

Company: Caerus Piceance LLC

Well: Puckett 42A-2

Field: Wildcat

County: Garfield State: Colorado

Reservoir Saturation Tool  
Sigma

County:	Garfield
Field:	Wildcat
Location:	SHL: S2, T7S, R97W
Well:	Puckett 42A-2
Company:	Caerus Piceance LLC
Location:	
SHL: S2, T7S, R97W	Elev.: K.B. 8509.00 ft
2190' FNL & 654' FEL	G.L. 8479.00 ft
LAT: 39.475778 / LONG: -108.180319	D.F. 8509.00 ft
Permanent Datum:	Ground Level
Log Measured From:	Kelly Bushing
Drilling Measured From:	Kelly Bushing
API Serial No.	Section: 2
05-045-22632	Township: 7S
	Range: 97W

Logging Date	23-Jul-2015
Run Number	ONE
Depth Driller	8930.00 ft
Schlumberger Depth	8865.00 ft
Bottom Log Interval	8865.00 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	2505.00 ft
To	8930.00 ft
Casing/Tubing Size	4.5 in
Weight	11.6 lbm/ft
Grade	P110
From	0.00 ft
To	8925.00 ft
Max Recorded Temperatures	235 degF
Logger on Bottom	24-Jul-2015 00:32:00
Unit Number	2135
Recorded By	Benjamin Mammon
Witnessed By	Natalie Naeve

Disclaimer

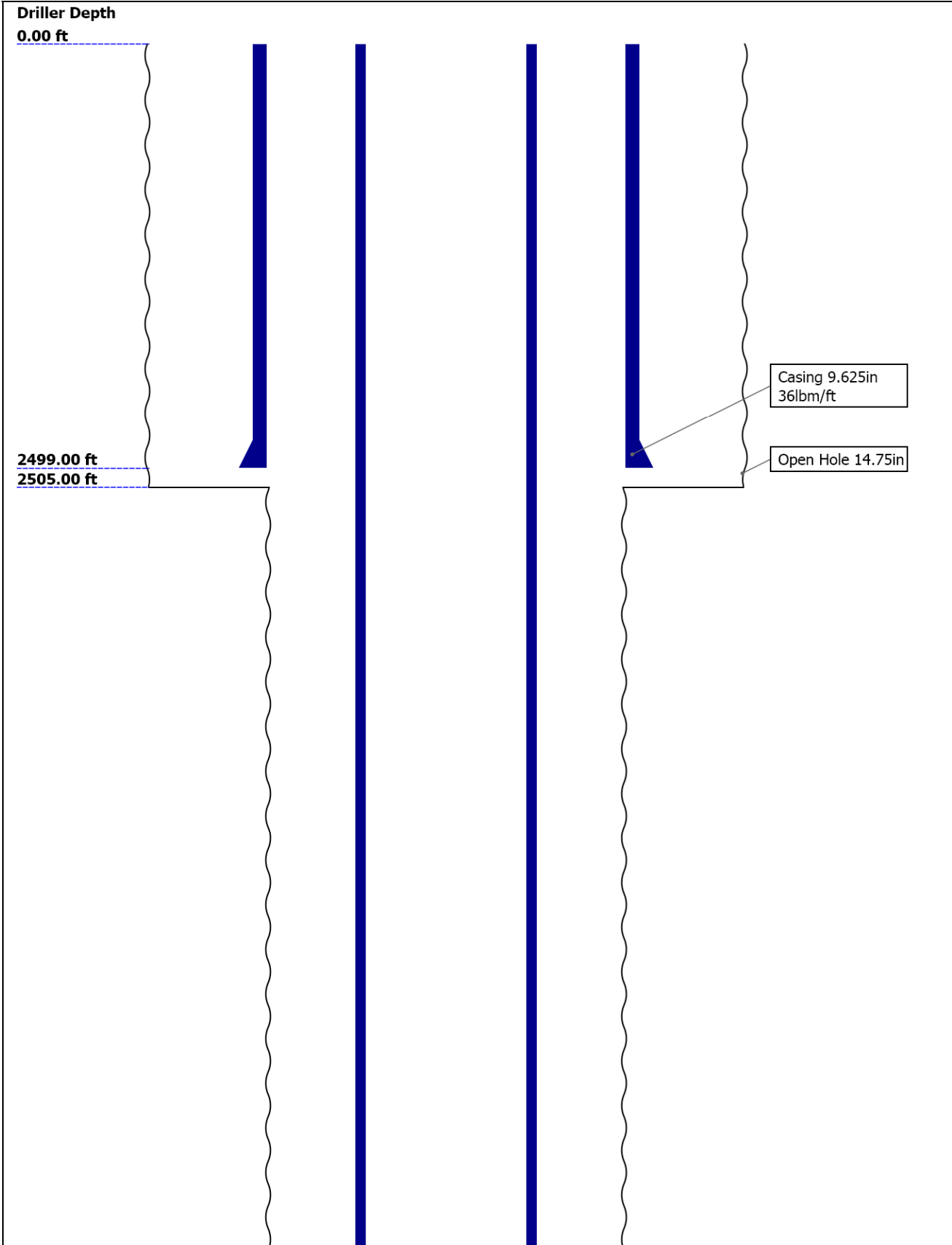
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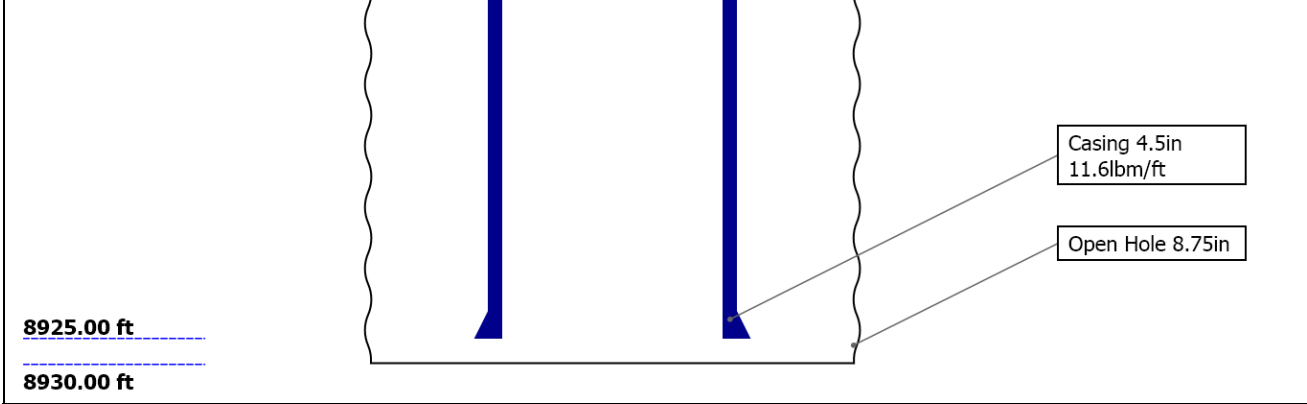
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Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	14.75	8.75				
Top Driller ( ft )	0	2505				
Top Logger ( ft )	0	2505				
Bottom Driller ( ft )	2505	8930				
Bottom Logger ( ft )	2505	8930				
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 )	2499	8925				
Bottom Logger ( ft )	2499	8925				

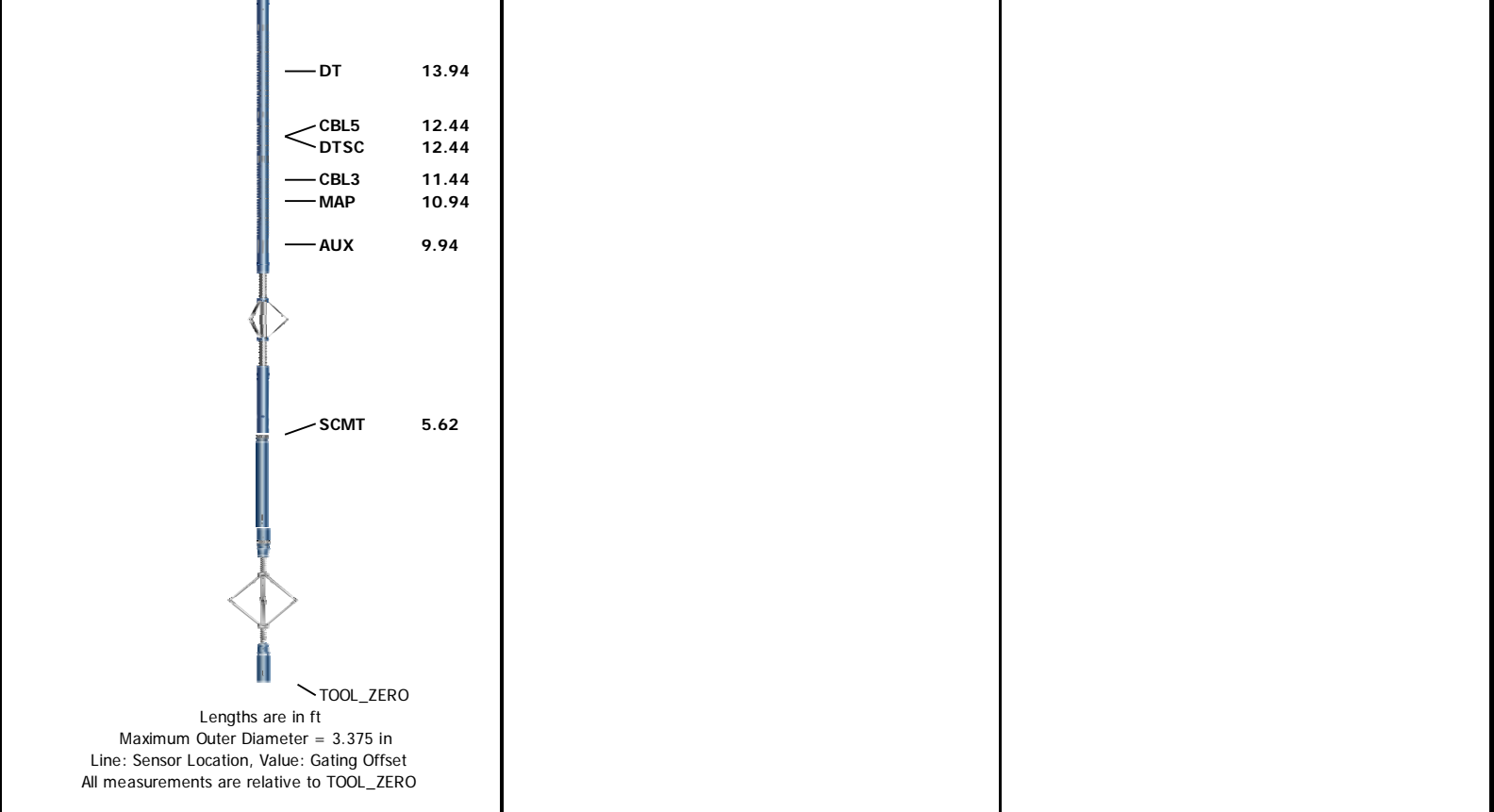
Operational Run Summary

Parameter ( unit )	ONE					
Date Log Started	23-Jul-2015					
Time Log Started	22:13:28					
Date Log Finished						
Time Log Finished						
Top Log Interval ( ft )						
Bottom Log Interval ( ft )						
Total Depth ( ft )	8865.00					
Max Hole Deviation ( deg )						
Azimuth of Max Deviation ( deg )						
Bit Size ( in )	8.750					
Logging Unit Number	2135					
Logging Unit Location	Fort Morgan, CO					
Recorded By	Benjamin Marmon					

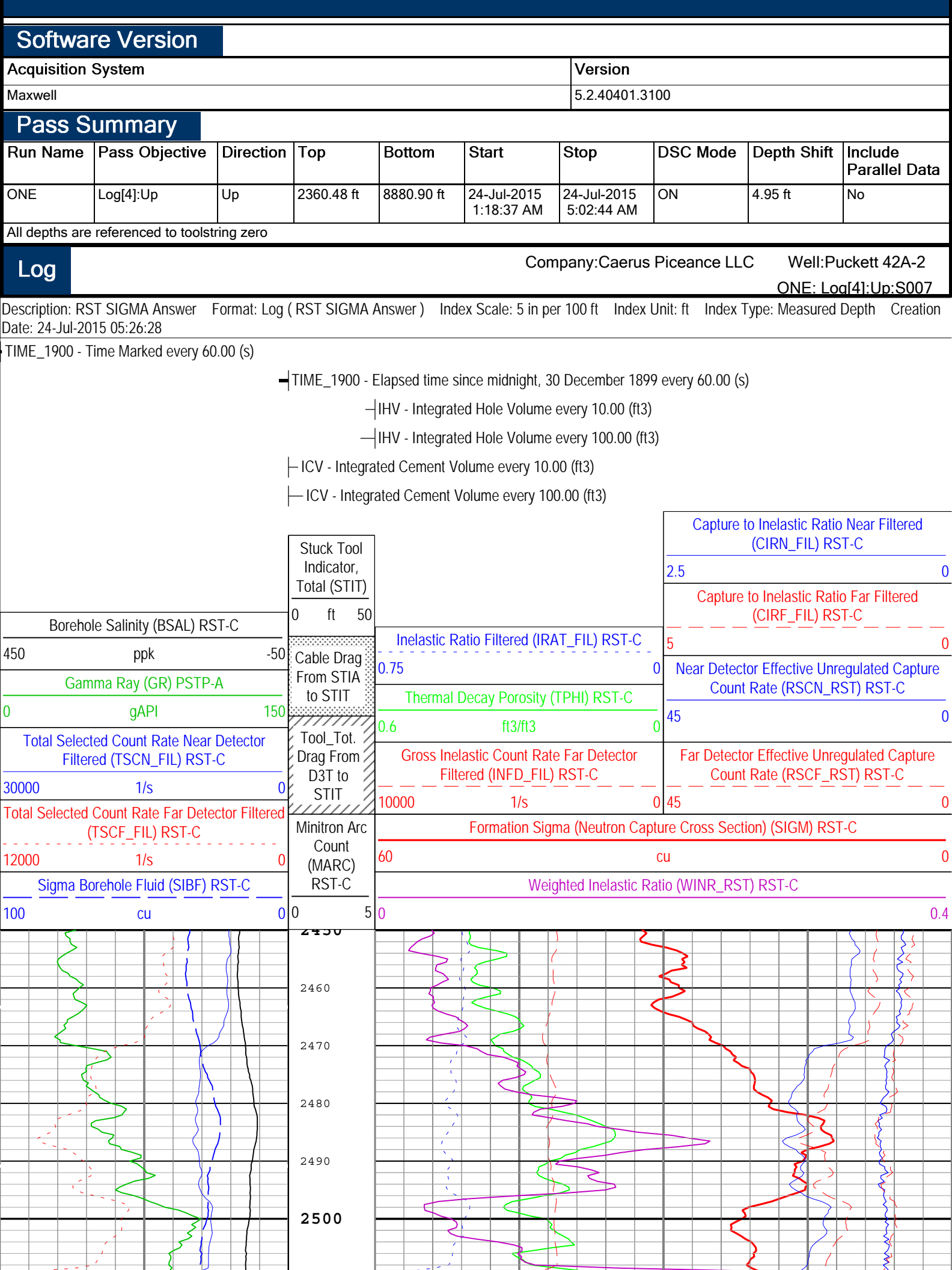
Witnessed By	Natalie Naeve					
Service Order Number	D5ND-00074					

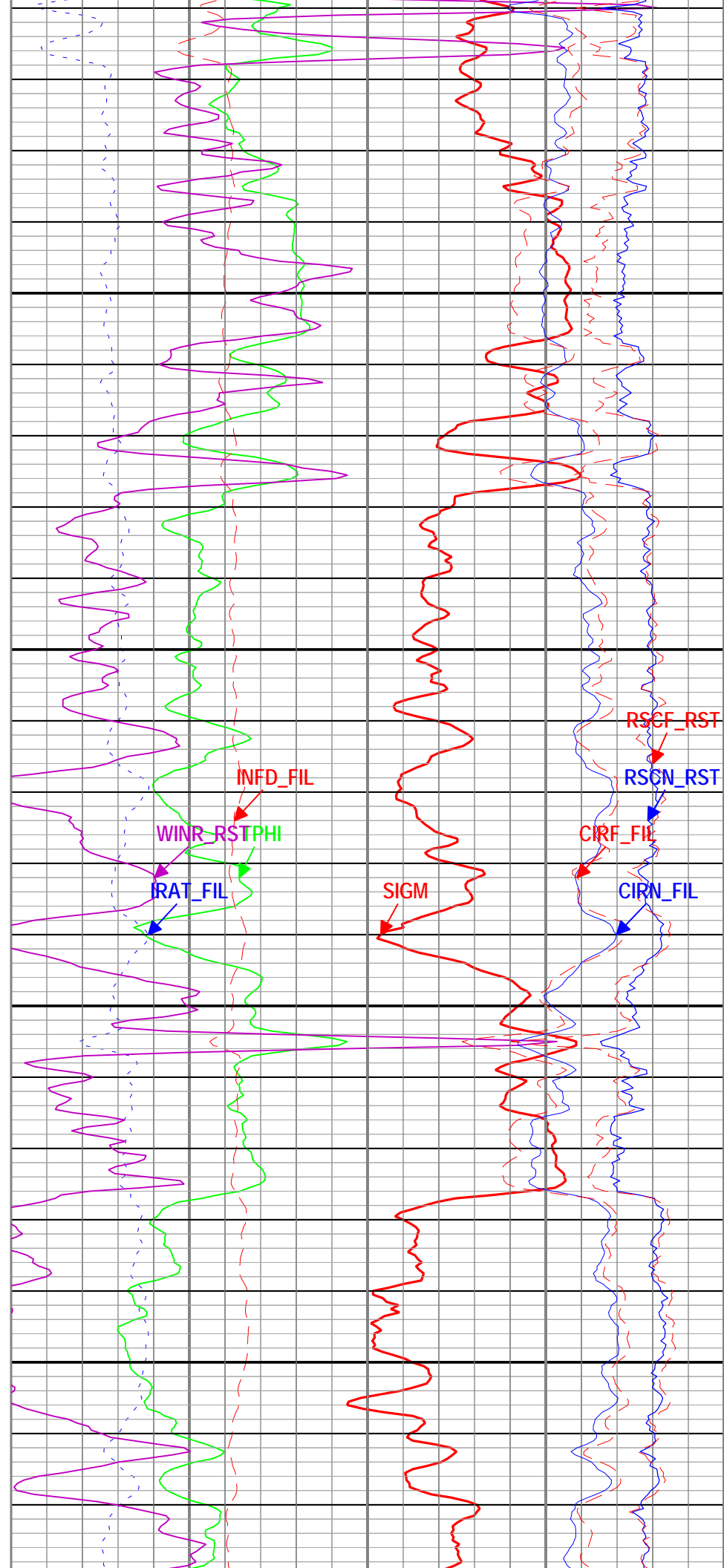
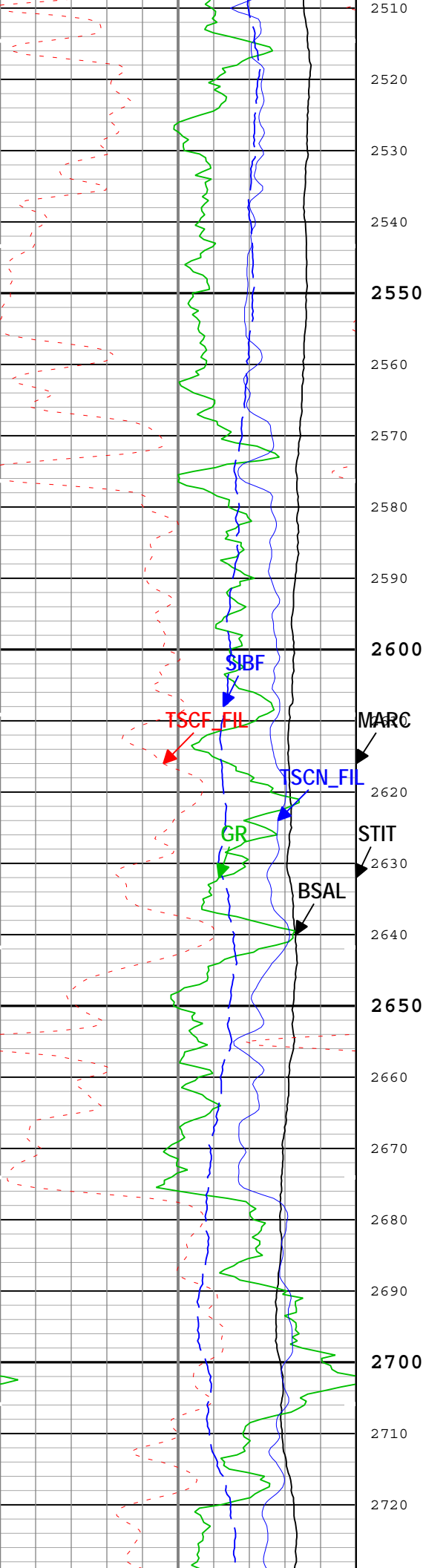
## Remarks and Equipment Summary

