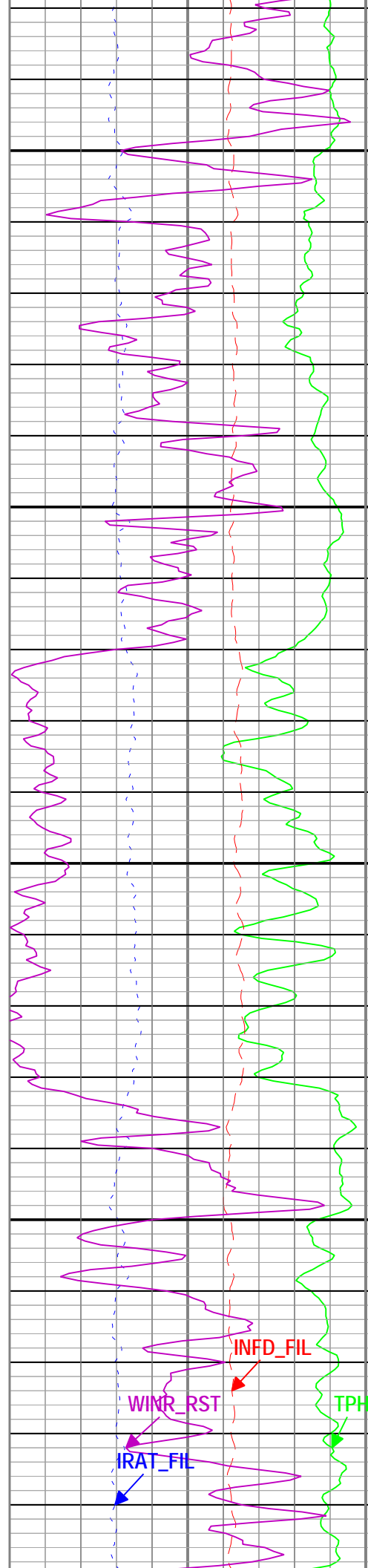
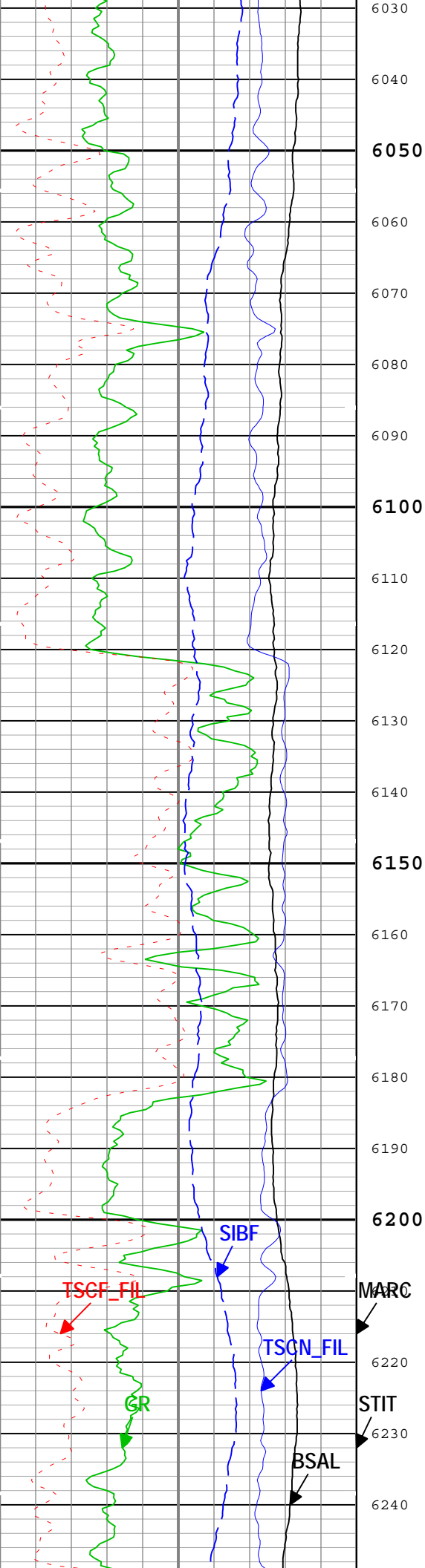


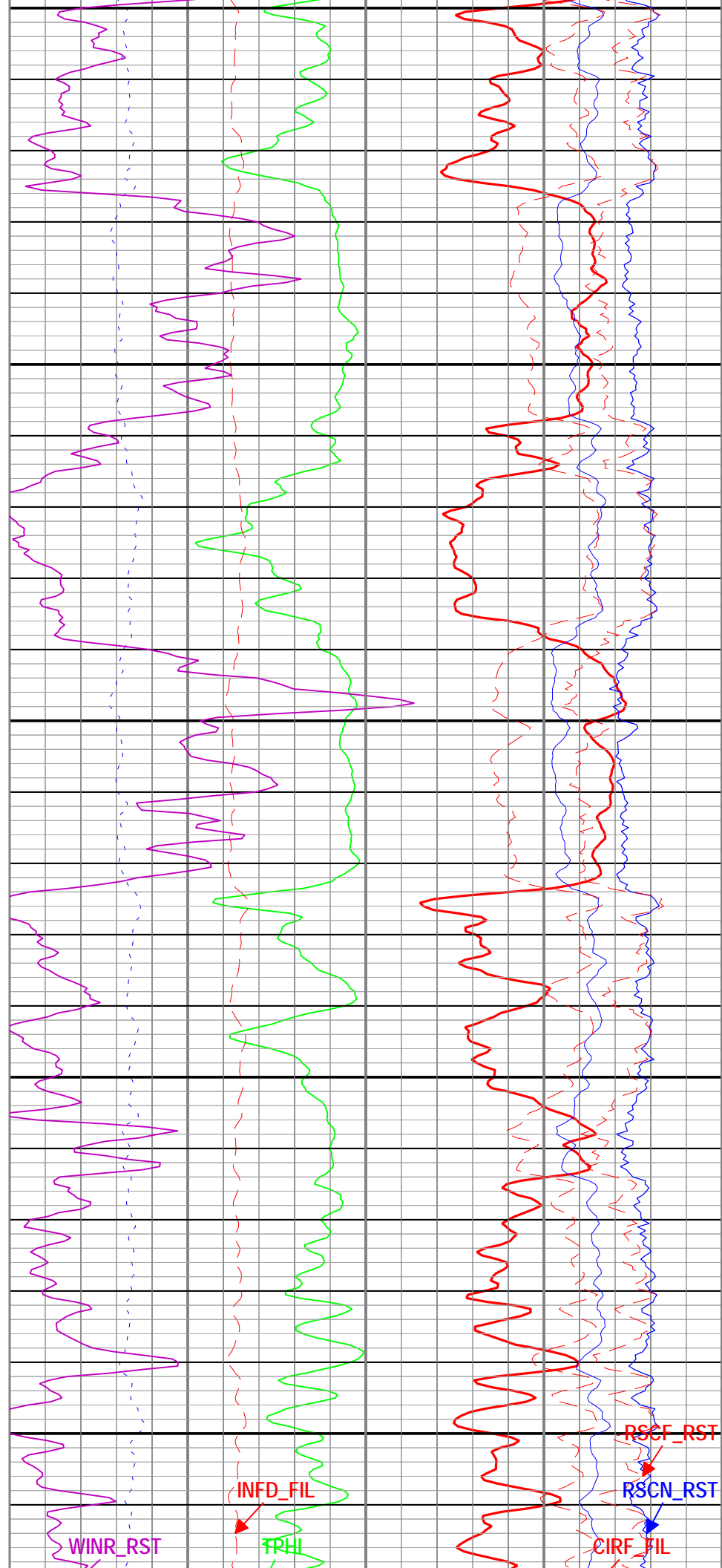
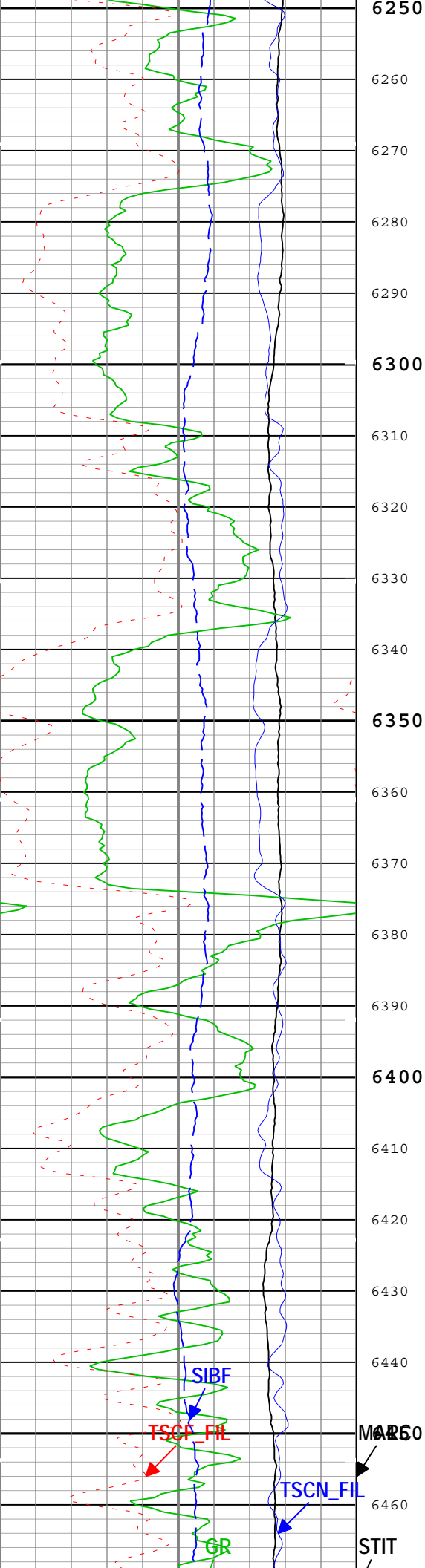


