

Company: ENCANA OIL & GAS (USA) INC

Well: SHIDELER 30-3A (O19EB)

Field: MAMM CREEK

County: GARFIELD State: COLORADO

RESERVOIR SATURATION LOG
SIGMA MODE
GR-CCL

County: GARFIELD

Field: MAMM CREEK

Location: SHL: 569 FSL & 1658 FEL

Well: SHIDELER 30-3A (O19EB)

Company: ENCANA OIL & GAS (USA) INC

LOCATION	
SHL: 569 FSL & 1658 FEL BHL: 162 FNL & 2127 FEL	Elev.: K.B. 6631.00 ft G.L. 6509.00 ft D.F. 6530.00 ft
Permanent Datum: _____	GROUND LEVEL _____ Elev.: 6509.00 ft _____
Log Measured From: _____	KELLY BUSHING _____ 22.00 ft above Perm. Datum
Drilling Measured From: _____	KELLY BUSHING _____
API Serial No. 05-045-21835-000C	Section 19 Township 7S Range 92W

Logging Date	28-Apr-2013				
Run Number	1				
Depth Driller	7854 ft				
Schlumberger Depth	7763 ft				
Bottom Log Interval	7729 ft				
Top Log Interval	2000 ft				
Casing Fluid Type	FRESH WATER				
Salinity					
Density	8.4 lbm/gal				
Fluid Level	60 ft				
BIT/CASING/TUBING STRING					
Bit Size	8.750 in				
From	0 ft				
To	7854 ft				
Casing/Tubing Size	4.500 in				
Weight	11.6 lbm/ft				
Grade					
From	22 ft				
To	7824 ft				
Maximum Recorded Temperatures	229 degF				
Logger On Bottom	28-Apr-2013		22:30		
Unit Number	391	GRAND JUNCTION			
Recorded By	JASON BARRY				
Witnessed By	BILLY MYERS				

Oil Density		Run 1	Run 2	Run
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				
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-MAR-2013 10:41:08

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6214	Serial Number:	3421	Serial Number:	112136
Calibration Date:	24-APR-2012	Calibration Date:	20-FEB-2011	Length:	19500 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:	-3	Calibration RMS:	4		
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 POLICIES APPLIED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SWPT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
- 4.
- 5.
- 6.

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 OF 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.

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 RAN AS PER TOOL SKETCH	
MAXIMUM RECORDED TEMPERATURE= 229 DEGF	
MAXIMUM RECORDED PRESSURE= 3257 PSIA	
ENTRANCE TIME= 22:00	

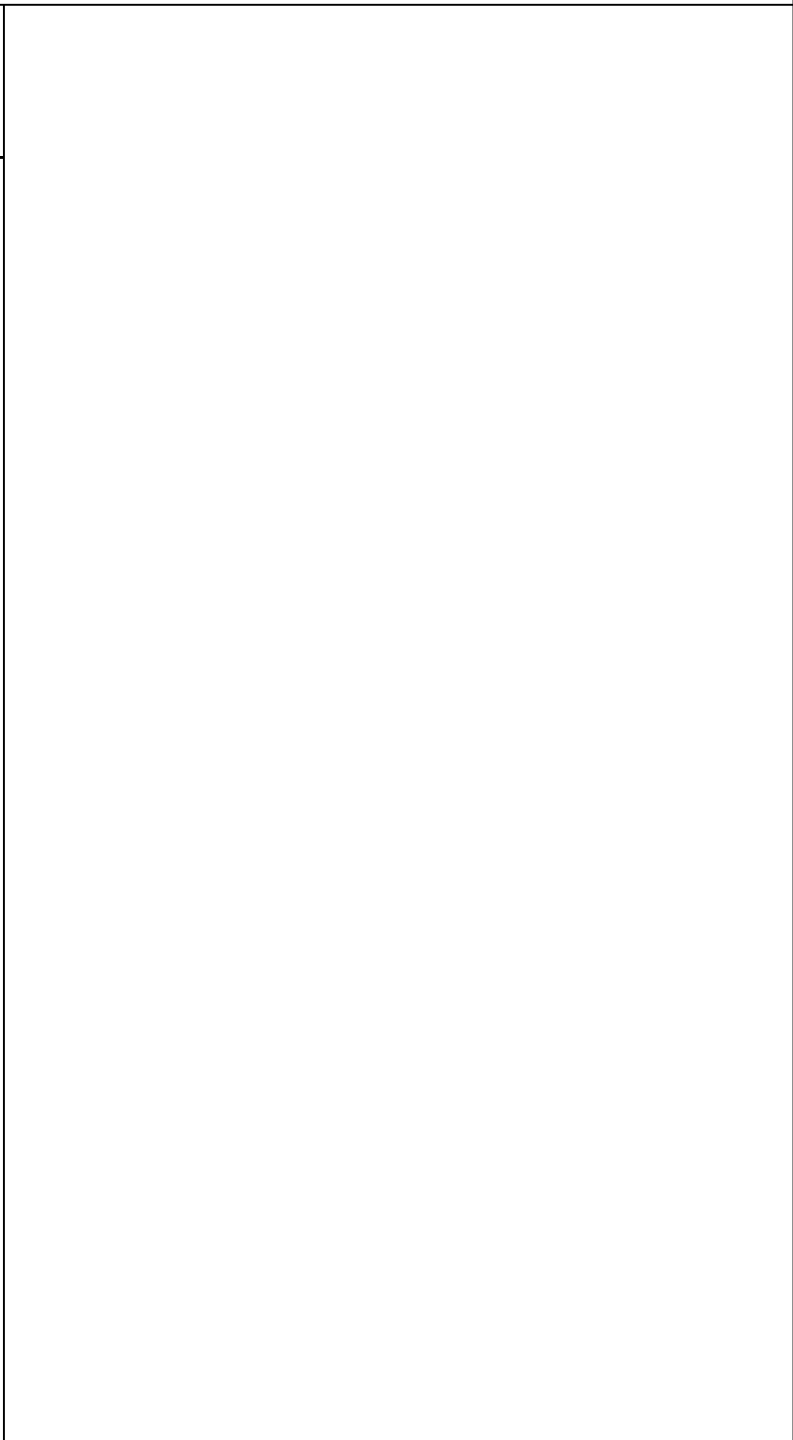
TIME ON BOTTOM= 22:30	
EXIT TIME= 00:30	
SHORT JOINTS: 5400 FT & 6388 FT	
SANDSTONE MATRIX USED	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGR COMPANY	
CREW: KBUNTING JBARRY KJOHNS JMANN	

RUN 1			RUN 2		
SERVICE ORDER #:		CGF9-00047	SERVICE ORDER #:		
PROGRAM VERSION:		19C0-187	PROGRAM VERSION:		
FLUID LEVEL:		60 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

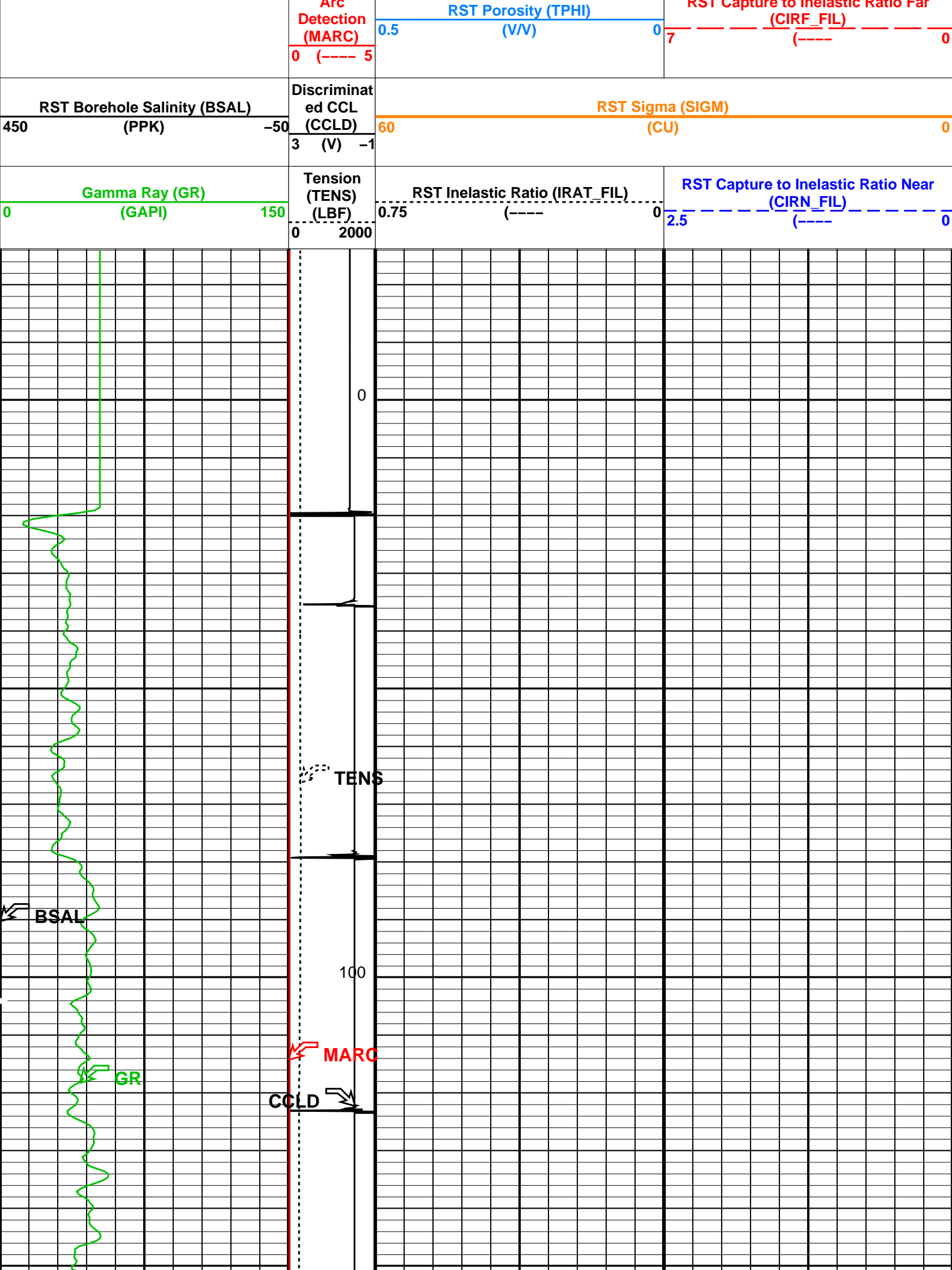
EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

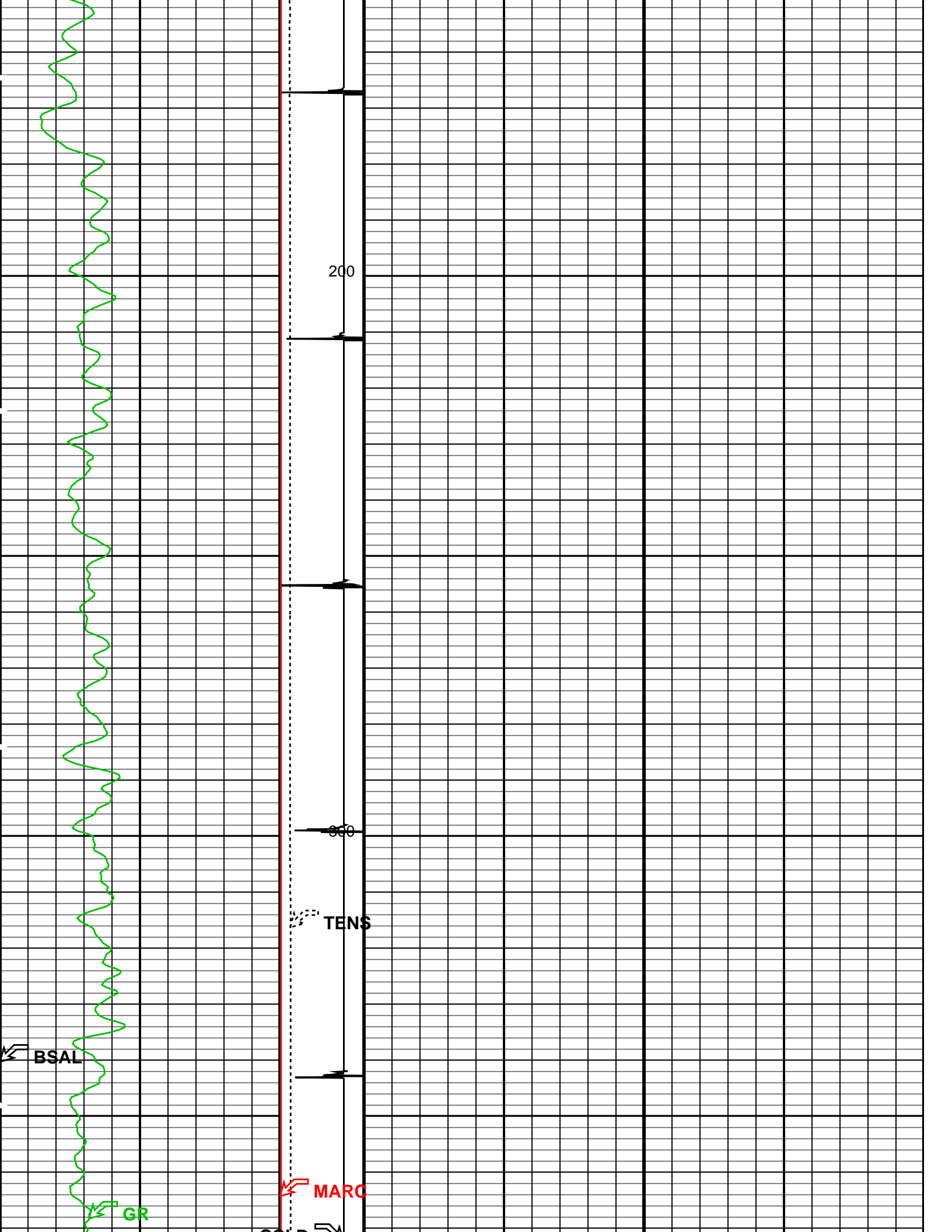
SURFACE EQUIPMENT	
WITM-A PSC_16MHZ	

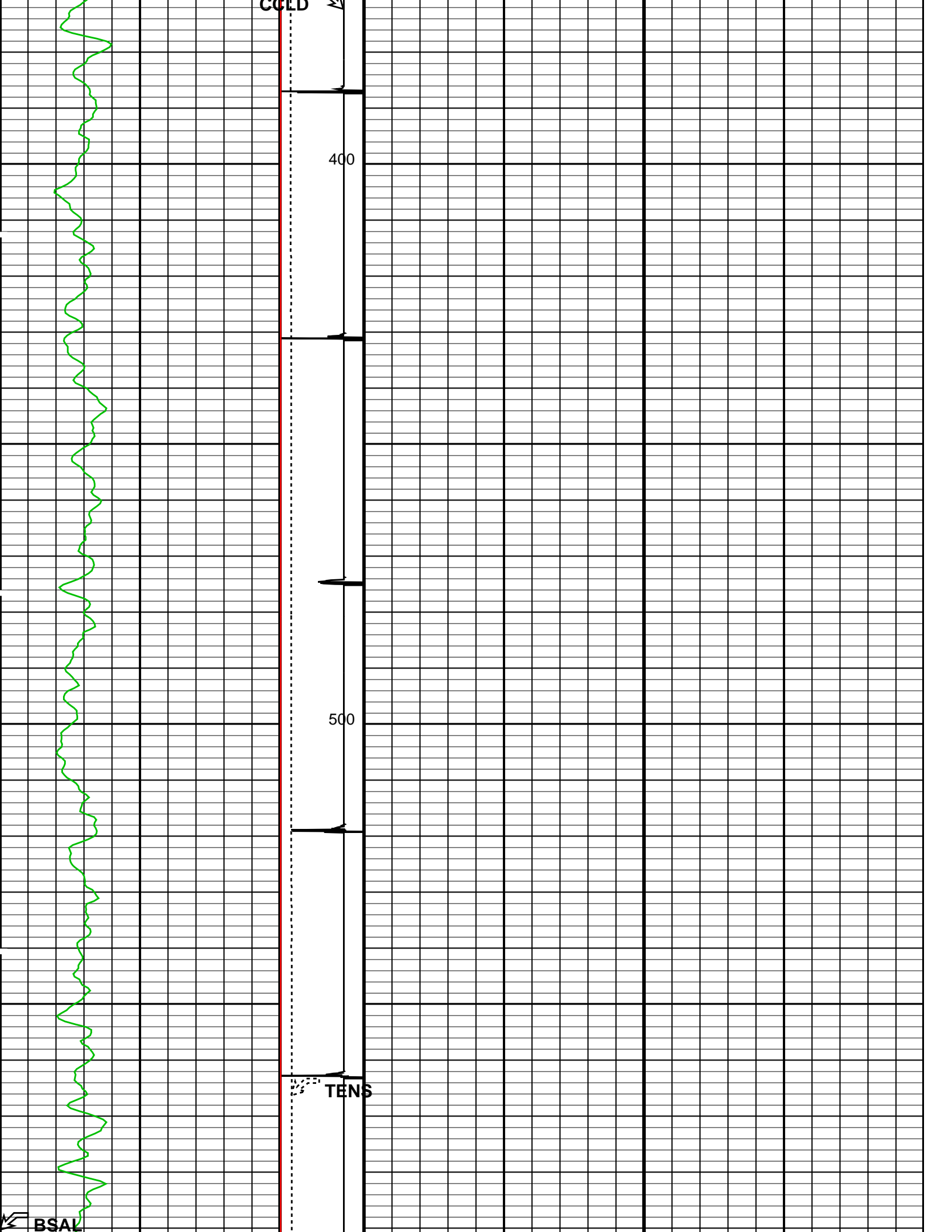
DOWNHOLE EQUIPMENT	
<div> <div> <div>MH-22</div> <div>MH-22</div> <div>AH-38</div> <div>PSPT</div> <div>PSC-A</div> <div>PSPT-B</div> <div>PSTC-A</div> <div>PBMS-B 928</div> <div>CQG_F_Mano</div> <div>RTD_Thermometer</div> <div>GR</div> <div>CCL</div> <div>PBMS</div> <div>RST-C</div> <div>RSCH-A 469</div> <div>RSC-E</div> <div>RSS-A 461</div> <div>RSXH-A 493</div> <div>RSX-E</div> </div> <div> <div>Detail MT</div> <div>TelStatus</div> <div>CTEM</div> <div>GR</div> <div>Well_Temp</div> <div>CQG Manom</div> <div>CCL</div> <div>PBMS PSTC</div> <div>RSC-A Far</div> <div>RSC-A PNG</div> <div>RSC-A Nea</div> <div>RSX-A PNG</div> </div> <div> <div>53.4</div> <div>51.8</div> <div>51.5</div> <div>47.8</div> <div>44.8</div> <div>44.5</div> <div>44.0</div> <div>43.3</div> <div>43.3</div> <div>34.2</div> <div>33.7</div> </div> </div>	