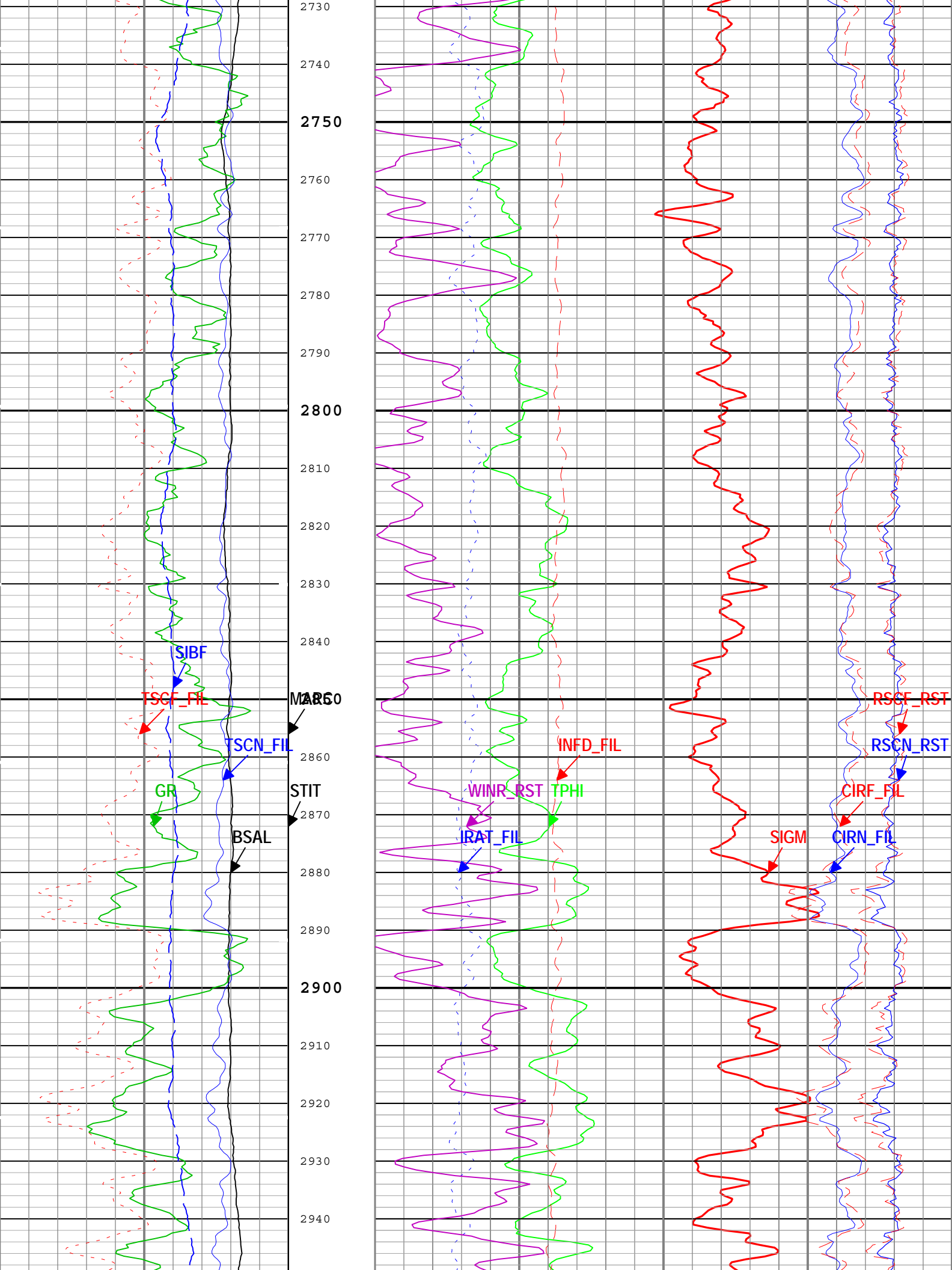
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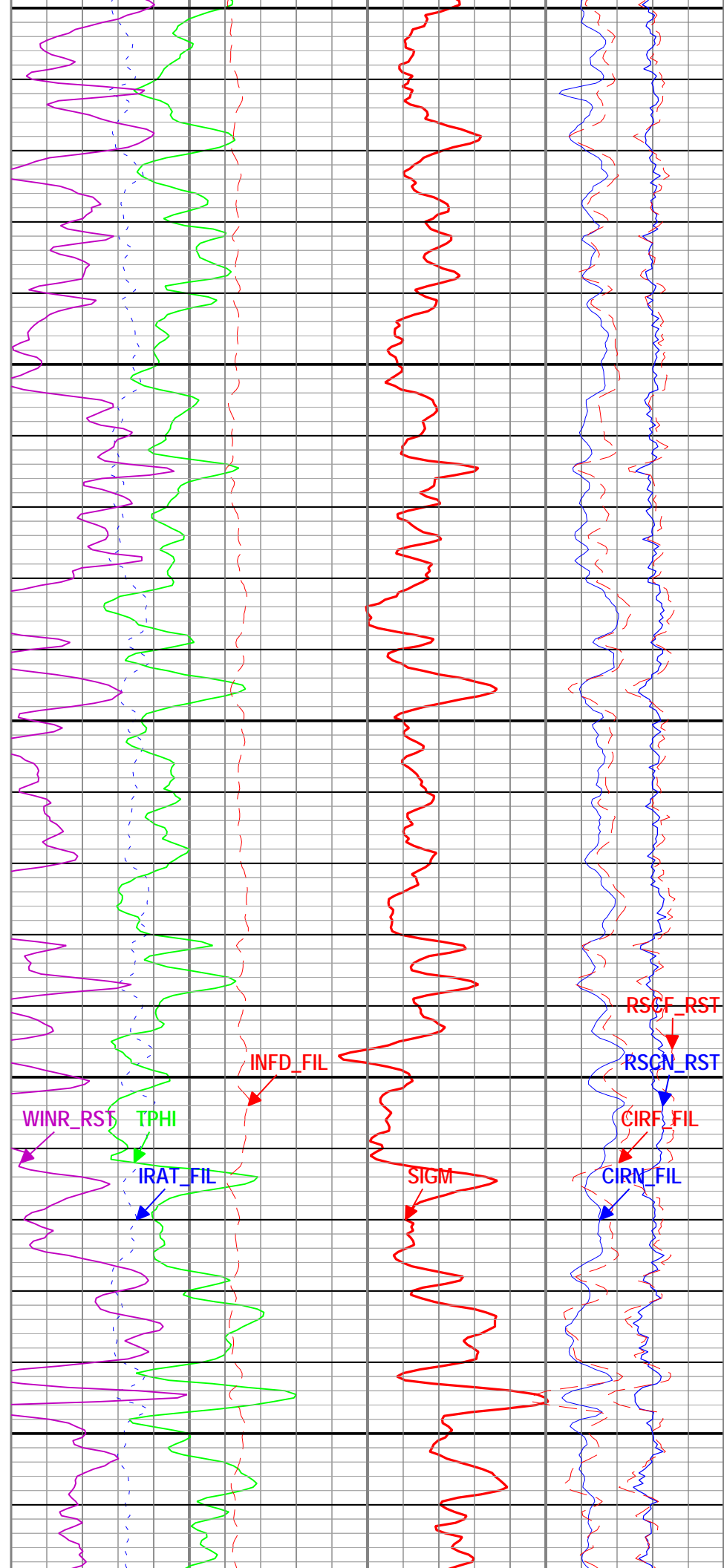
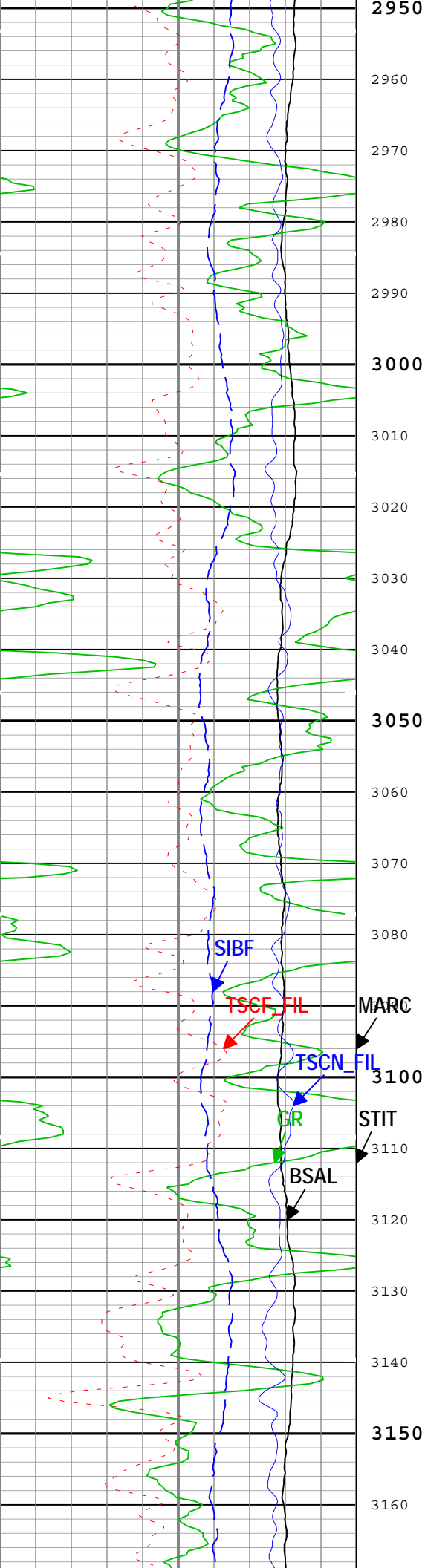
Depth Summary				
		ONE		
Depth Measuring Device				
Type	IDW-B			
Serial Number				
Calibration Date				
Calibrator Serial Number				
Calibration Cable Type				
Wheel Correction 1	0			
Wheel Correction 2	0			
Tension Device				
Type	CMTD-B/A			
Serial Number				
Calibration Date				
Calibrator Serial 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.	
Rig Up Length At Bottom			Z-Chart used as secondary depth control.	
Rig Up Length Correction				
Stretch Correction				
Tool Zero Check At Surface				

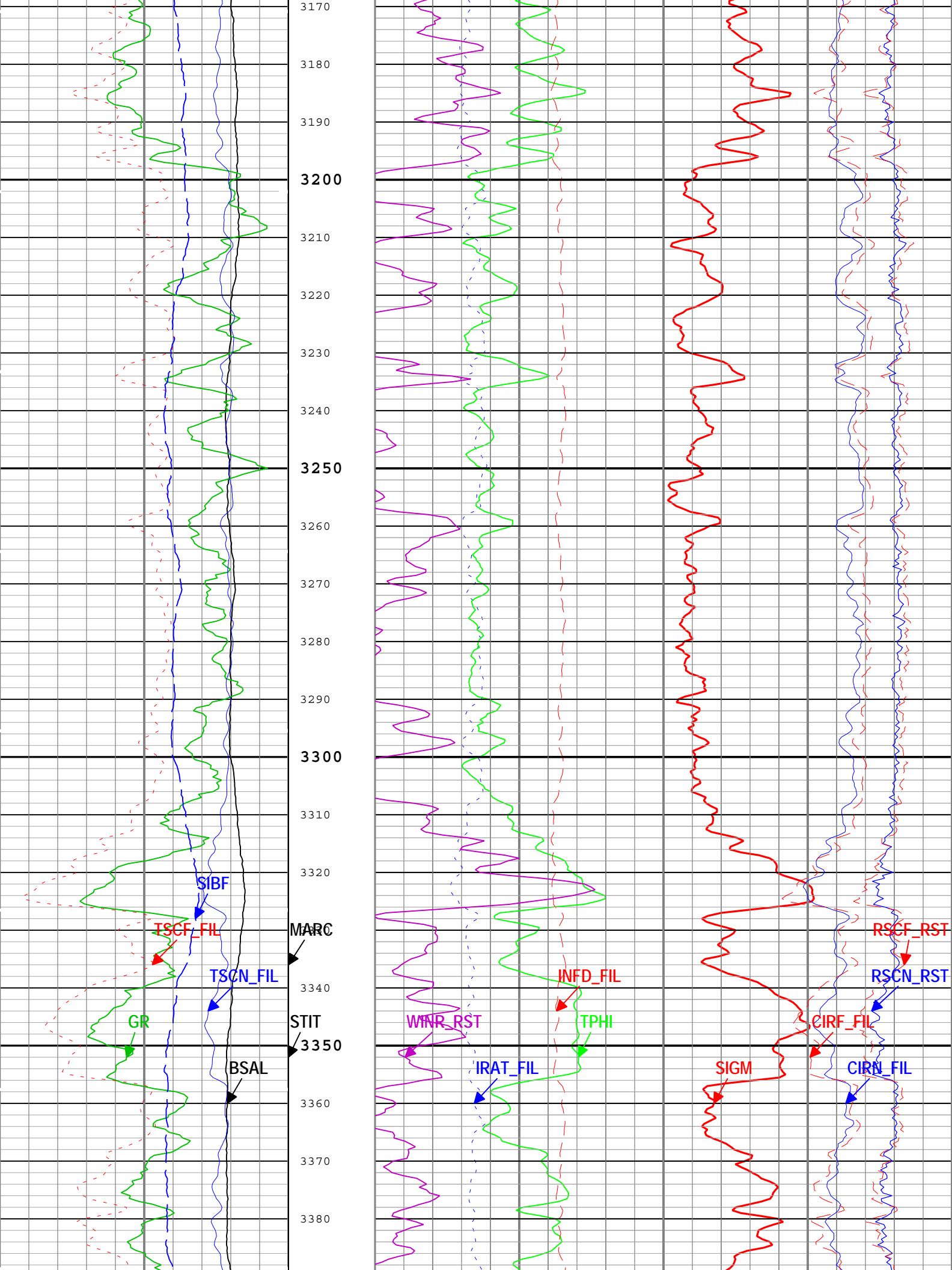


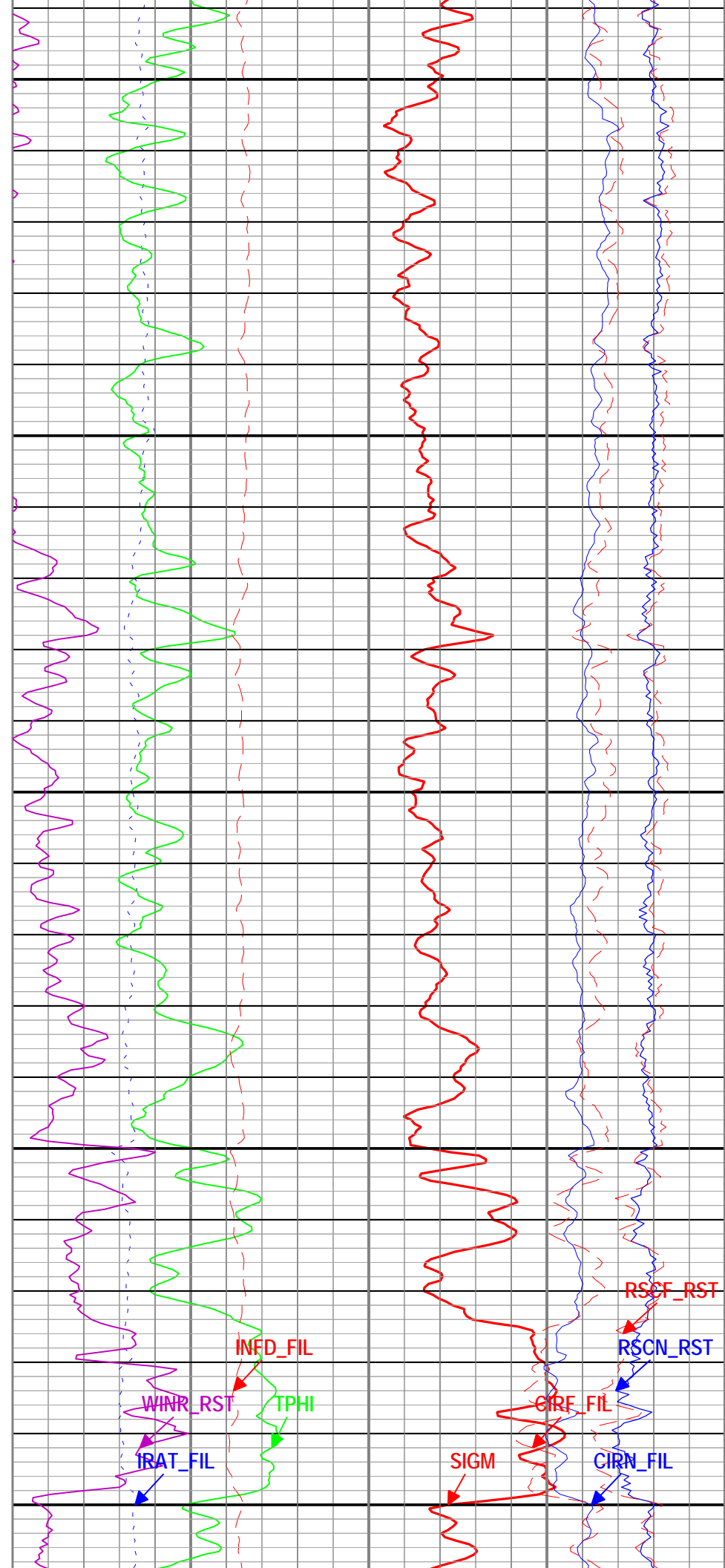
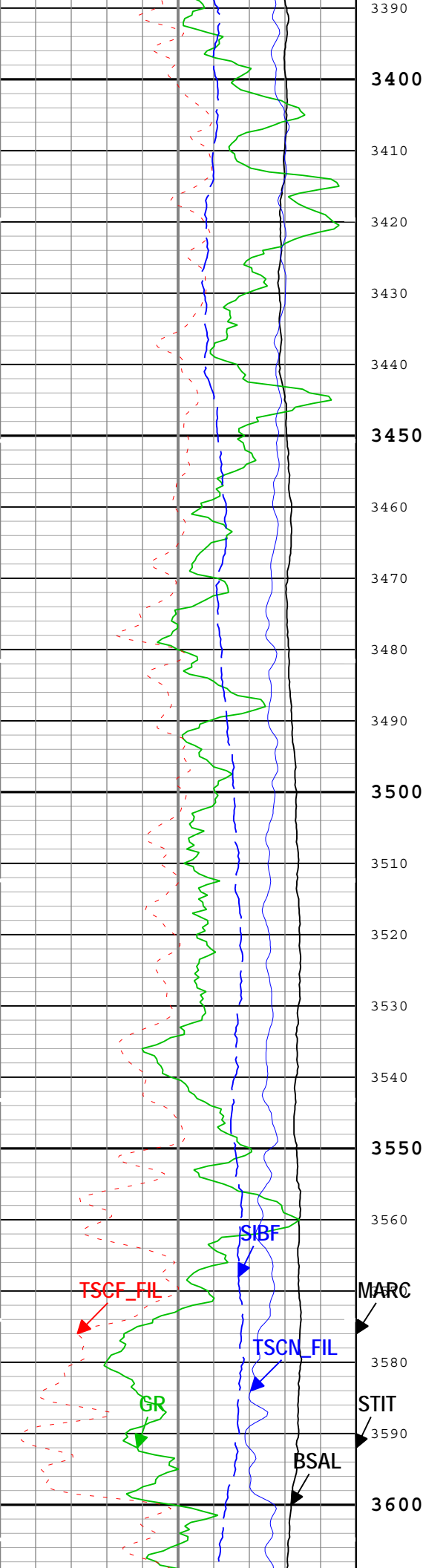


