

Company: Kerr McGee Oil & Gas Onshore LP

Well: Banded 37C-27HZ

Field: Wattenberg

County: Weld State: Colorado

Platform Express
Array Induction
with Linear Correlation

County: Weld
Field: Wattenberg
Location: SHL: 300' FSL & 916' FEL
Well: Banded 37C-27HZ
Company: Kerr McGee Oil & Gas Onshore LP

Location:		SHL: 300' FSL & 916' FEL	Elev.:	K.B.	5002.00 ft
Permanent Datum:				G.L.	4977.00 ft
Log Measured From:				D.F.	5001.00 ft
Drilling Measured From:					
API Serial No.	Section:				
05-123-39303-00	27				
	Township:				
	2N				
	Range:				
	67W				

Logging Date 08-Aug-2014

Run Number Two

Depth Driller 7045.00 ft

Schlumberger Depth 7042.00 ft

Bottom Log Interval 7055.00 ft

Top Log Interval 1762.00 ft

Casing Driller Size @ Depth 9.625 in @ 1771.00 ft

Casing Schlumberger 1762 ft

Bit Size 8.75 in

Type Fluid In Hole WBM

Density 10.2 lbm/gal 41 s

Fluid Loss PH 9.5

Source of Sample Active Tank

RM @ Meas Temp 1.13 ohm.m @ 75 degF

RMF @ Meas Temp 1.15 ohm.m @ 75 degF

RMC @ Meas Temp 1.37 ohm.m @ 75 degF

Source RMF RMC Calculated Calculated

RM @ BHT RMF @ BHT 0.55 @ 160 0.56 @ 160

Max Recorded Temperatures 160 degF

Circulation Stopped 07-Aug-2014 23:00:00

Logger on Bottom 08-Aug-2014 04:00:00

Unit Number 2135

Recorded By Nolan Welsh

Witnessed By Steve Wilson

Disclaimer

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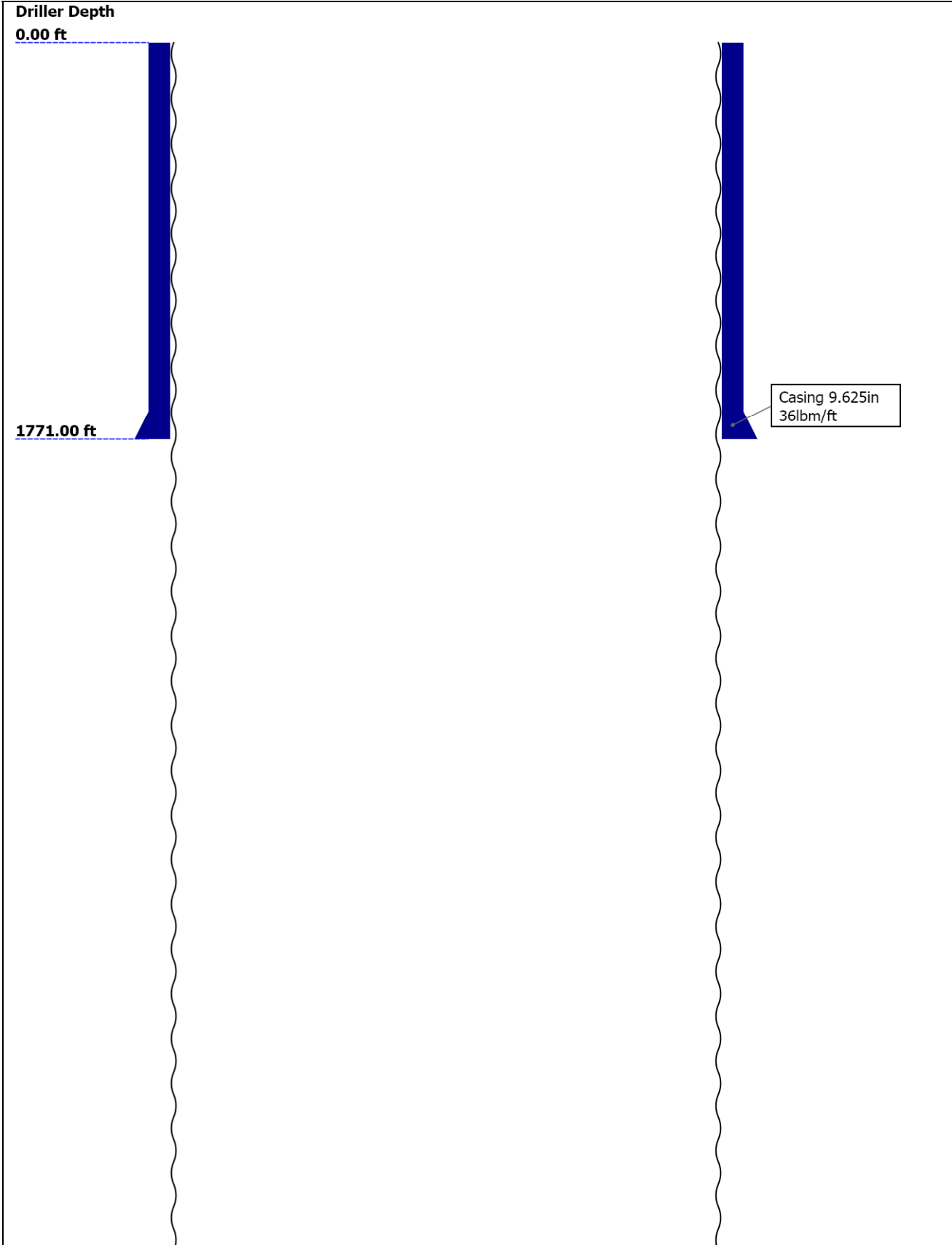
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Well Sketch





Borehole Size/Casing/Tubing Record						
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Bit						
Bit Size (in)	8.75					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	7045					
Bottom Logger (ft)	7042					
Casing						
Size (in)	9.625					
Weight (lbm/ft)	36					
Inner Diameter (in)	8.921					
Grade	N/A					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	1771					
Bottom Logger (ft)	1762					

Operational Run Summary						
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Parameter (unit)	Two					
Date Log Started	08-Aug-2014					
Time Log Started	03:12:32					
Date Log Finished	08-Aug-2014					
Time Log Finished	06:14:00					
Top Log Interval (ft)	1762.00					
Bottom Log Interval (ft)	7055.00					
Total Depth (ft)	7055.00					
Max Hole Deviation (deg)	19.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.750					
Logging Unit Number	2135					
Logging Unit Location	Fort Morgan					
Recorded By	Nolan Welsh					
Witnessed By	Steve Wilson					
Service Order Number	CXPX-00021					