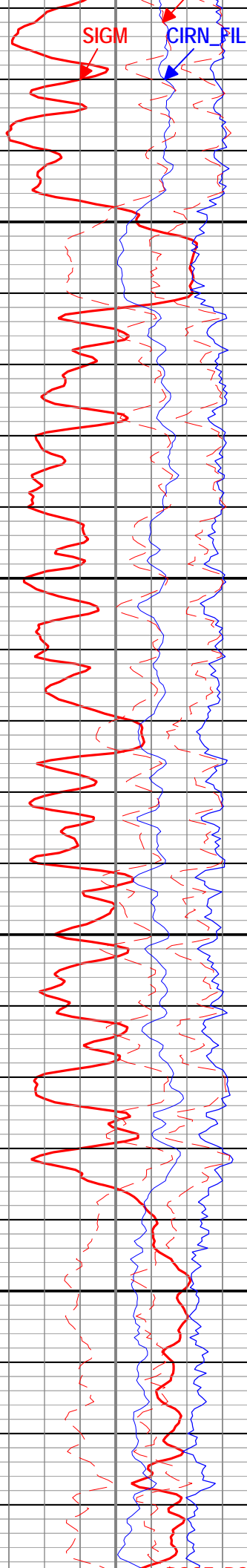
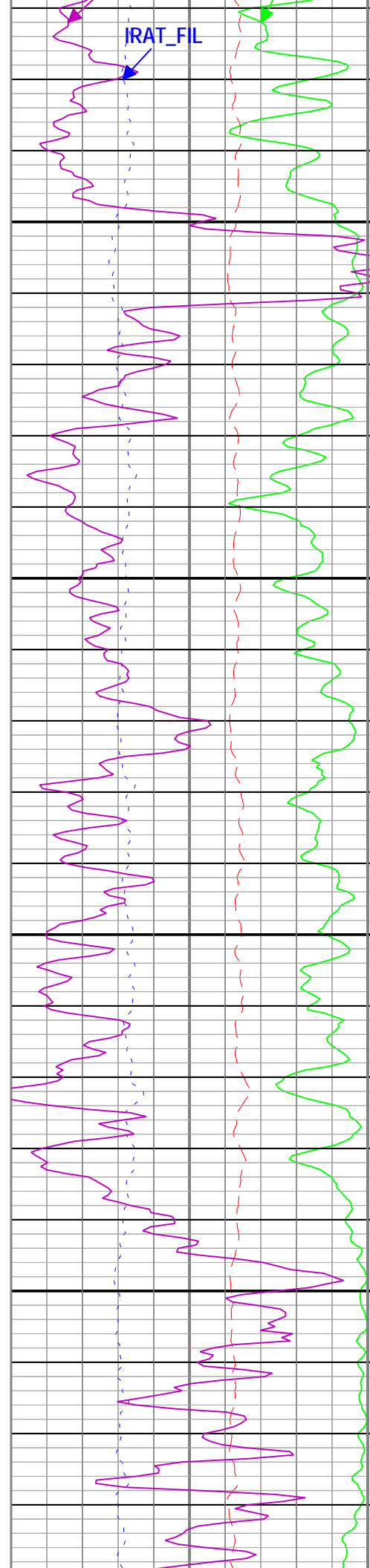
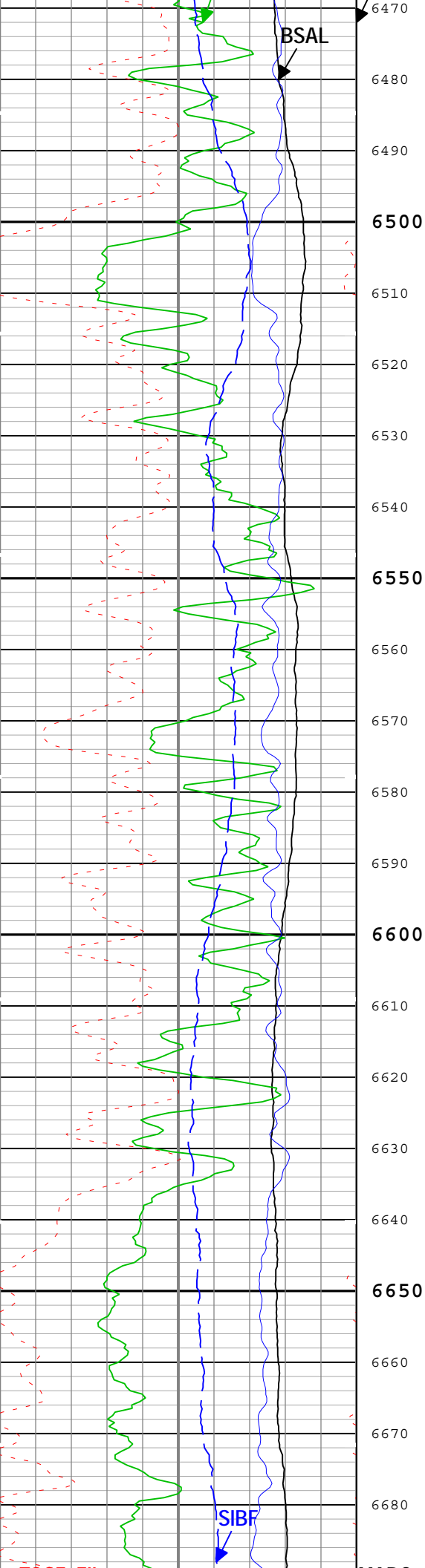


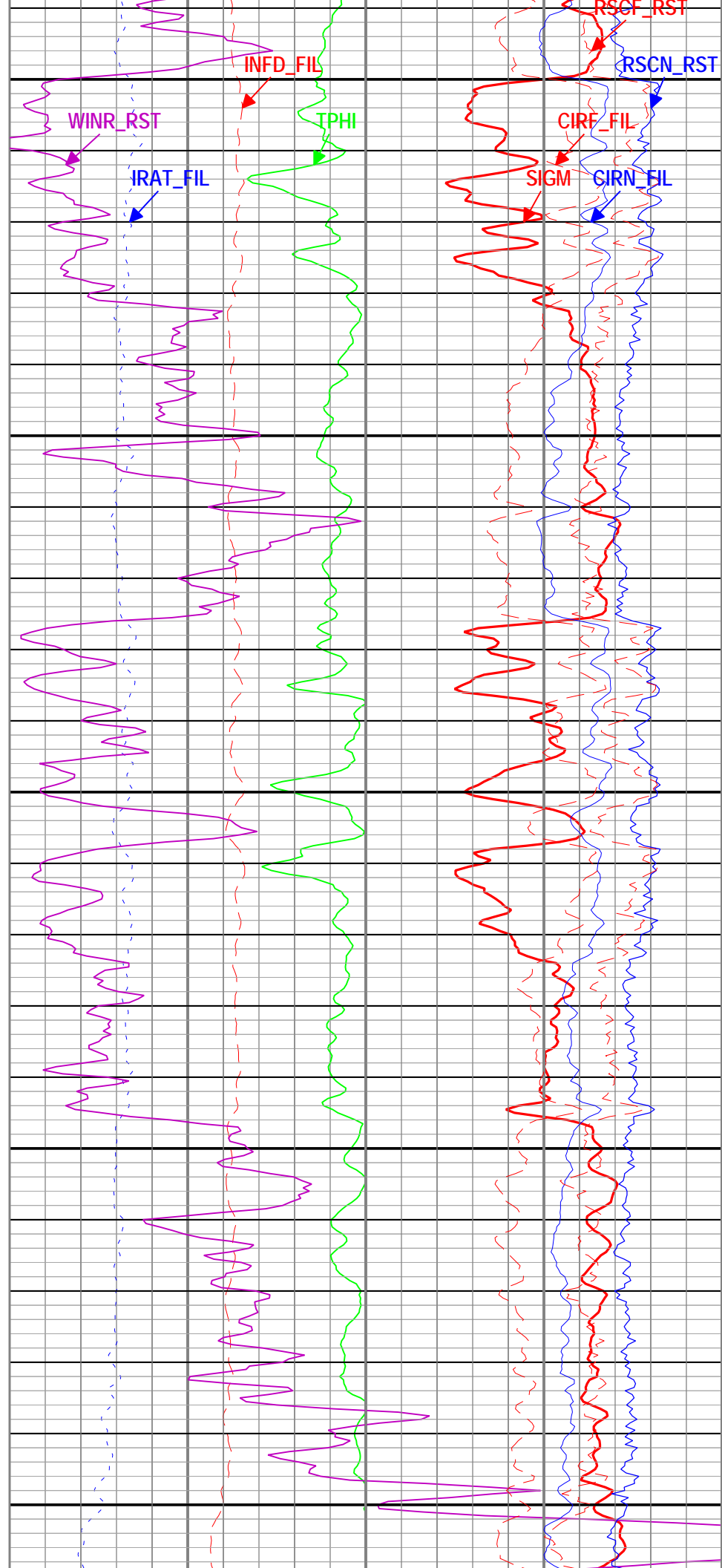
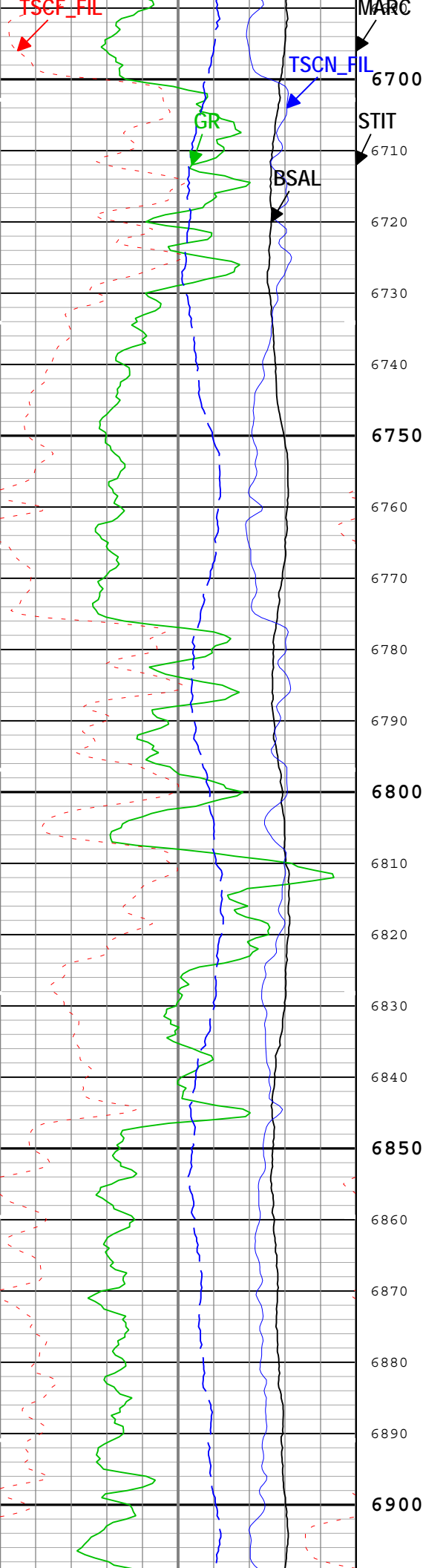