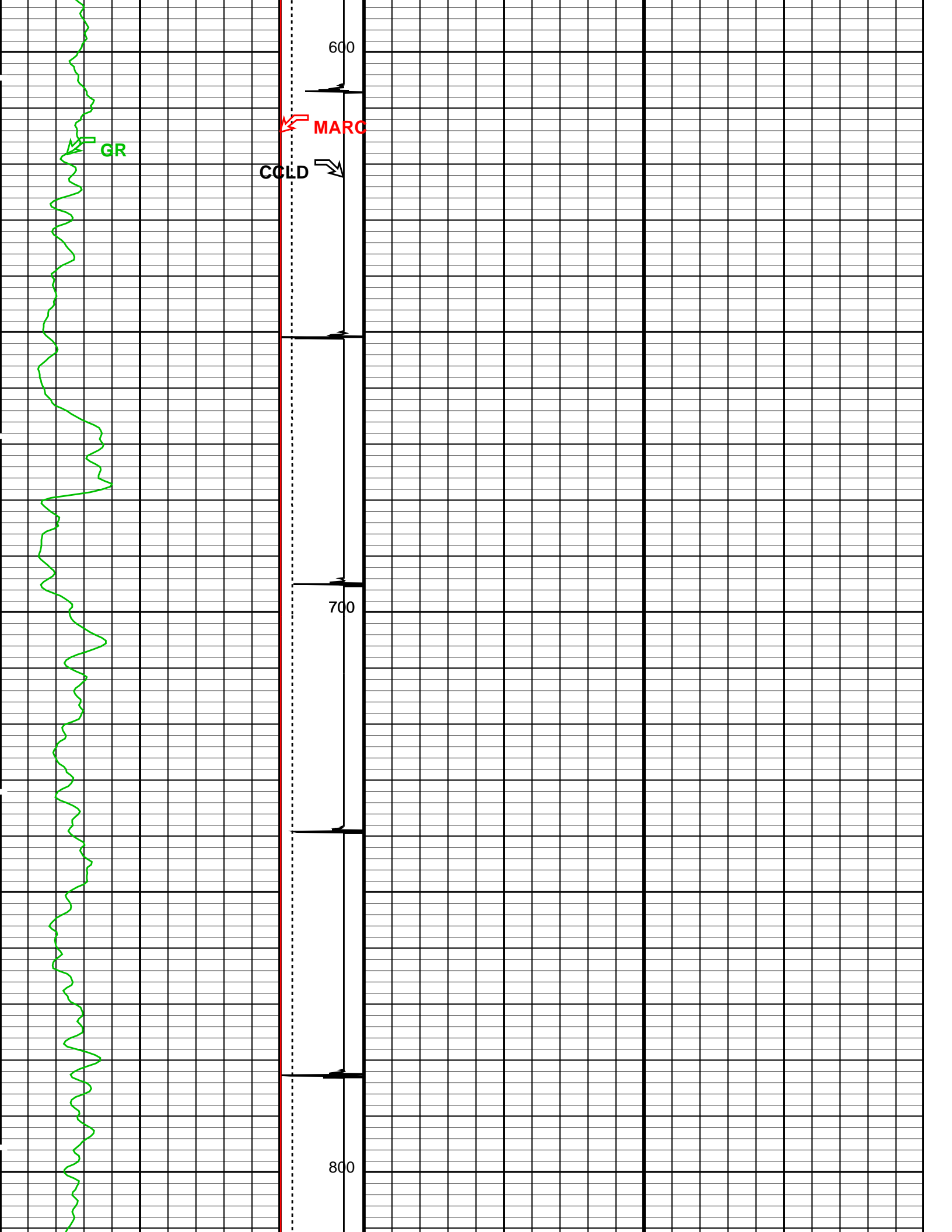


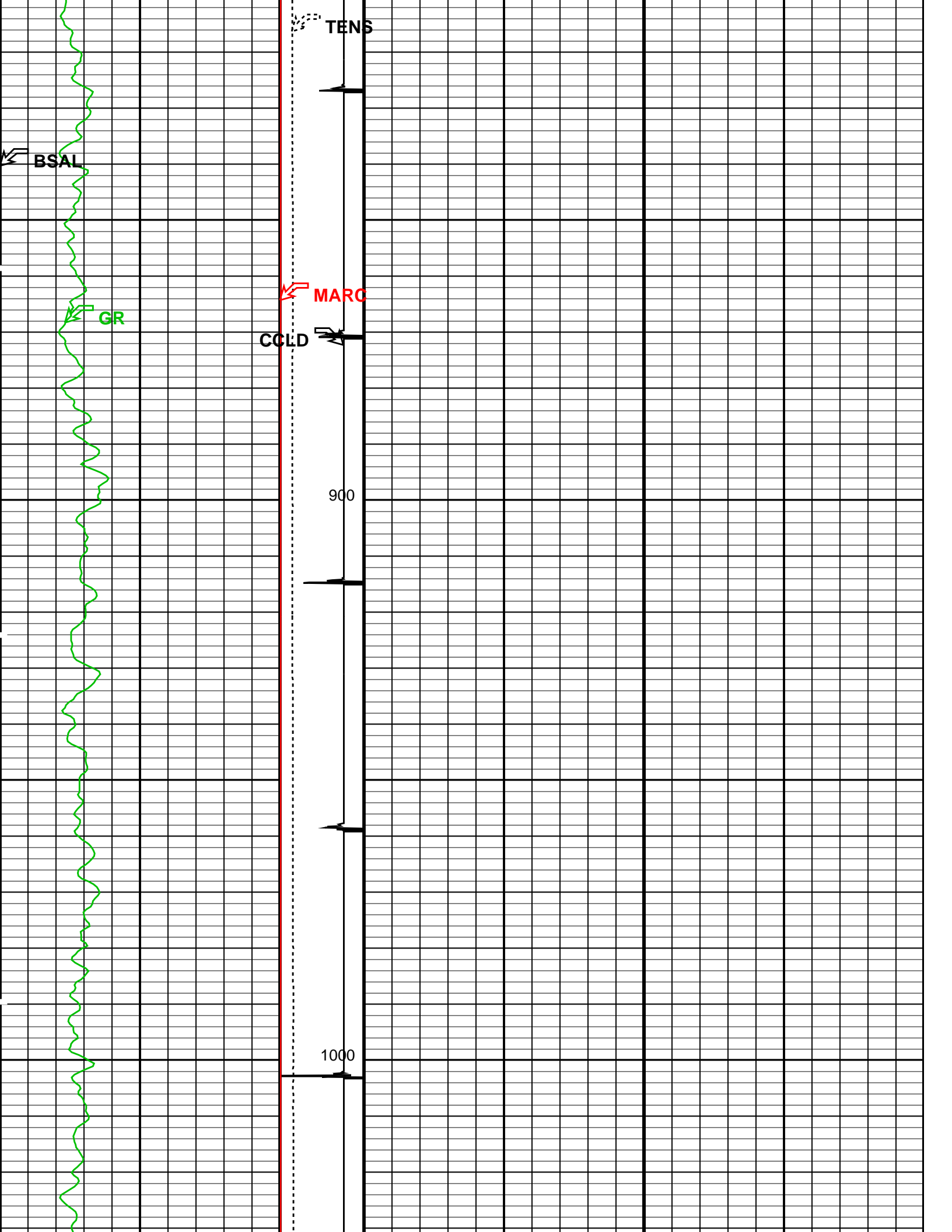
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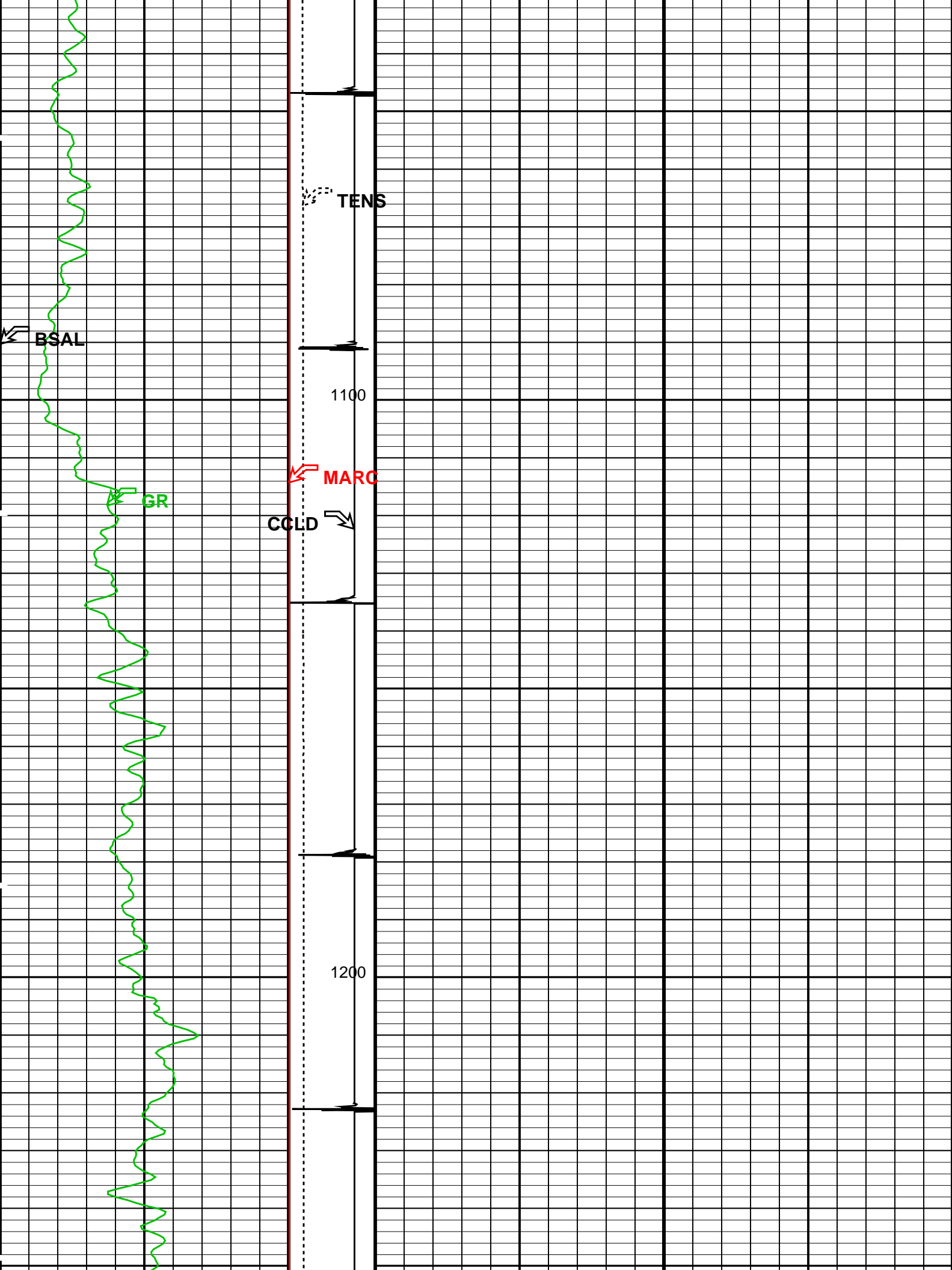