Service Order Number		CATX-00021					
Borehole Fluids							
Parameter(unit)	Two						
Fluid Type	Water						
Fluid Name	WBM						
Max Recorded Temperatures (degF)	160						
Source of Sample	Active Tank						
Salinity (ppm)	0						
Density (lbm/gal)	10.2						
Funnel Viscosity (s)	41						
Fluid Loss (cm3)							
PH	9.5						
Date/Time Circulation Stopped	07-Aug-2014 23:00:00						
Date Logger on Bottom	08-Aug-2014						
Time Logger on Bottom	04:00:00						
Source RMF	Calculated						
RMC	Calculated						
RM @ Meas Temp (ohm.m@degF)	1.13 @ 75						
RMF @ Meas Temp (ohm.m@degF)	1.15 @ 75						
RMC @ Meas Temp (ohm.m@degF)	1.37 @ 75						
RM @ BHT (ohm.m@degF)	0.55 @ 160						
RMF @ BHT (ohm.m@degF)	0.56 @ 160						
RMC @ BHT (ohm.m@degF)	0.67 @ 160						
Total Solid (%)							
High Gravity Solids (%)							
Remarks and Equipment Summary							
Two: Toolstring				Two: Remarks			
Equip name	Length	MP name	Offset	Thank you for choosing schlumberger			
LEH-QT	53.58			Rig: H&P 311			
LEH-QT				AIT ran in compute standoff mode`			
EDTC-B:8315	50.67			HGNS ran without bowspring			
EDTH-B:8336				HGNS eccentered using PPC caliper with one arm powered.			
EDTG-B:77213				Logging interval from TD to Casing Shoe.			
EDTC-B:8315				Repeat analysis done 200 ft. below casing shoe due to bottom hole conditions.			
		CTEM	47.17	Crew: Kevin Crow, Troy Ocanas, Alonzo Carrera			
		ACCZ	0.00				
		HV	0.00				
		Gamma Ray	45.3				
		TelStatus	44.17				
PPC-B:8193	44.17						
PPC-B:8193		PPC-B Caliper	43.02				
		s					

HGNS-H:4865 37.65
HGNH:4817
NSR-F:2554
NPV-N
HMCA-H
HGNS-H:4865
HACCZ-H:6991

Temperature 37.62
GR 36.91

CNL Porosity 30.57
HGNS 28.24
HMCA 28.24
Acceleromete 0.00
r

HDRS-H:3863 28.24
ECH-MEB:2898
HRCC-H:3828
HRMS-H:3863
GPV-Q
Short Spacing
Long Spacing
GSR-J:5471
Backscatter
HRGD-H:3760

HRCC 24.24

MCFL 18.81
Caliper 18.33
TLD Density 17.94

AIT-M:181 16.00
AMIS:181
AMRM:181

Power Supply 7.91
Temperature 7.91
Induction 7.91

SP 0.08
Mud Resistivity 0.00
Head Tension
TOOL_ZERO

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									
		Two							
Depth Measuring Device									
Type		IDW-JA							
Serial Number		5916							
Calibration Date		24-Mar-2014							
Calibrator Serial Number									
Calibration Cable Type		7-46 PXS							
Wheel Correction 1		-6							
Wheel Correction 2		-3							
Tension Device									
Type		CMTD-B/A							
Serial Number		1919							
Calibration Date		28-Jul-2014							
Calibrator Serial Number		78135A							
Number of Calibration Points		10							
Calibration Root Mean Square Error		17							
Calibration Peak Error		26							
Logging Cable									
Type		7-46P-XS							
Serial Number		U711136							
Length		18500.00 ft							
Conveyance Type		Wireline							
Rig Type		Land							
Two:Depth Control Parameters					Depth Control Remarks				
Log Sequence		First Log In the Well			All Schlumberger depth procedures followed.				
Rig Up Length At Surface					IDW used as primary depth control.				
Rig Up Length At Bottom					Z-Chart used as secondary depth control.				
Rig Up Length Correction									
Stretch Correction		11.35 ft							
Tool Zero Check At Surface									
Two									
2" Induction									
Integration Summary									
Output Channel(s)		Output Description		Input Parameter			Output Value		Unit
ICV		Integrated Cement Volume		GCSE_UP_PASS, FCD			855.69		ft3
Software Version									
Acquisition System						Version			
MaxWell						4.0.9163.3000			
Application Patch						Patch-SP-10767_18214-4.0.9163.3001			
						Patch-Hotfix_Task_Tree_GDI_SP2-20806-4.0.9434.3002			
Computation		Description						Version	
Borehole		Borehole Ensemble provides common Borehole Parameters and Channels						4.0.9433.3000	
Tool Elements		Description				Software Version		Firmware Version	
HRCC-H		HILT High-Resolution Control Cartridge, 150 degC				4.0.9385.3000		2.0	
HGNS-H		HILT Gamma-Ray and Neutron Sonde, 150 degC				4.0.9385.3000		2.0	
AMIS		Array Induction Sonde - M				4.0.9427.3000		1	
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data

Two	Log[2]:Up	Up	71.32 ft	7075.21 ft	08-Aug-2014 4:00:16 AM	08-Aug-2014 5:44:41 AM	ON	13.25 ft	Yes
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All depths are referenced to toolstring zero

Log	Company:Kerr McGee Oil & Gas Onshore LP	Well:Banded 37C-27HZ
		Two: Log[2]:Up:S010

