

Company: Expedition Water Solutions LLC

Well: EWS 4

Field: Wattenburg

County: Weld State: Colorado

MicroLog

Weld	Location:	NE SE 18-2N-63W	Elev.:	K.B.	4869.00 ft
Wattenburg	Permanent Datum:			G.L.	4856.00 ft
NE SE 18-2N-63W	Log Measured From:			D.F.	4869.00 ft
EWS 4	Drilling Measured From:				
Expedition Water Solutions LLC	API Serial No.	Section:	Township:	Range:	
	05-123-44167	18	2N	63W	

Logging Date	22-Feb-2017		
Run Number	ONE		
Depth Driller	10204.00 ft		
Schlumberger Depth	10201.00 ft		
Bottom Log Interval	10204.00 ft		
Top Log Interval	8548.00 ft		
Casing Driller Size @ Depth	7 in @ 8547.00 ft		
Casing Schlumberger	8552 ft		
Bit Size	6.125 in		
Type Fluid In Hole	Fresh Water		
Density	9.1 lbm/gal	43 s	
Fluid Loss	5.2 cm3	8.8	
MUD	Active Tank		
Source of Sample			
RM @ Meas Temp	0.5 ohm.m @ 68 degF		
RMF @ Meas Temp	0.48 ohm.m @ 68 degF		
RMC @ Meas Temp	0.36 ohm.m @ 68 degF		
Source RMF	Calculated	Calculated	
RM @ BHT	0.17 @ 212	0.16 @ 212	
Max Recorded Temperatures	258 degF		
Circulation Stopped	21-Feb-2017	21:30:00	
Logger on Bottom	22-Feb-2017	05:35:00	
Unit Number	Location:	OSL-C-AR2 2161	Ft. Morgan
Recorded By		L. Await	
Witnessed By		Jeremiah Demuth	

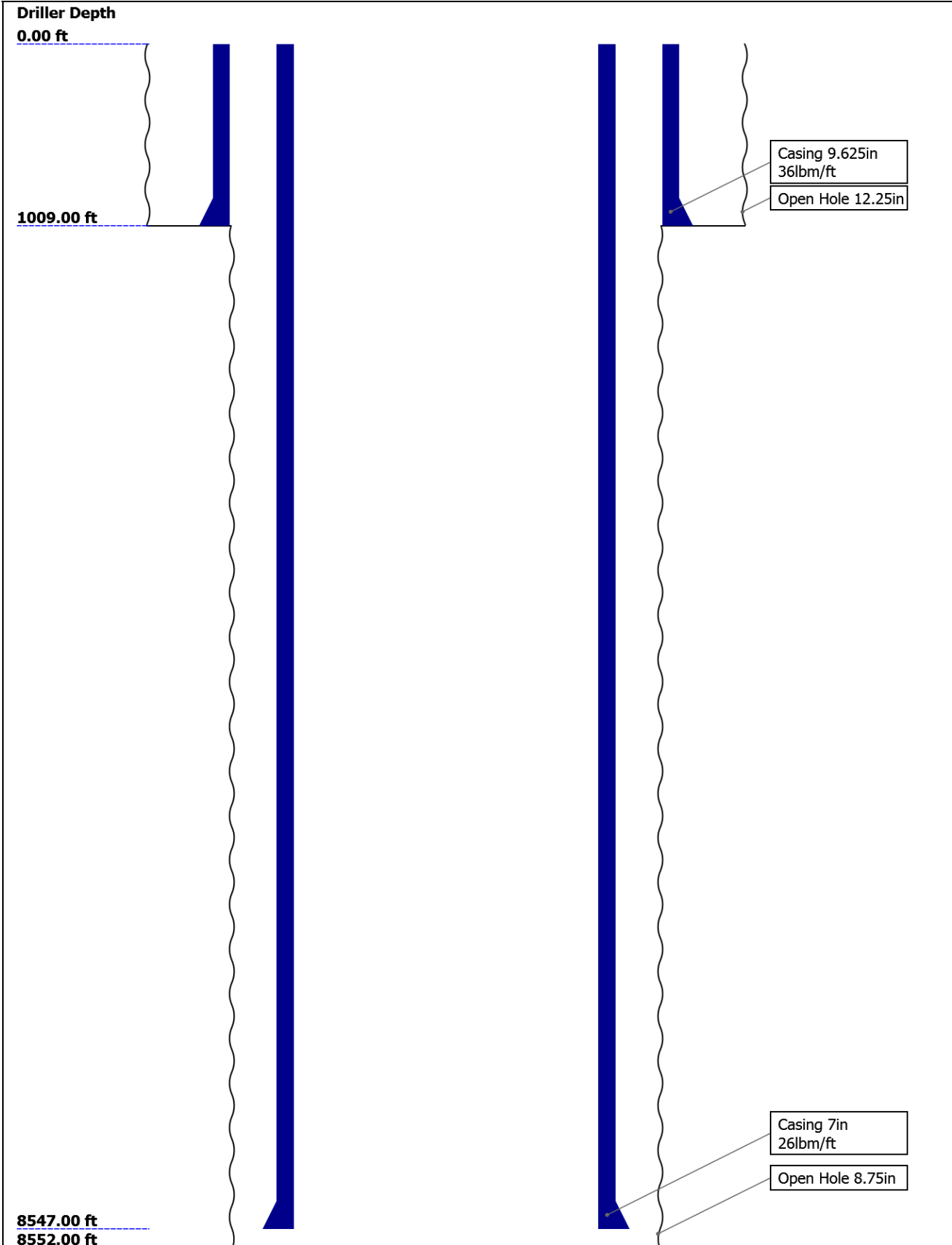
Disclaimer

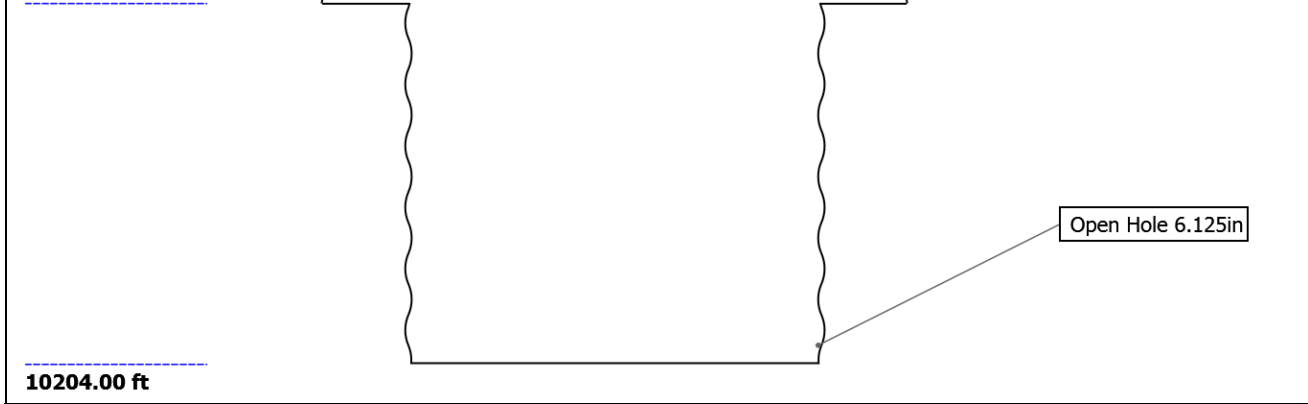
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Well Sketch





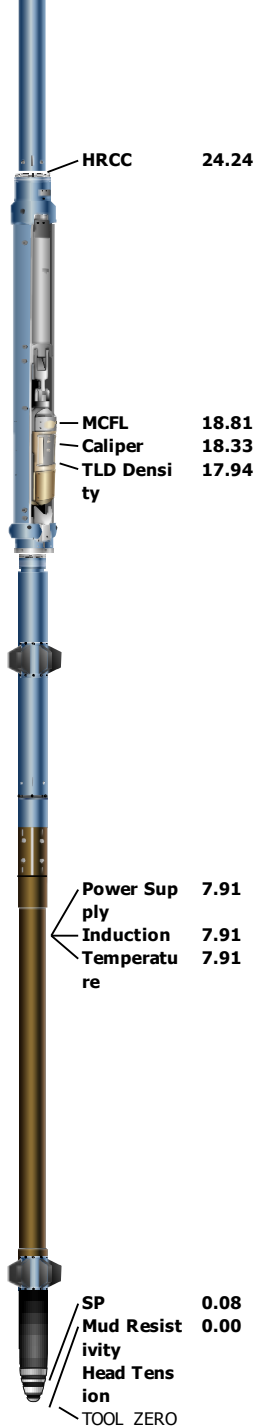
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	12.25	8.75	6.125			
Top Driller (ft)	0	1009	8552			
Top Logger (ft)	0	1009	8552			
Bottom Driller (ft)	1009	8552	10204			
Bottom Logger (ft)	1009	8552	10201			
Casing						
Size (in)	9.625	7				
Weight (lbm/ft)	36	26				
Inner Diameter (in)	8.921	6.276				
Grade	N/A	N/A				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	1009	8547				
Bottom Logger (ft)	1009	8552				

Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks	
Equip name	Length	MP name	Offset	Thank you for choosing Schlumberger!	
LEH-QT	43.57			Run ONE: Log ran for open hole formation evaluation	
				Run ONE: Tool ran eccentralized as per tool sketch	
DTC-H	40.65	CTEM HV	39.75 0.00	Run ONE: Sandstone Matrix of 2.65g/cc used for TD-9800 & 8780 - Surface as per client req	
		TelStatus	37.65	Run ONE: Limestone Matrix of 2.71g/cc used for 9800-8780 as per client request.	
		ToolStatus	37.65	Run TWO: Log ran for casing and cement evaluation	
		Temperature	37.62	Run TWO: Tool ran centralized with two knuckles as per tool sketch	
HGNS-H	37.65	GR	36.91		
HGNH					
NPV-N					
NSR-F:5069					
HMCA-H					
HGNS-H					
HACCZ-H					
		CNL Porosity	30.57		
		HGNS	28.24		
		HMCA	28.24		
		Accelerometer	0.00		
HDPS-H	28.24				

HRMS-H
ECH-MEB
HRCC-H
HRMS-H
Backscatter
GPV-Q
Short Spacing
:27786
Long Spacing
GSR-J:5471
HRGD-H:4899



Lengths are in ft
Maximum Outer Diameter = 9.000 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

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

Serial Number

Length

Conveyance Type

Rig Type

7-46NT-XS

24000.00 ft

Wireline

Ensign 121

ONE:Depth Control Parameters

Log Sequence

Rig Up Length At Surface

Rig Up Length At Bottom

Rig Up Length Correction

Stretch Correction

Tool Zero Check At Surface

First Log In the Well

Depth Control Remarks

ONE

Software Version

Acquisition System

Maxwell 2017 SP1

Version

7.1.82245.3100

Pass Summary

Run Name

Pass Objective

Direction

Top

Bottom

Start

Stop

DSC Mode

Depth Shift

Include Parallel Data

ONE

Log[3]:Up

Up

13.94 ft

10220.98 ft

22-Feb-2017 5:31:59 AM

22-Feb-2017 8:02:44 AM

ON

-0.03 ft

Yes

All depths are referenced to toolstring zero

Log

Company:Expedition Water Solutions LLC

Well:EWS 4

ONE: Log[3]:Up:S015

Description: MCFL processing for Platform Express

Format: Log (PEX MCFL Processing)

Index Scale: 5 in per 100 ft

Index Unit: ft

Index Type:

Measured Depth

Creation Date: 24-Feb-2017 09:20:51

TIME_1900 - Time Marked every 60.00 (s)

Stuck Tool Indicator, Total (STIT)

0 ft 50

Gamma Ray (ECGR) HGNS-H

0 gAPI 150

Caliper (HCAL) HDRS-H

6 in 16

Spontaneous Potential (SP) AIT-M

-80 mV 20

ToolDrag

Cable Tension (TENS)

10000 lbf

-20

-10

Mud Cake

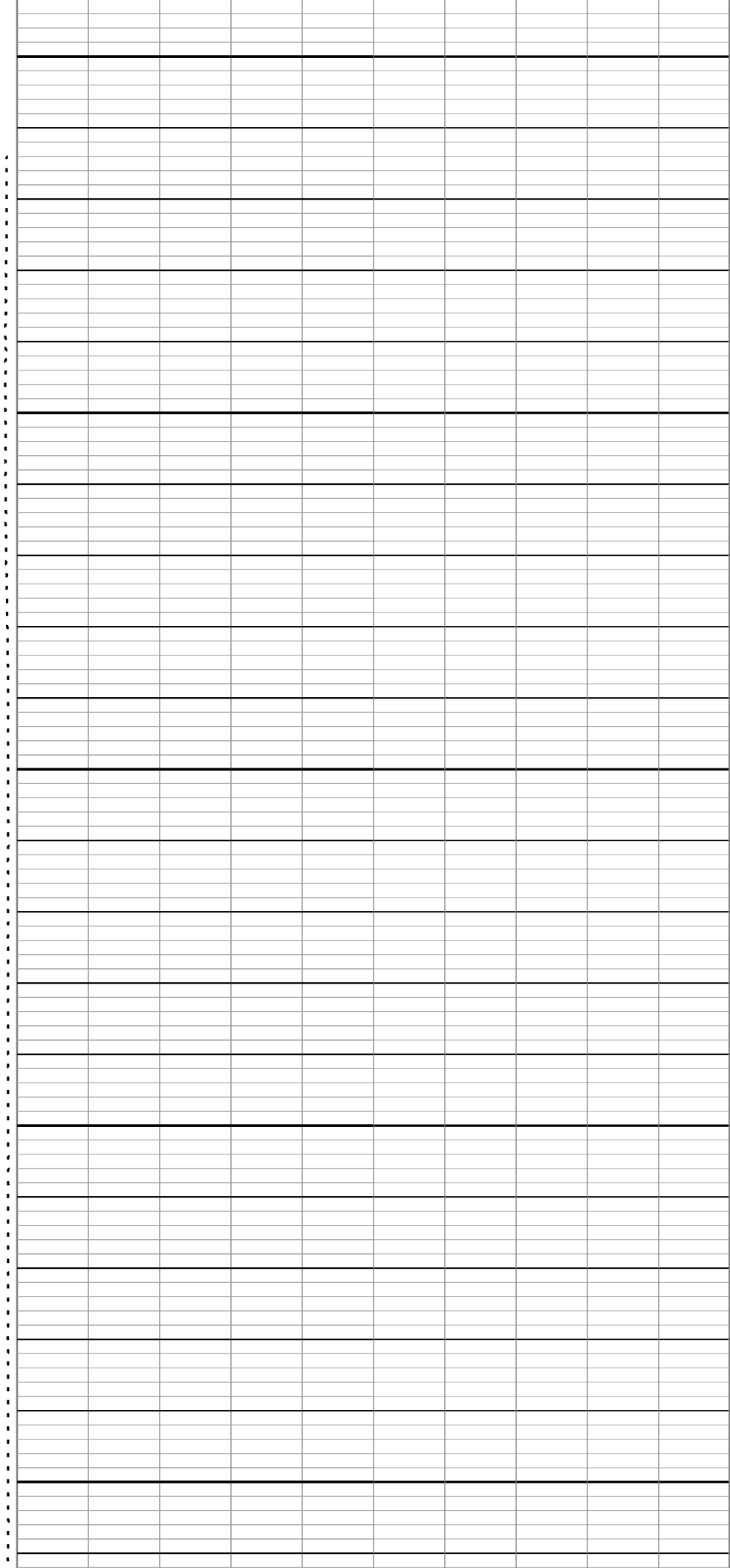
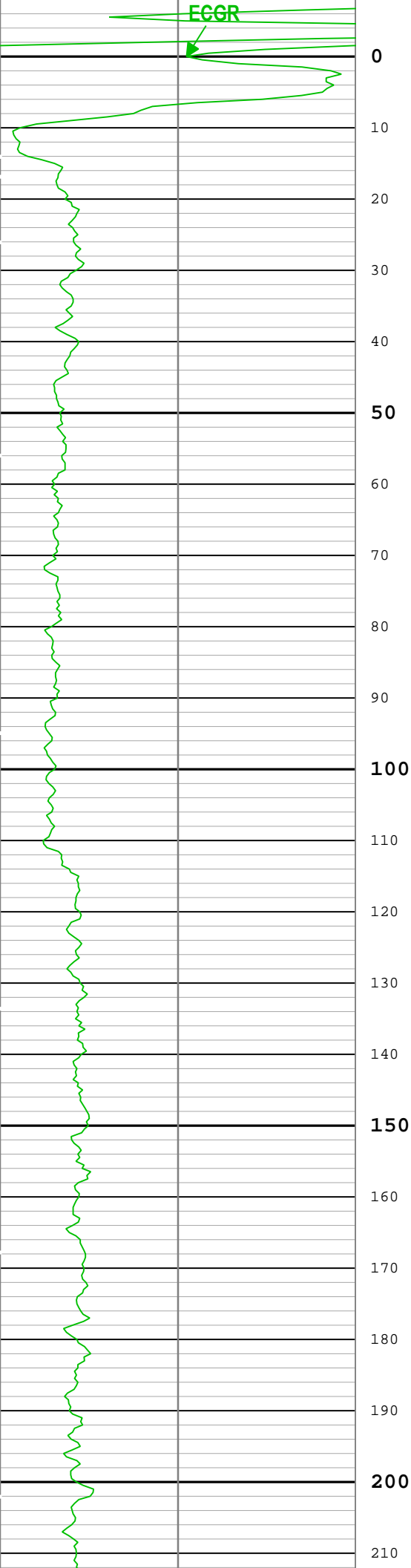
Perm From SMIN to SMNO

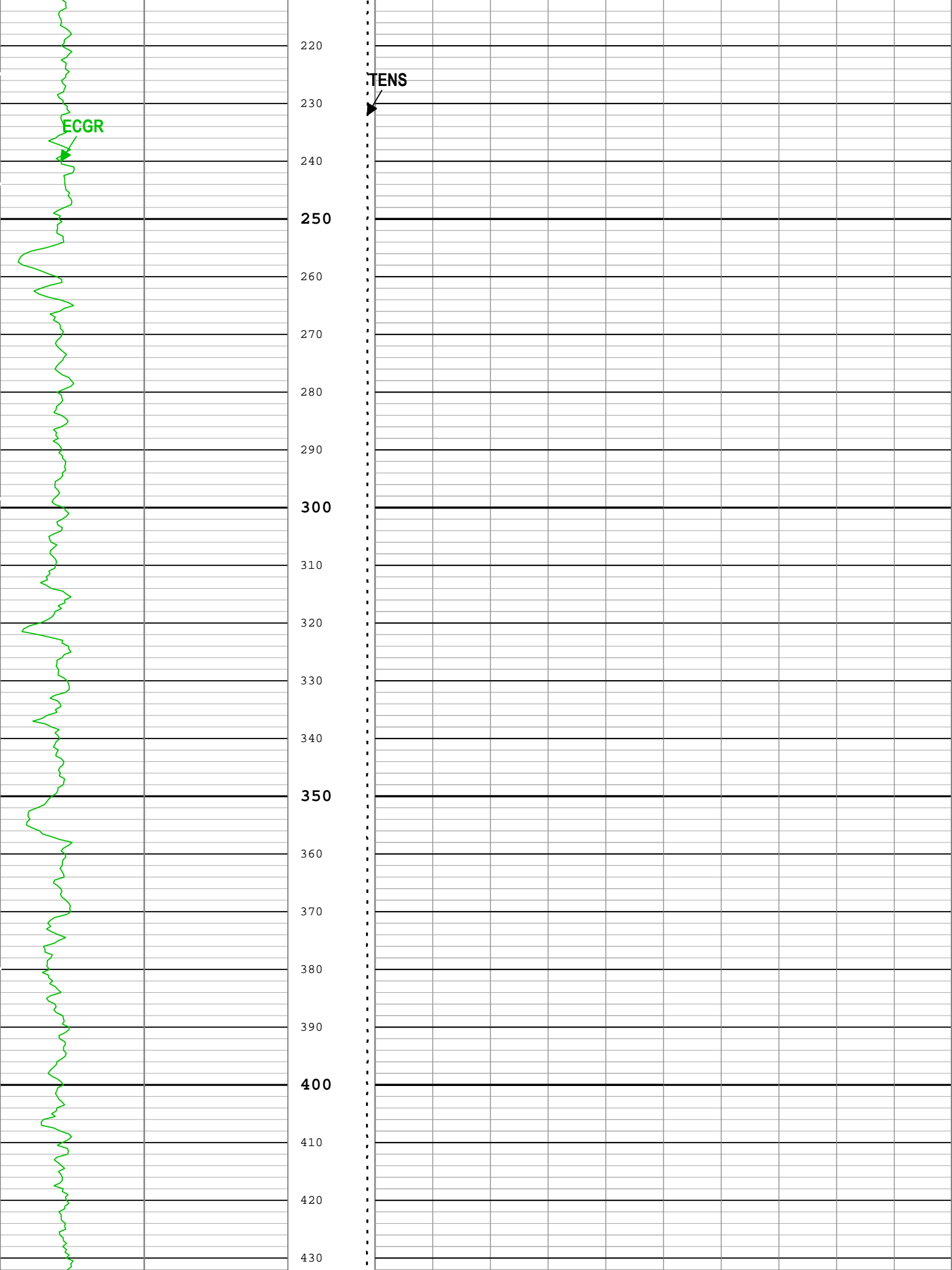
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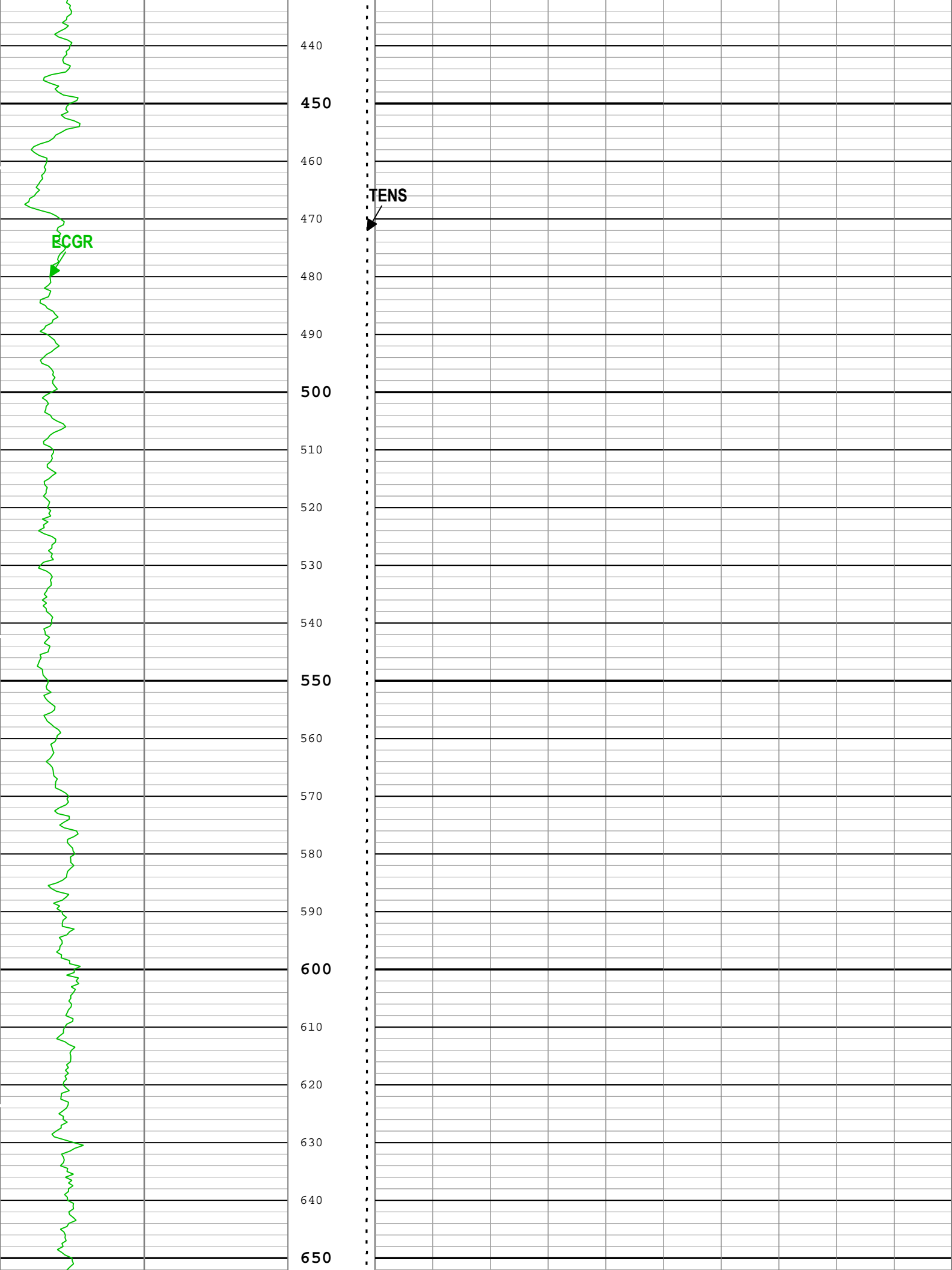
0 ohm.m 100