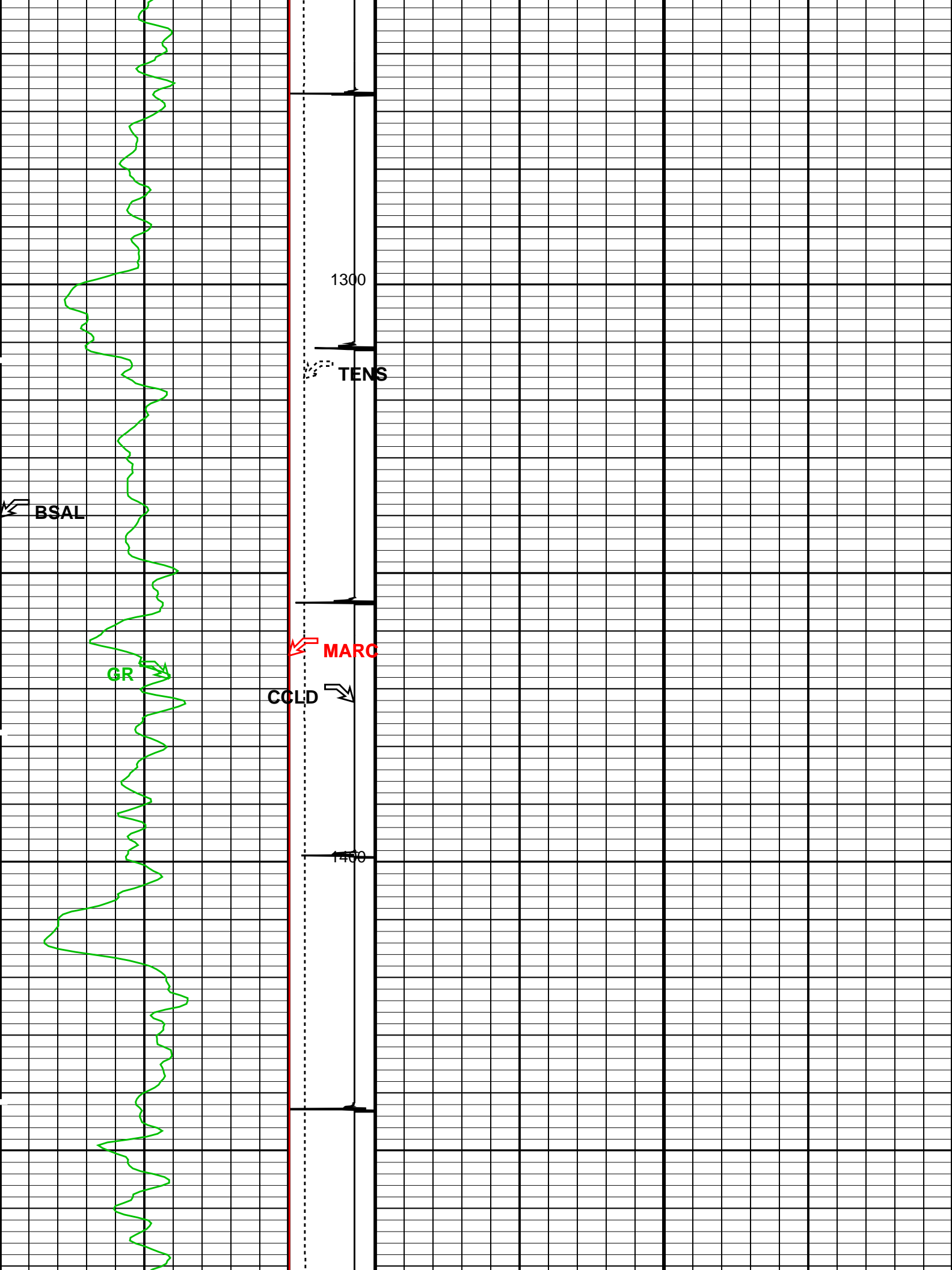


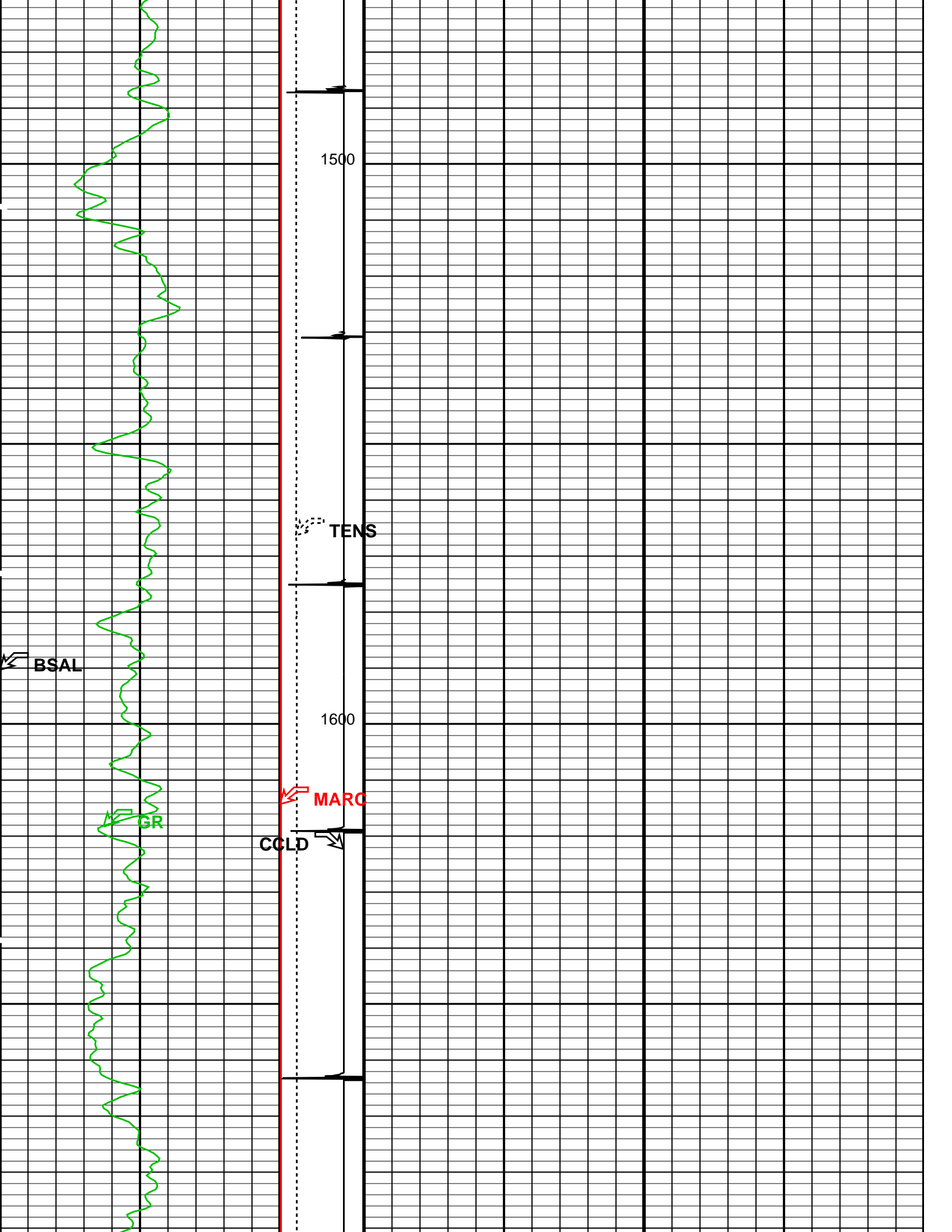


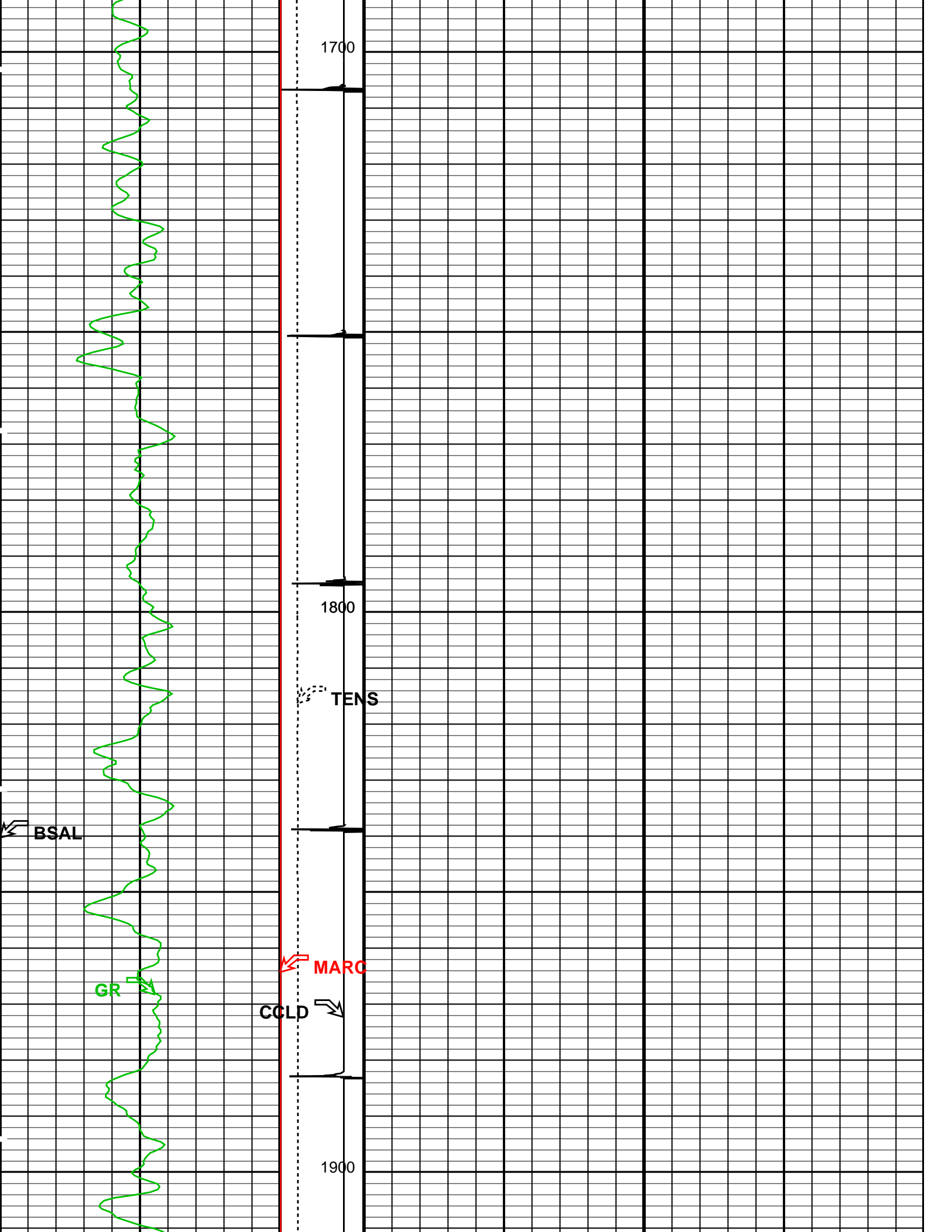


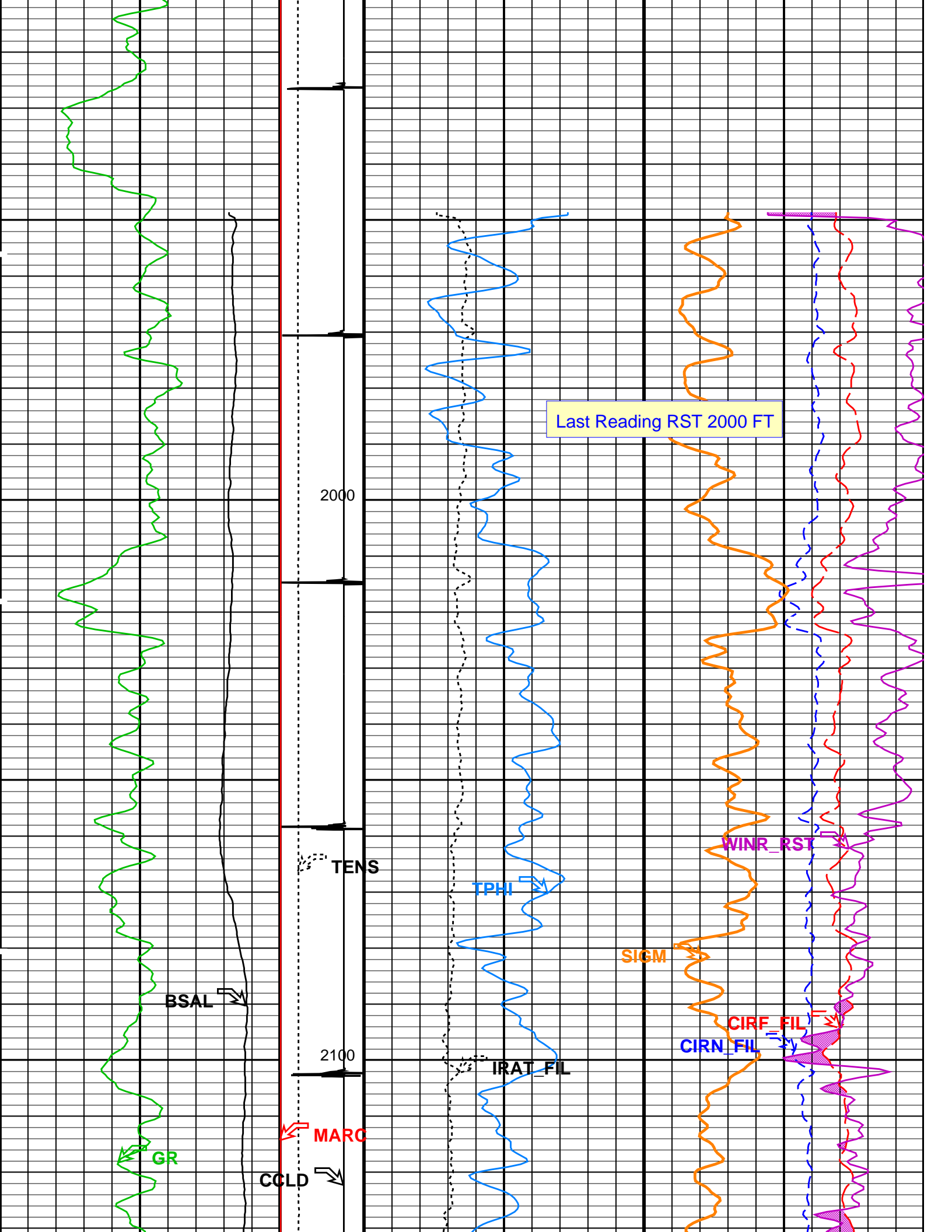


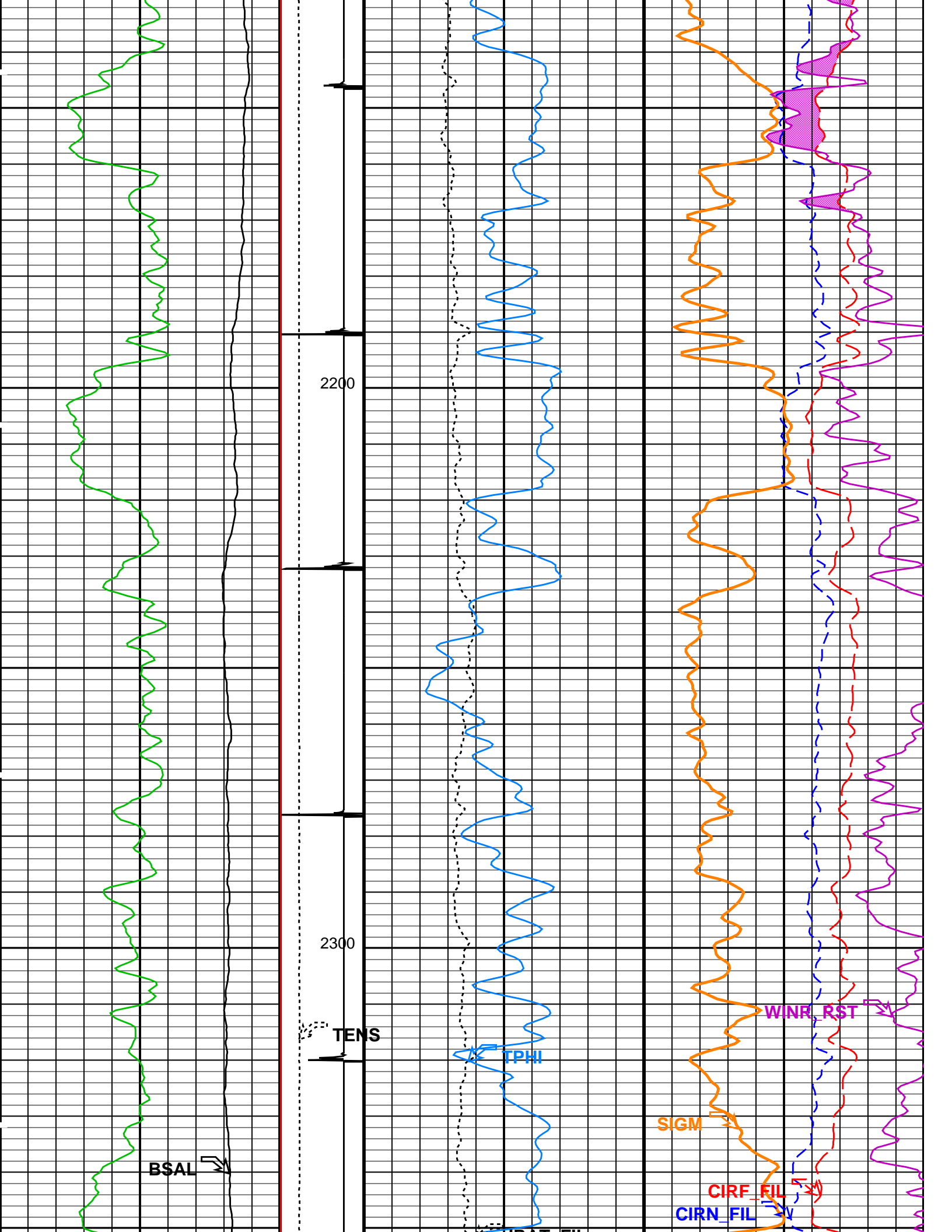


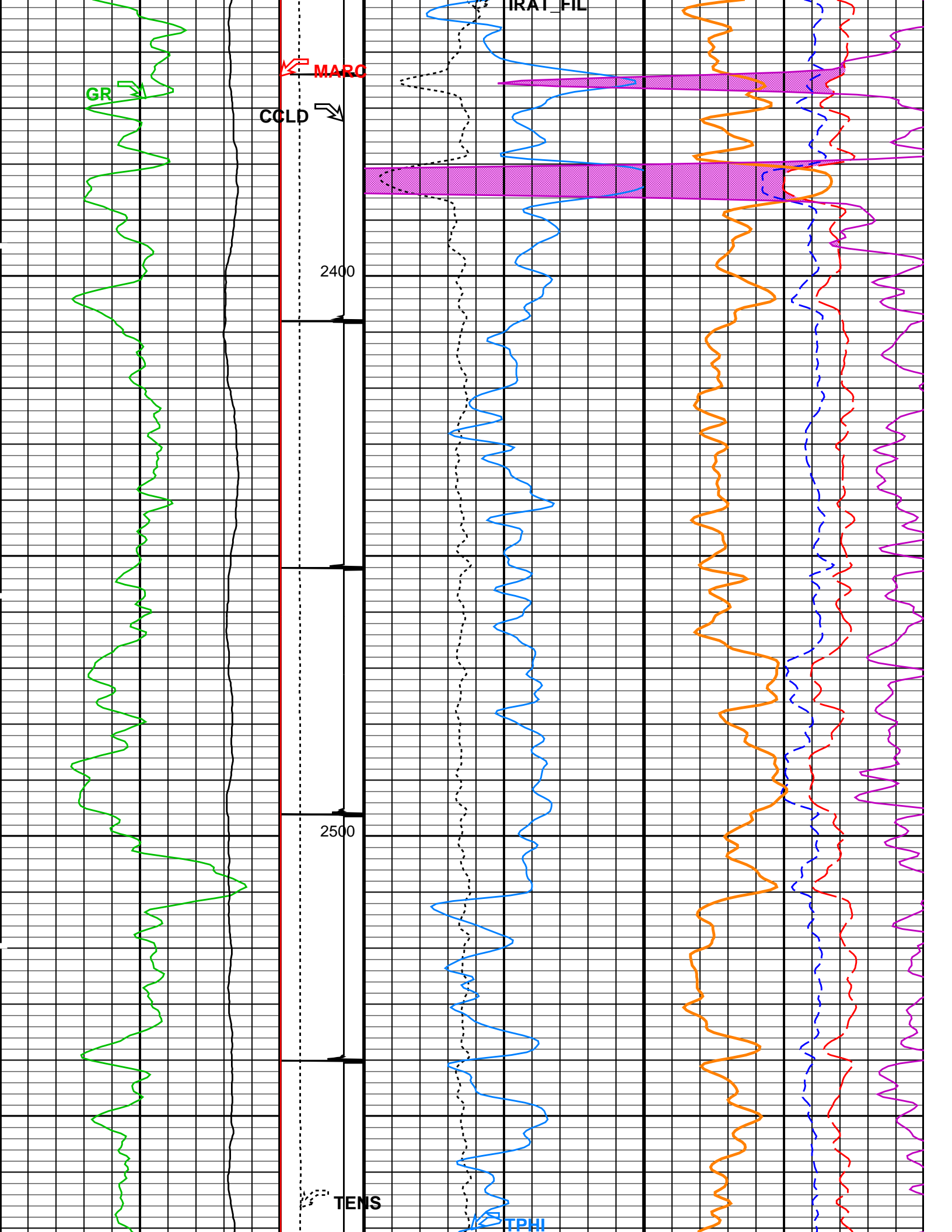


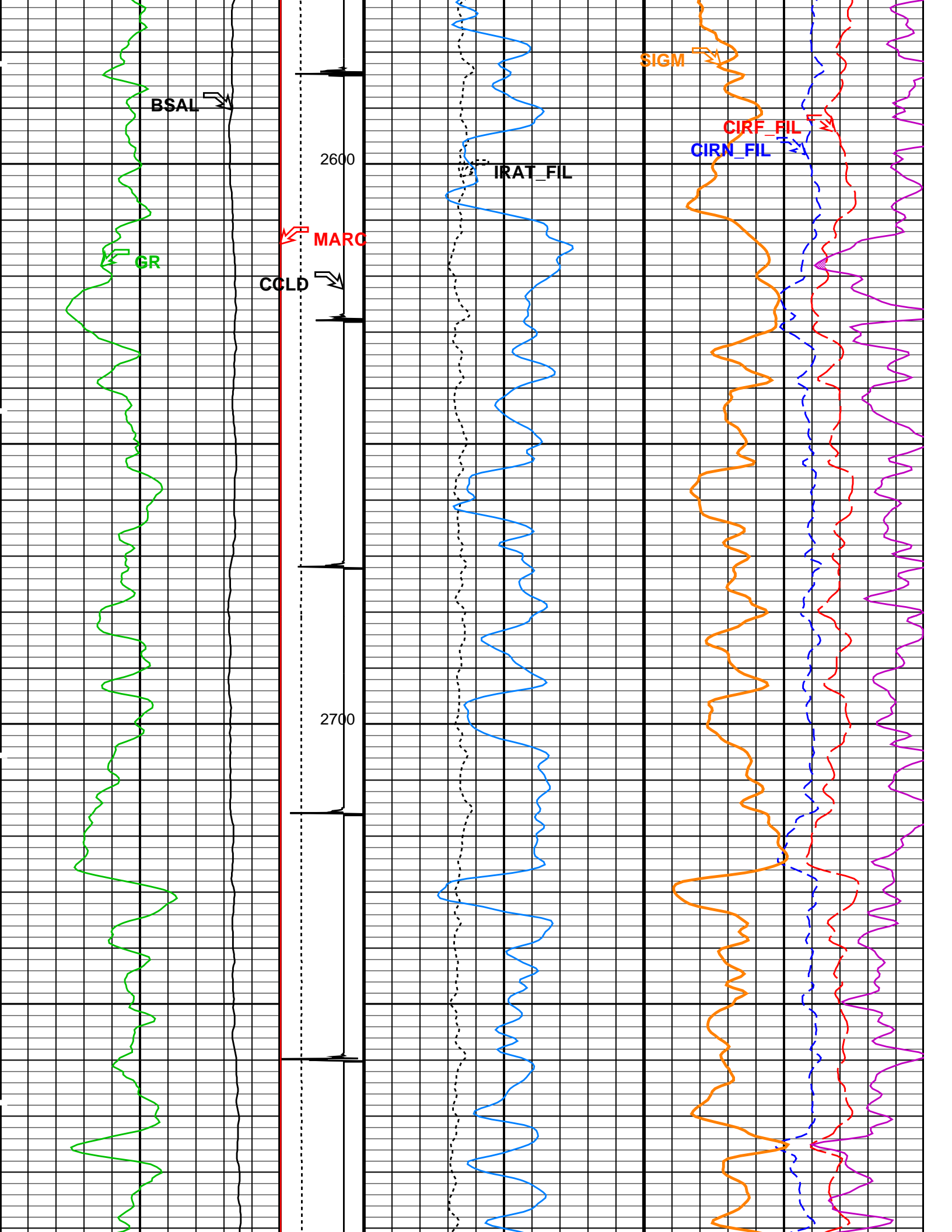


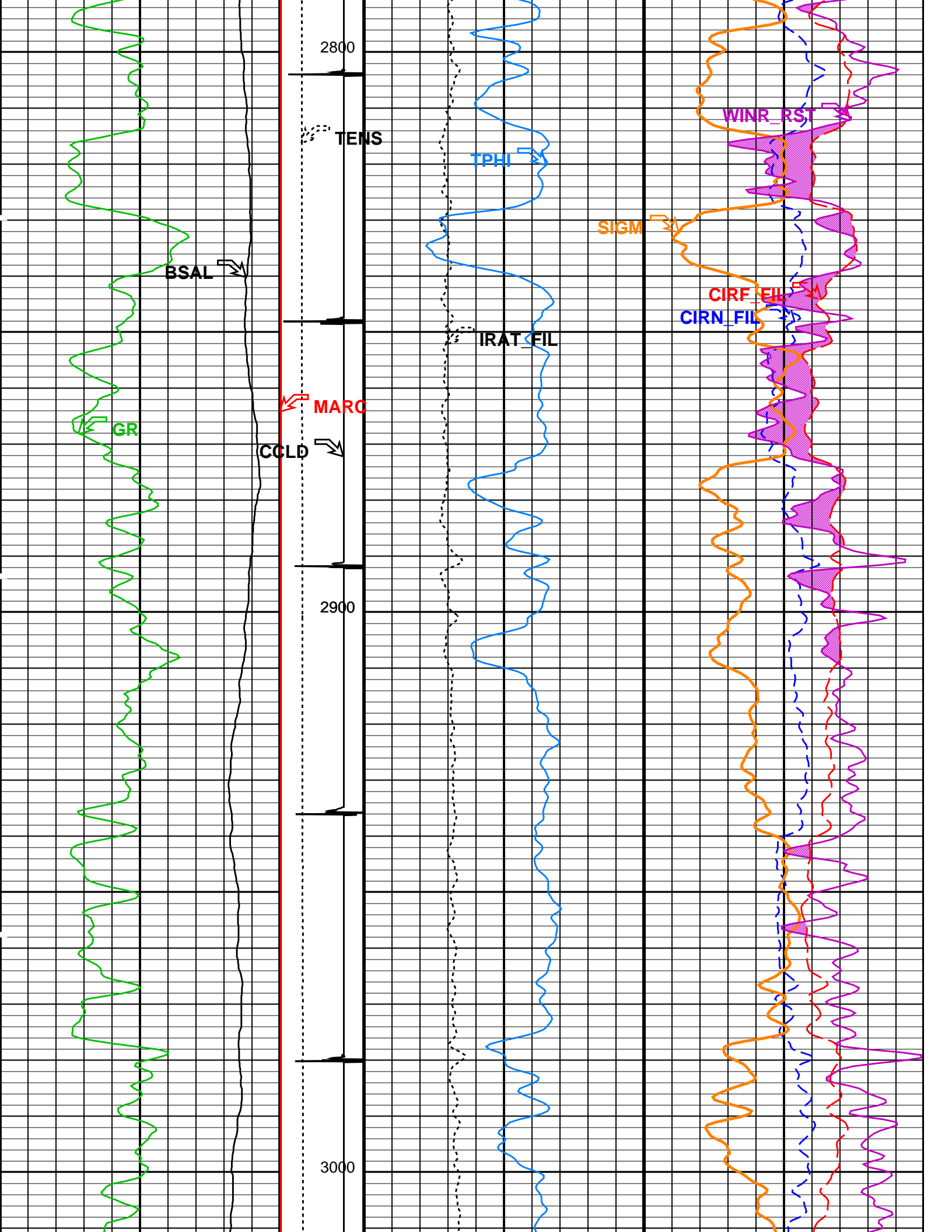


