

Company: ENCANA OIL & GAS (USA) INC

Well: ALP FEE 24-2C (J24NW)

Field: MAMM CREEK

County: GARFIELD State: COLORADO

RESERVOIR SATURATION LOG
SIGMA MODE
GAMMA RAY-CCL

County: GARFIELD

Field: MAMM CREEK

Location: SHL: 2495 FSL & 1847 FEL

Well: ALP FEE 24-2C (J24NW)

Company: ENCANA OIL & GAS (USA) INC

LOCATION	
SHL: 2495 FSL & 1847 FEL BHL: 1038 FNL & 2537 FEL	Elev.: K.B. 5702.00 ft G.L. 5680.00 ft D.F. 5701.00 ft
Permanent Datum: _____	GROUND LEVEL _____
Log Measured From: _____	KELLY BUSHING _____
Drilling Measured From: _____	KELLY BUSHING _____
API Serial No. 05-045-21807-0C	Section 24
	Township 6S
	Range 93W

	Run 1	Run 2	Run 3
PVT DATA			
Oil Density			
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation			
CEMENTING DATA			
Primary/Squeeze	Primary		
Casing String No			
Lead Cement Type			
Volume			
Density			
Water Loss			
Additives			
Tail Cement Type			
Volume			
Density			
Water Loss			
Additives			
Expected Cement Top			

Logging Date	16-Aug-2013
Run Number	1
Depth Driller	8143 ft
Schlumberger Depth	8056 ft
Bottom Log Interval	8022 ft
Top Log Interval	2000 ft
Casing Fluid Type	FRESH WATER
Salinity	
Density	8.4 lbm/gal
Fluid Level	70 ft
BIT/CASING/TUBING STRING	
Bit Size	7.875 in
From	5300 ft
To	8143 ft
Casing/Tubing Size	4.500 in
Weight	11.6 lbm/ft
Grade	S-80
From	22 ft
To	8123 ft
Maximum Recorded Temperatures	217 degF
Logger On Bottom	16-Aug-2013
Unit Number	391
Recorded By	KIRSTIE BUNTING
Witnessed By	BILLY MYERS

Logging Date	
Run Number	
Depth Driller	
Schlumberger Depth	
Bottom Log Interval	
Top Log Interval	
Casing Fluid Type	
Salinity	
Density	
Fluid Level	
BIT/CASING/TUBING STRING	
Bit Size	
From	
To	
Casing/Tubing Size	
Weight	
Grade	
From	
To	
Maximum Recorded Temperatures	
Logger On Bottom	
Unit Number	
Recorded By	
Witnessed By	

DEPTH SUMMARY LISTING

Date Created: 14-AUG-2013 11:54:57

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JB	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6349	Serial Number:	3421	Serial Number:	112136
Calibration Date:	7-31-2013	Calibration Date:	14-AUG-201	Length:	19000 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878	Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	-5	Calibration RMS:	3		
Wheel Correction 2:	-4	Calibration Peak Error:	8		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	
Tool Zero Check At Surface:	

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES USED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SPWT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
- 4.
- 5.
- 6.

DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: SLIM CEMENT MAPPING	OS1:
OS2: LOG	OS2:
OS3: CBL-VDL	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE CORRELATED TO DOWN LOG	
TOOL RUN AS PER TOOL SKETCH	
ENTRANCE: 08:15	
TIME ON BOTTOM: 08:30	
EXIT: 10:45	

MAXIMUM RECORDED TEMPERATURE: 217 DEGF	
MAXIMUM RECORDED PRESSURE: 3292 PSIA	
SHORT JOINTS: 5902 FT & 6950 FT	
SANDSTONE MATRIX USED	
CREW: KBUNTING, WAZIZ, KJOHNS	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	

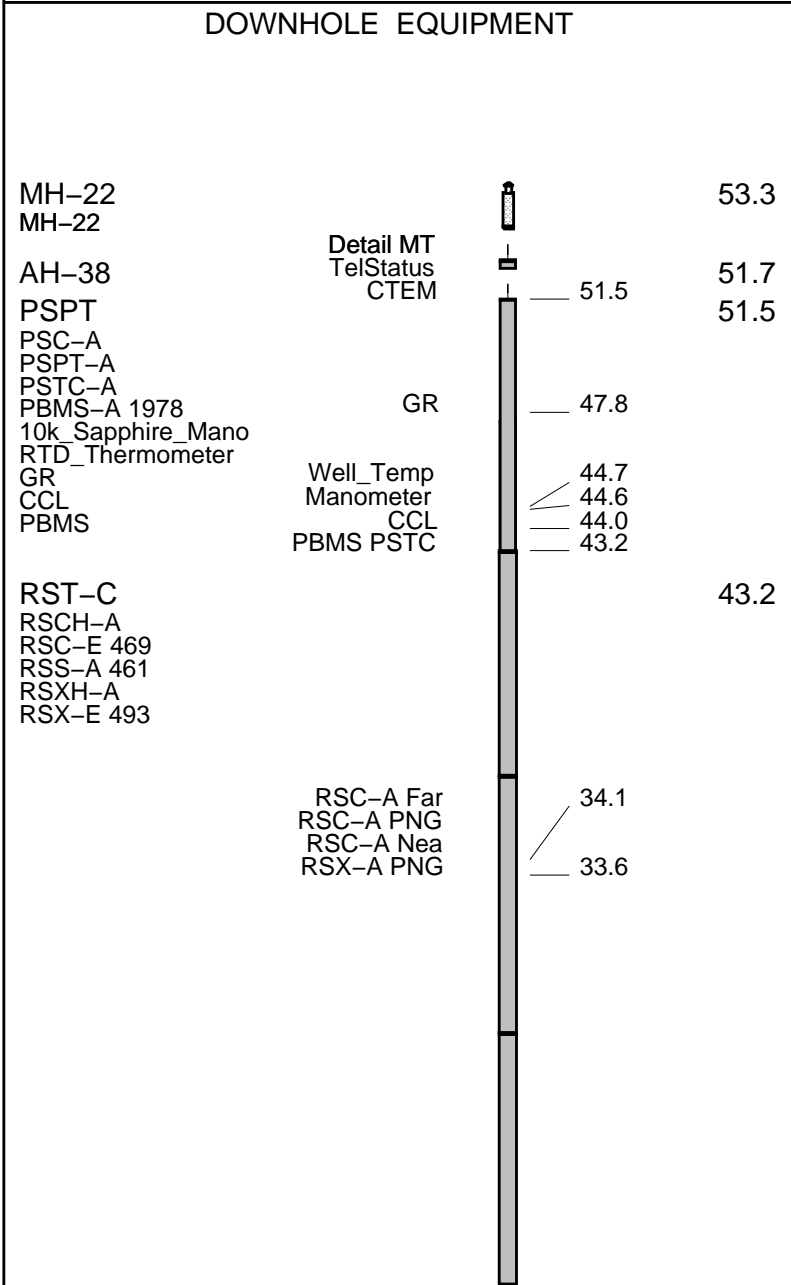
RUN 1			RUN 2		
SERVICE ORDER #:	CGF9-00096		SERVICE ORDER #:		
PROGRAM VERSION:	19C0-187		PROGRAM VERSION:		
FLUID LEVEL:	70 ft		FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

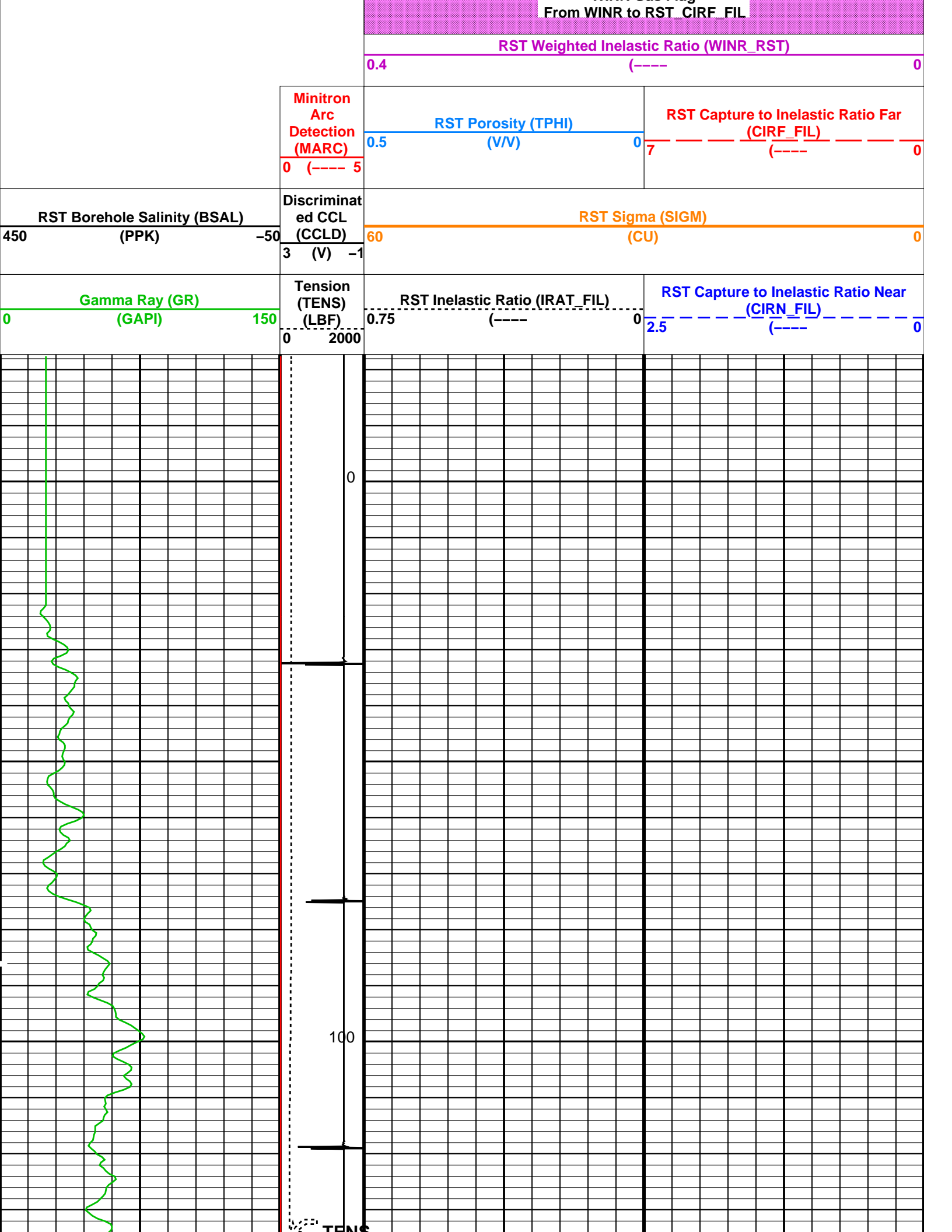
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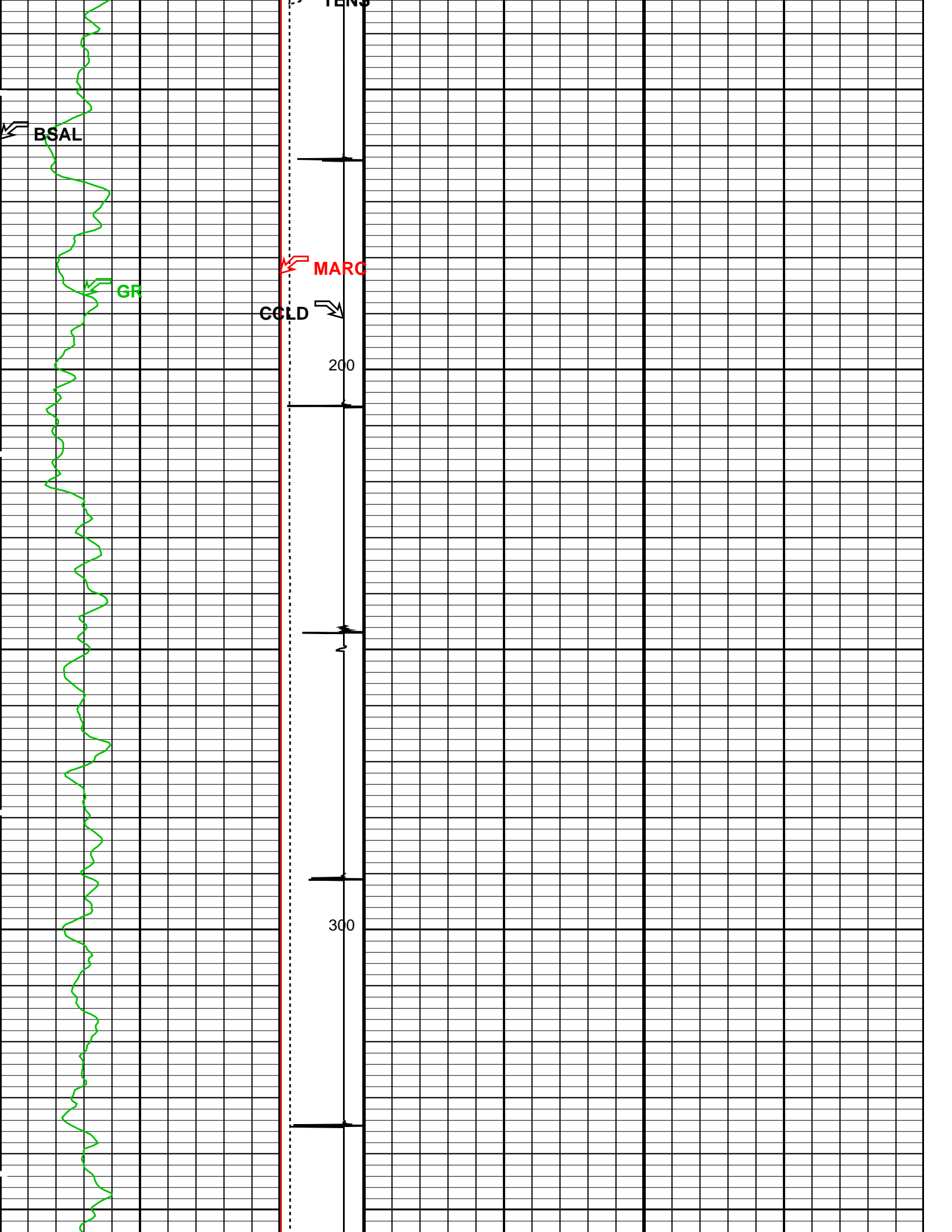
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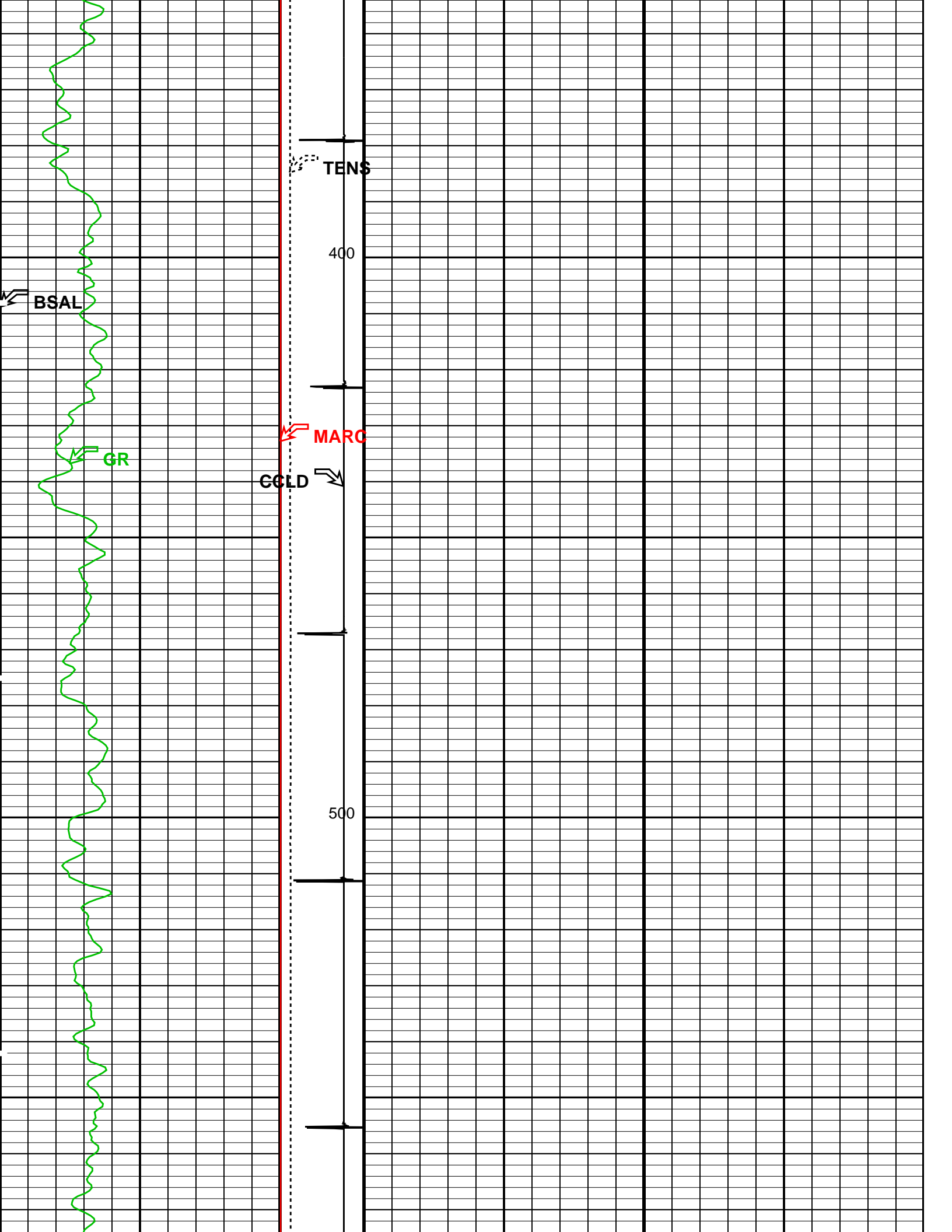
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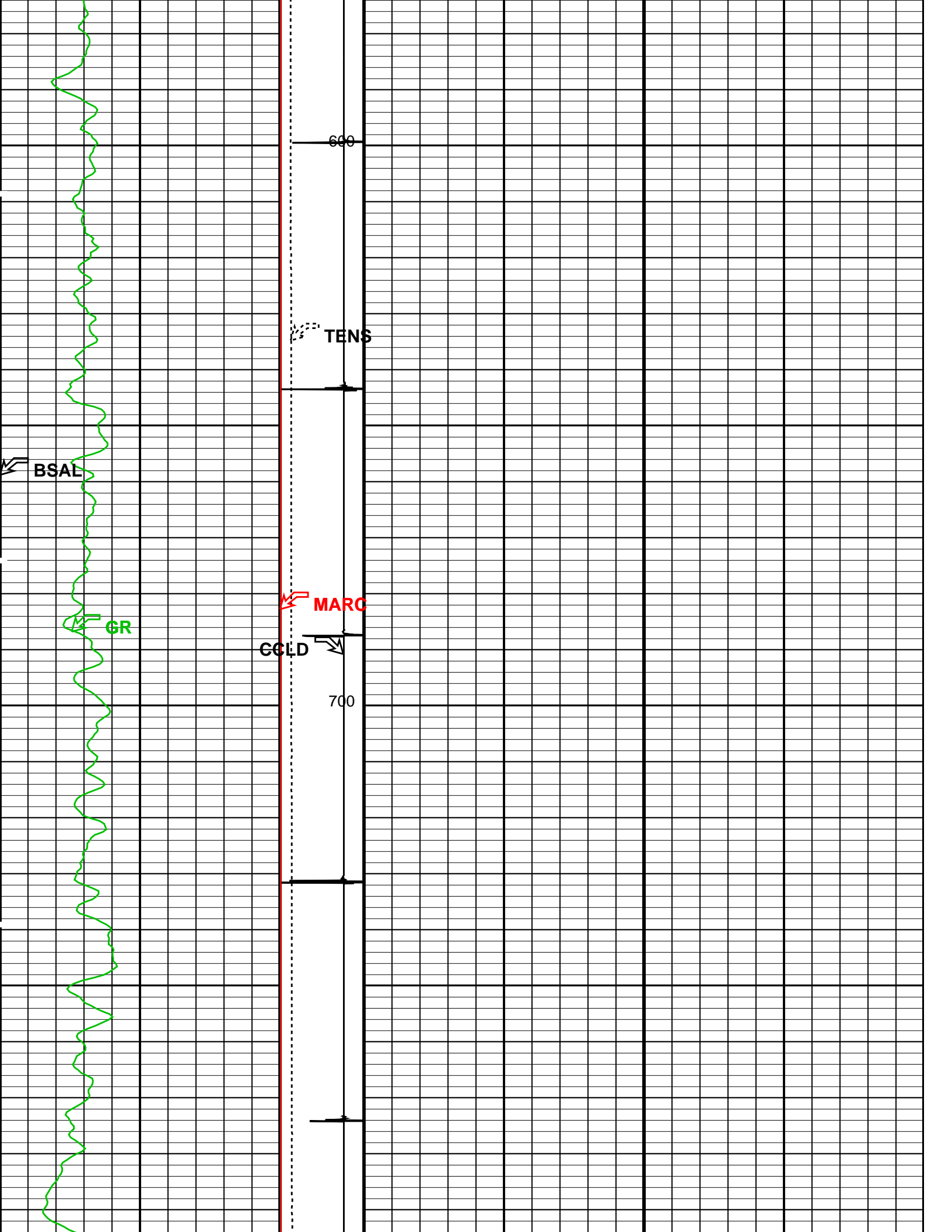