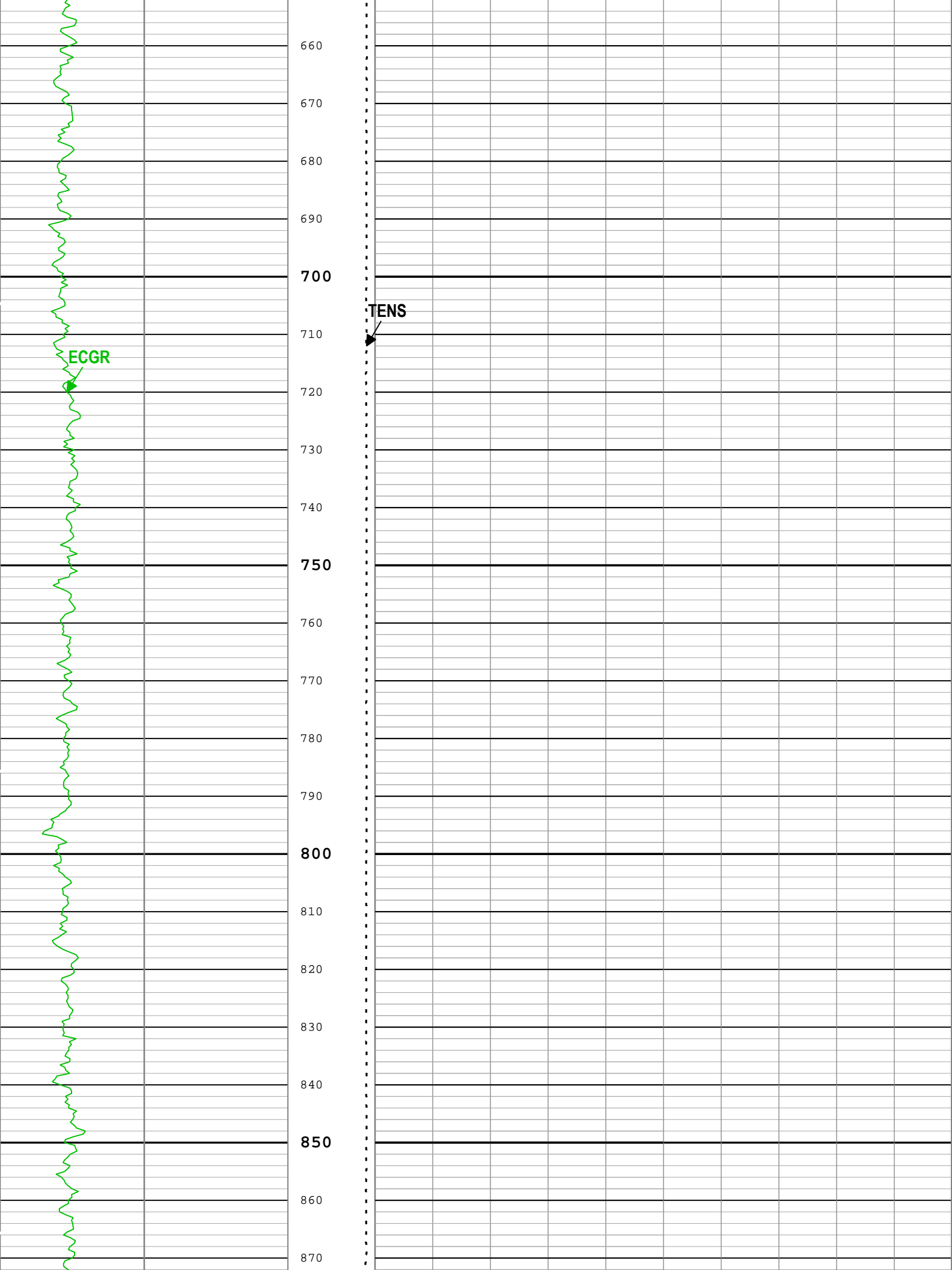
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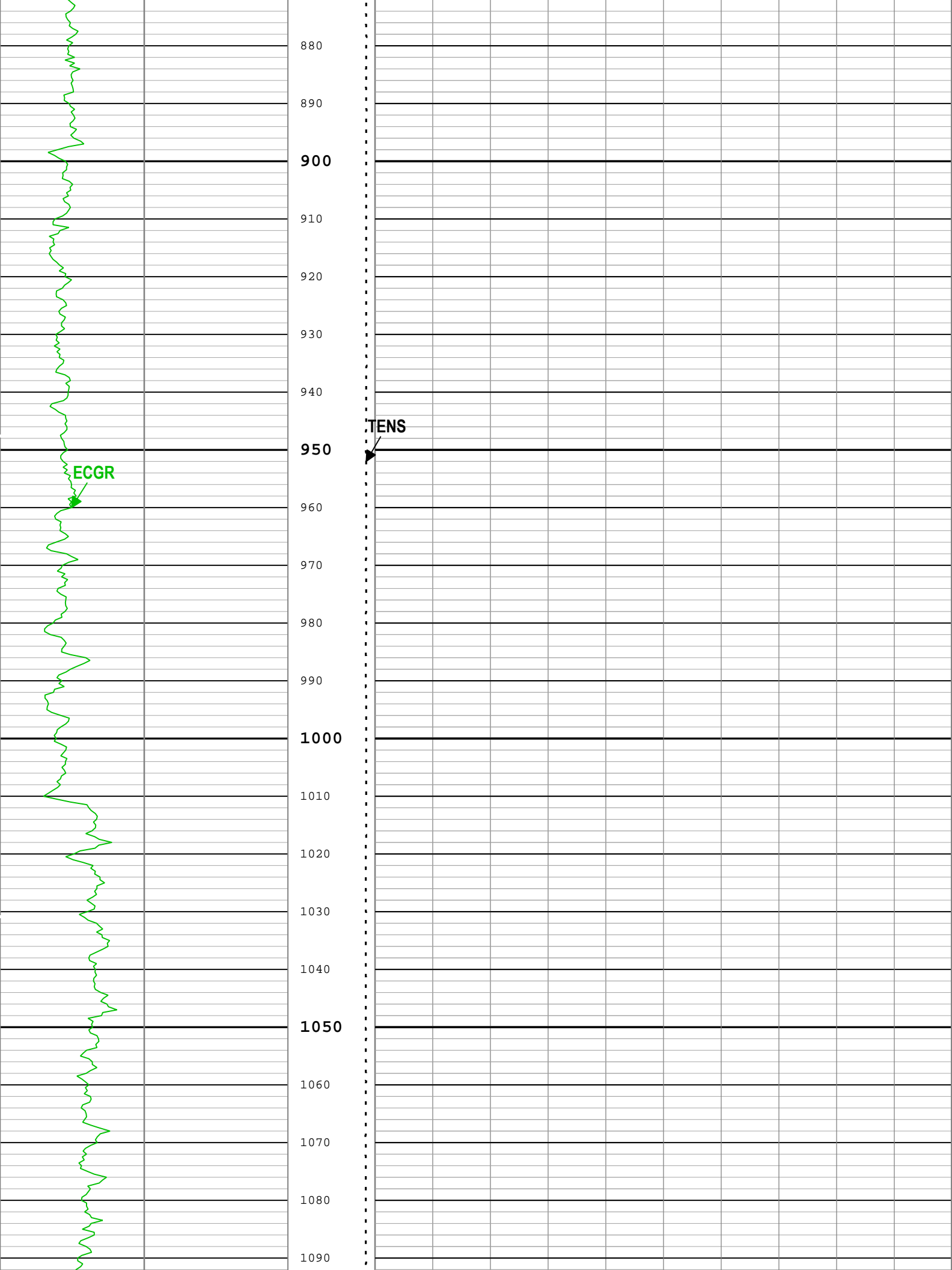
0 ohm.m 100