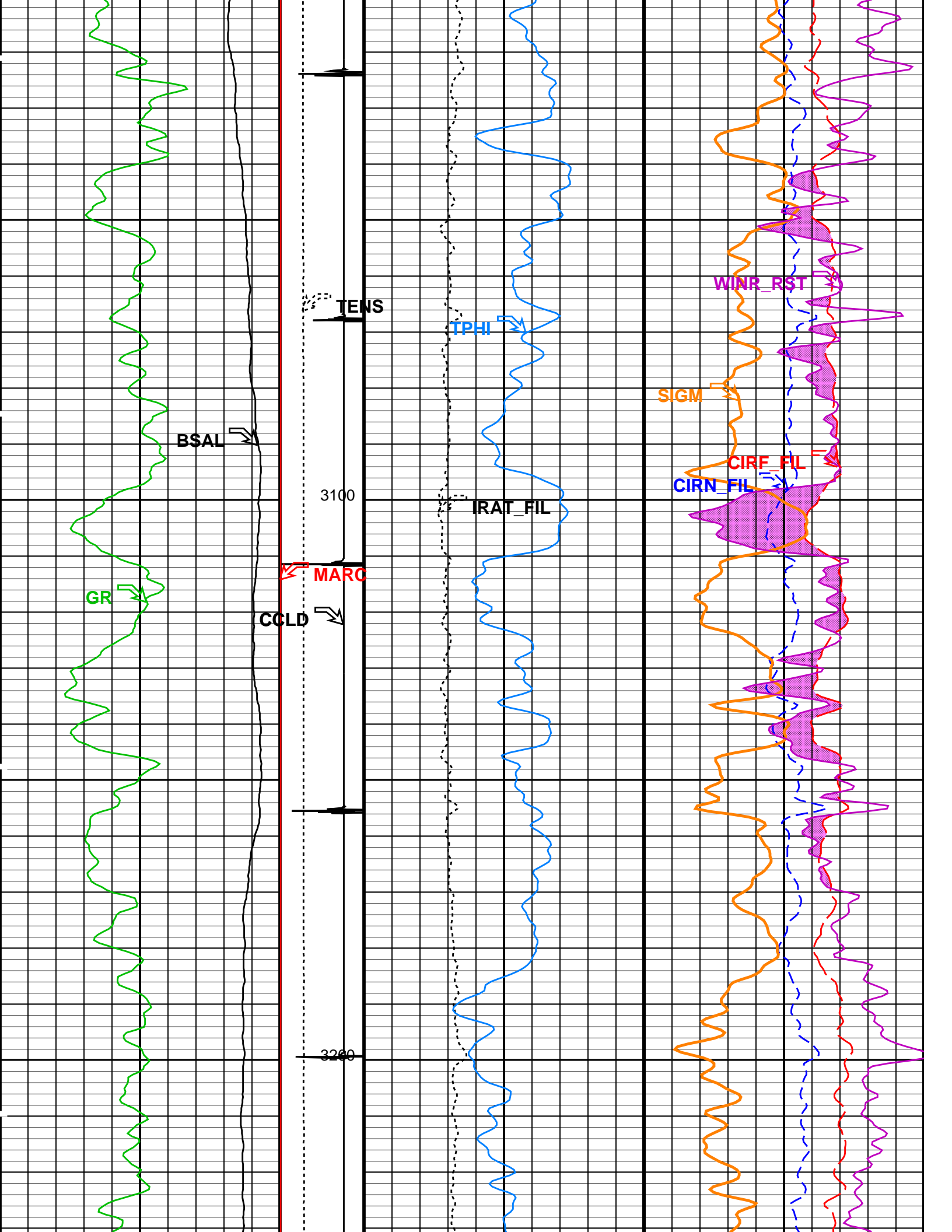


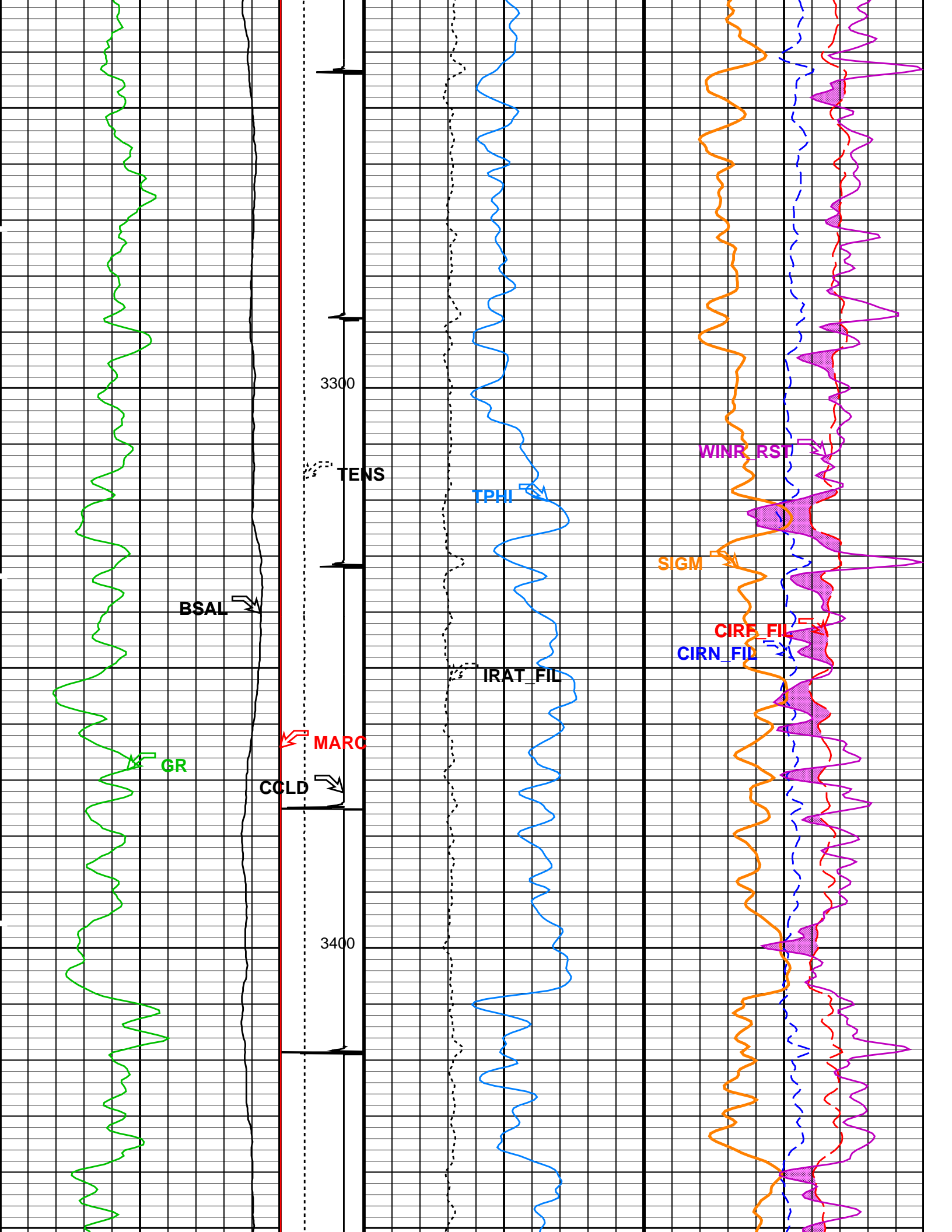


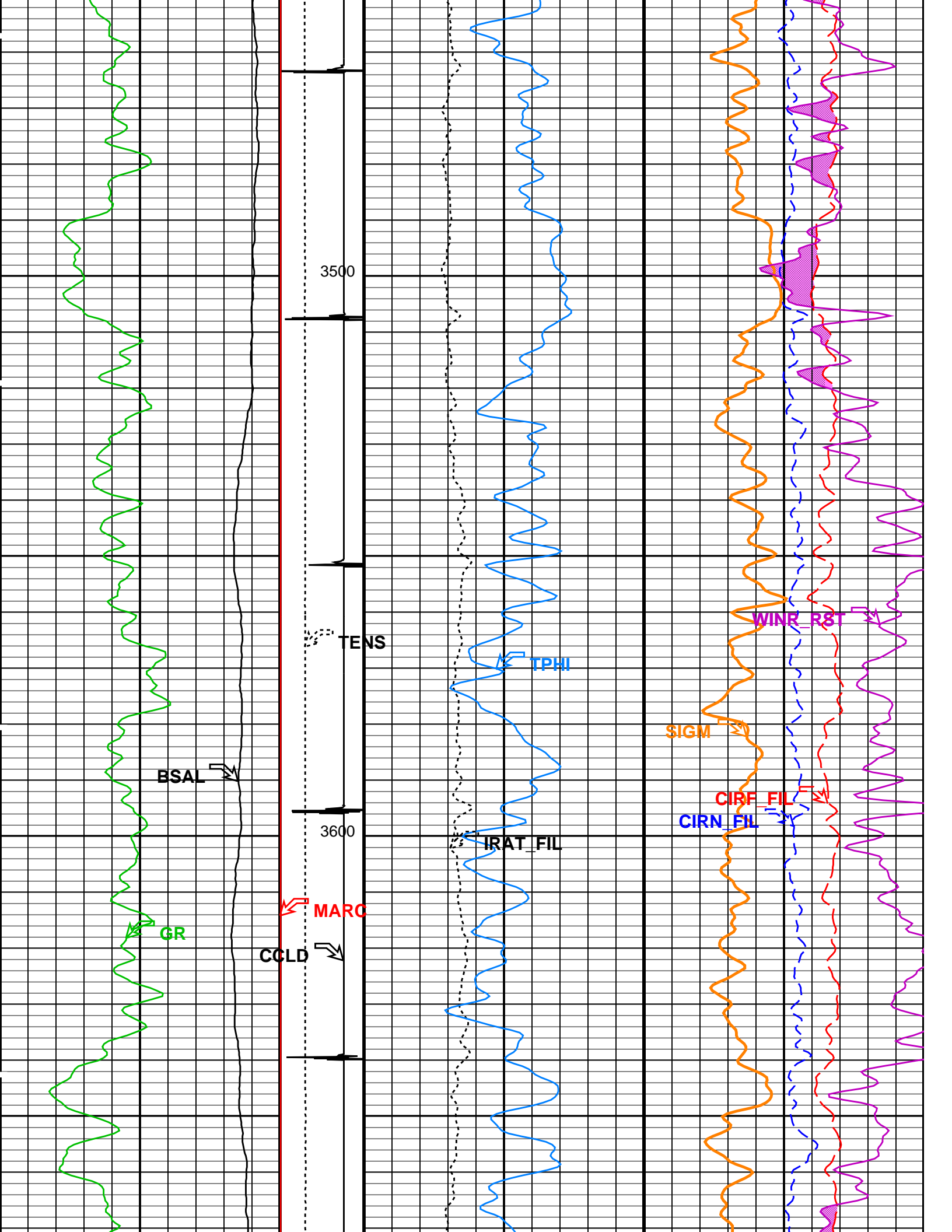


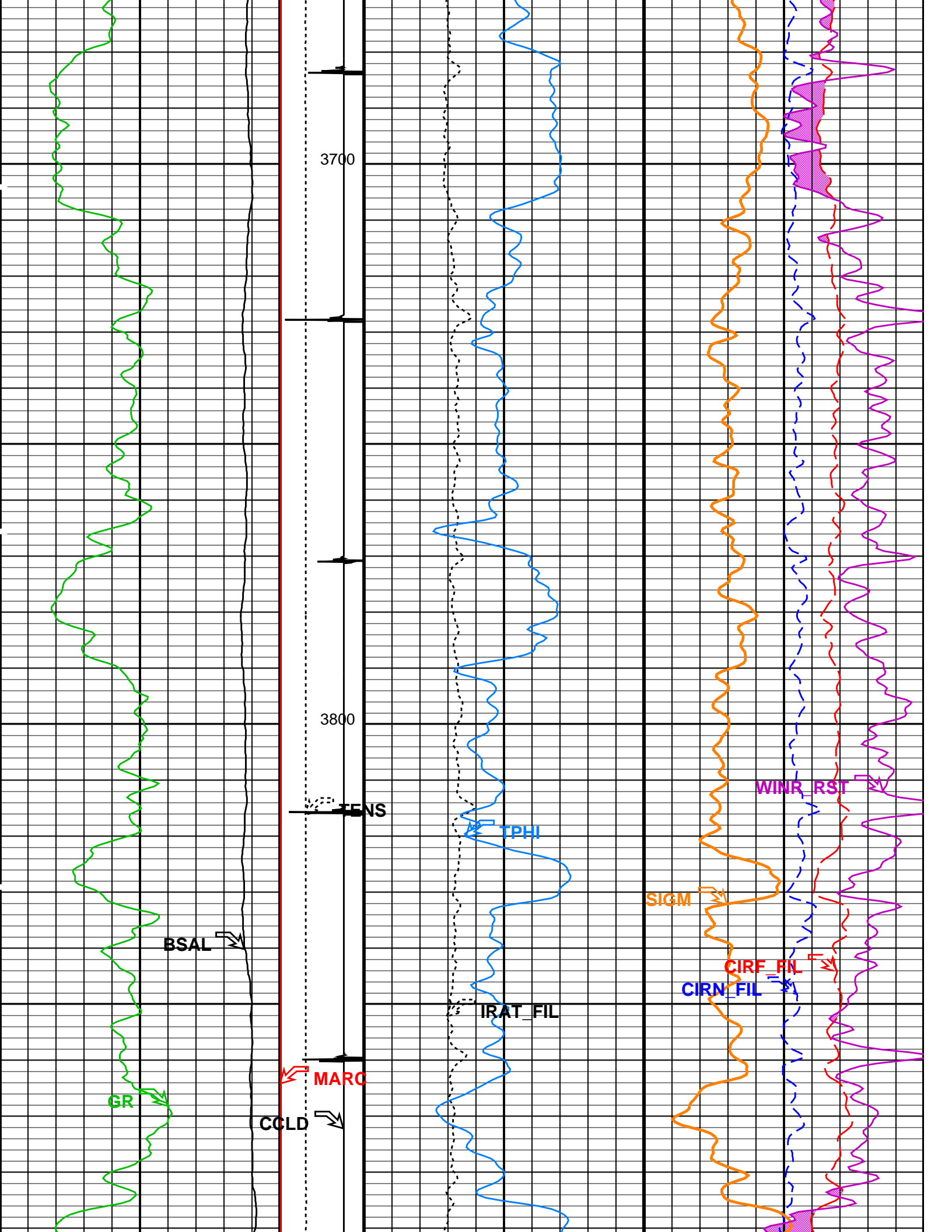


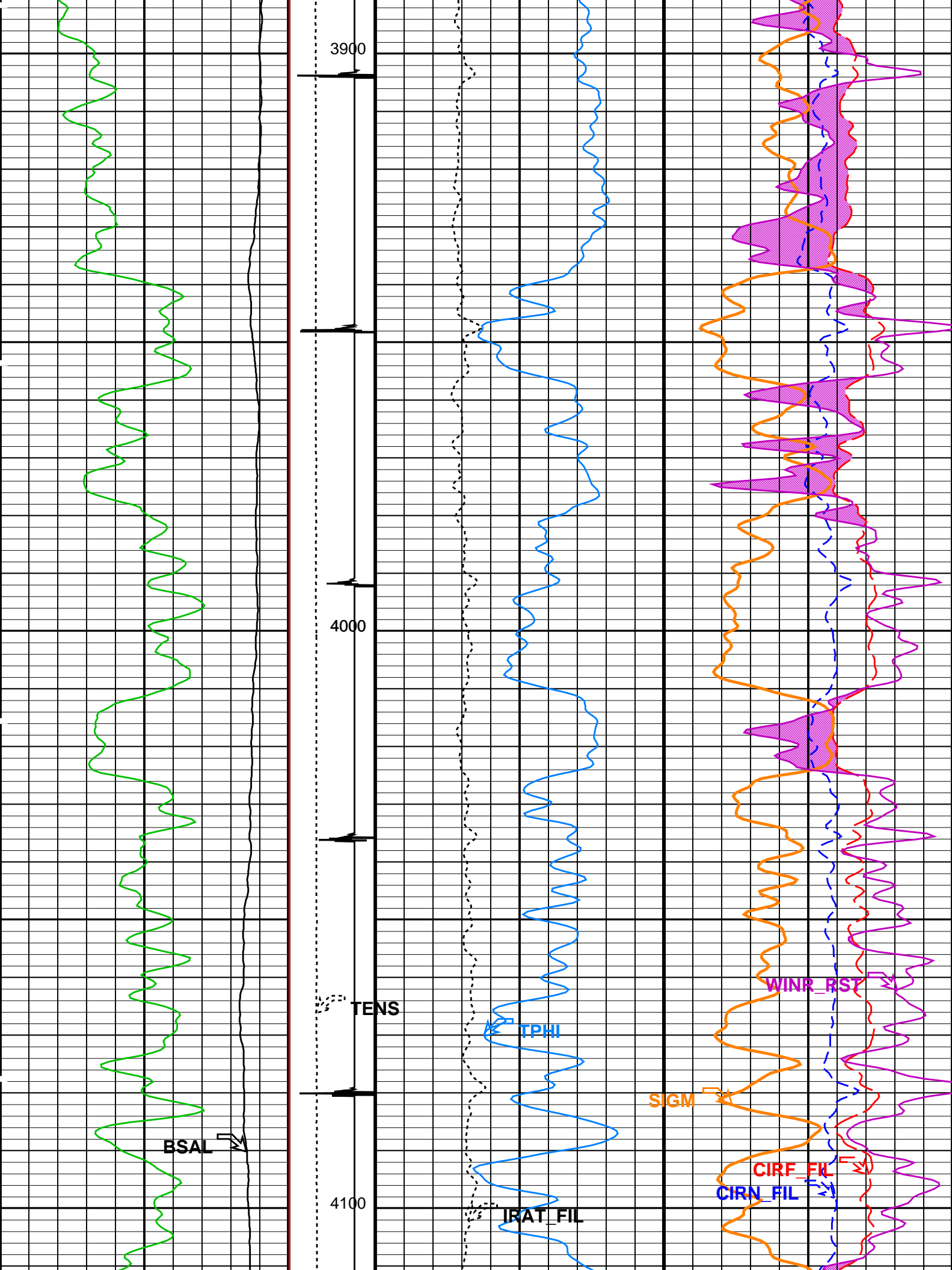


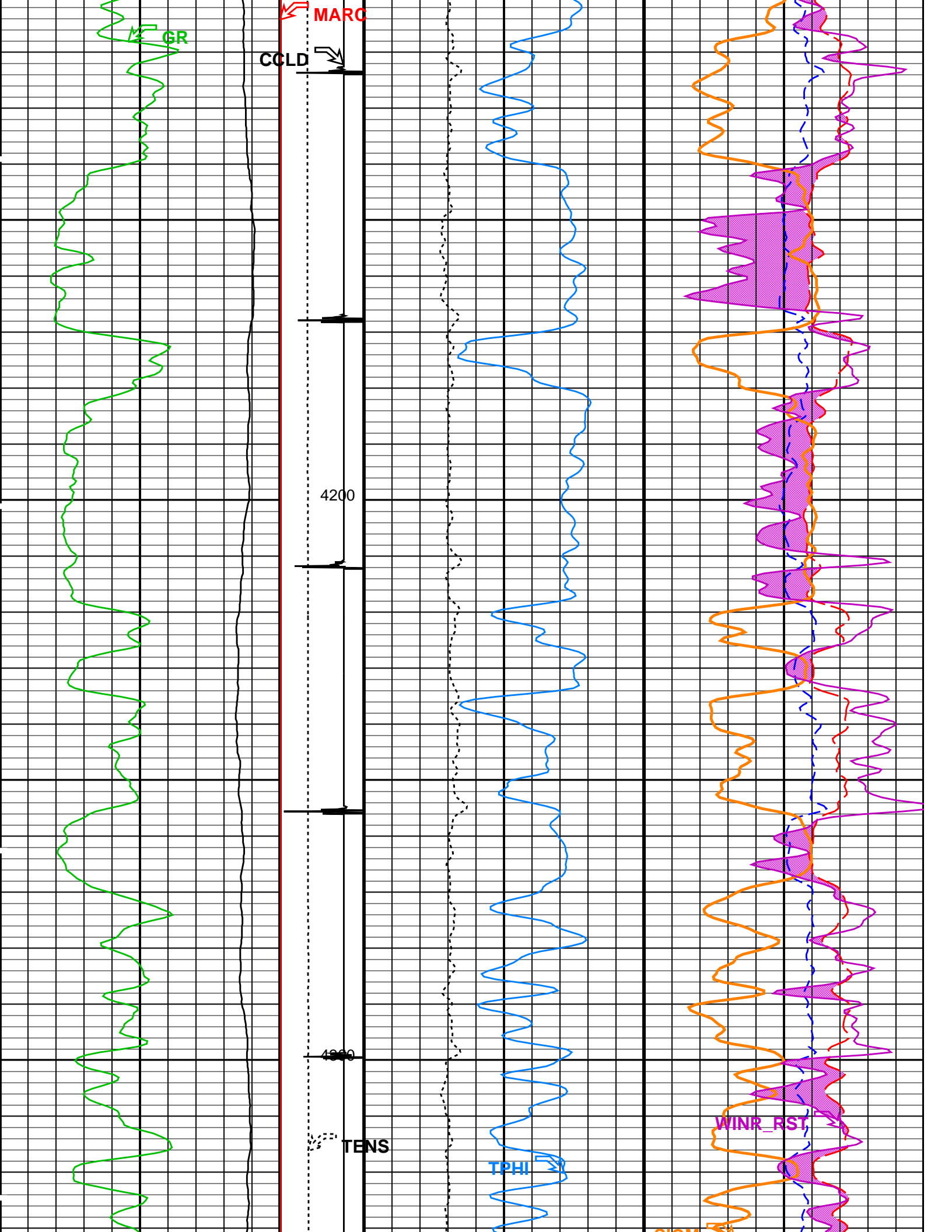


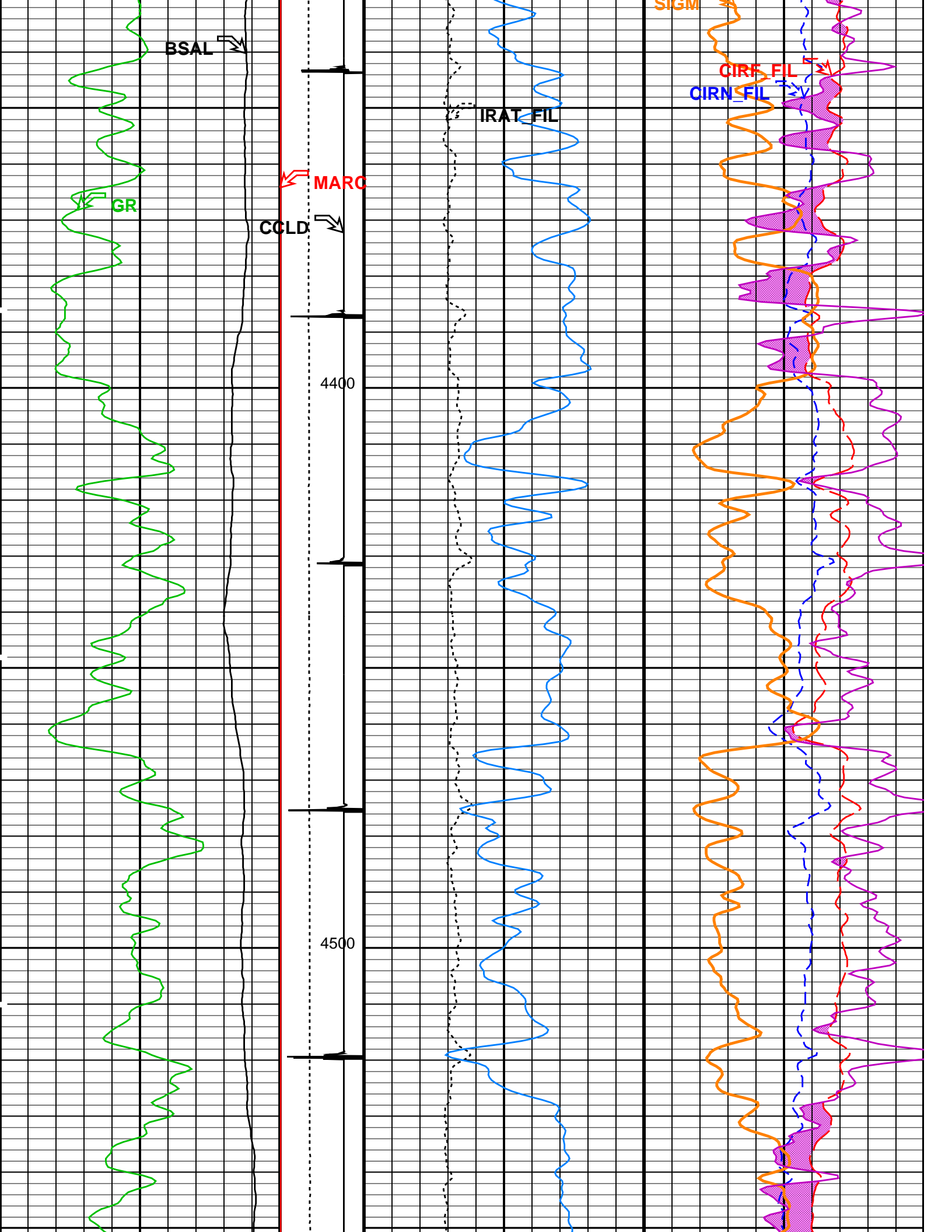


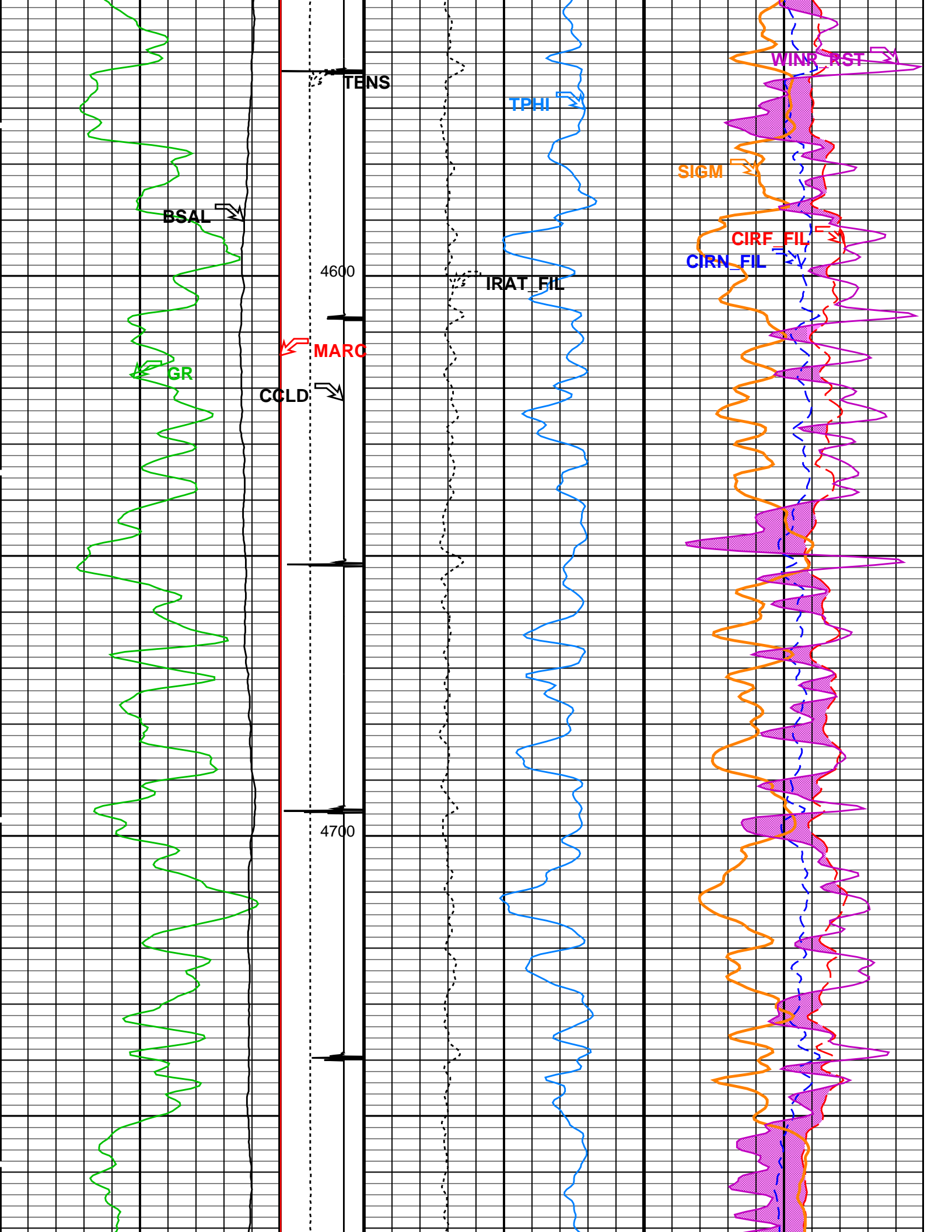