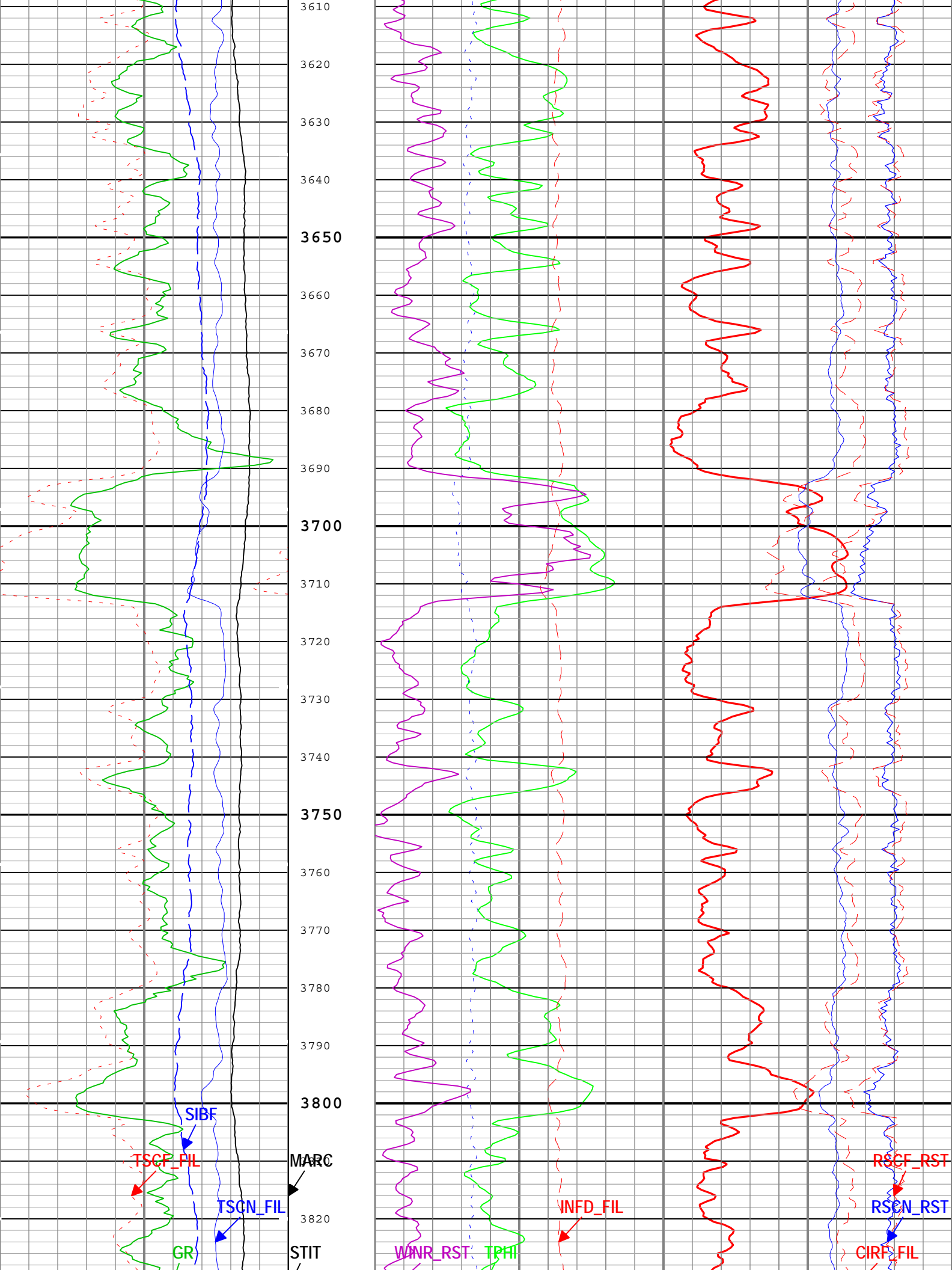


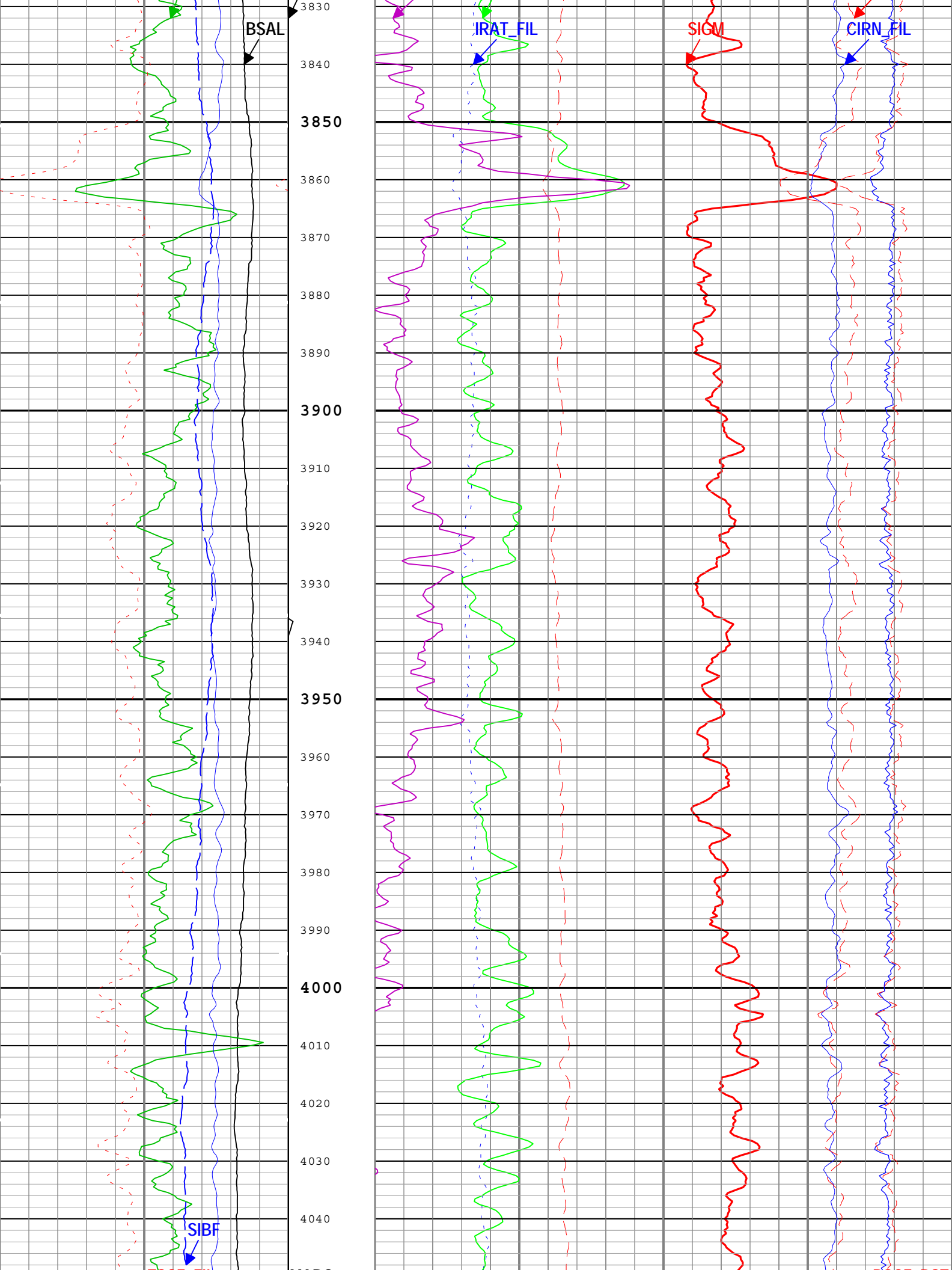


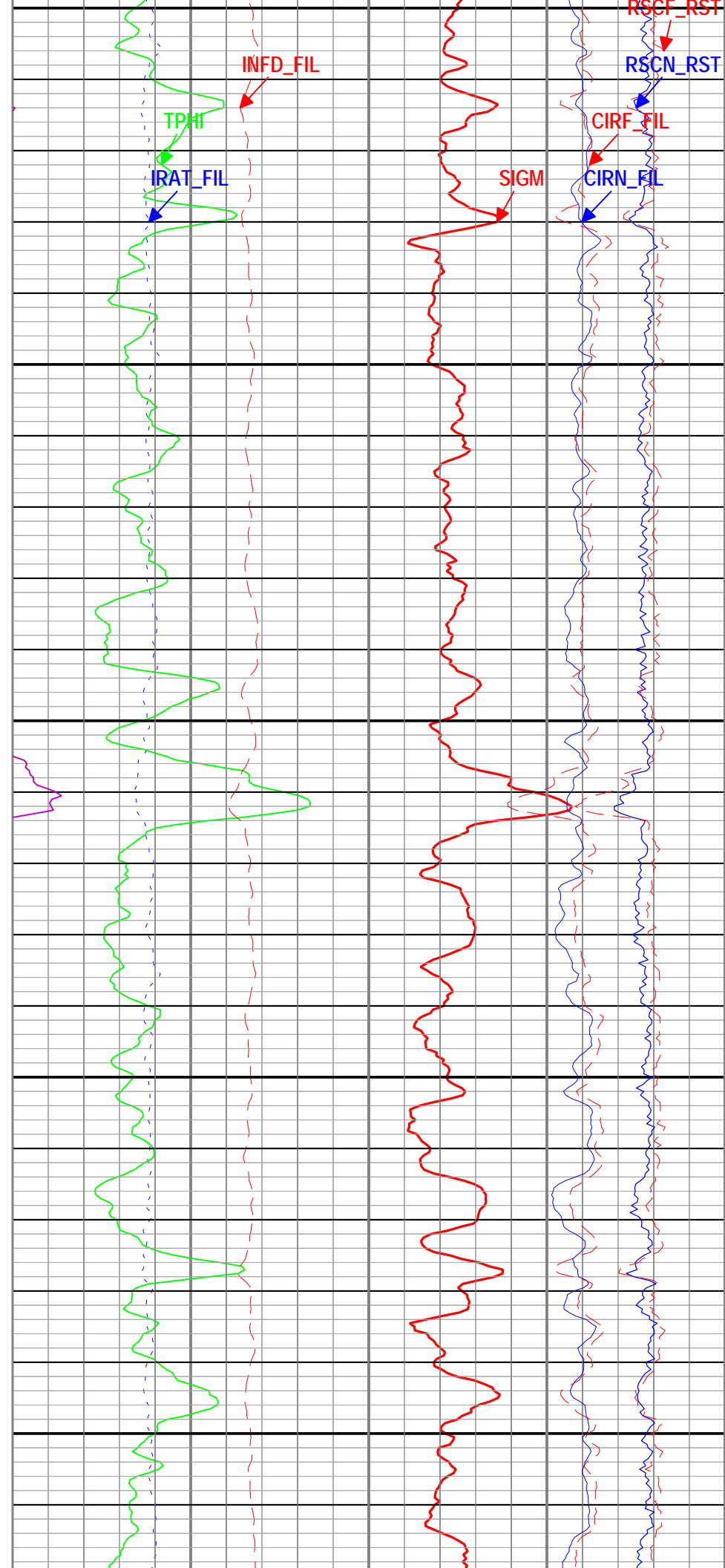
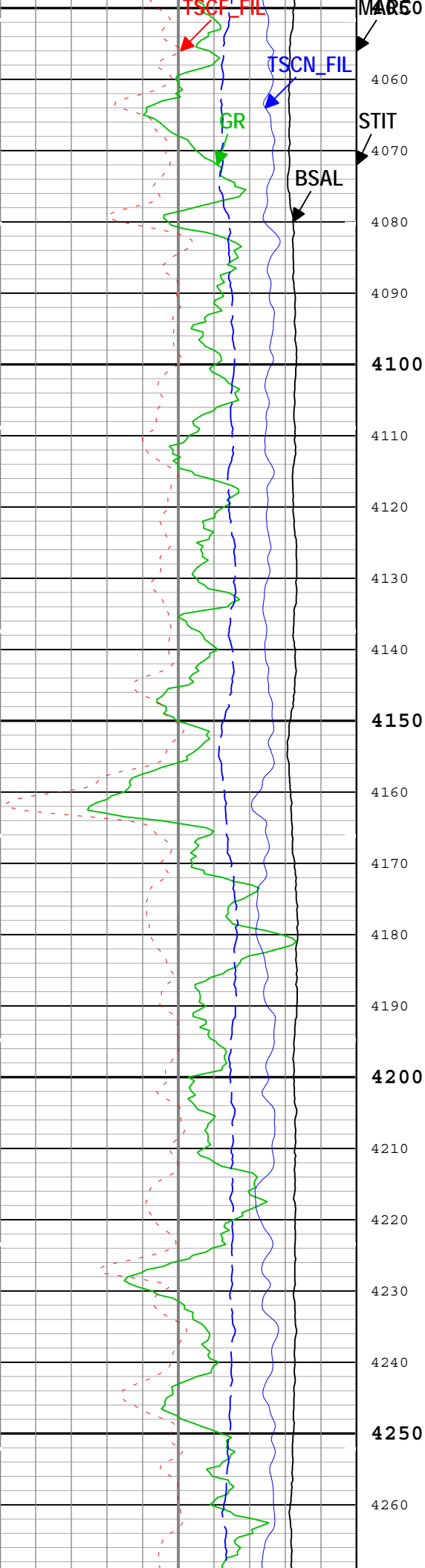


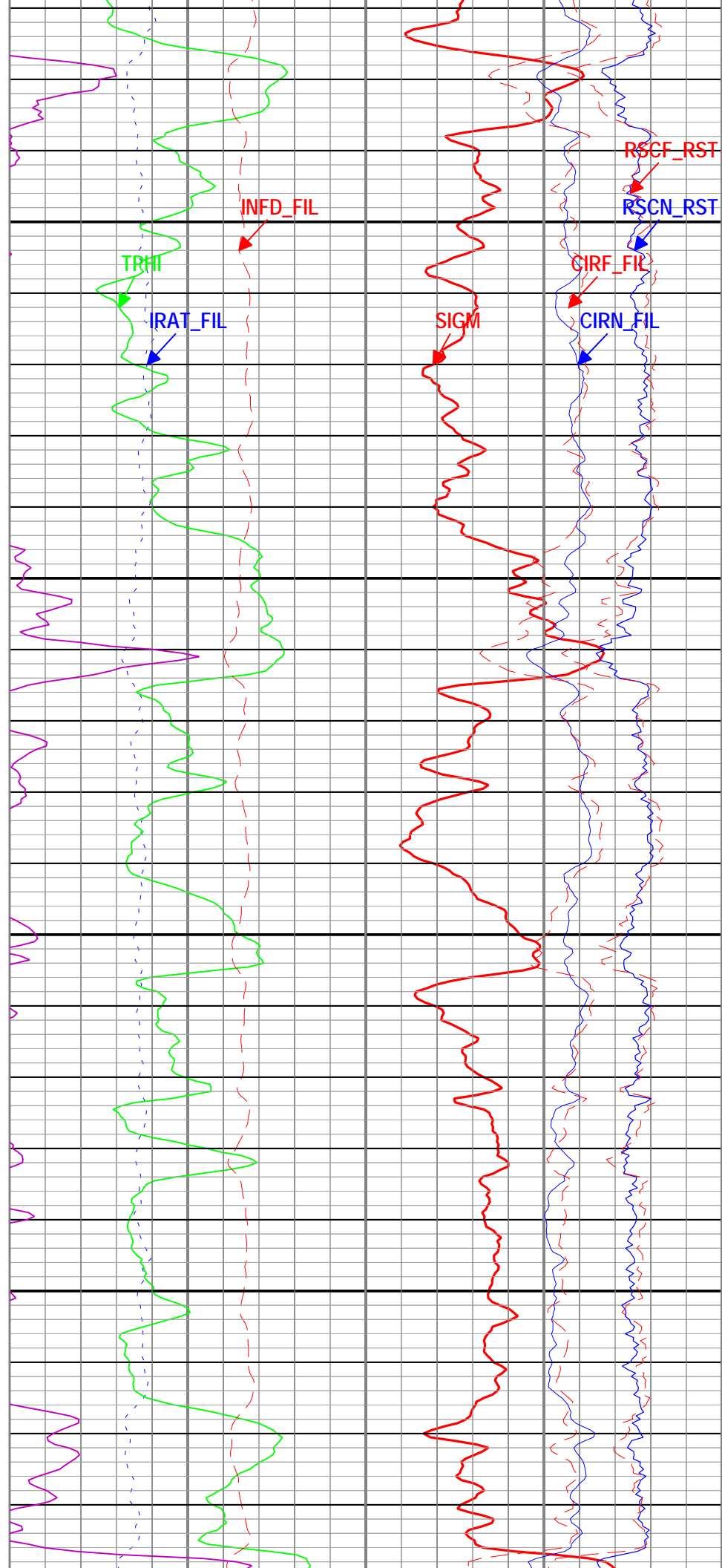
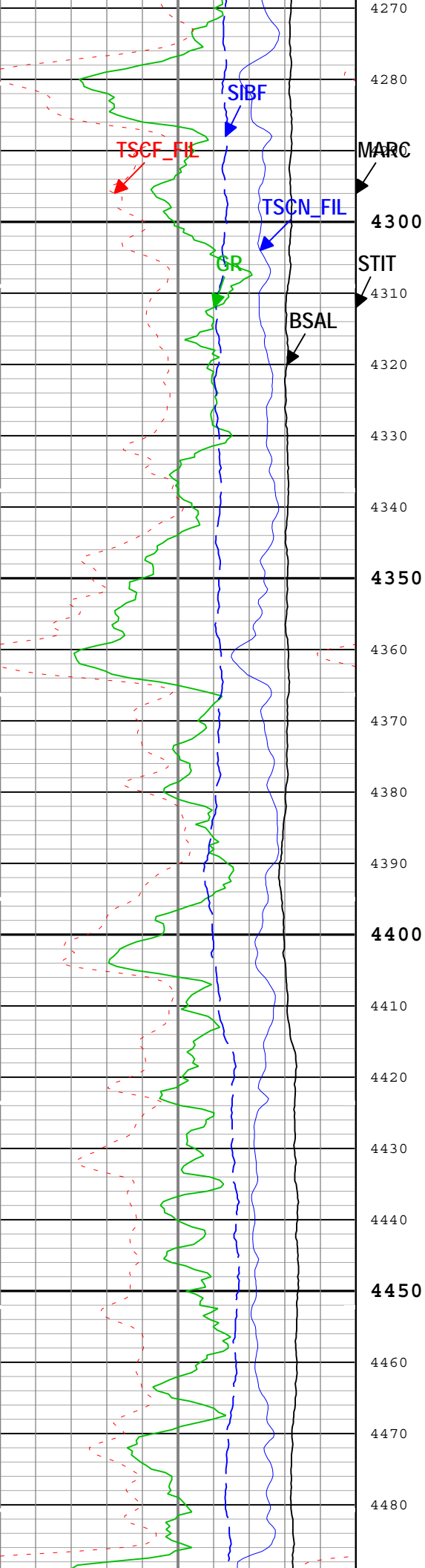


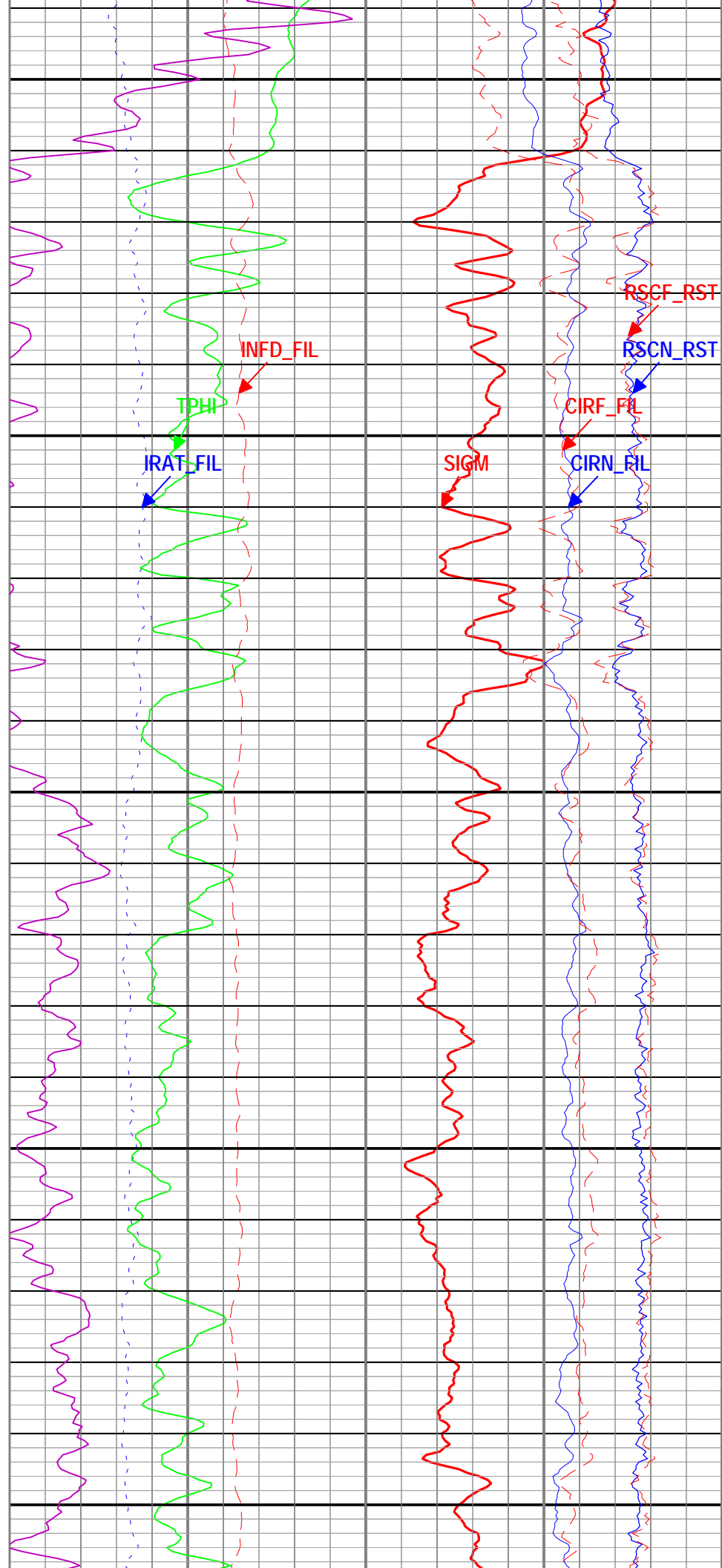
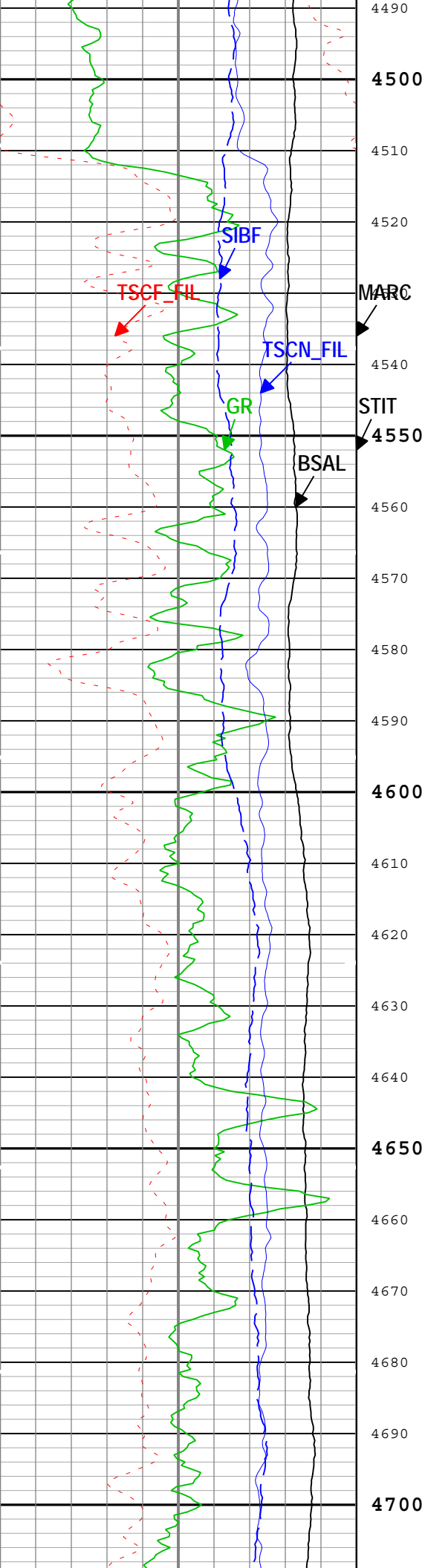