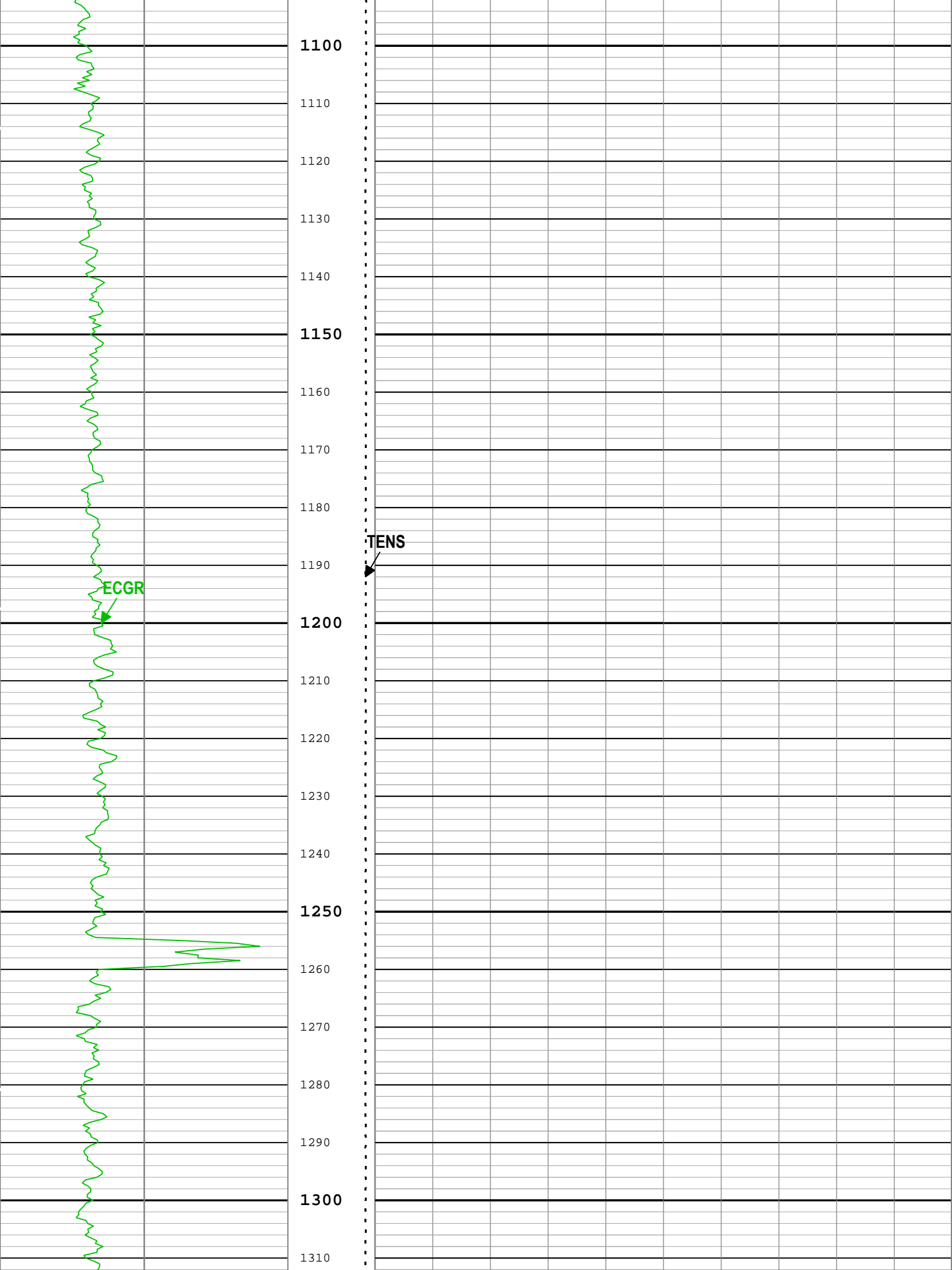


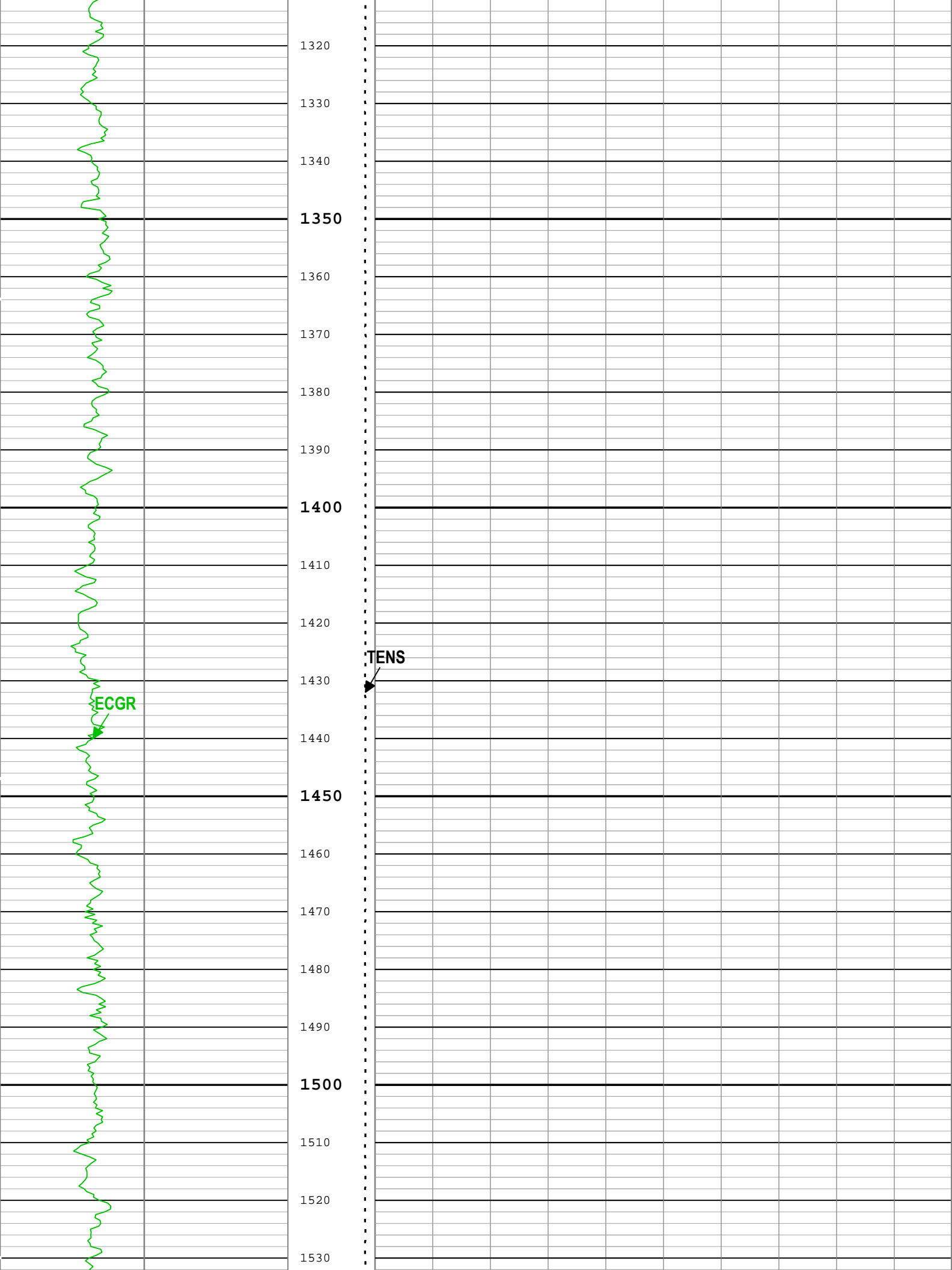


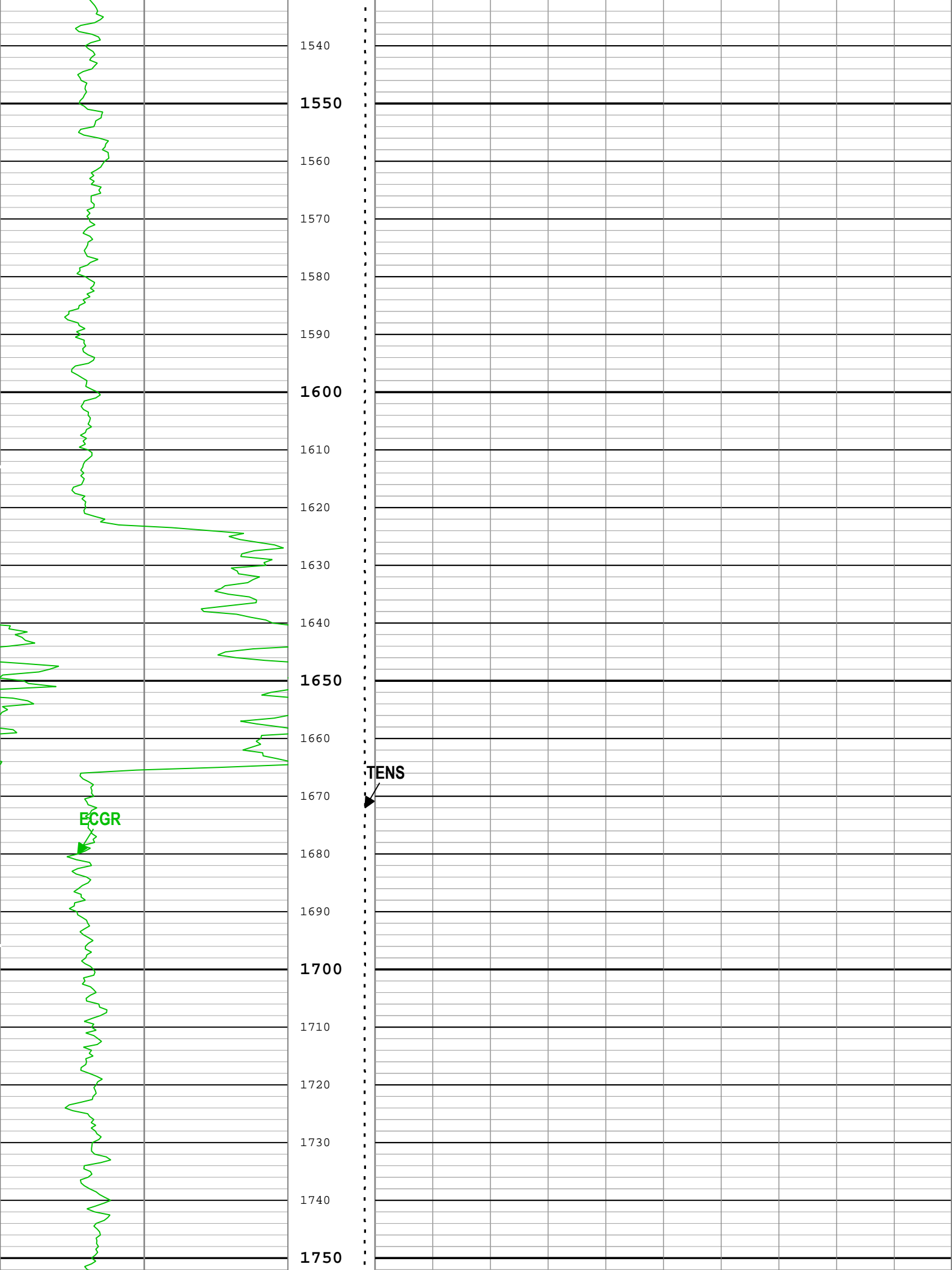


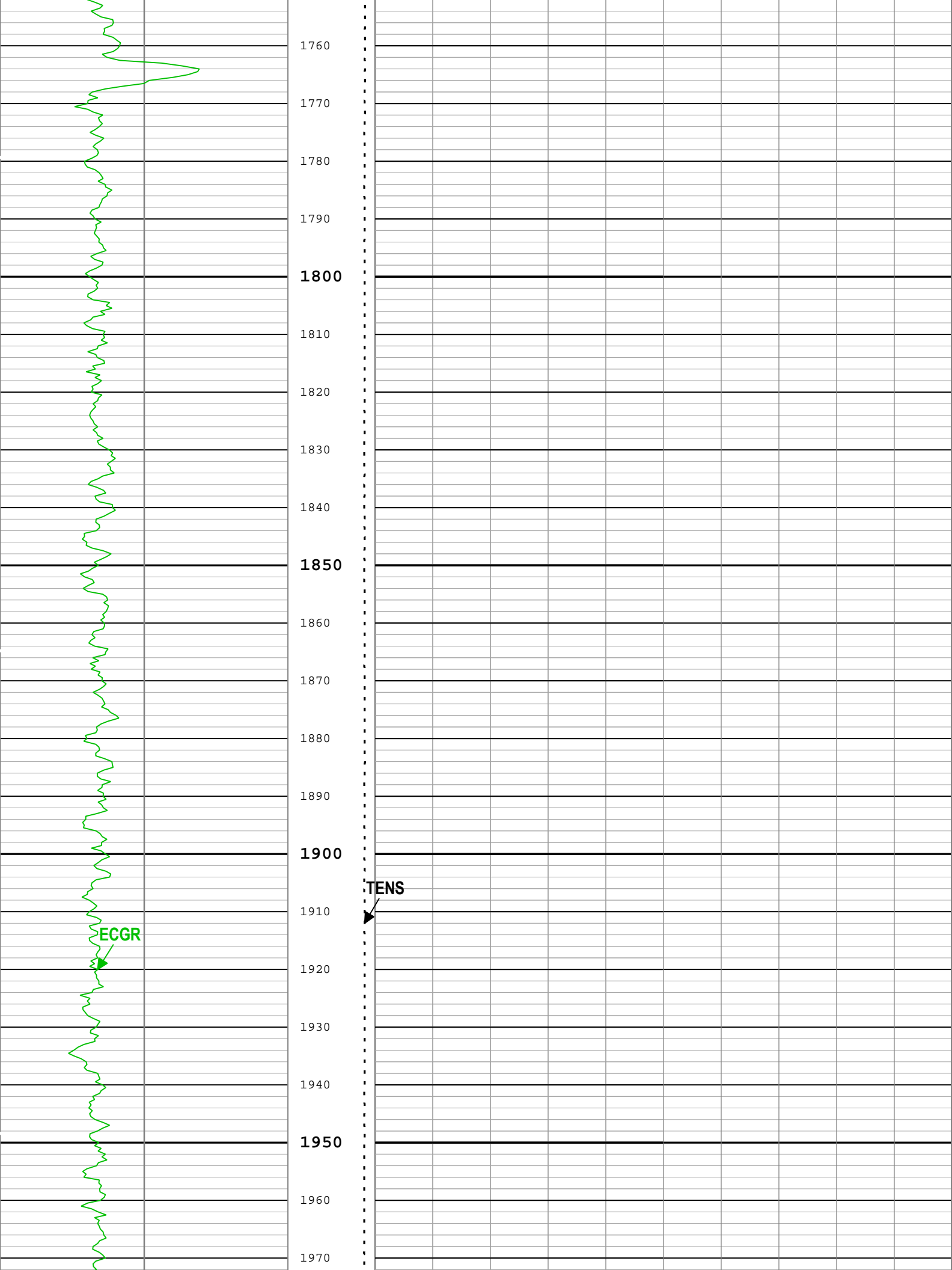


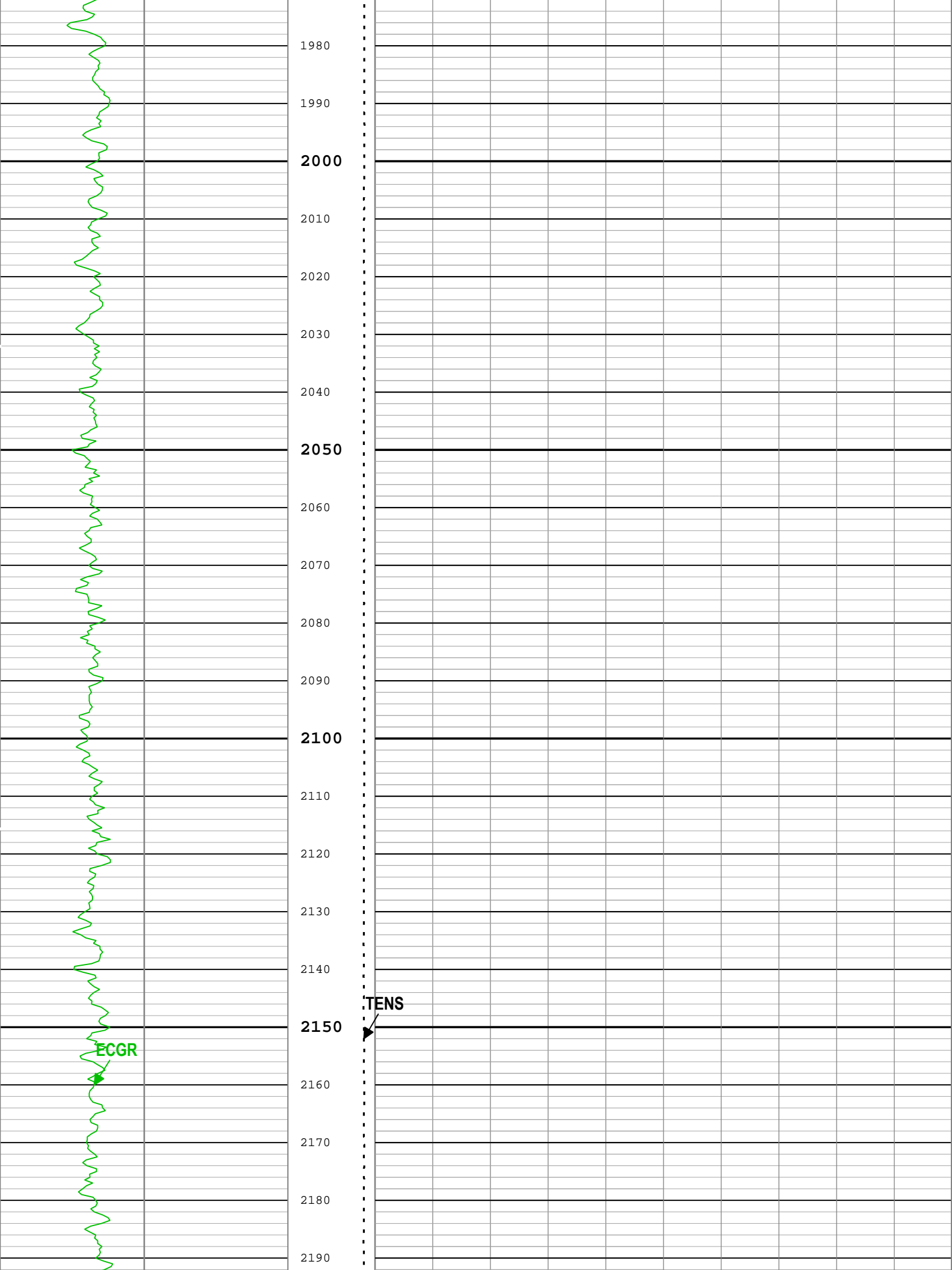


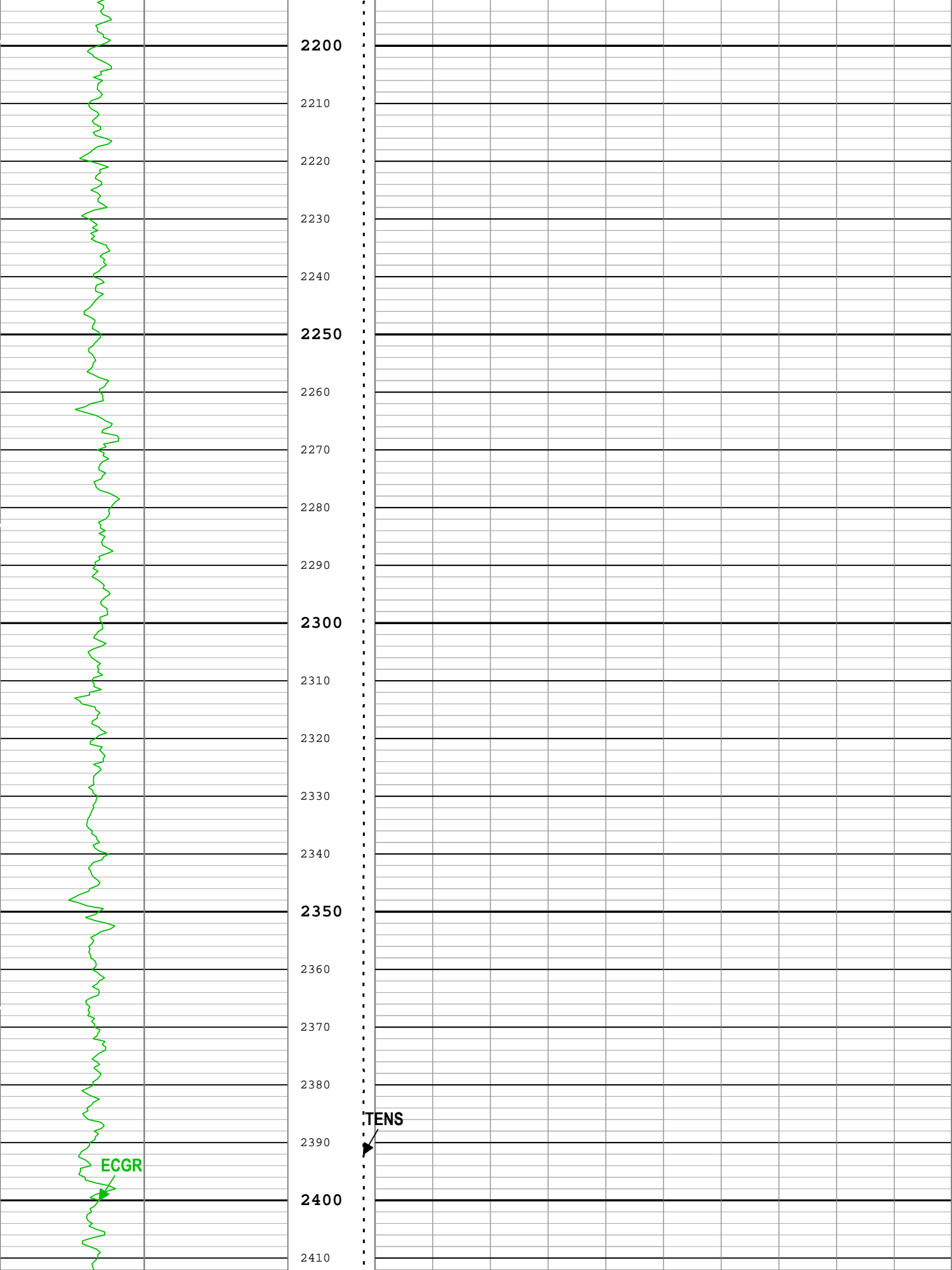


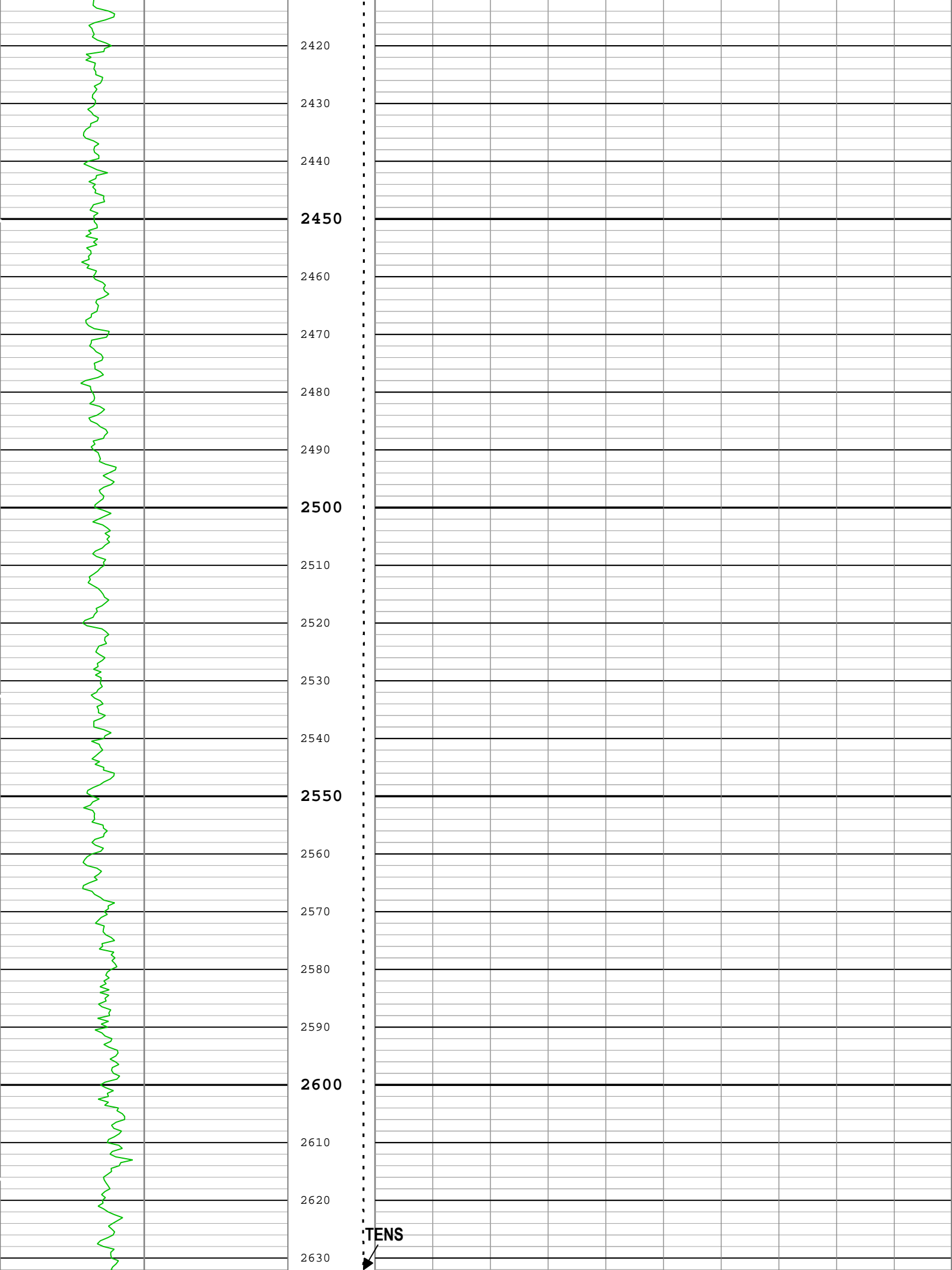


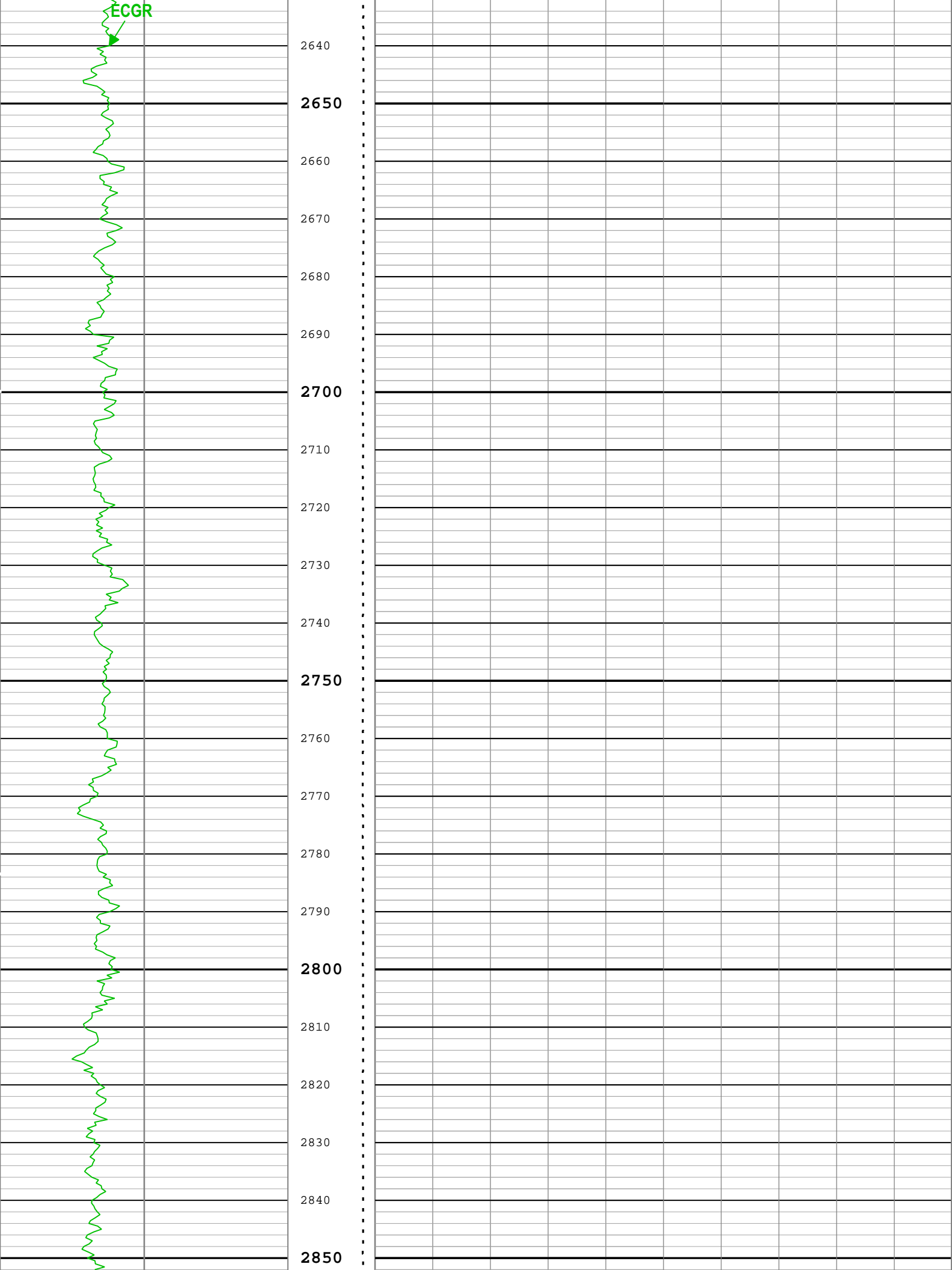


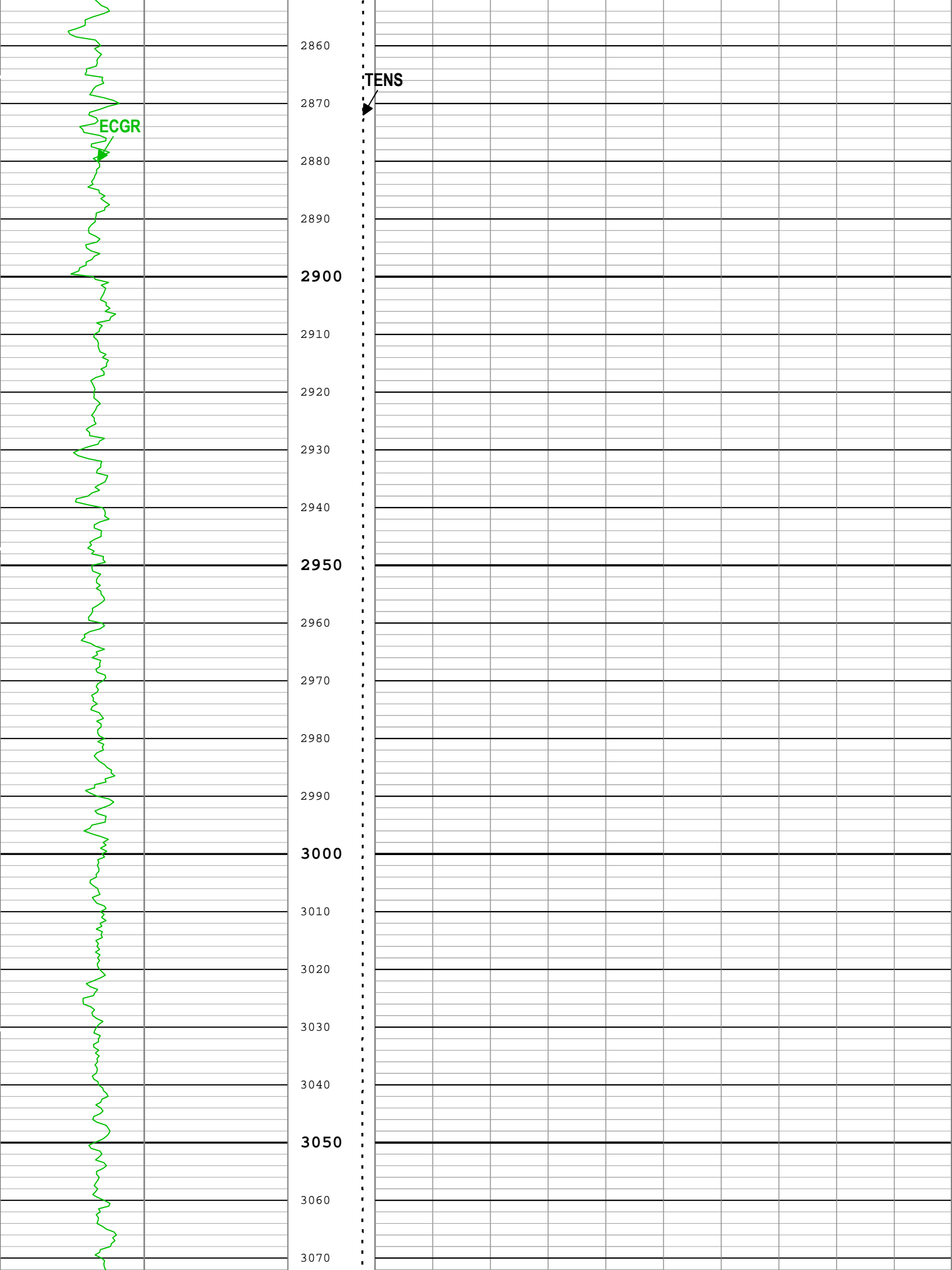