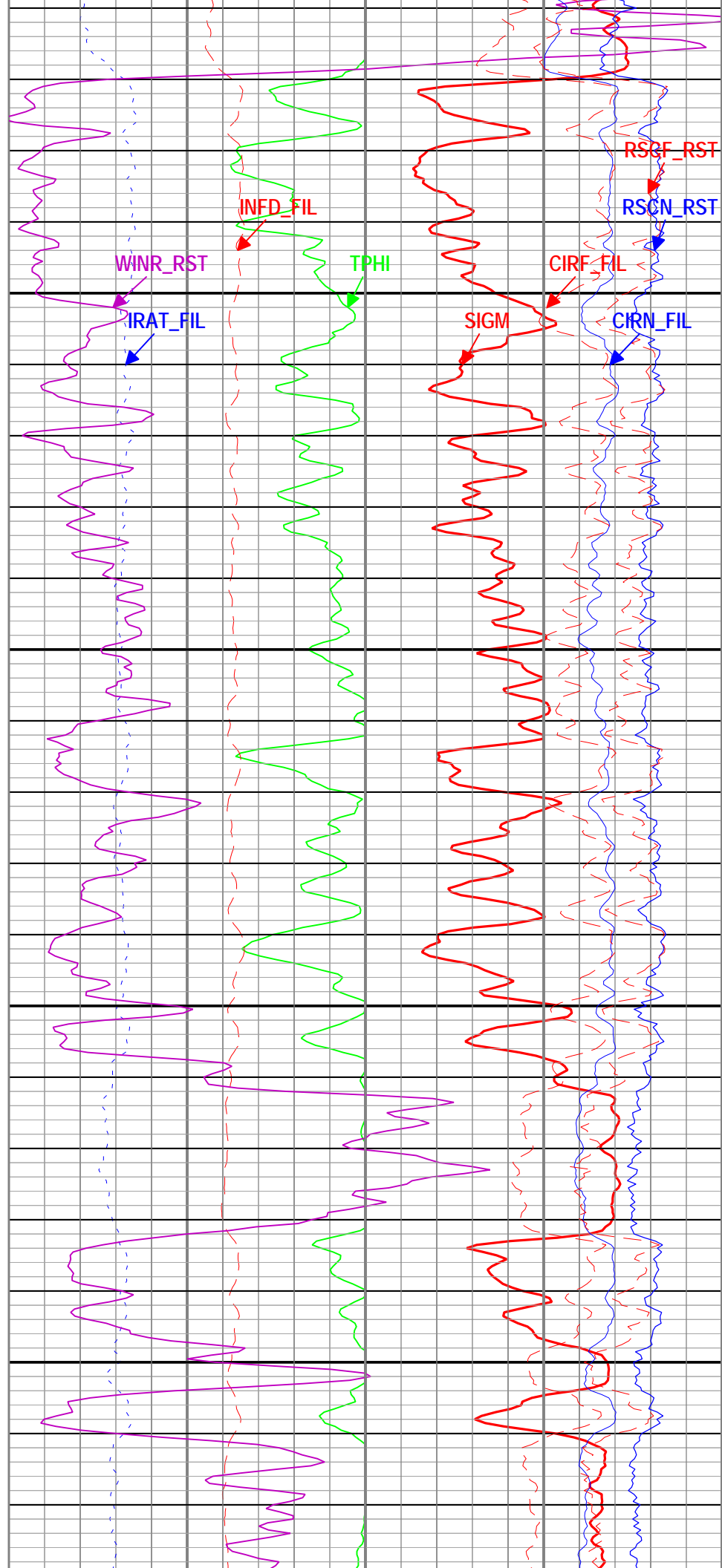
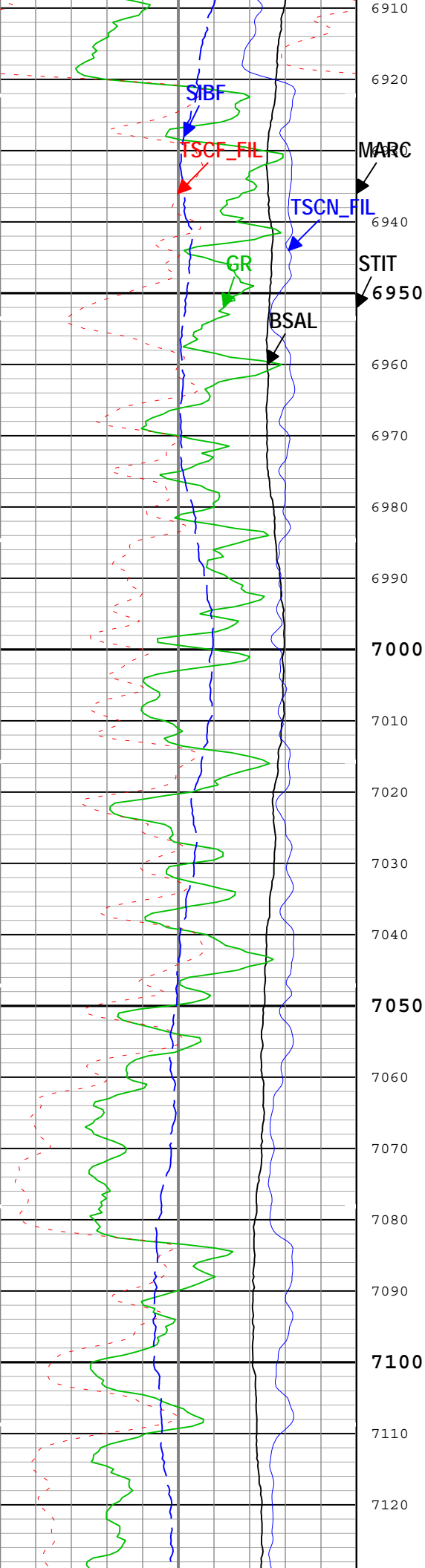