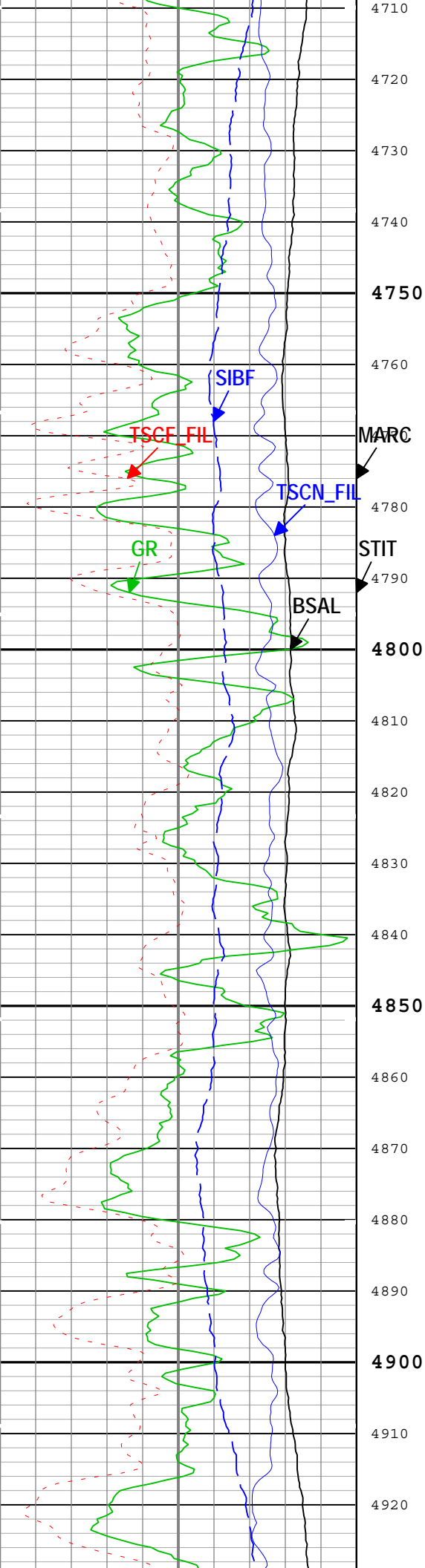




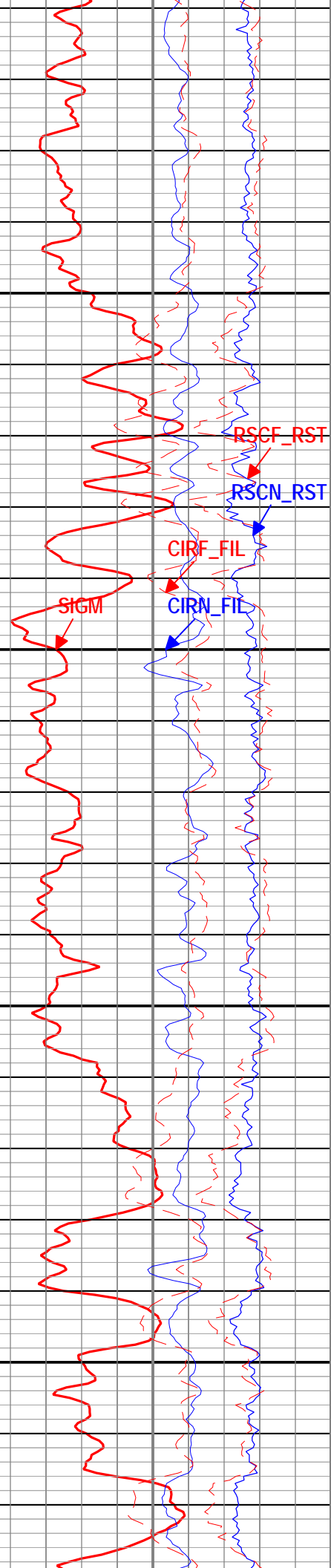
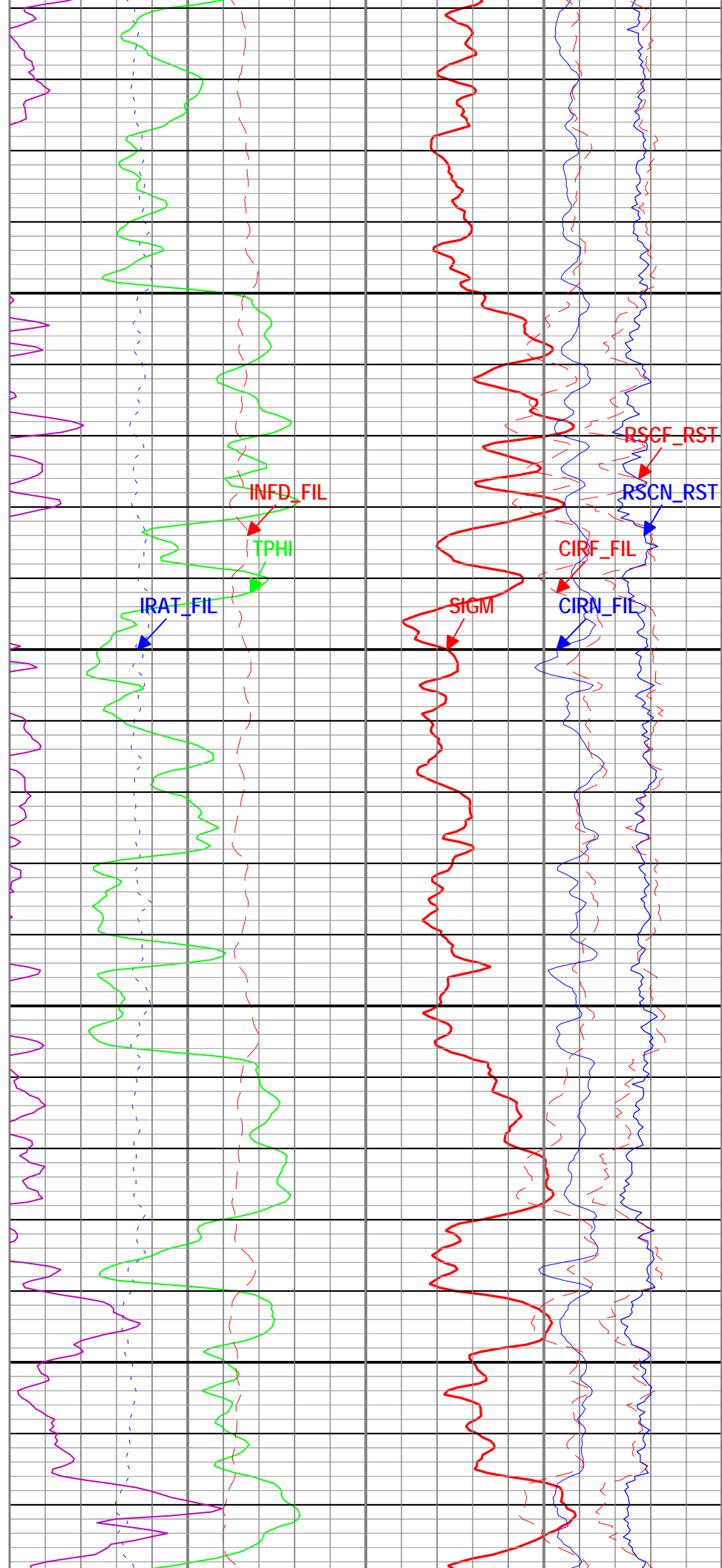