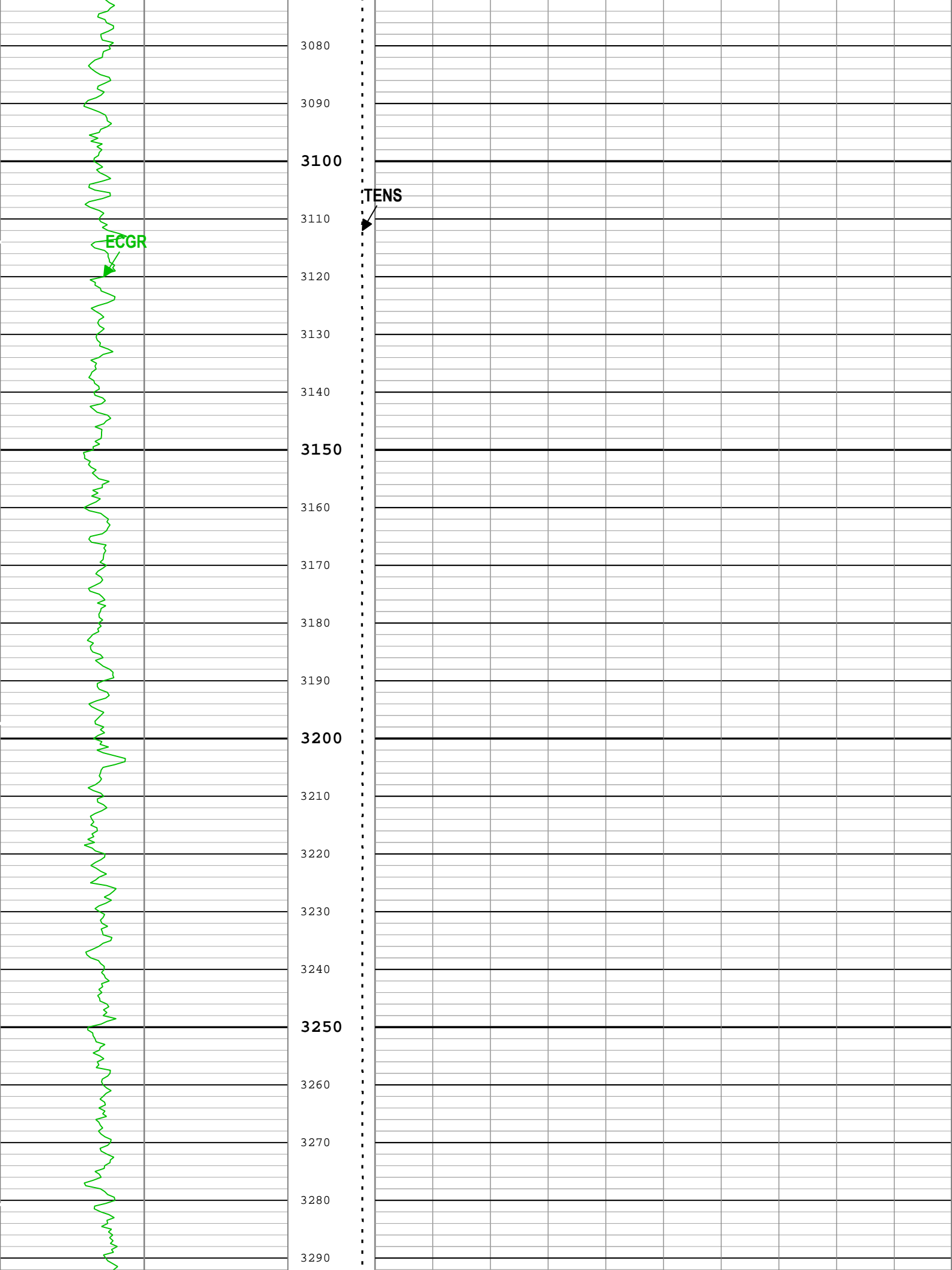


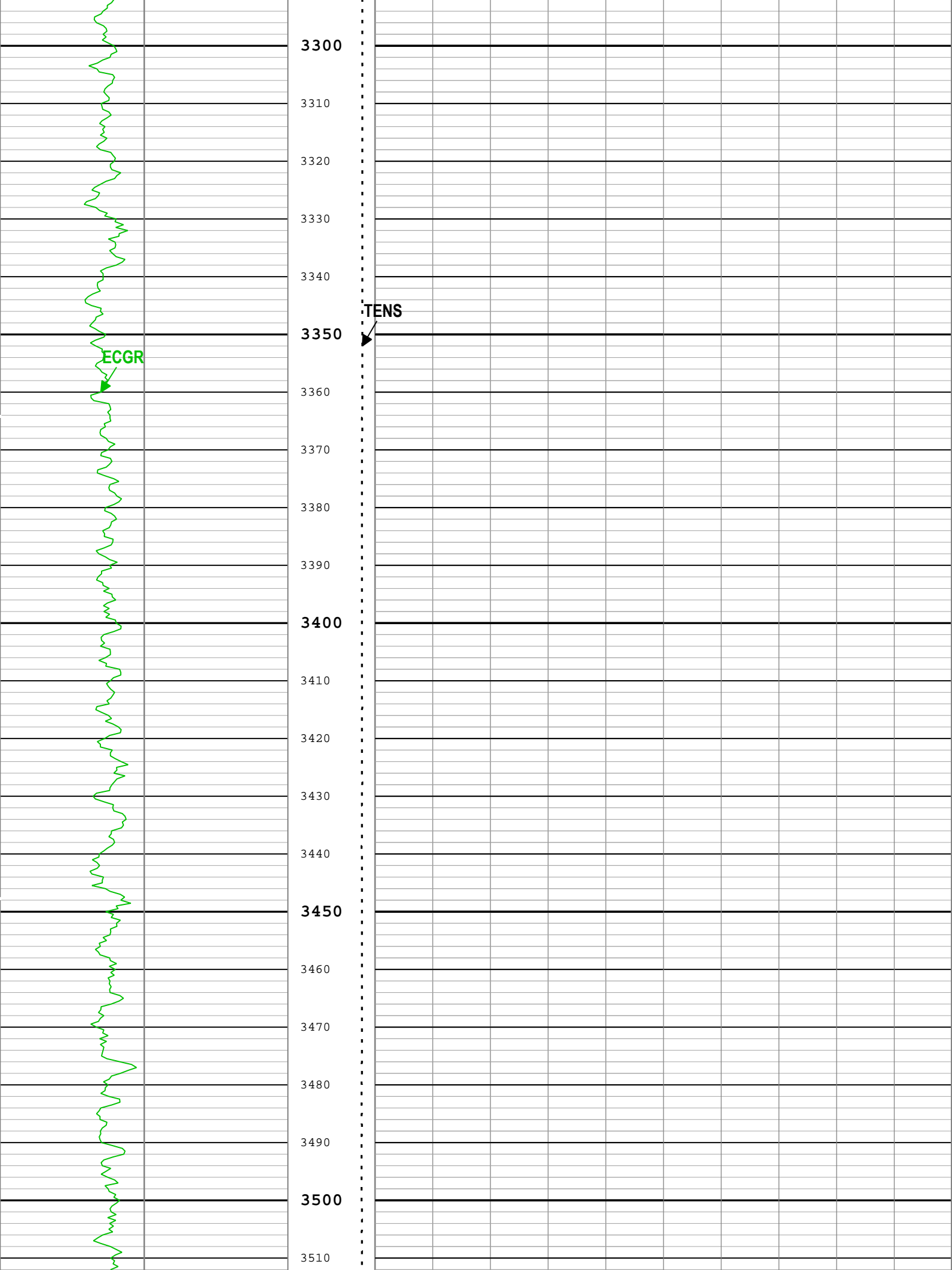


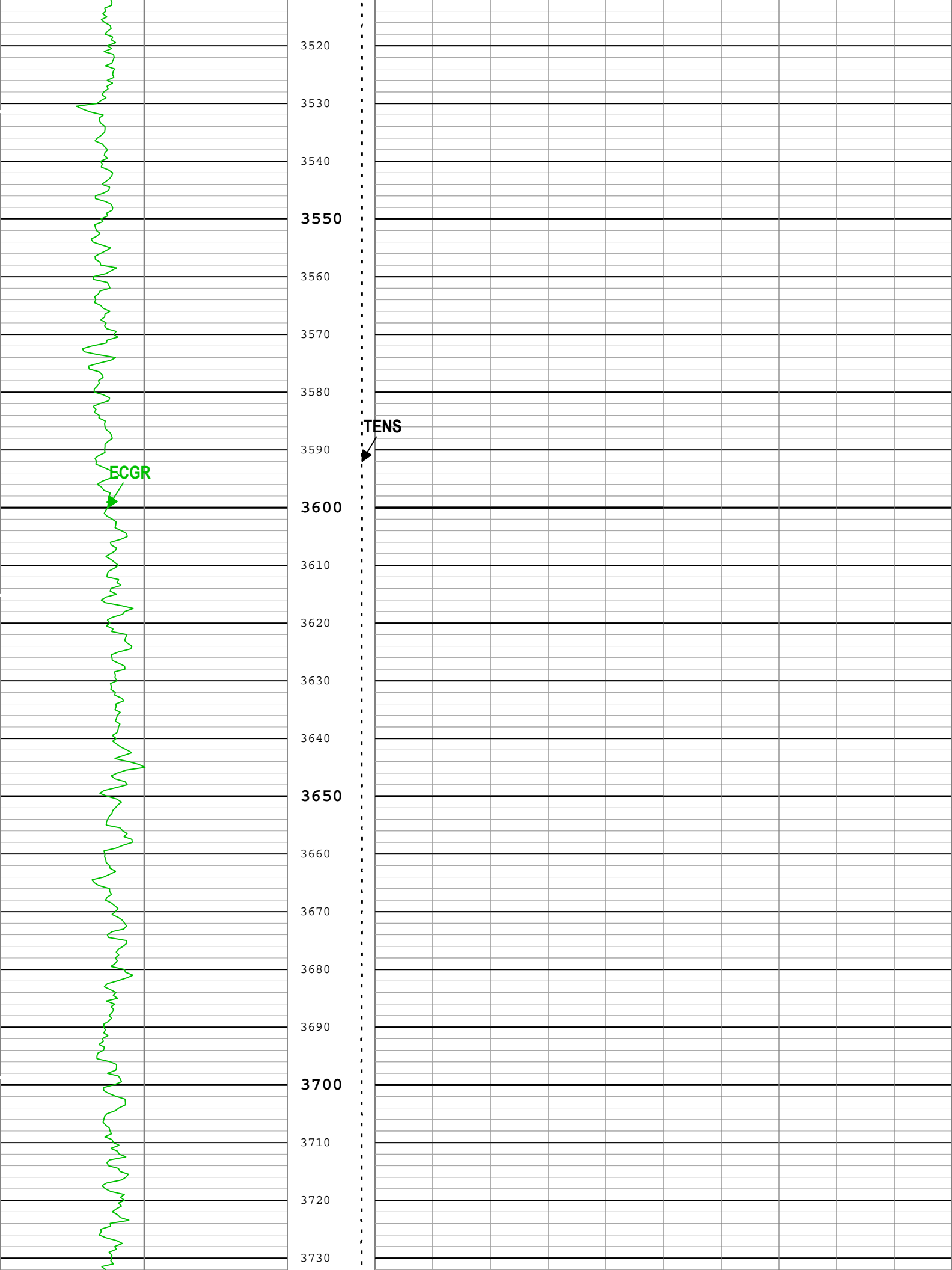


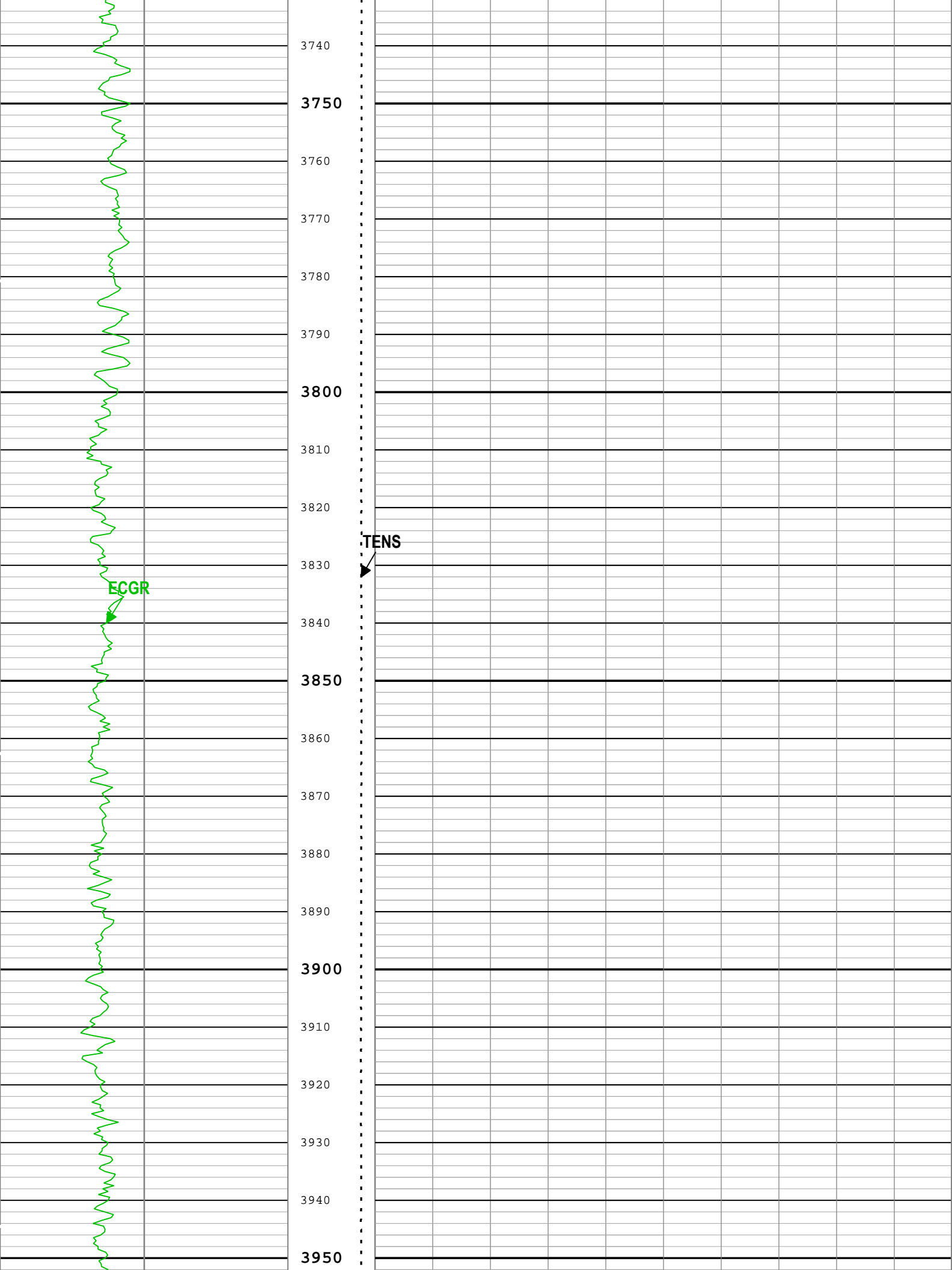


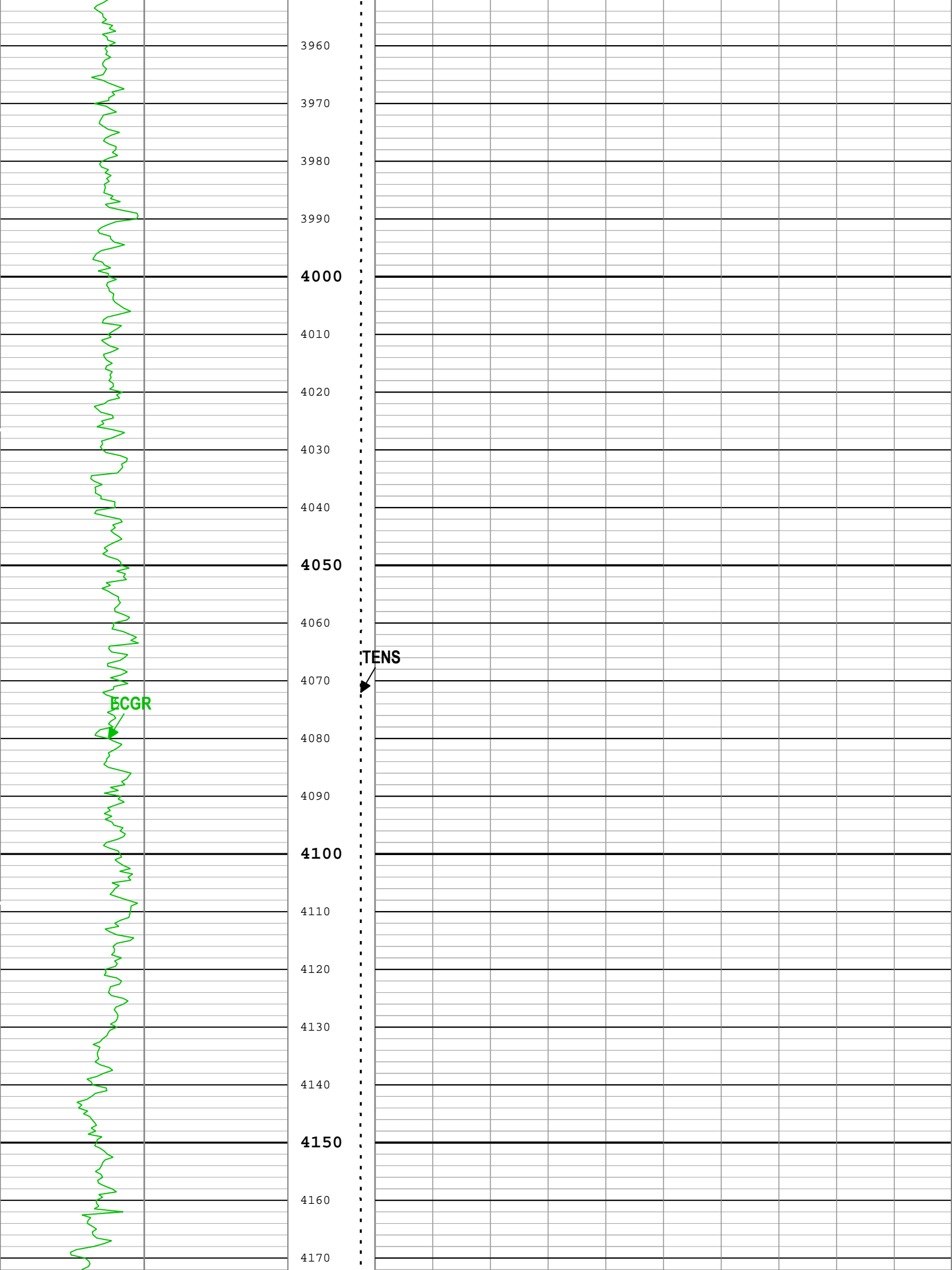


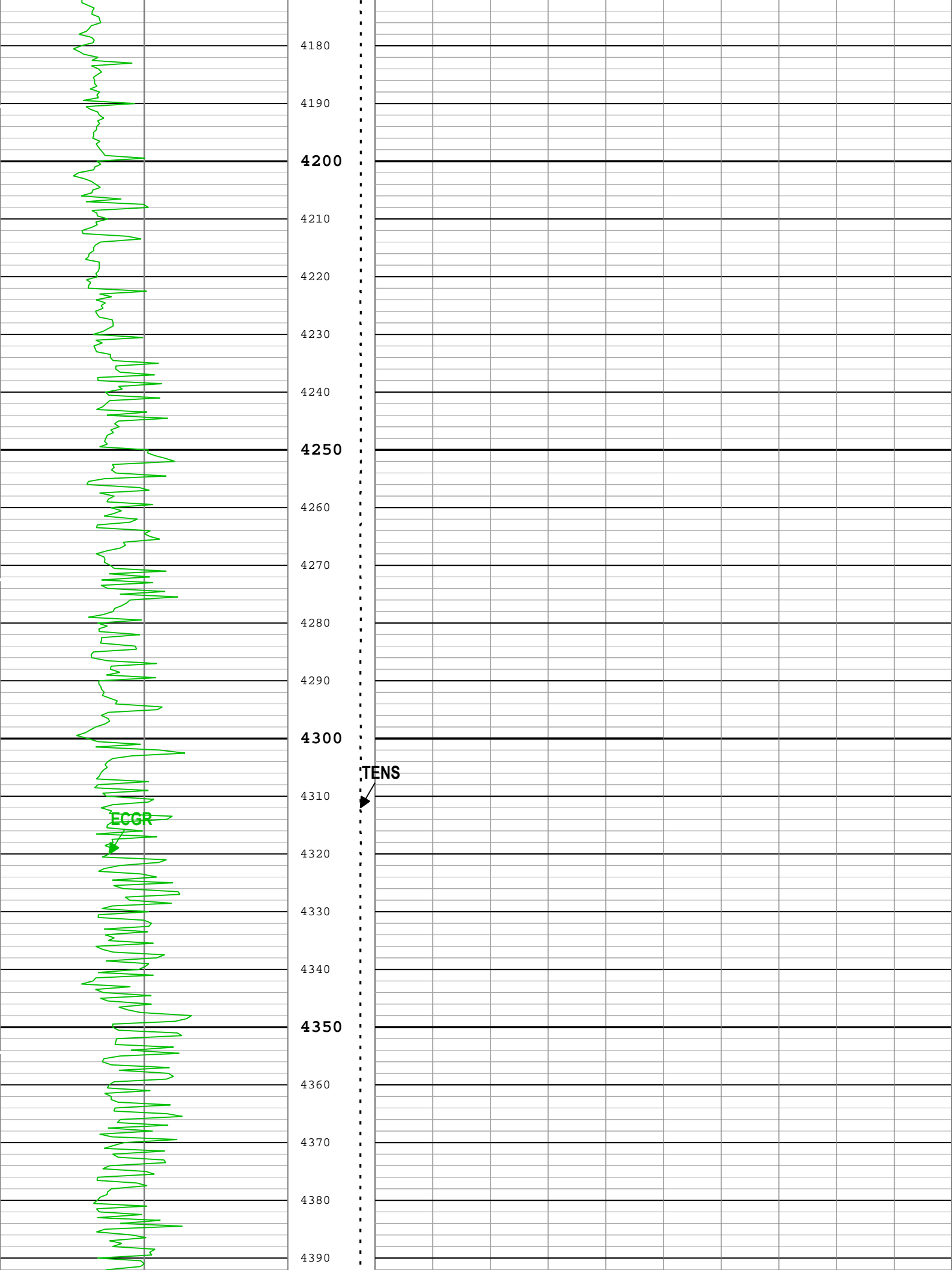


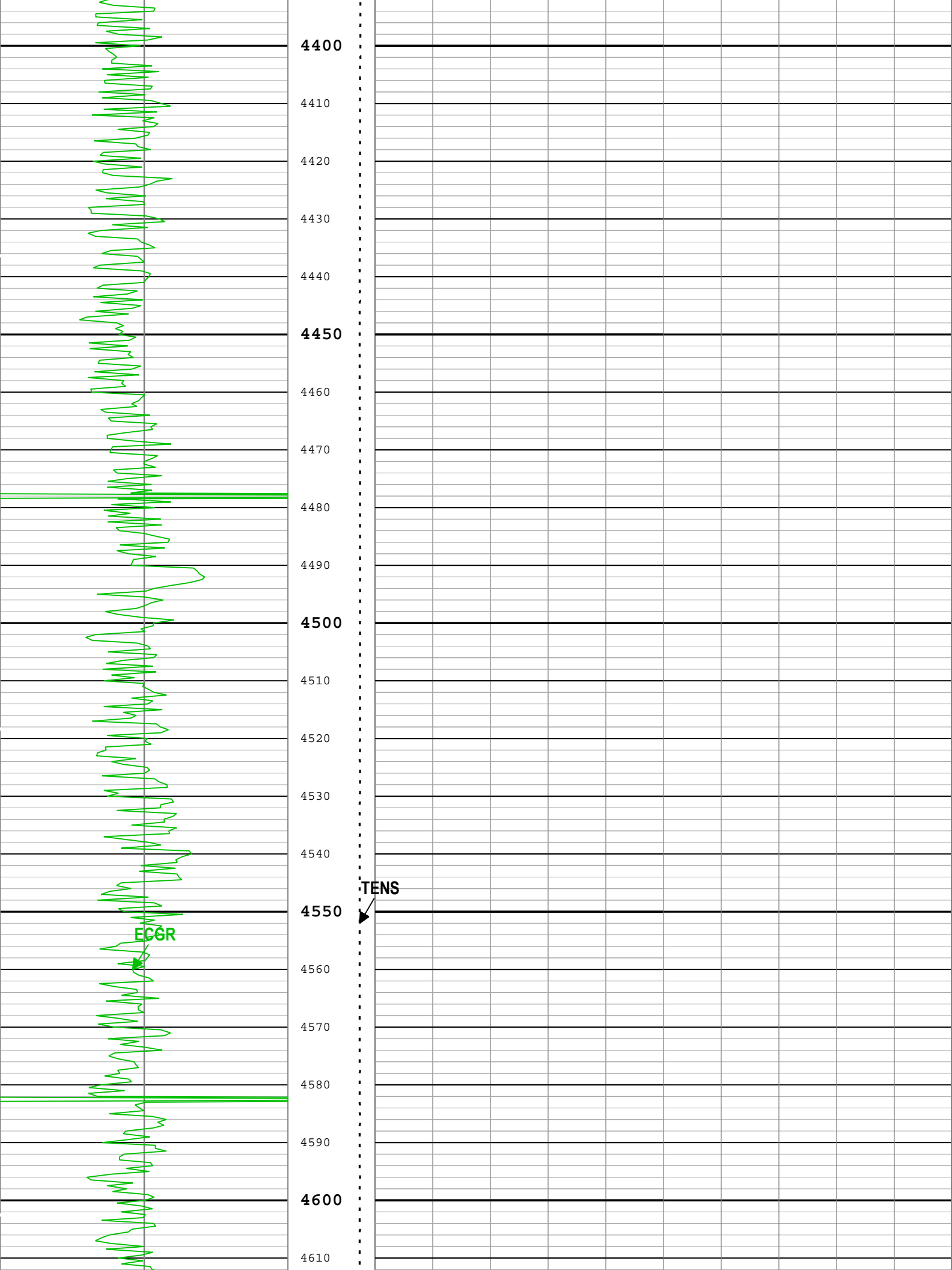


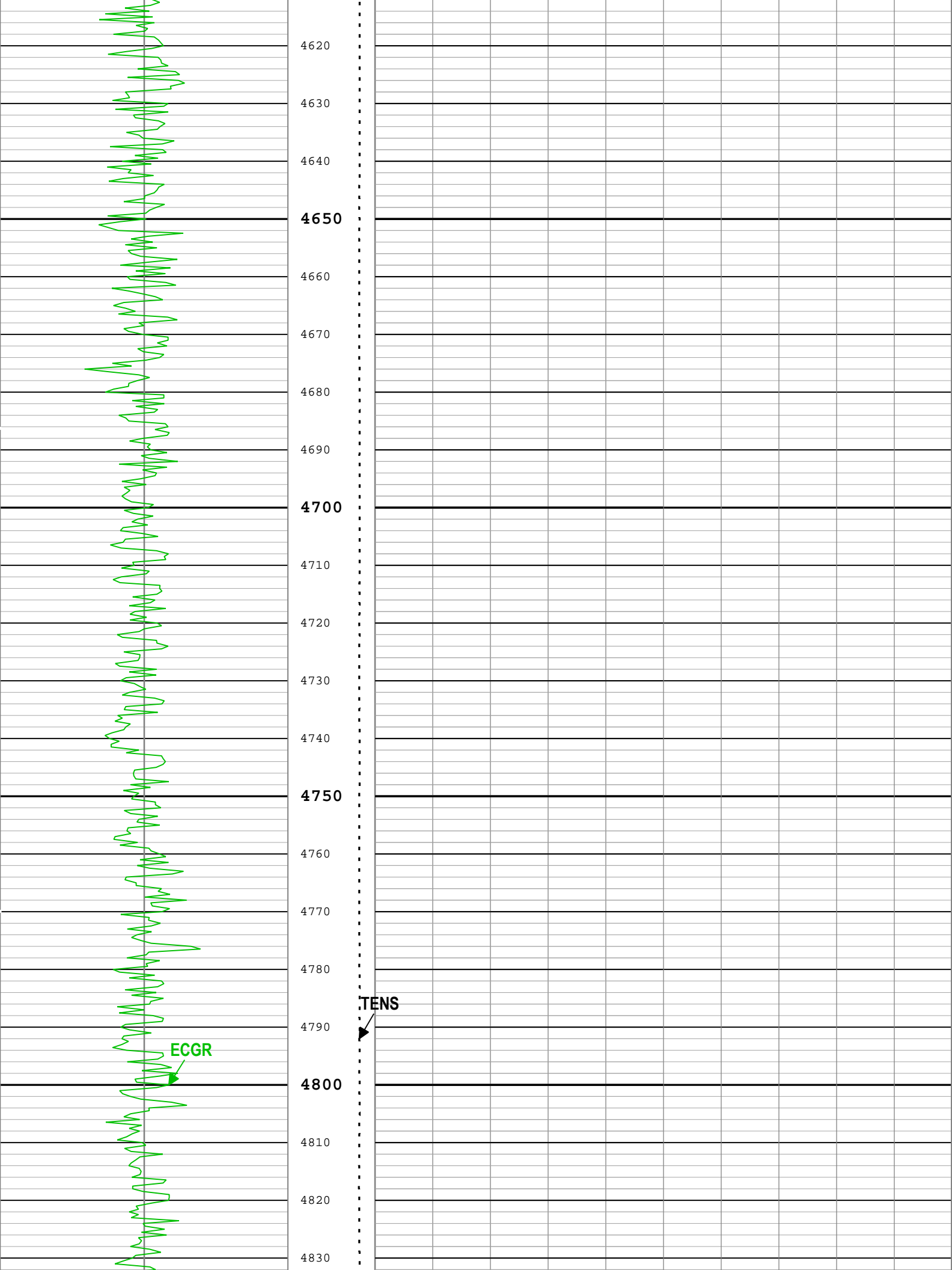


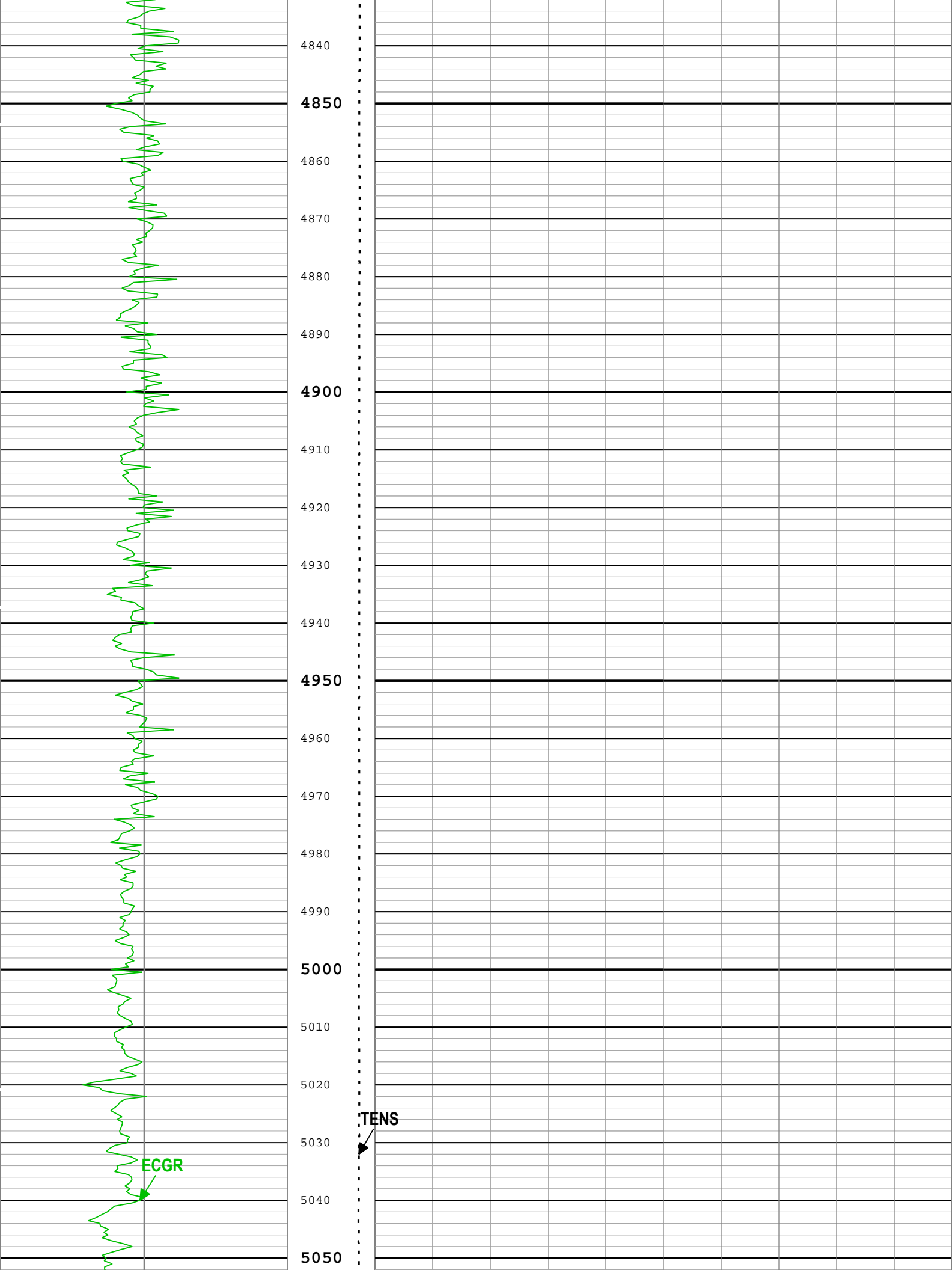