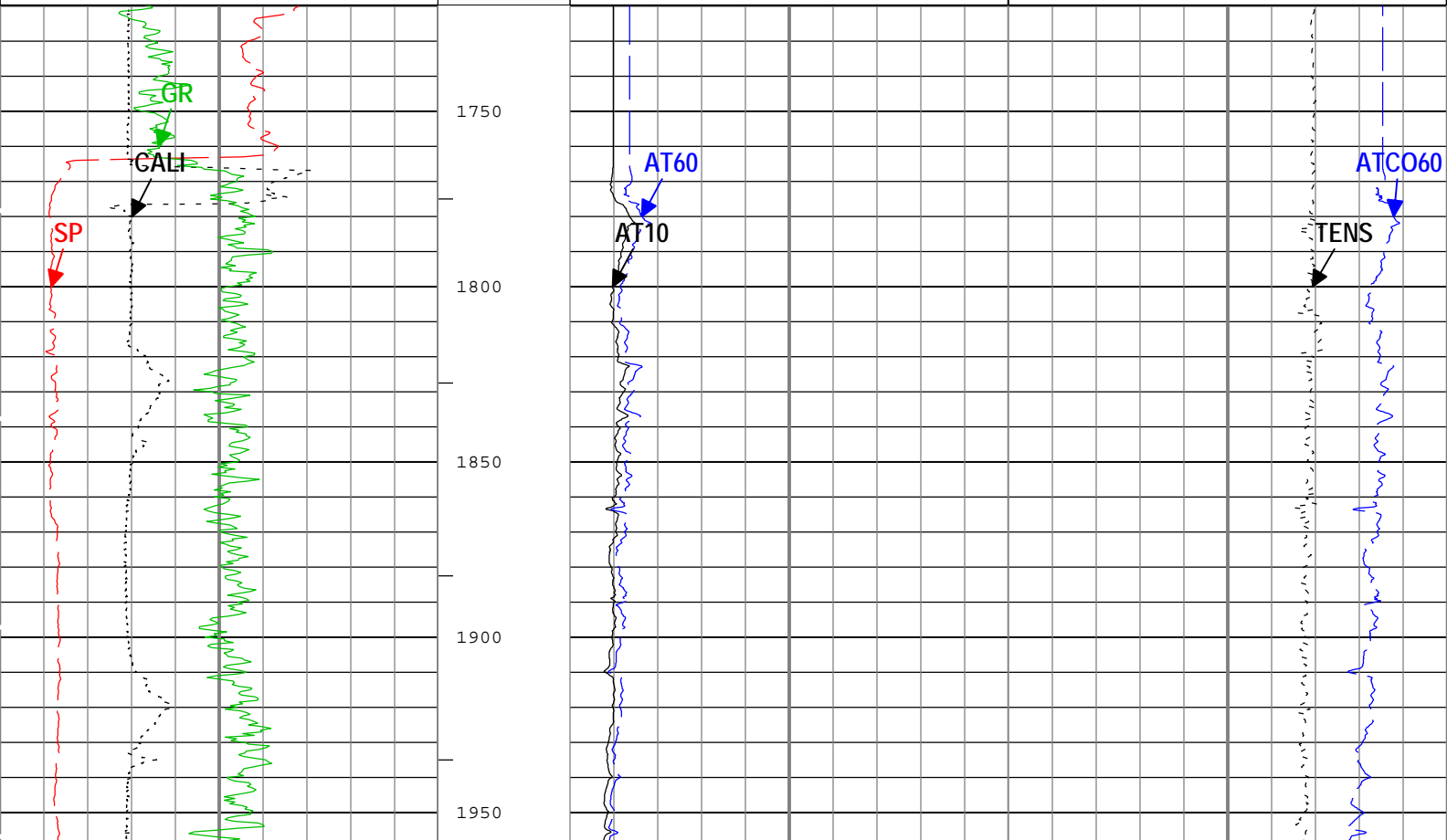
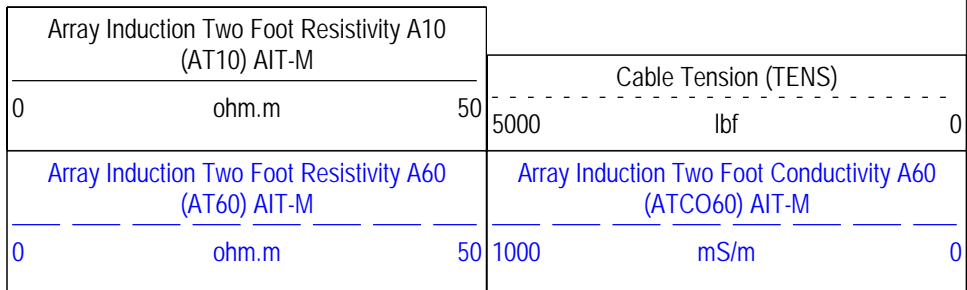
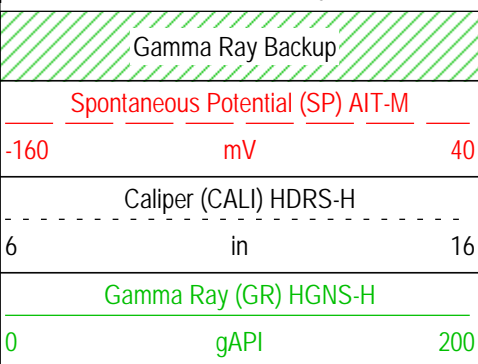
Description: AIT Basic Log Two Format: Log (Import of Kerr McGee 2in Induction) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured

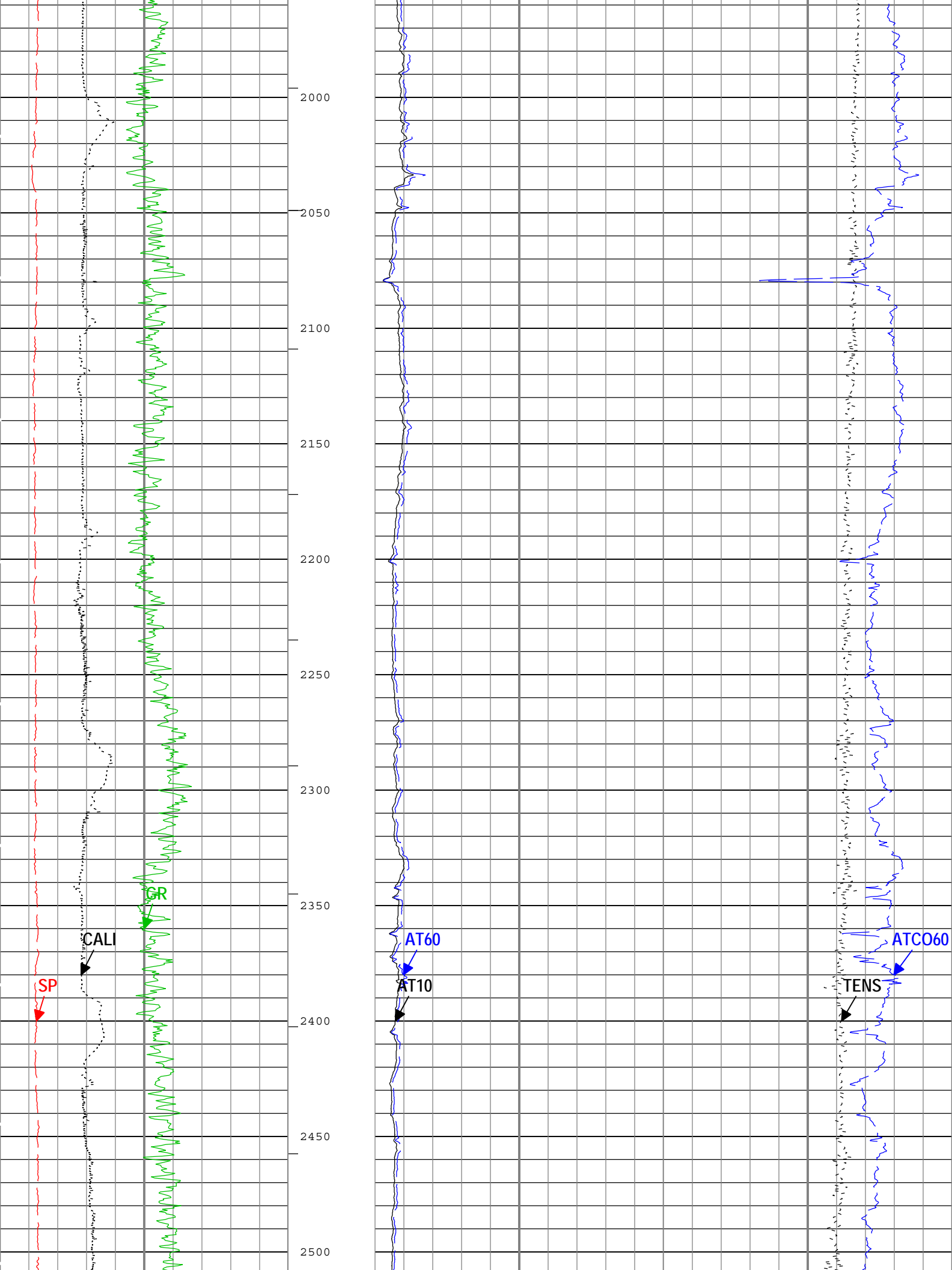
Depth Creation Date: 08-Aug-2014 06:49:08