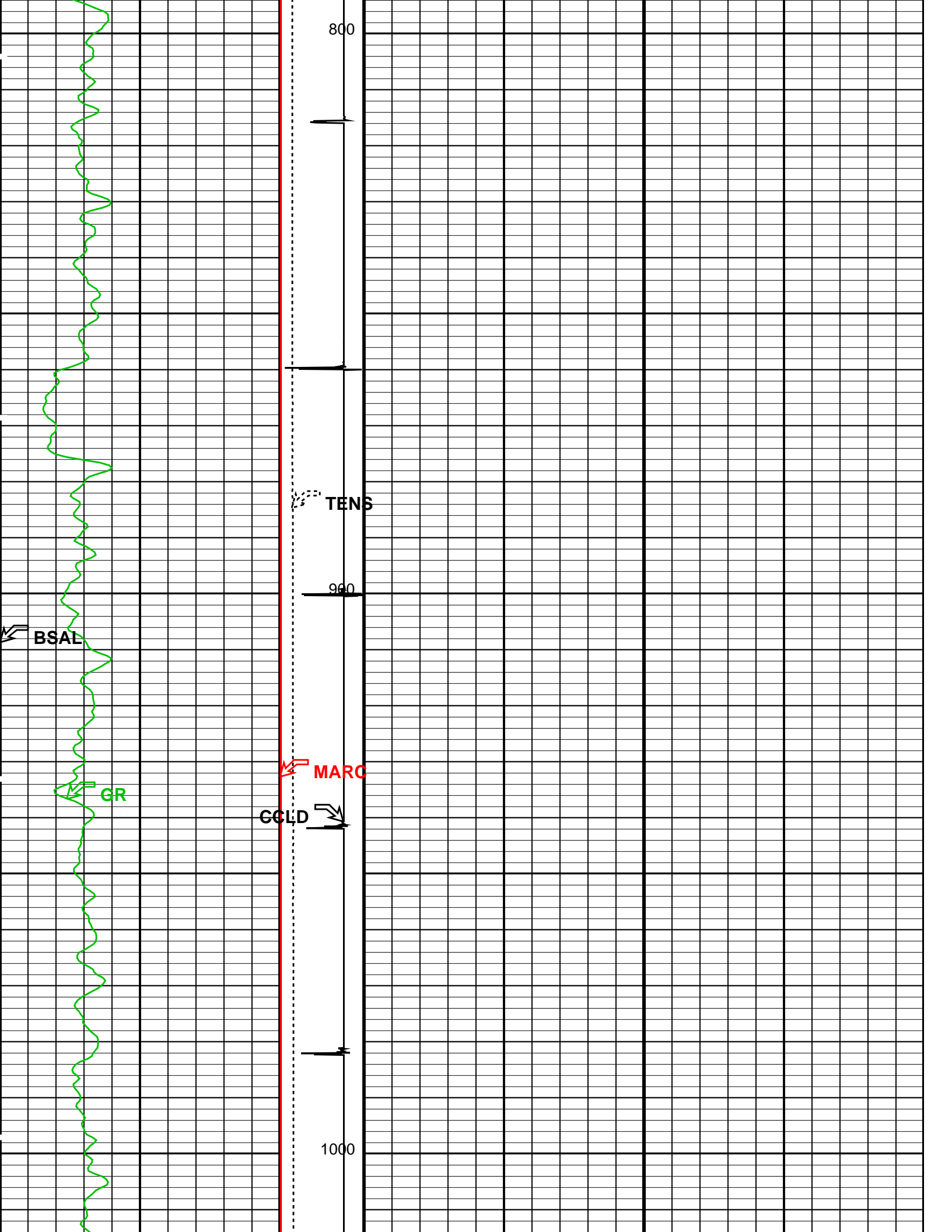
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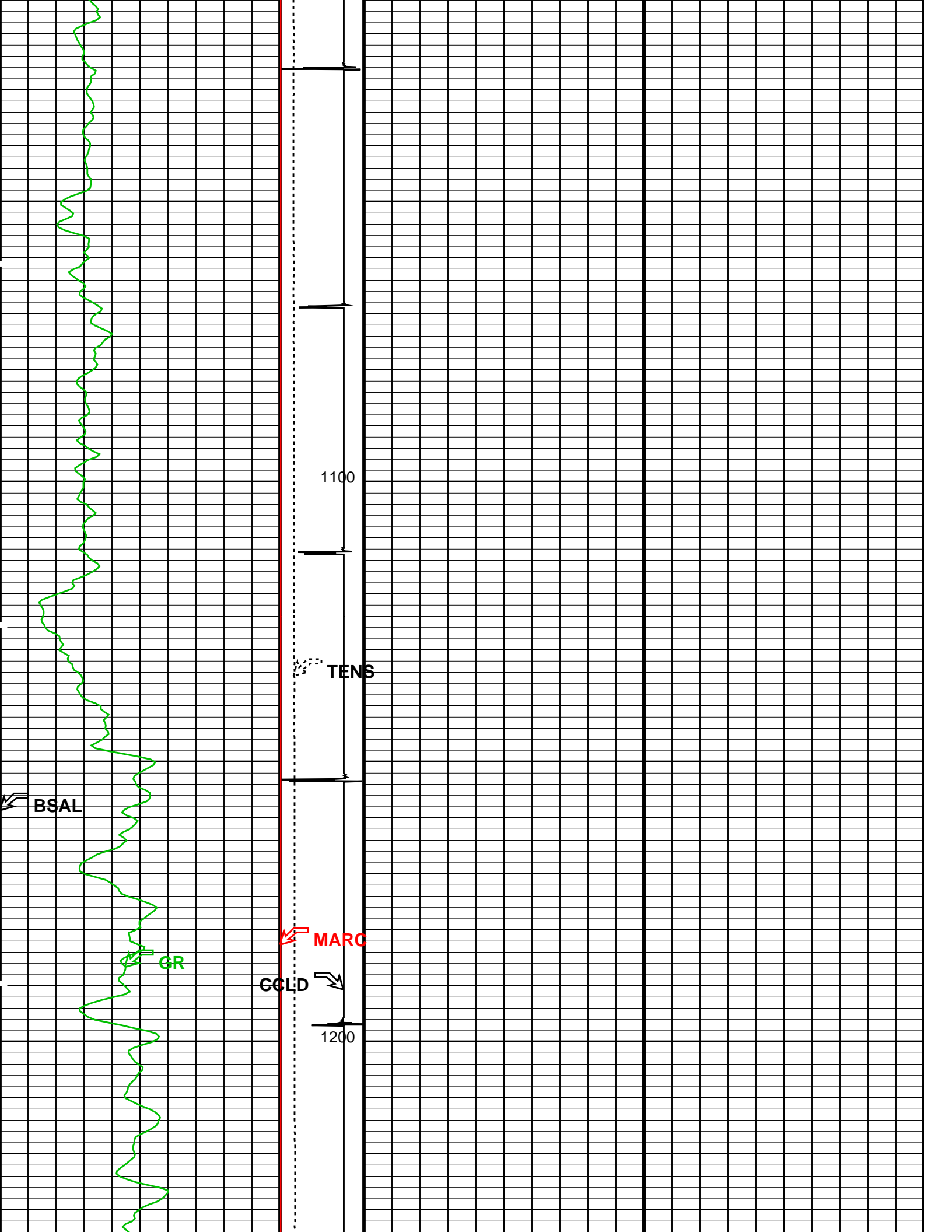