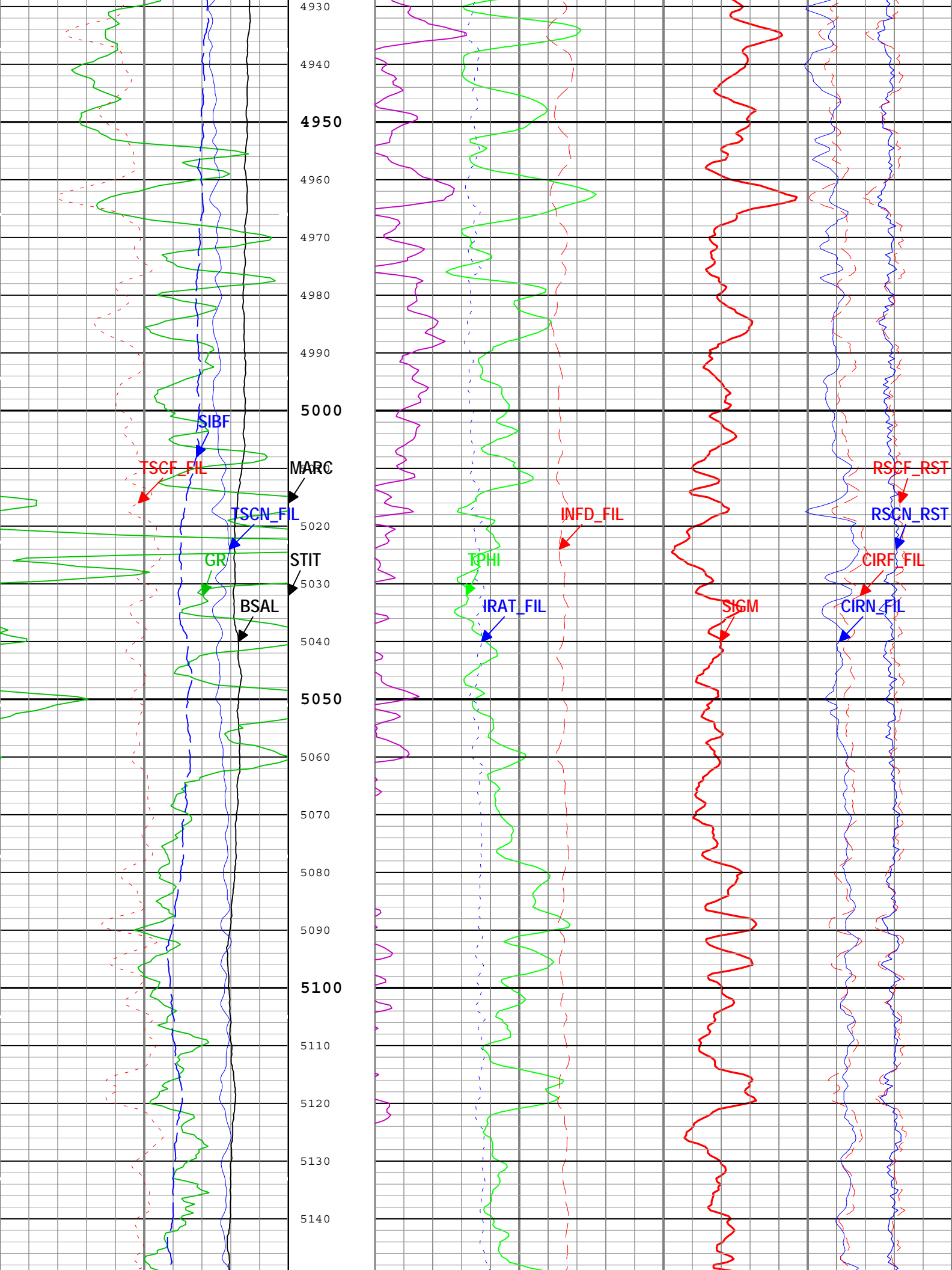


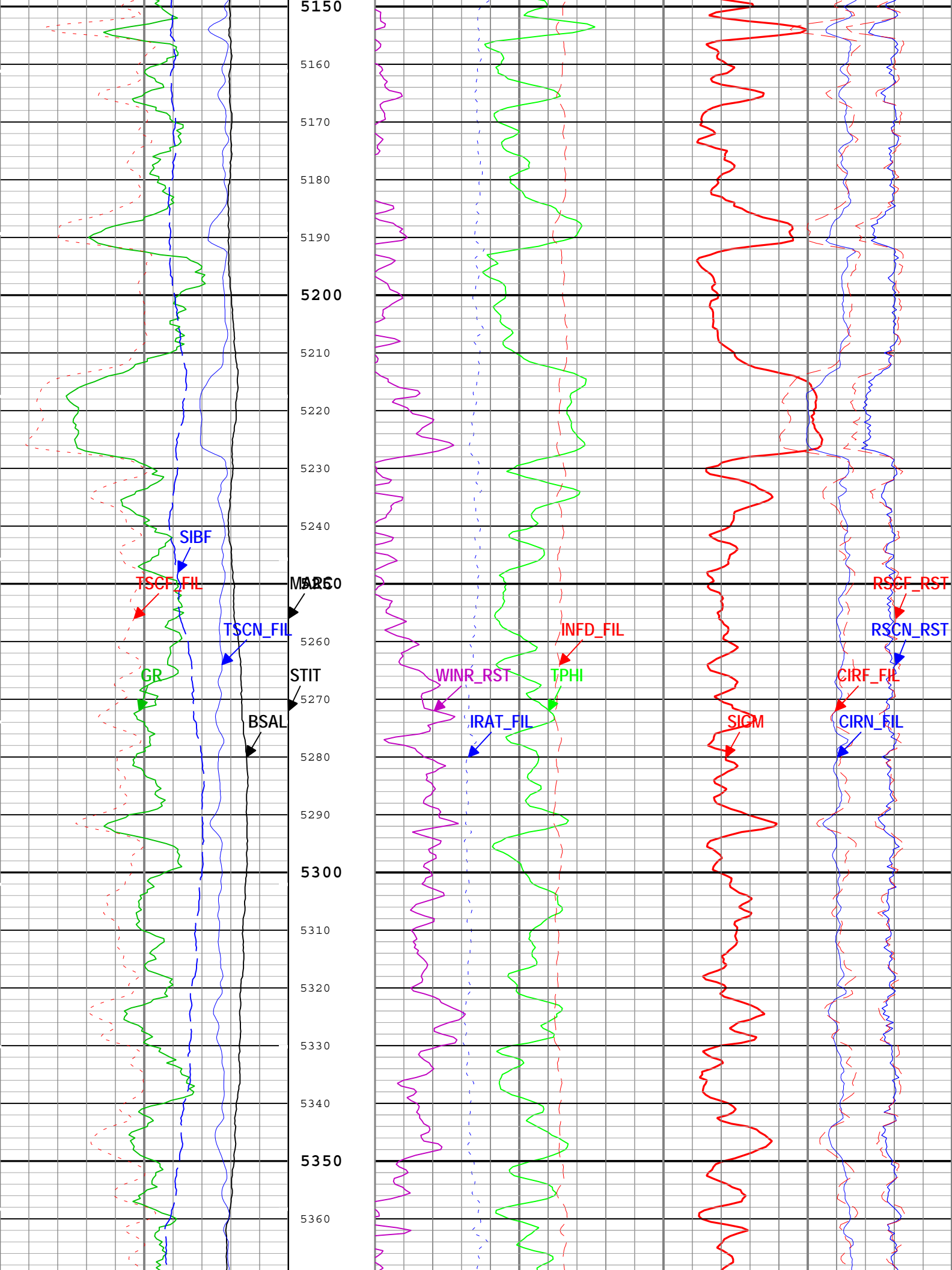


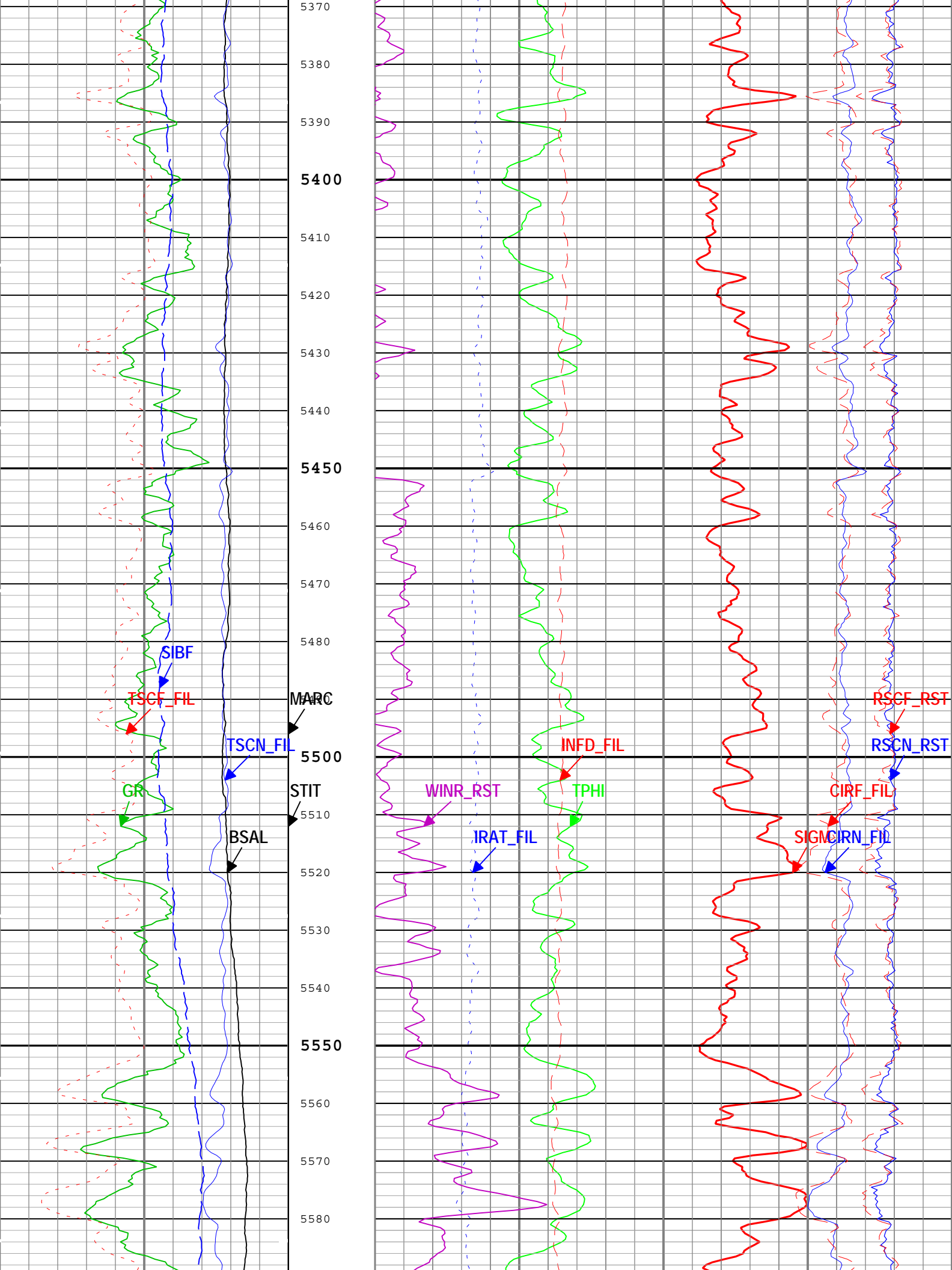


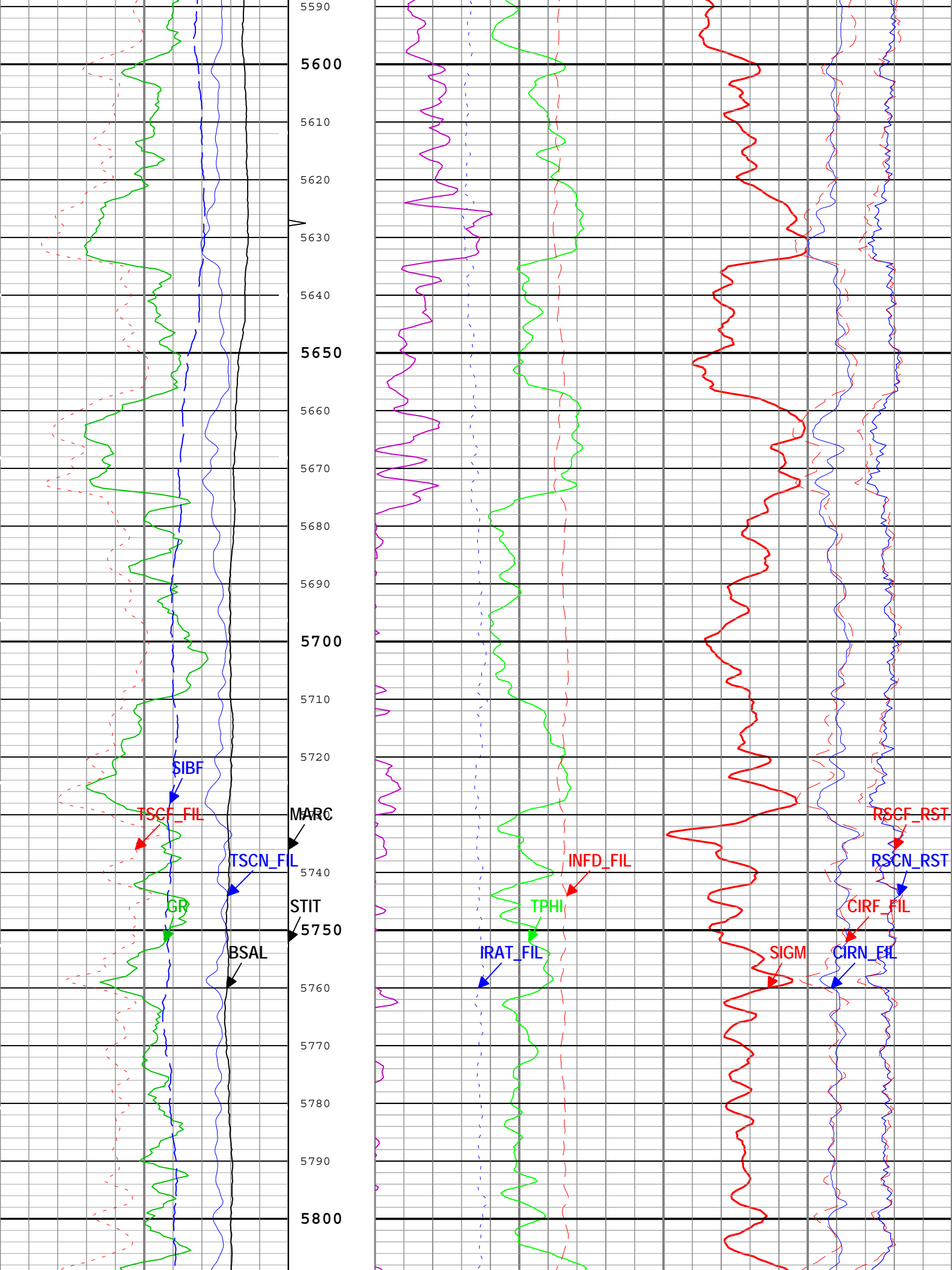
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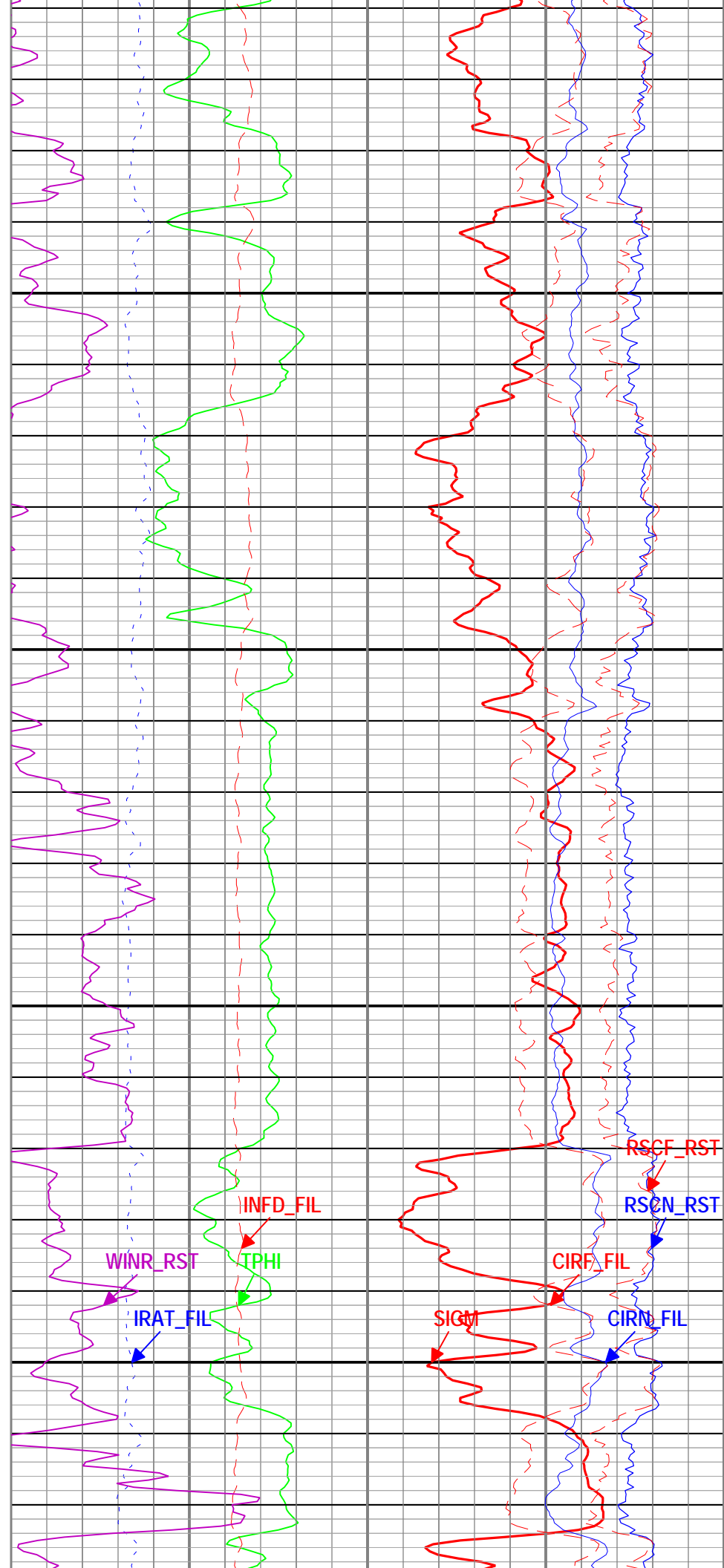
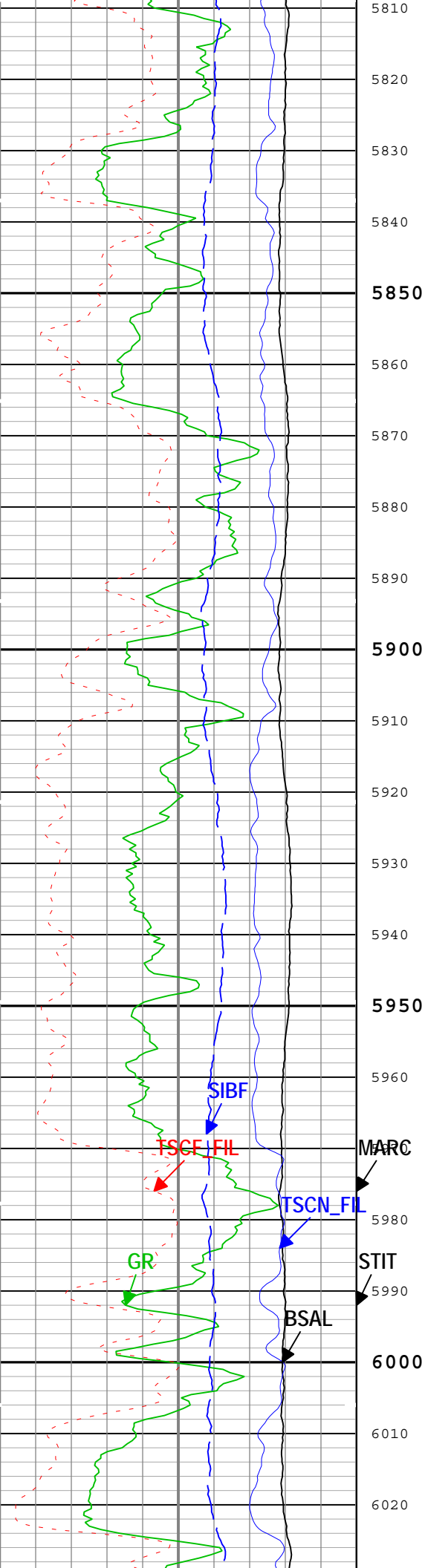


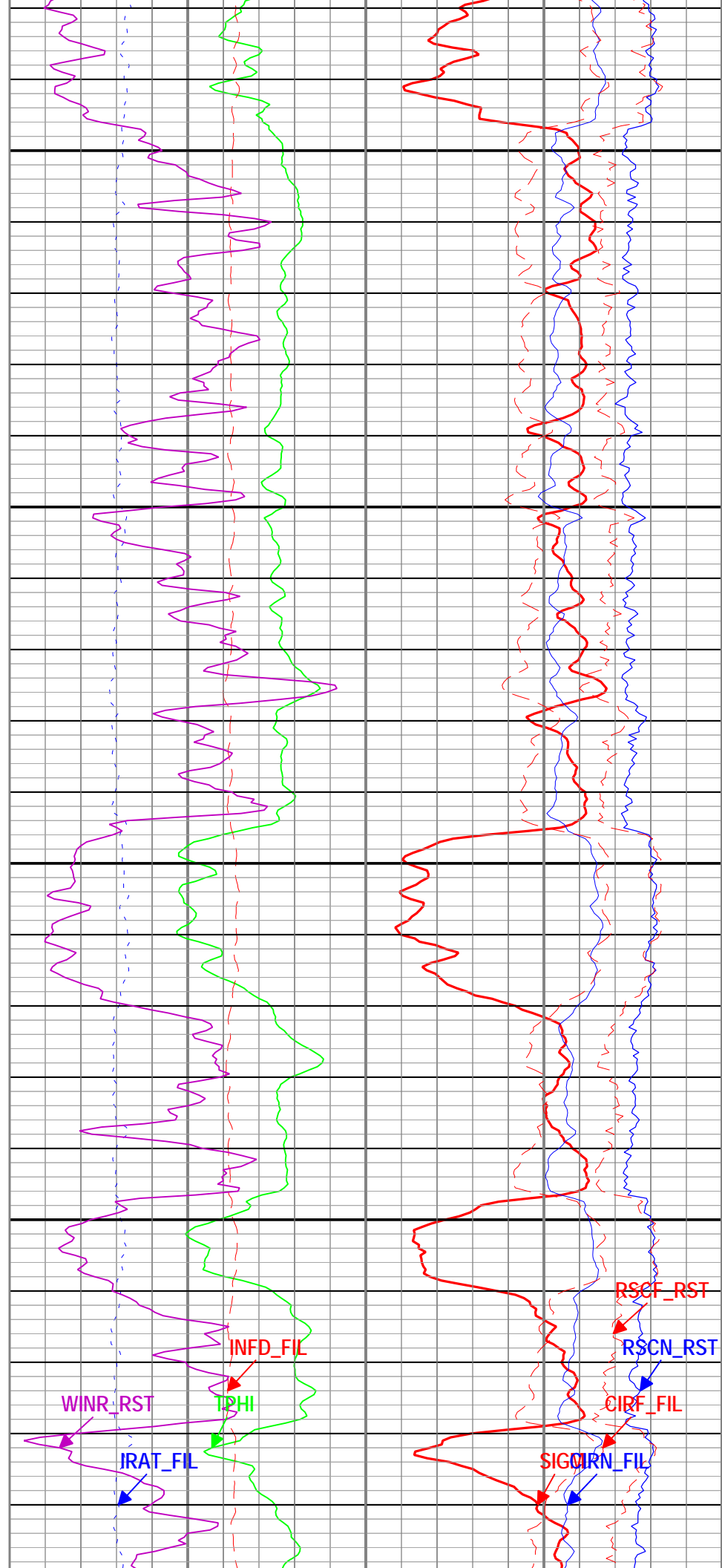
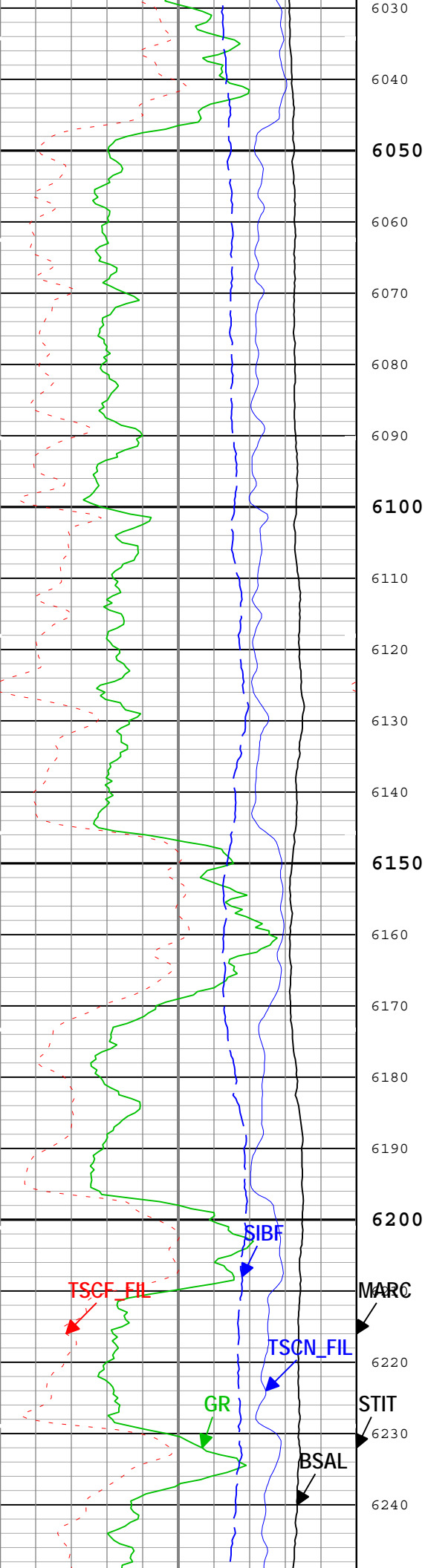


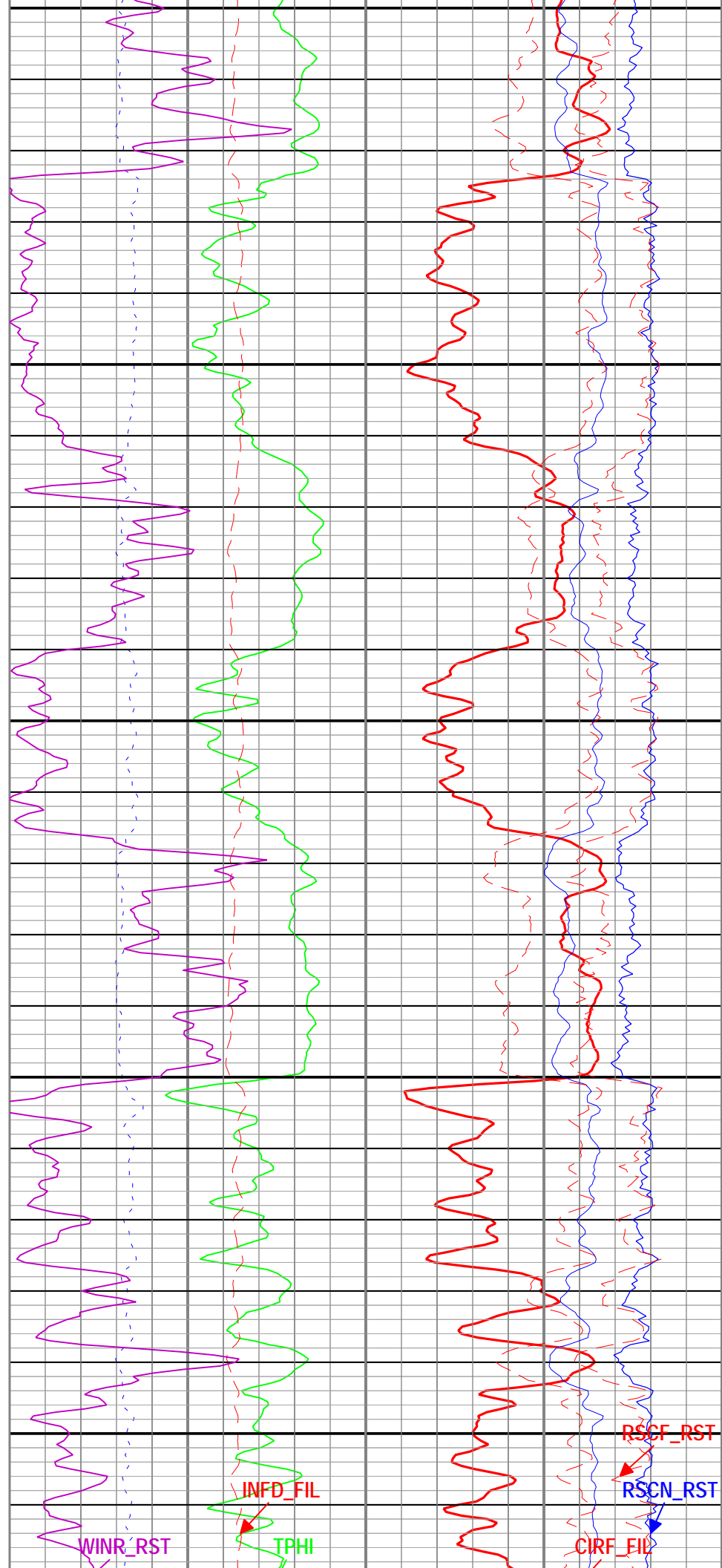
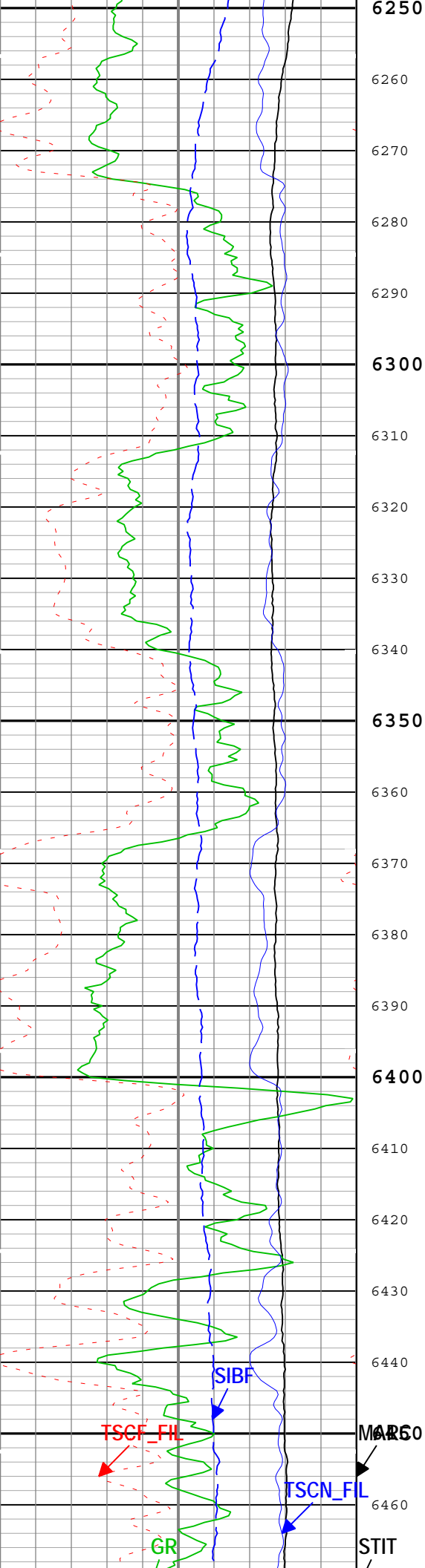




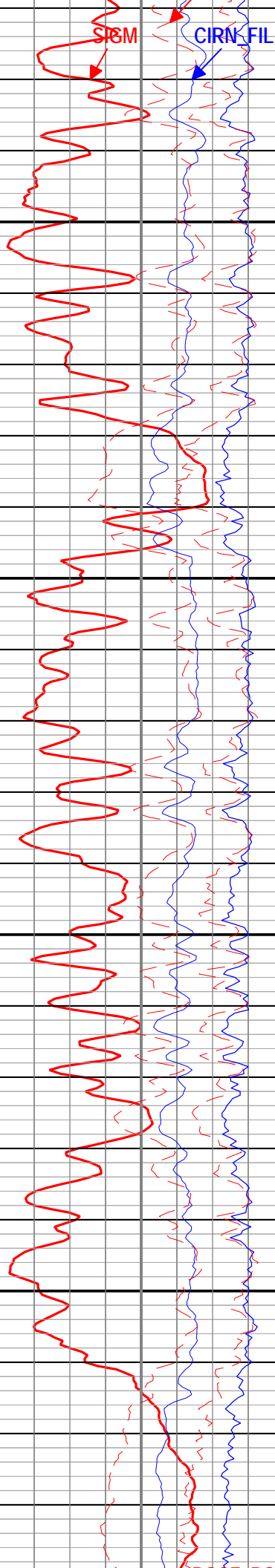
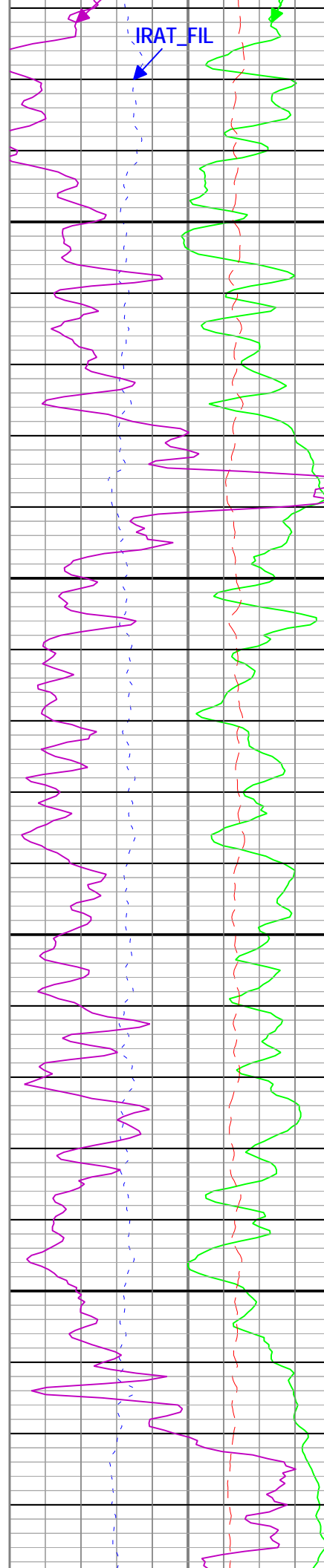
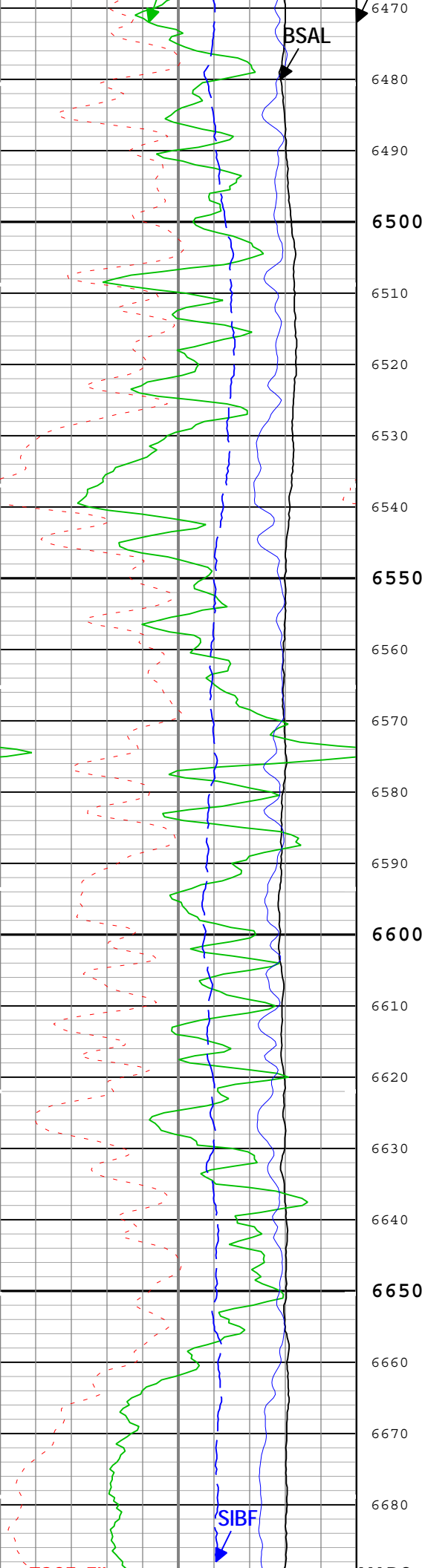