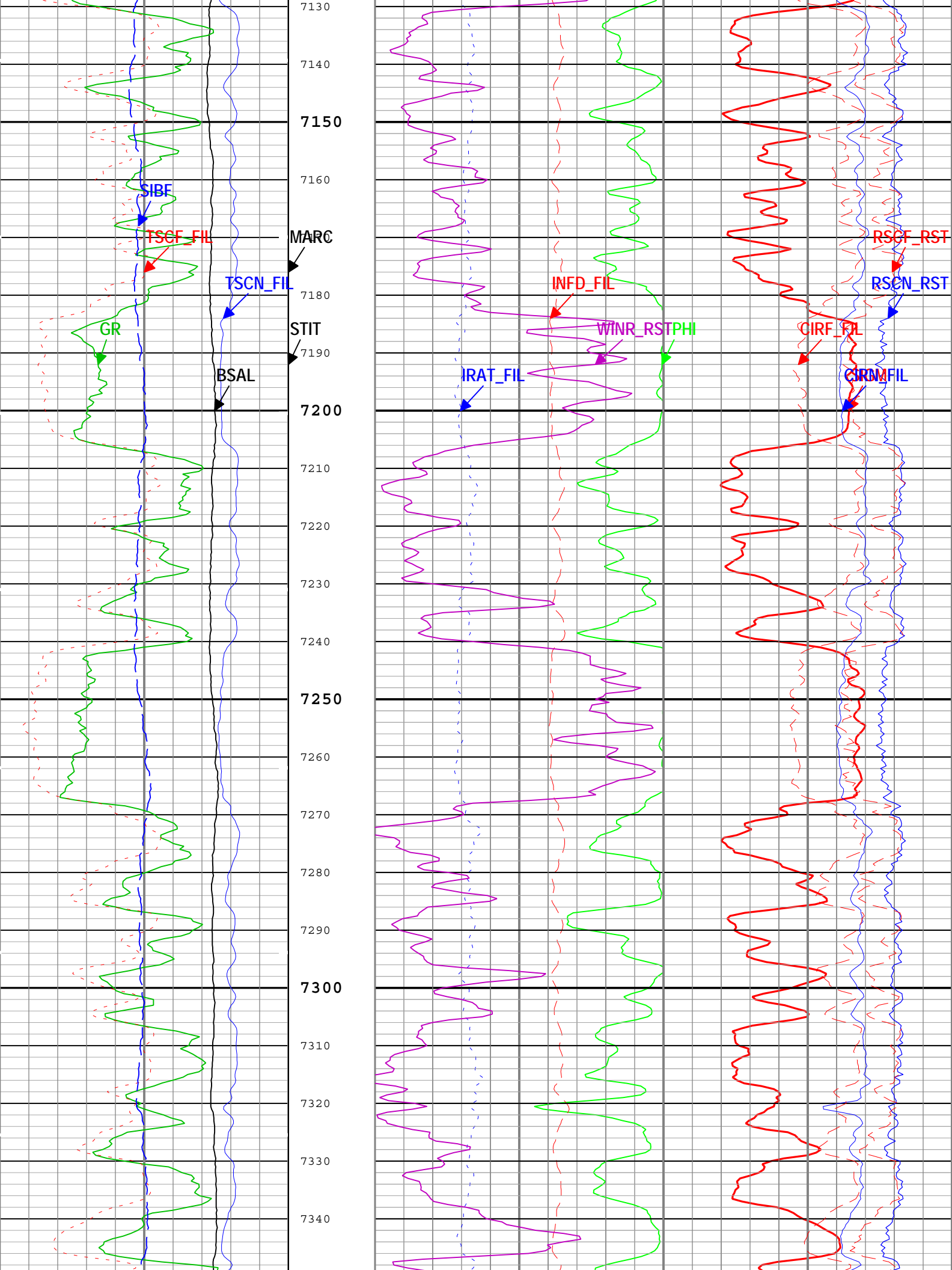


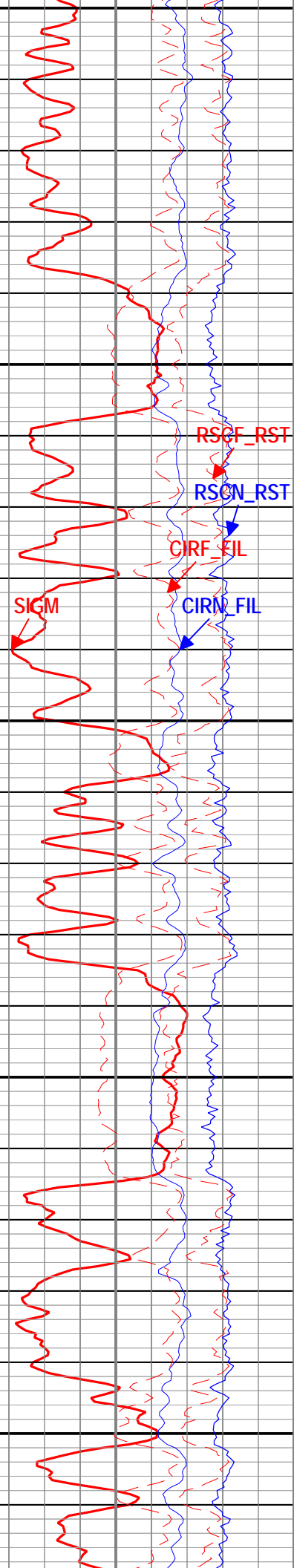
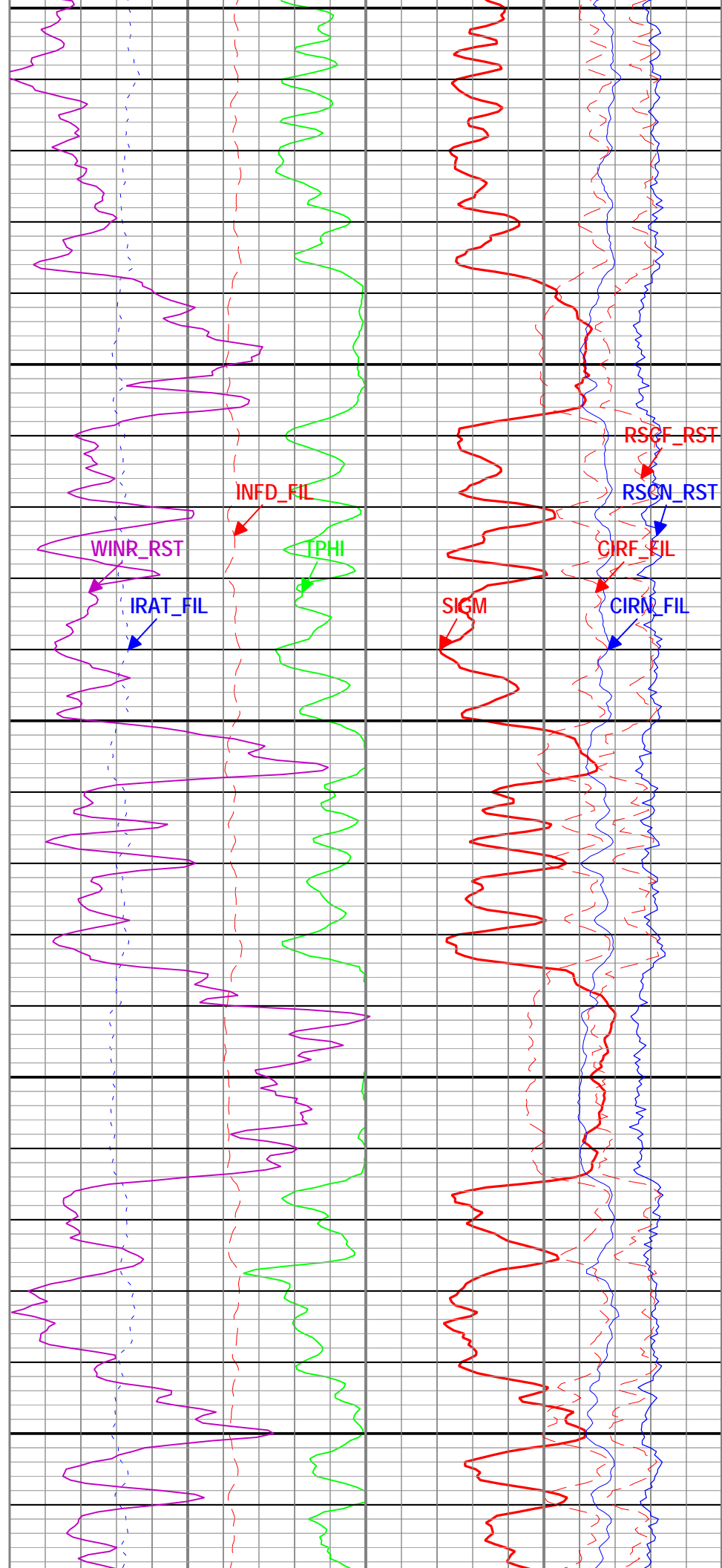
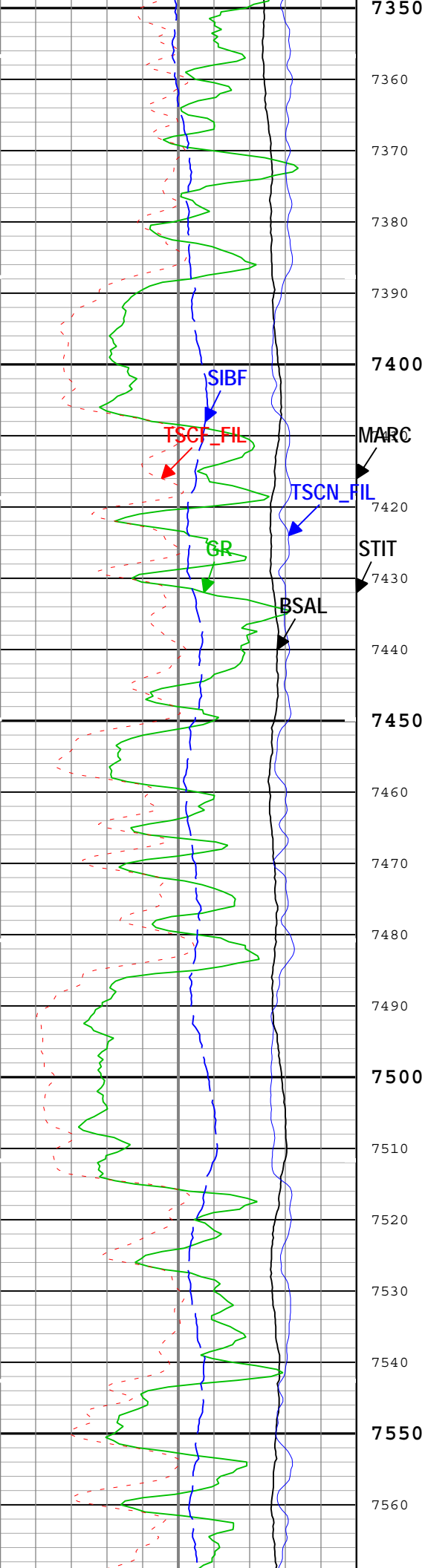