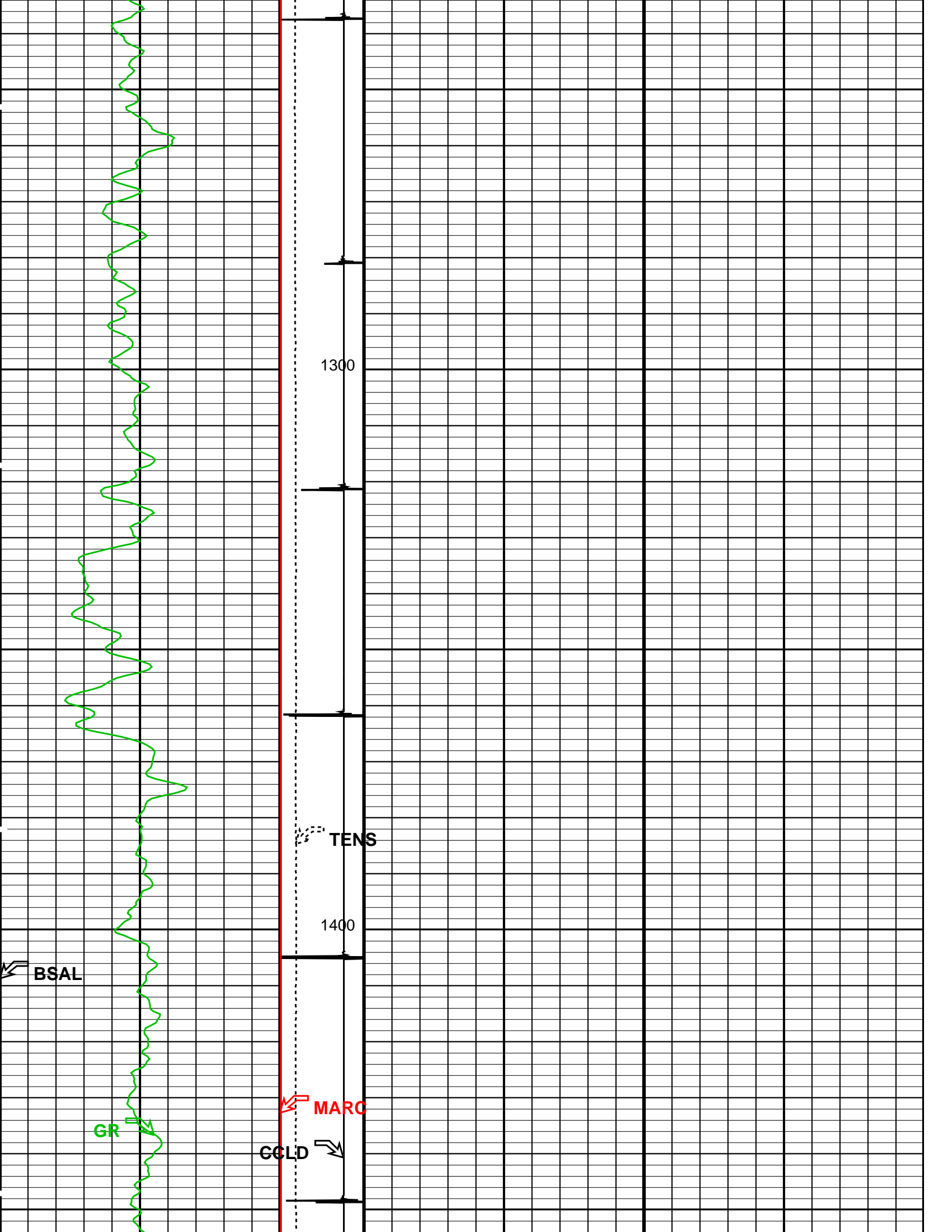


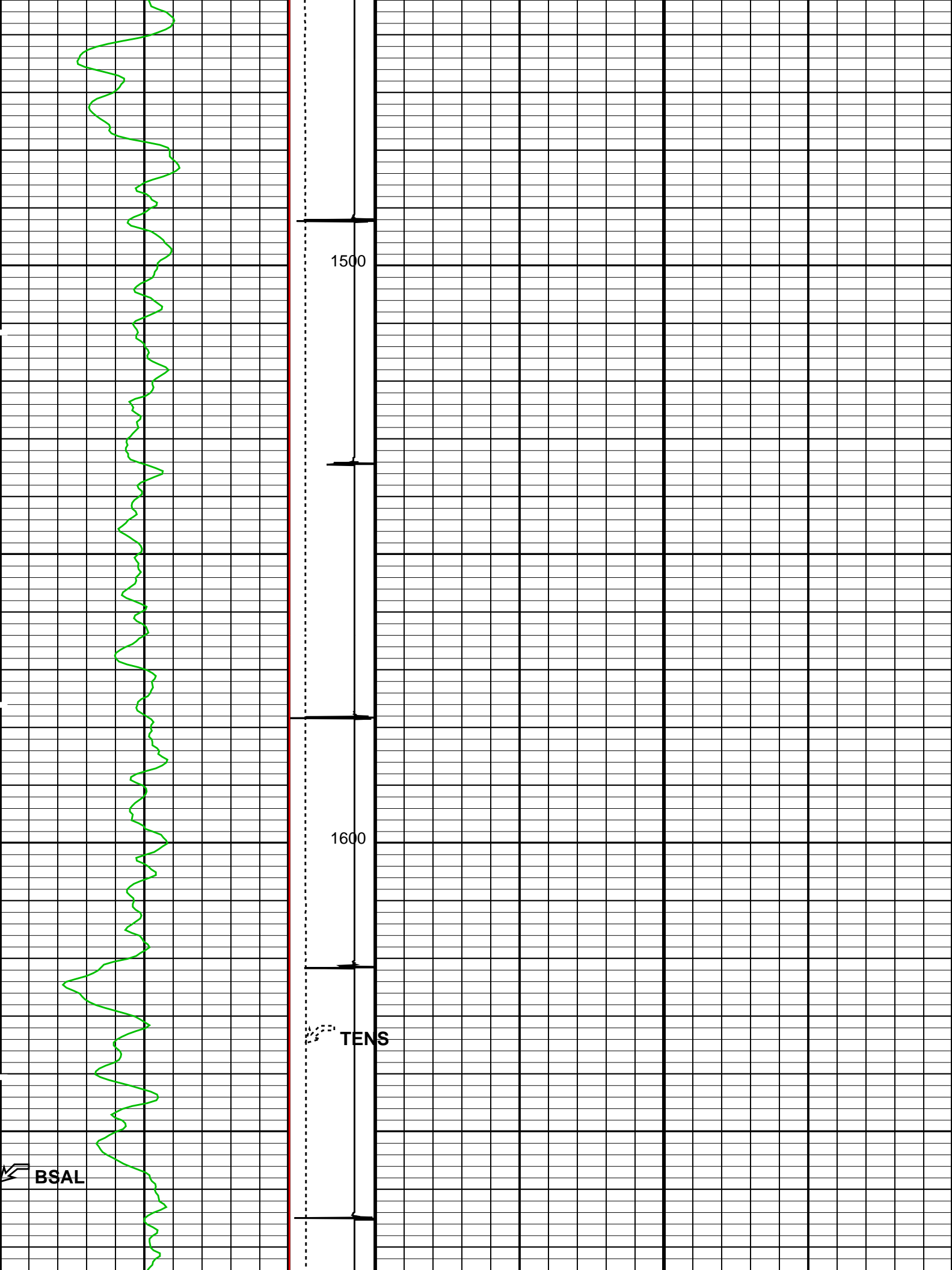


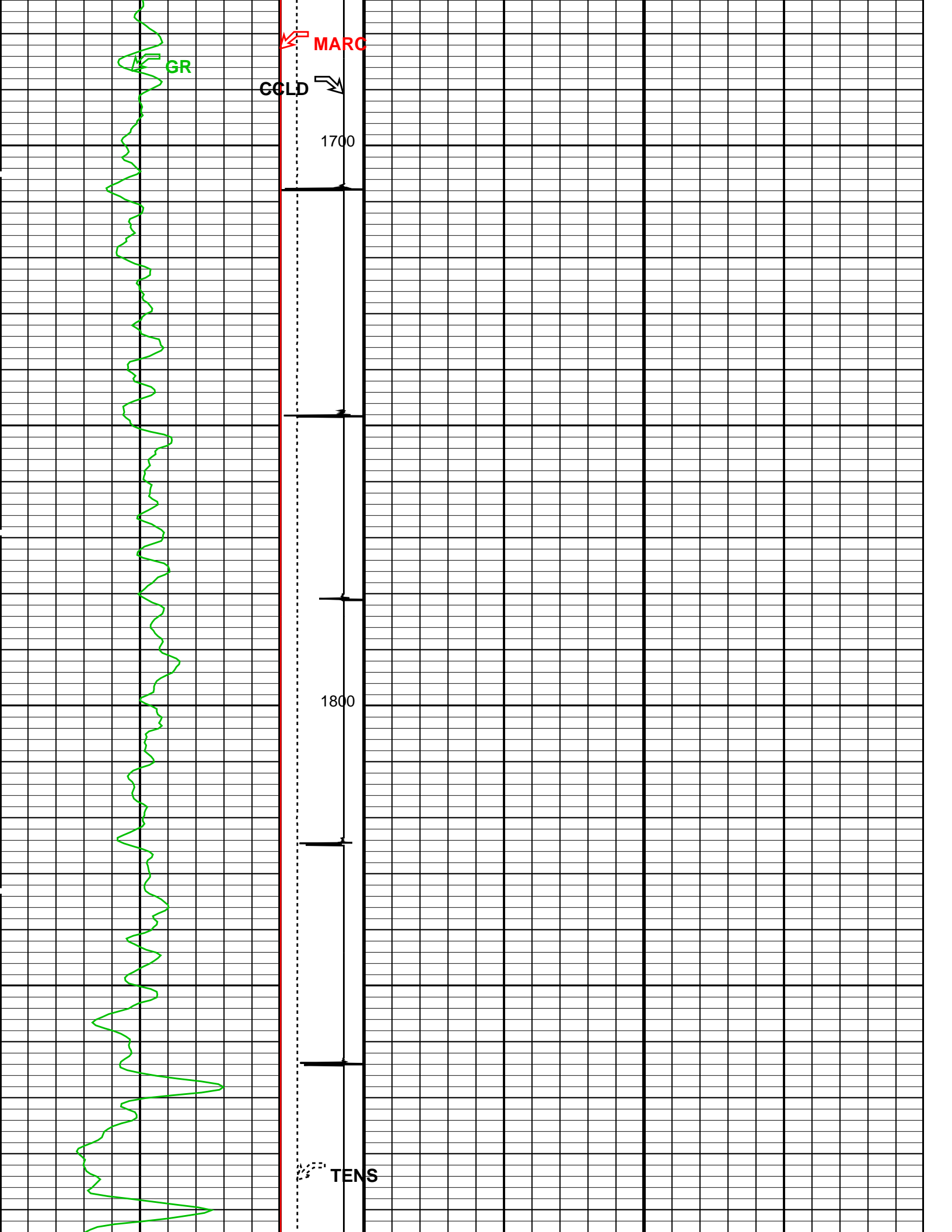


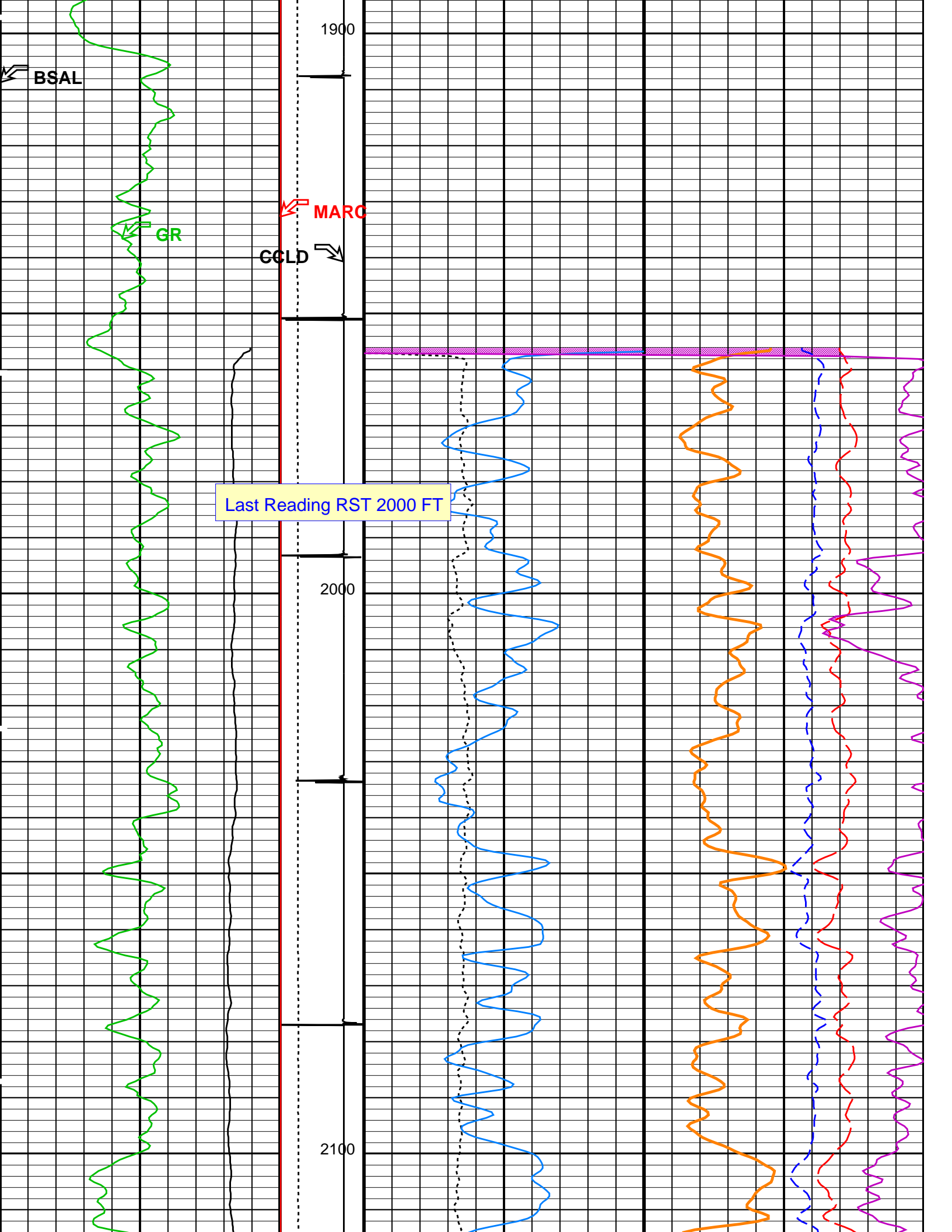


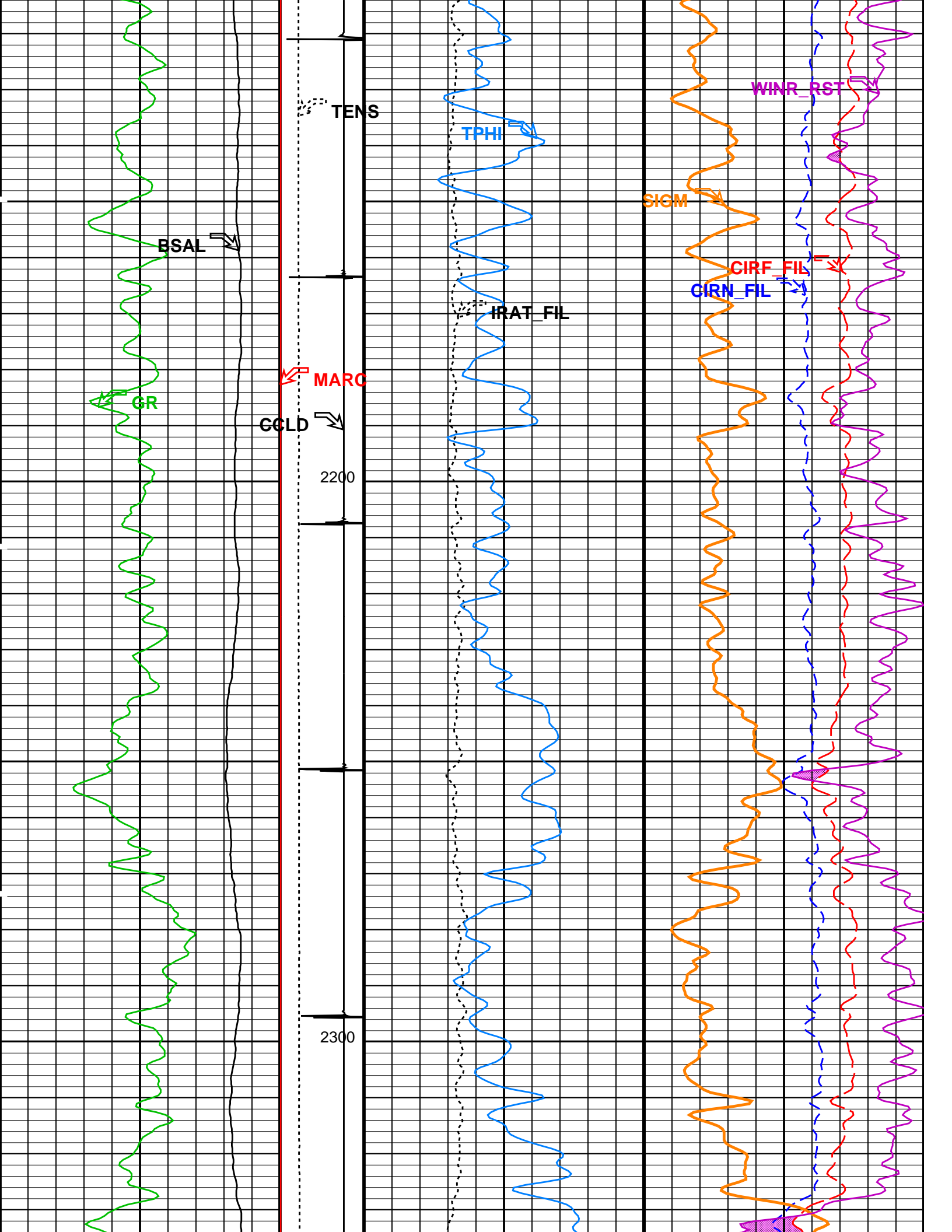


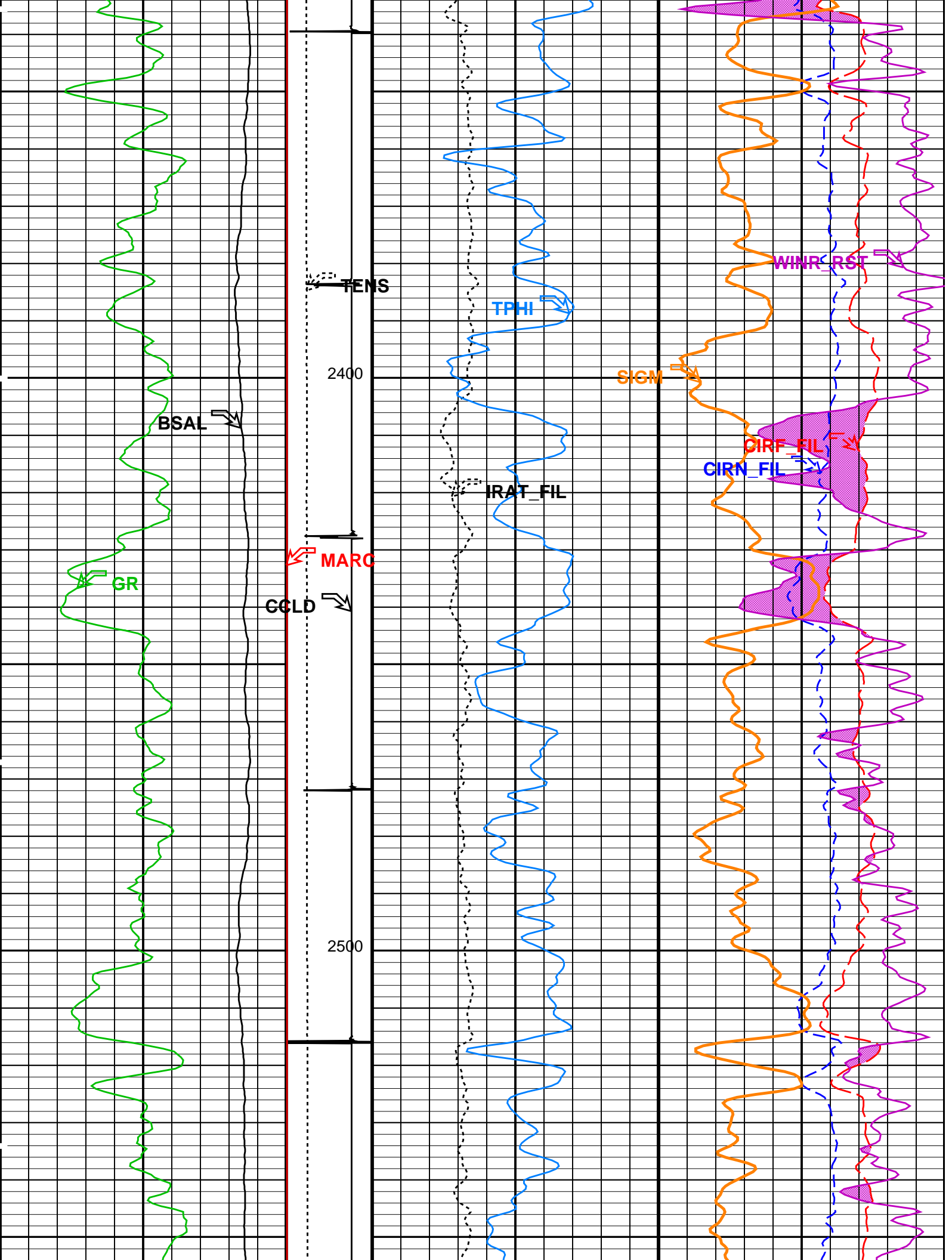


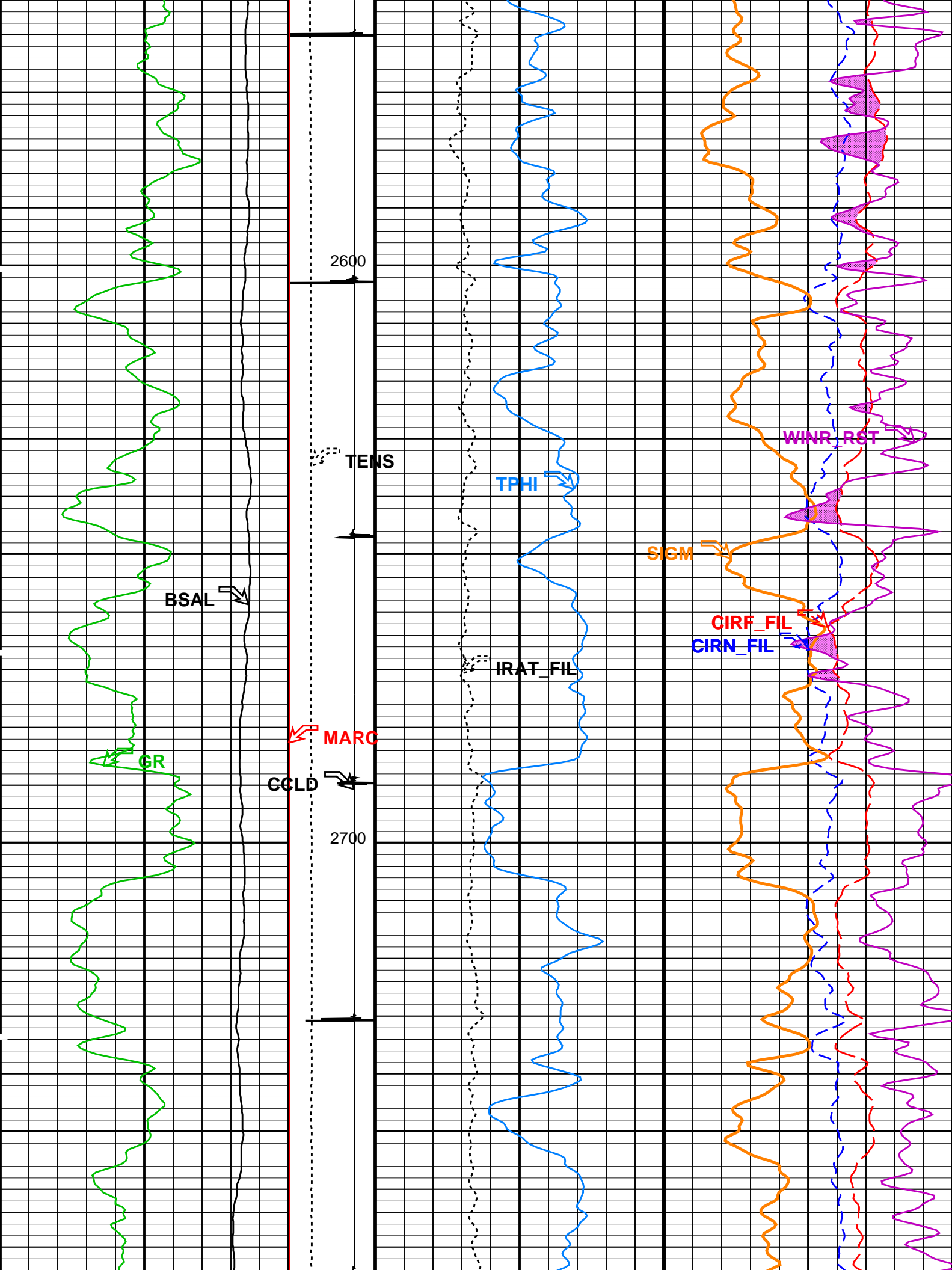


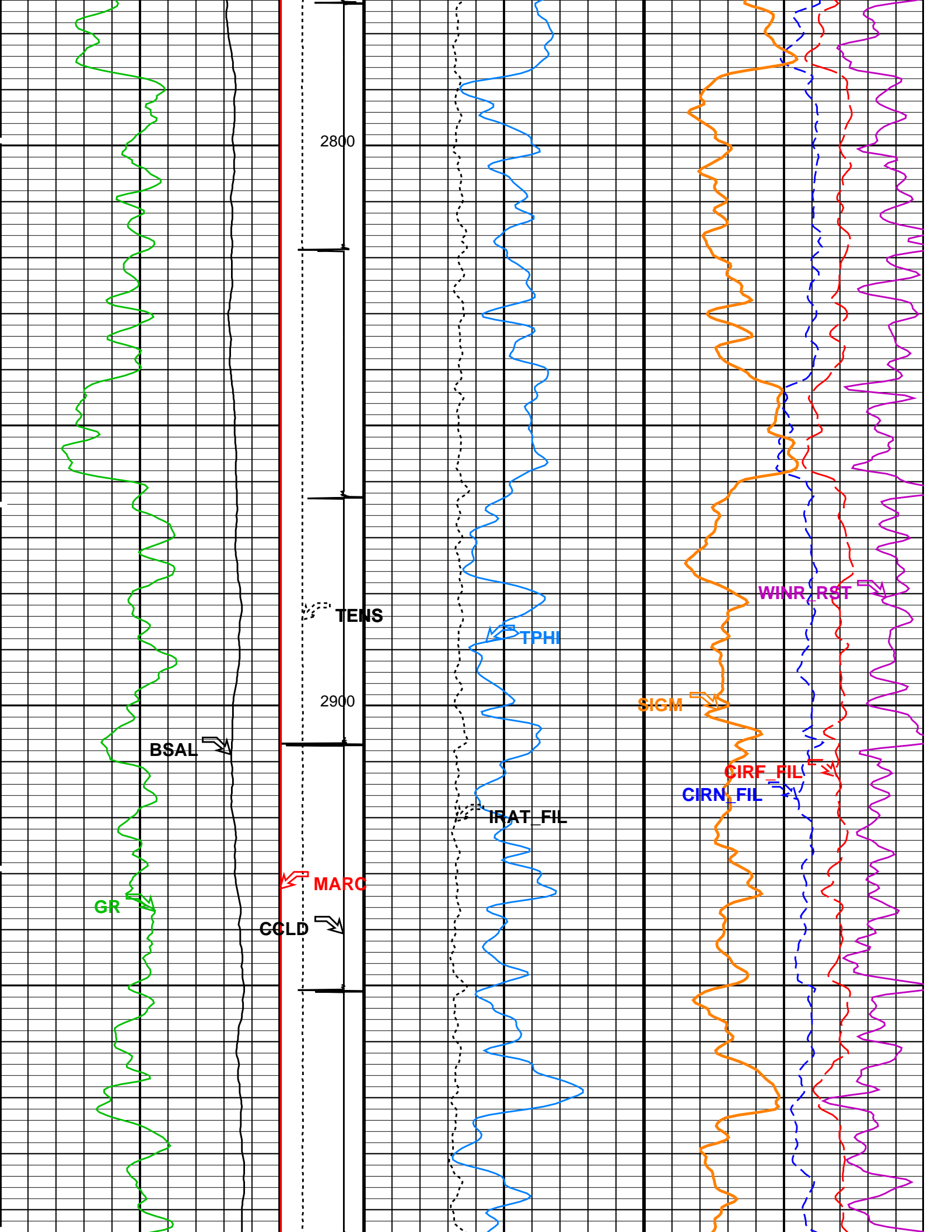


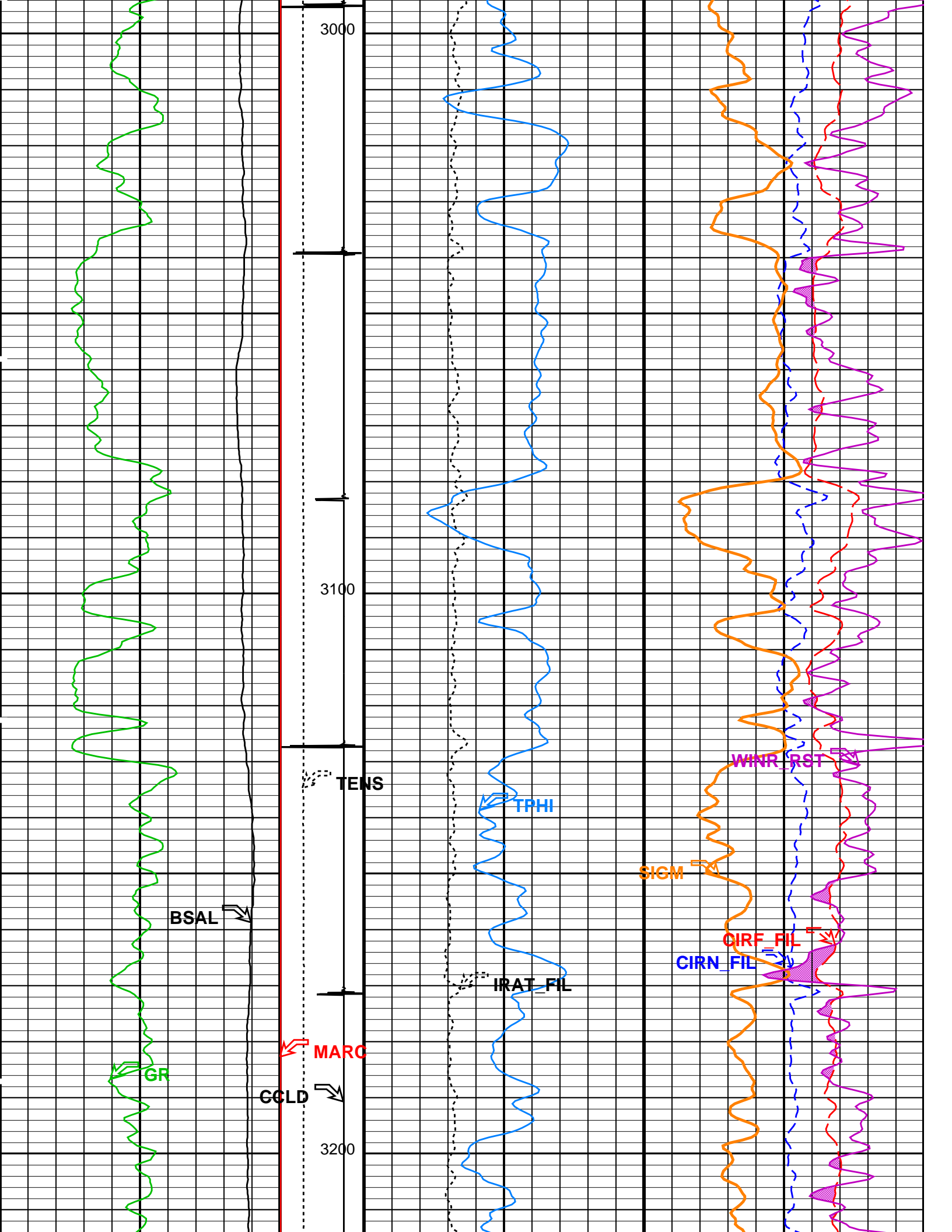


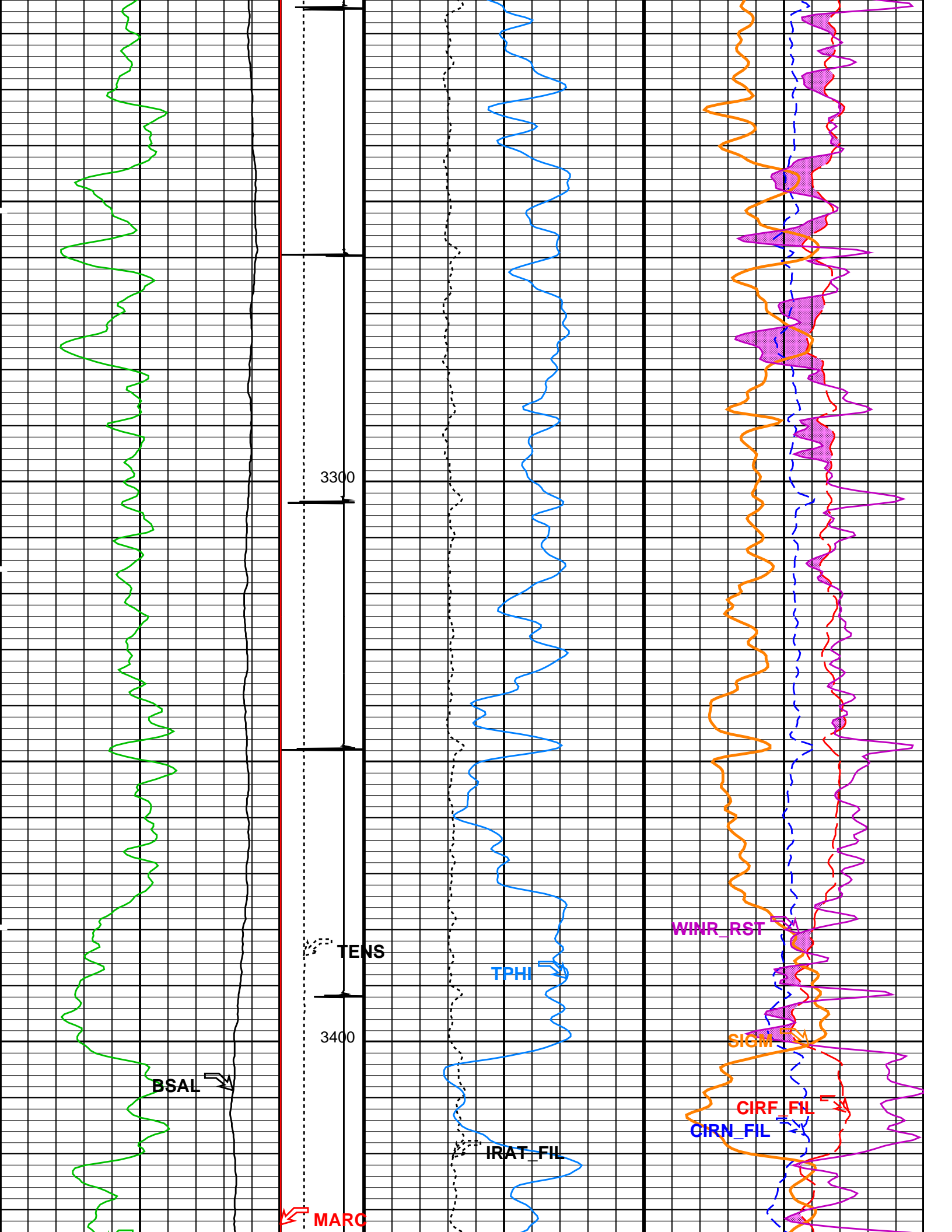


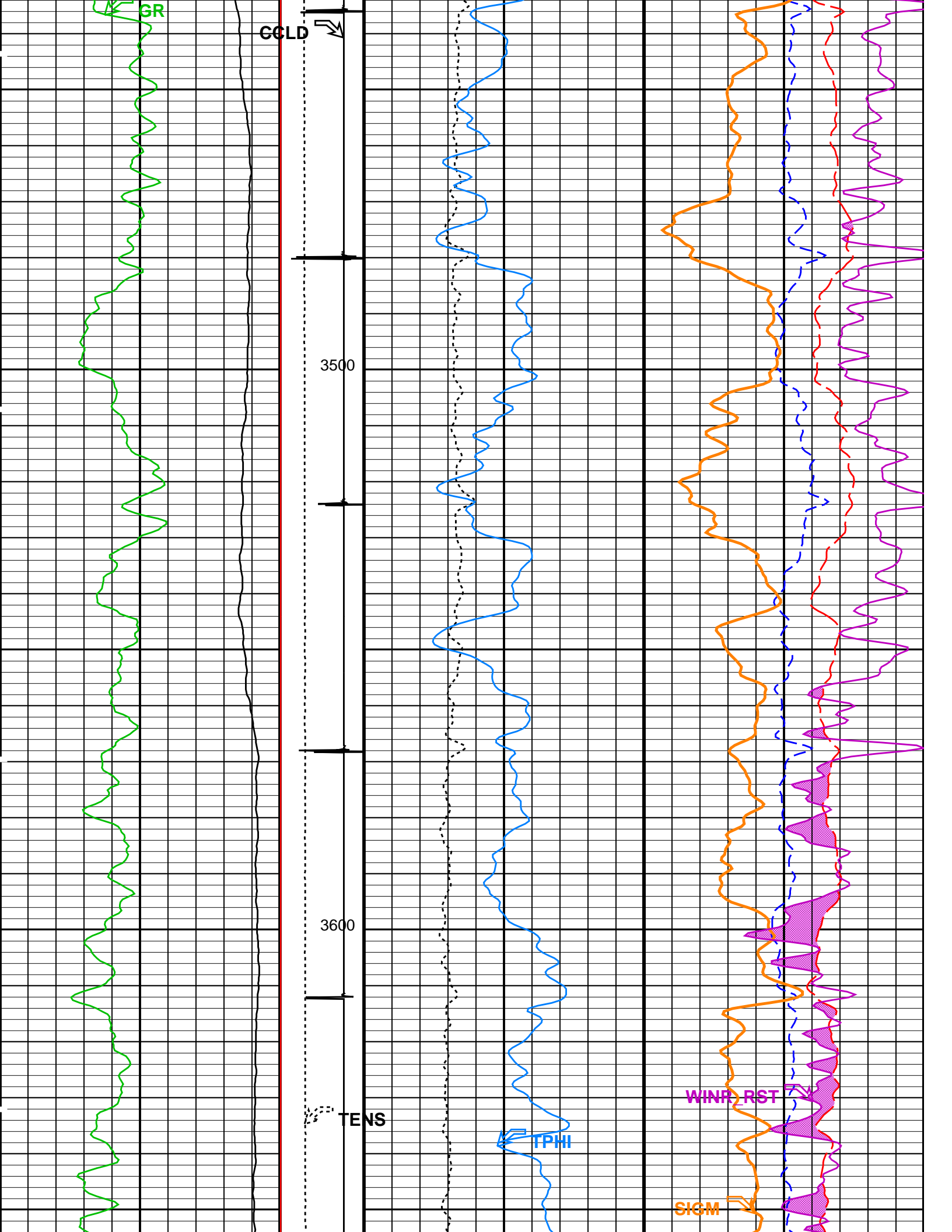


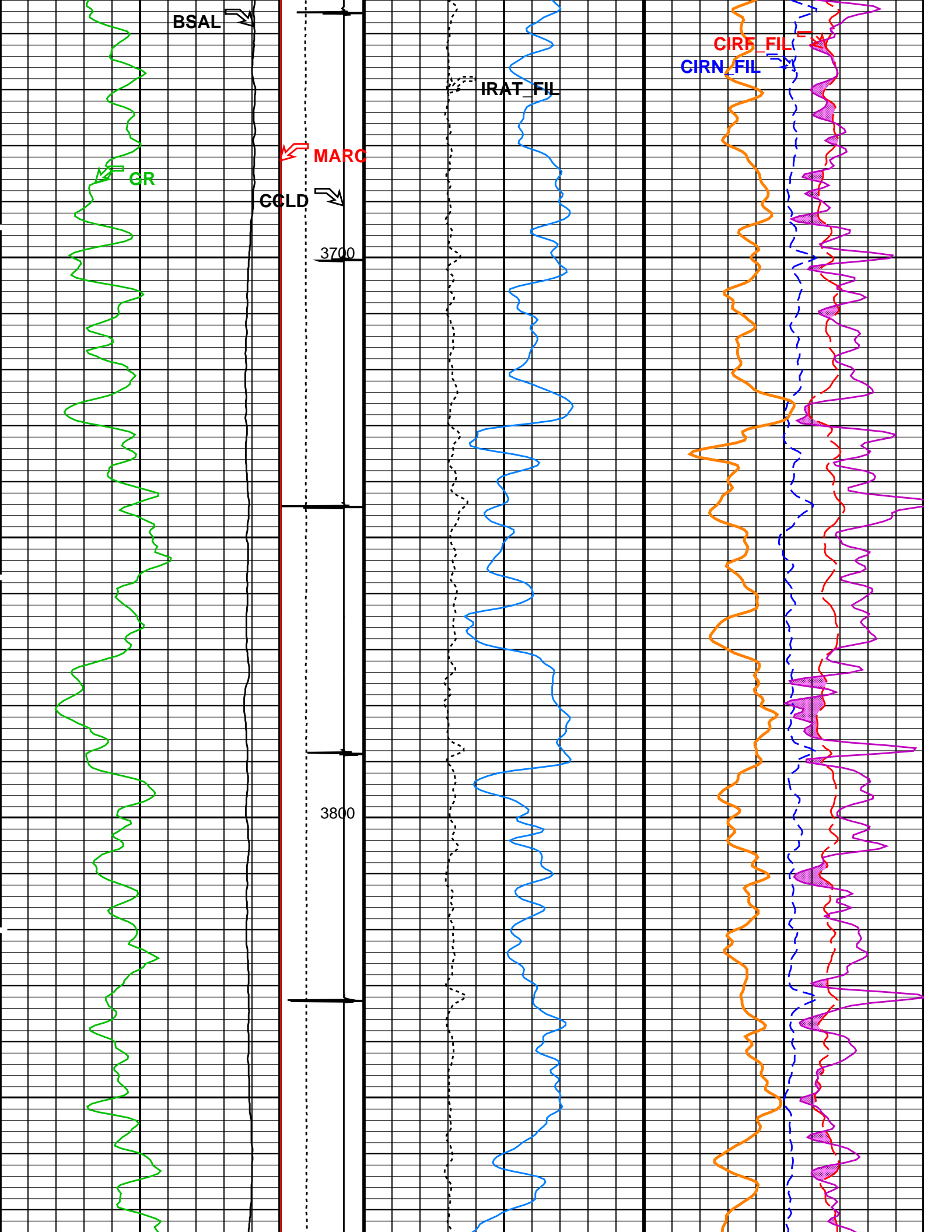


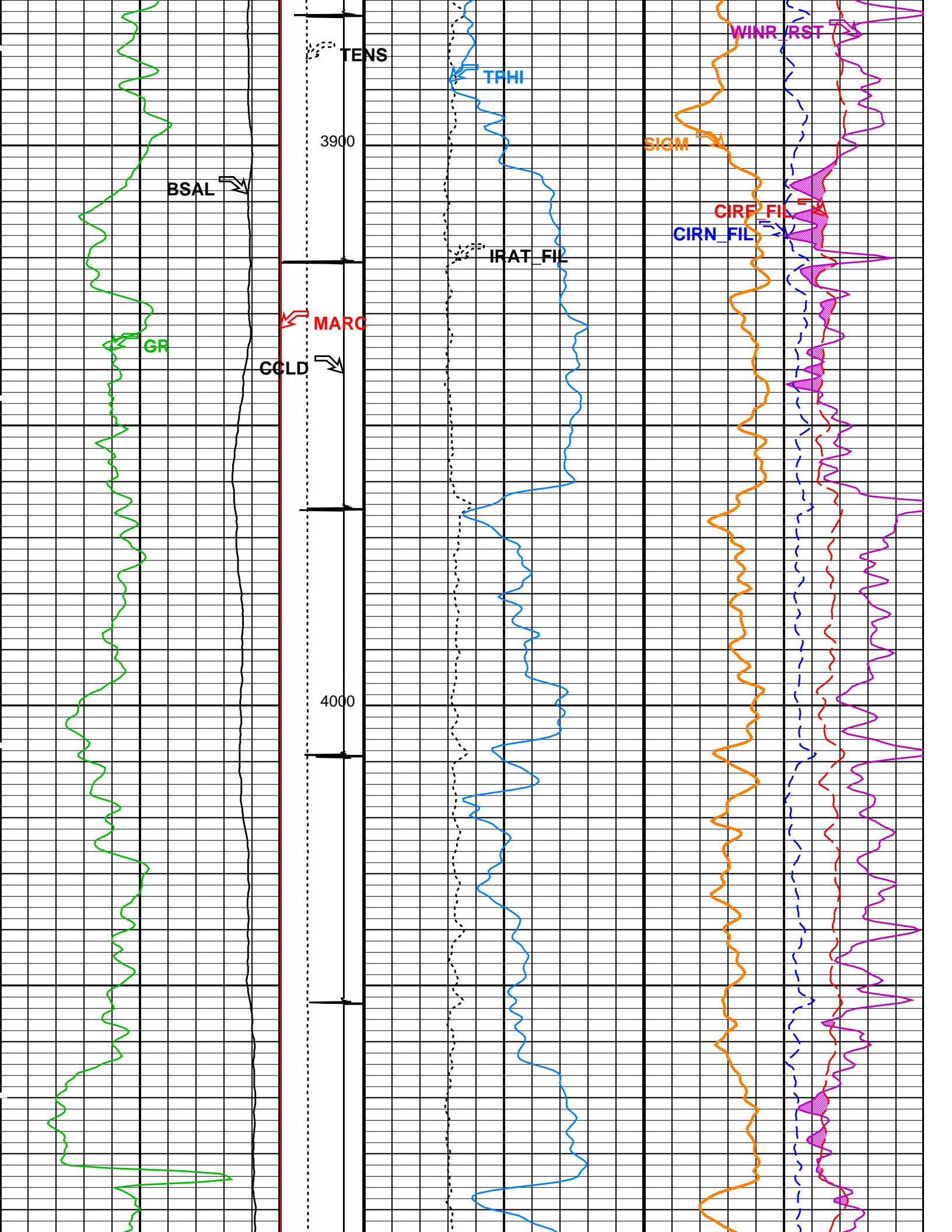


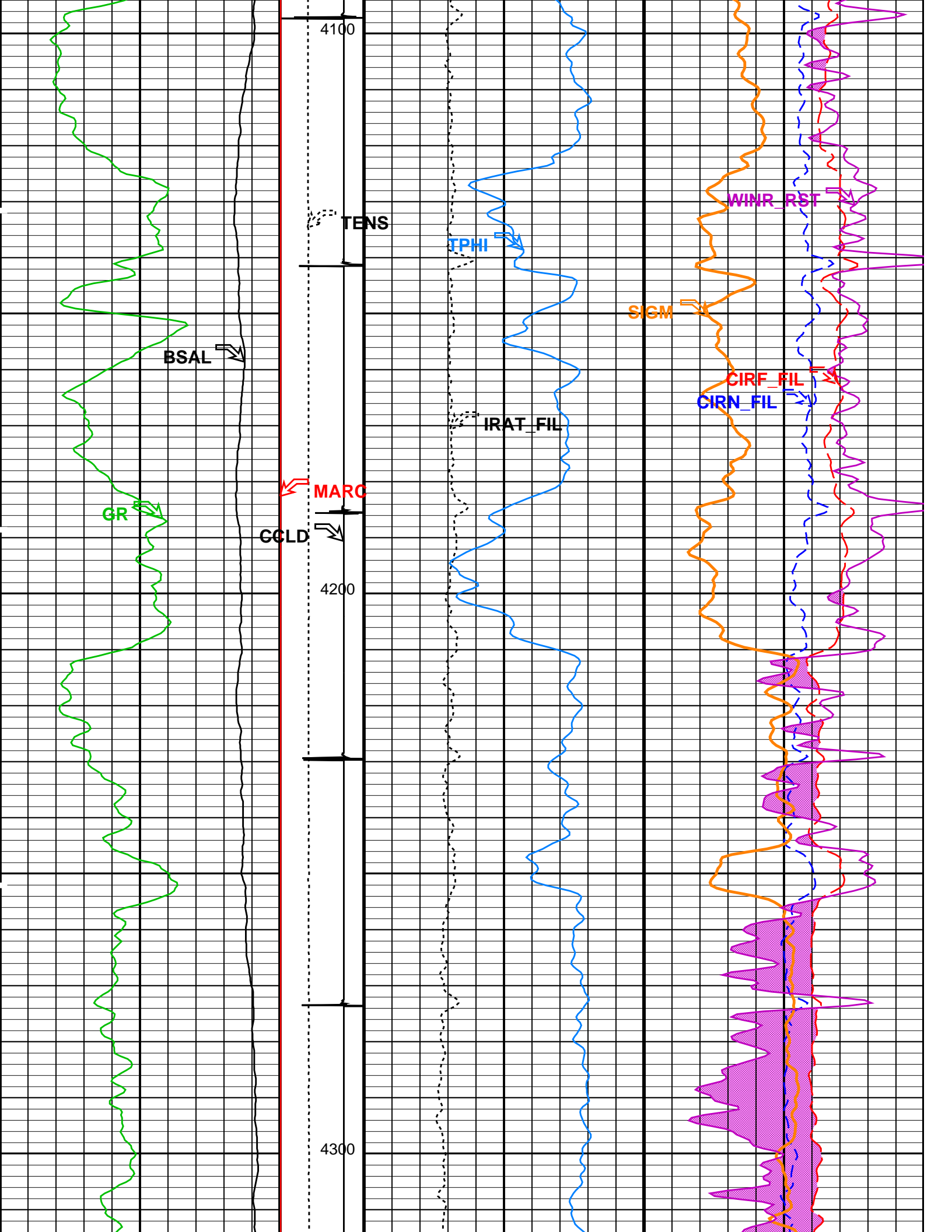


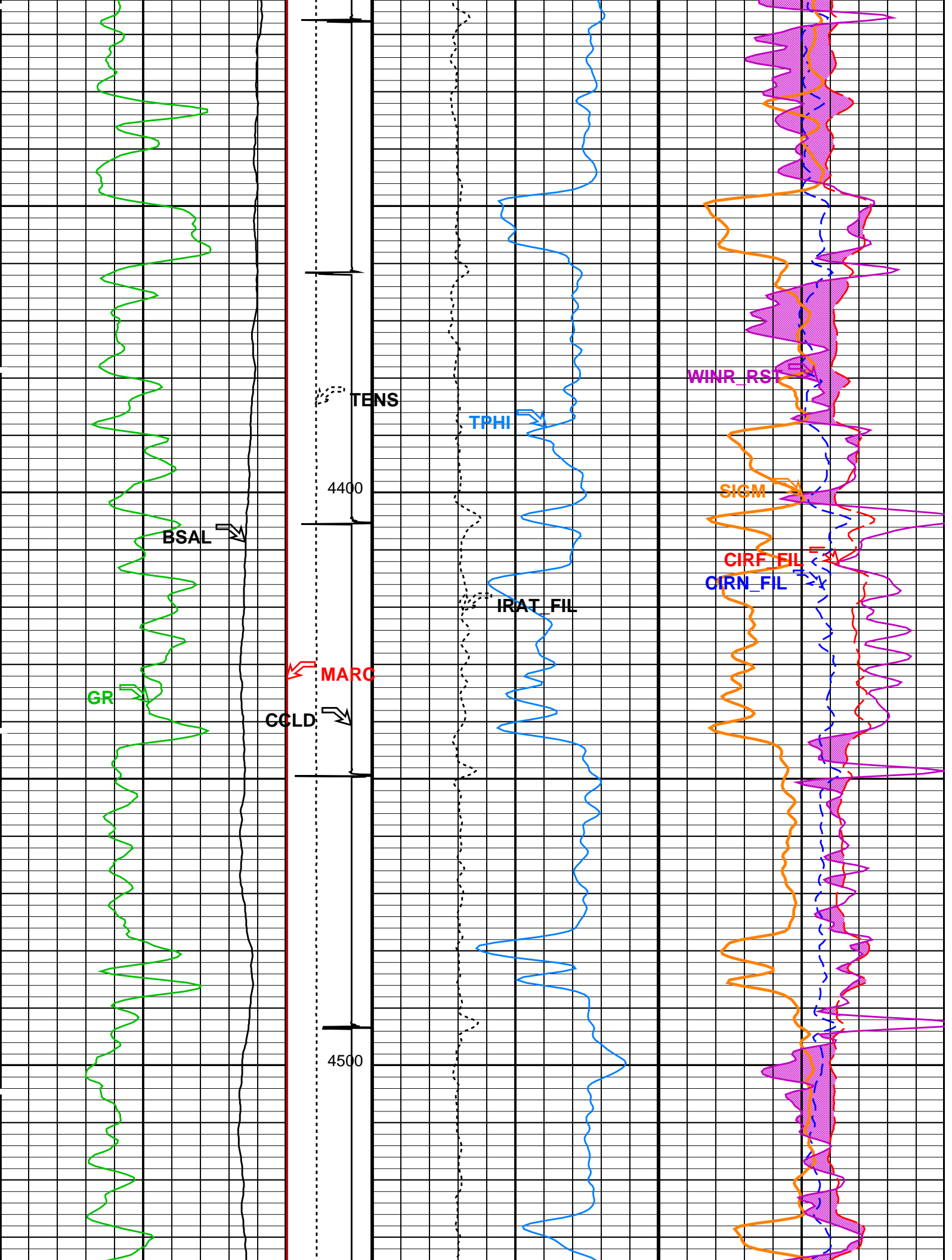


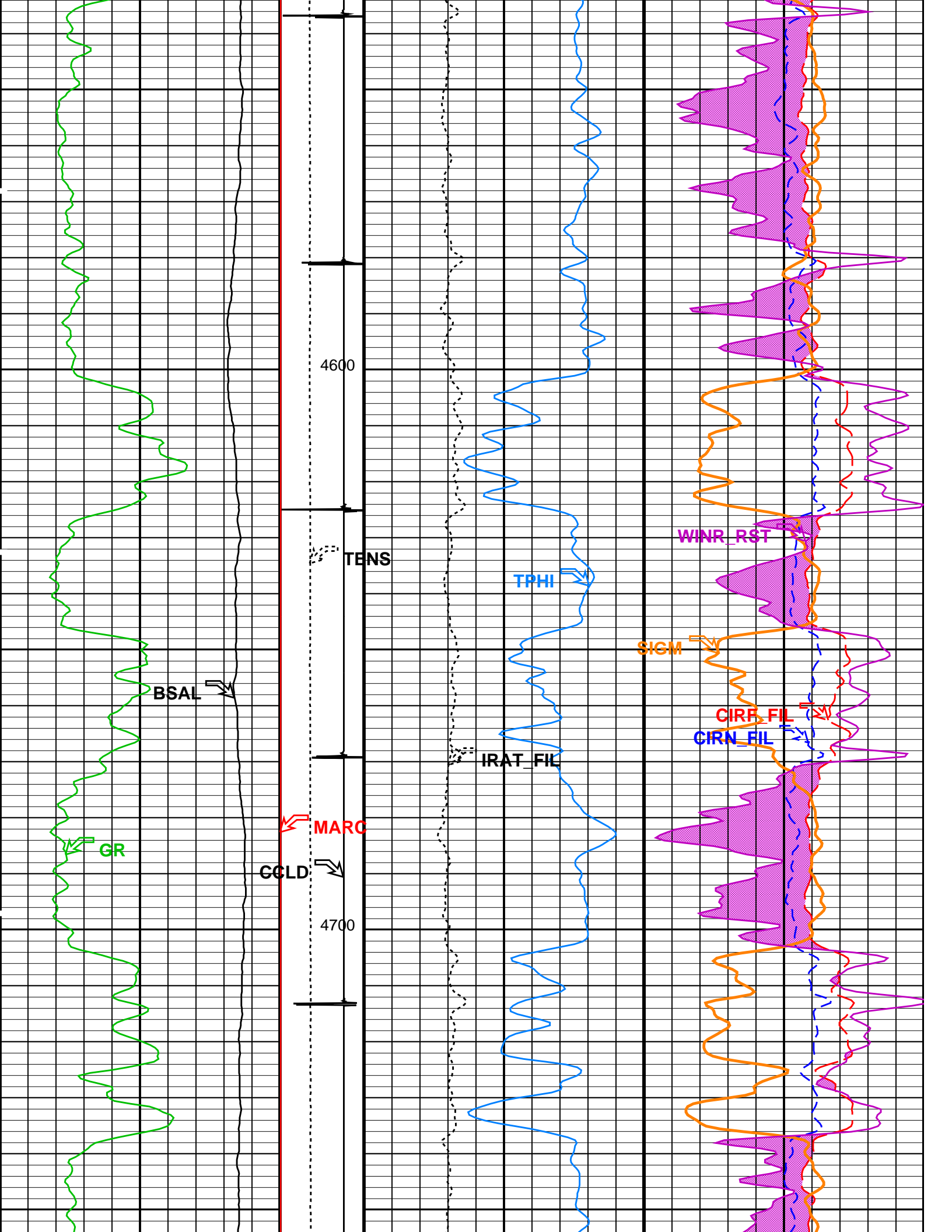


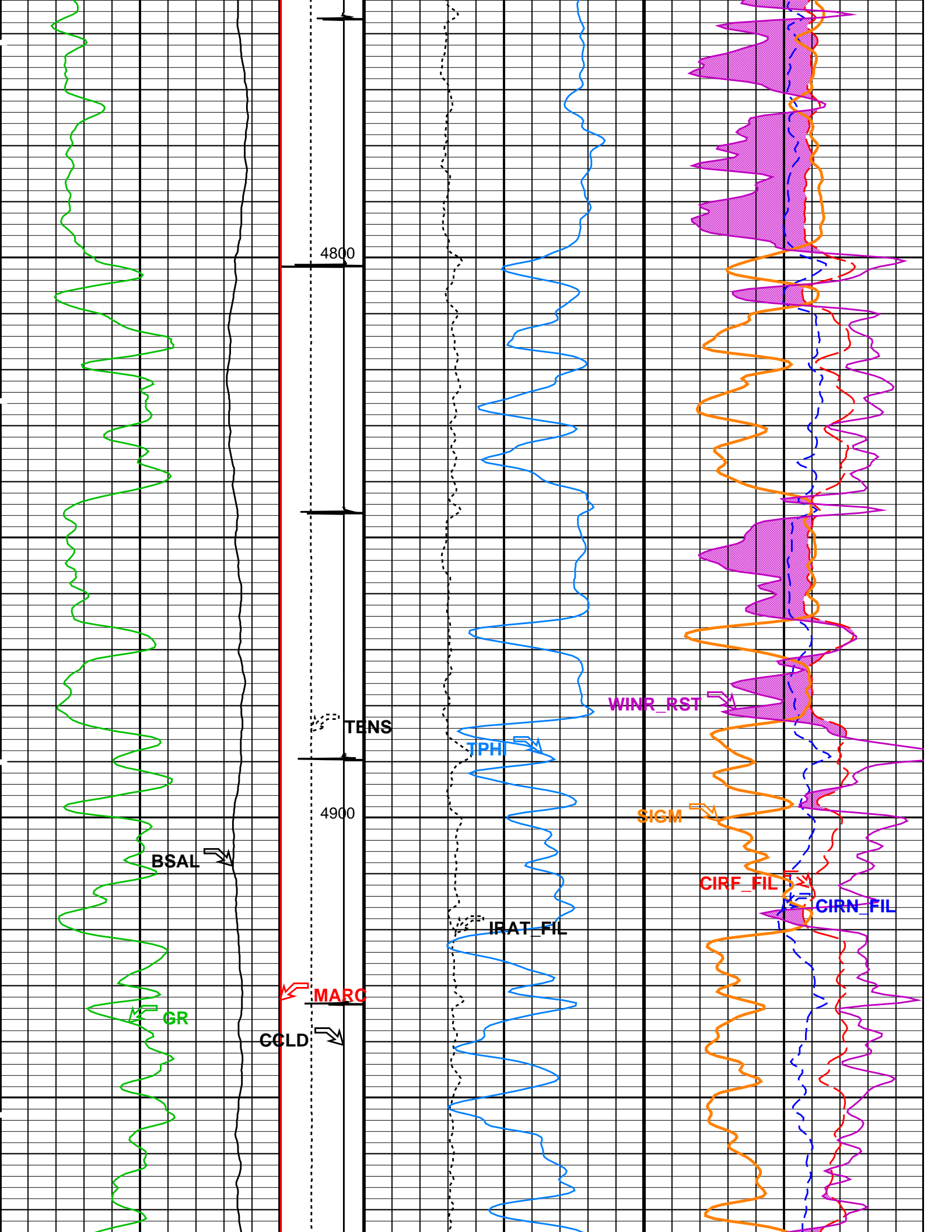


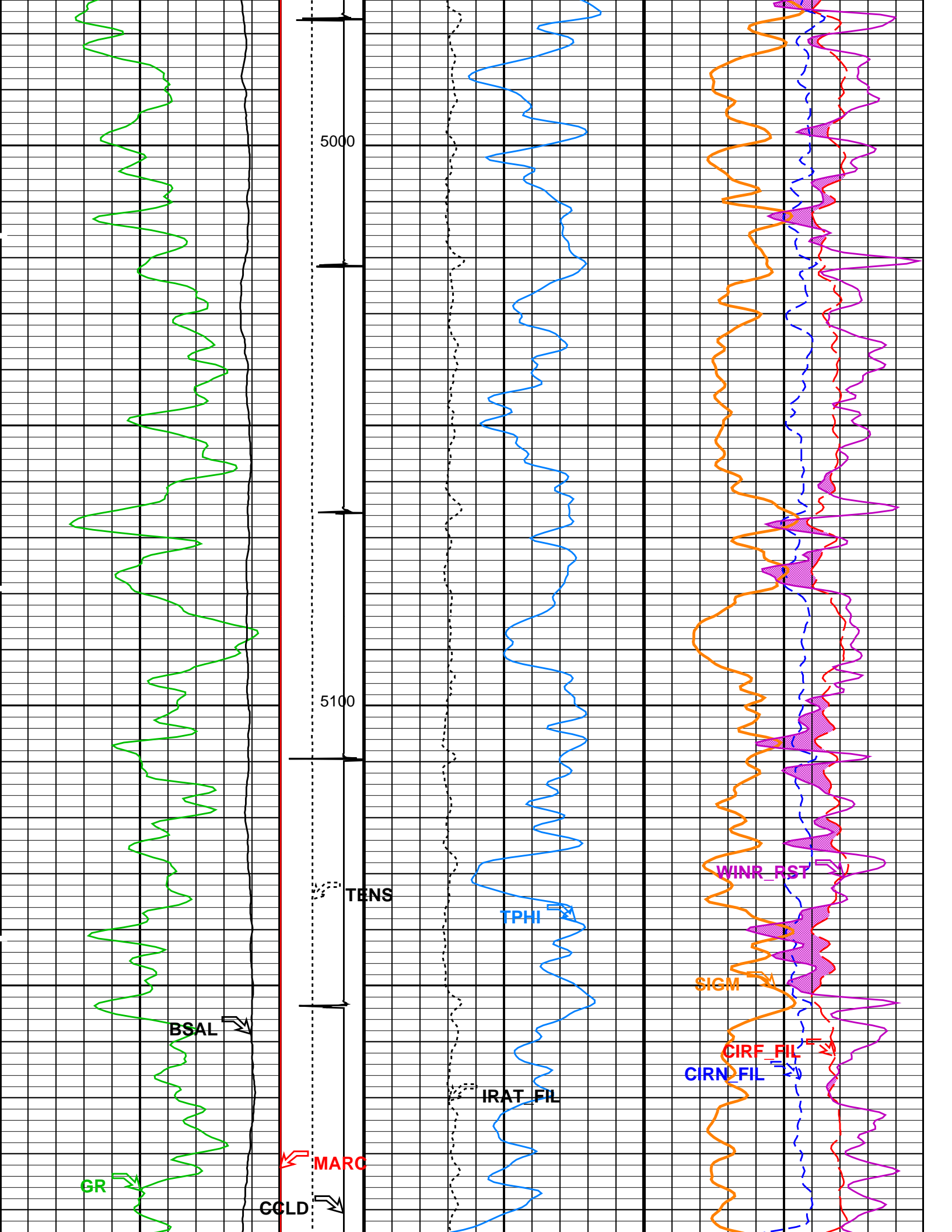


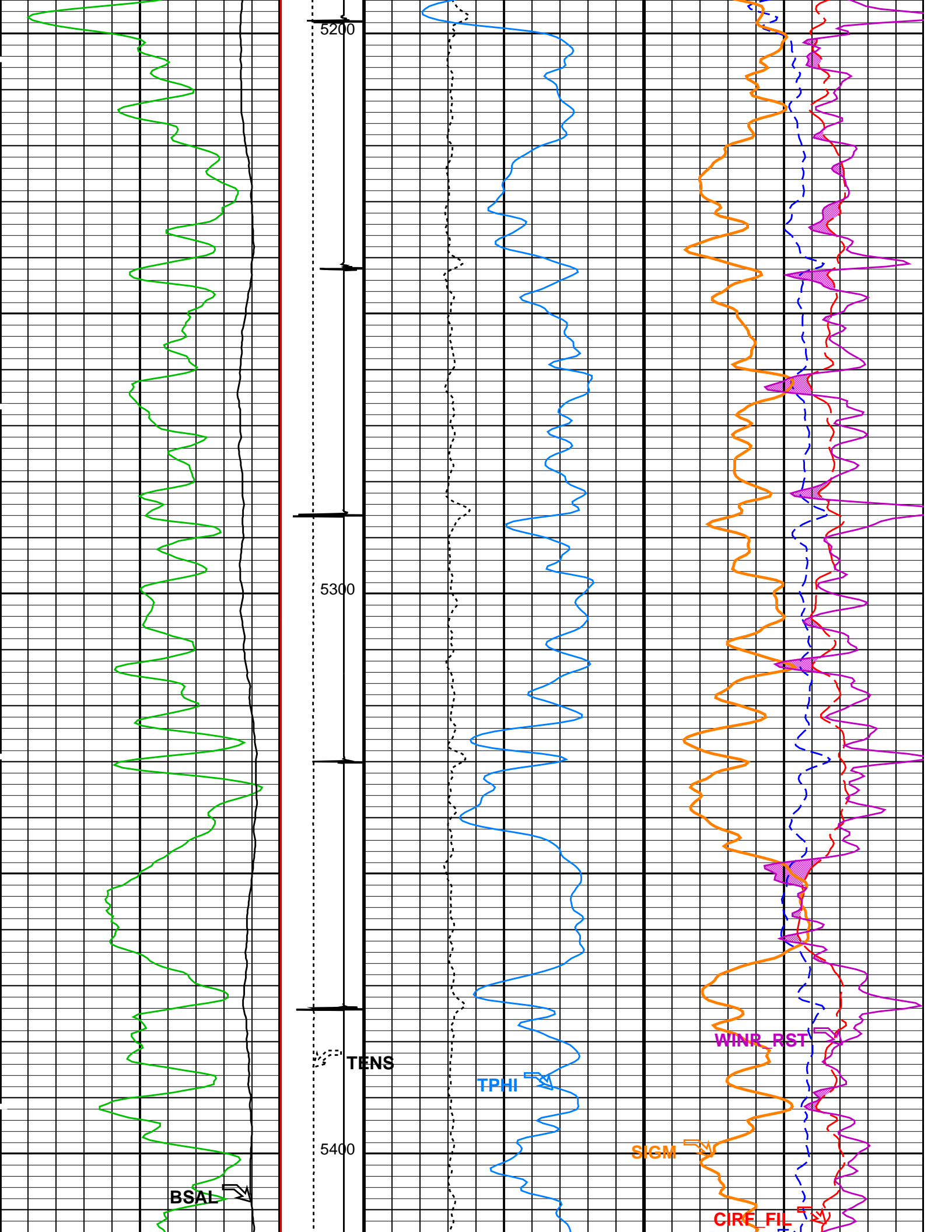


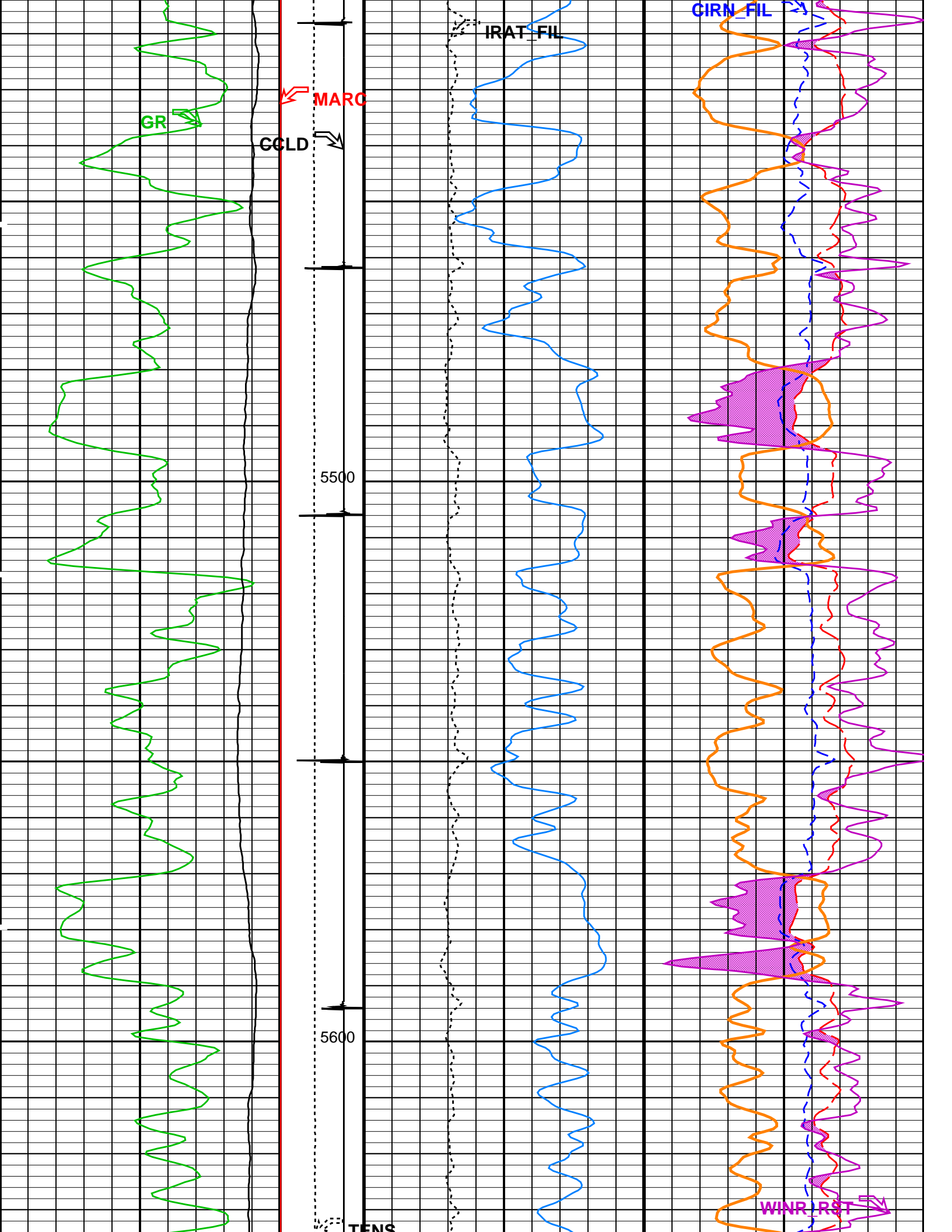


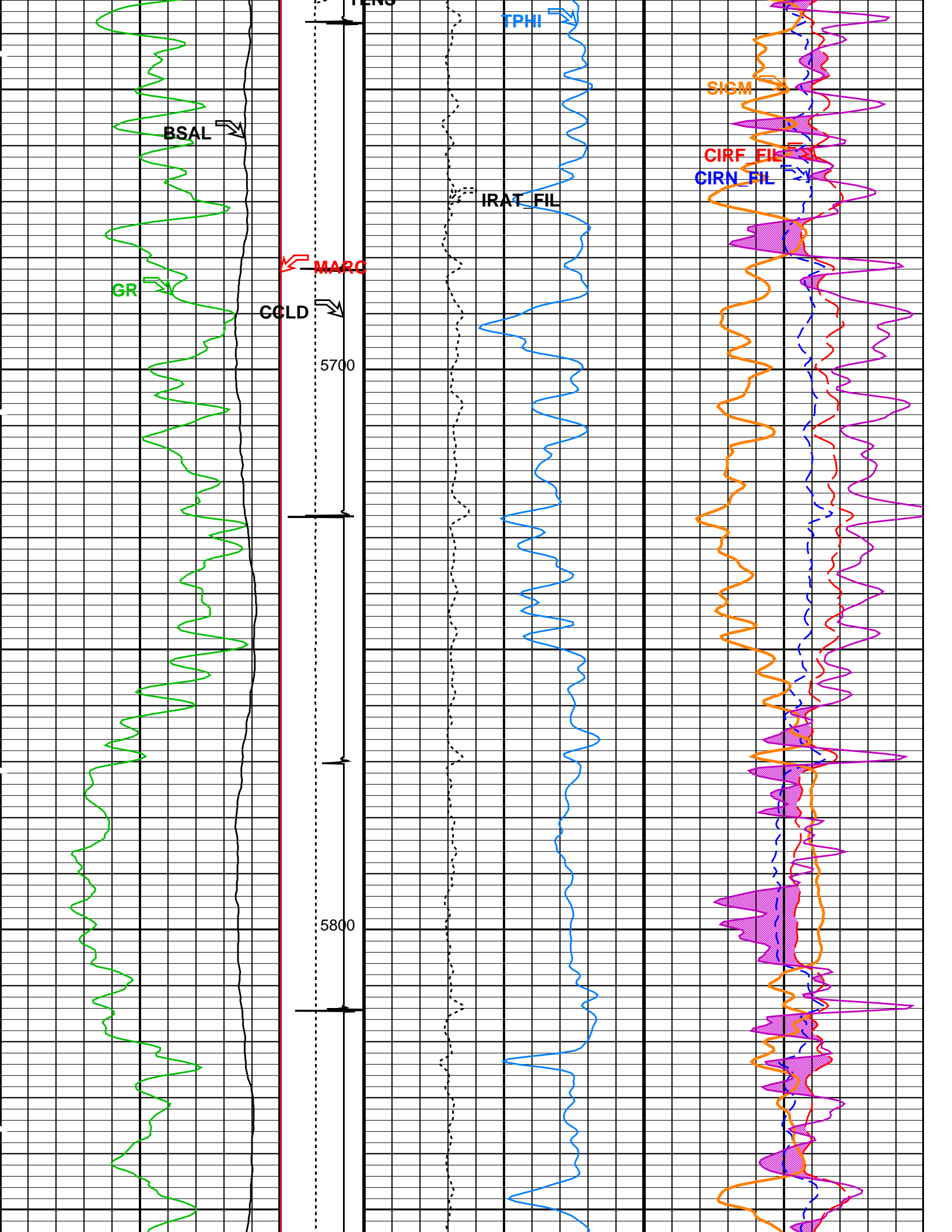


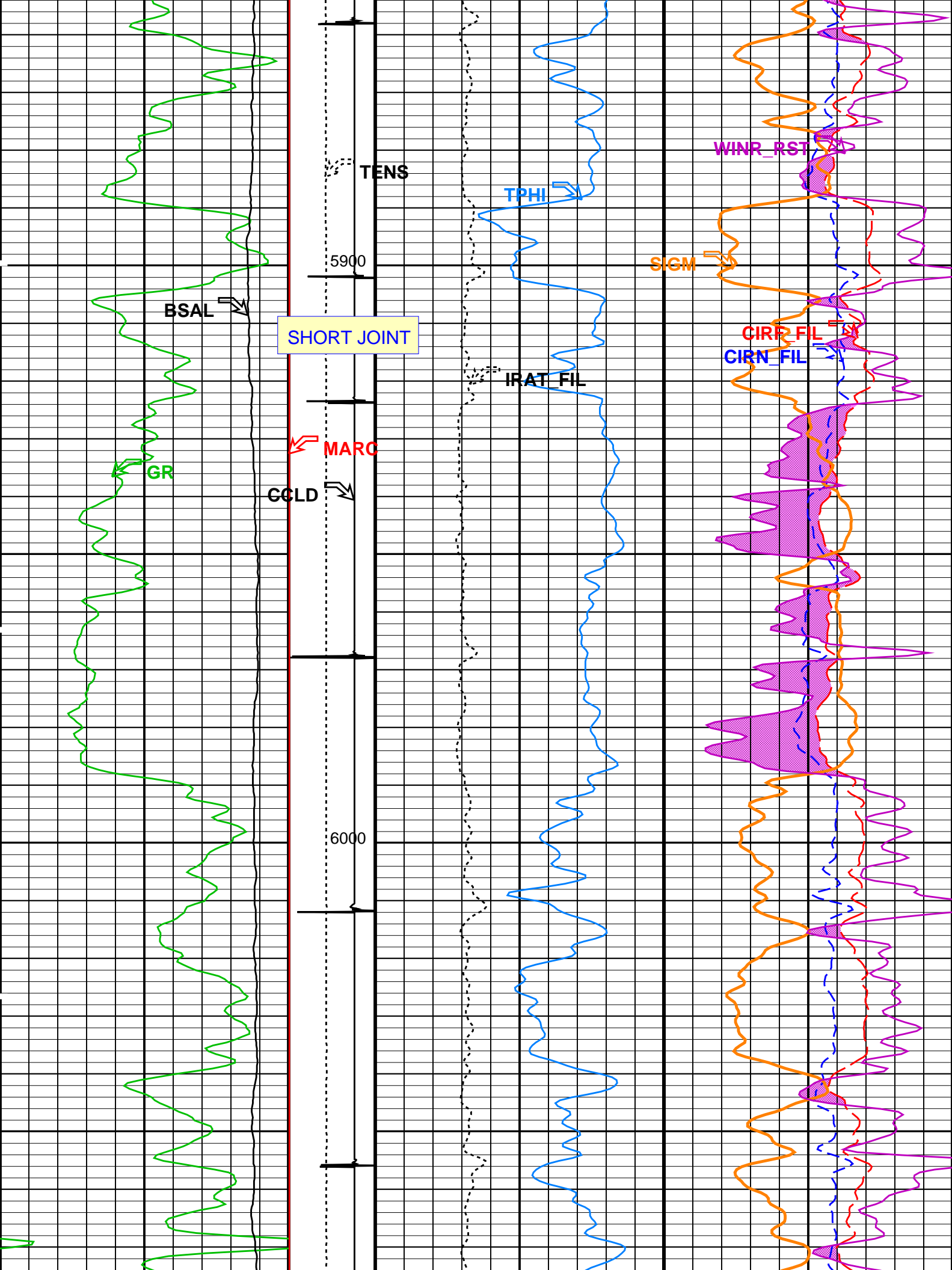


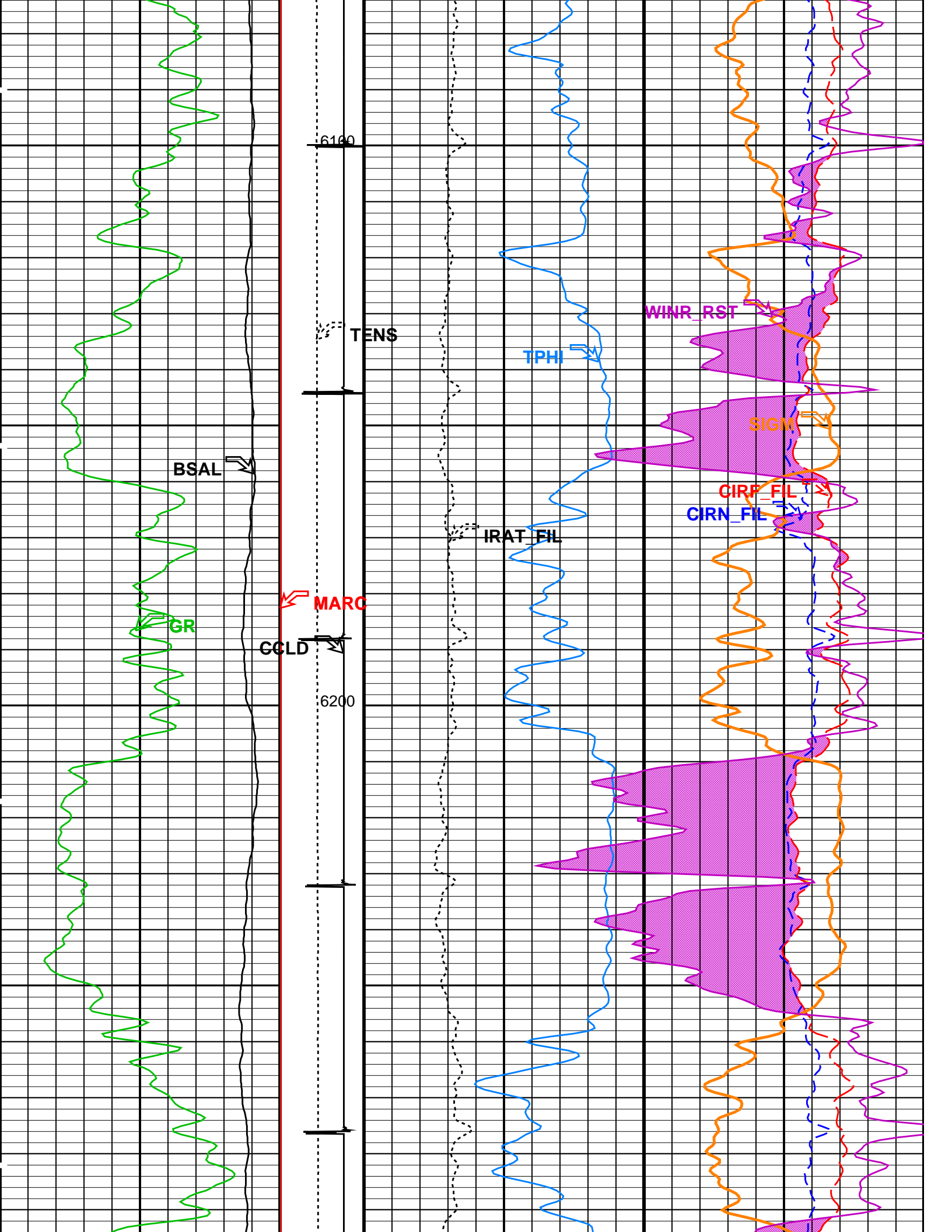


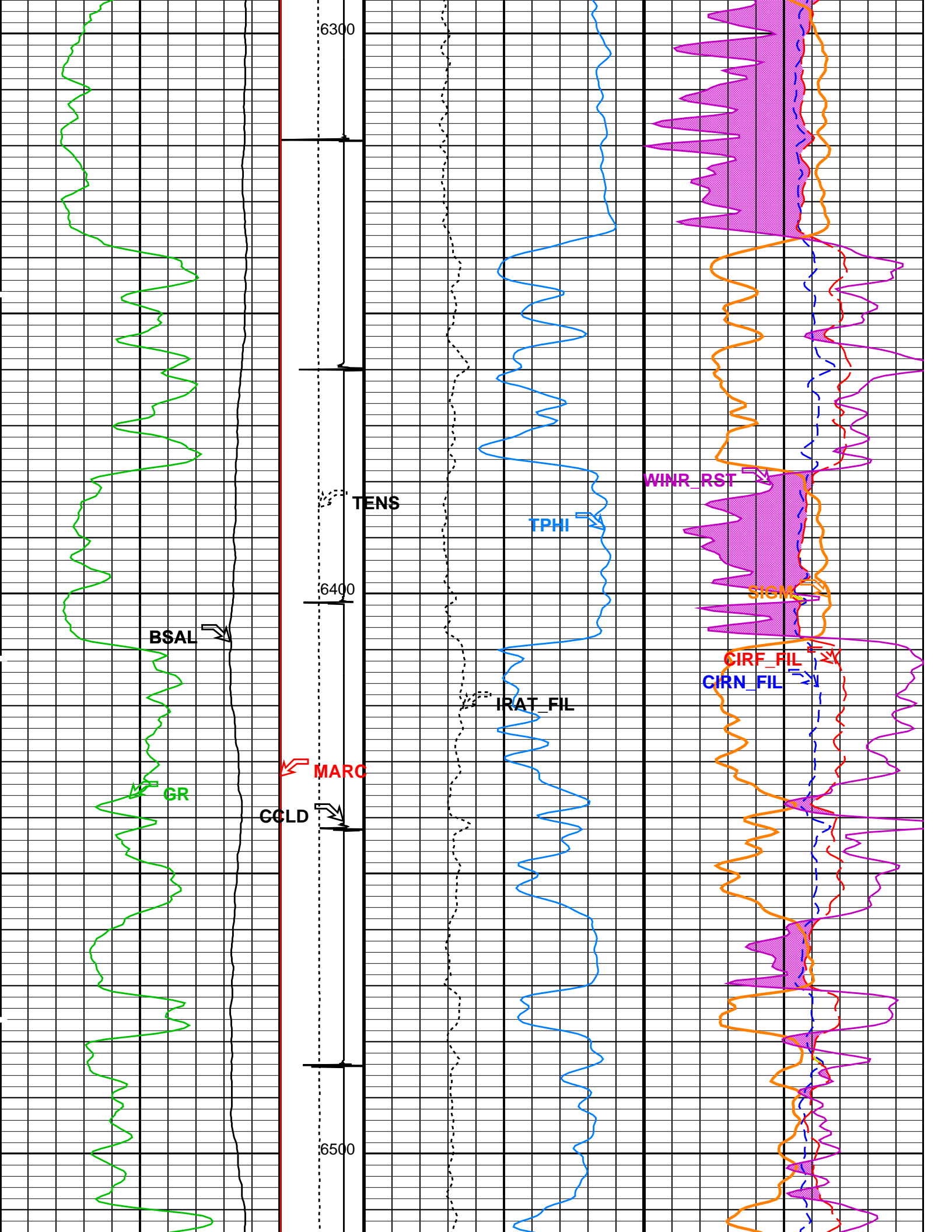


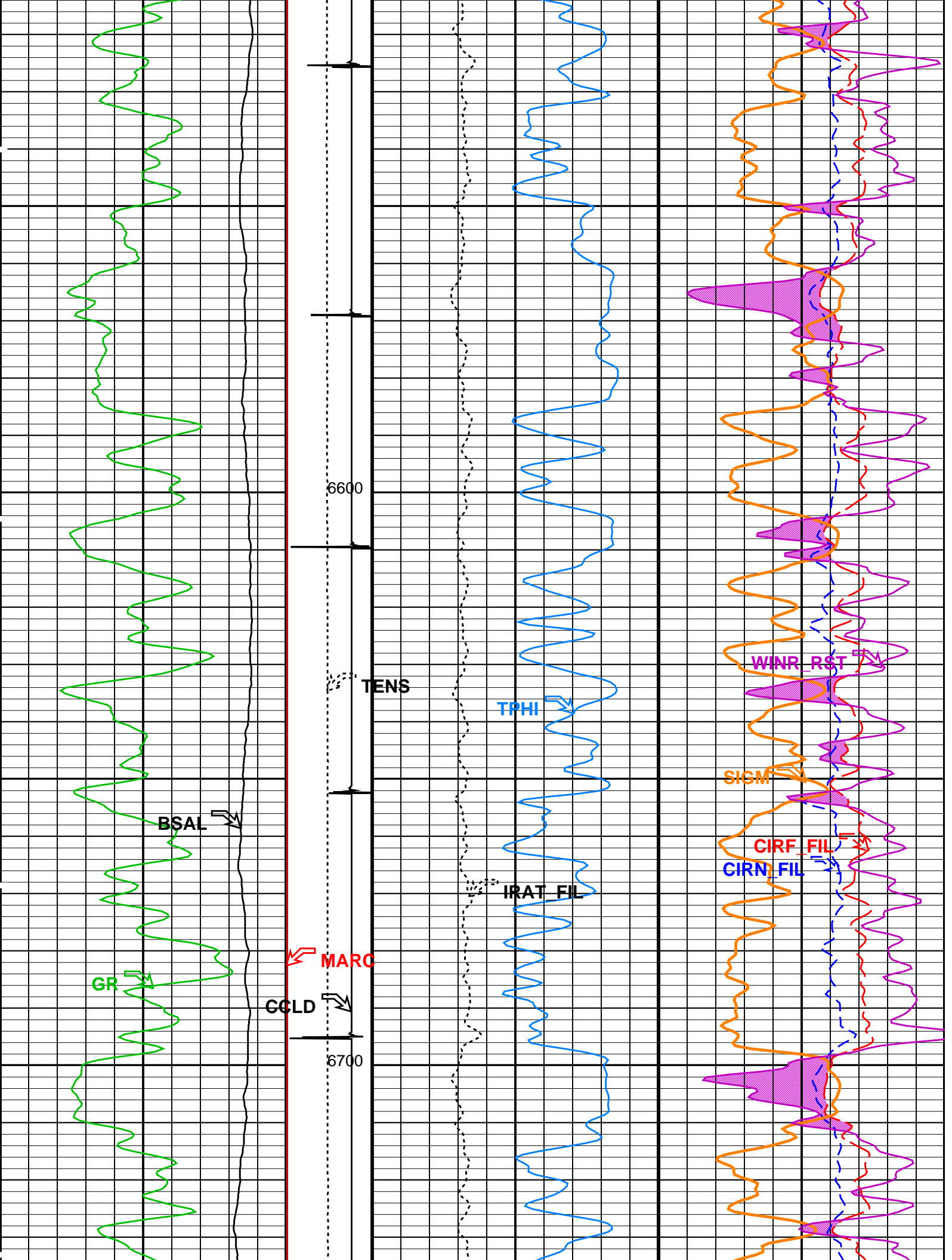


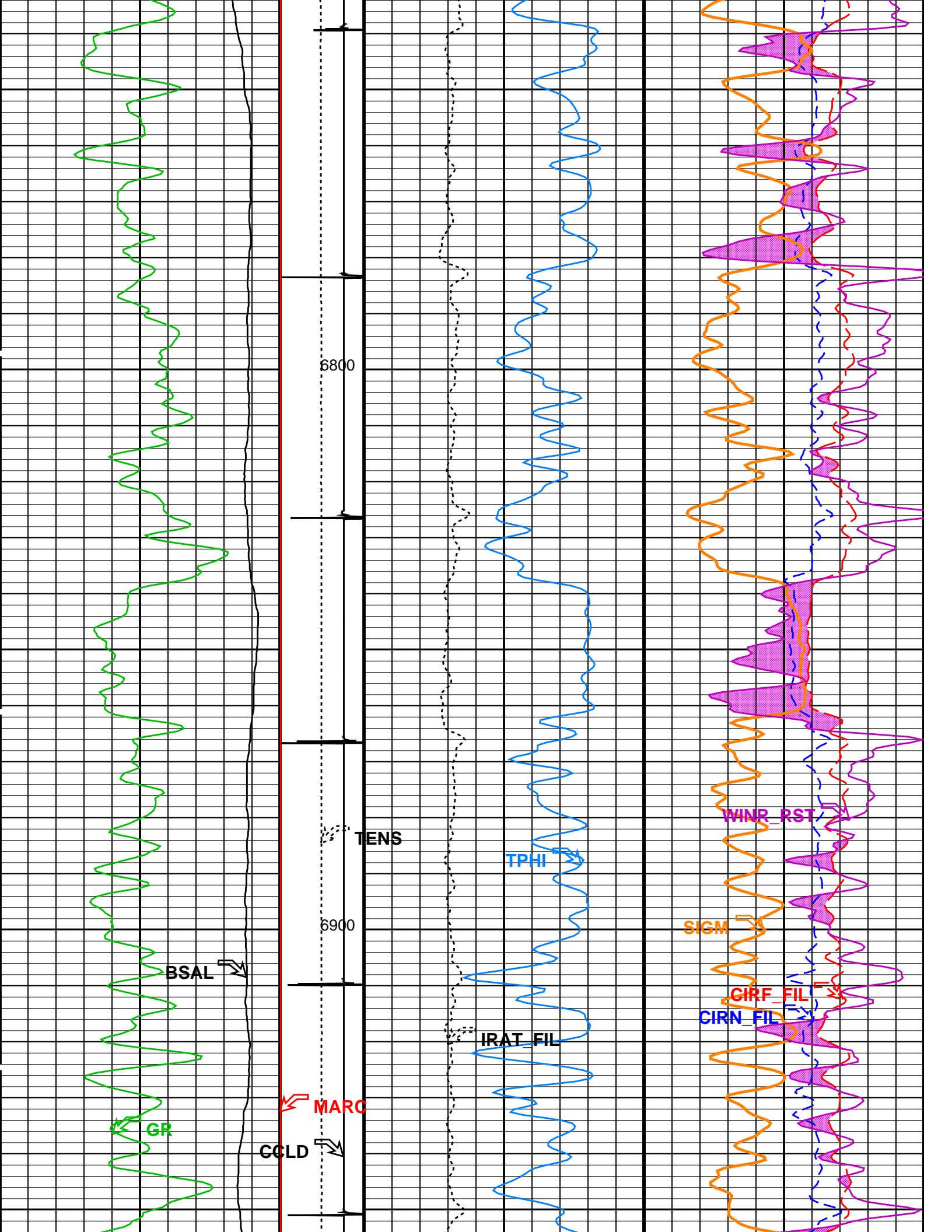












SHORT JOINT

7000

7100

TENS

BSAL

TPHI

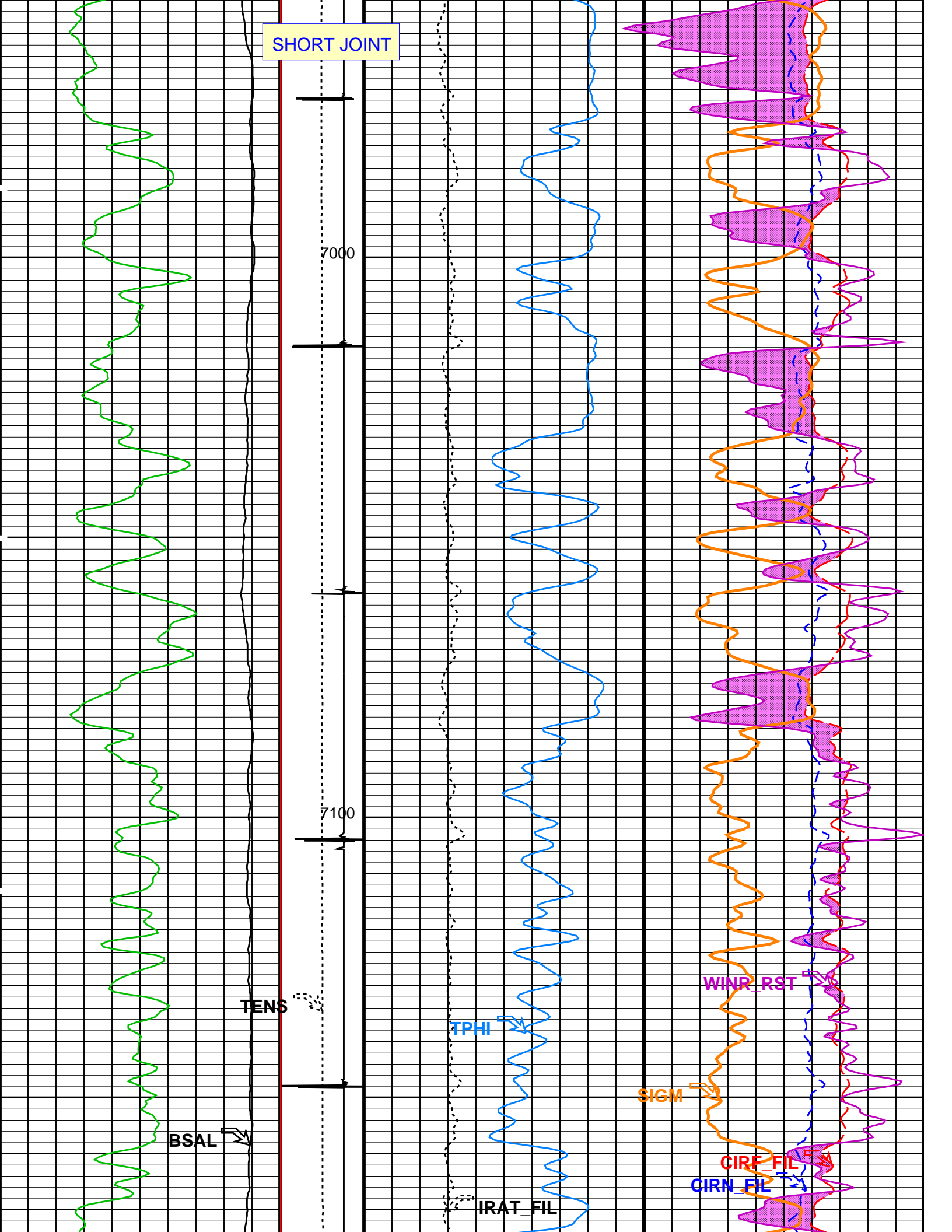