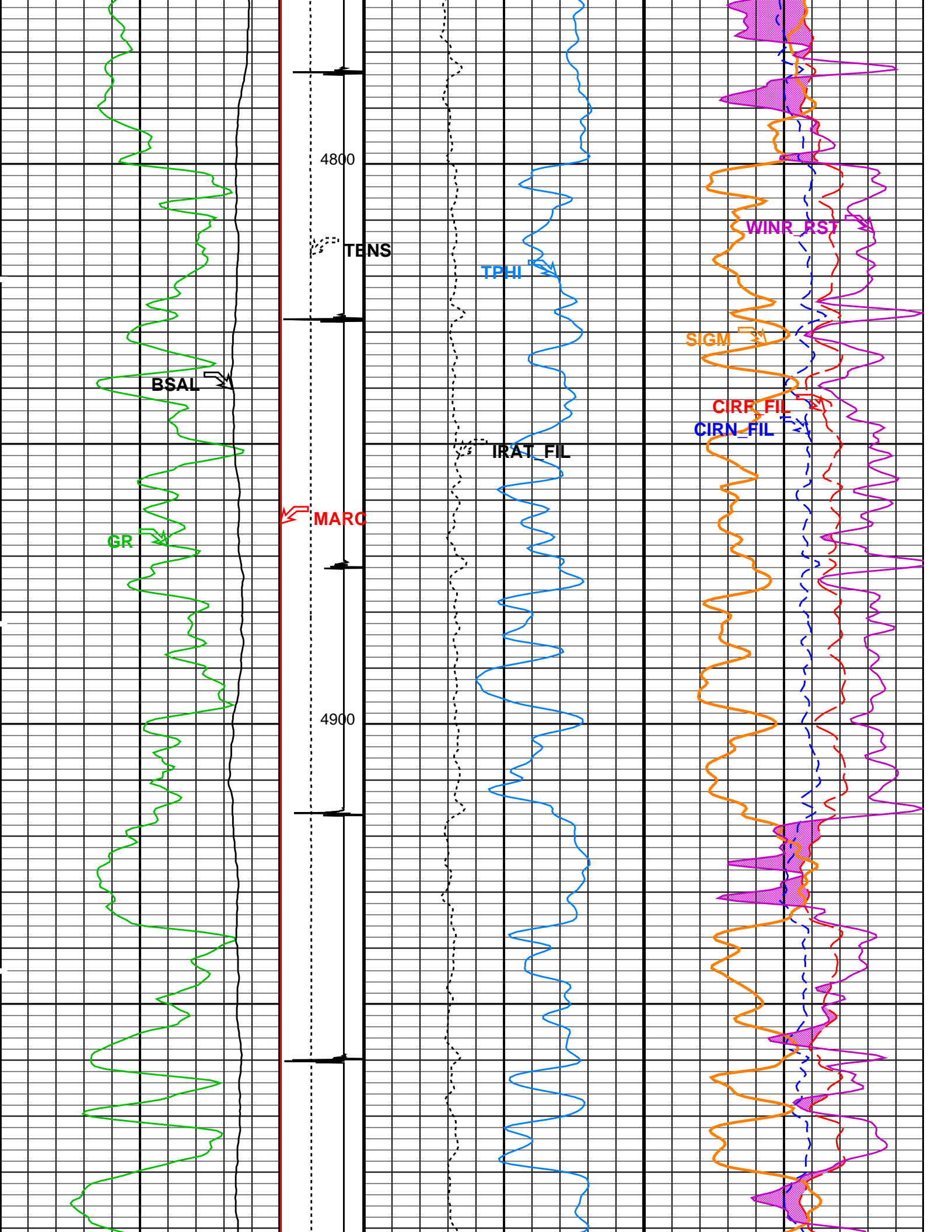


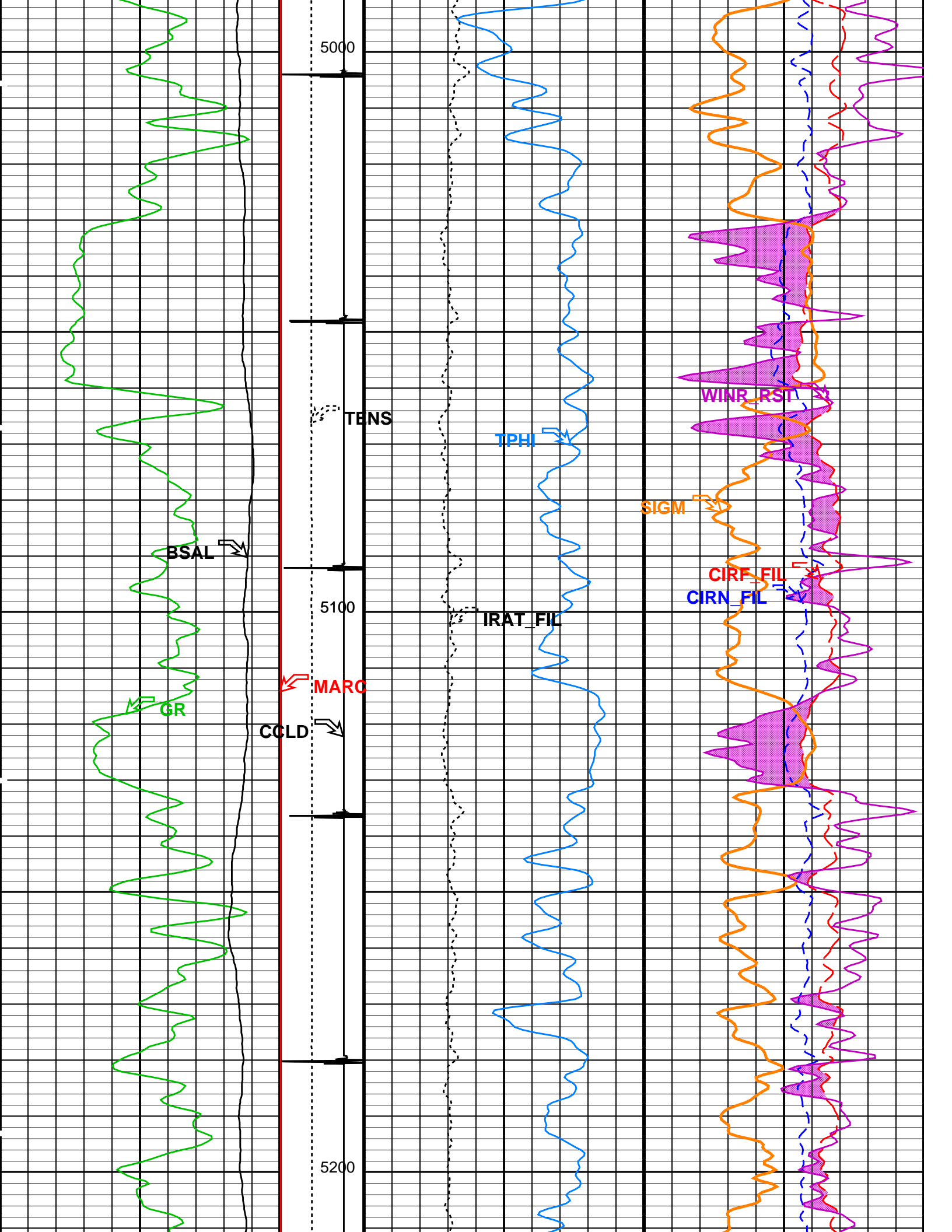


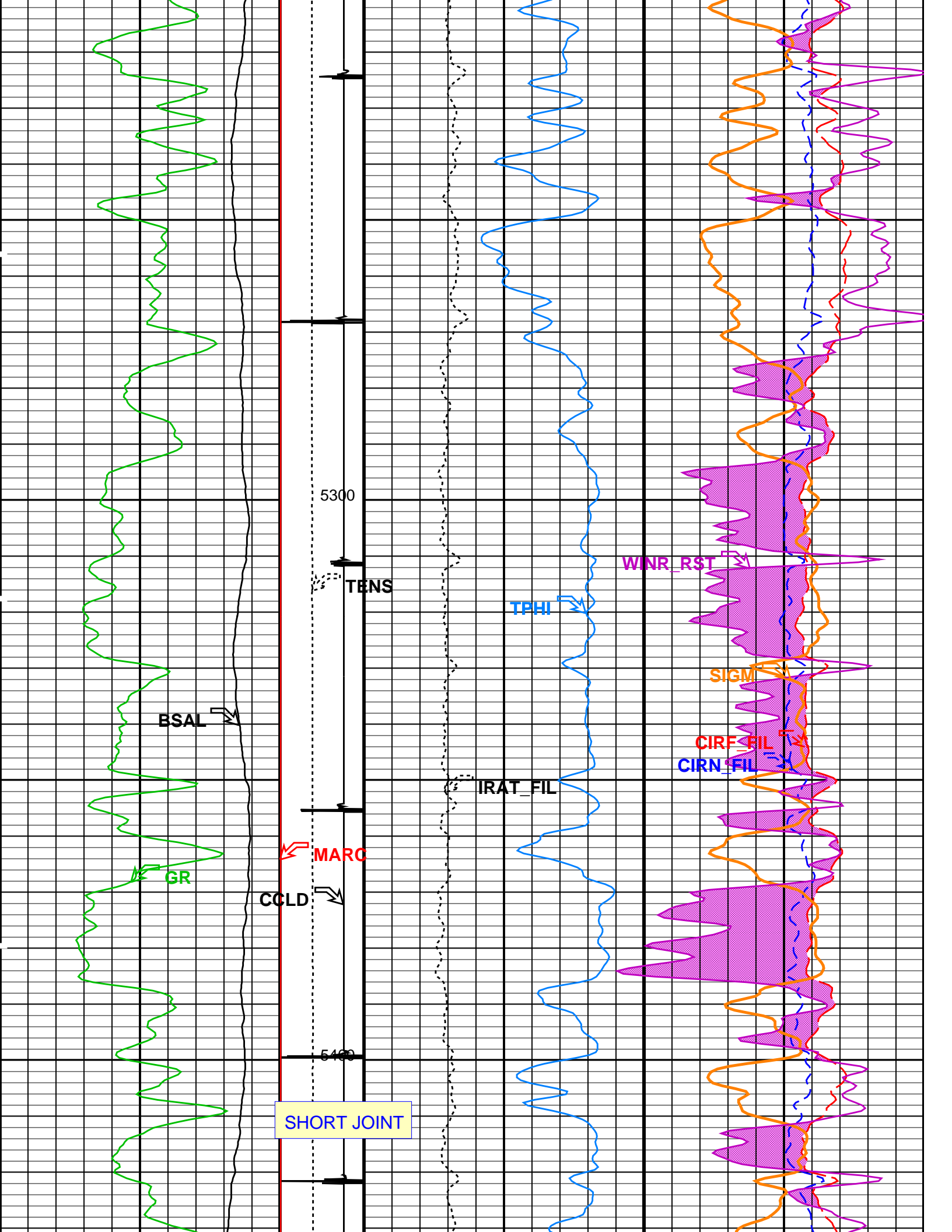


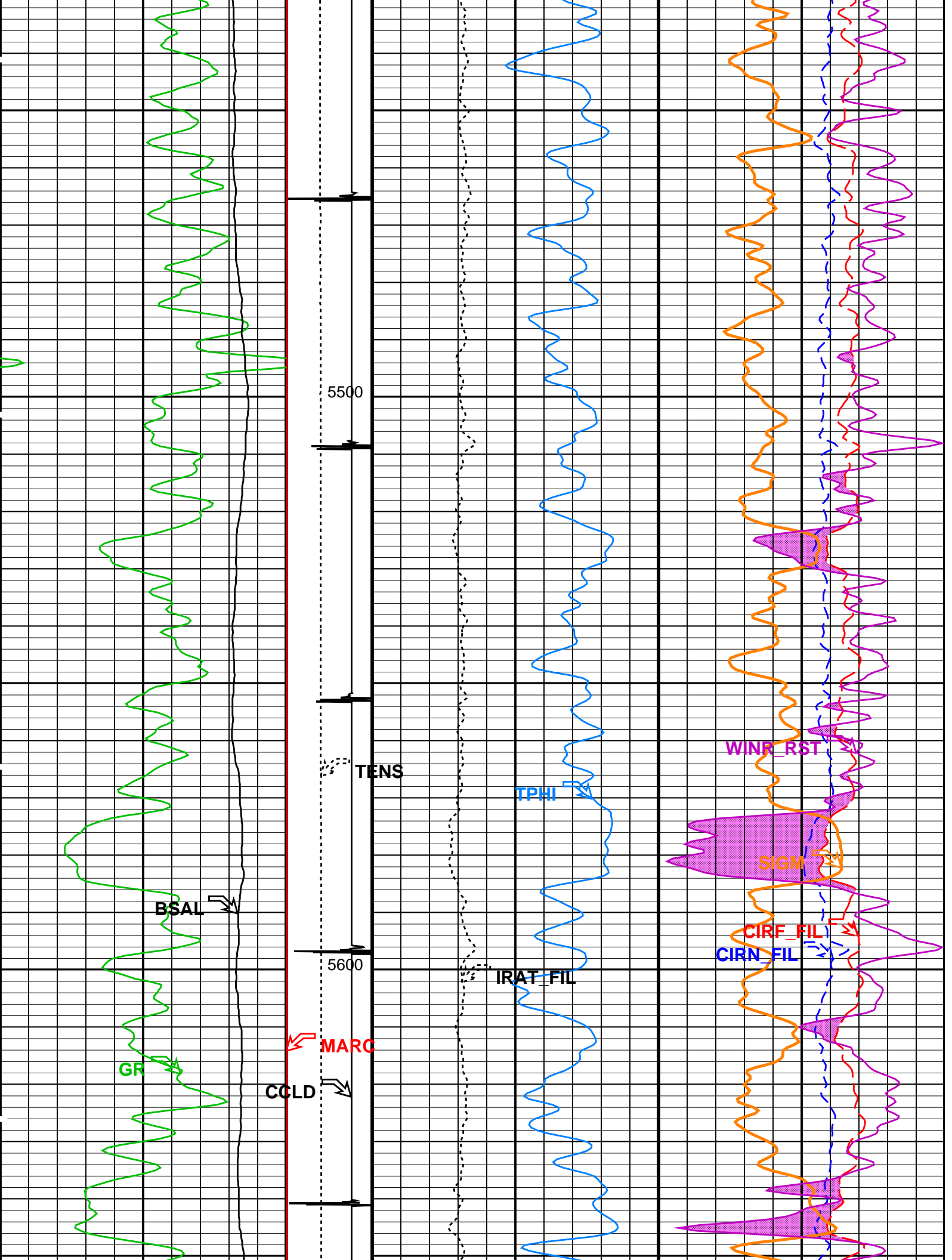


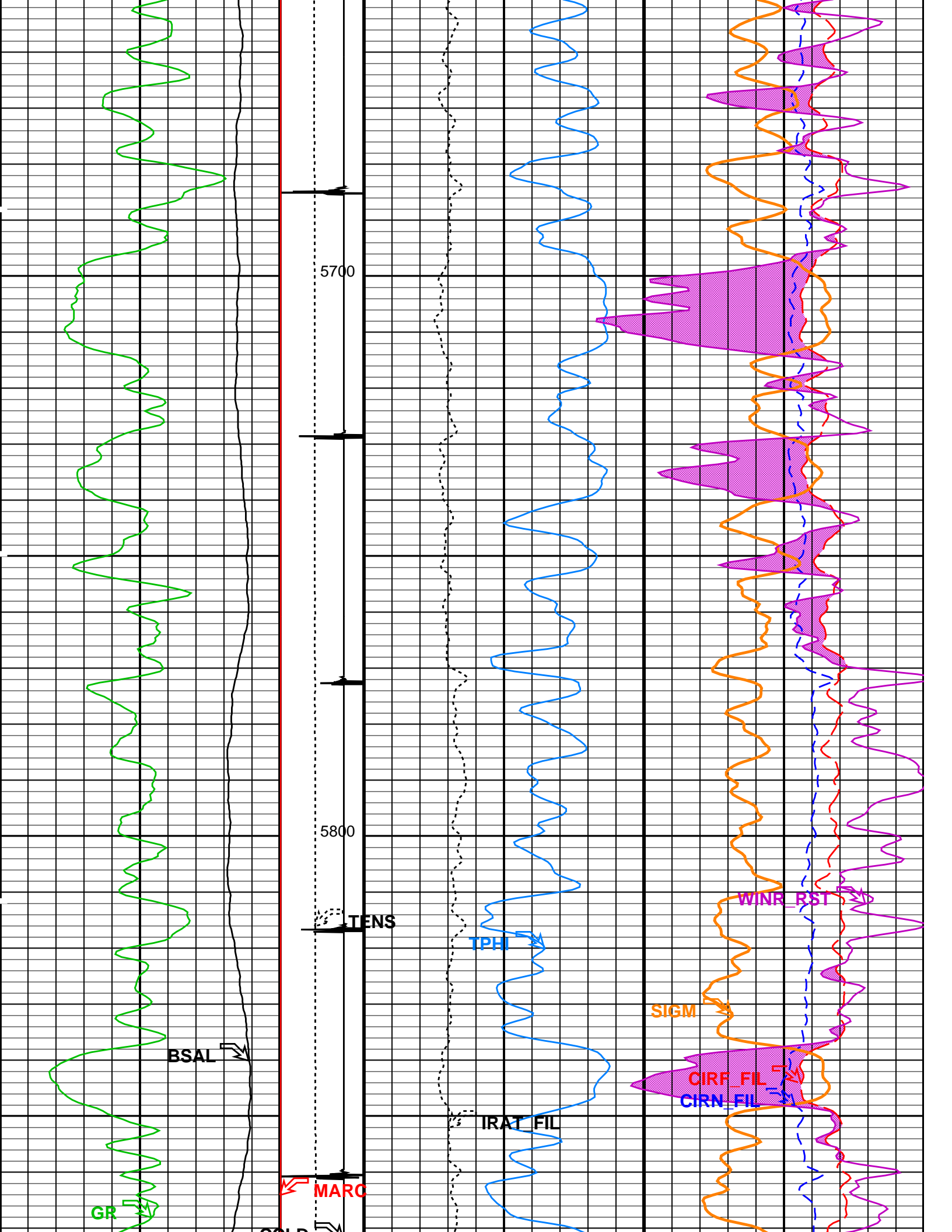


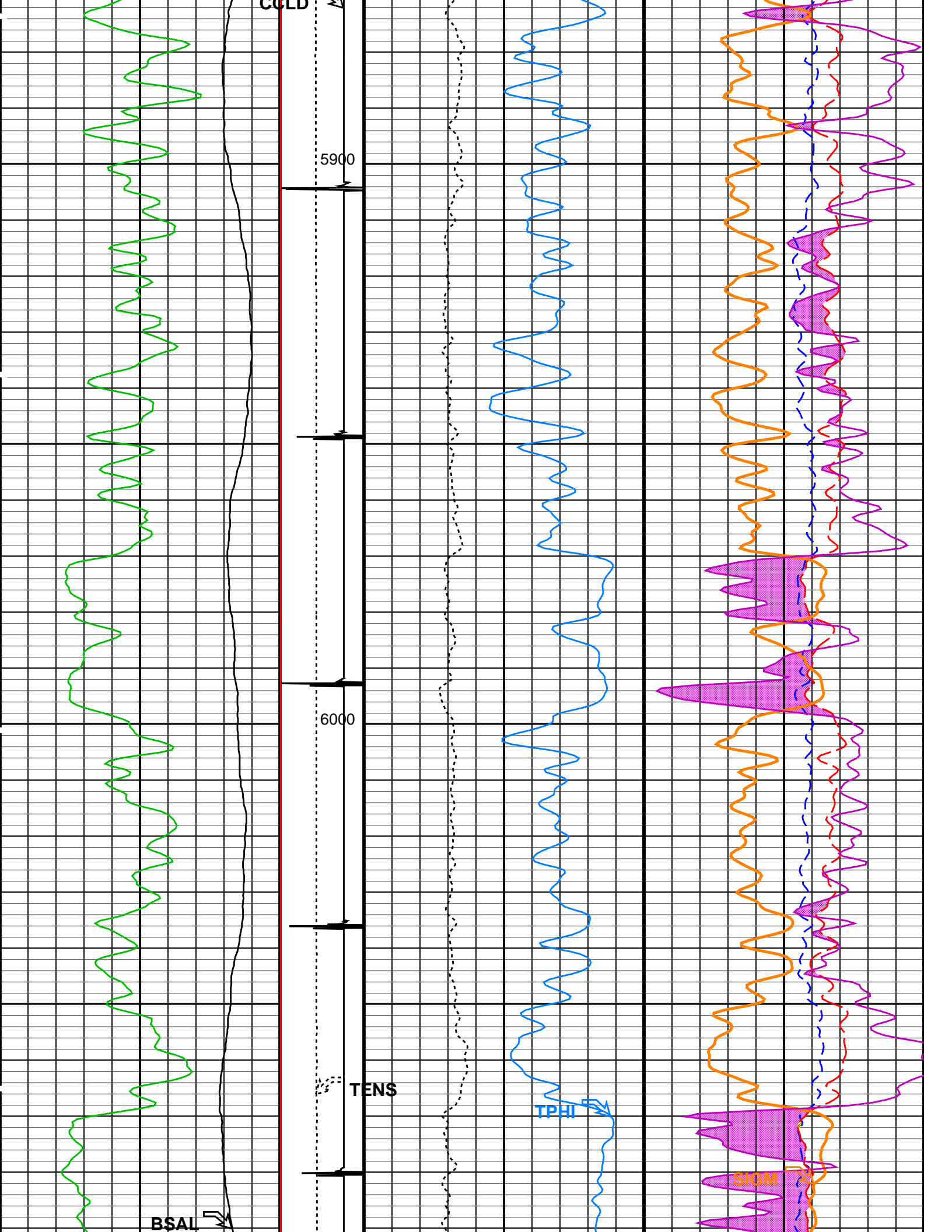


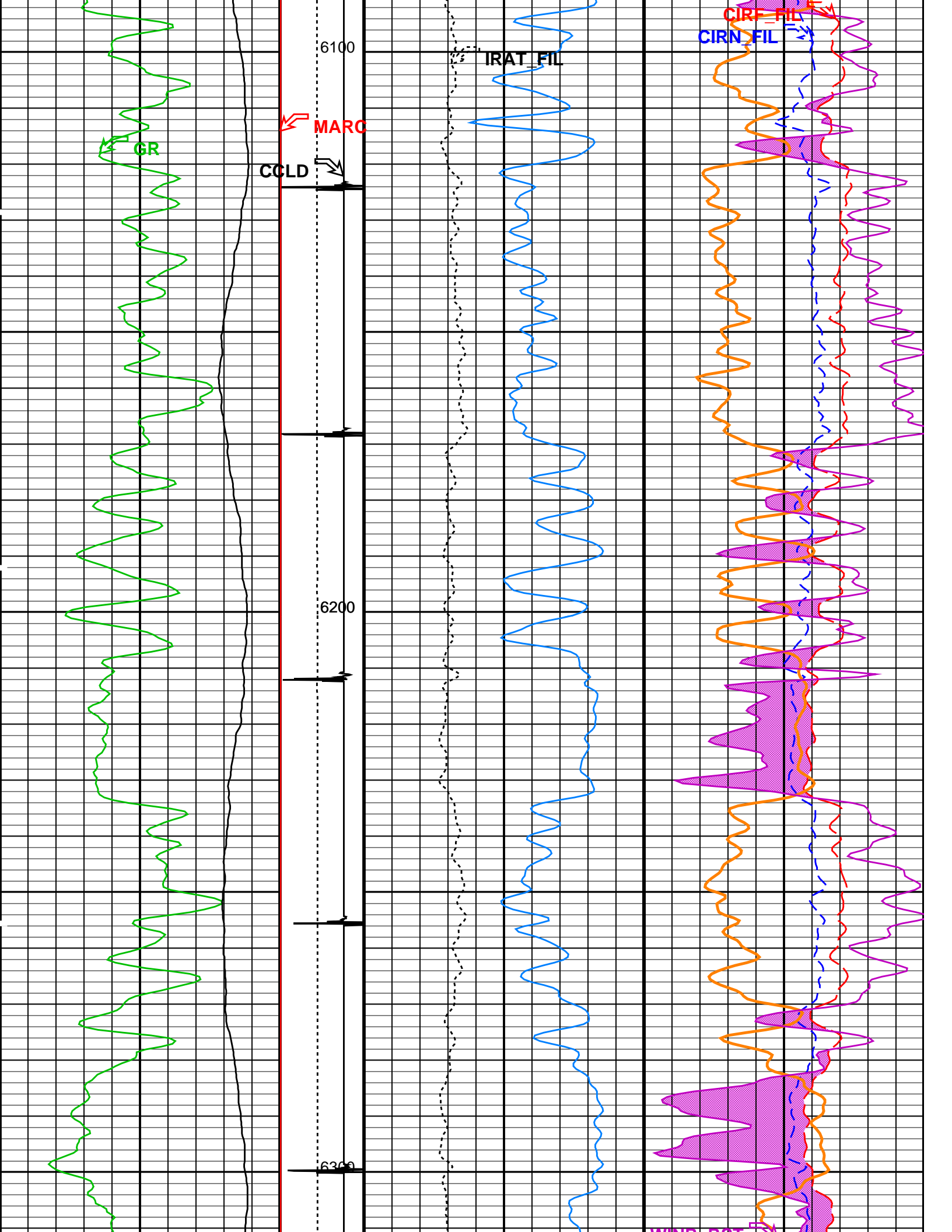


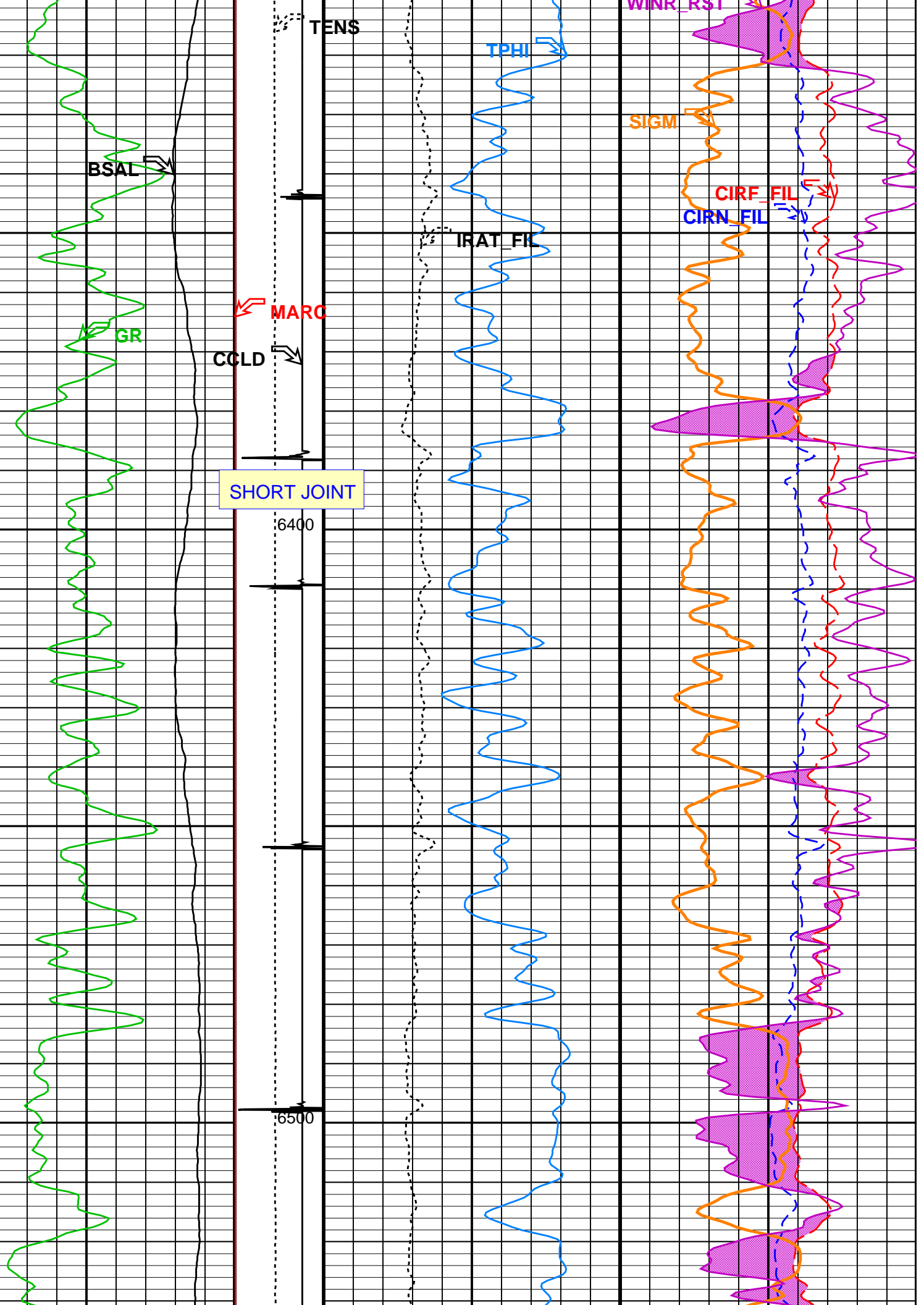