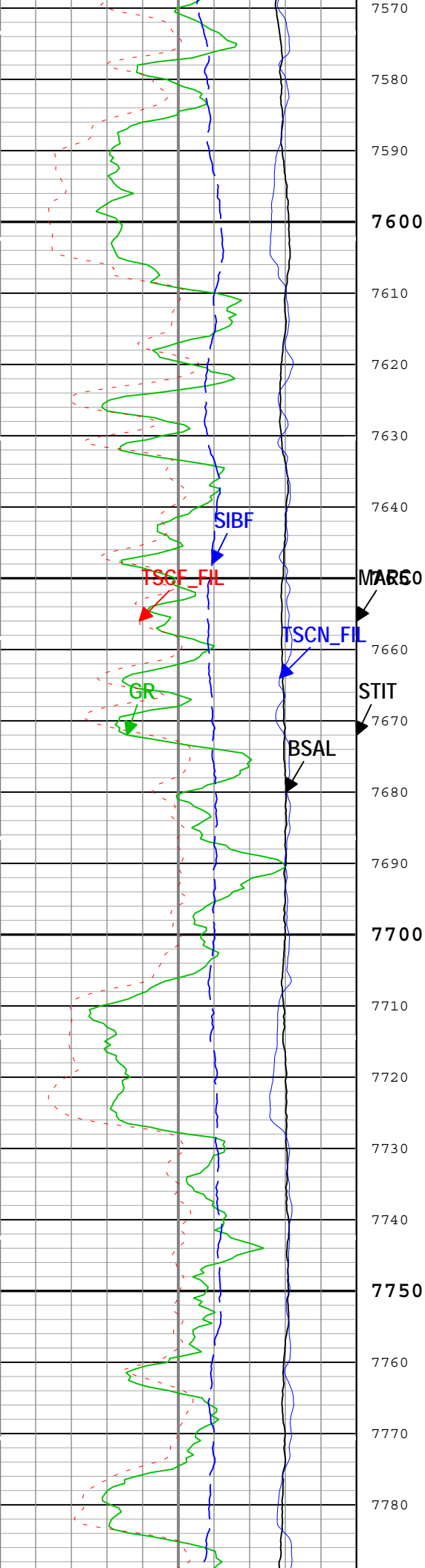




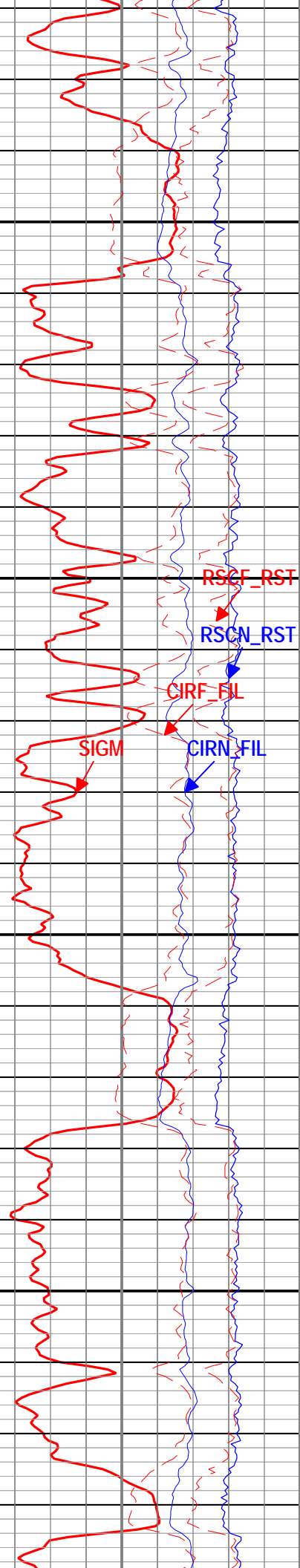
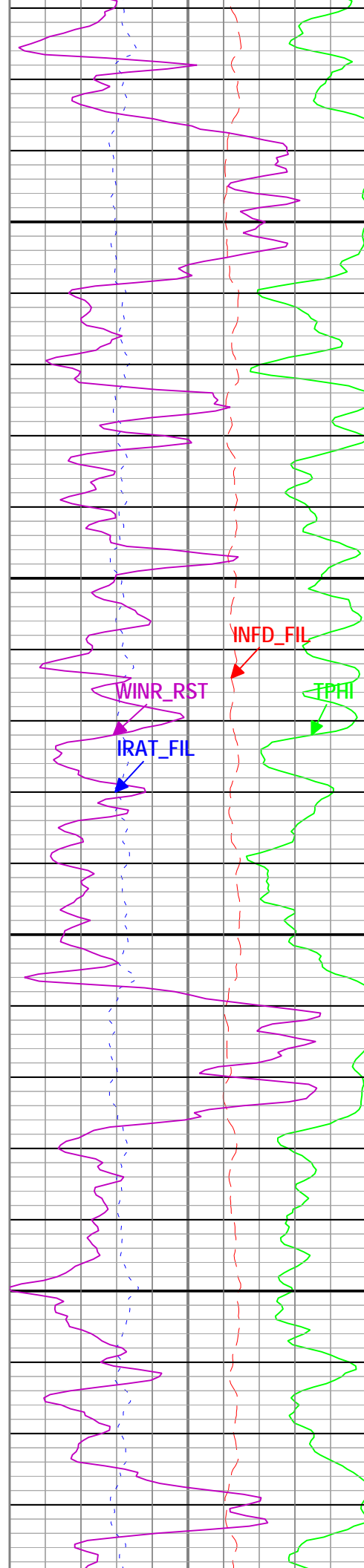