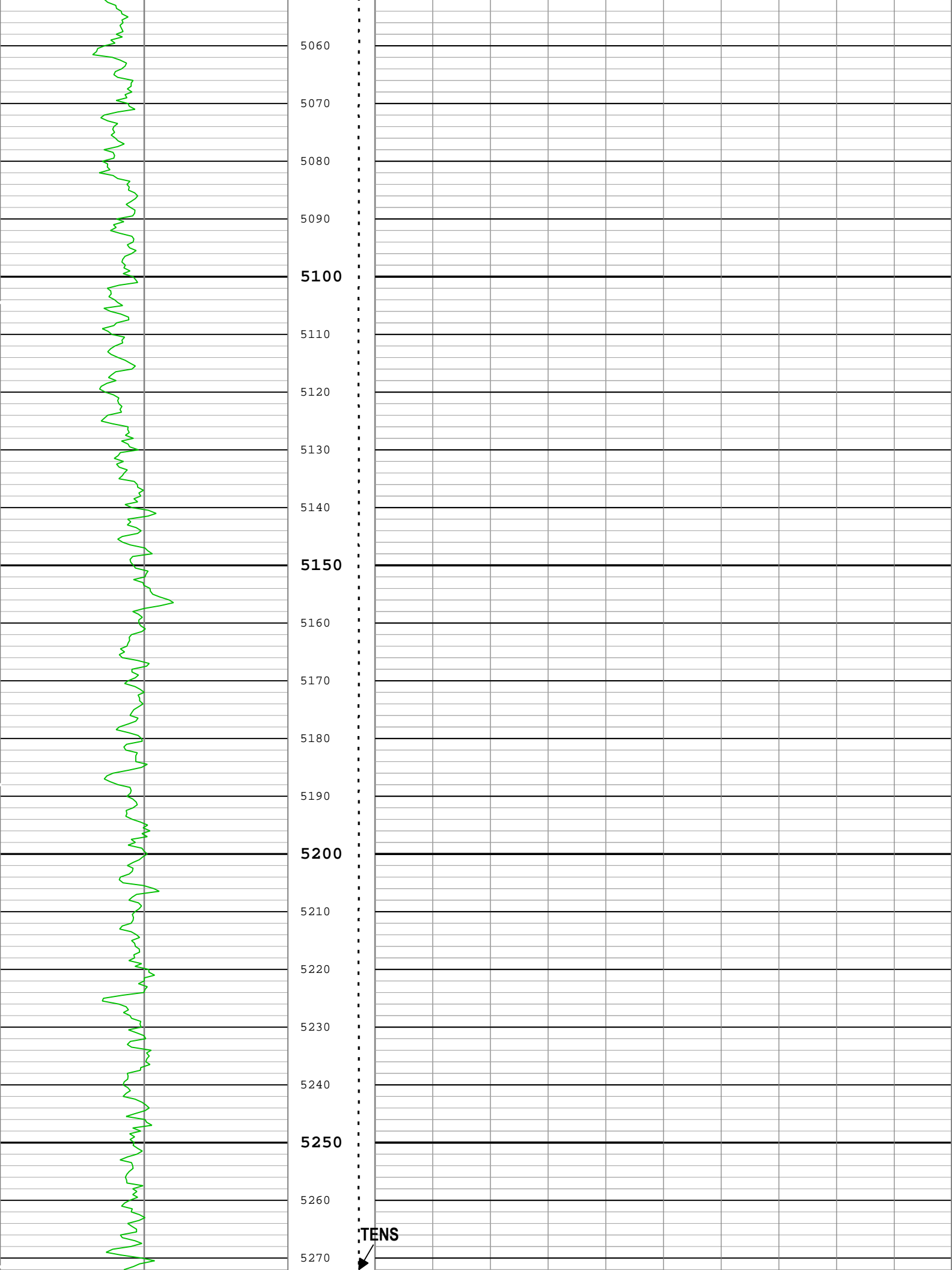


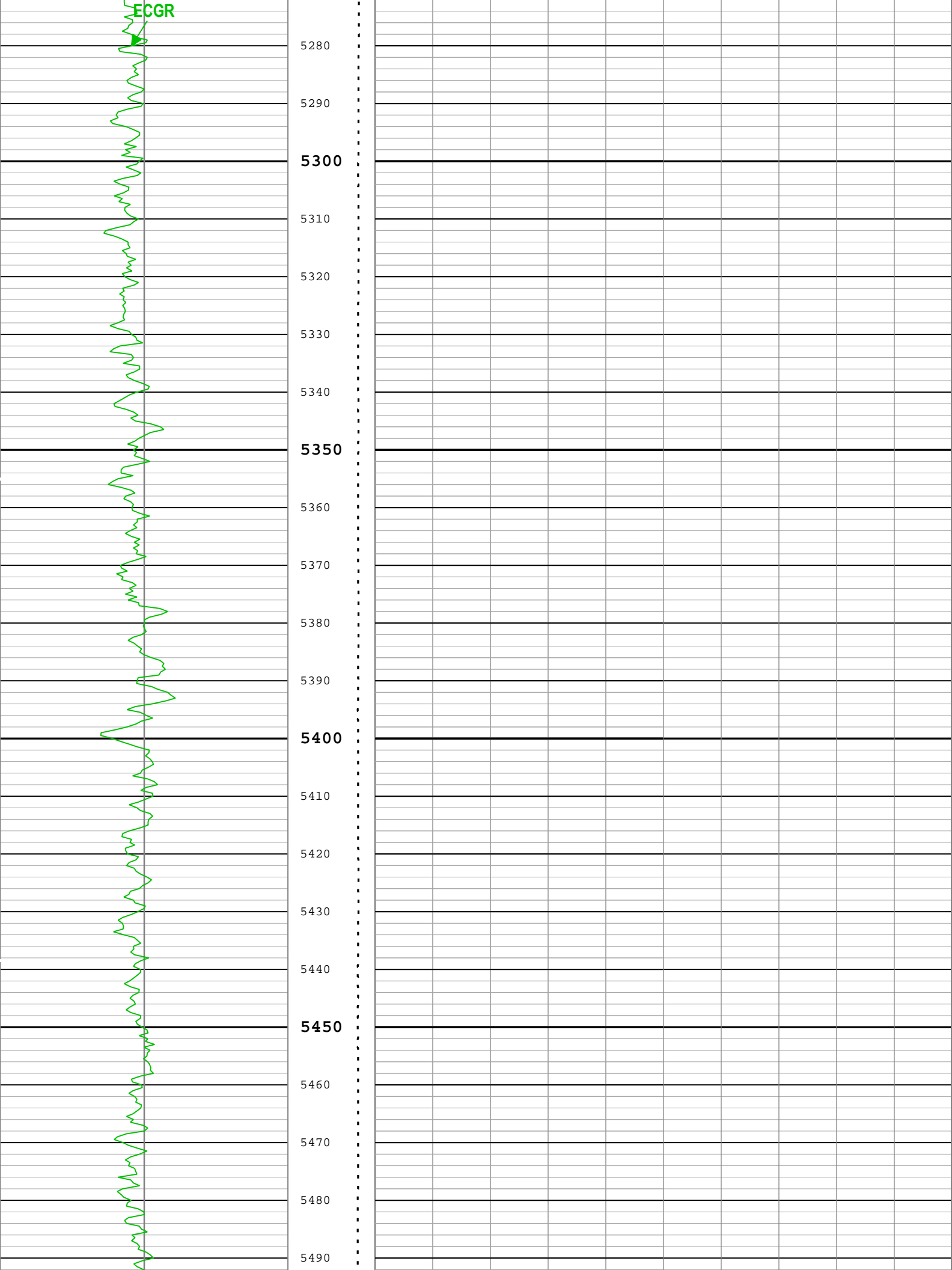


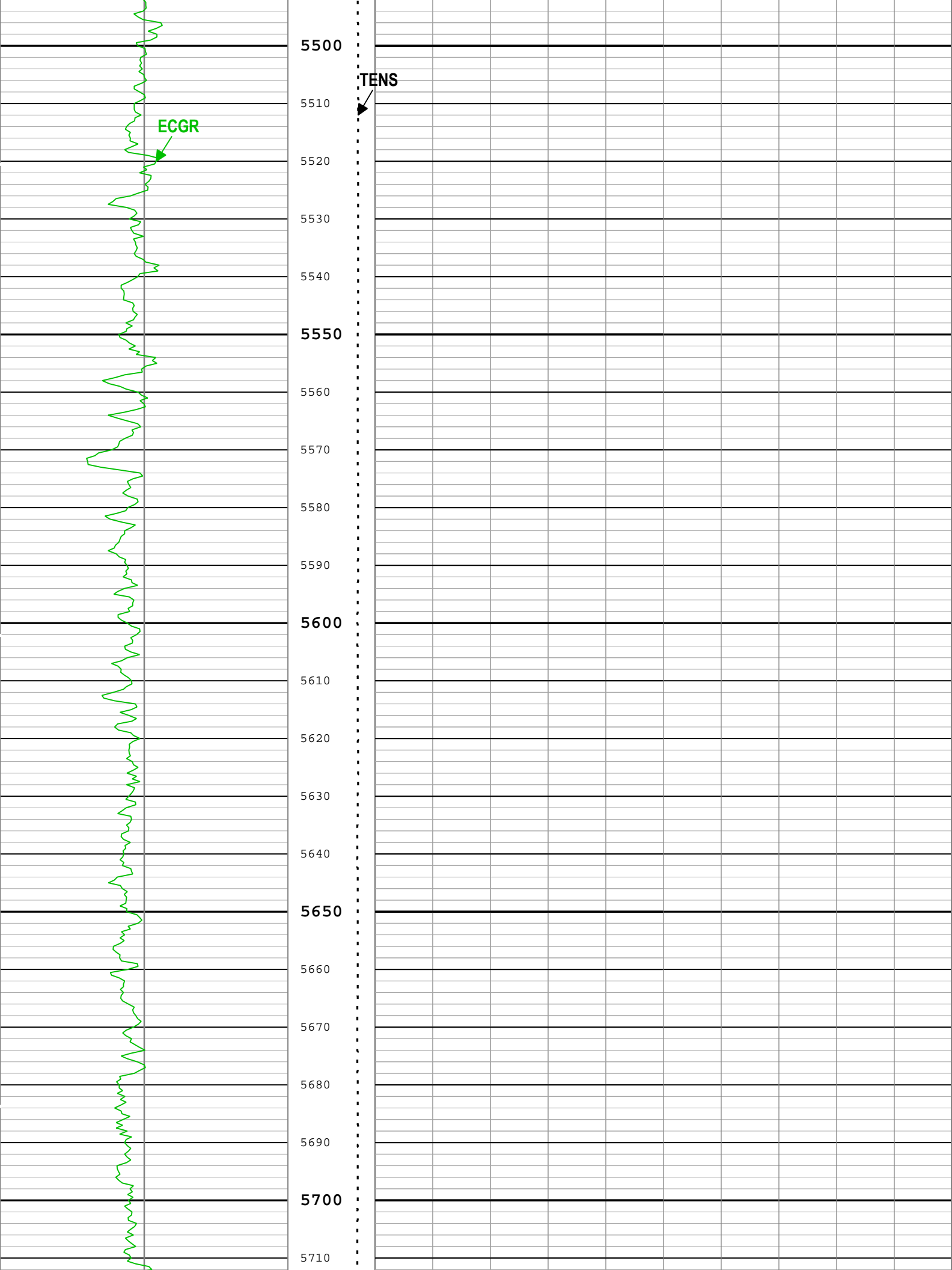


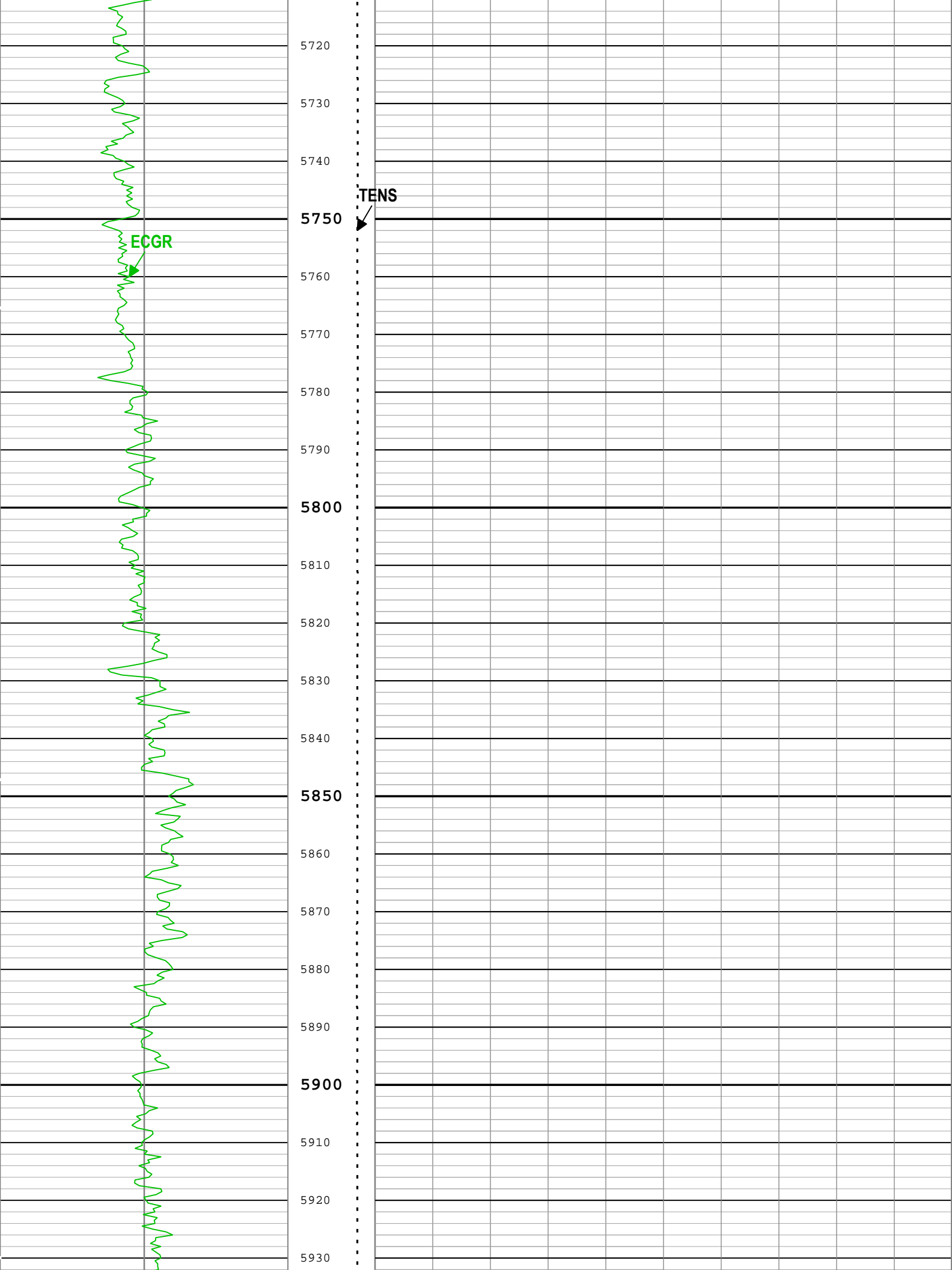


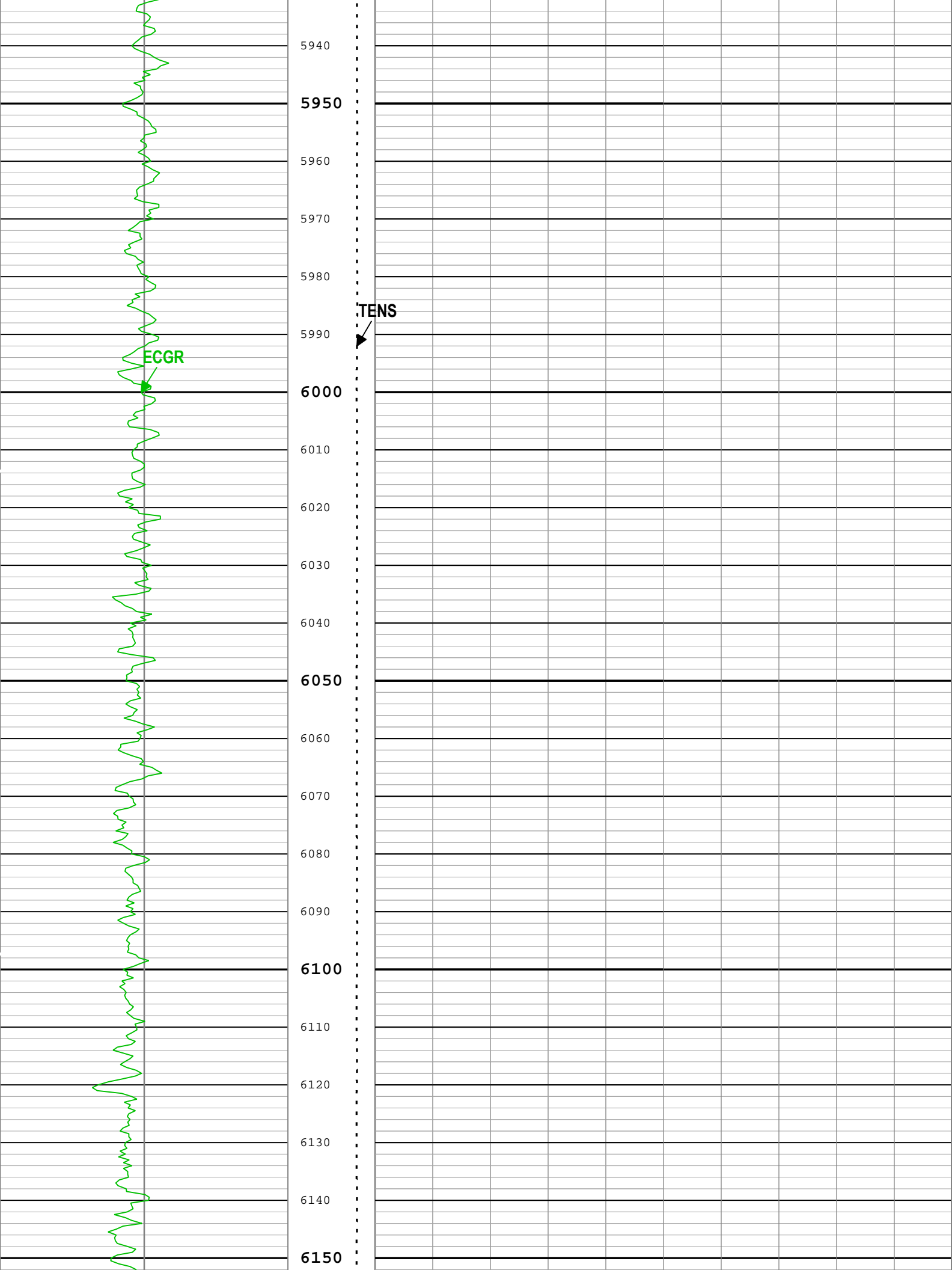


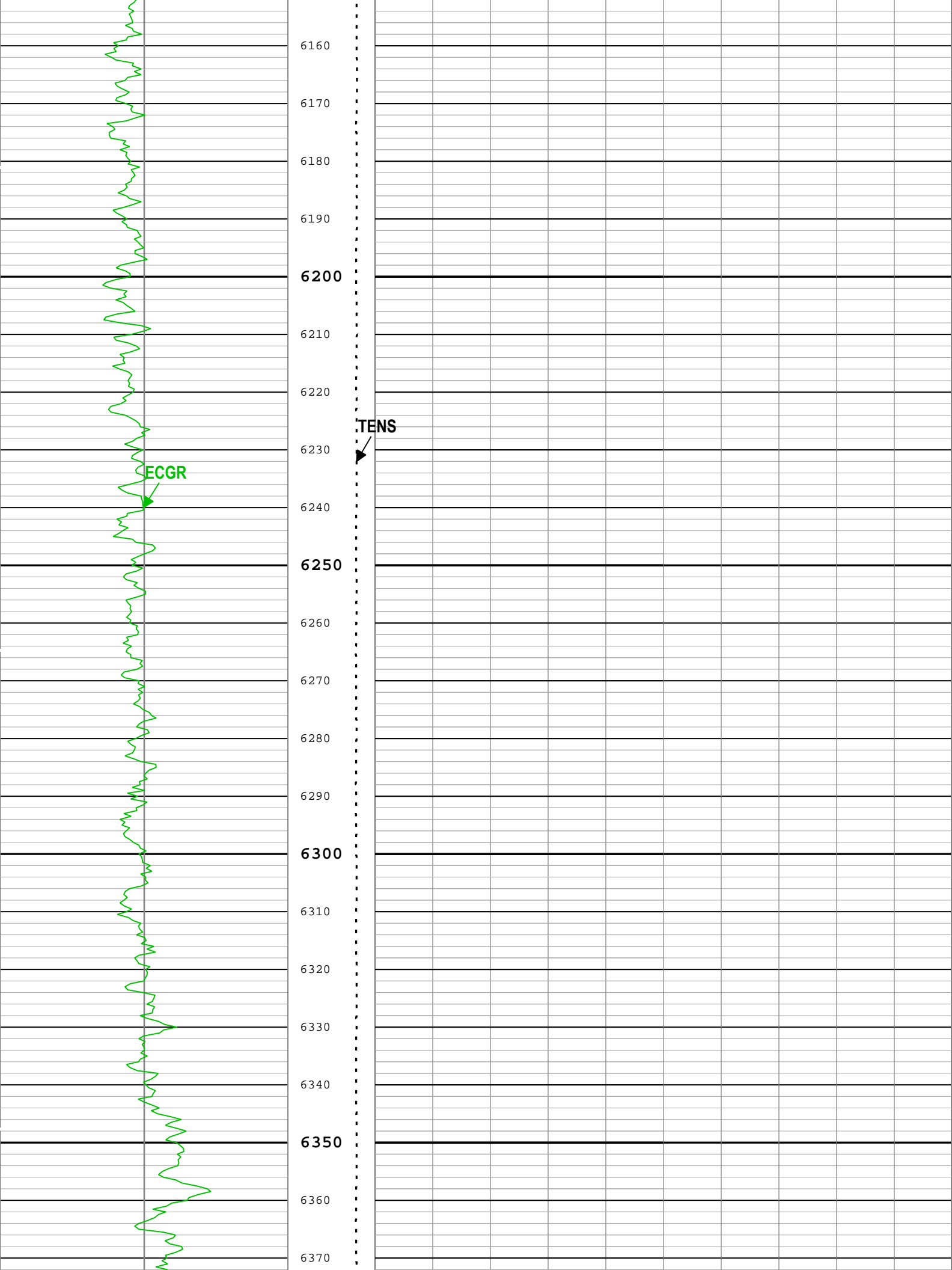


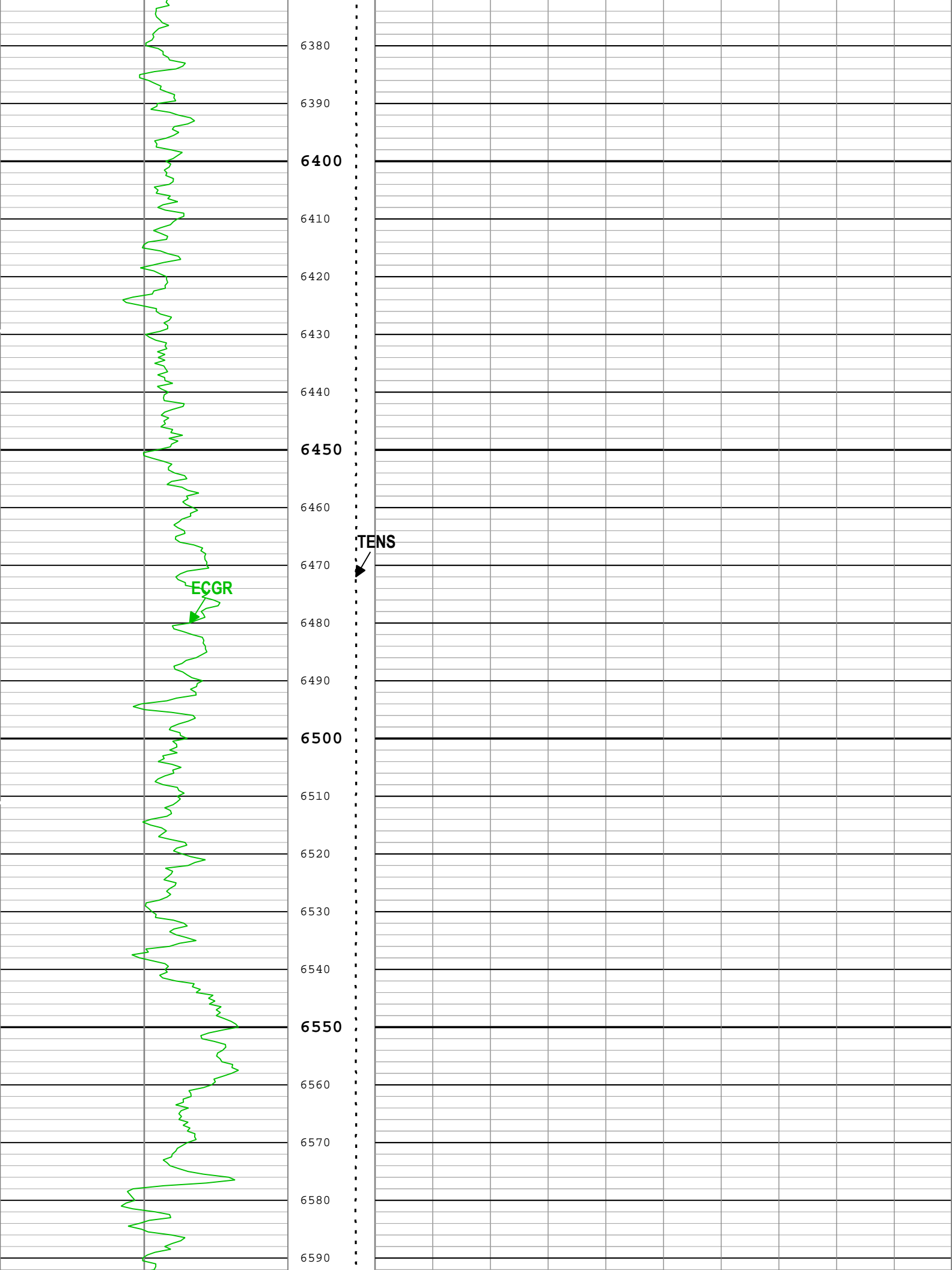


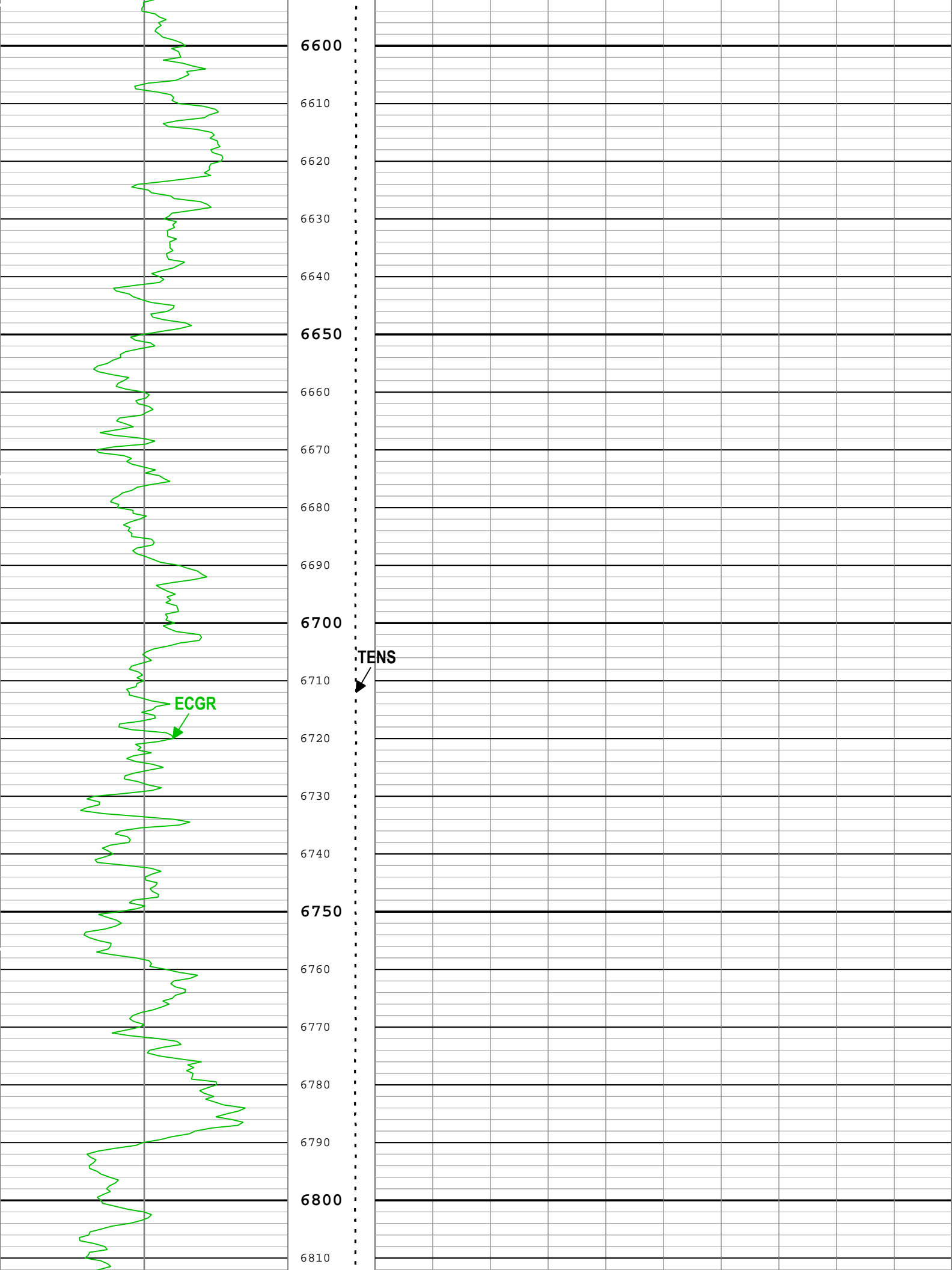