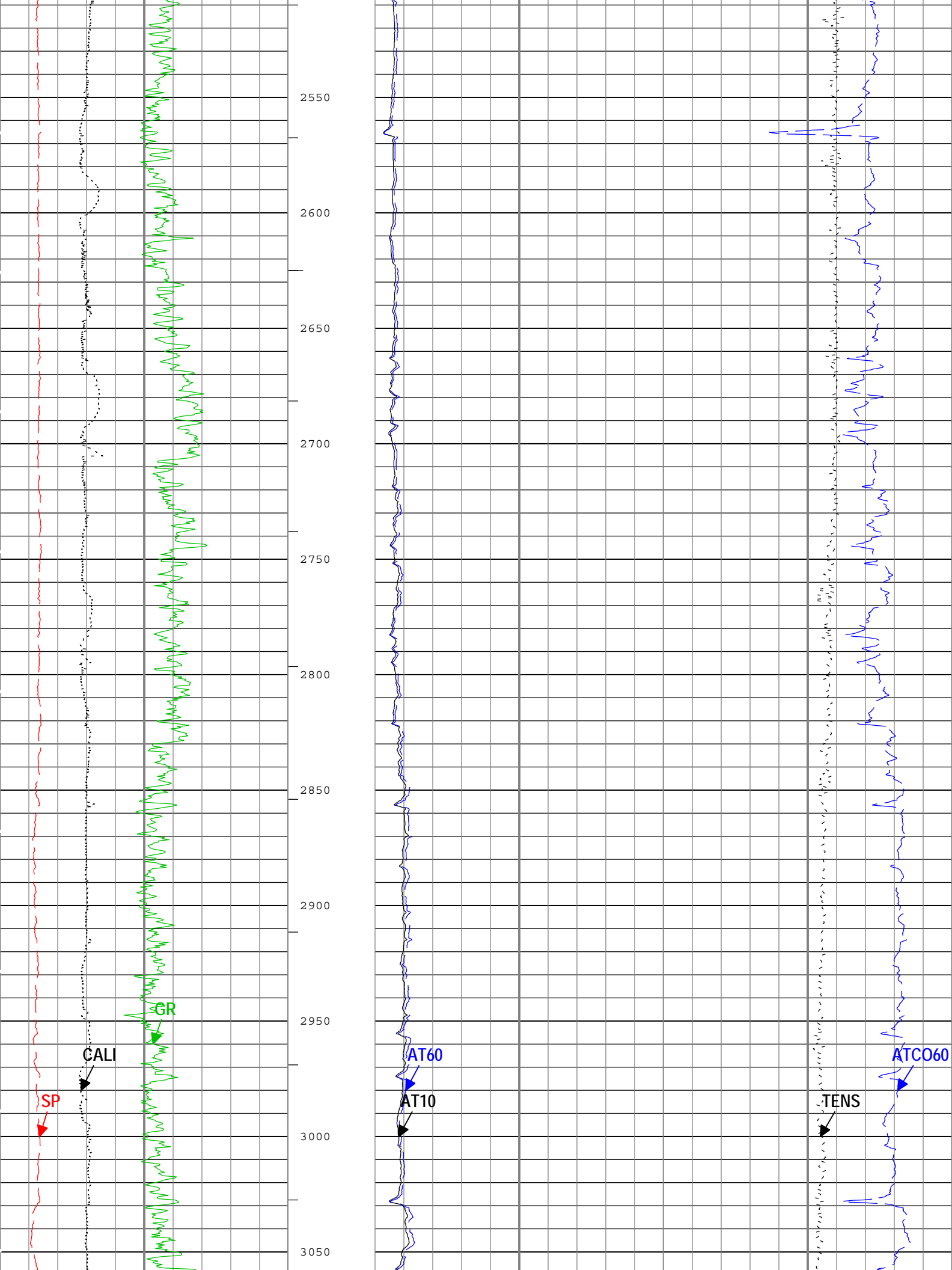
Channel	Source	Sampling
AT10	AIT-M:AMIS:AMIS	3in
AT60	AIT-M:AMIS:AMIS	3in
ATCO60	AIT-M:AMIS:AMIS	3in
CALI	HDRS-H:HRCC-H:HRCC-H	1in
GR	HGNS-H:HGNS-H:HGNS-H	6in
ICV	Borehole	6in
SP	AIT-M:AMIS:AMIS	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