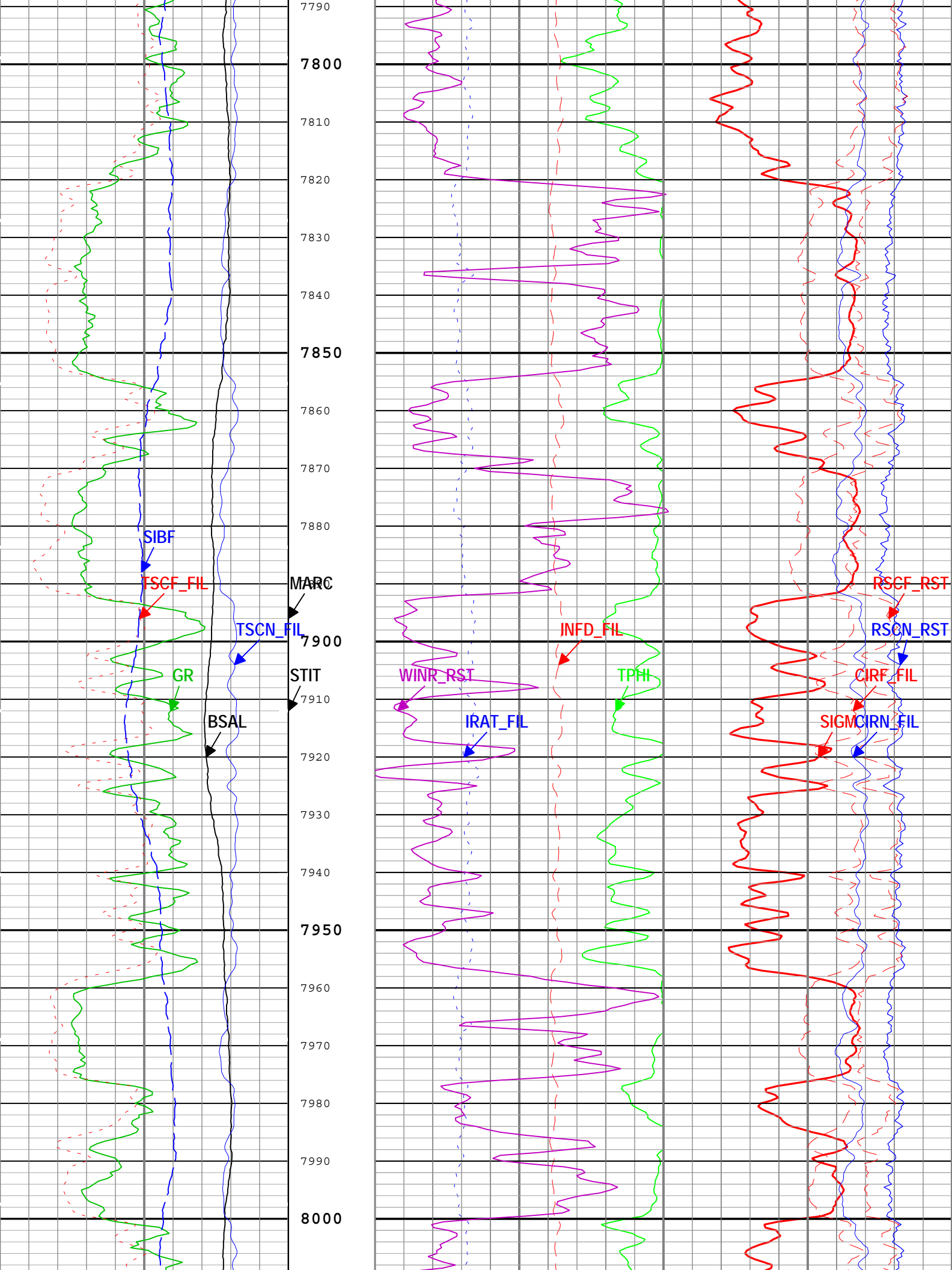


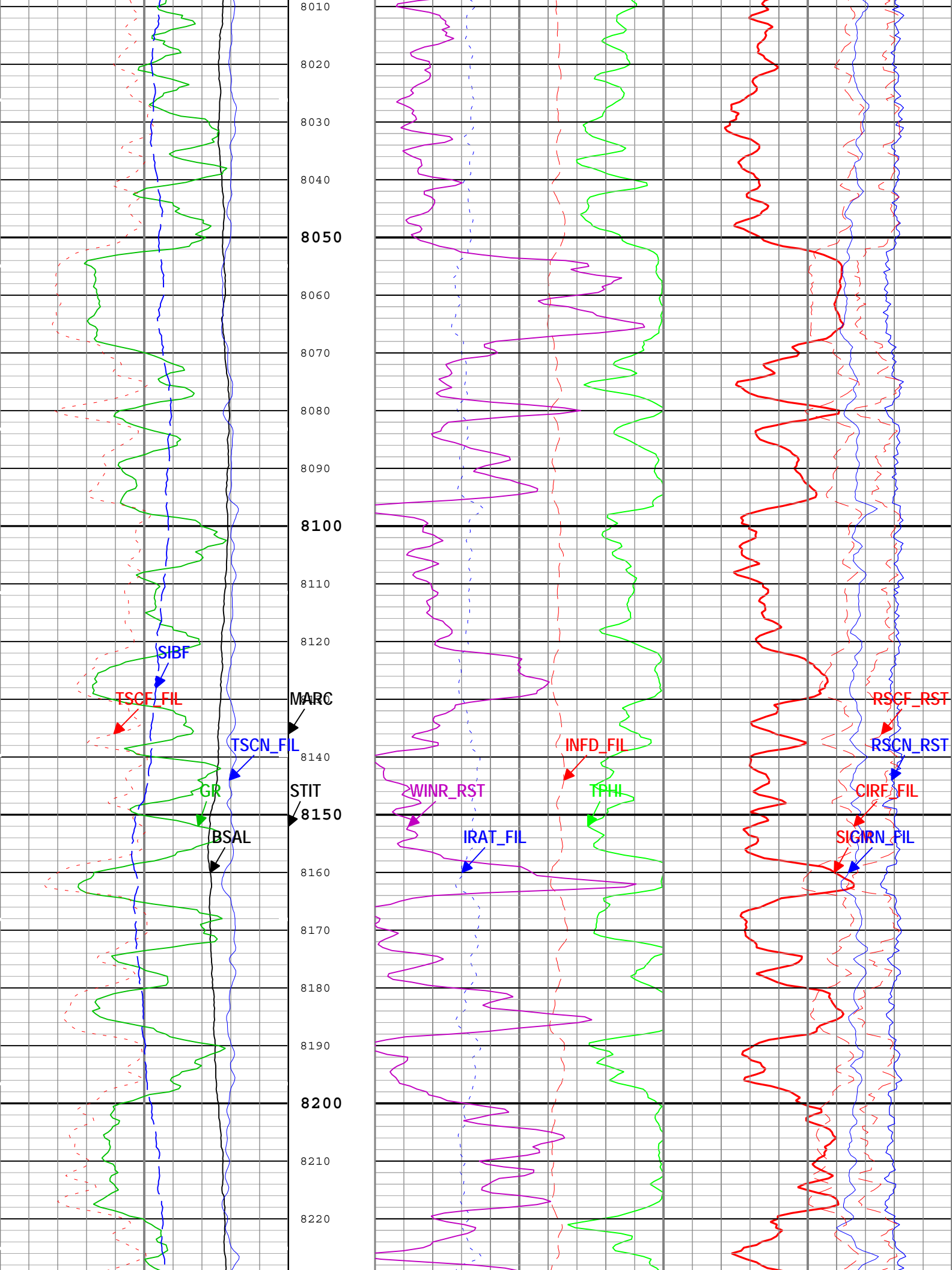


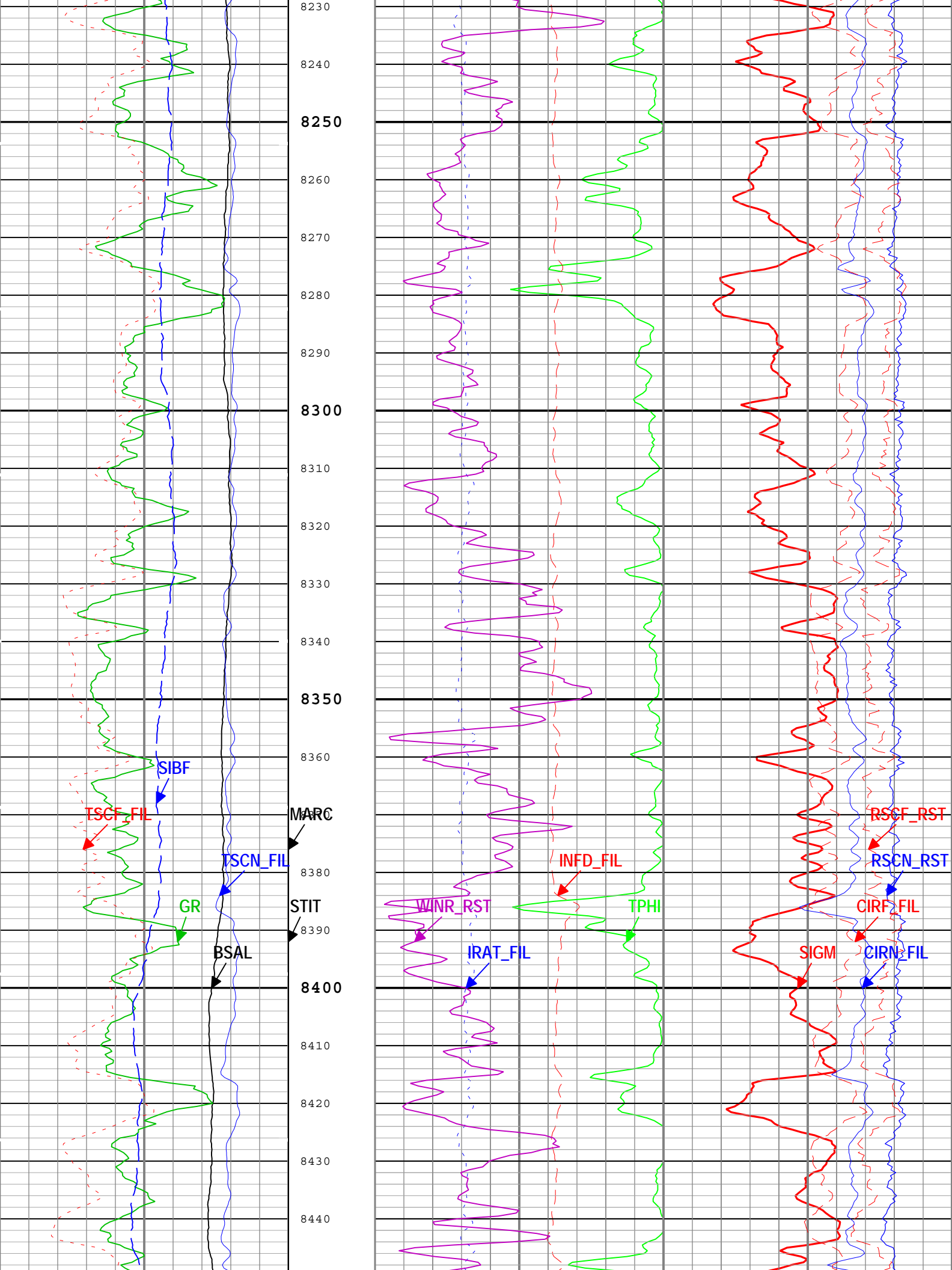


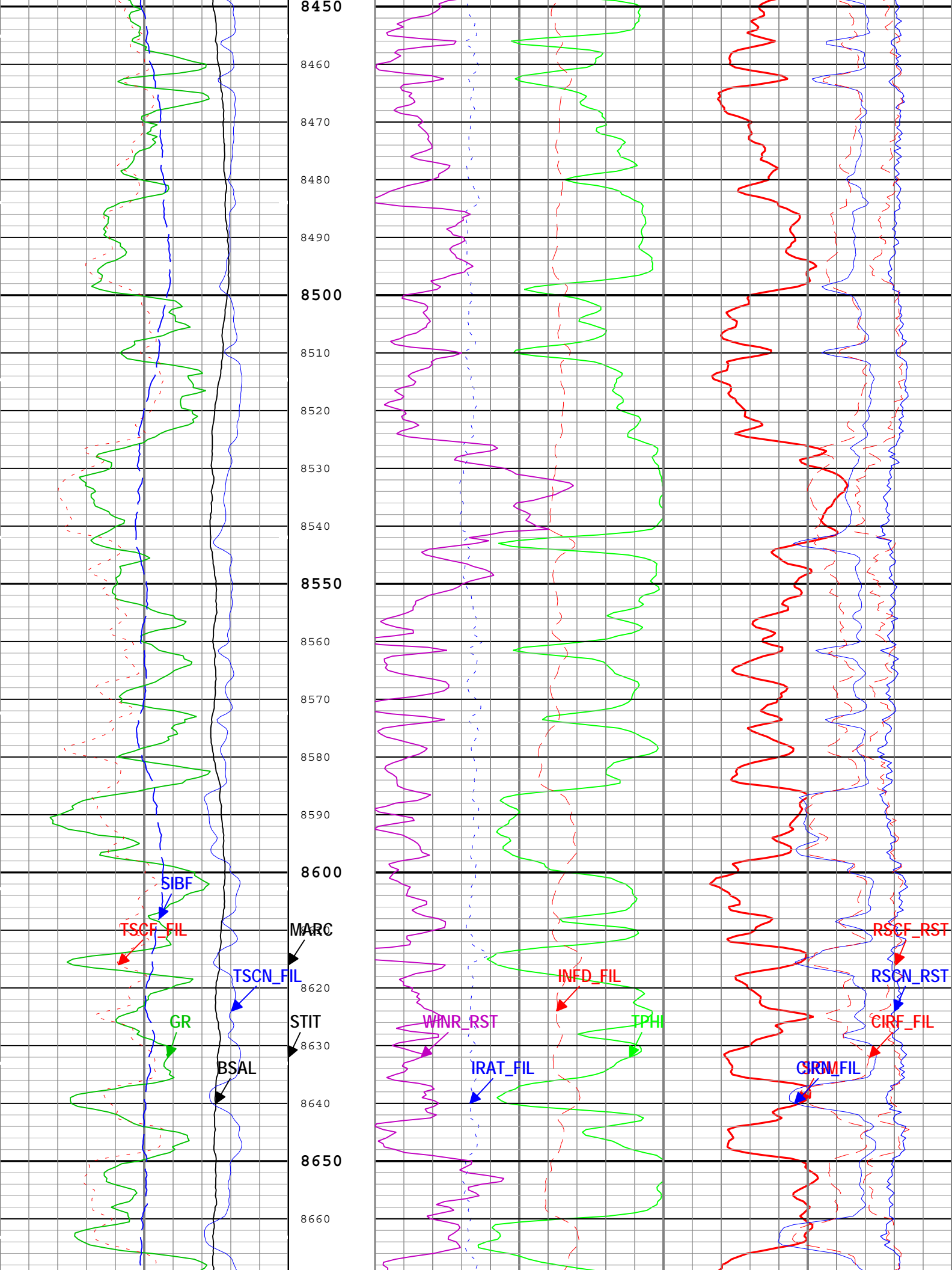
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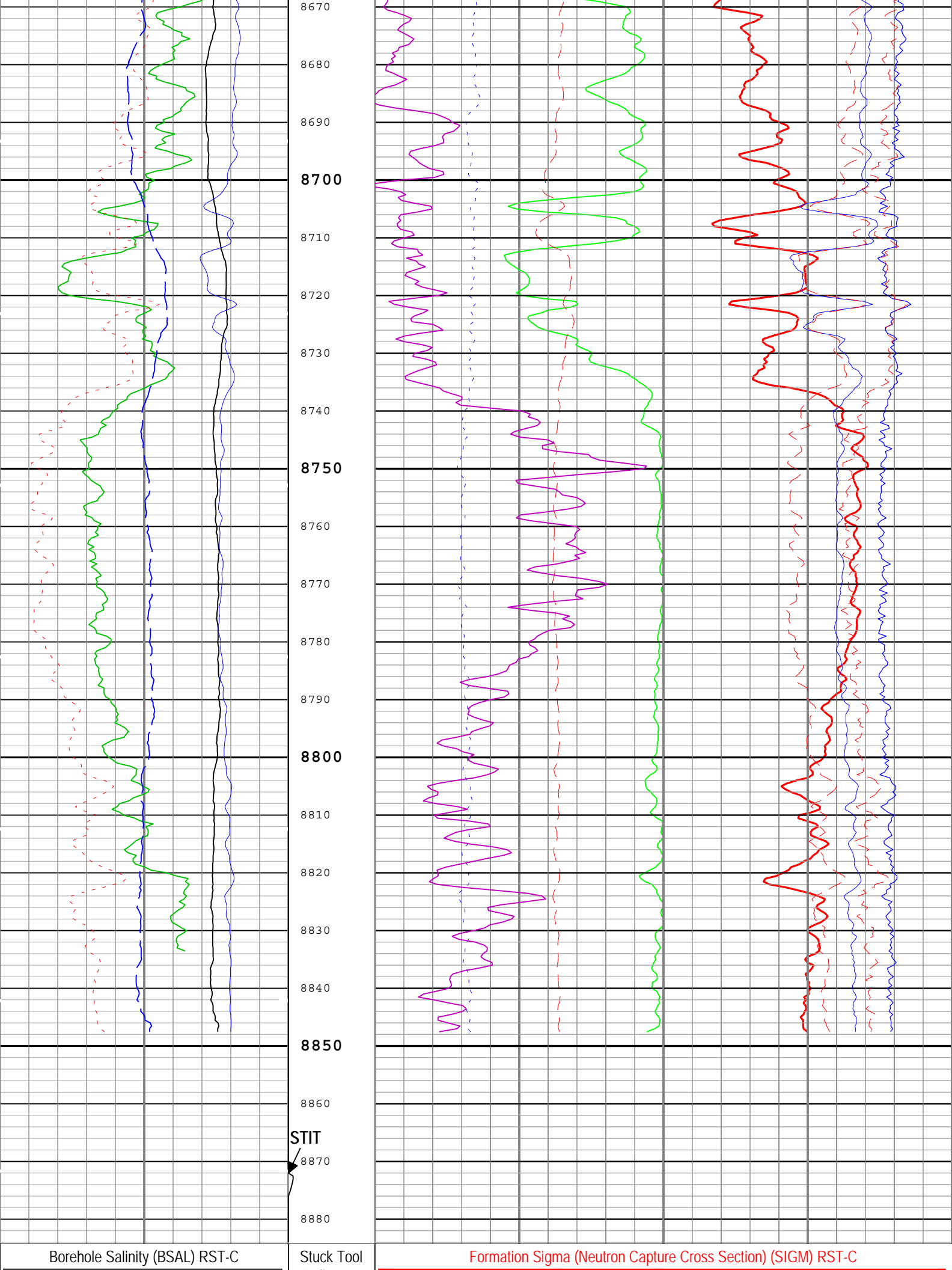