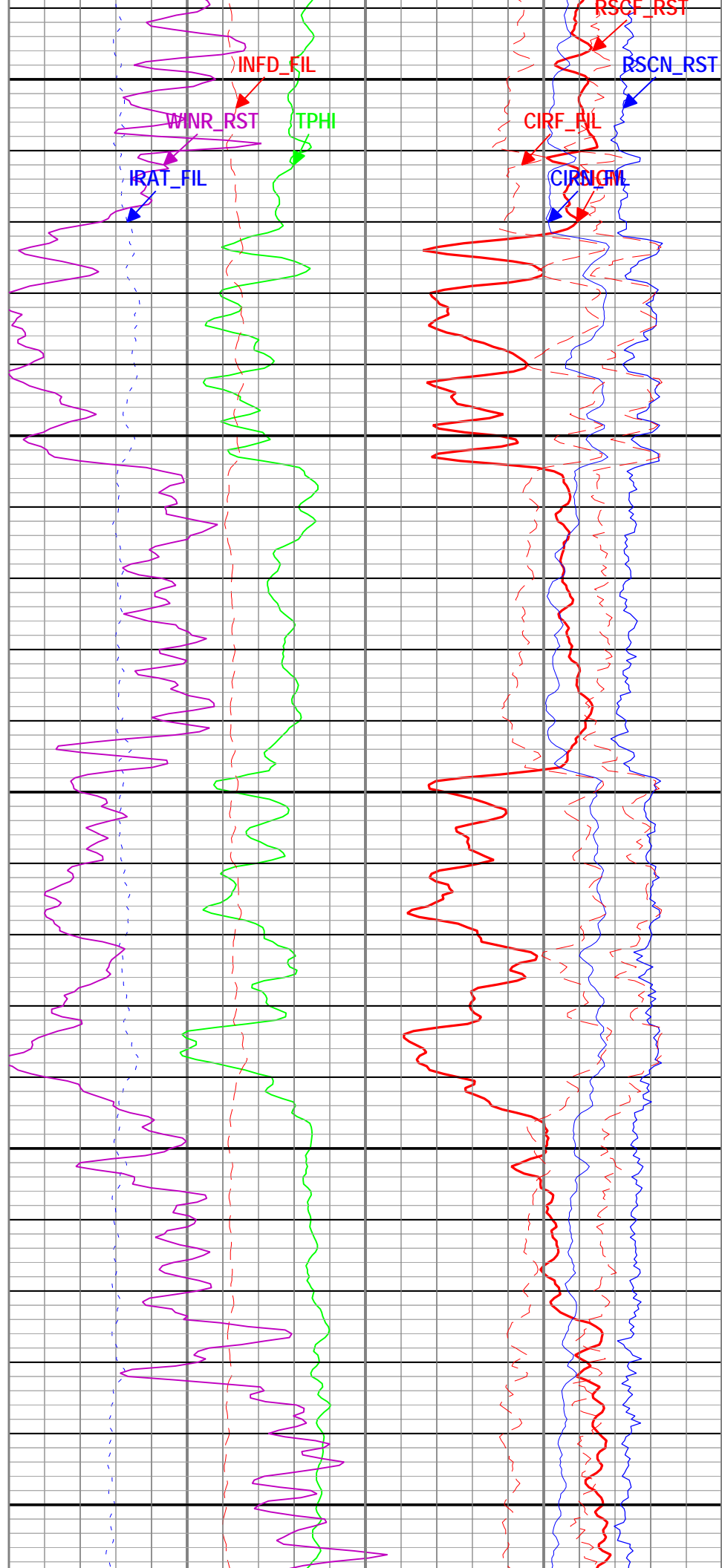
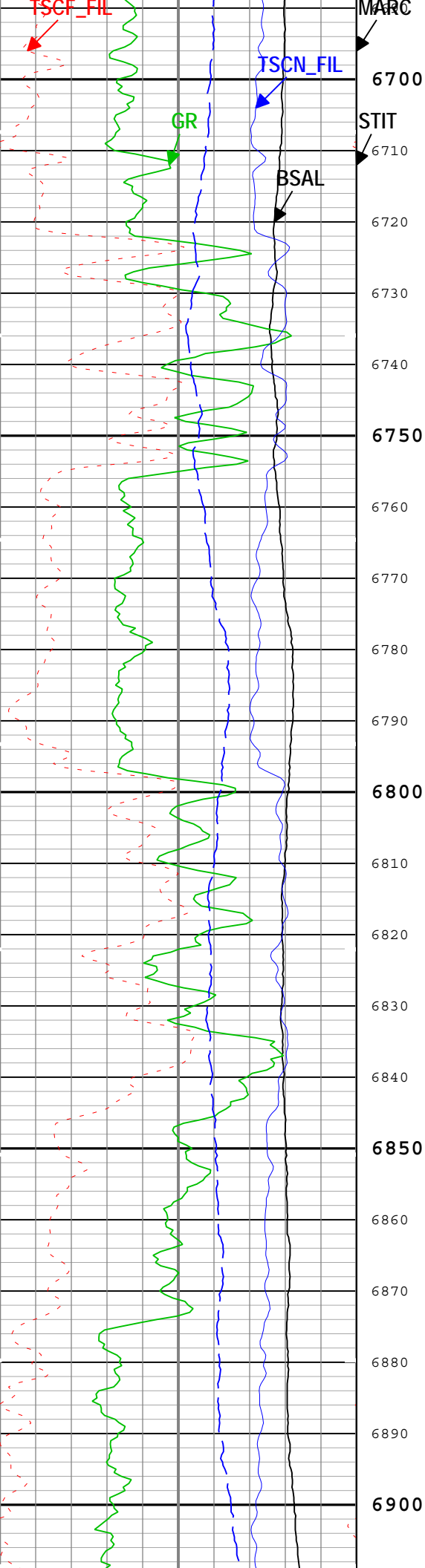


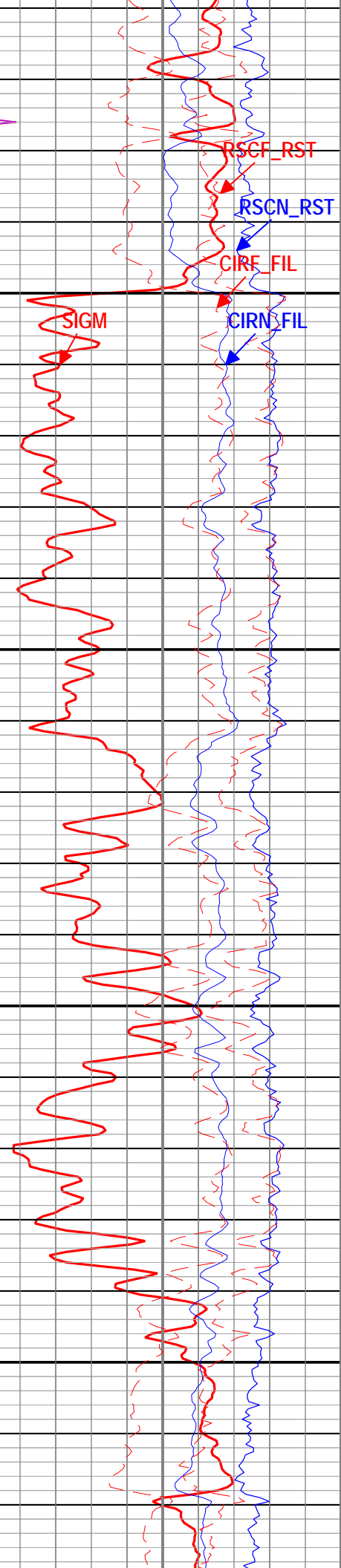
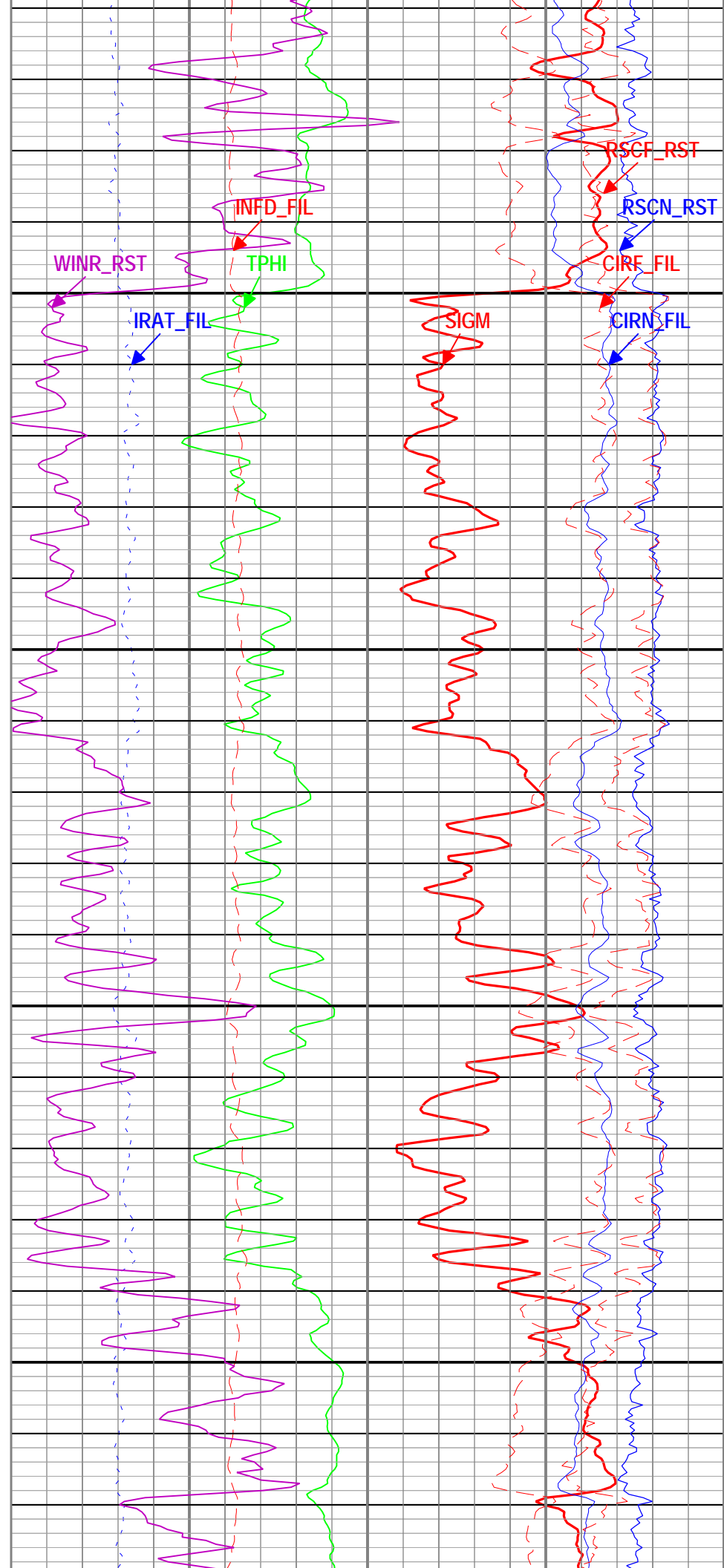
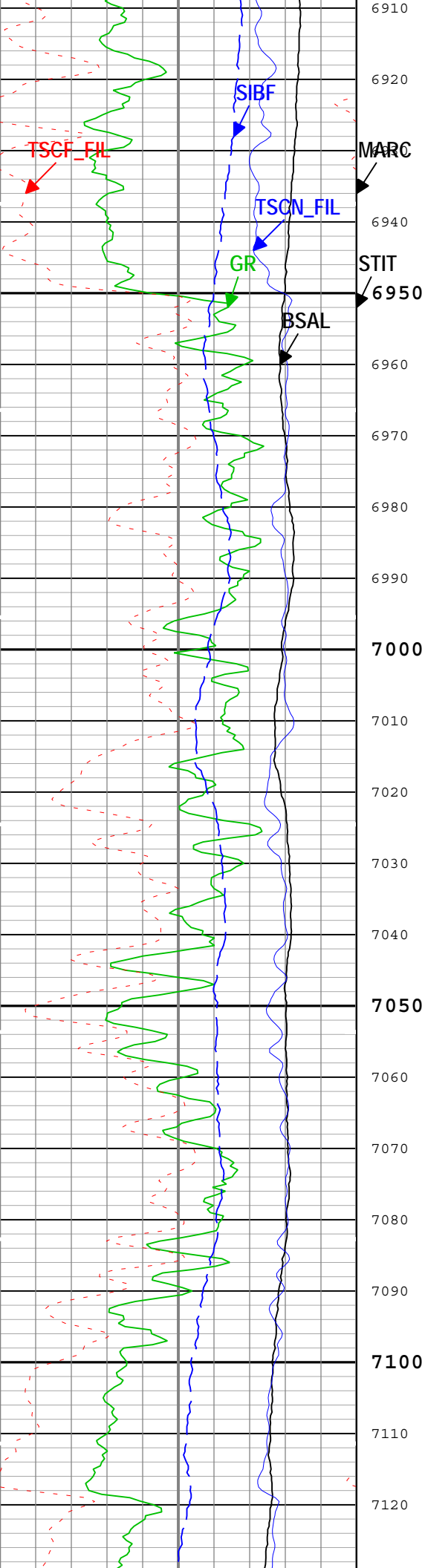


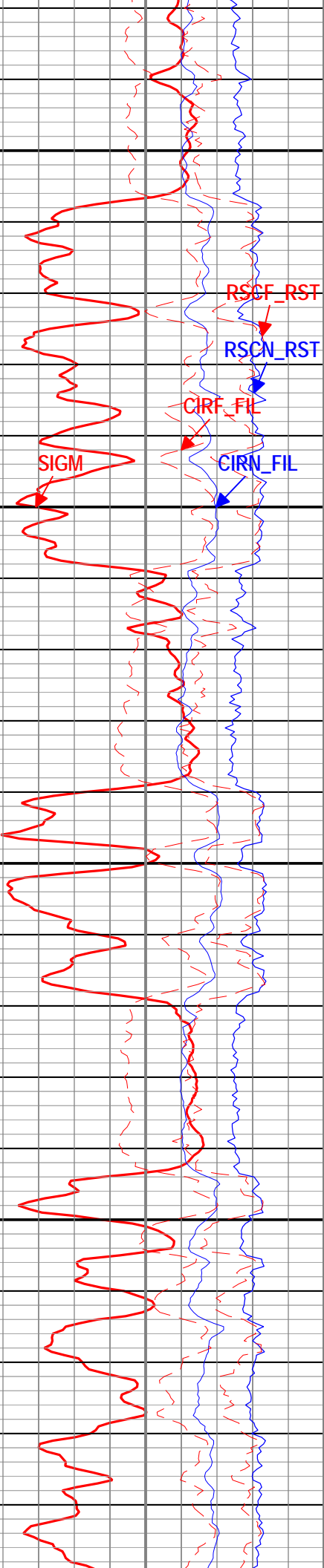
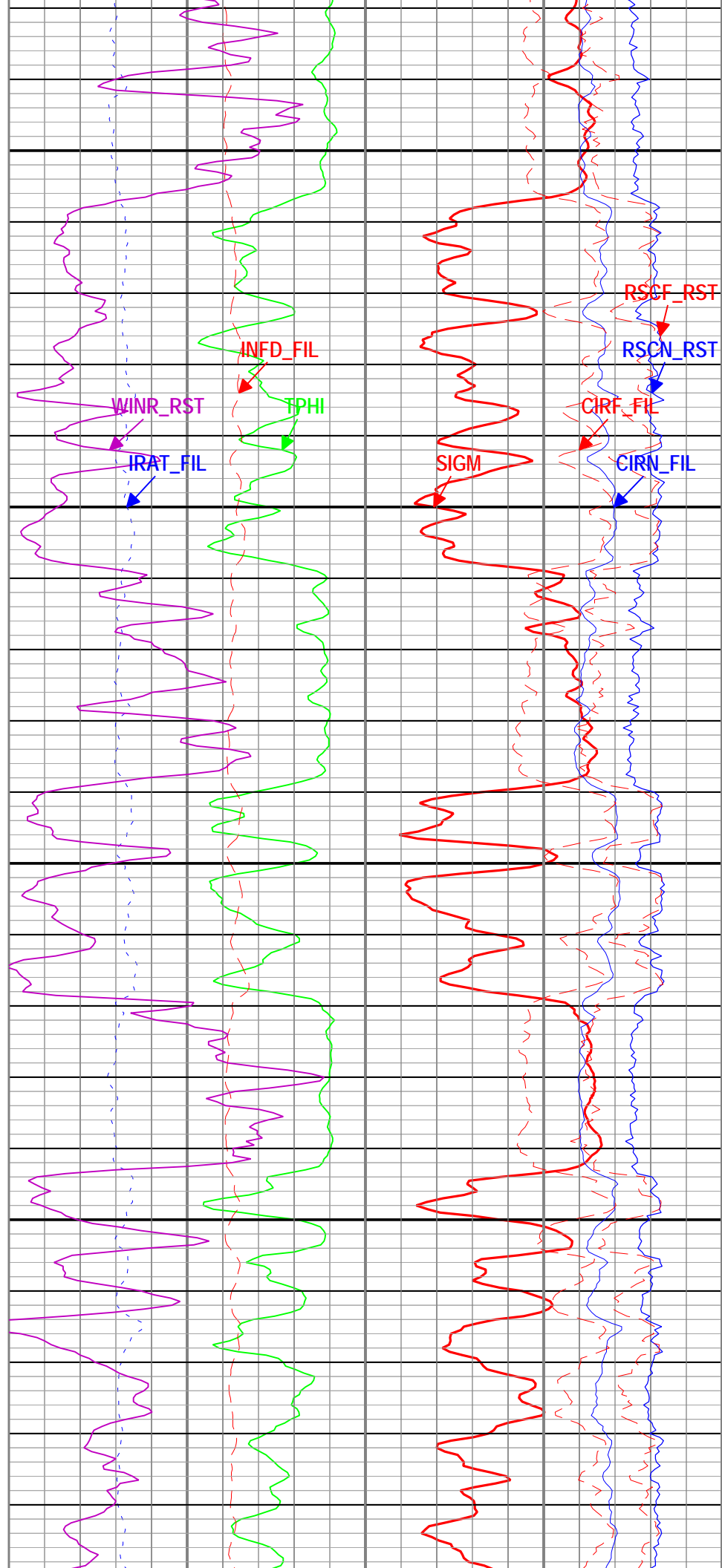
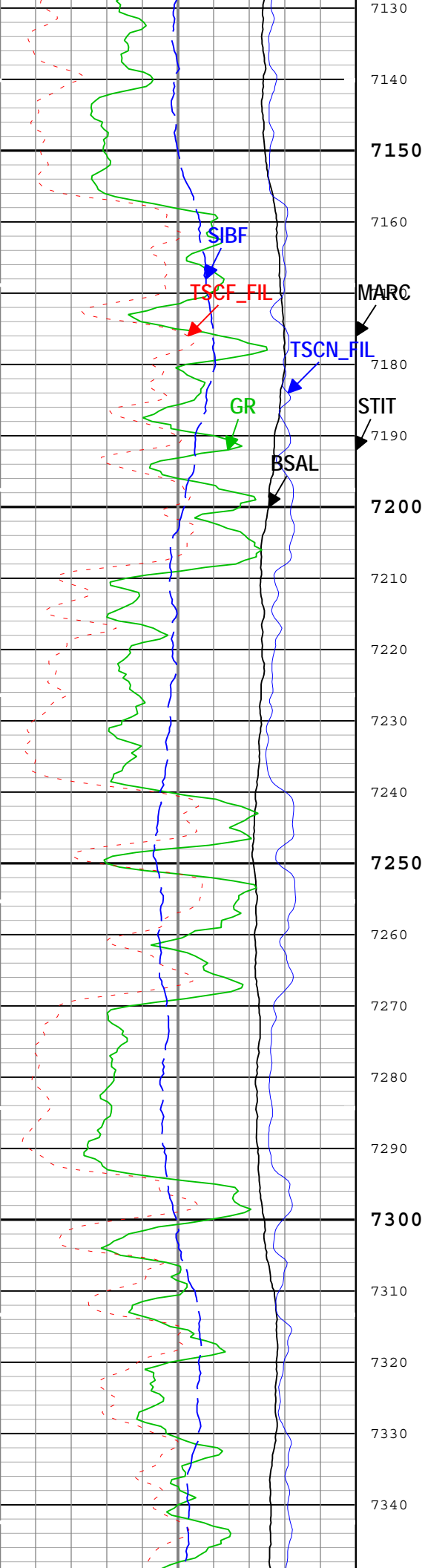