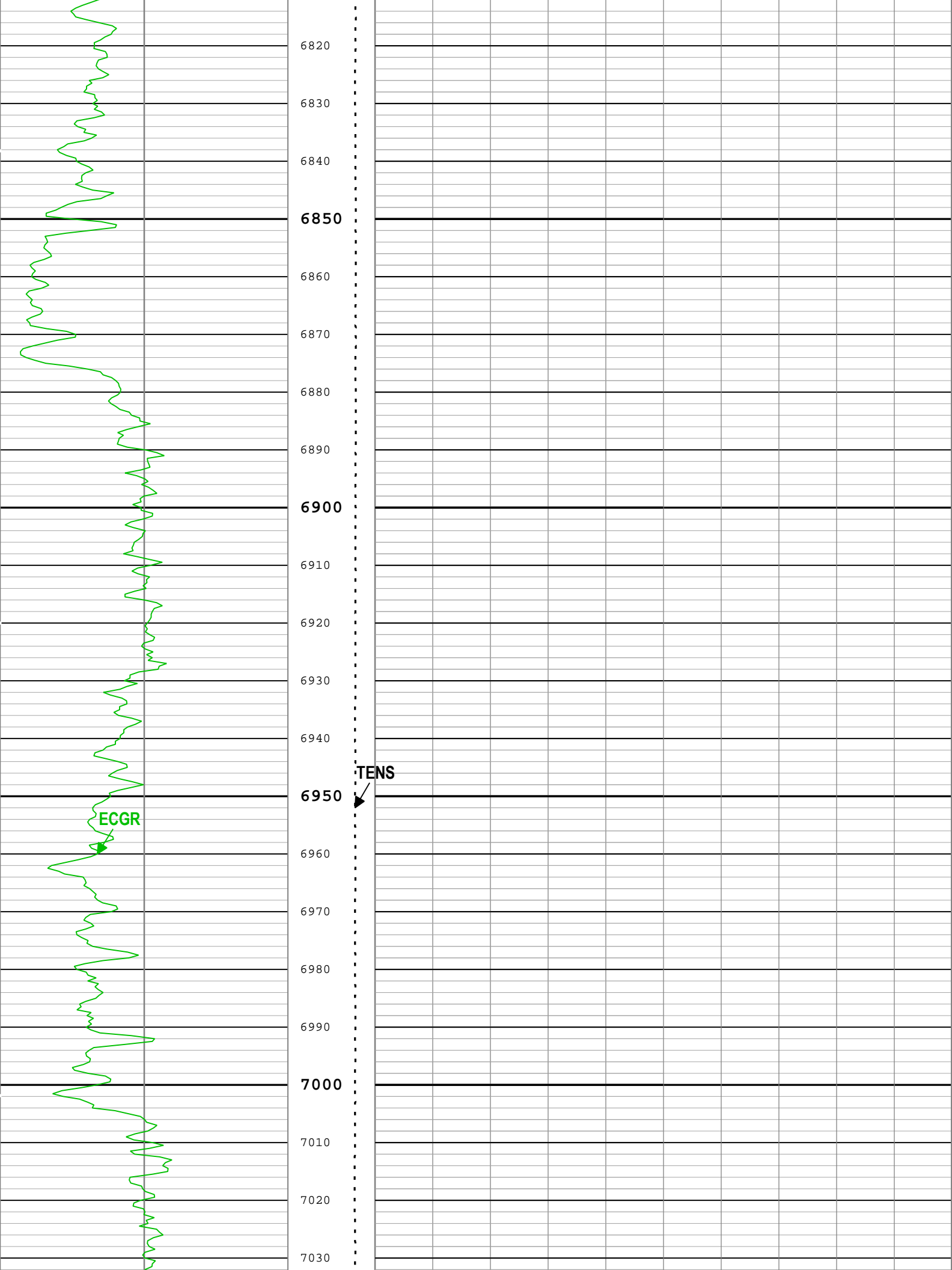


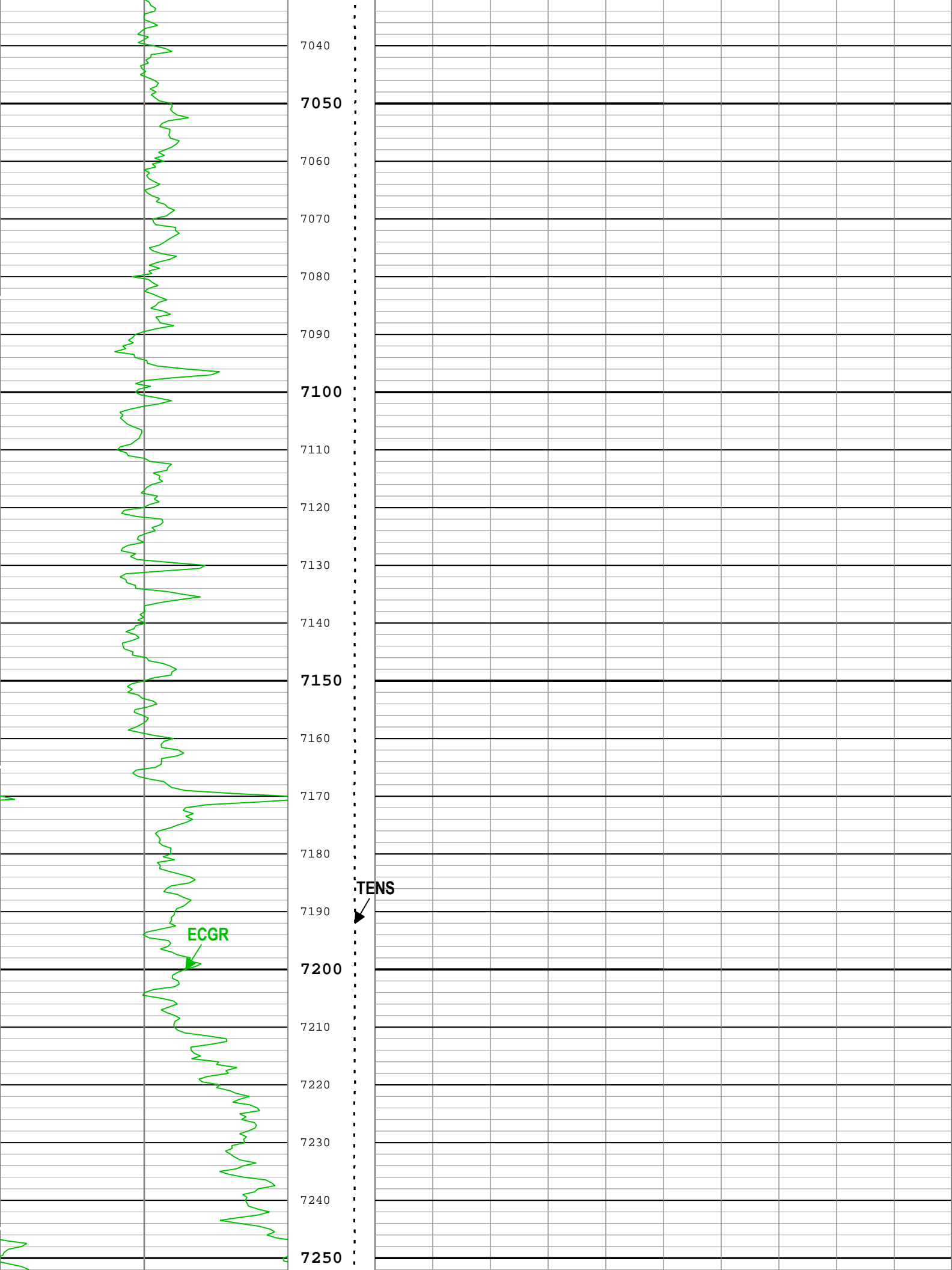


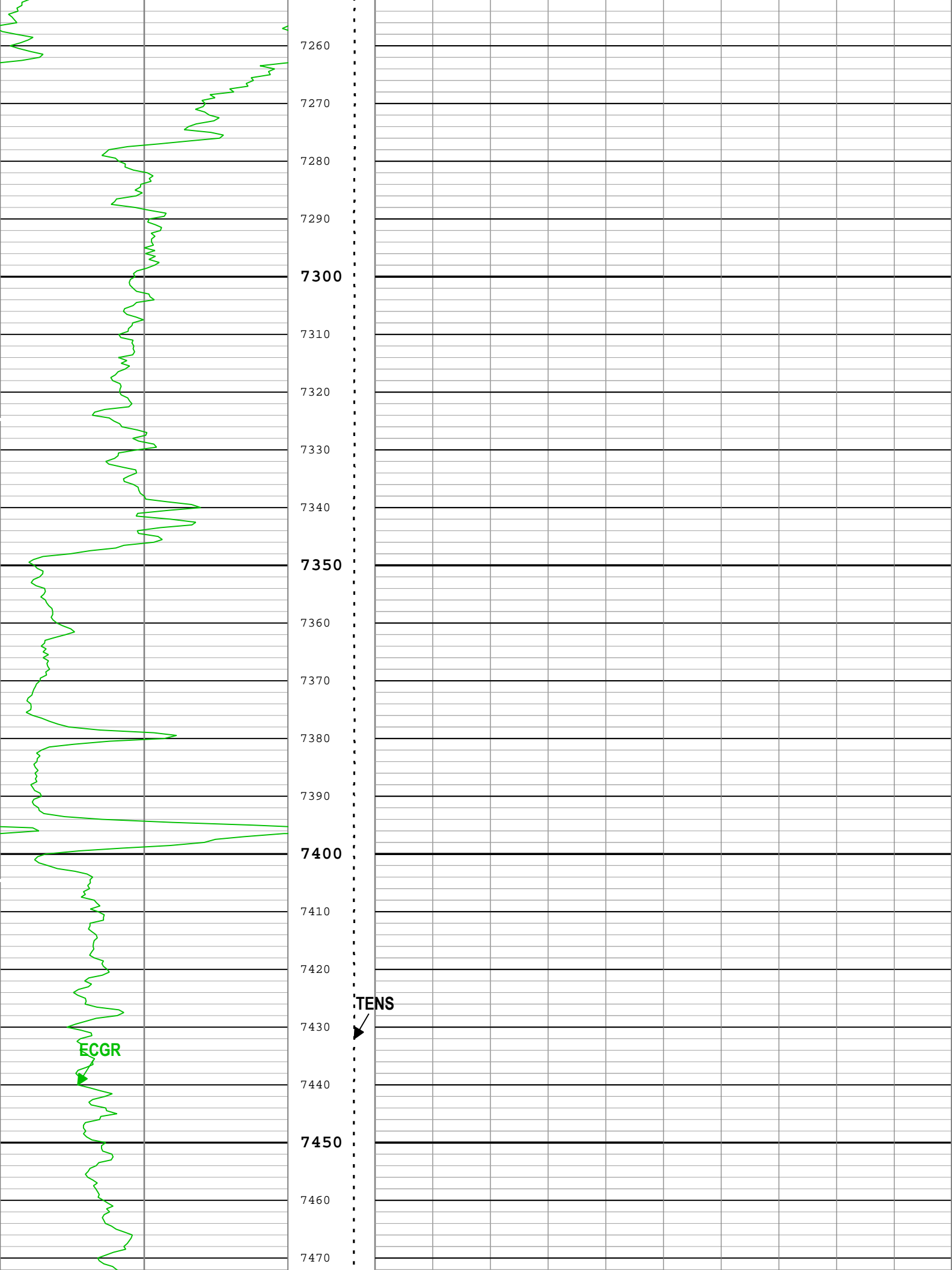


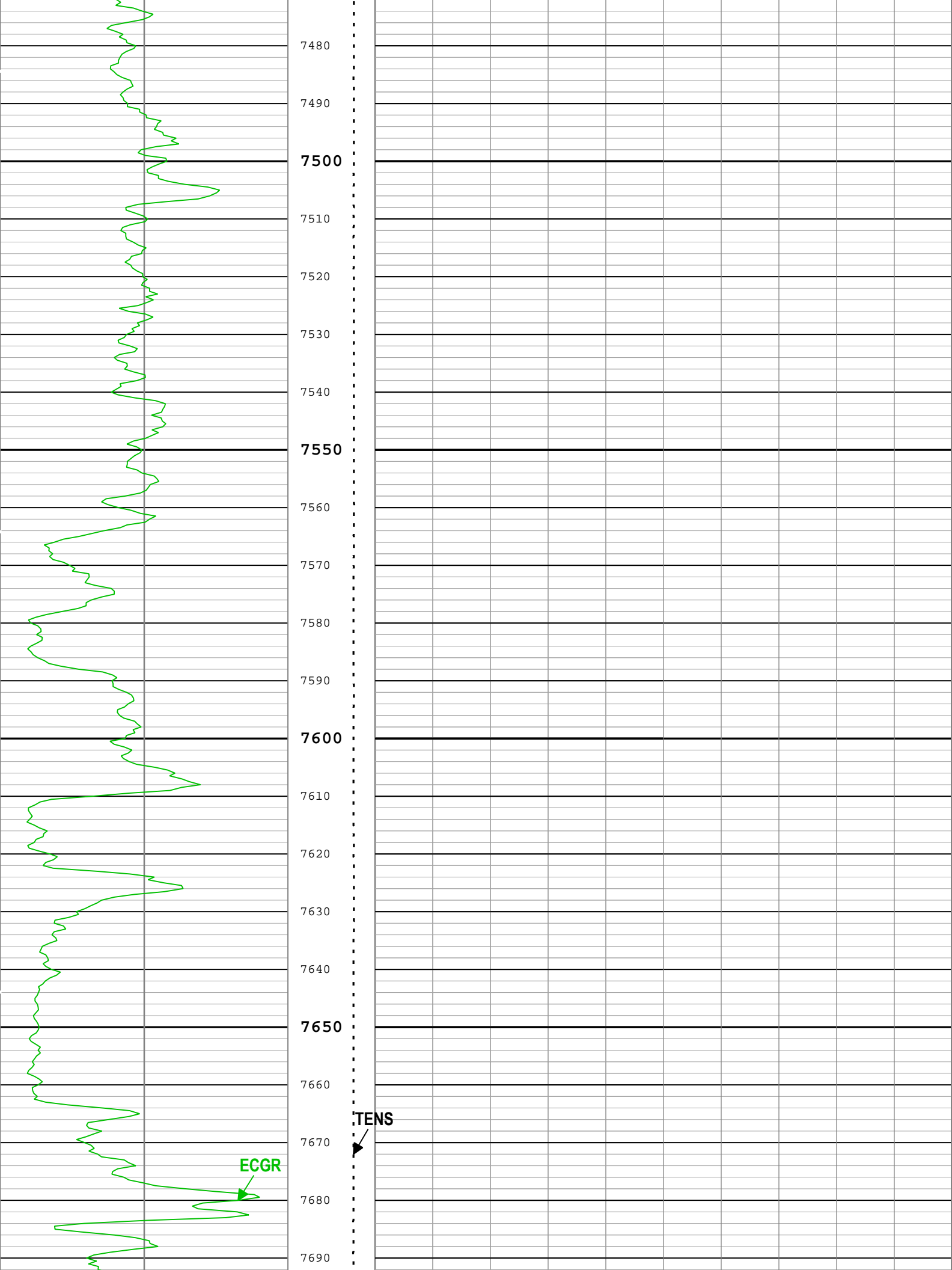


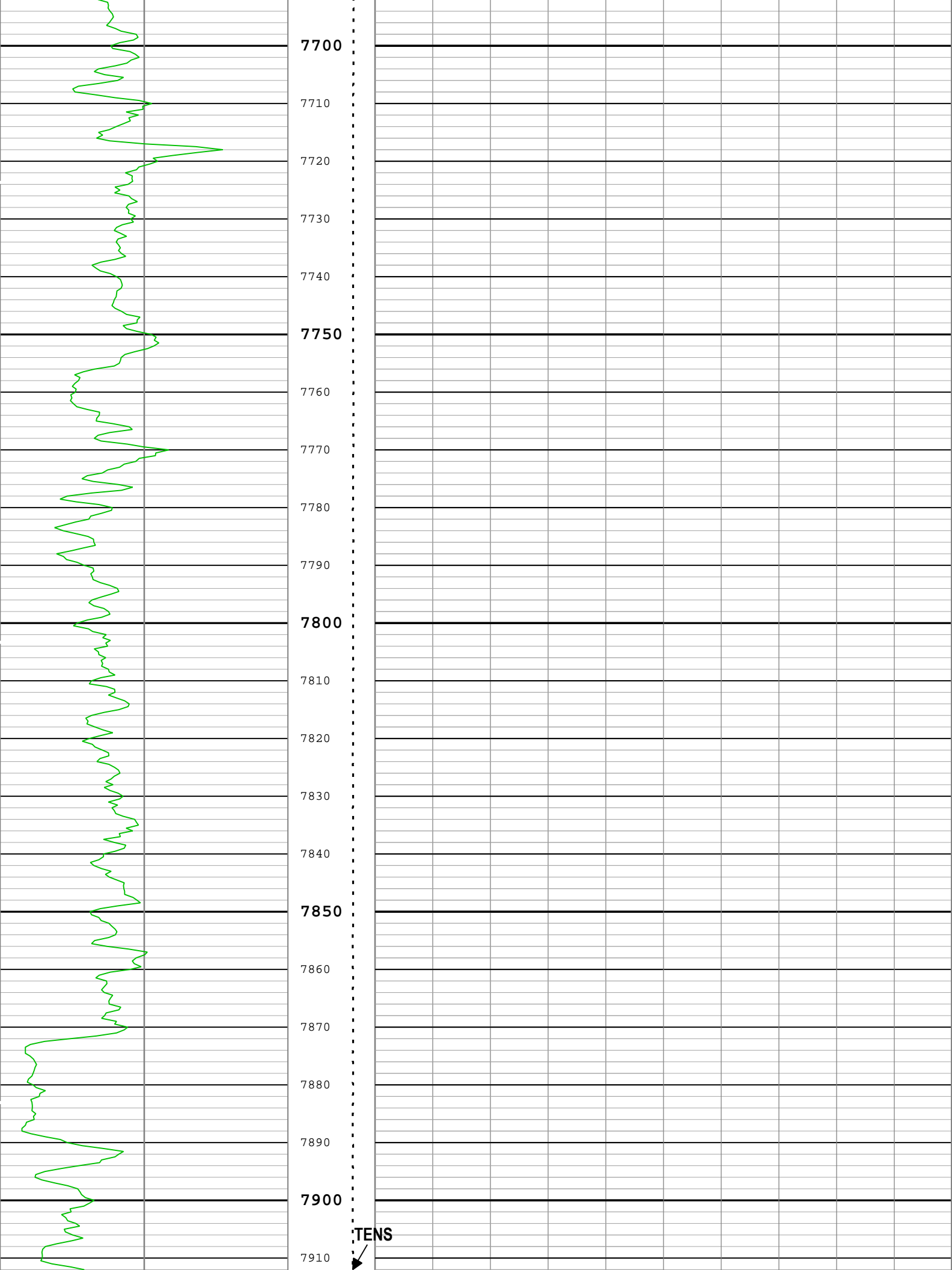


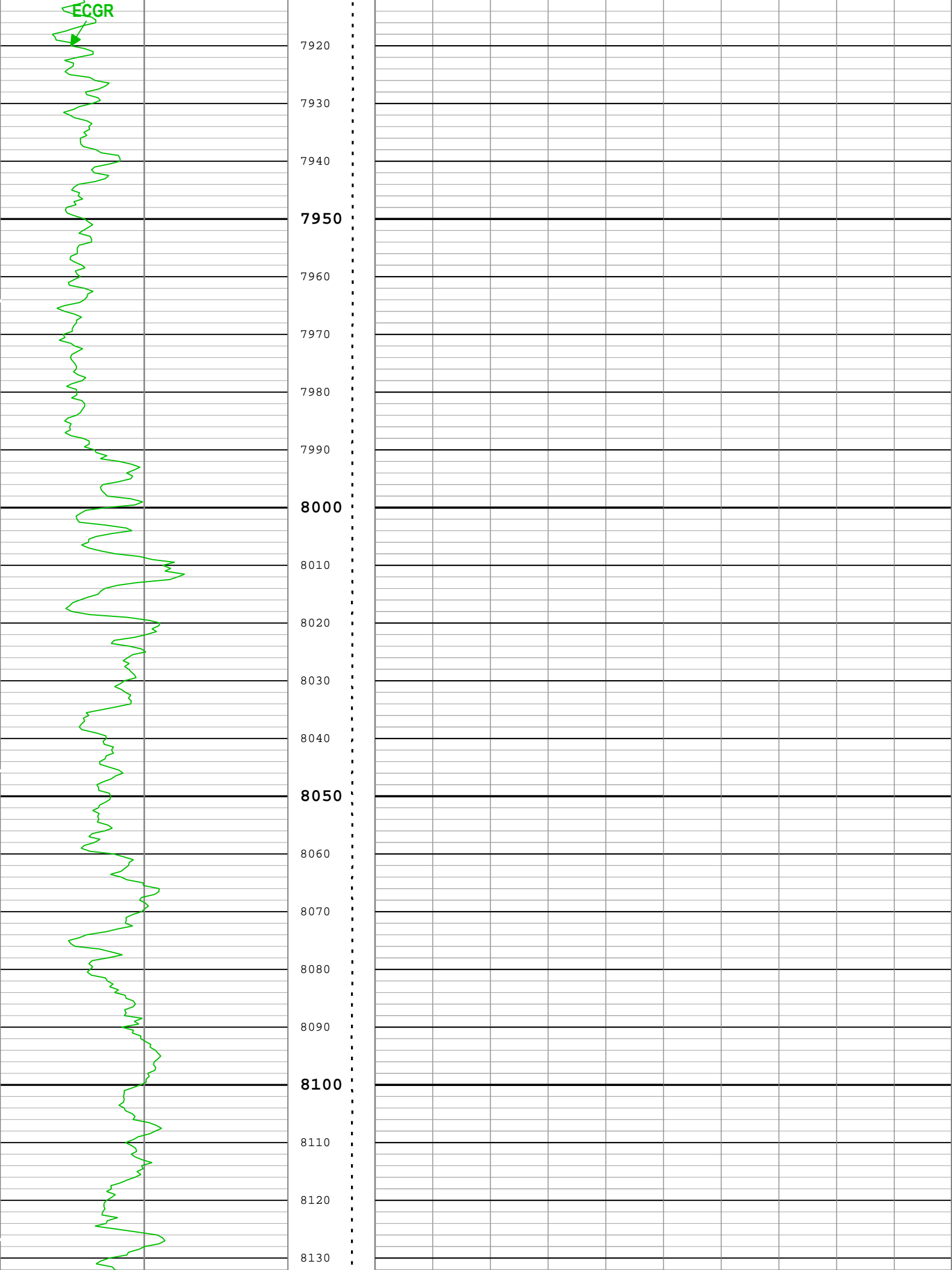


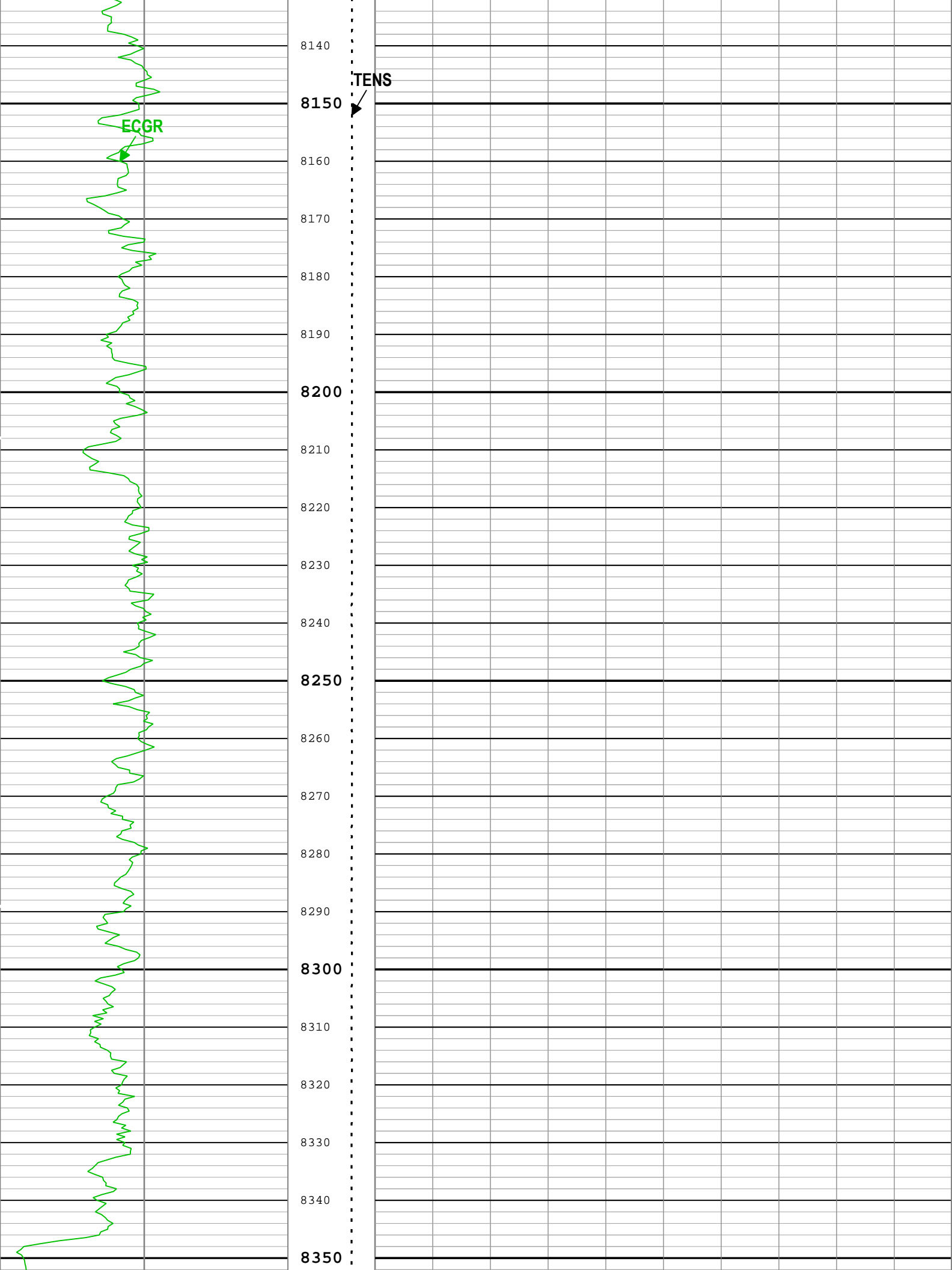


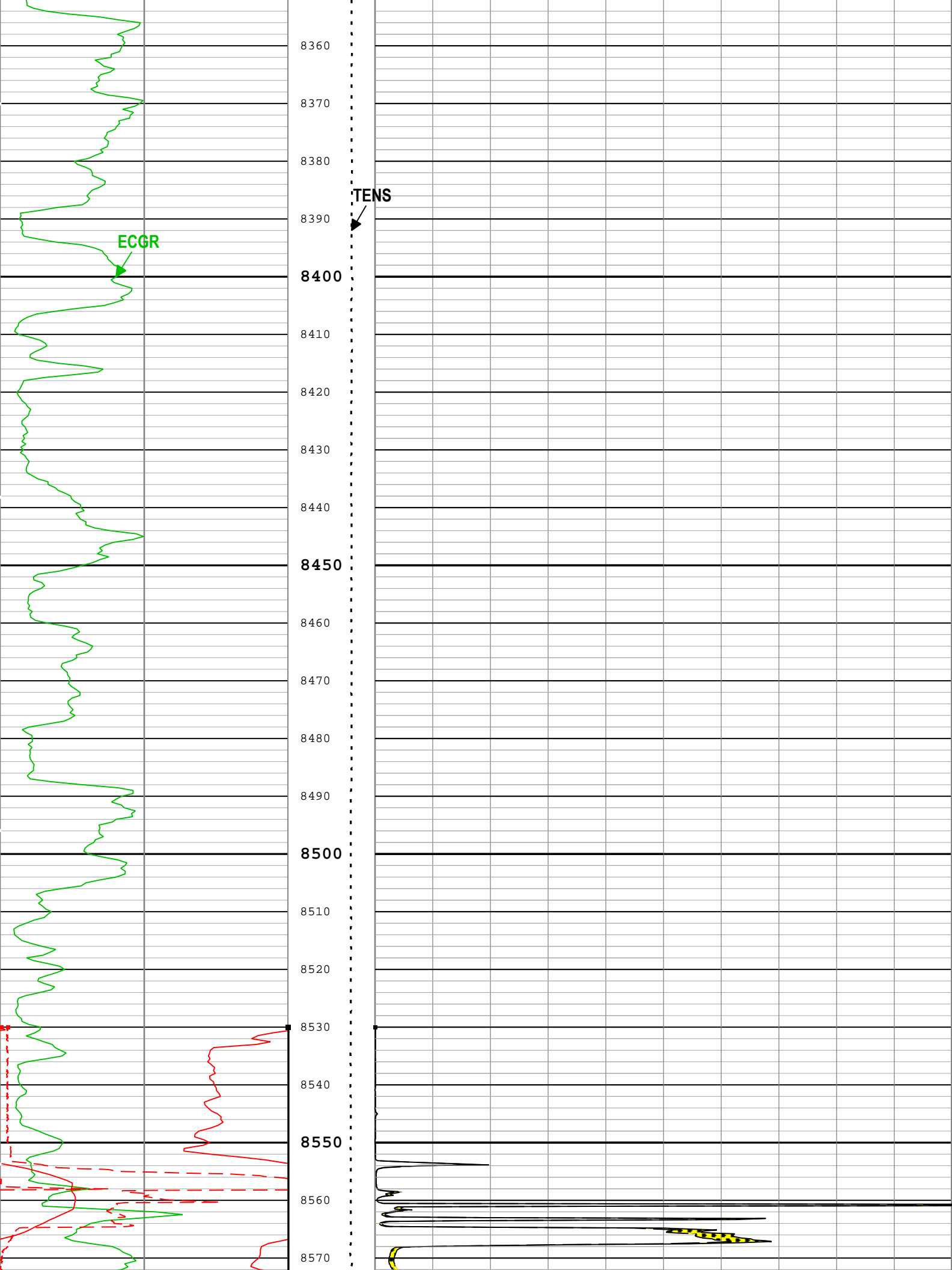


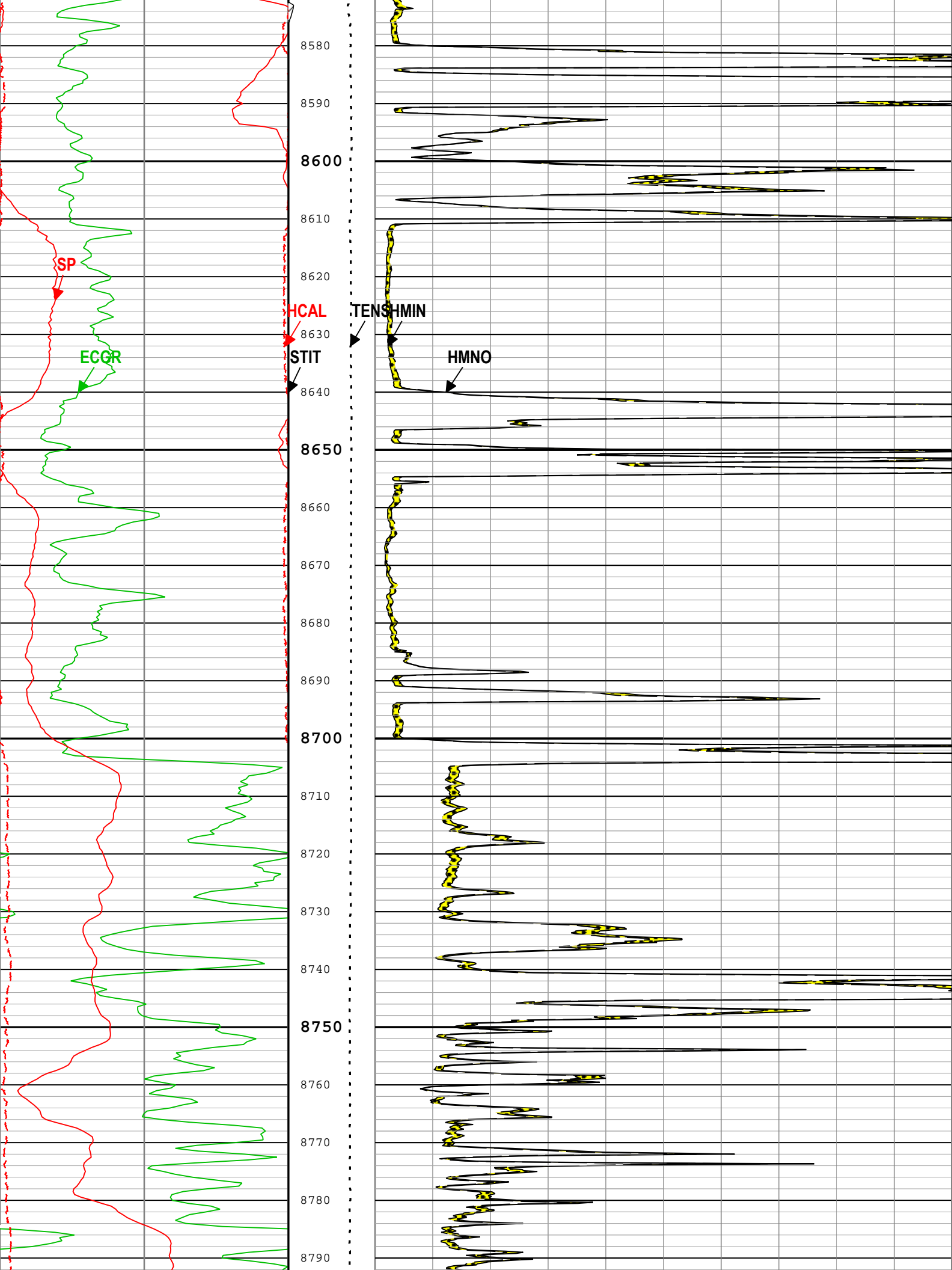