IRAT_FIL

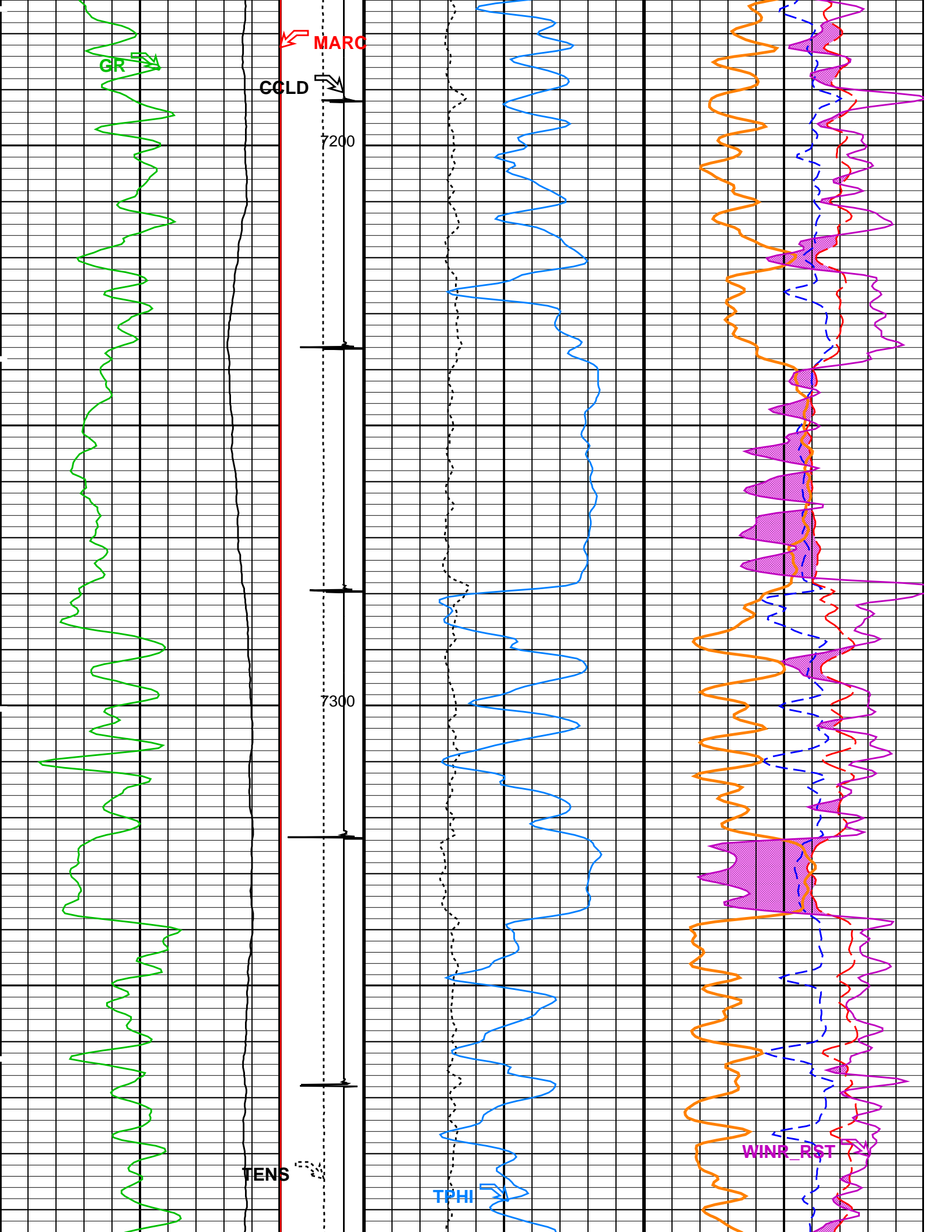
SIGM

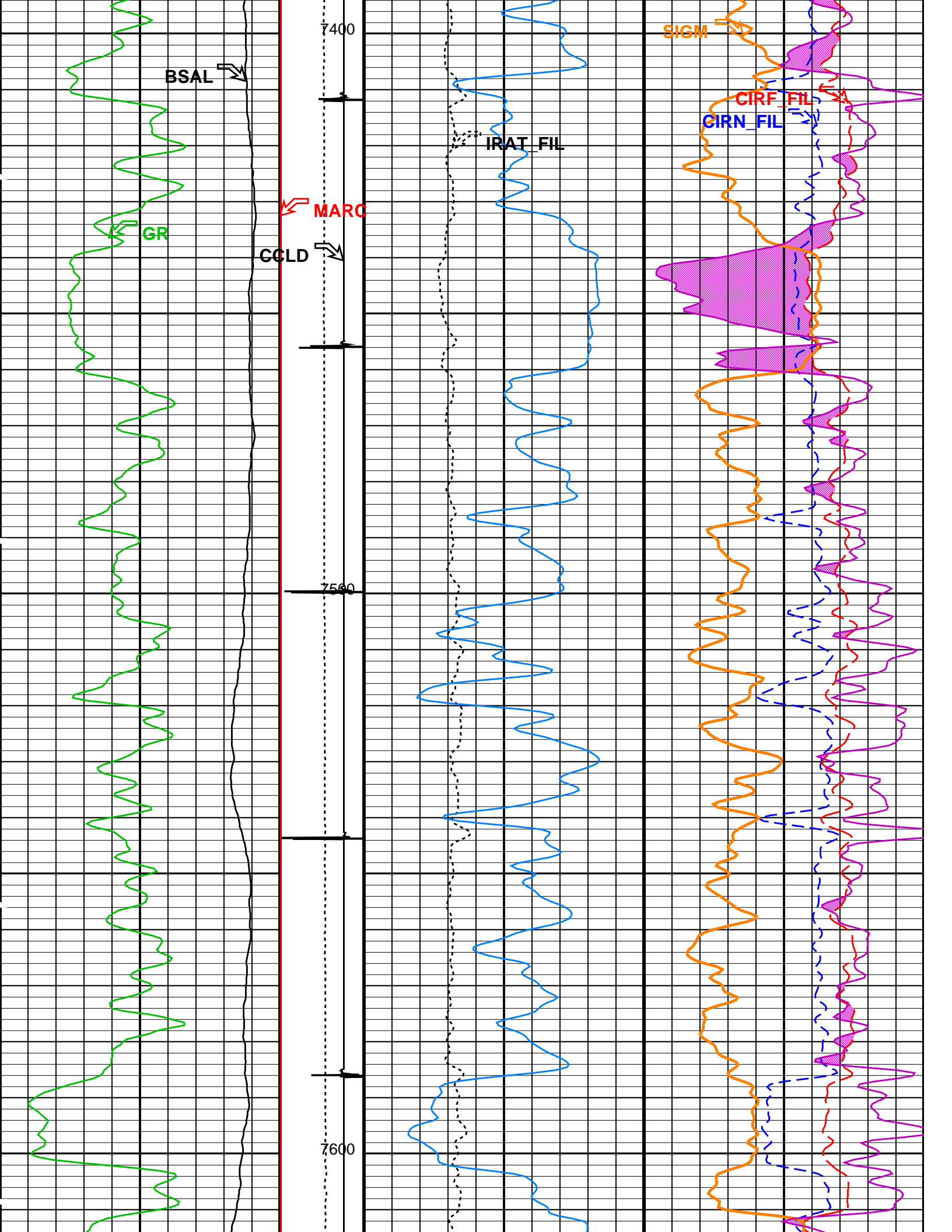
WINR_RST

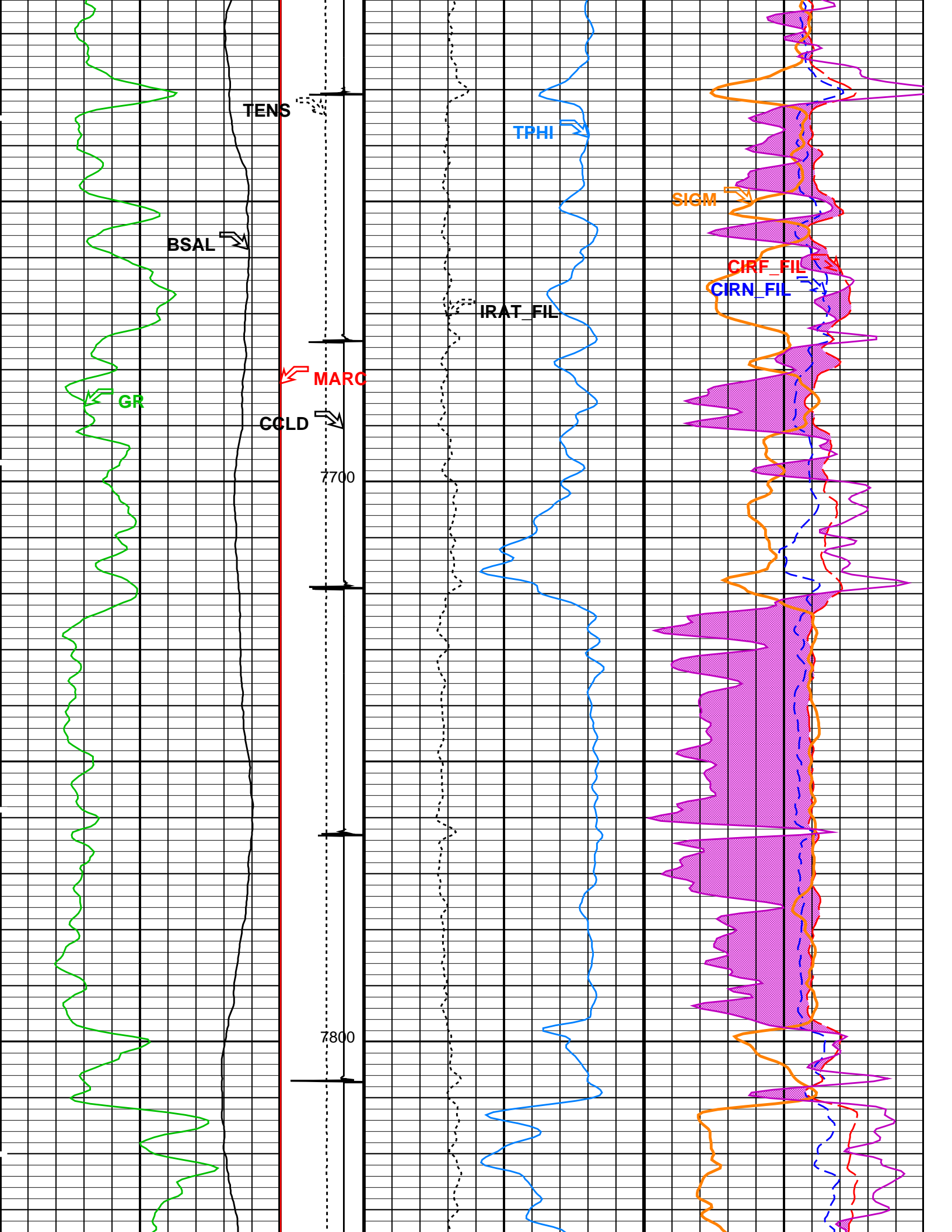
CIRF_FIL

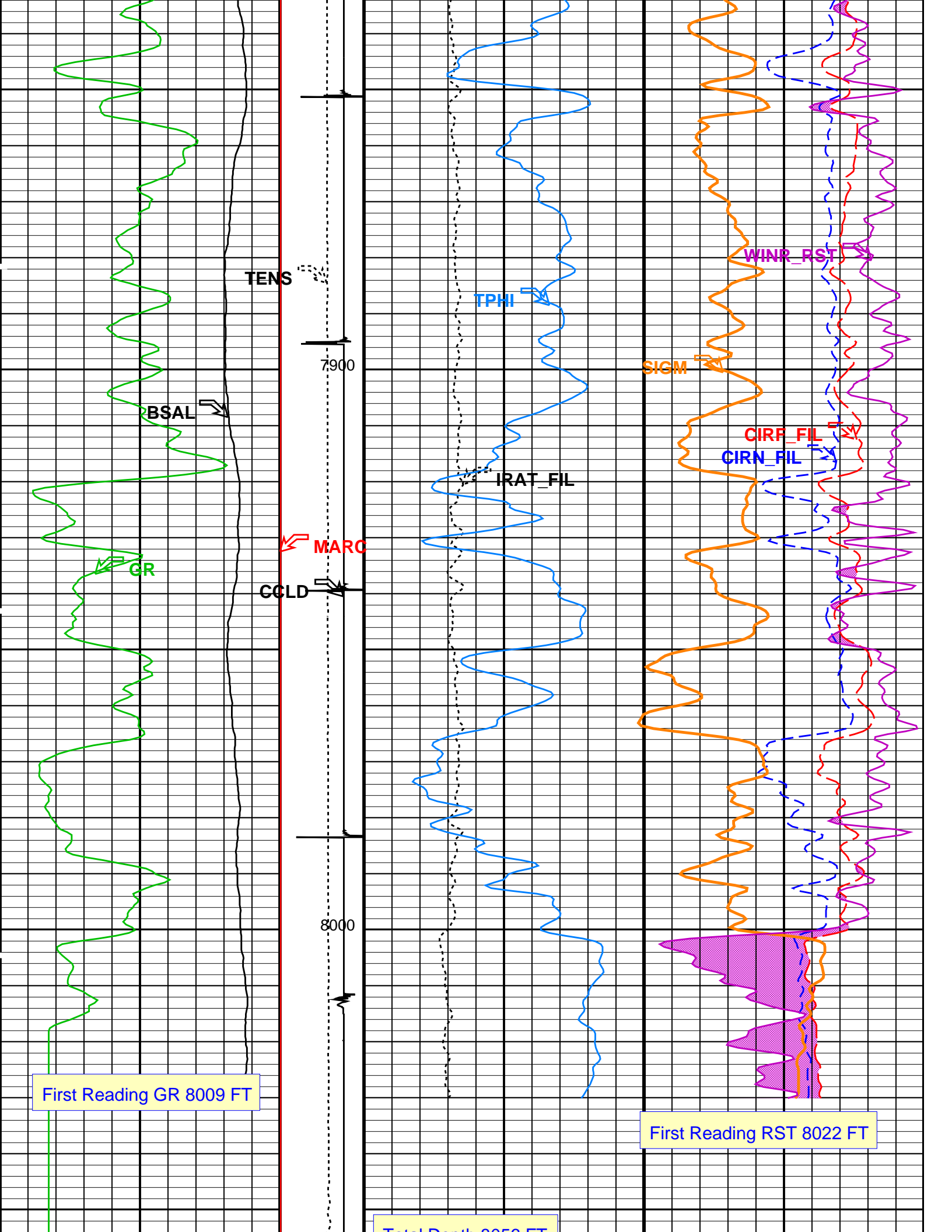
CIRN_FIL











										Total Depth 8056 FT																								
Gamma Ray (GR) (GAPI)										Tension (TENS) (LBF)					RST Inelastic Ratio (IRAT_FIL)										RST Capture to Inelastic Ratio Near (CIRN_FIL)									
0 150										0 2000					0.75 (----) 0										2.5 (----) 0									
RST Borehole Salinity (BSAL) (PPK)										Discriminat ed CCL (CCLD)					RST Sigma (SIGM)																			
450 -50										3 (V) -1					60 (CU) 0																			
										Minitron Arc Detection (MARC)					RST Porosity (TPHI)										RST Capture to Inelastic Ratio Far (CIRF_FIL)									
										0 (----) 5					0.5 (V/V) 0										7 (----) 0									
										RST Weighted Inelastic Ratio (WINR_RST)																								
										0.4 (----) 0																								
										WINR Gas Flag From WINR to RST_CIRF_FIL																								
																						Crossover in sand From RST_CIRF_FIL to RST_CIRN_FIL												
PIP SUMMARY																																		