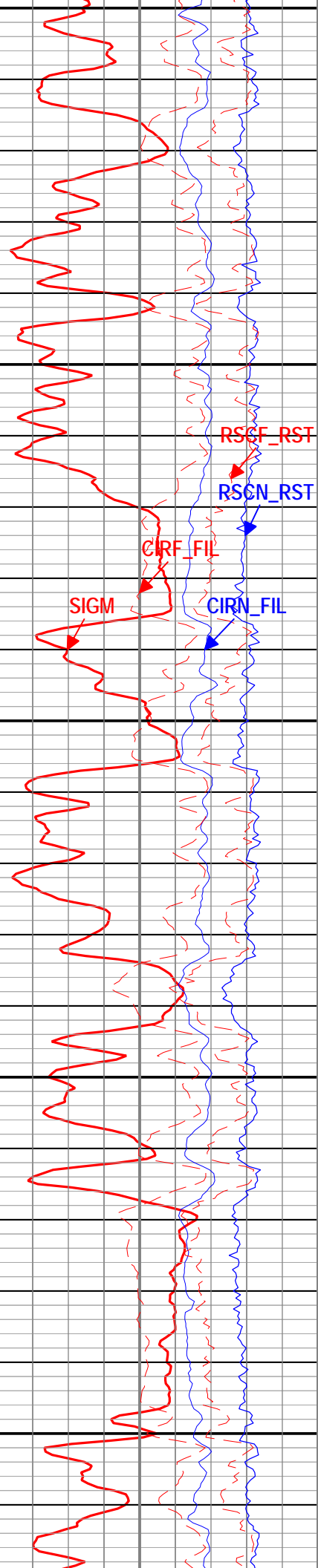
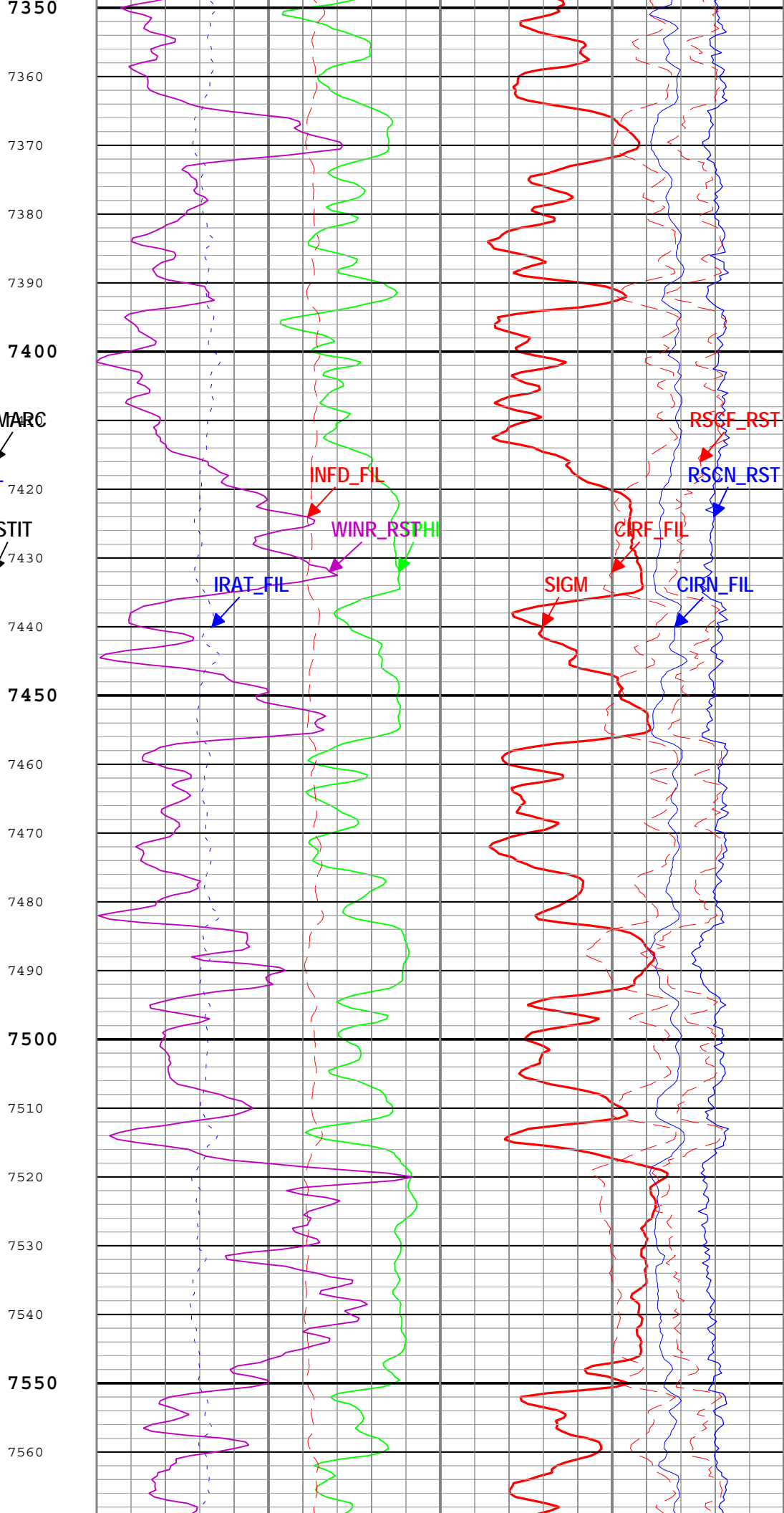
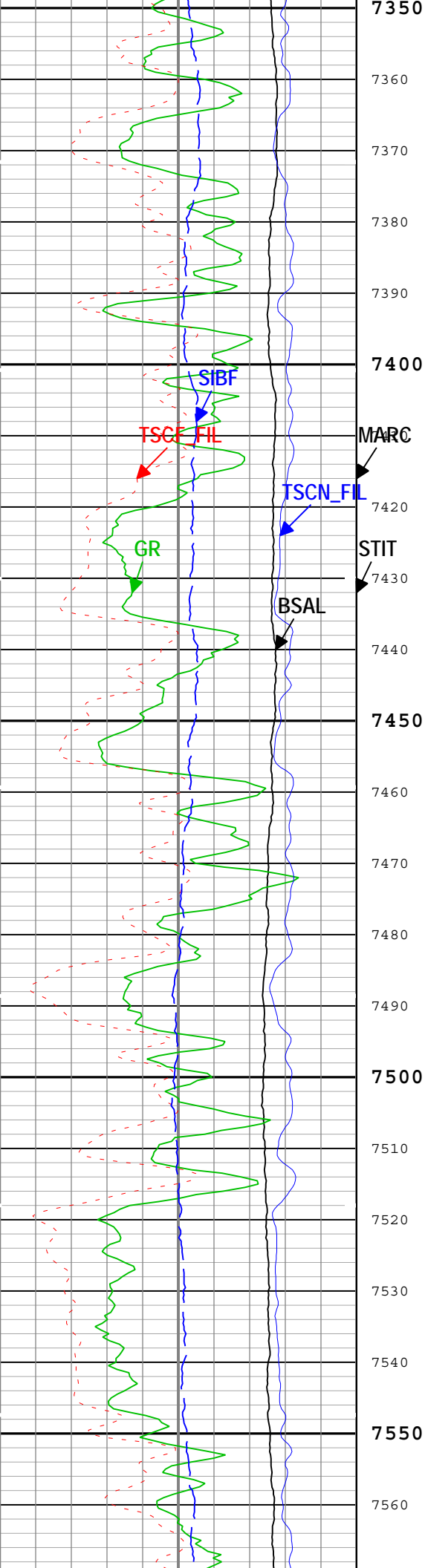