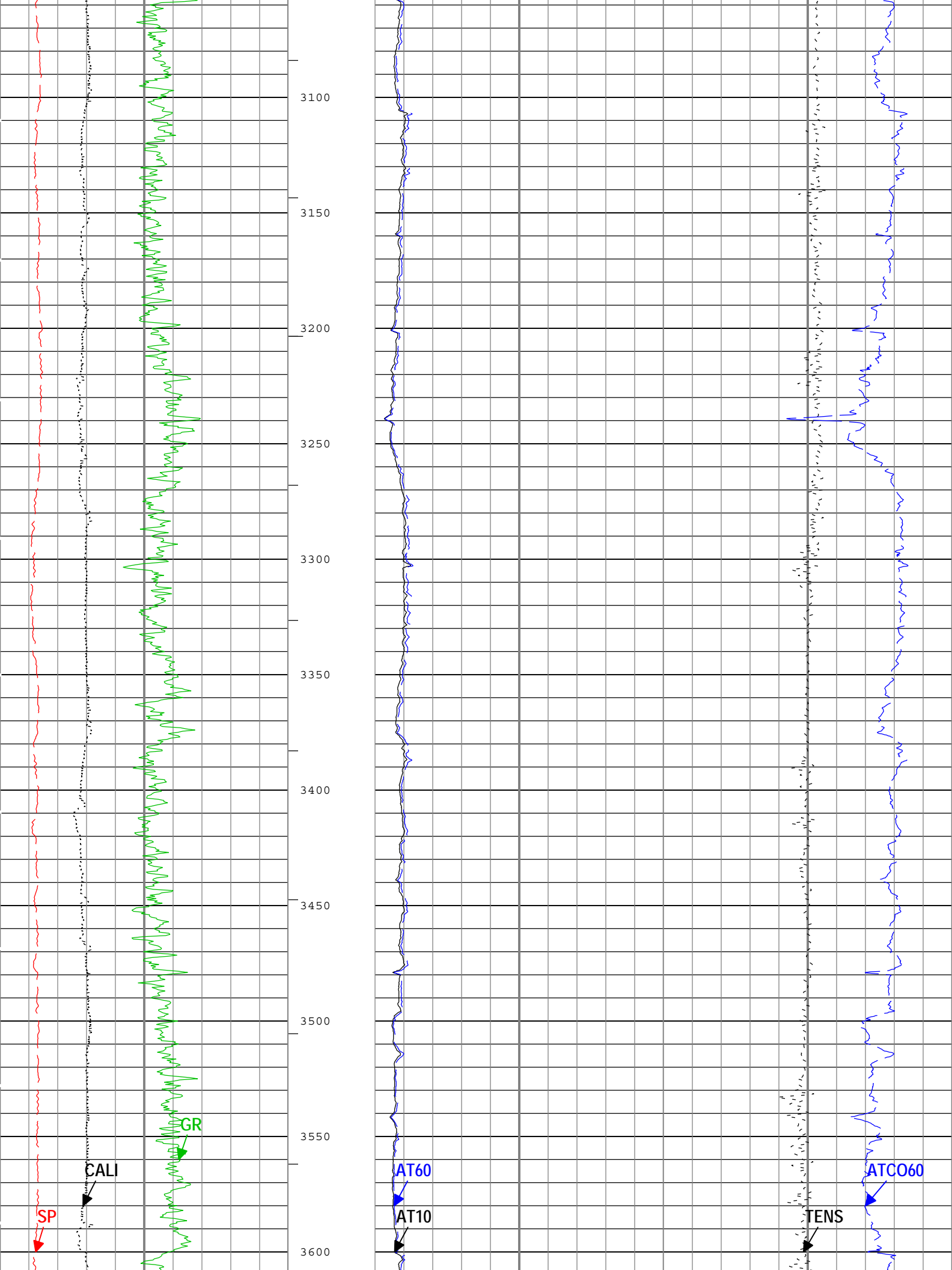
ICV - Integrated Cement Volume every 10.00 (ft3)
ICV - Integrated Cement Volume every 100.00 (ft3)

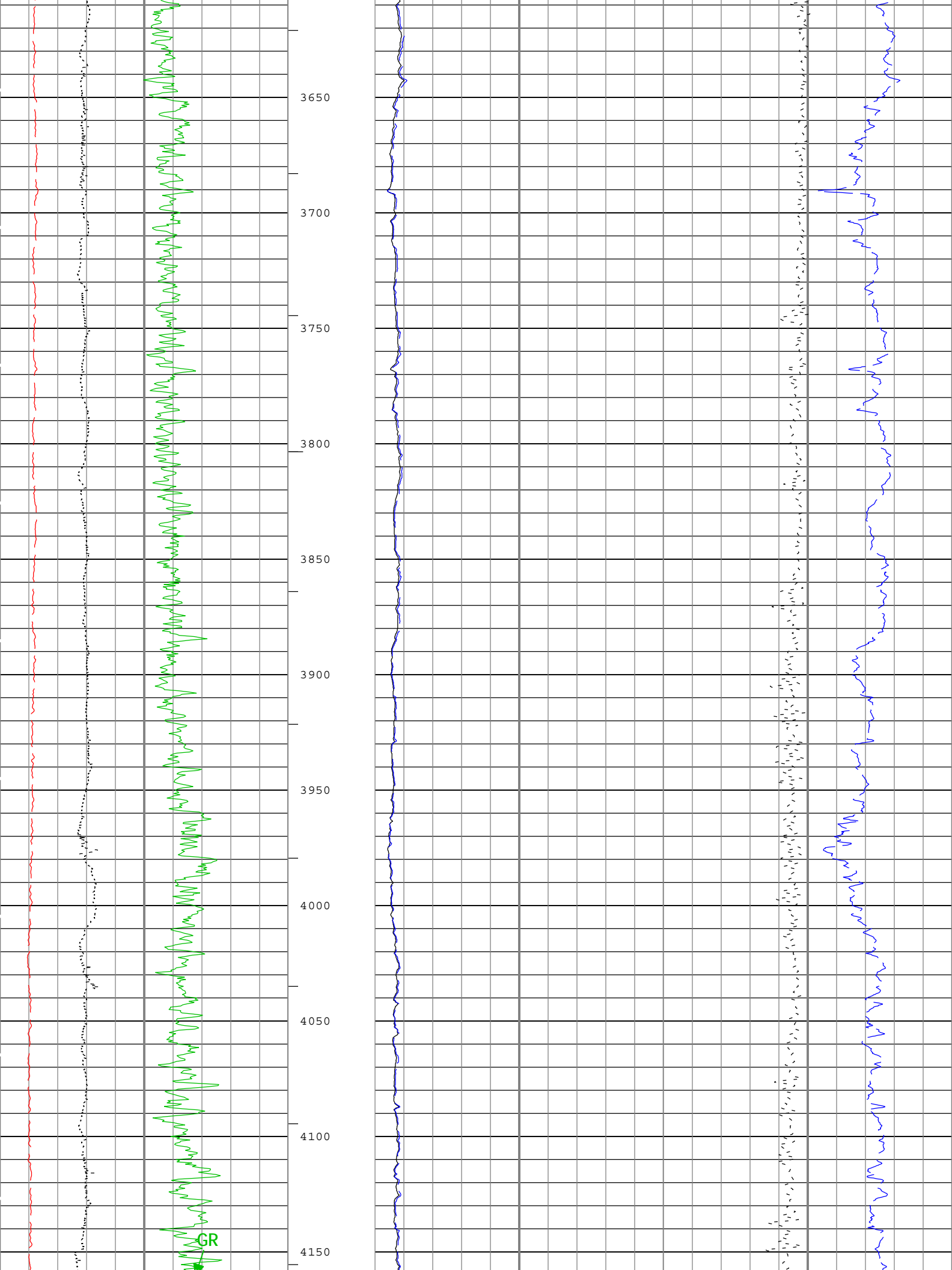
TIME_1900 - Time Marked every 60.00 (s)