Borehole Salinity (BSAL) RST-C

Stuck Tool

Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C

TIME_1900 - Time Marked every 60.00 (s)					
Description: RST SIGMA Answer	Format: Log (RST SIGMA Answer)	Index Scale: 5 in per 100 ft	Index Unit: ft	Index Type: Measured Depth	Creation Date: 24-Jul-2015 12:50:18

ONE: Parameters

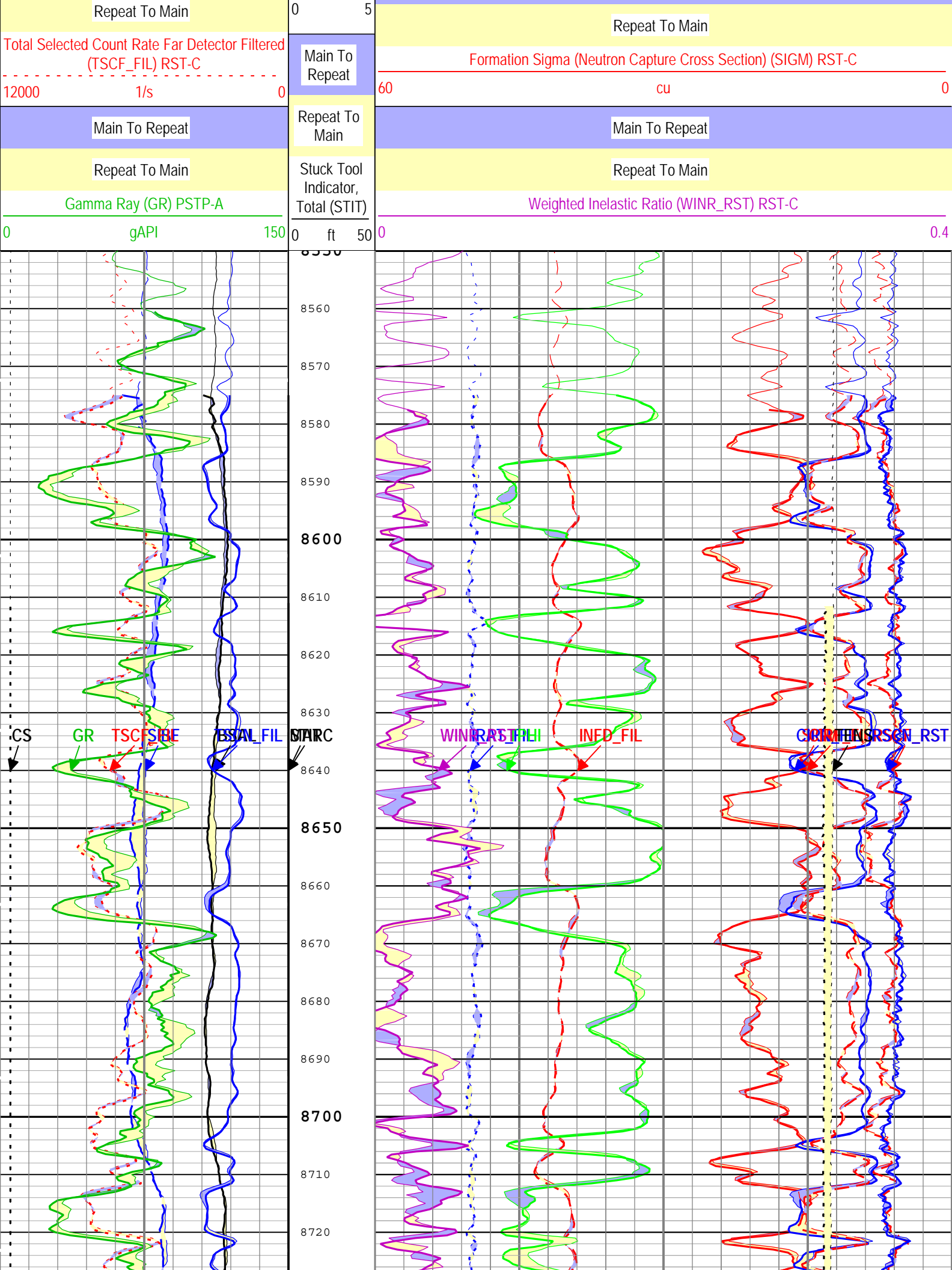
Depth Zone Parameters

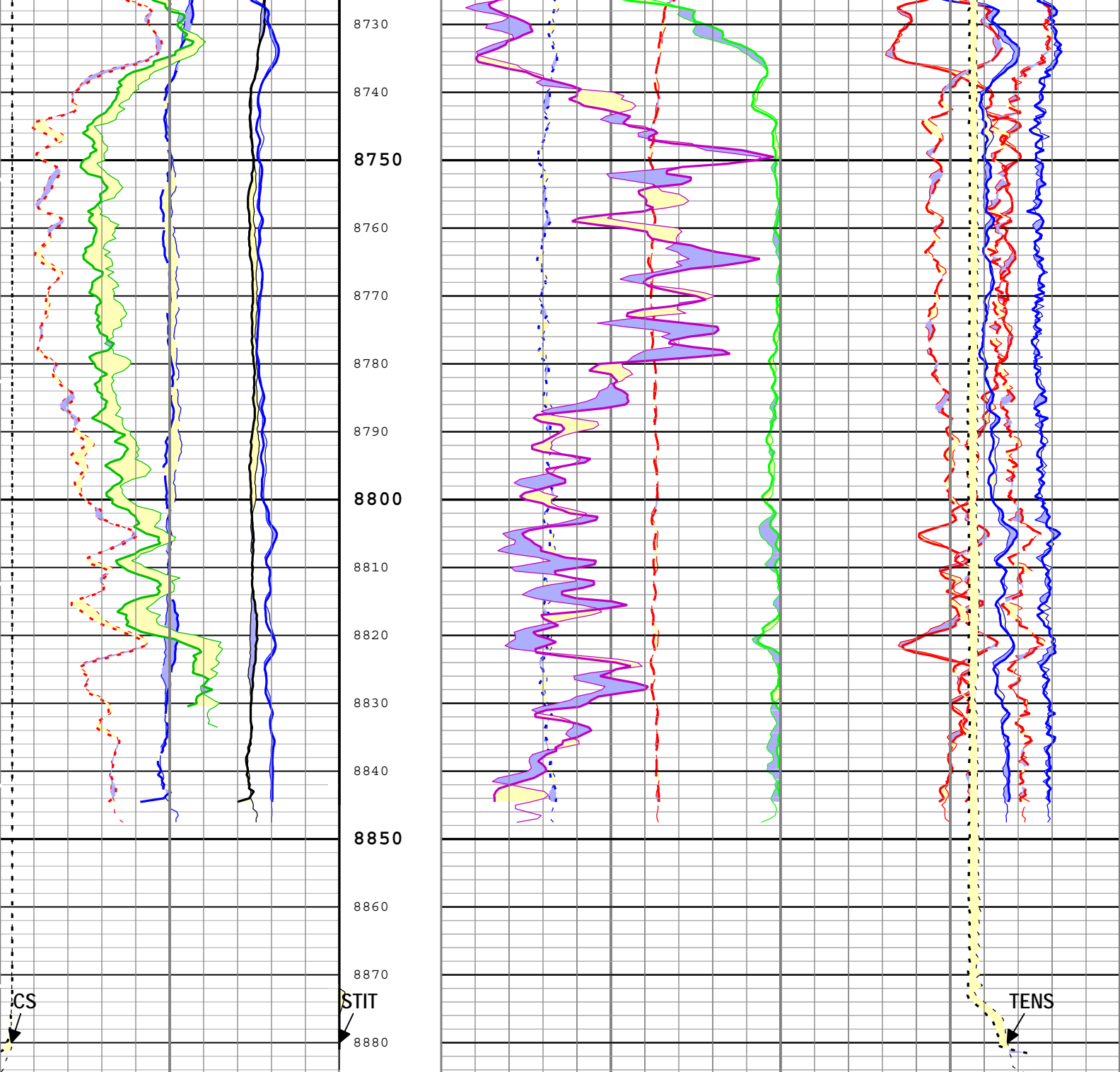
All depth are actual.