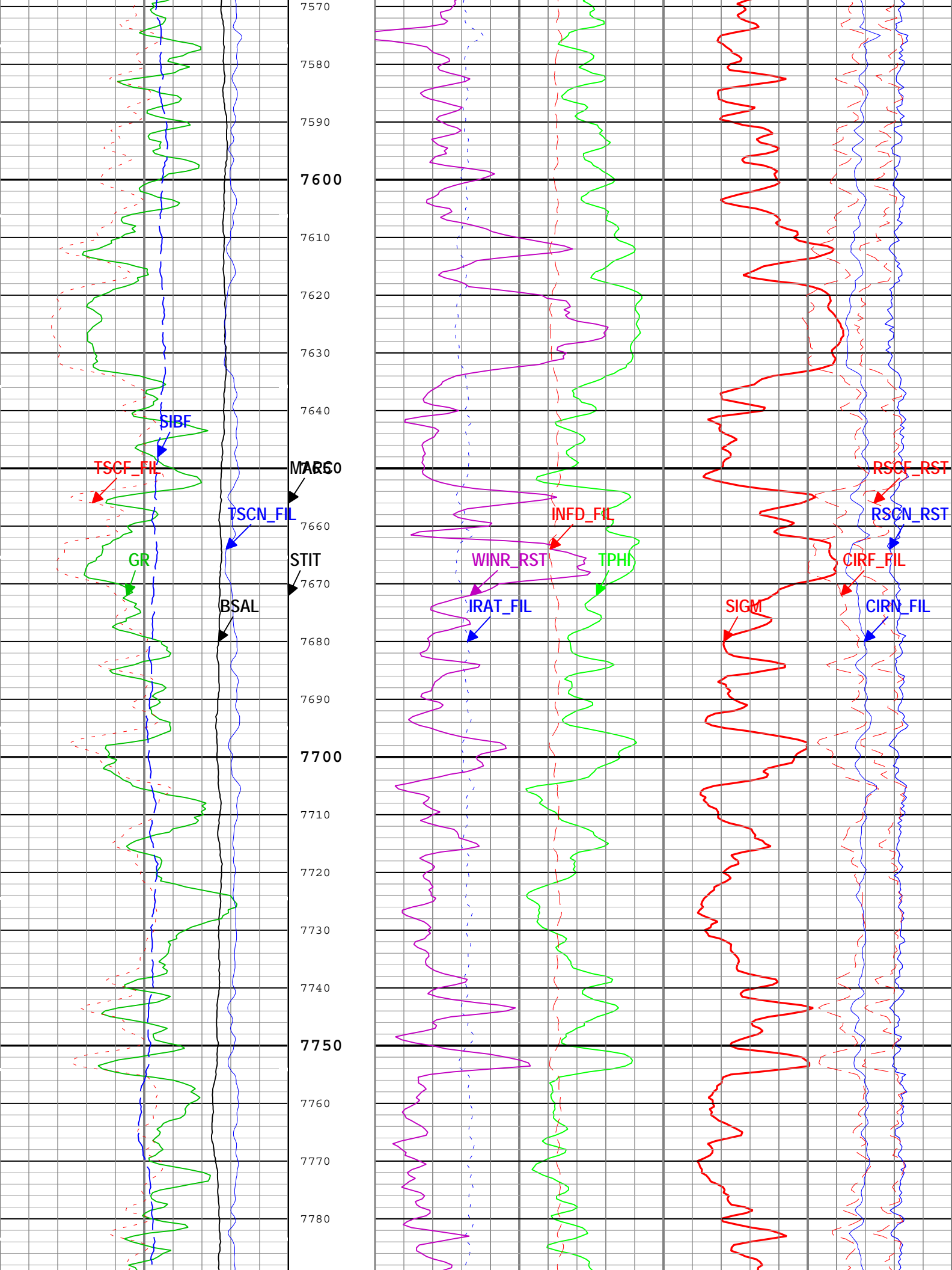


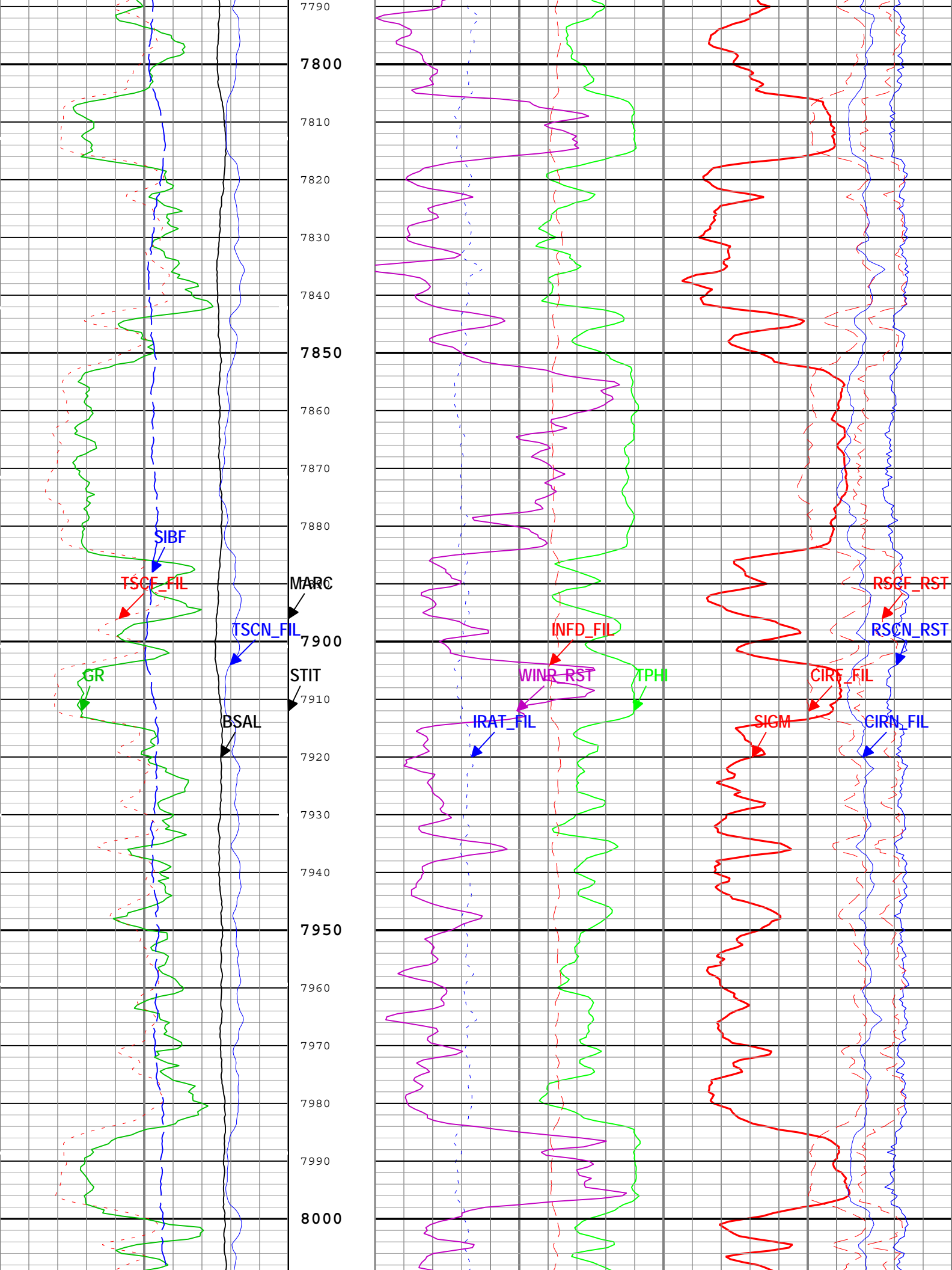




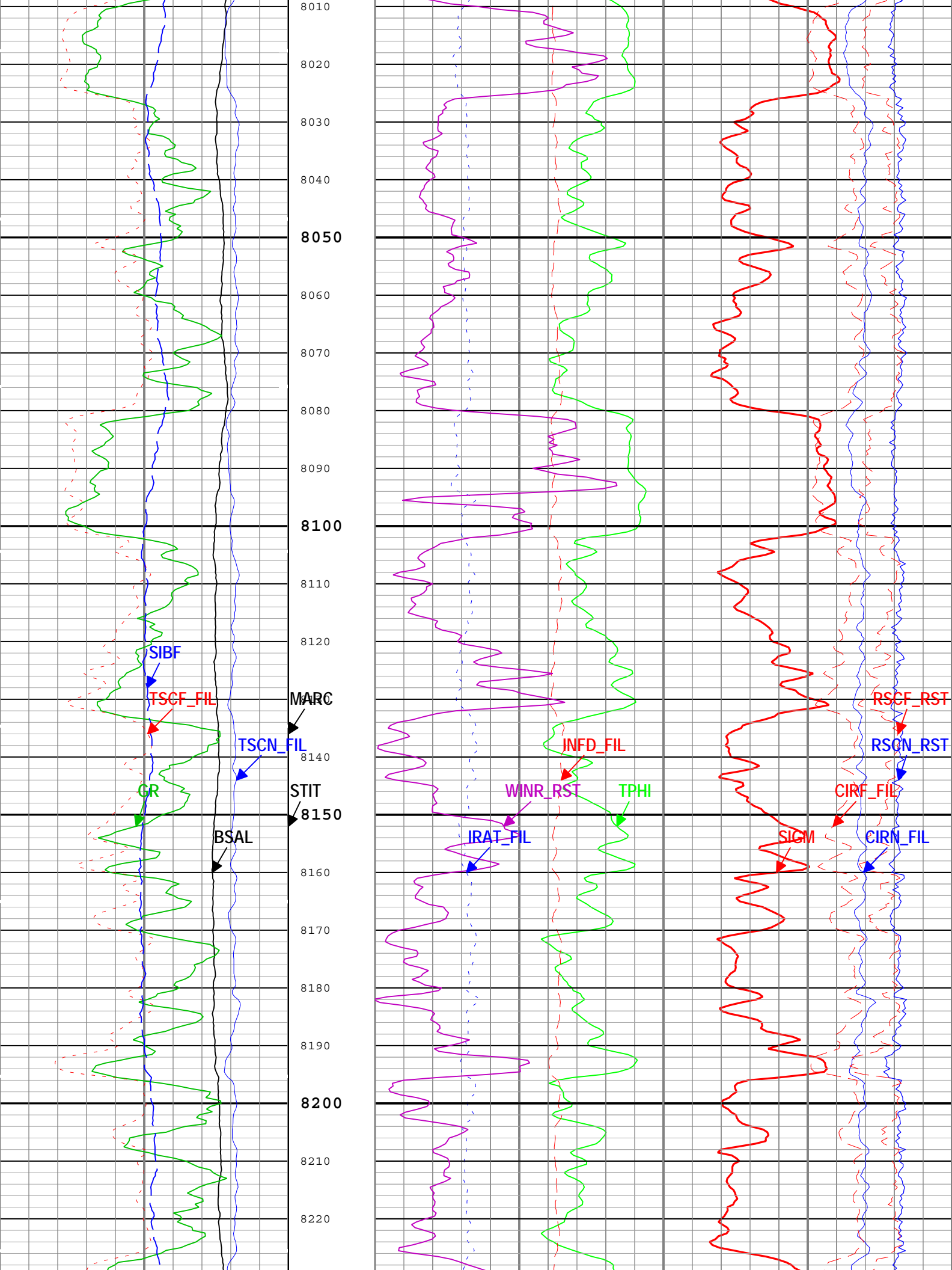




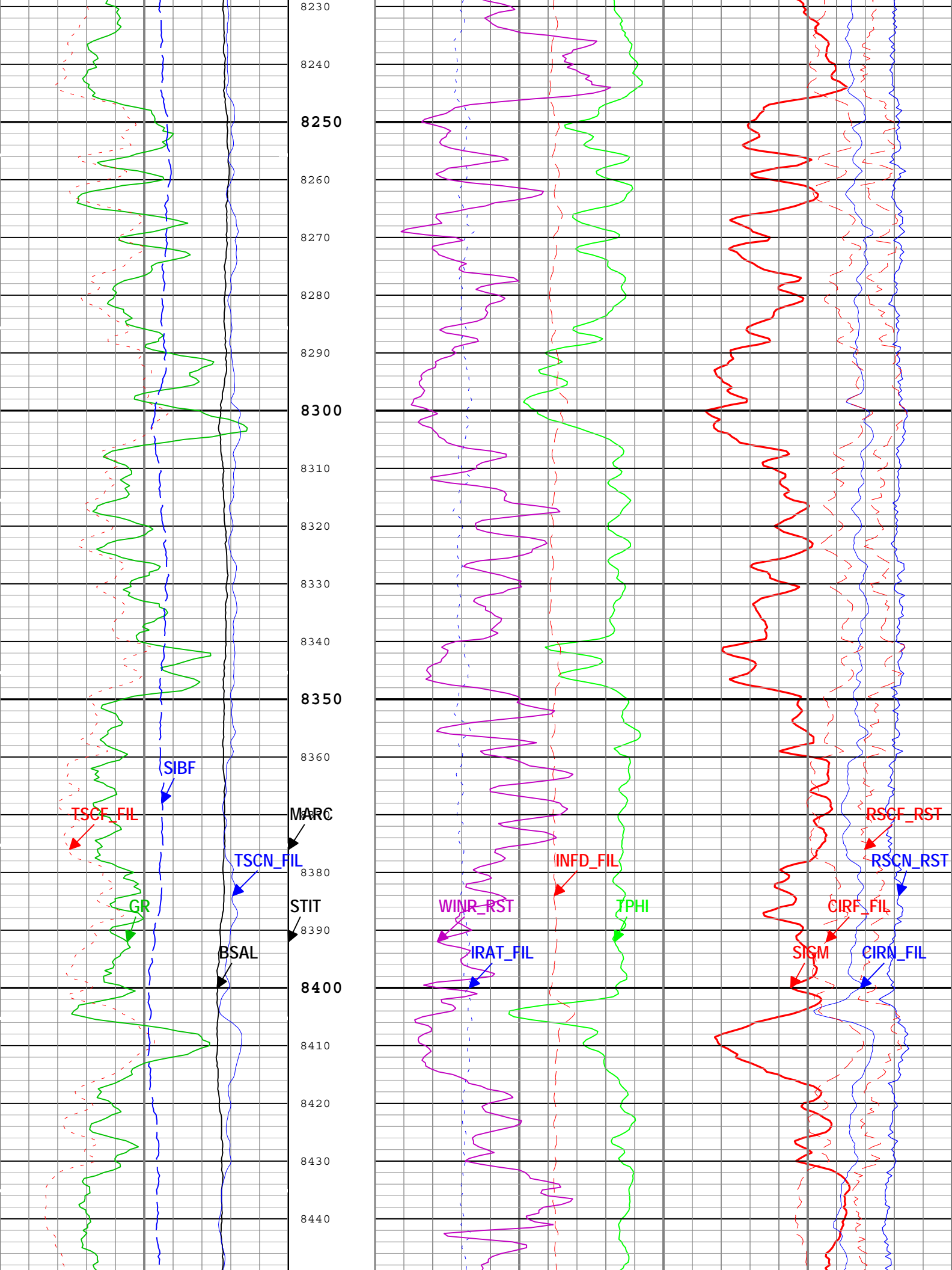


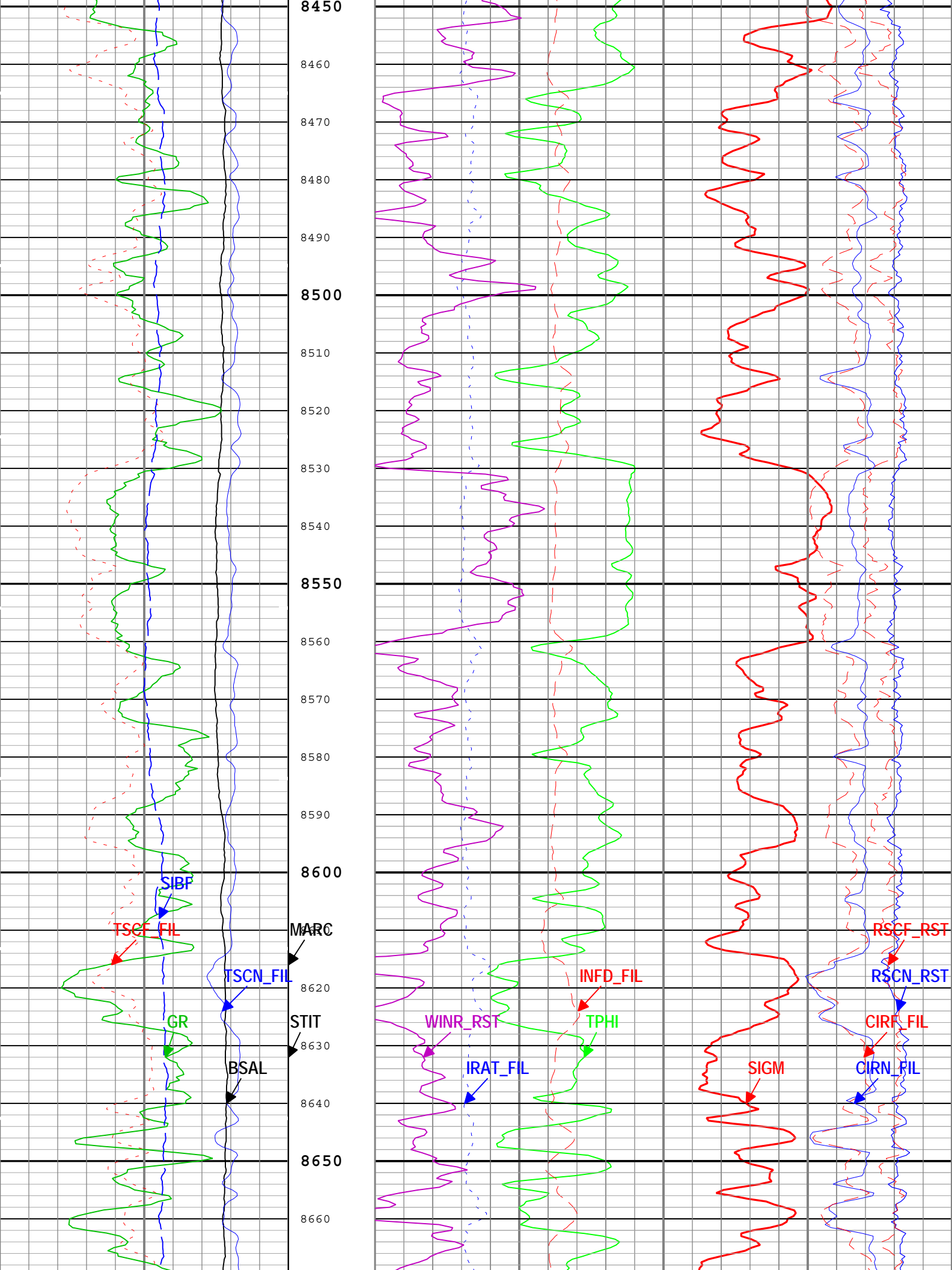


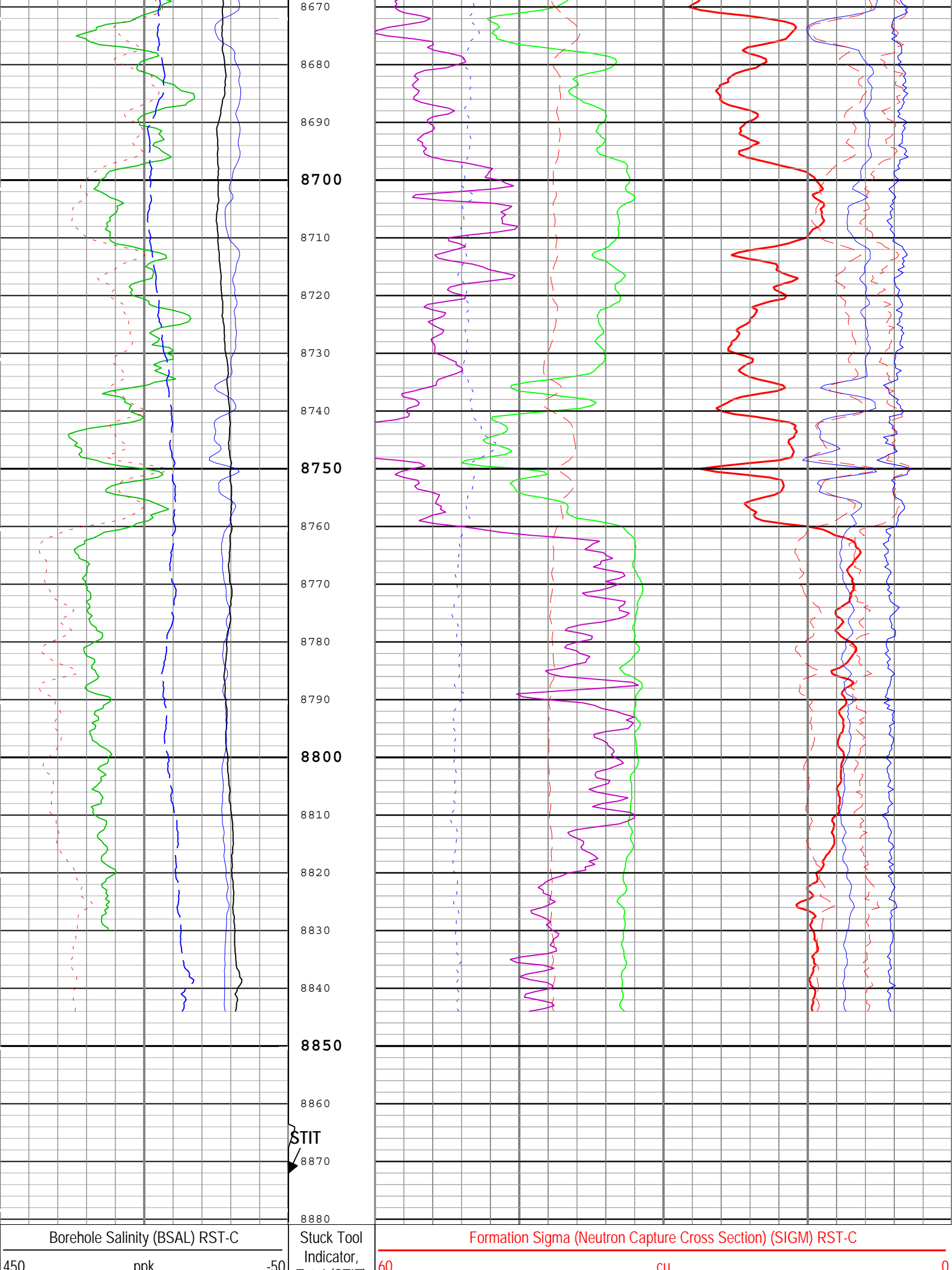






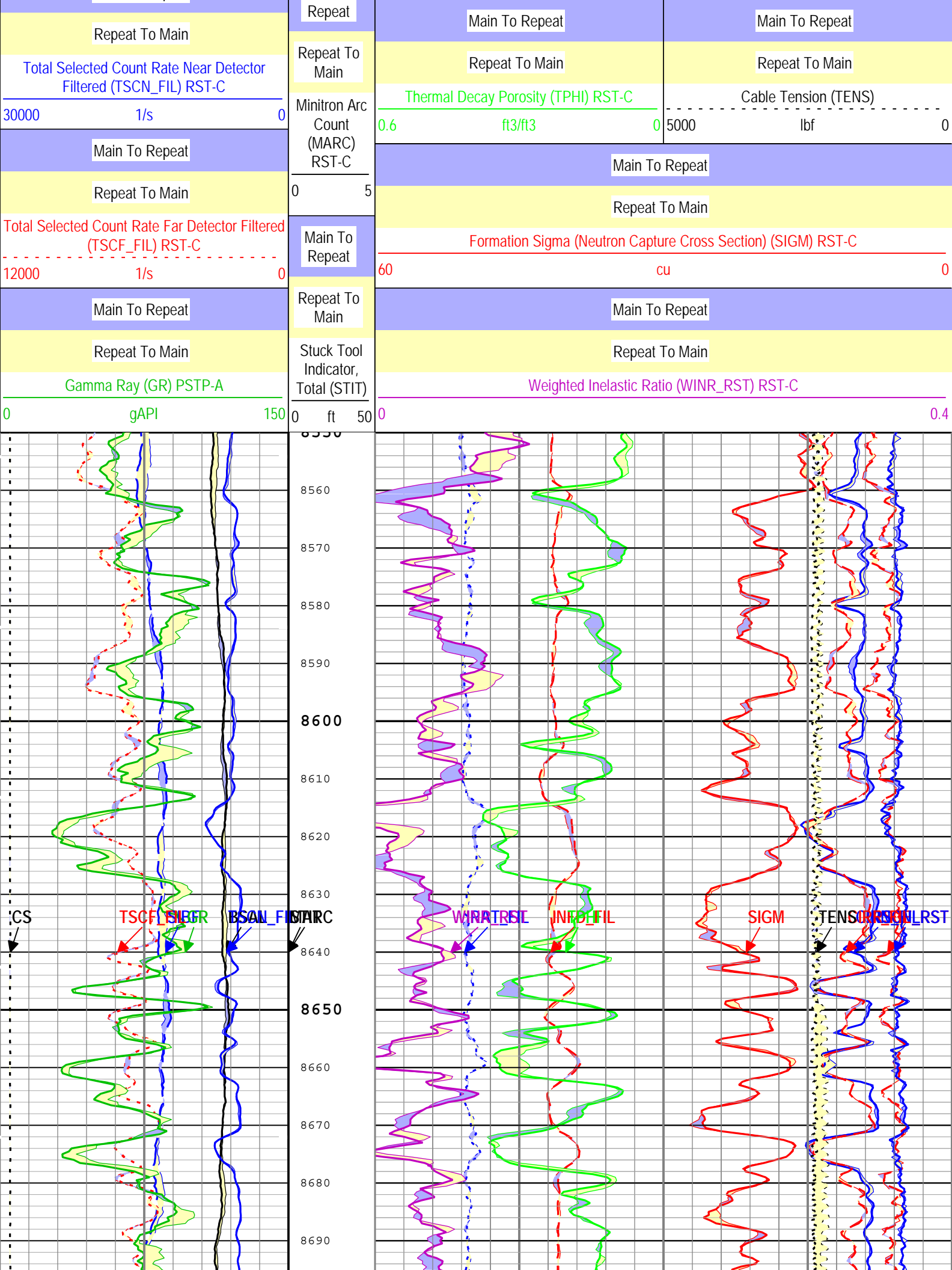


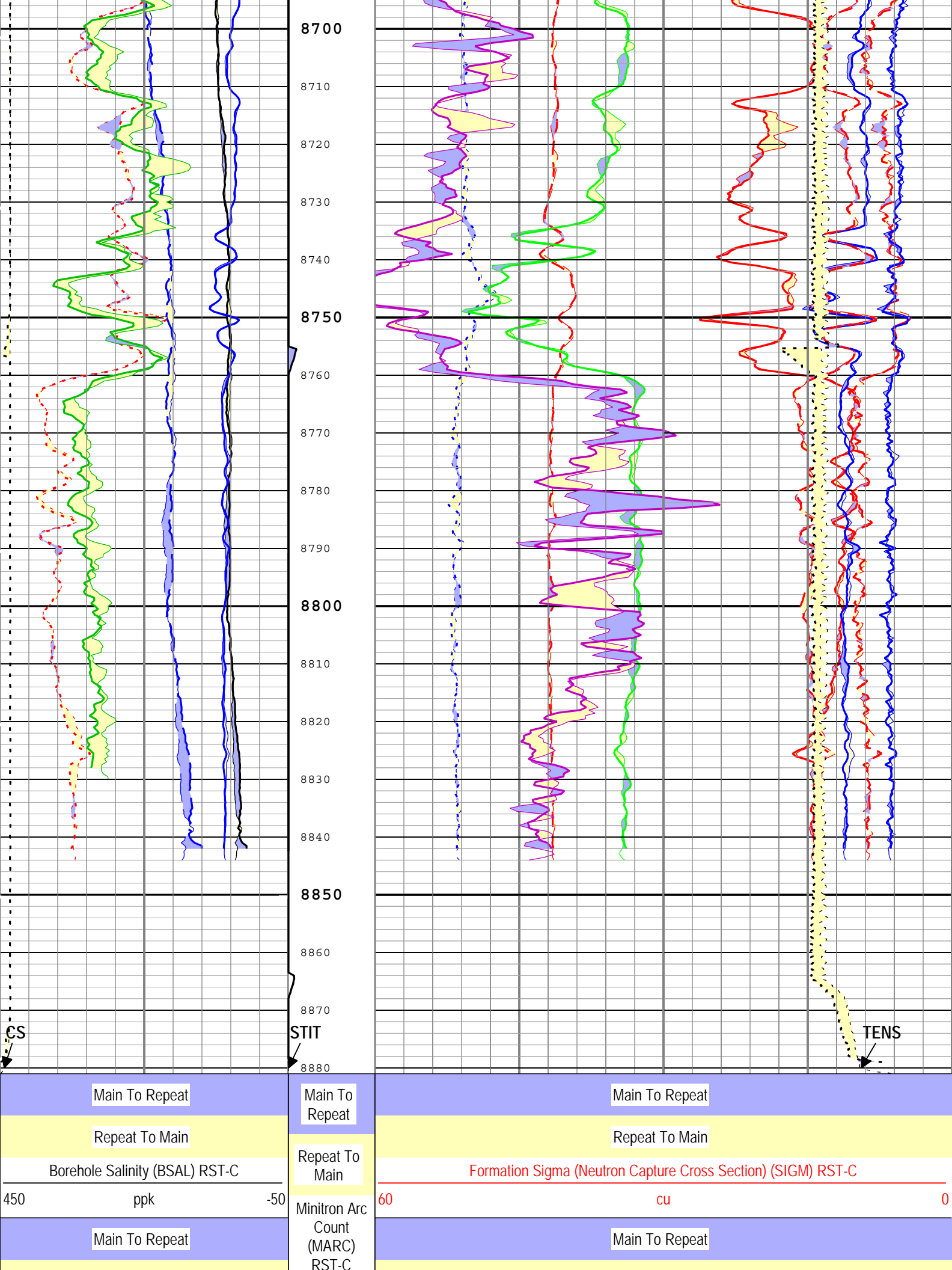




Parameter	Value	Start Time	Stop Time	Start Depth ( ft )	Stop Depth ( ft )
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PCCG	36 dB	24-Jul-2015 01:18:37	24-Jul-2015 02:52:52	8880.9	6149.13				
PCCG	12 dB	24-Jul-2015 02:52:52	24-Jul-2015 02:54:19	6149.13	6109.07				
PCCG	24 dB	24-Jul-2015 02:54:19	24-Jul-2015 05:02:44	6109.07	2360.48				
All depth are at tool zero.									
ONE									
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	8521.49 ft	8878.97 ft	24-Jul-2015 12:36:04 AM	24-Jul-2015 12:48:44 AM	ON	3.39 ft	No
ONE	Log[4]:Up	Up	2360.48 ft	8880.90 ft	24-Jul-2015 1:18:37 AM	24-Jul-2015 5:02:44 AM	ON	4.95 ft	No
All depths are referenced to toolstring zero									
Log	Company:Caerus Piceance LLC      Well:Puckett 42A-2 ONE: Log[4]:Up:S007								
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 05:26:32									
TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)									
TIME_1900 - Time Marked every 60.00 (s)									
IHV - Integrated Hole Volume every 10.00 (ft3)									
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			
45						0			
Main To Repeat			Repeat To Main			Near Detector Effective Unregulated Capture Count Rate (RSCN_RST) RST-C			
45						0			
Main To Repeat			Repeat To Main			Sigma Borehole Fluid (SIBF) RST-C			
100			cu			0			
Main To Repeat			Repeat To Main			Cable Speed (CS)			
0			ft/h			50000			
Main To Repeat			Main To	Main To Repeat					
				Repeat To Main					
				Gross Inelastic Count Rate Far Detector Filtered (INFD_FIL) RST-C					
10000				1/s					
				0					
Main To Repeat			Repeat To Main			Main To Repeat			
						Repeat To Main			
						Inelastic Ratio Filtered (IRAT_FIL) RST-C			
0.75						0			
						5			
						0			
						Main To Repeat			
						Repeat To Main			
						Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C			







Repeat To Main	0	5	Repeat To Main	
Sigma Borehole Fluid (SIBF) RST-C			Weighted Inelastic Ratio (WINR_RST) RST-C	
100cu0	Main To Repeat		0	0.4
Main To Repeat	Repeat To Main		Main To Repeat	
Repeat To Main			Repeat To Main	
Cable Speed (CS)	Stuck Tool Indicator, Total (STIT)		Gross Inelastic Count Rate Far Detector Filtered (INFD_FIL) RST-C	Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C
0ft/h50000	0ft50		100001/s0	450
Main To Repeat			Main To Repeat	
Repeat To Main			Repeat To Main	
Total Selected Count Rate Near Detector Filtered (TSCN_FIL) RST-C			Inelastic Ratio Filtered (IRAT_FIL) RST-C	Near Detector Effective Unregulated Capture Count Rate (RSCN_RST) RST-C
300001/s0			0.750	450
Main To Repeat			Main To Repeat	
Repeat To Main			Repeat To Main	
Total Selected Count Rate Far Detector Filtered (TSCF_FIL) RST-C			Thermal Decay Porosity (TPHI) RST-C	Capture to Inelastic Ratio Near Filtered (CIRN_FIL) RST-C
120001/s0			0.6ft3/ft30	2.50
Main To Repeat				Main To Repeat
Repeat To Main				Repeat To Main
Gamma Ray (GR) PSTP-A				Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C
0gAPI150				50
				Main To Repeat
				Repeat To Main
				Cable Tension (TENS)
				5000lbf0
<div> <div>ICV - Integrated Cement Volume every 100.00 (ft3)</div> <div>ICV - Integrated Cement Volume every 10.00 (ft3)</div> <div>IHV - Integrated Hole Volume every 100.00 (ft3)</div> <div>IHV - Integrated Hole Volume every 10.00 (ft3)</div> </div>				
TIME_1900 - Time Marked every 60.00 (s)				
TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)				

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 05:26:32

Calibration Report							
RST-C (Reservoir Saturation Pro Tool C) Calibration - Run ONE							
Primary Equipment :							
RSC Acquisition Cartridge			RSC-E		381		
RST IC Tank Calibration - RST IC Tank Calibration							
Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	



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

## RST IC Tank Check - RST IC Tank Check

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>
Near Spectral Acquisition Time Calibration Coefficient	s	Master			NOT DONE		<div></div>
Near Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	<div></div>
Far Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	<div></div>
Near Windows Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	<div></div>
Far Windows Carbon/Oxygen Ratio Calibration Coefficient - 0		Master	----	----	----	----	<div></div>
Near IC Mode Capture Optimization Resolution Degradation Factor Calibration Coefficient - 0		Master	----	----	----	----	<div></div>
Far IC Mode Capture Optimization Resolution Degradation Factor Calibration Coefficient - 0		Master	----	----	----	----	<div></div>
Near Pulse Shape Compensation Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div></div>
Far Pulse Shape Compensation Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div></div>
Near Photomultiplier High Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div></div>
Far Photomultiplier High Voltage Setting Echo Calibration Coefficient - 0	V	Master	----	----	----	----	<div></div>
Minitron Measured Beam Current Calibration Coefficient - 0	uA	Master	----	----	----	----	<div></div>
Grid Current Peak Calibration Coefficient - 0	mA	Master	----	----	----	----	<div></div>
Minitron Measured Extractor Current Calibration Coefficient - 0	uA	Master	----	----	----	----	<div></div>
Minitron Measured High Voltage Calibration Coefficient - 0	kV	Master	----	----	----	----	<div></div>
Near Instantaneous Count Rate Calibration Coefficient	kHz	Master			NOT DONE		<div></div>
Near/Far Count Rate Ratio Calibration Coefficient		Master			NOT DONE		<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	
Near Spectral Acquisition Time Calibration Coefficient	s	Master		300.0	300.3		
Near/Far Capture Ratio Calibration Coefficient		Master	0.980	0.930	0.982	1.030	
Sigma Formation Near Apparent Calibration Coefficient - 0	1/m	Master	----	----	----	----	
Sigma Formation Far Apparent Calibration Coefficient - 0	1/m	Master	----	----	----	----	
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 (Master)		RTD Coefficients				
	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 (Master)		GR Coefficients
	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 (Master)		PBMS A Clock Coefficients				
	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

County:	Garfield
State:	Colorado
Reservoir Saturation Tool	
Sigma	