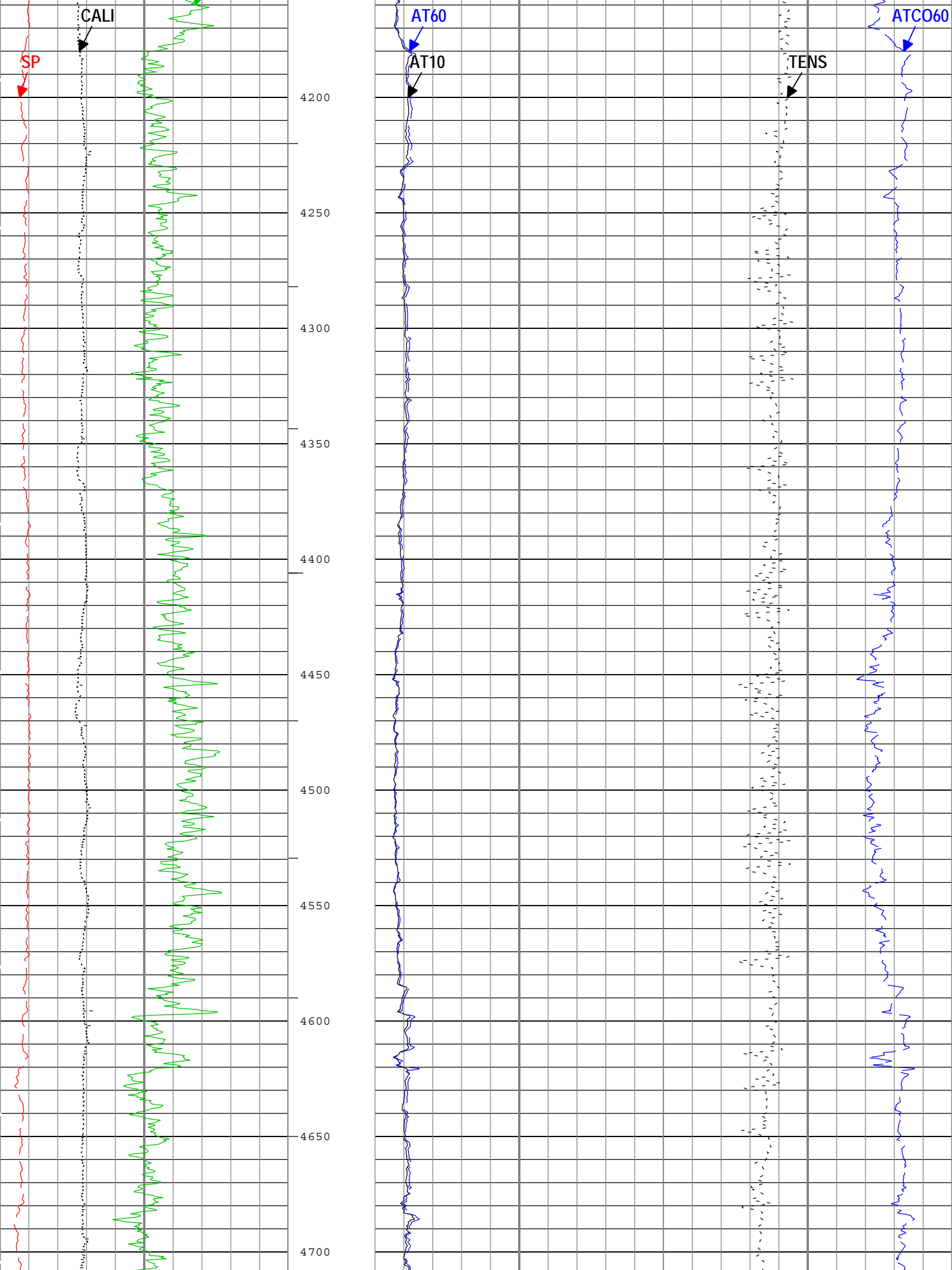


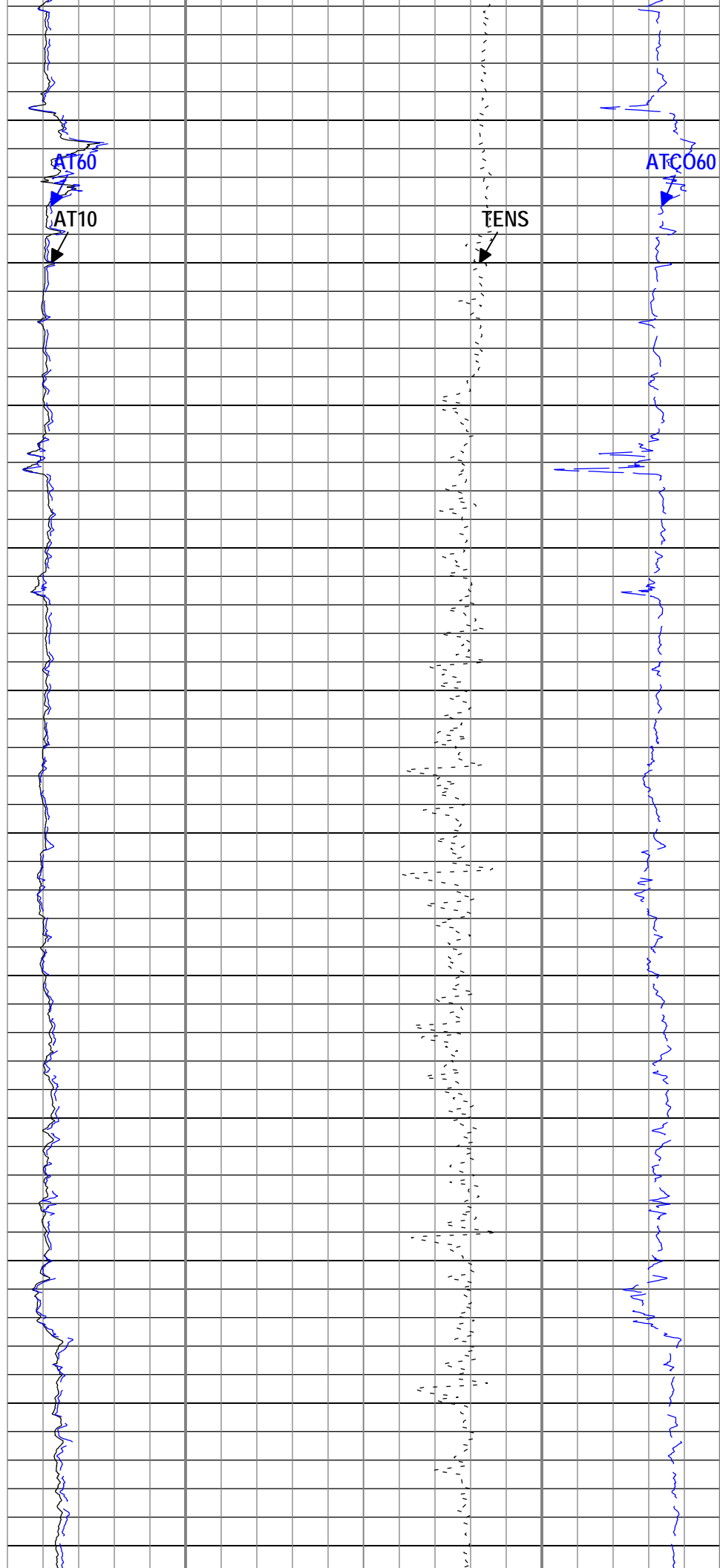
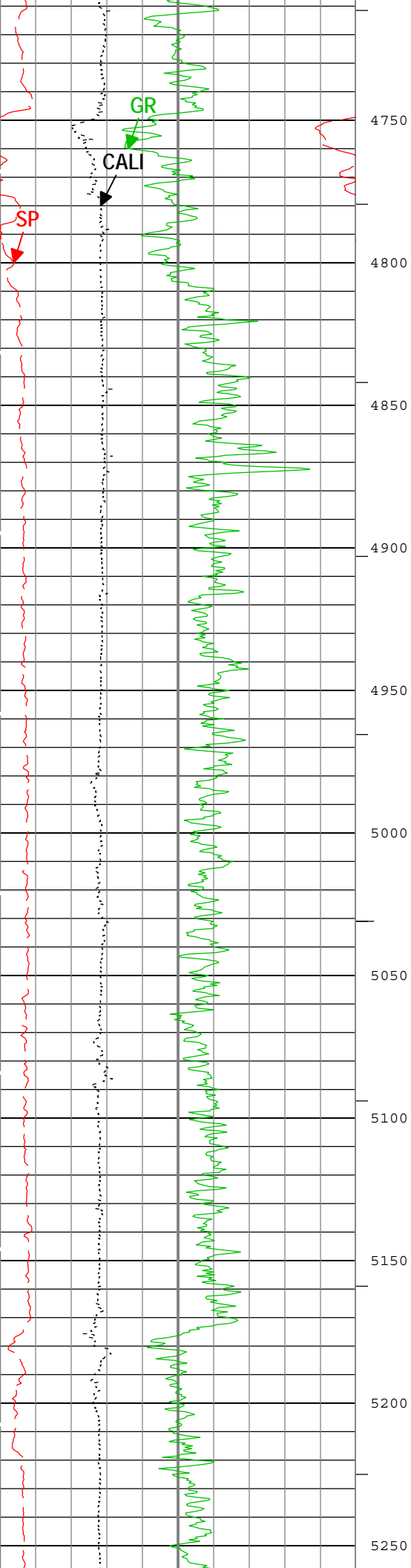