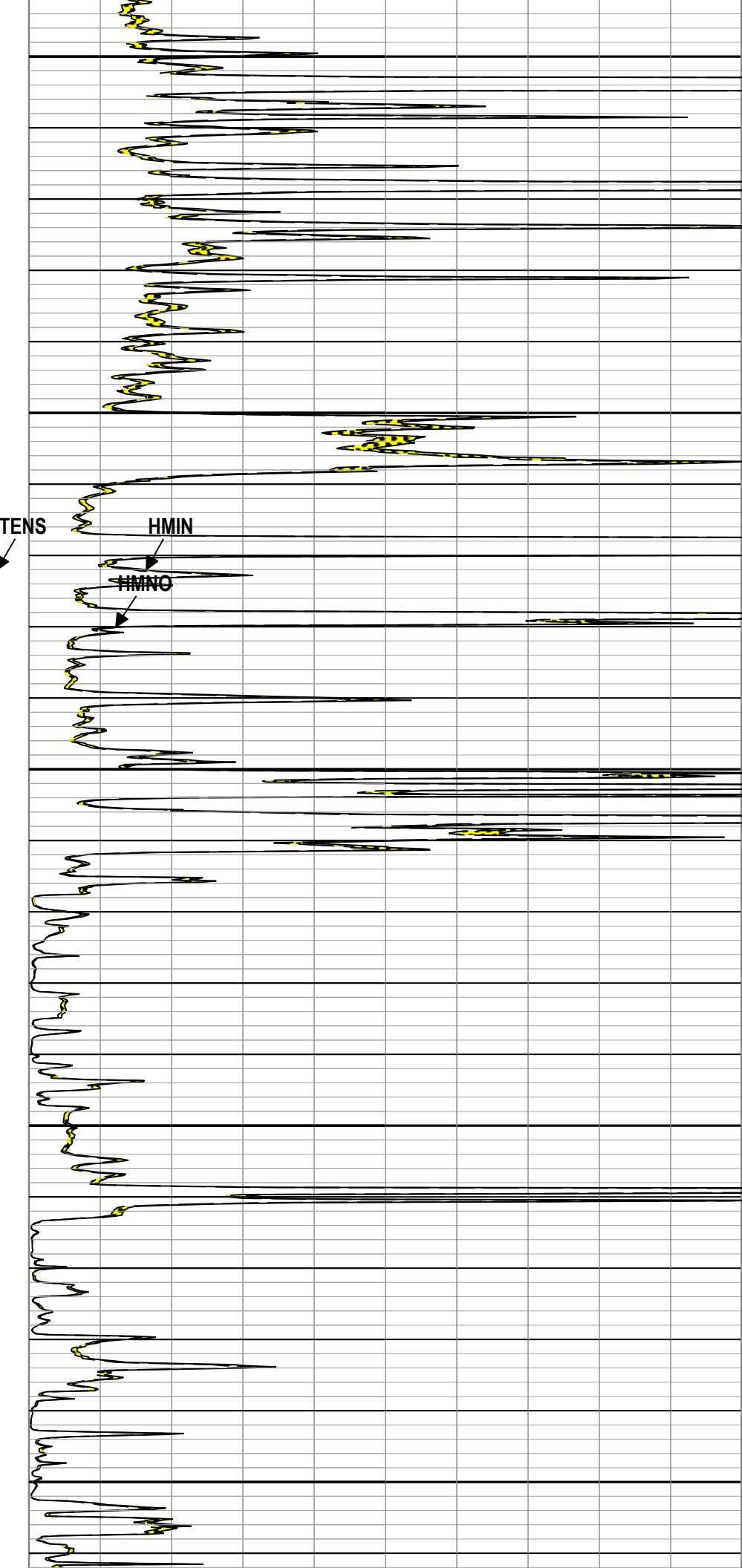
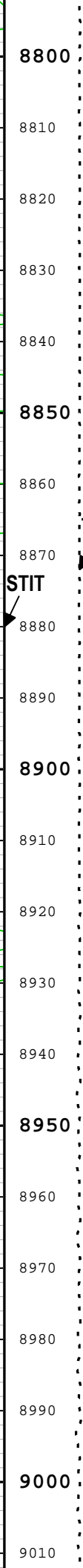
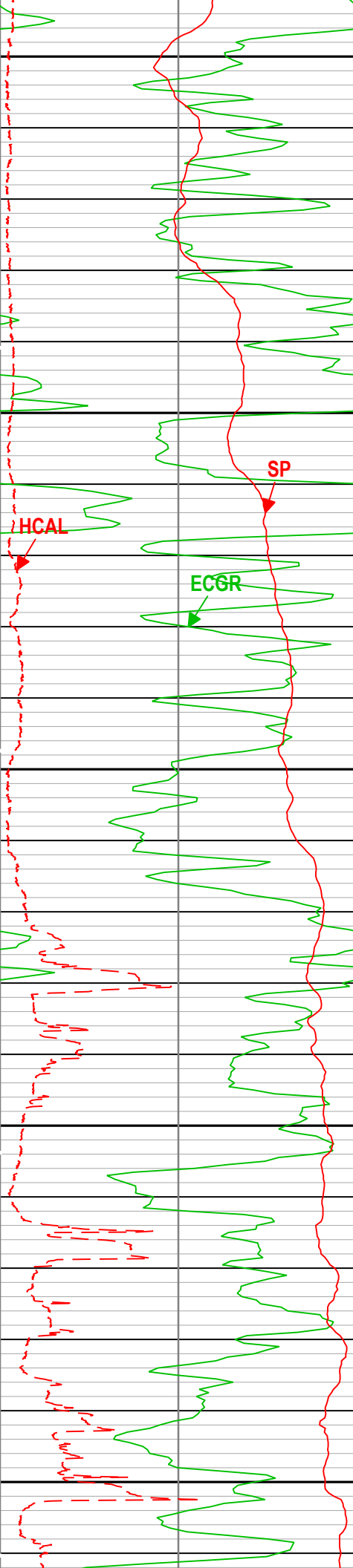


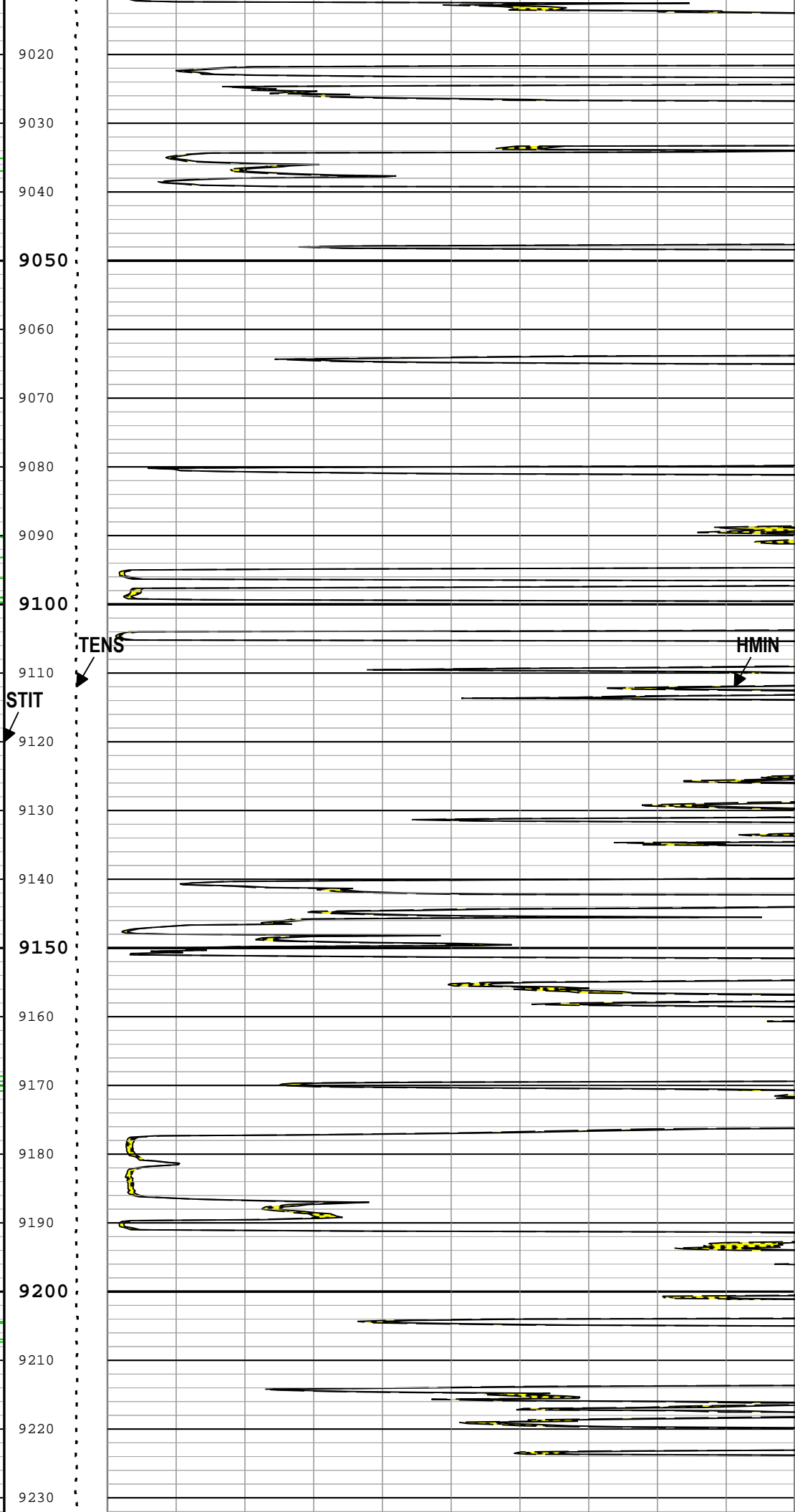
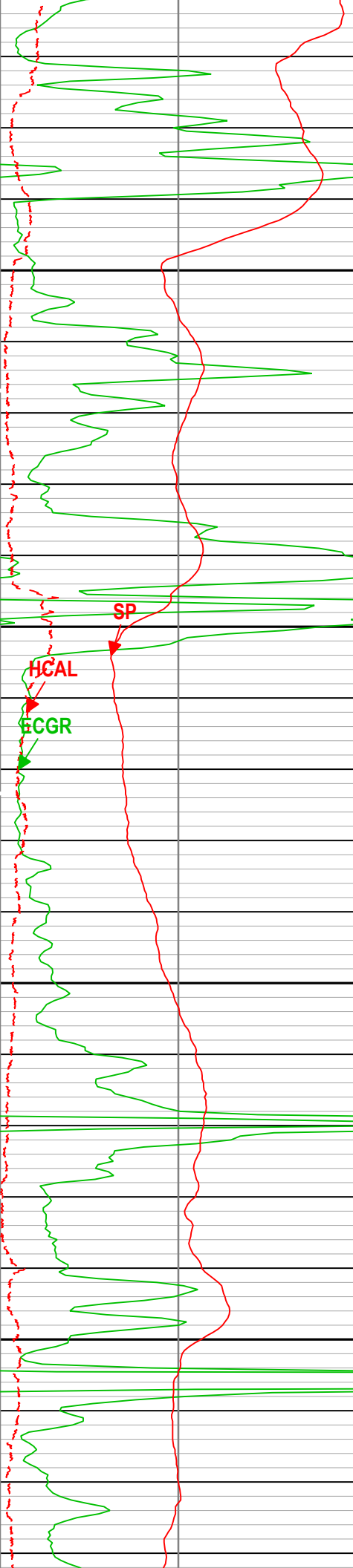


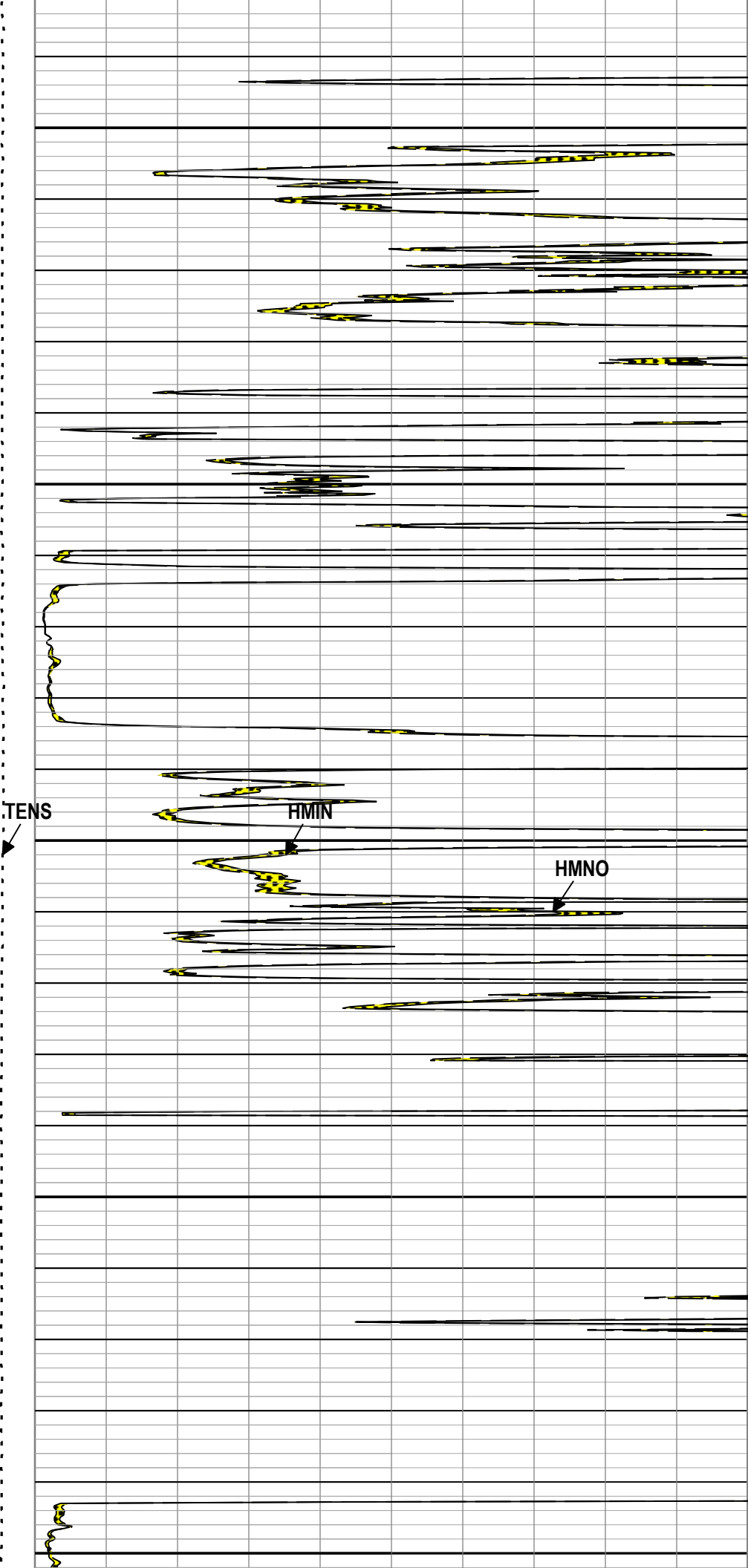
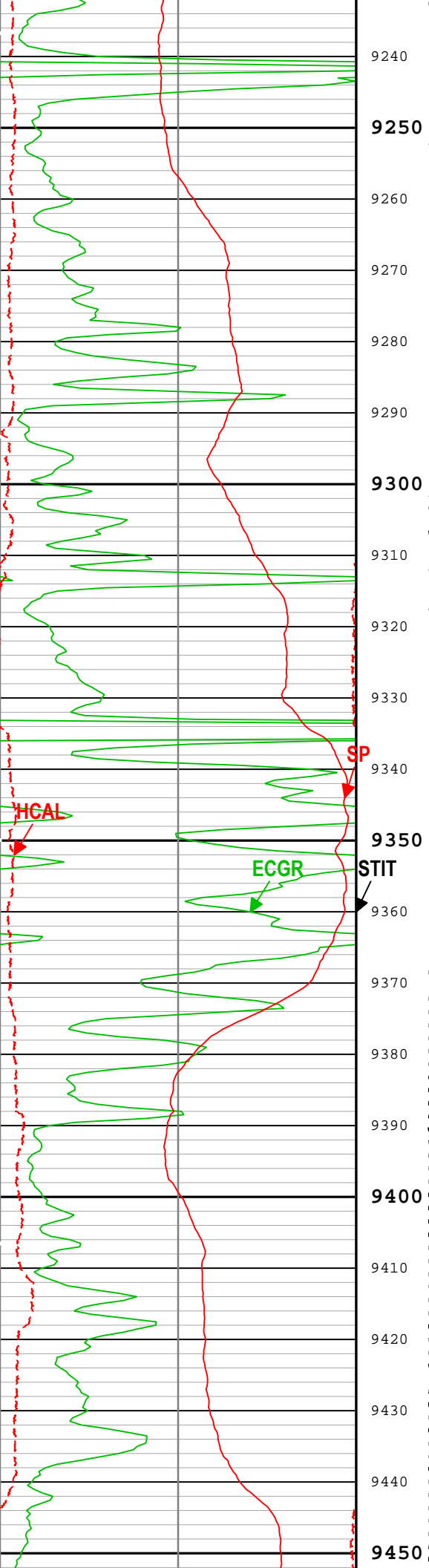


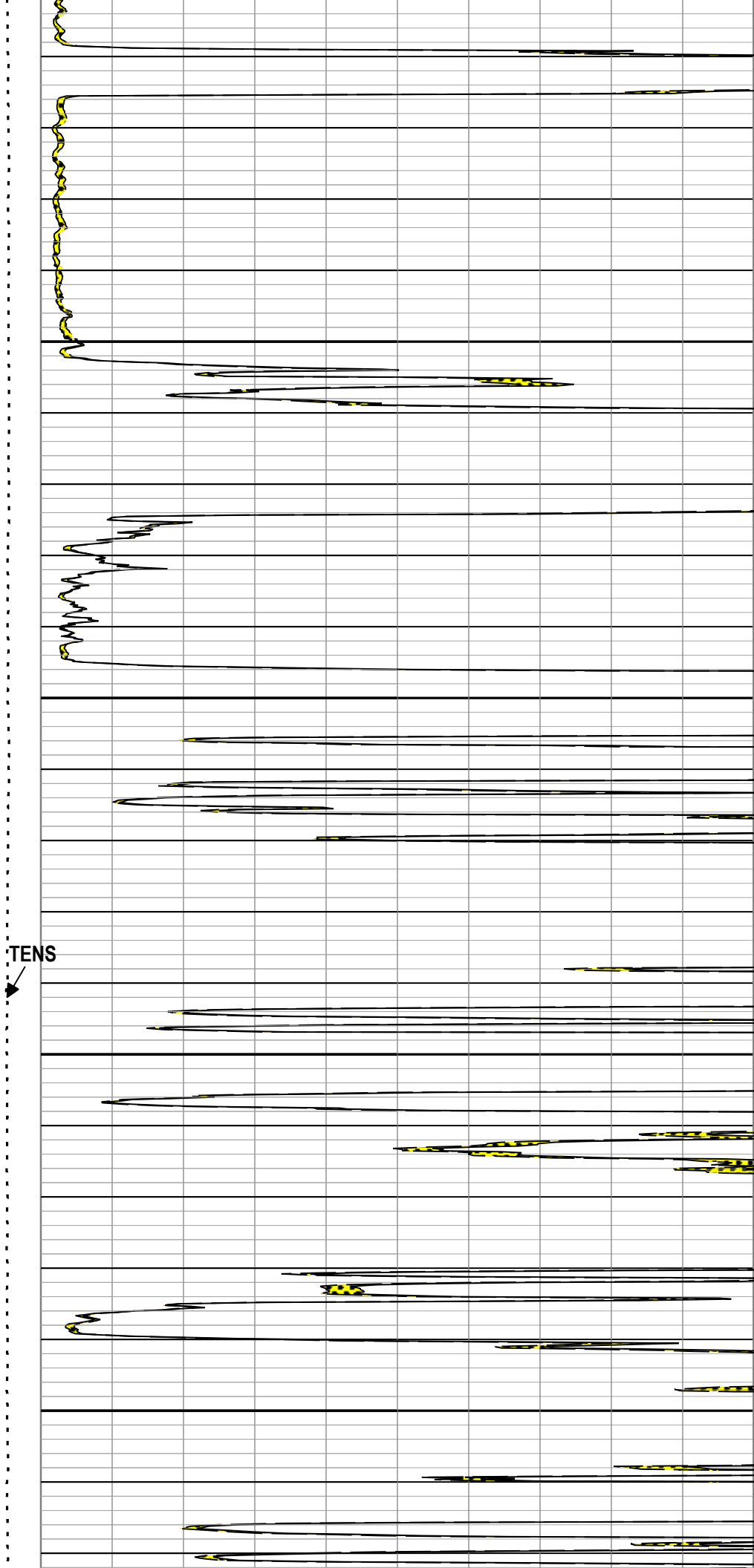
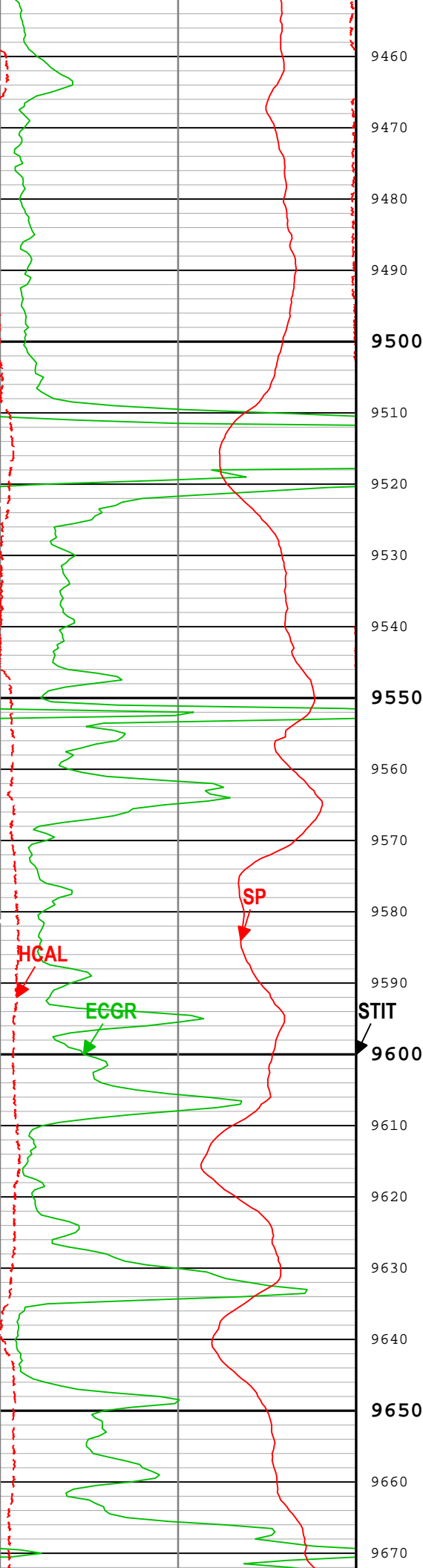