ONE: Parameters

ONE

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[2]:Up	Up	8610.97 ft	8881.32 ft	24-Jul-2015 8:21:38 AM	24-Jul-2015 8:30:46 AM	ON	2.86 ft	No
ONE	Log[3]:Up	Up	2249.32 ft	8884.28 ft	24-Jul-2015 8:45:22 AM	24-Jul-2015 12:27:44 PM	ON	4.17 ft	No
All depths are referenced to toolstring zero									
Log	Company:Caerus Piceance LLC Well:Puckett 42B-2 ONE: Log[3]:Up:S008								
Description: RST SIGMA Answer Format: Log (RST SIGMA Answer RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 24-Jul-2015 12:50:21									
⌵TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s) ⌵IHV - Integrated Hole Volume every 10.00 (ft3)									
TIME_1900 - Time Marked every 60.00 (s) ⌵IHV - Integrated Hole Volume every 100.00 (ft3) └ICV - Integrated Cement Volume every 10.00 (ft3) └ICV - Integrated Cement Volume every 100.00 (ft3)									
Main To Repeat			Repeat To Main			Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C 450			
Repeat To Main			Borehole Salinity (BSAL) RST-C			Near Detector Effective Unregulated Capture Count Rate (RSCN_RST) RST-C 450			
Main To Repeat			Sigma Borehole Fluid (SIBF) RST-C			Main To Repeat Repeat To Main Capture to Inelastic Ratio Near Filtered (CIRN_FIL) RST-C 2.50			
Repeat To Main			Cable Speed (CS)			Main To Repeat Repeat To Main Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C 50			
Main To Repeat			Total Selected Count Rate Near Detector Filtered (TSCN_FIL) RST-C			Main To Repeat Repeat To Main Cable Tension (TENS) 5000			
Repeat To Main			Minitron Arc Count (MARC) RST-C			Main To Repeat			
Main To Repeat			Thermal Decay Porosity (TPHI) RST-C 0.6 ft3/ft3						
Repeat To Main			Main To Repeat						





Main To Repeat		Main To Repeat	
Repeat To Main		Repeat To Main	
Borehole Salinity (BSAL) RST-C		Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C	
450	ppk	60	cu
Main To Repeat		Main To Repeat	
Repeat To Main		Repeat To Main	
Sigma Borehole Fluid (SIBF) RST-C		Weighted Inelastic Ratio (WINR_RST) RST-C	
100	cu	0	0.4
Main To Repeat		Main To Repeat	Main To Repeat
Repeat To Main		Repeat To Main	Repeat To Main

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Spectral Acquisition Time Calibration Coefficient - 0	s	Master	----	----	----	----	
Near Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	
Far Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	
Near Windows Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	
Far Windows Carbon/Oxygen Ratio Calibration		Master	----	----	----	----	

Coefficient - 0							<div><div></div><div></div></div>
Near IC Mode Capture Optimization Resolution Degradation Factor Calibration Coefficient - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Far IC Mode Capture Optimization Resolution Degradation Factor Calibration Coefficient - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Near Pulse Shape Compensation Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div><div></div><div></div></div>
Far Pulse Shape Compensation Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div><div></div><div></div></div>
Near Photomultiplier High Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div><div></div><div></div></div>
Far Photomultiplier High Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div><div></div><div></div></div>
Minitron Measured Beam Current Calibration Coefficient - 0	uA	Master	----	----	----	----	<div><div></div><div></div></div>
Grid Current Peak Calibration Coefficient - 0	mA	Master	----	----	----	----	<div><div></div><div></div></div>
Minitron Measured Extractor Current Calibration Coefficient - 0	uA	Master	----	----	----	----	<div><div></div><div></div></div>
Minitron Measured High Voltage Calibration Coefficient - 0	kV	Master	----	----	----	----	<div><div></div><div></div></div>
Near Instantaneous Count Rate Calibration Coefficient - 0	kHz	Master	----	----	----	----	<div><div></div><div></div></div>
Near/Far Count Rate Ratio Calibration Coefficient - 0		Master	----	----	----	----	<div><div></div><div></div></div>

RST IC Tank Check - RST IC Tank Check

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div></div>
Near Spectral Acquisition Time Calibration Coefficient	s	Master			NOT DONE		<div><div></div><div></div></div>
Near Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Far Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Near Windows Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Far Windows Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Near IC Mode Capture Optimization Resolution Degradation Factor Calibration Coefficient - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Far IC Mode Capture Optimization Resolution Degradation Factor Calibration Coefficient - 0		Master	----	----	----	----	<div><div></div><div></div></div>
Near Pulse Shape Compensation Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div><div></div><div></div></div>
Far Pulse Shape Compensation Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div><div></div><div></div></div>
Near Photomultiplier High Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div><div></div><div></div></div>
Far Photomultiplier High Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div><div></div><div></div></div>
Minitron Measured Beam Current Calibration Coefficient - 0	uA	Master	----	----	----	----	<div><div></div><div></div></div>
Grid Current Peak Calibration Coefficient - 0	mA	Master	----	----	----	----	<div><div></div><div></div></div>
Minitron Measured Extractor Current Calibration Coefficient - 0	uA	Master	----	----	----	----	<div><div></div><div></div></div>
Minitron Measured High Voltage Calibration Coefficient - 0	kV	Master	----	----	----	----	<div><div></div><div></div></div>
Near Instantaneous Count Rate Calibration Coefficient	kHz	Master			NOT DONE		<div><div></div><div></div></div>
Near/Far Count Rate Ratio Calibration Coefficient		Master			NOT DONE		<div><div></div><div></div></div>

RST Sigma Tank Check - RST Sigma Tank Check

Master (Measured): 14:57:24 17-Jul-2015							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div></div>
Near Spectral Acquisition Time Calibration Coefficient	s	Master		300.0	300.3		<div><div></div><div></div></div>
Near/Far Capture Ratio Calibration Coefficient		Master	0.980	0.930	0.982	1.030	<div><div></div><div></div></div>
Sigma Formation Near Apparent Calibration Coefficient - 0	1/m	Master	----	----	----	----	<div><div></div><div></div></div>
Sigma Formation Far Apparent Calibration Coefficient - 0	1/m	Master	----	----	----	----	<div><div></div><div></div></div>
Near Pulse Shape Compensation Voltage	V	Master	2.500	2.445	2.700	4.555	<div><div></div><div></div></div>

Near Pulse Shape Compensation Voltage Setting Echo Calibration Coefficient	V	Master	3.500	2.445	3.700	4.555	
Far Pulse Shape Compensation Voltage Setting Echo Calibration Coefficient	V	Master	3.325	2.095	2.433	4.555	
Near Photomultiplier High Voltage Setting Echo Calibration Coefficient	V	Master	1400.000	1100.000	1145.795	1700.000	
Far Photomultiplier High Voltage Setting Echo Calibration Coefficient	V	Master	1400.000	1100.000	1183.172	1700.000	
Minitron Measured Beam Current Calibration Coefficient	uA	Master	75.000	50.000	85.102	100.000	
Grid Current Peak Calibration Coefficient	mA	Master	60.000	58.000	60.036	62.000	
Minitron Measured Extractor Current Calibration Coefficient	uA	Master	499.500	0	0.000	999.000	
Minitron Measured High Voltage Calibration Coefficient	kV	Master	73.000	50.000	80.028	96.000	
Near Instantaneous Count Rate Calibration Coefficient	kHz	Master	400.000	340.000	349.576	460.000	
Near/Far Count Rate Ratio Calibration Coefficient		Master	1.300	1.000	1.471	1.600	

PSTP-A (PSP Telemetry Platform A - Sapphire) Calibration - Run ONE

Primary Equipment :

PBMS-A

PBMS-A

1963

Calibration Parameter :

JIG-BKGD (Jig minus background reference)

150

PBMS Well Temp Master Calibration

Master (EEPROM): 00:00:00 12-May-2005						
PBMS_RTD_THERM RTD Coefficients (Master)						
	Tt**0	Tt**1	Tt**2	Tt**3	Tt**4	Tt**5
Tt**0	-1418.501	1118.407	-362.1241	56.89739	-3.317989	0

PBMS Gamma Ray Master Calibration

Master (EEPROM): 00:00:00 01-Dec-2003		
PBMS_GR_MODEL GR Coefficients (Master)		
	Rt**0	Rt**1
Rt**0	2000	4740

PBMS A Reference Clock Master Calibration

Master (EEPROM): 00:00:00 12-May-2005						
PBMS_REF_CLOCK PBMS A Clock Coefficients (Master)						
	Temp**0	Temp**1	Temp**2	Temp**3	Temp**4	Temp**5
Temp**0	45.0069	-9.445683	-0.02744274	0.0002354008	3.654205E-06	0

PBMS A Sapphire Master Calibration

Master (EEPROM): 00:00:00 12-May-2005						
PBMS_P_GAUGE_PRES Sapphire Pressure Model Coefficients (Master)						
	Tt**0	Tt**1	Tt**2	Tt**3	Tt**4	Tt**5
Tp**0	4187.029	-3429.79	773.3541	-119.1729	7.244876	0
Tp**1	698.9312	545.2234	21.97955	-3.948855	0.2235462	0
Tp**2	-6.430802	9.633142	-3.005254	0	0	0

Tp**3	-2.550163	0.6971294	0	0	0	0
Tp**4	0	0	0	0	0	0
Tp**5	0	0	0	0	0	0
PBMS_P_GAUGE_TEMP Sapphire Temperature Model Coefficients (Master)						
	Tp**0	Tp**1	Tp**2	Tp**3	Tp**4	Tp**5
Tt**0	-293.9637	10.31608	-5.693609	1.308318	-0.1107738	0
Tt**1	63.53009	-2.347224	1.230874	-0.2610083	0.02165993	0
Tt**2	8.593975	0.03386374	-0.01621674	0	0	0
Tt**3	-0.487141	0.005250175	0	0	0	0
Tt**4	0	0	0	0	0	0
Tt**5	0	0	0	0	0	0

Company: Caerus Piceance LLC

Schlumberger

Well: Puckett 42B-2

Field: Wildcat

County:	Garfield
State:	Colorado
Reservoir Saturation Tool	
Sigma	