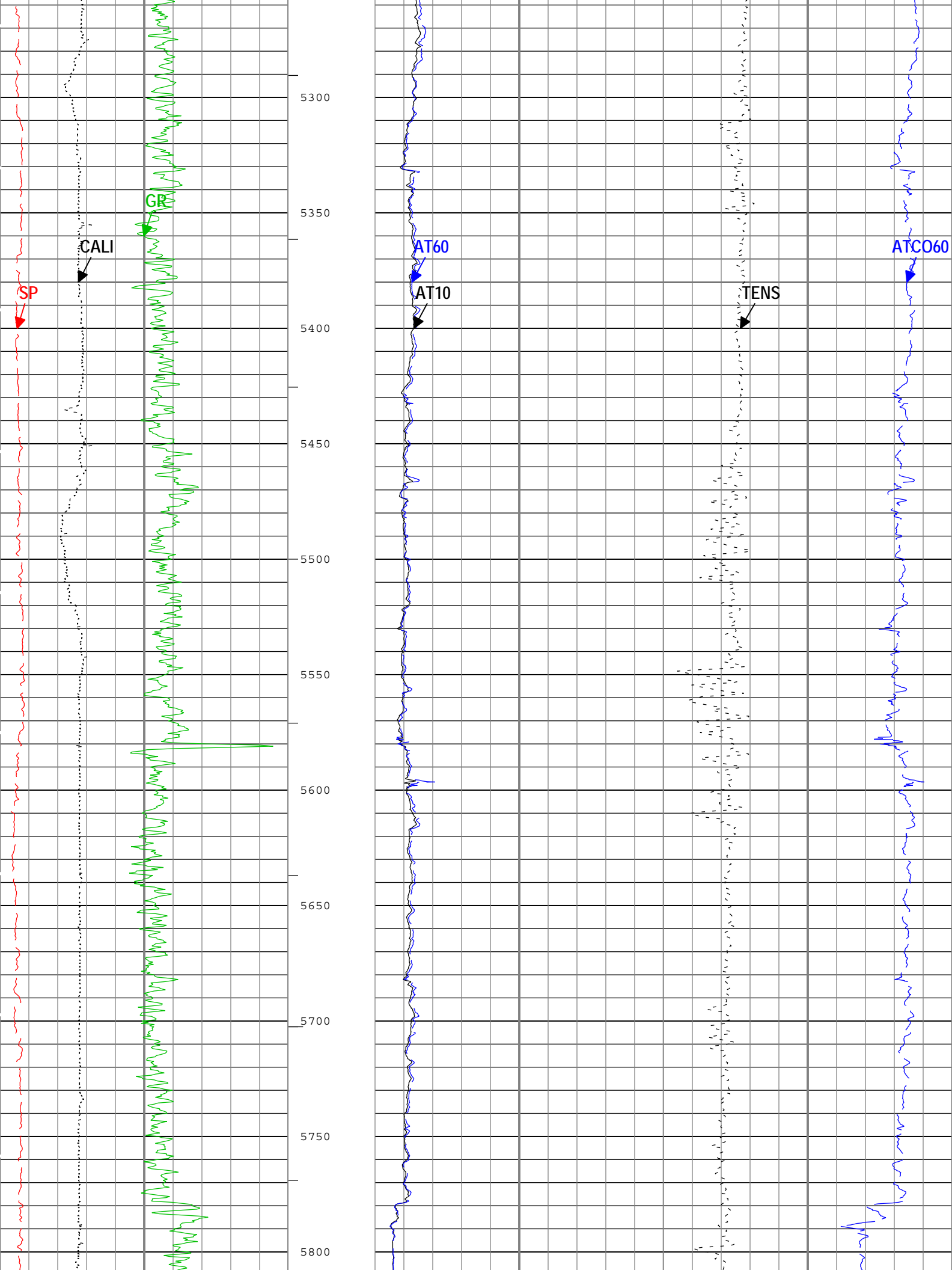


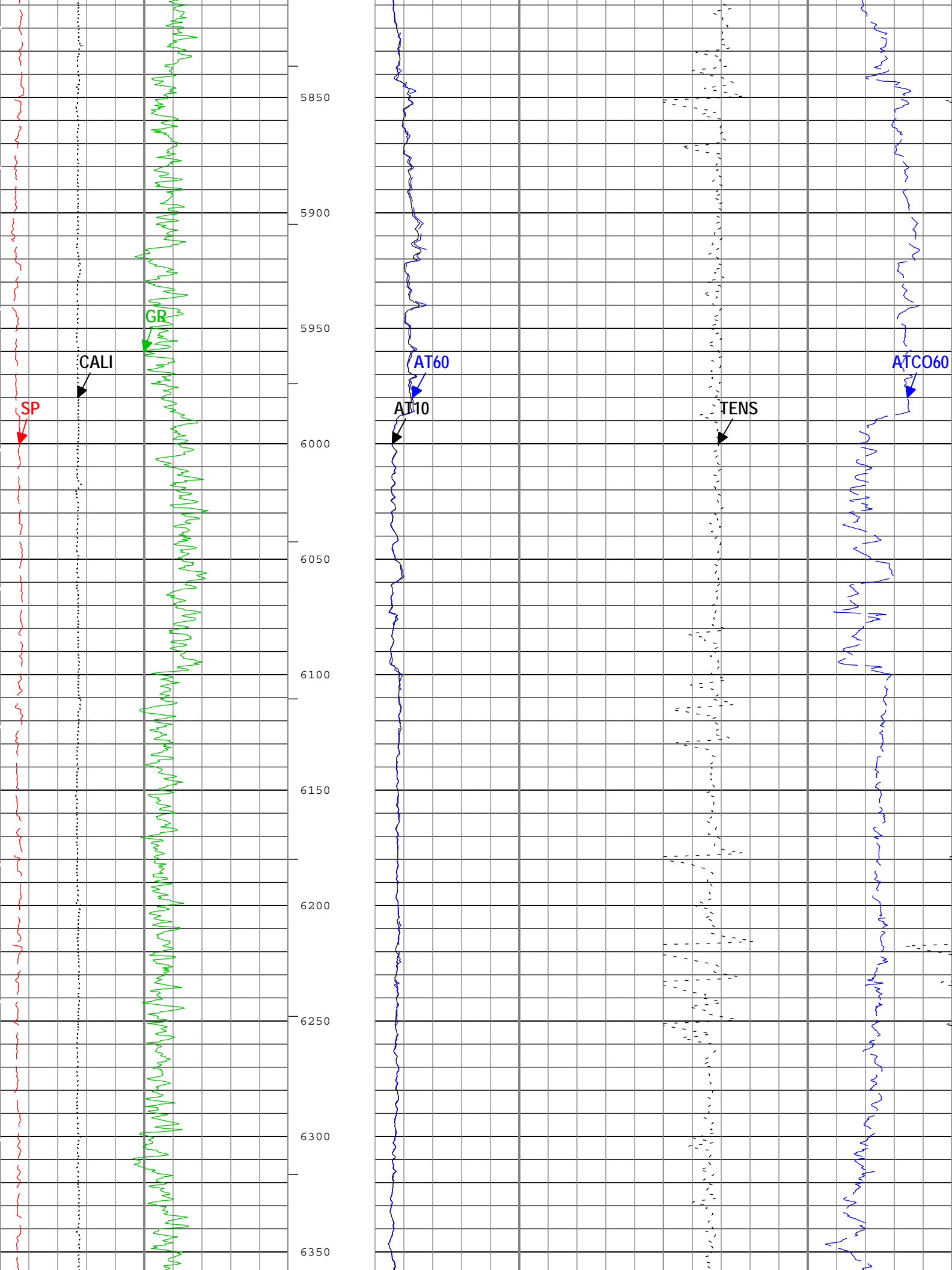