Time Mark Every 60 S																																		

Parameters			
DLIS Name	Description	Value	
SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD			
BILI	Bond Index Level for Zone Isolation	0.8	
BISS	Bond Index Source Selection for BIQL	BI	
CB3D	SCMT CBL 3 ft Peak Detection Mode	PEAK	
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	224.559	US
CB3T	SCMT CBL 3 ft Fixed Threshold Level	20	MV
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK	
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	338.559	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	45	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CMTPT	SCMT Tool position on CAN	5	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.255617	IN
DTF	Delta-T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	1.55185	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	16.5449	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	1.25	FT
MMSA	MAP Minimum Sonic Amplitude	4.32284	MV
MSA	Minimum Sonic Amplitude	0.579149	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	
RBC	Relative Bearing Correction Allow/Disallow	ALLOW	
VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
RST-C: Reservoir Saturation Pro Tool C			
	Tractor Available in Tool String	NO	
AIRB	RST Air Borehole	No	
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
BSALOPT	RST Borehole Salinity Option	Unknown	
BSFL	RST Borehole Salinity Filter Length	51	
CSID	Casing Size I.D.	3.998	IN
DFPC	RST Depth Filter Processing Constant	One	
DFPC	RST Depth Filter Processing Constant (TDT_FIL)	One	

DFPC_IDTL	RST Depth Filter Processing Constant (1DT-like)	Two	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48	
NORM_SIGM_RST	RST Normalized Sigma	30	CU
PTIER	RST Tiered Presentation Selection	0_Customer	
PVL_PSNT_PRST	PVL Peak Signal/Noise Threshold	3	
RGAI	Near/Far Gain Calibration Ratio	1	
SHT	Surface Hole Temperature	68	DEGF
TIER_IC	RST IC Acquisition Mode	0_CO_Yield_and_Spectrolith	
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma	
WOFSL_PRST	RST WFL-Off Subcycle Length	0	
WONSL_PRST	RST WFL-On Subcycle Length	0	
WSCOM_PRST	RST Station Log Comment		
PSPT: Production Services Logging Platform			
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
CSID	Casing Size I.D.	3.998	IN
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
PBPO	PBMS Tool position on CAN	2	
PCCG	PBMS CCL Gain	DB12	
PSTP	PSTC Tool Position on CAN Bus	1	
SHT	Surface Hole Temperature	68	DEGF