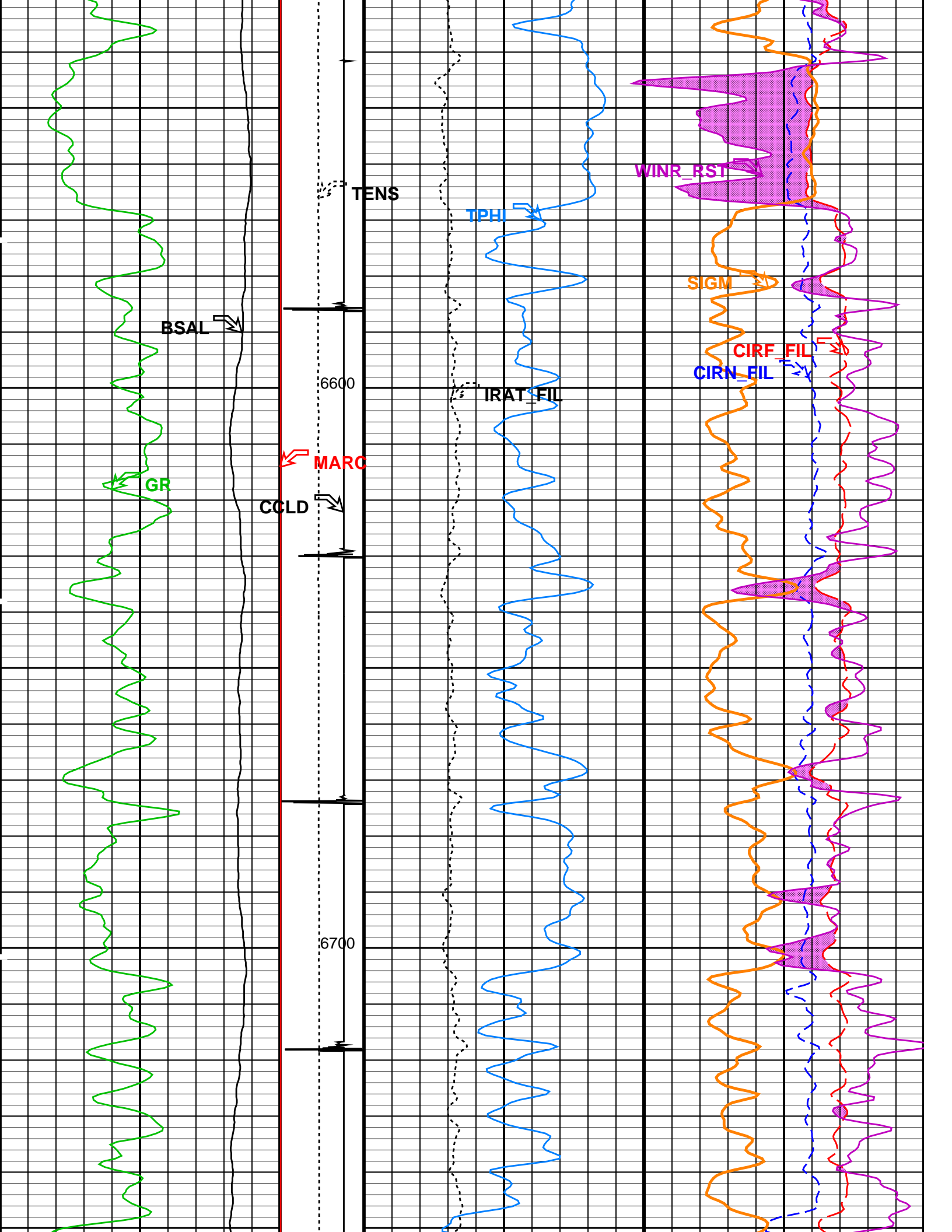


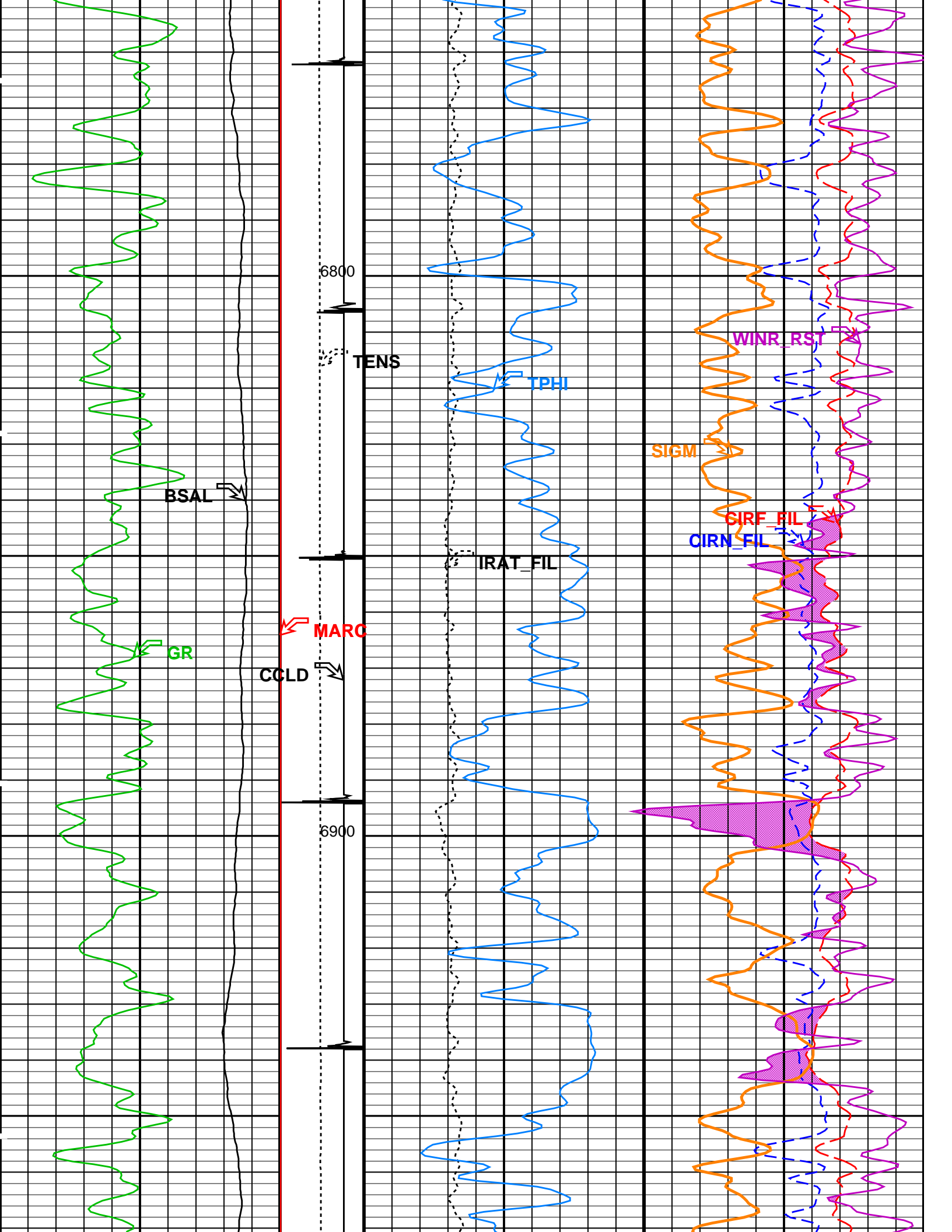


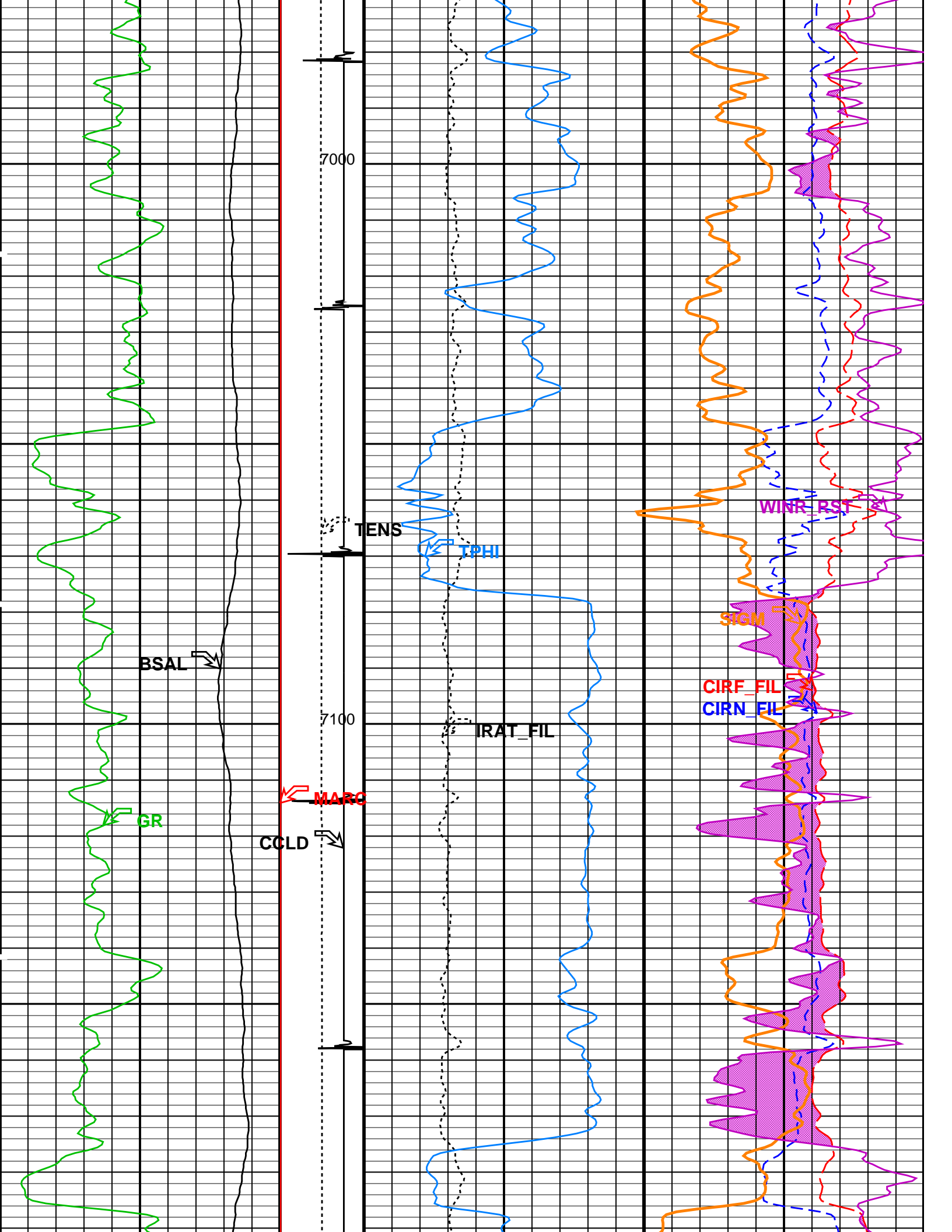


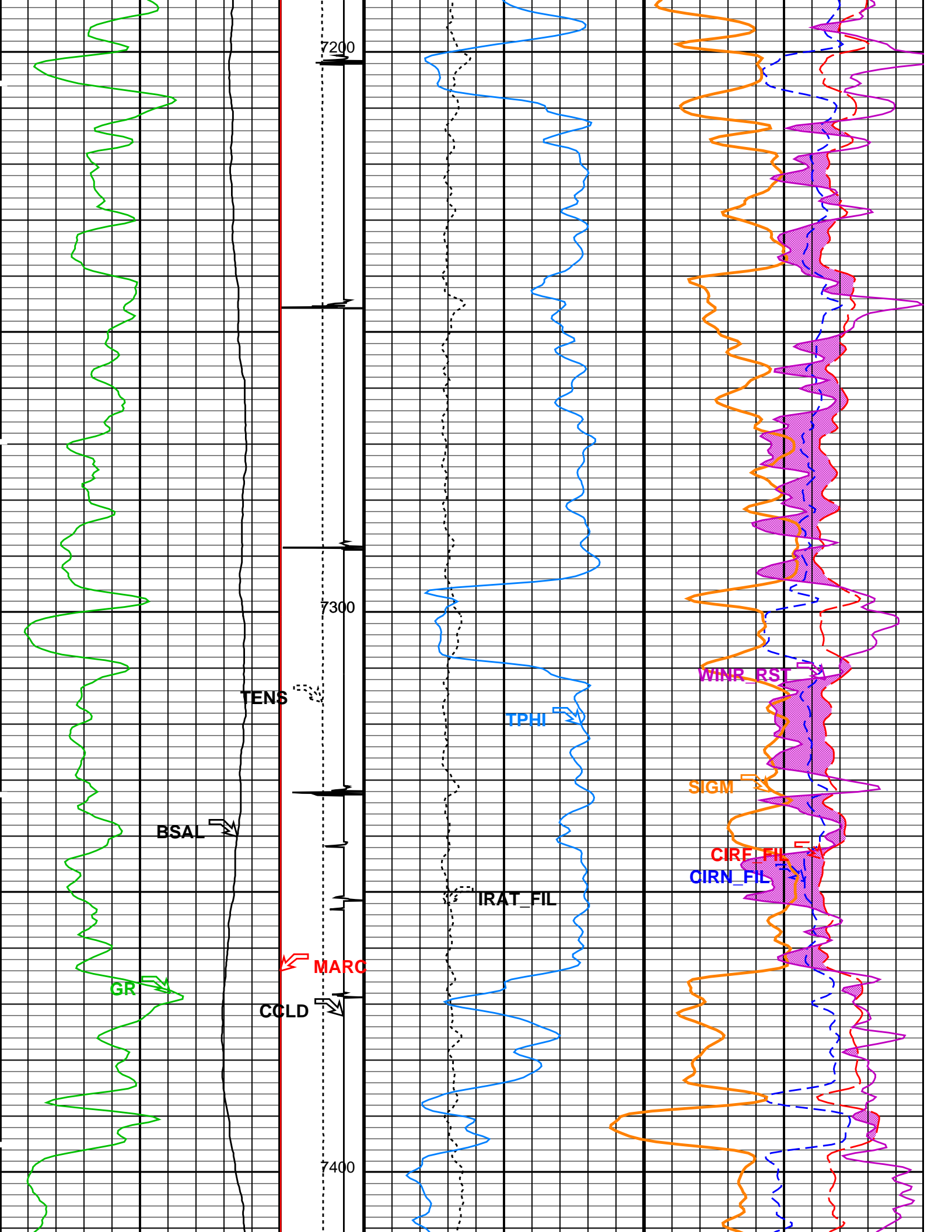


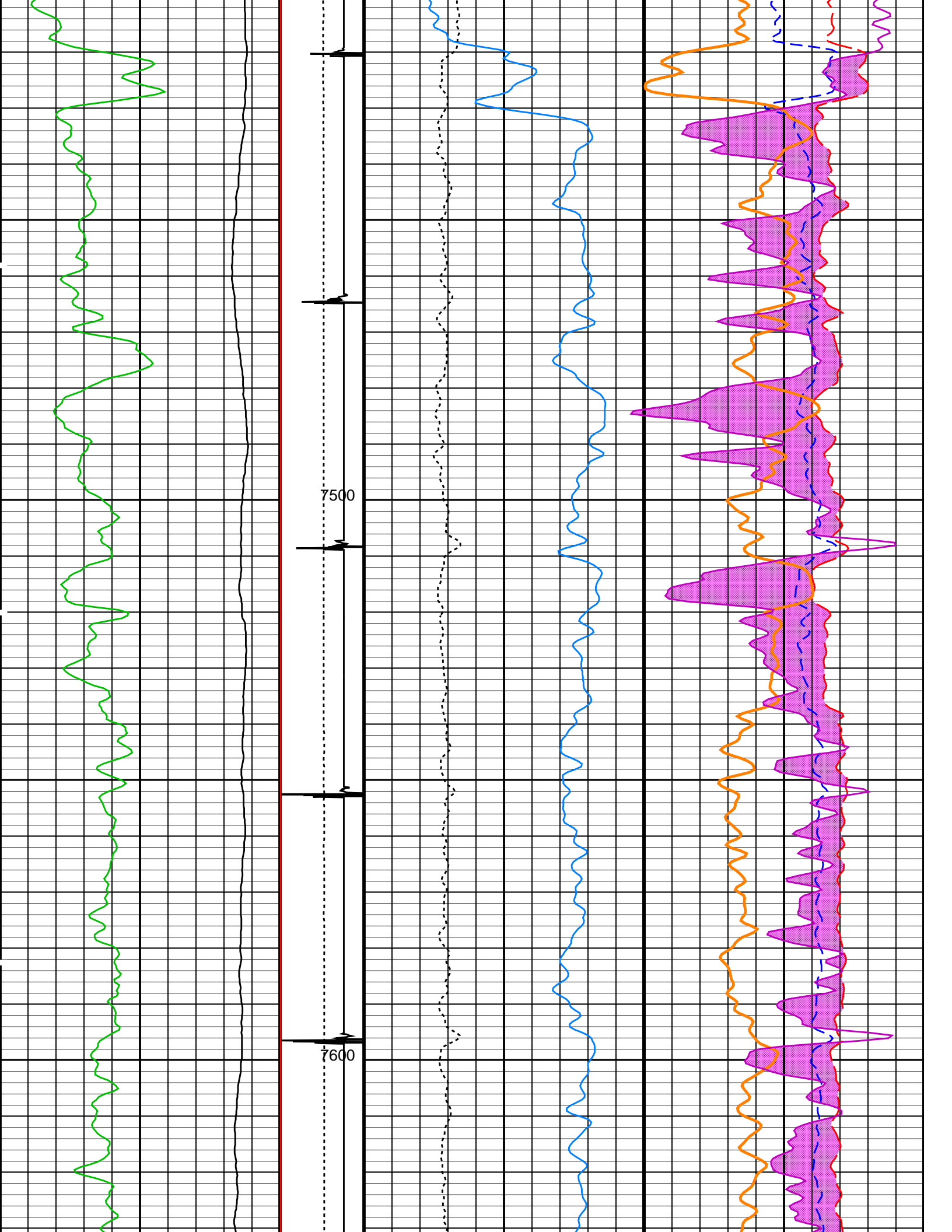


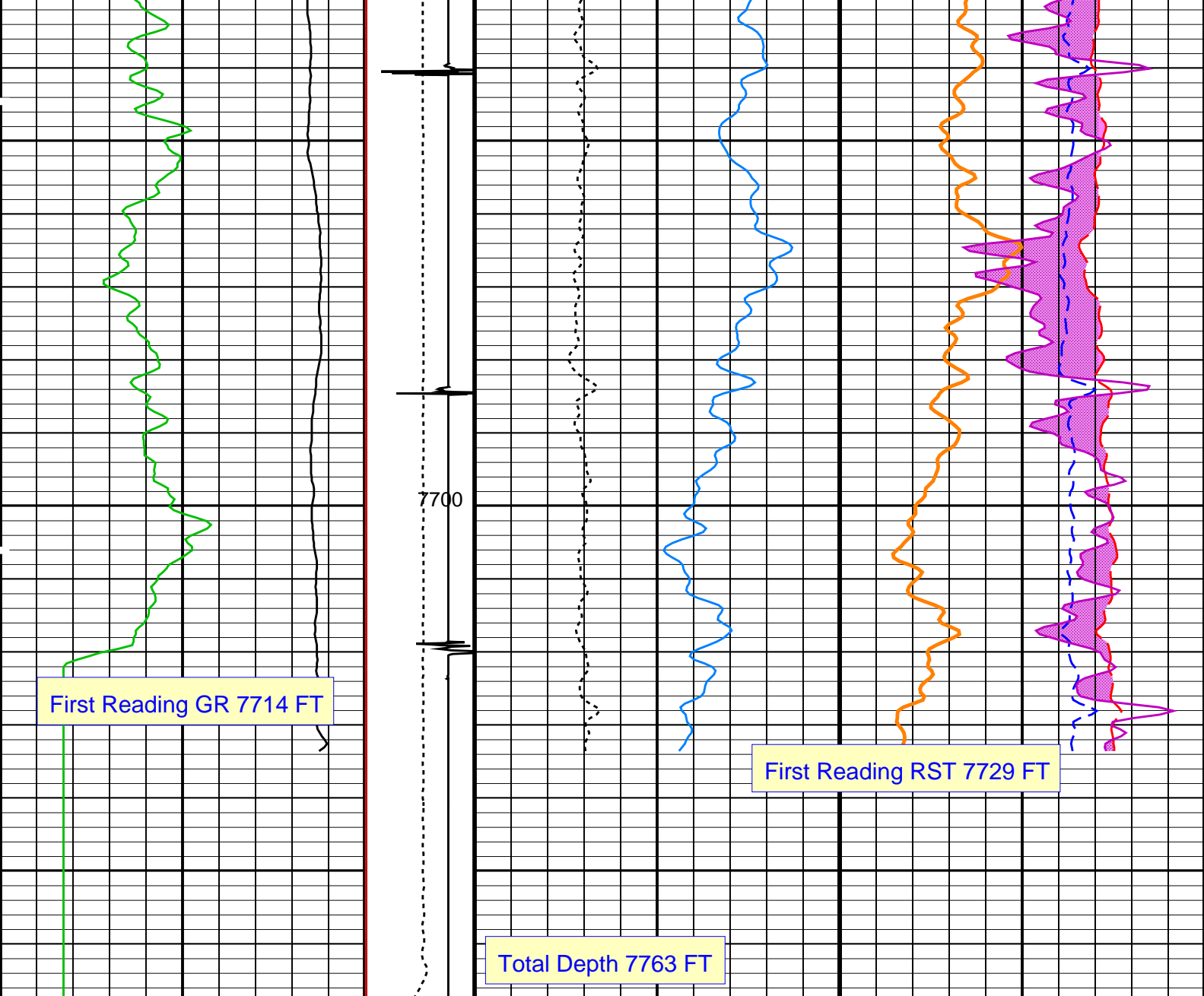












Gamma Ray (GR) (GAPI)		Tension (TENS) (LBF)		RST Inelastic Ratio (IRAT_FIL) (-----)		RST Capture to Inelastic Ratio Near (CIRN_FIL) (-----)	
0 150		0 2000		0.75 (-----) 0		2.5 (-----) 0	
RST Borehole Salinity (BSAL) (PPK)		Discriminat ed CCL (CCLD) (V)		RST Sigma (SIGM) (CU)			
450 -50		3 -1		60 0			
Minitron Arc Detection (MARC)		RST Porosity (TPHI) (V/V)		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					