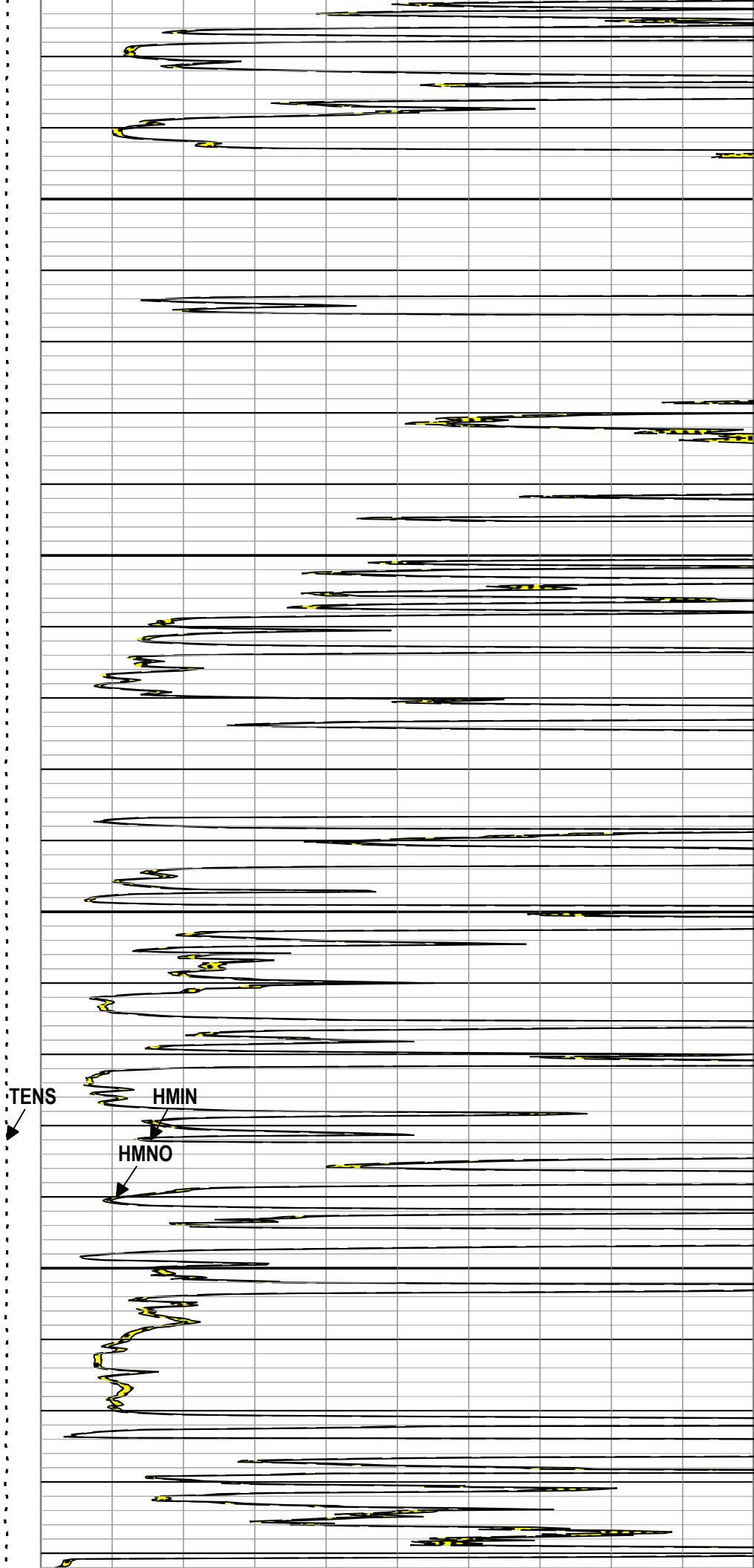
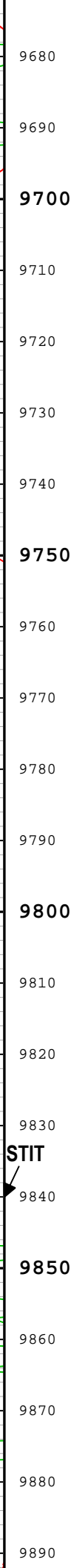
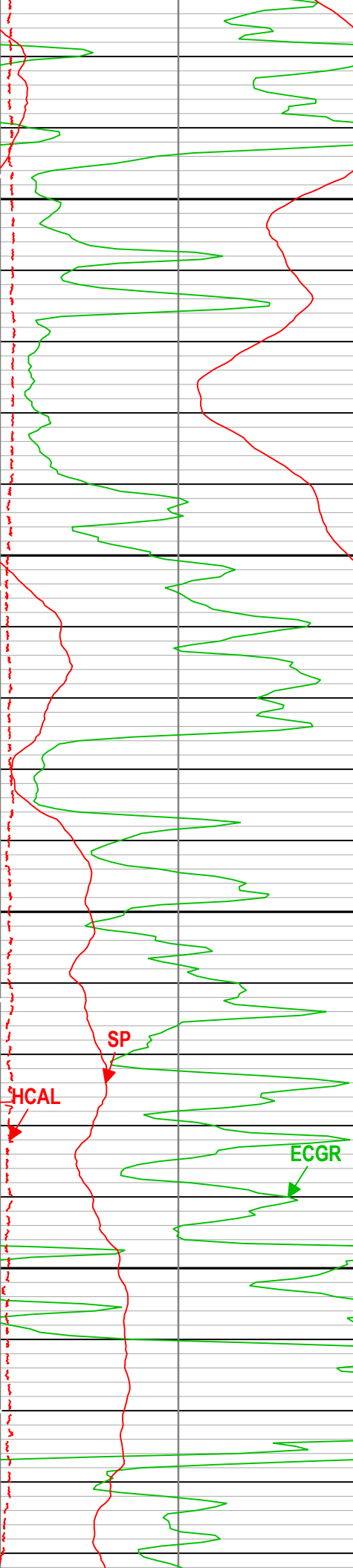


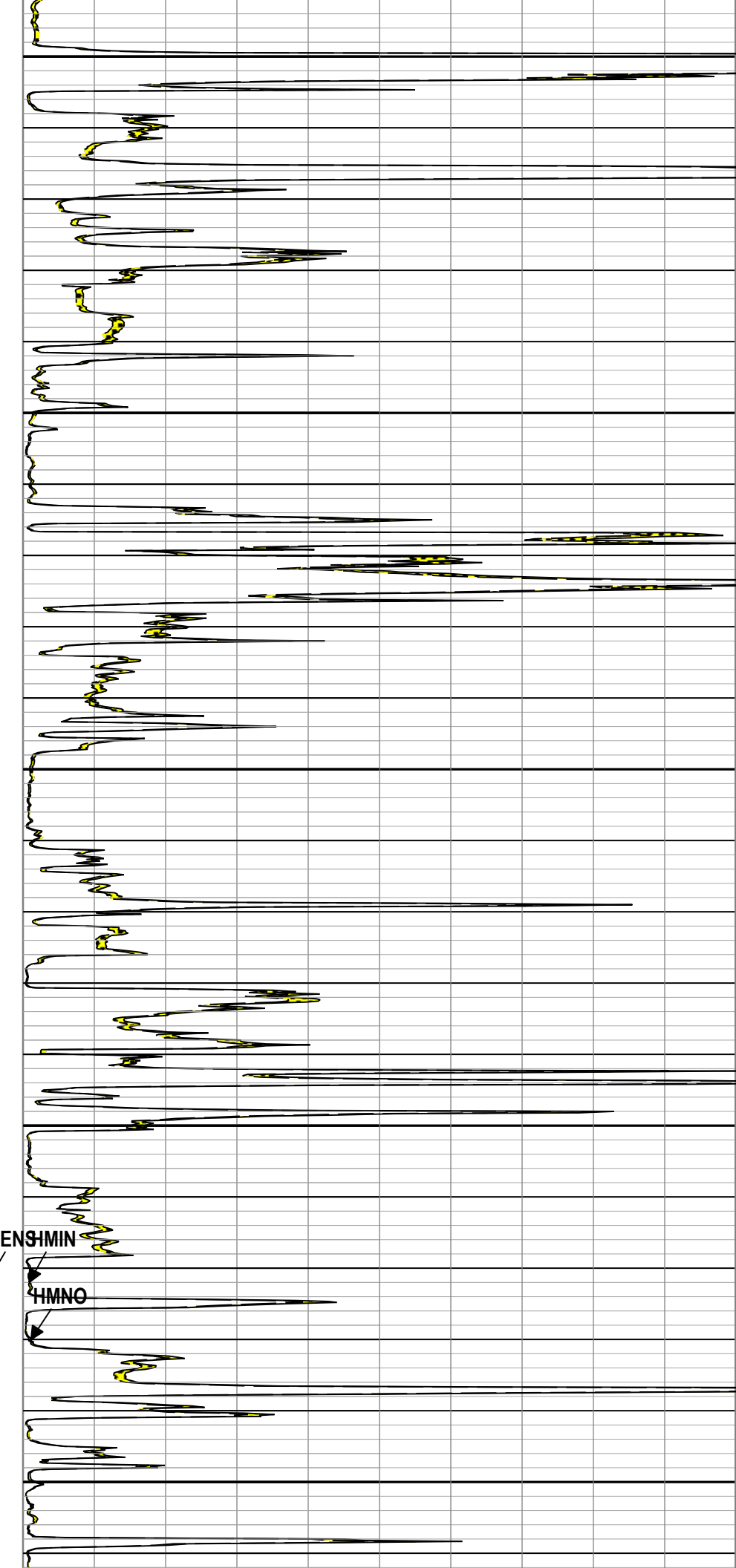
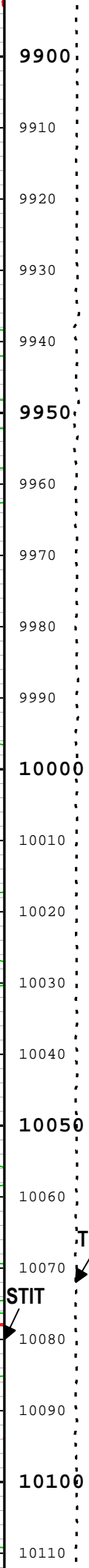
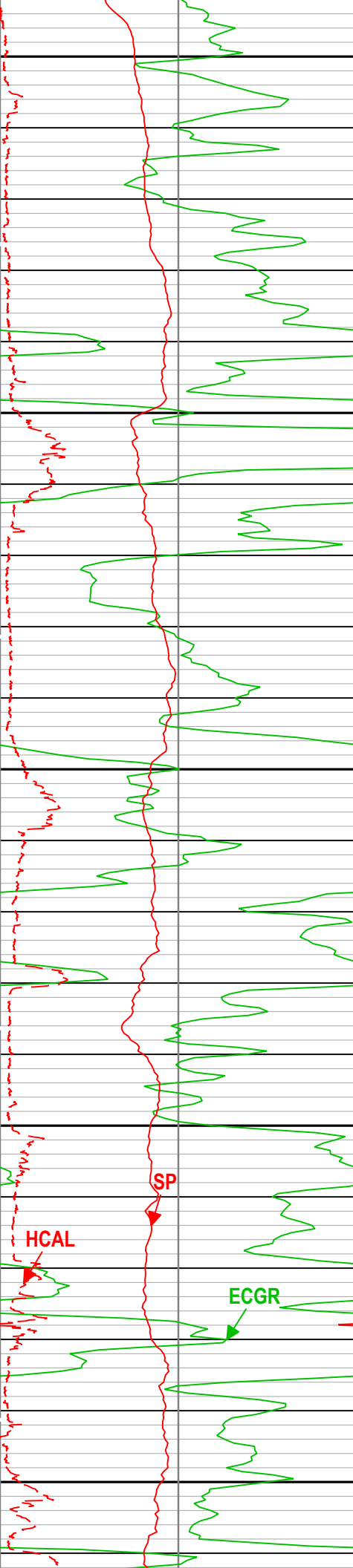


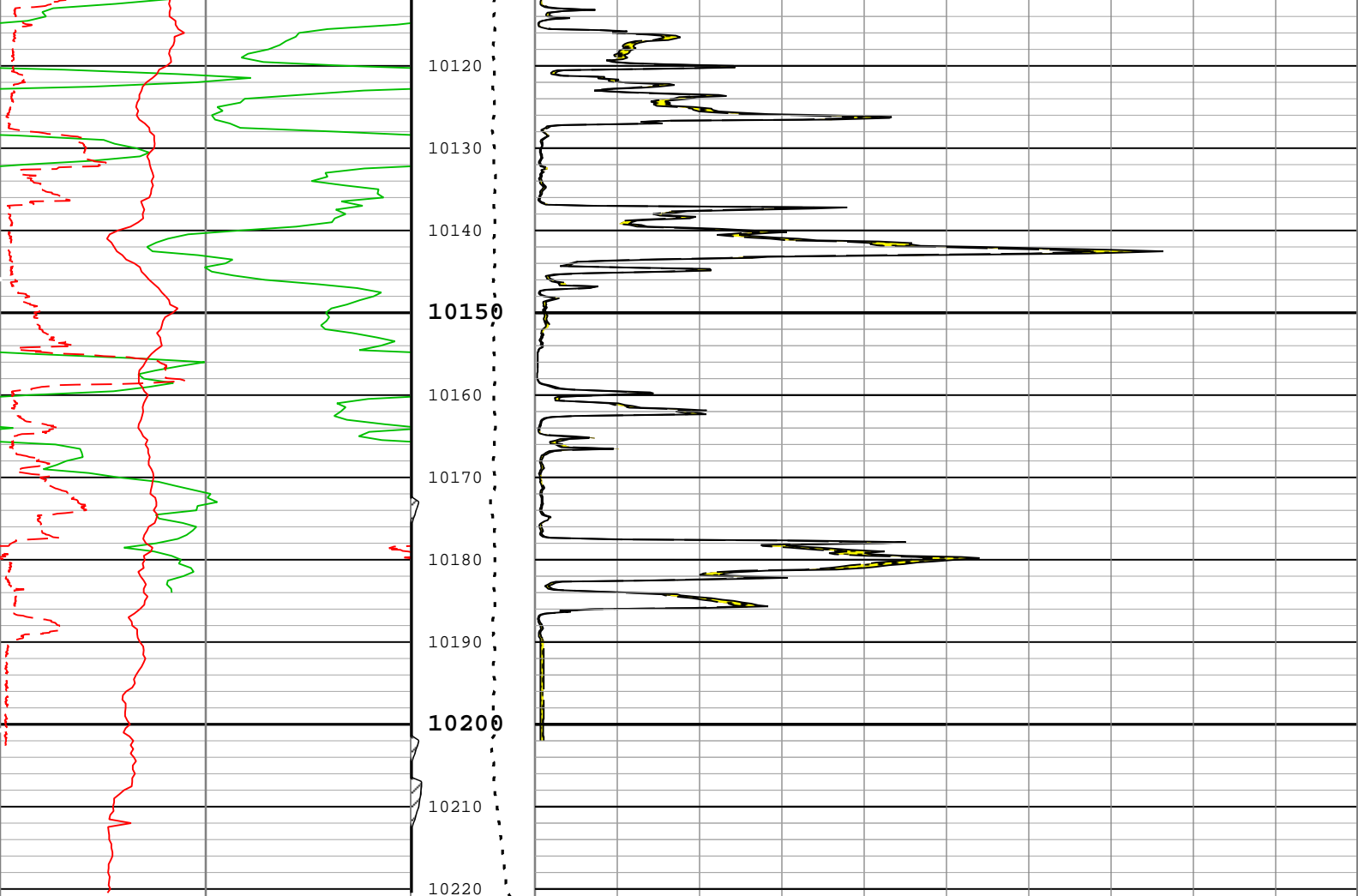












Gamma Ray (ECGR) HGNS-H	Stuck Tool Indicator, Total (STIT)	Mud Cake
0 gAPI 150	0 ft 50	Perm From SMIN to SMNO
Caliper (HCAL) HDRS-H	ToolDrag	Synthetic Micro-Normal Resistivity (HMNO) HDRS-H
6 in 16	0	ohm.m 100
Spontaneous Potential (SP) AIT-M	Cable Tension (TENS)	Synthetic Micro-Inverse Resistivity (HMIN) HDRS-H
-80 mV 20	10000 0 lbf	ohm.m 100

TIME_1900 - Time Marked every 60.00 (s)

Description: MCFL processing for Platform Express Format: Log (PEX MCFL Processing) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 24-Feb-2017 09:20:51

Channel Processing Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	Depth Zoned	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.01	in
CBLO	Casing Bottom (Logger)	WLSESSION	8552	ft
CDEN	Cement Density	HGNS-H	13.2	lbm/gal
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.1	lbm/gal
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	

GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	
MPOF	MCFL Processing Operation Mode	HDRS-H	On	
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	10204	ft

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	12.25	0	1009
BS	8.75	1009	8552
BS	6.125	8552	10201

All depth are actual.

Tool Control Parameters

ONE: Parameters

Parameter	Description	Tool	Value	Unit
HRGD_BOARD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

Calibration Report

AIT-M (Array Induction Tool - M) Calibration - Run ONE

Primary Equipment :				
File code for AIT-MA Sonde Tool Element	AMIS	1305		
Auxiliary Equipment :				
File code for AIT Bottom Nose Tool Element	AMRM	1305		

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM):		19:45:52 30-Aug-2016					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Test Loop Gain - 0		Master	1.000	0.950	1.019	1.050	
Test Loop Phase - 0	deg	Master	0	-3.000	0.457	3.000	
Test Loop Gain - 1		Master	1.000	0.950	1.018	1.050	
Test Loop Phase - 1	deg	Master	0	-3.000	0.485	3.000	
Test Loop Gain - 2		Master	1.000	0.950	1.017	1.050	
Test Loop Phase - 2	deg	Master	0	-3.000	-1.158	3.000	
Test Loop Gain - 3		Master	1.000	0.950	1.014	1.050	
Test Loop Phase - 3	deg	Master	0	-3.000	-0.716	3.000	
Test Loop Gain - 4		Master	1.000	0.950	0.999	1.050	
Test Loop Phase - 4	deg	Master	0	-3.000	-0.186	3.000	
Test Loop Gain - 5		Master	1.000	0.950	0.997	1.050	
Test Loop Phase - 5	deg	Master	0	-3.000	-0.244	3.000	
Test Loop Gain - 6		Master	1.000	0.950	1.007	1.050	
Test Loop Phase - 6	deg	Master	0	-3.000	0.209	3.000	
Test Loop Gain - 7		Master	1.000	0.950	1.031	1.050	
Test Loop Phase - 7	deg	Master	0	-3.000	0.072	3.000	

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM):		19:45:52 30-Aug-2016					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-82.274	119.000	
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-11.750	2250.000	
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	189.132	204.000	
Sonde Error Correction Quad - 1		Master	-----	-625.000	-99.398	625.000	
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	91.987	156.000	
Sonde Error Correction Quad - 2		Master	-----	-350.000	-163.766	350.000	
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	56.787	89.000	

Sonde Error Correction Quad - 3		Master	-----	-250.000	10.774	250.000	<div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	27.318	35.000	<div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 4		Master	-----	-63.000	-9.964	63.000	<div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	11.520	24.000	<div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 5		Master	-----	-50.000	21.600	50.000	<div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	10.623	15.000	<div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 6		Master	-----	-30.000	-5.057	30.000	<div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.679	5.000	<div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 7		Master	-----	-30.000	3.884	30.000	<div><div></div><div></div><div></div><div></div></div>

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 19:45:52 30-Aug-2016

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div></div>
Coarse Gain		Master	1.000	0.800	1.152	1.200	<div><div></div><div></div><div></div><div></div></div>
Fine Gain		Master	1.000	0.800	1.147	1.200	<div><div></div><div></div><div></div><div></div></div>

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 19:45:52 30-Aug-2016 Expired by 85 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Mag - 0	V	Master	-----	0.366	0.608	0.854	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Phase - 0	deg	Master	-----	137.000	-172.932	-103.000	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Mag - 1	V	Master	-----	0.762	1.246	1.778	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Phase - 1	deg	Master	-----	136.000	-173.870	-104.000	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Mag - 2	V	Master	-----	0.372	0.617	0.868	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Phase - 2	deg	Master	-----	132.000	-177.254	-108.000	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Mag - 3	V	Master	-----	0.420	0.699	0.980	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Phase - 3	deg	Master	-----	131.000	-177.987	-109.000	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Mag - 4	V	Master	-----	0.804	1.309	1.876	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Phase - 4	deg	Master	-----	125.000	176.206	-115.000	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Mag - 5	V	Master	-----	1.176	1.906	2.744	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Phase - 5	deg	Master	-----	122.000	174.647	-118.000	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Mag - 6	V	Master	-----	1.176	1.904	2.744	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Phase - 6	deg	Master	-----	121.000	174.679	-119.000	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Mag - 7	V	Master	-----	0.846	1.375	1.974	<div><div></div><div></div><div></div><div></div></div>
Thru Cal Phase - 7	deg	Master	-----	115.000	173.699	-125.000	<div><div></div><div></div><div></div><div></div></div>
SPA Zero	mV	Master		-50.000	-0.126	50.000	<div><div></div><div></div><div></div><div></div></div>
SPA Plus	mV	Master		941.000	1004.288	1040.000	<div><div></div><div></div><div></div><div></div></div>
Temperature Zero	V	Master		-0.050	0.000	0.050	<div><div></div><div></div><div></div><div></div></div>
Temperature Plus	V	Master		0.870	0.930	0.960	<div><div></div><div></div><div></div><div></div></div>

HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run ONE

Primary Equipment :			
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H		
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	4899	
Auxiliary Equipment :			
HRDD Backscatter Detector	Backscatter		
HRDD Long Spacing Detector	Long Spacing		
HRDD Short Spacing Detector	Short Spacing	27786	
Cesium 137 Gamma-Ray Logging Source	GSR-J	5471	
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H		
HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H		
Calibration Parameter :			
Small Ring Size (Caliper Calibration Small Ring)	8.00		
Large Ring Size (Caliper Calibration Large Ring)	12.00		

HDRS Caliper Calibration - Caliper Accumulations

Before (Measured): 17:13:38 20-Feb-2017 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div></div>
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Small Ring	in	Before	8.00	6.00	7.25	10.00	<div><div></div><div></div><div></div><div></div><div></div></div>
Large Ring	in	Before	12.00	9.00	10.96	15.00	<div><div></div><div></div><div></div><div></div><div></div></div>
HDRS Density Calibration - Inversion Results							
Master (EEPROM):		15:35:40 17-Feb-2017					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div></div>
Rho Aluminum	lbm/gal	Master	21.66	21.58	21.72	21.75	<div><div></div><div></div><div></div><div></div><div></div></div>
Rho Magnesium	lbm/gal	Master	14.07	13.99	14.04	14.15	<div><div></div><div></div><div></div><div></div><div></div></div>
Pe Aluminum		Master	2.570	2.470	2.572	2.670	<div><div></div><div></div><div></div><div></div><div></div></div>
Pe Magnesium		Master	2.650	2.550	2.618	2.750	<div><div></div><div></div><div></div><div></div><div></div></div>
HDRS Density Calibration - Deviation Summary							
Master (EEPROM):		15:35:40 17-Feb-2017					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div></div>
BS Average Deviation	%	Master	0	-0.6000	0.3901	0.6000	<div><div></div><div></div><div></div><div></div><div></div></div>
BS Max Deviation	%	Master	0	-1.6000	0.8354	1.6000	<div><div></div><div></div><div></div><div></div><div></div></div>
SS Average Deviation	%	Master	0	-1.0000	0.2566	1.0000	<div><div></div><div></div><div></div><div></div><div></div></div>
SS Max Deviation	%	Master	0	-2.5000	0.8468	2.5000	<div><div></div><div></div><div></div><div></div><div></div></div>
LS Average Deviation	%	Master	0	-1.5000	0.9914	1.5000	<div><div></div><div></div><div></div><div></div><div></div></div>
LS Max Deviation	%	Master	0	-3.5000	2.1815	3.5000	<div><div></div><div></div><div></div><div></div><div></div></div>
HDRS Density Calibration - Background Summary							
Master (EEPROM):		15:35:40 17-Feb-2017		Before:			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div></div>
BS Window Ratio		Master	1.0000		0.7373		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before			NOT DONE		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
BS Window Sum	1/s	Master	1		25188		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before			NOT DONE		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
SS Window Ratio		Master	1.0000		0.4824		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before			NOT DONE		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
SS Window Sum	1/s	Master	1		10929		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before			NOT DONE		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
LS Window Ratio		Master	1.0000		0.3002		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before			NOT DONE		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
LS Window Sum	1/s	Master	1		1214		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before			NOT DONE		<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
HDRS Density Calibration - Photo-multiplier High Voltages							
Master (EEPROM):		15:35:40 17-Feb-2017		Before:			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div></div>
BS PM High Voltage	V	Master		1000	1504	2400	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
SS PM High Voltage	V	Master		1000	1448	2400	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
LS PM High Voltage	V	Master		1000	1496	2400	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
HDRS Density Calibration - Crystal Quality Resolutions							
Master (EEPROM):		15:35:40 17-Feb-2017		Before:			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div></div>
BS Crystal Resolution	%	Master		5.00	11.92	25.00	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
SS Crystal Resolution	%	Master		5.00	10.52	20.00	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>
		Before-Master	----	----	----	----	<div><div></div><div></div><div></div><div></div><div></div></div>

LS Crystal Resolution	%	Master Before Before-Master	----- ----- -----	5.00 ----- -----	8.22 ----- -----	20.00 ----- -----	<div><div></div></div> <div><div></div></div> <div><div></div></div>
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HDRS MCFL Calibration - MCFL Accumulations

Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div></div> <div><div></div></div>
Main Resistivity - 0	ohm.m	Before	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
Deep Resistivity - 0	ohm.m	Before	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
Shallow Resistivity - 0	ohm.m	Before	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run ONE

Primary Equipment :			
HILT Gamma-Ray and Neutron Sonde, 150 degC		HGNS-H	
Auxiliary Equipment :			
AmBe Neutron Logging Source		NSR-F	5069
Calibration Parameter :			
Water Temperature (Calibration Tank Water Temperature)		54.0	
Housing Size (Thermal Housing Size)		3.38	
JIG-BKG (Jig minus background reference)		165	

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div></div> <div><div></div></div>
AZ Vertical Measurement - 0	ft/s2	Before	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div></div> <div><div></div></div>
Accelerometer Manufacturer		Master			NOT DONE		<div><div></div></div> <div><div></div></div>
Accelerometer Reference Temperature		Master		-1.0	NOT DONE	50.0	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 0		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 1		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 2		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 3		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 4		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 5		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 6		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 7		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 8		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>
Accelerometer Coefficients - 9		Master	-----	-----	NOT DONE	-----	<div><div></div></div> <div><div></div></div>

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM):		16:09:48 04-Feb-2017		Before:			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div></div> <div><div></div></div>
Near Zero Measurement	1/s	Master	0	5.0	27.7	40.0	<div><div></div></div> <div><div></div></div>
		Before	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
		Before-Master	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
Far Zero Measurement	1/s	Master	0	5.0	27.4	40.0	<div><div></div></div> <div><div></div></div>
		Before	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
		Before-Master	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
Near Plus Measurement	1/s	Master	6031.0	4700.0	4965.0	6900.0	<div><div></div></div> <div><div></div></div>
		Before	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
		Before-Master	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
Far Plus Measurement	1/s	Master	2793.0	1900.0	2052.0	2900.0	<div><div></div></div> <div><div></div></div>
		Before	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
		Before-Master	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>
Near Corrected Plus Measurement	1/s	Master		4700.0	5042.0	6900.0	<div><div></div></div> <div><div></div></div>
		Before	-----	-----	-----	-----	<div><div></div></div> <div><div></div></div>

		Before-Master	----	----	----	----		
Far Corrected Plus Measurement	1/s	Master		1900.0	2091.0	2900.0		
		Before	----	----	----	----		
		Before-Master	----	----	----	----		
HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations								
Before (Measured): 17:13:52 20-Feb-2017 Expired by 1 days								
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
RGR Zero Measurement	gAPI	Before	30.0	0	92.3	120.0		
RGR Plus Measurement	gAPI	Before	185.4	157.1	196.5	206.3		
GR Calibration Gain		Before	0.89	0.80	0.84	1.05		

Company:	Expedition Water Solutions LLC	Schlumberger
Well:	EWS 4	
Field:	Wattenburg	
County:	Weld	
State:	Colorado	
MicroLog		