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	3.0	FT
FLEV	Fluid Level	60.00	FT
MST	Mud Sample Temperature	-50000.00	DEGF
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	8056	FT
TDD	Total Depth - Driller	8143.00	FT
TDL	Total Depth - Logger	8056.00	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: RST_SIGMA_S5 Vertical Scale: 5" per 100' Graphics File Created: 16-Aug-2013 10:33

OP System Version: 19C0-187

SCMT-CB	SRPC-5214-H2-2012-OP1!	RST-C	SRPC-5214-H2-2012-OP1!
PSPT	SRPC-5214-H2-2012-OP1!		

Input DLIS Files

DEFAULT	SCMT_RST_PSP_075LUP	FN:74	PRODUCER	16-Aug-2013 08:23	8061.0 FT	18.5 FT
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Output DLIS Files

DEFAULT	SCMT_RST_PSP_078PUP	FN:77	PRODUCER	16-Aug-2013 10:33
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Schlumberger

REPEAT ANALYSIS RST SIGMA

Input DLIS Files

DEFAULT	SCMT_RST_PSP_073LUP	FN:72	PRODUCER	16-Aug-2013 08:09	6103.0 FT	5719.5 FT
DEFAULT	SCMT_RST_PSP_078PUP	FN:77	PRODUCER	16-Aug-2013 10:33	8064.0 FT	-23.0 FT

Output DLIS Files

DEFAULT	SCMT_RST_PSP_081PUP	FN:80	PRODUCER	16-Aug-2013 10:43	6103.0 FT	5675.0 FT
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OP System Version: 19C0-187