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	
CMTF	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.	4	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.	4	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	DB0	
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	2.0	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	7763	FT
TDD	Total Depth – Driller	7854.00	FT
TDL	Total Depth – Logger	7763.00	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF


Format: RST_SIGMA_S5

Vertical Scale: 5" per 100'

Graphics File Created: 29-Apr-2013 00:39

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_103LUP	FN:101	PRODUCER	28-Apr-2013 22:30	7765.5 FT	16.0 FT
Output DLIS Files						
DEFAULT	SCMT_RST_PSP_106PUP	FN:104	PRODUCER	29-Apr-2013 00:39		



REPEAT ANALYSIS RST SIGMA

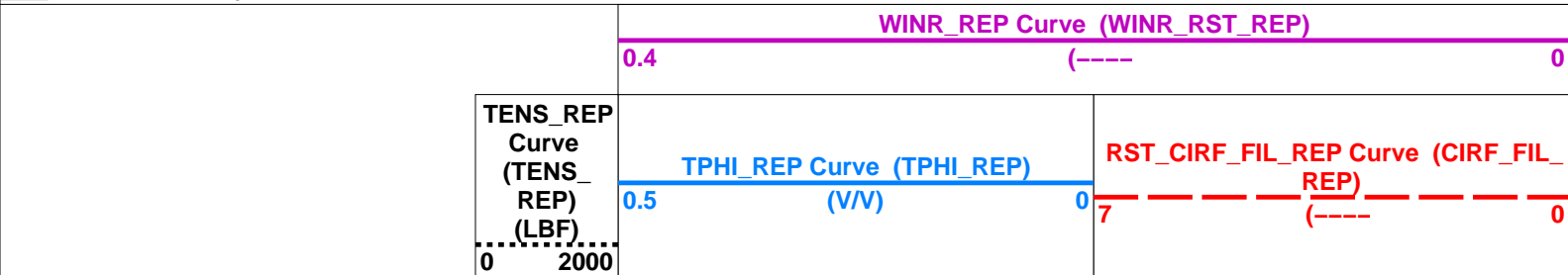
MAXIS Field Log

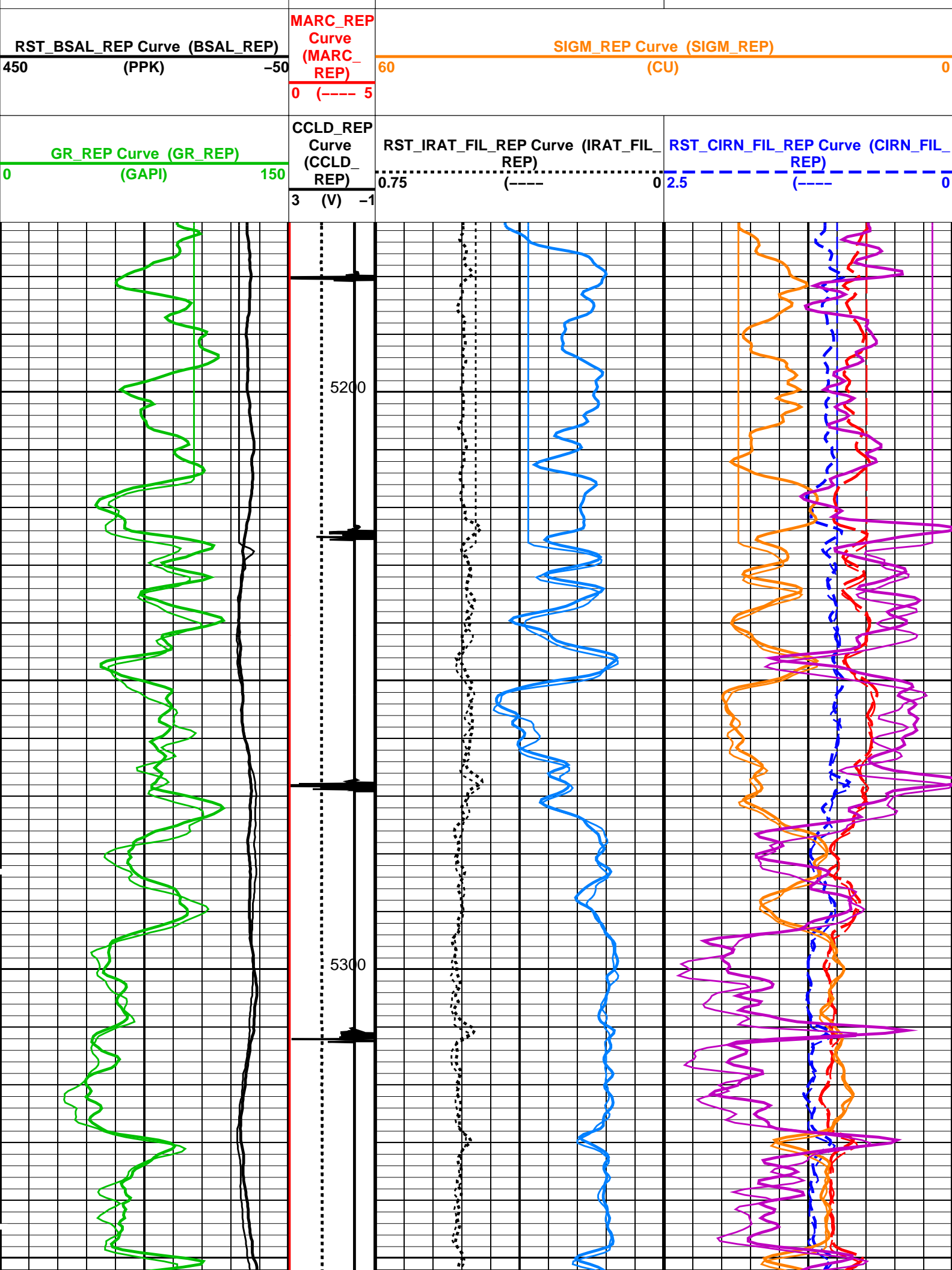
Input DLIS Files						
DEFAULT	SCMT_RST_PSP_101LUP	FN:99	PRODUCER	28-Apr-2013 22:09	5527.5 FT	5213.5 FT
DEFAULT	SCMT_RST_PSP_106PUP	FN:104	PRODUCER	29-Apr-2013 00:39	7767.5 FT	-26.5 FT
Output DLIS Files						
DEFAULT	SCMT_RST_PSP_107PUP	FN:105	PRODUCER	29-Apr-2013 00:46	5528.5 FT	5170.0 FT

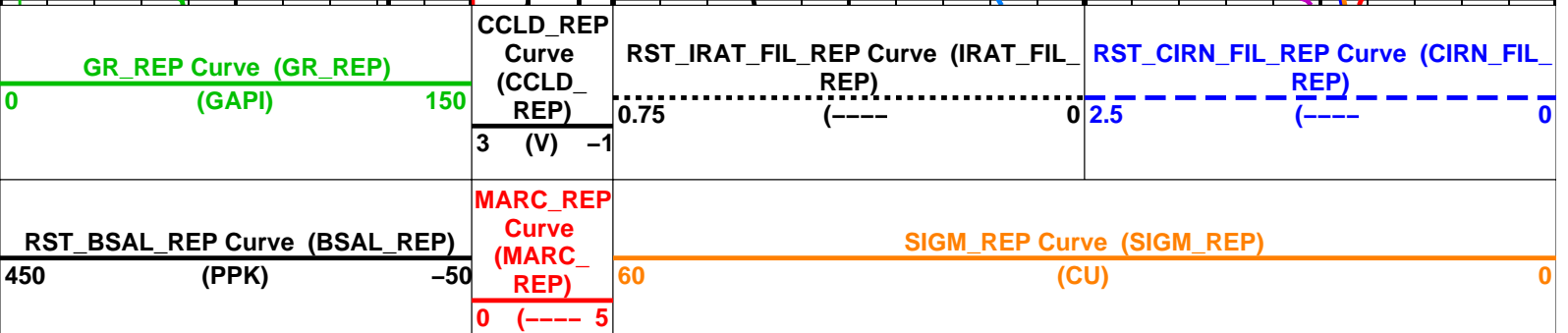
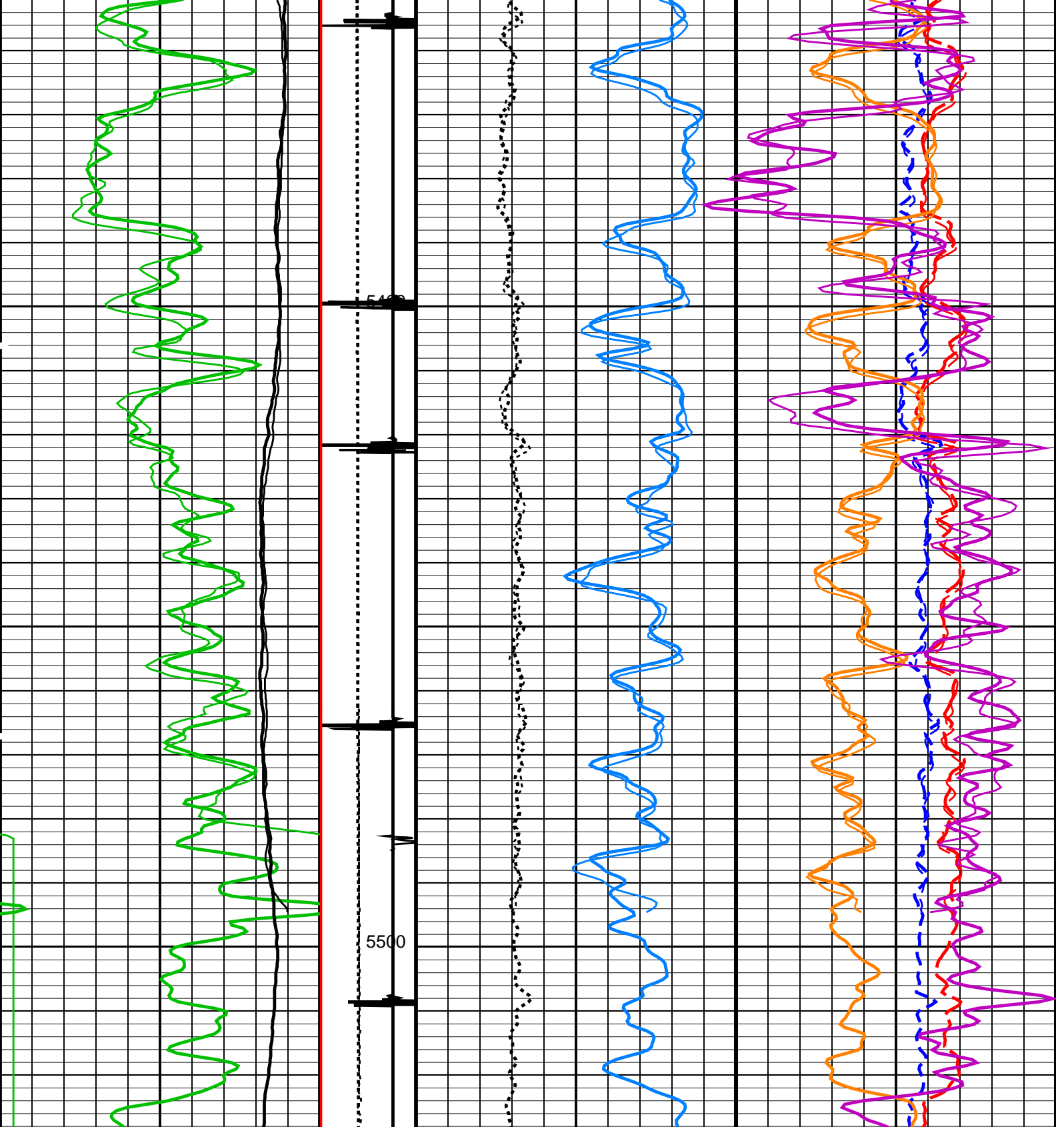
OP System Version: 19C0-187			
SCMT-CB	SRPC-5214-H2-2012-OP1!	RST-C	SRPC-5214-H2-2012-OP1!
PSPT	SRPC-5214-H2-2012-OP1!		

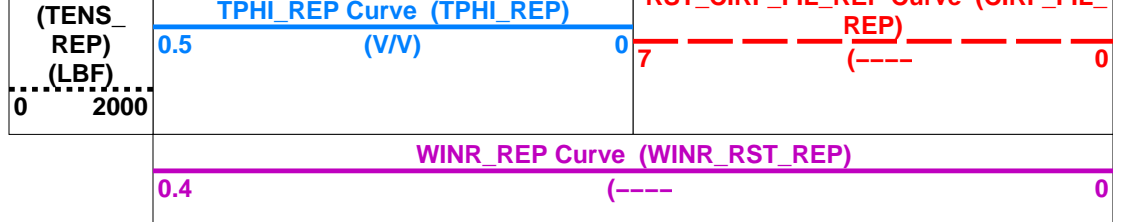
PIP SUMMARY

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
CMTF	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		
AIRB	Tractor Available in Tool String	NO
BHS	RST Air Borehole	No
BHT	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.	4 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.	4 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	DB0	
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	1.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	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	7763	FT
TDD	Total Depth - Driller	7854.00	FT
TDL	Total Depth - Logger	7763.00	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: RST_SIGMA_S5_REP Vertical Scale: 5" per 100' Graphics File Created: 29-Apr-2013 00:46

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_101LUP	FN:99	PRODUCER	28-Apr-2013 22:09	5527.5 FT	5213.5 FT
DEFAULT	SCMT_RST_PSP_106PUP	FN:104	PRODUCER	29-Apr-2013 00:39	7767.5 FT	-26.5 FT

Output DLIS Files

DEFAULT	SCMT_RST_PSP_107PUP	FN:105	PRODUCER	29-Apr-2013 00:46
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Schlumberger

PBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC
Field: MAMM CREEK
Well: SHIDELER 30-3A (O19EB)
Run date: 28-Apr-2013

Tool: PSP
Sub Type: PBMS
Sensor: GR

PBMS Gamma Ray
Sonde Serial NB
Sensor Serial NB
Calib Date ddmmyy

RESISTORS FOR GR SENSOR N.33223, TOOL PBMS-BA0928. SENSOR S/N:
33223
090800

Matrix Size 12
Coeff CRC CFE2

GR HV Rt

Rt**0

Rt**1

Rt**0

+.182000000000e+04

+.332000000000e+04

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: SHIDELER 30-3A (O19EB)

Run date: 28-Apr-2013

Tool:

PSP

Sub Type:

PBMS

Sensor:

WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB

COEFFICIENTS FOR RTD THERMOMETER PBMS-B.928 S/N:

Sensor Serial NB

928

Calib Date ddmmyy

280612

Matrix Size

16

Coeff CRC

A24E

WTemp Coeff

Tt**0

Tt**1

Tt**2

Tt**0

-.391987973189E+03

+.191346892512E+03

-.440920753451E+02

Tt**3

Tt**4

Tt**5

Tt**0

+.957191300908E+01

-.711421725686E+00

0.0

Client: ENCANA OIL & GAS (USA) INC

Tool:

PSP

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR CQG PBMS-B.928 S/N:

928

280612

66

9DC3

Pres Coeff

	Fb**0	Fb**1	Fb**2
Fc**0	+.714463802232E+04	+.183434658655E-01	-.156620073569E-06
Fc**1	-.100638308957E+01	-.119899563644E-04	-.912155899025E-10
Fc**2	+.936268101283E-06	+.423898071451E-10	+.958076371919E-15
Fc**3	+.185123362373E-11	+.203107925433E-15	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

	Fb**3	Fb**4	Fb**5
Fc**0	-.746577997611E-10	-.588773826860E-15	-.622250441458E-19
Fc**1	-.120636521092E-15	+.400325894750E-19	0.0
Fc**2	0.0	0.0	0.0
Fc**3	0.0	0.0	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

:

928

280612

66

283B

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+.117016867873E+03	-.284359629614E-03	+.604391180345E-08
Fb**1	-.598309140812E-02	+.182731130848E-07	+.160166486172E-12
Fb**2	-.307621454576E-07	+.300601550309E-12	+.311233548560E-17
Fb**3	-.419658736767E-12	+.117473708647E-16	0.0
Fb**4	0.0	0.0	0.0

Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0
	Fc**3	Fc**4	Fc**5
Fb**0	+1.114322792679E-12	+1.153807711176E-17	-7.36714260866E-21
Fb**1	-5.28037875456E-18	-2.20337637519E-21	0.0
Fb**2	0.0	0.0	0.0
Fb**3	0.0	0.0	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB
Sensor Serial NB
Calib Date ddmmyy
Matrix Size
Coeff CRC

:
928
280612
16
093F

Clock Freq Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+3.10874009898E+05	+2.88920923041E-02	+6.97940727038E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-6.57432344763E-10	-4.12920638782E-15	+2.13369826099E-20

PBMS Quartz Gauge type F

Sonde Serial NB
Sensor Serial NB
Calib Date ddmmyy
Matrix Size
Coeff CRC

:
928
280612
16
8419

Clock Temp Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+1.115369519827E+03	-5.65338877075E-02	-3.33717531829E-07
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-1.24387135327E-12	+7.13102327208E-16	-3.16084316842E-20

Well: SHIDLER 30-3A (019LB)
Field: MAMM CREEK
County: GARFIELD
State: COLORADO

RESERVOIR SATURATION LOG
SIGMA MODE
GR-CCL