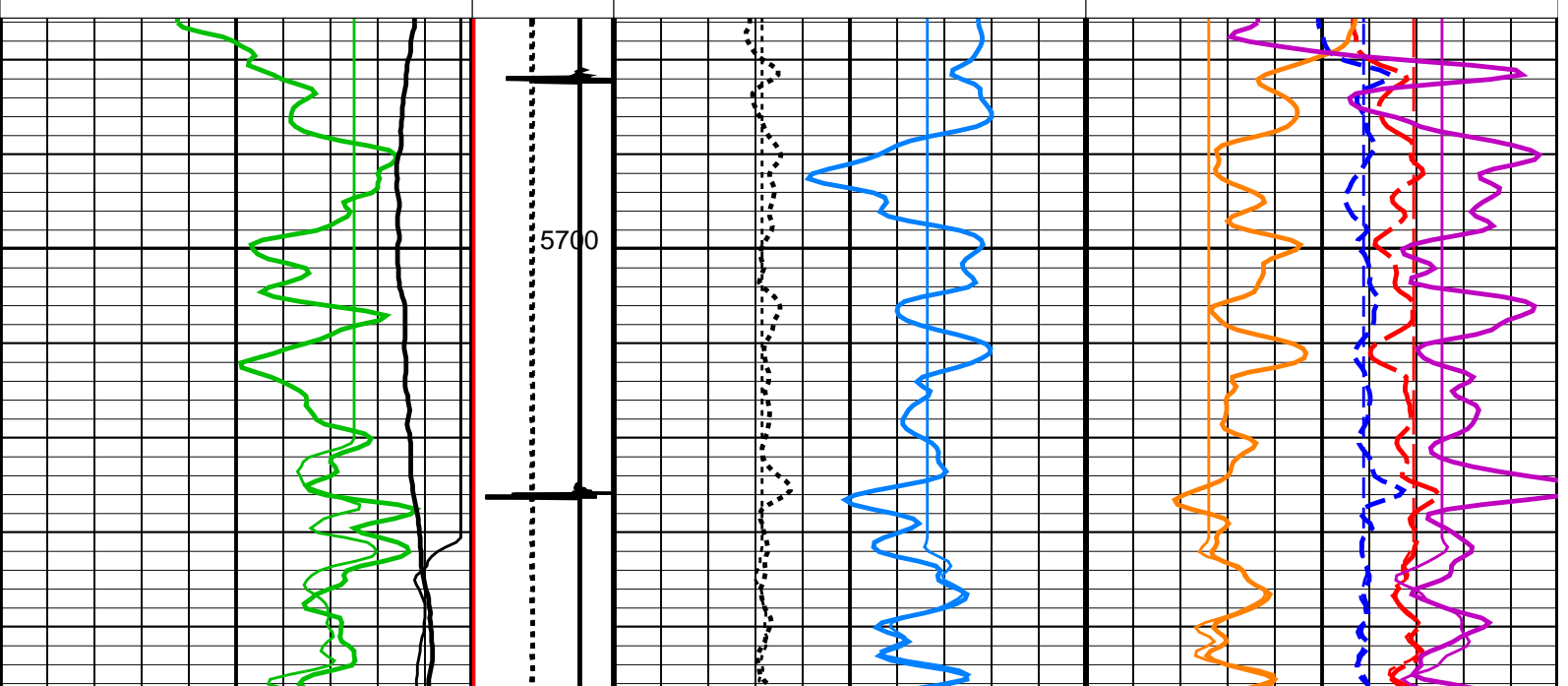
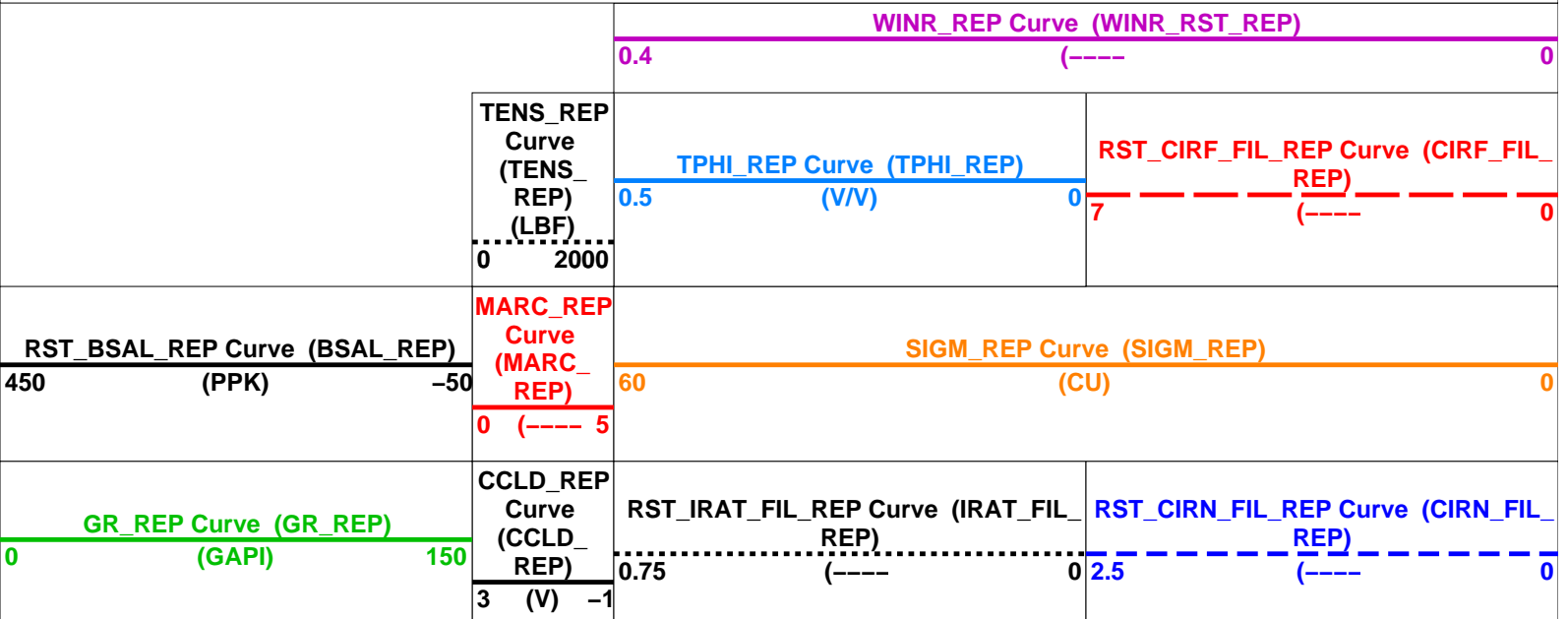
SCMT-CB PSPT	SRPC-5214-H2-2012-OP1: SRPC-5214-H2-2012-OP1:	RST-C	SRPC-5214-H2-2012-OP1:
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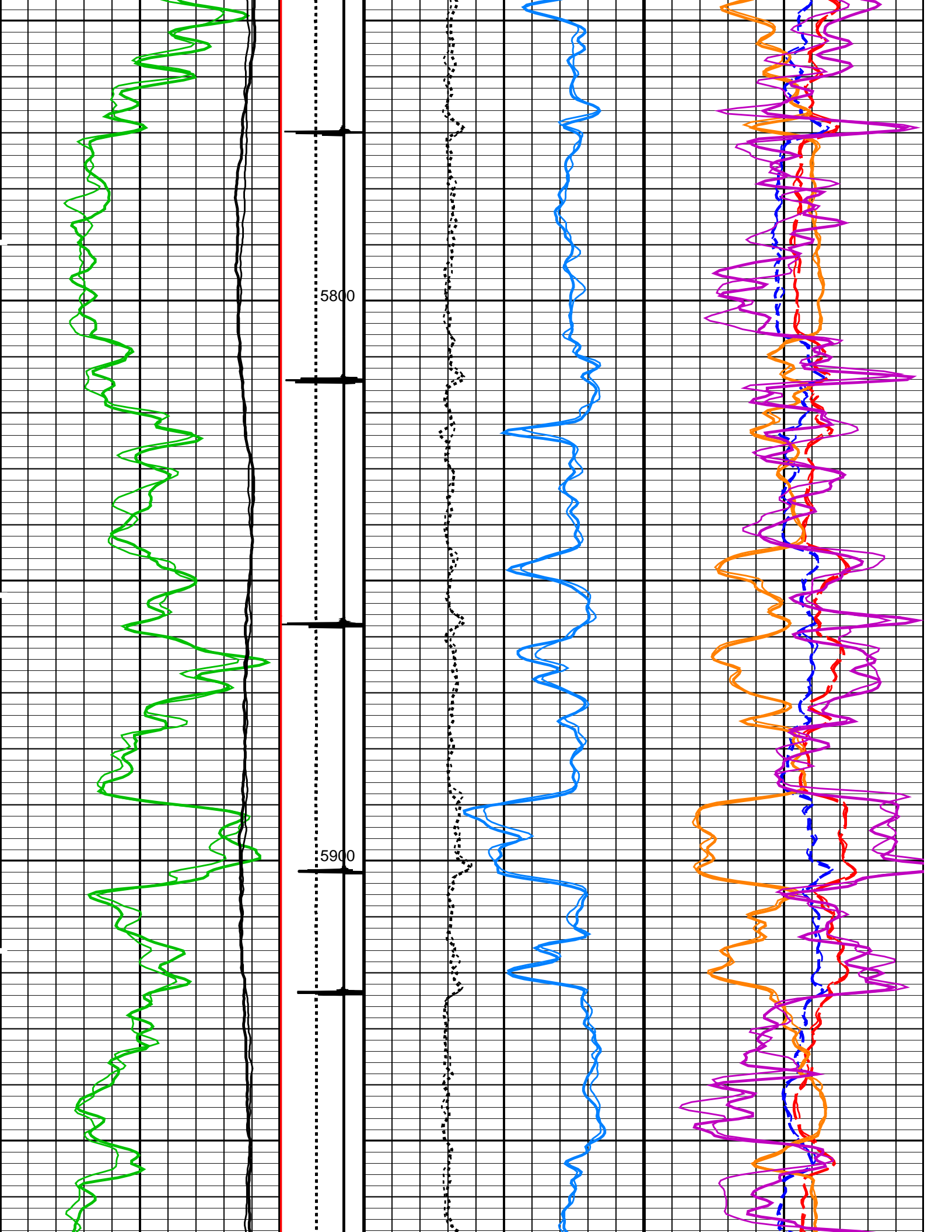
Changed Parameter Summary

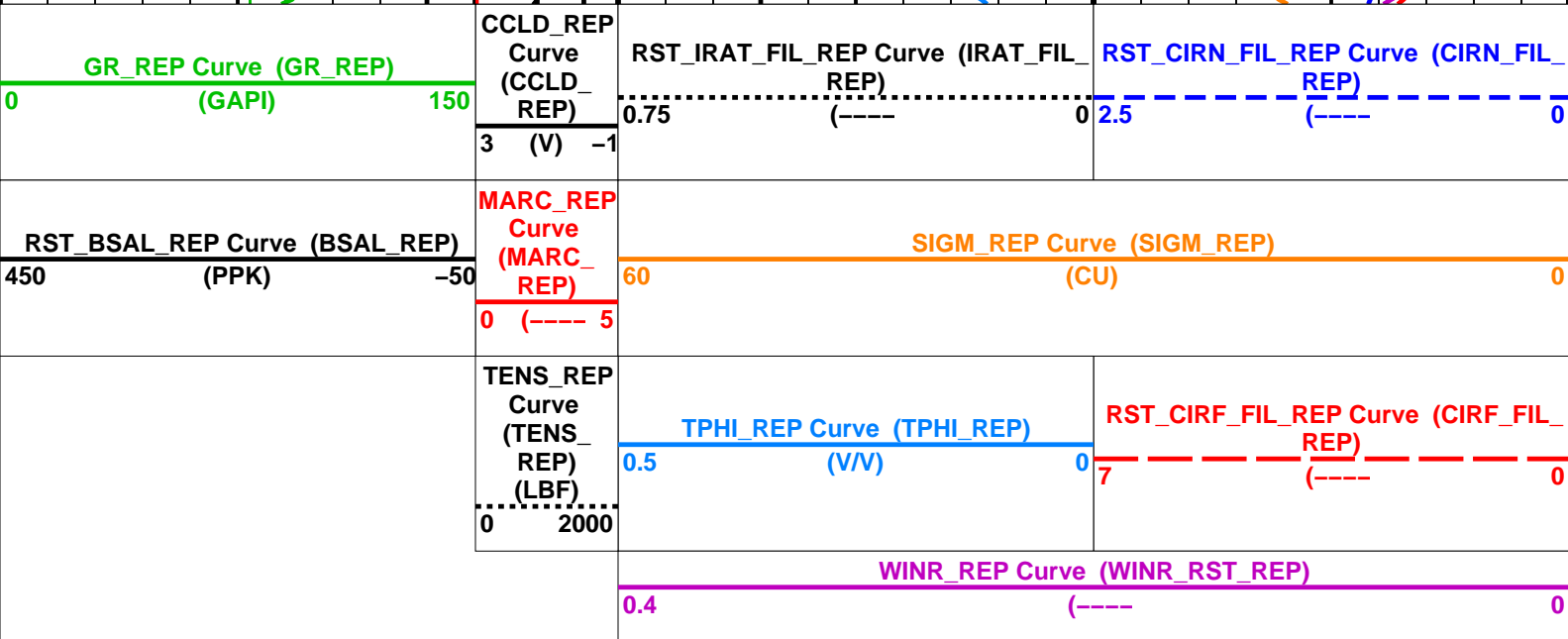
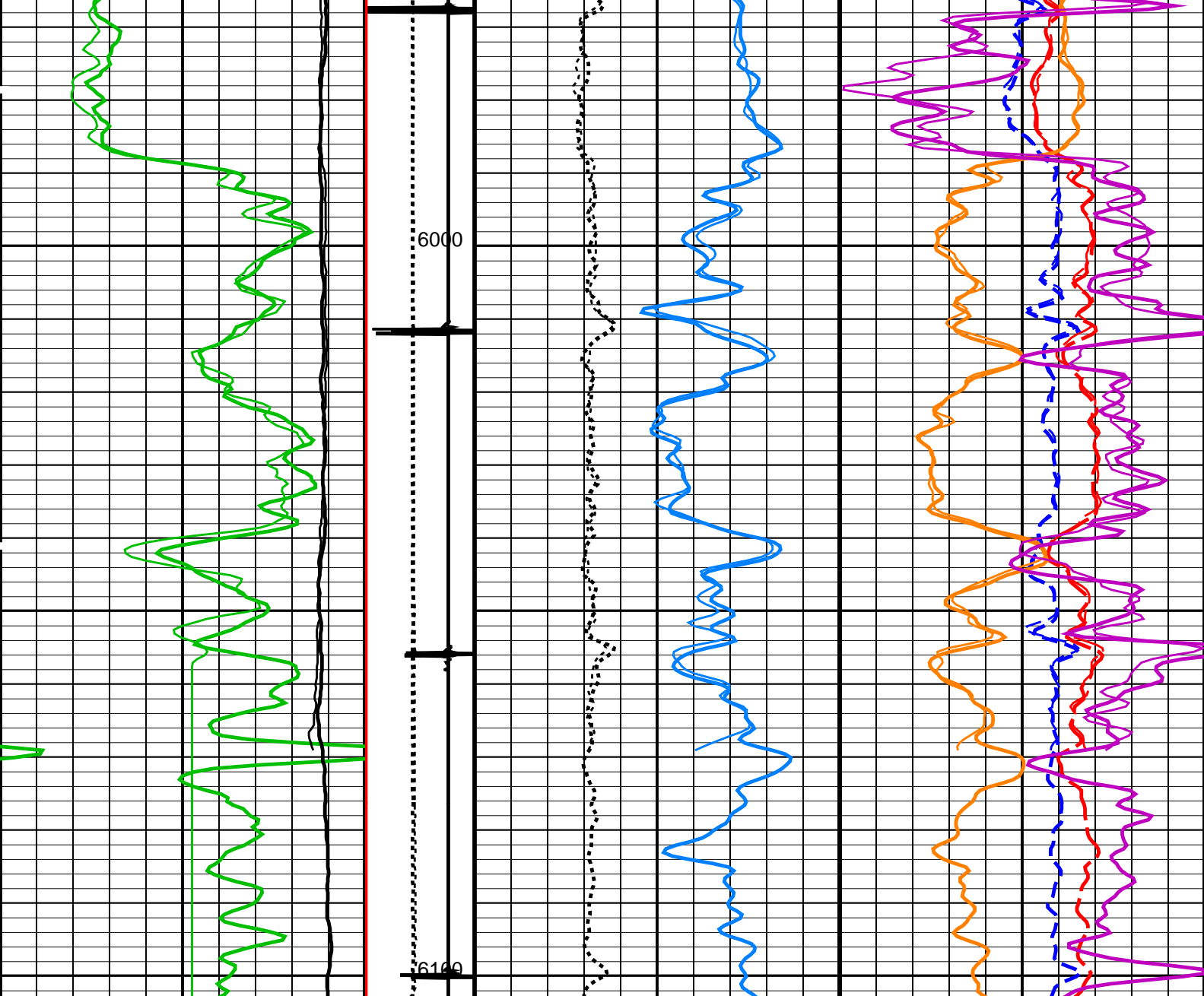
DLIS Name	New Value	Previous Value	Depth & Time
BS	7.875 IN	8.750 IN	6103.0 10:43:59

PIP SUMMARY

Time Mark Every 60 S







PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value		
SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD				
BILI	Bond Index Level for Zone Isolation	0.8		
BISS	Bond Index Source Selection for BIQL	BI		
CB3D	SCMT CBL 3 ft Peak Detection Mode	PEAK		
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	224.559	US	
CB3T	SCMT CBL 3 ft Fixed Threshold Level	20	MV	
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK		
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	338.559	US	
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV	
CBLG	CBL Gate Width	45	US	
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV	
CMCF	CBL Cement Type Compensation Factor	1		
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN		
CMTM	SCMT Operating Mode	LOG		
CMTPT	SCMT Tool position on CAN	5		
CSCS	SCMT Slow Channel Index	VCC		
CTHI	Casing Thickness	0.255617	IN	
DTF	Delta-T Fluid	189	US/F	
FATT	Acoustic Attenuation due to Fluid	0	DB/F	
FCF	CBL Fluid Compensation Factor	0.924277		
GOBO	Good Bond	1.55185	MV	
MAPD	SCMT MAP Peak Detection Mode	PEAK		
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	US	
MAPT	SCMT MAP Fixed Threshold Level	30	MV	
MATT	Maximum Attenuation	16.5449	DB/F	
MCCF	MAP Cement Type Compensation Factor	1		
MCI	Minimum Cemented Interval for Isolation	1.25	FT	
MMSA	MAP Minimum Sonic Amplitude	4.32284	MV	
MSA	Minimum Sonic Amplitude	0.579149	MV	
PEDE	Peak Detection On/Off Switch in Playback	OFF		
RBC	Relative Bearing Correction Allow/Disallow	ALLOW		
VDLG	VDL Manual Gain	5		
ZCMT	Acoustic Impedance of Cement	6.8	MRAY	
RST-C: Reservoir Saturation Pro Tool C				
	Tractor Available in Tool String	NO		
AIRB	RST Air Borehole	No		
BHS	Borehole Status	CASED		
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF	
BSALOPT	RST Borehole Salinity Option	Unknown		
BSFL	RST Borehole Salinity Filter Length	51		
CSID	Casing Size I.D.	3.998	IN	
DFPC	RST Depth Filter Processing Constant	One		
DFPC_TDTL	RST Depth Filter Processing Constant (TDT-like)	Two		
GCSE	Generalized Caliper Selection	BS		
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG	
GGRD	Geothermal Gradient	0.01	DF/F	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
ISSBAR	Barite Mud Switch	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48		
NORM_SIGM_RST	RST Normalized Sigma	30	CU	
PTIER	RST Tiered Presentation Selection	0_Customer		
PVL_PSNT_PRST	PVL Peak Signal/Noise Threshold	3		
RGAI	Near/Far Gain Calibration Ratio	1		
SHT	Surface Hole Temperature	68	DEGF	
TIER_IC	RST IC Acquisition Mode	0_CO_Yield_and_Spectrolith		
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma		
WOFSL_PRST	RST WFL-Off Subcycle Length	0		
WONSL_PRST	RST WFL-On Subcycle Length	0		
WSCOM_PRST	RST Station Log Comment			
PSPT: Production Services Logging Platform				
BHS	Borehole Status	CASED		
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF	
CSID	Casing Size I.D.	3.998	IN	
GCSE	Generalized Caliper Selection	BS		
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG	
GGRD	Geothermal Gradient	0.01	DF/F	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
ISSBAR	Barite Mud Switch	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
PBPO	PBMS Tool position on CAN	2		
PCCG	PBMS CCL Gain	DB12		
PSTP	PSTC Tool Position on CAN Bus	1		
SHT	Surface Hole Temperature	68	DEGF	
System and Miscellaneous				
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth		
BS	Bit Size	8.750	IN	
BSAL	Borehole Salinity	-50000.00	PPM	
CSIZ	Current Casing Size	4.500	IN	
CWEI	Casing Weight	11.60	LB/F	

DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	70.00	FT
MST	Mud Sample Temperature	-50000.00	DEGF
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	8056	FT
TDD	Total Depth – Driller	8143.00	FT
TDL	Total Depth – Logger	8056.00	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: RST_SIGMA_S5_REP Vertical Scale: 5" per 100' Graphics File Created: 16-Aug-2013 10:43

OP System Version: 19C0-187

SCMT-CB	SRPC-5214-H2-2012-OP1	RST-C	SRPC-5214-H2-2012-OP1
PSPT	SRPC-5214-H2-2012-OP1		

Input DLIS Files

DEFAULT	SCMT_RST_PSP_073LUP	FN:72	PRODUCER	16-Aug-2013 08:09	6103.0 FT	5719.5 FT
DEFAULT	SCMT_RST_PSP_078PUP	FN:77	PRODUCER	16-Aug-2013 10:33	8064.0 FT	-23.0 FT

Output DLIS Files

DEFAULT	SCMT_RST_PSP_081PUP	FN:80	PRODUCER	16-Aug-2013 10:43
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Schlumberger

PBMS COEFFICIENTS

MAXIS Field Log

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	MAMM CREEK	Sub Type:	PBMS
Well:	ALP FEE 24-2C (J24NW)	Sensor:	Clock Model
Run date:	16-Aug-2013		

PBMS Digitalization Clock

Sonde Serial NB

Sensor Serial NB 1978

Calib Date ddmmyy 040413

Matrix Size 16

Coeff CRC 32D3

Clock Coeff

	Temp**0	Temp**1	Temp**2
Temp**0	+.197240577294E+02	-.385846870252E+01	-.884656308536E-01
	Temp**3	Temp**4	Temp**5
Temp**0	+.864677466012E-03	+.180389331248E-05	0.0

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: ALP FEE 24–2C (J24NW)

Run date: 16–Aug–2013

Tool: PSP

Sub Type: PBMS

Sensor: Sapphire

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR SAPPHIRE PBMS–A.1978 S/N:

1978

040413

66

FC03

Pres Coeff

	Tt**0	Tt**1	Tt**2
Tp**0	–.610621928185E+04	+.733479463928E+04	–.366313458381E+04
Tp**1	+.560047728214E+04	–.464751655104E+04	+.226378681937E+04
Tp**2	+.226844774102E+02	+.466095162698E+01	–.416031460599E+01
Tp**3	–.565000011498E+01	+.155154221168E+01	0.0
Tp**4	0.0	0.0	0.0
Tp**5	0.0	0.0	0.0

	Tt**3	Tt**4	Tt**5
Tp**0	+.661206381662E+03	–.442588980489E+02	0.0
Tp**1	–.405555010111E+03	+.270764938790E+02	0.0
Tp**2	0.0	0.0	0.0
Tp**3	0.0	0.0	0.0
Tp**4	0.0	0.0	0.0
Tp**5	0.0	0.0	0.0

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

:

1978

040413

Calib Date ddmmyy 040413
Matrix Size 66
Coeff CRC A9F6

Temp Coeff

	Tp**0	Tp**1	Tp**2
Tt**0	-.311910596034E+03	-.260514939056E+02	+.113131692891E+02
Tt**1	+.942044266961E+02	+.115447305149E+02	-.325190620792E+01
Tt**2	+.217040881254E+01	-.166464613929E+01	+.530464403583E-01
Tt**3	+.169097553929E+00	+.121208915106E+00	0.0
Tt**4	0.0	0.0	0.0
Tt**5	0.0	0.0	0.0

	Tp**3	Tp**4	Tp**5
Tt**0	-.311141115592E+01	+.330242609958E+00	0.0
Tt**1	+.850293467157E+00	-.913717647562E-01	0.0
Tt**2	0.0	0.0	0.0
Tt**3	0.0	0.0	0.0
Tt**4	0.0	0.0	0.0
Tt**5	0.0	0.0	0.0

Client: ENCANA OIL & GAS (USA) INC
Field: MAMM CREEK
Well: ALP FEE 24-2C (J24NW)
Run date: 16-Aug-2013

Tool: PSP
Sub Type: PBMS
Sensor: GR

PBMS Gamma Ray

Sonde Serial NB RESISTORS FOR GR SENSOR N.36646, TOOL PBMS-AA1978. SENSOR S/N:
Sensor Serial NB 36646
Calib Date ddmmyy 230611
Matrix Size 12
Coeff CRC 3017

GR HV Rt

	Rt**0	Rt**1
Rt**0	+.200000000000e+04	+.238000000000e+04

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: ALP FEE 24–2C (J24NW)

Run date: 16–Aug–2013

Tool: PSP

Sub Type: PBMS

Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR RTD THERMOMETER PBMS–A.1978 S/N:

1978

040413

16

5275

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	–.147060145836E+03	–.907965992712E+02	+.770663084969E+02
	Tt**3	Tt**4	Tt**5
Tt**0	–.131119885893E+02	+.876373733985E+00	0.0

Company: ENCANA OIL & GAS (USA) INC

Well: ALP FEE 24–2C (J24NW)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

Schlumberger

RESERVOIR SATURATION LOG

SIGMA MODE

GAMMA RAY–CCL