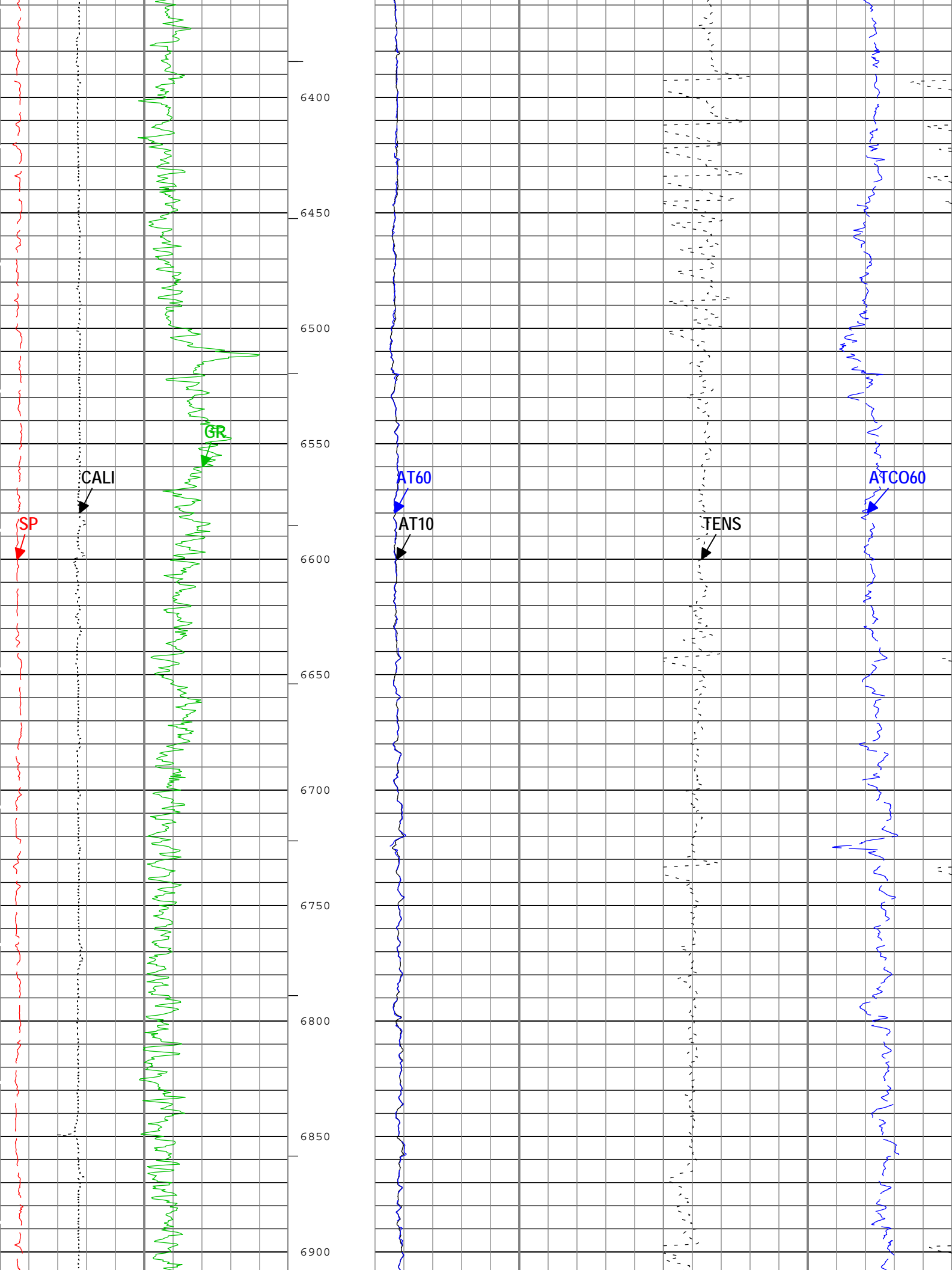


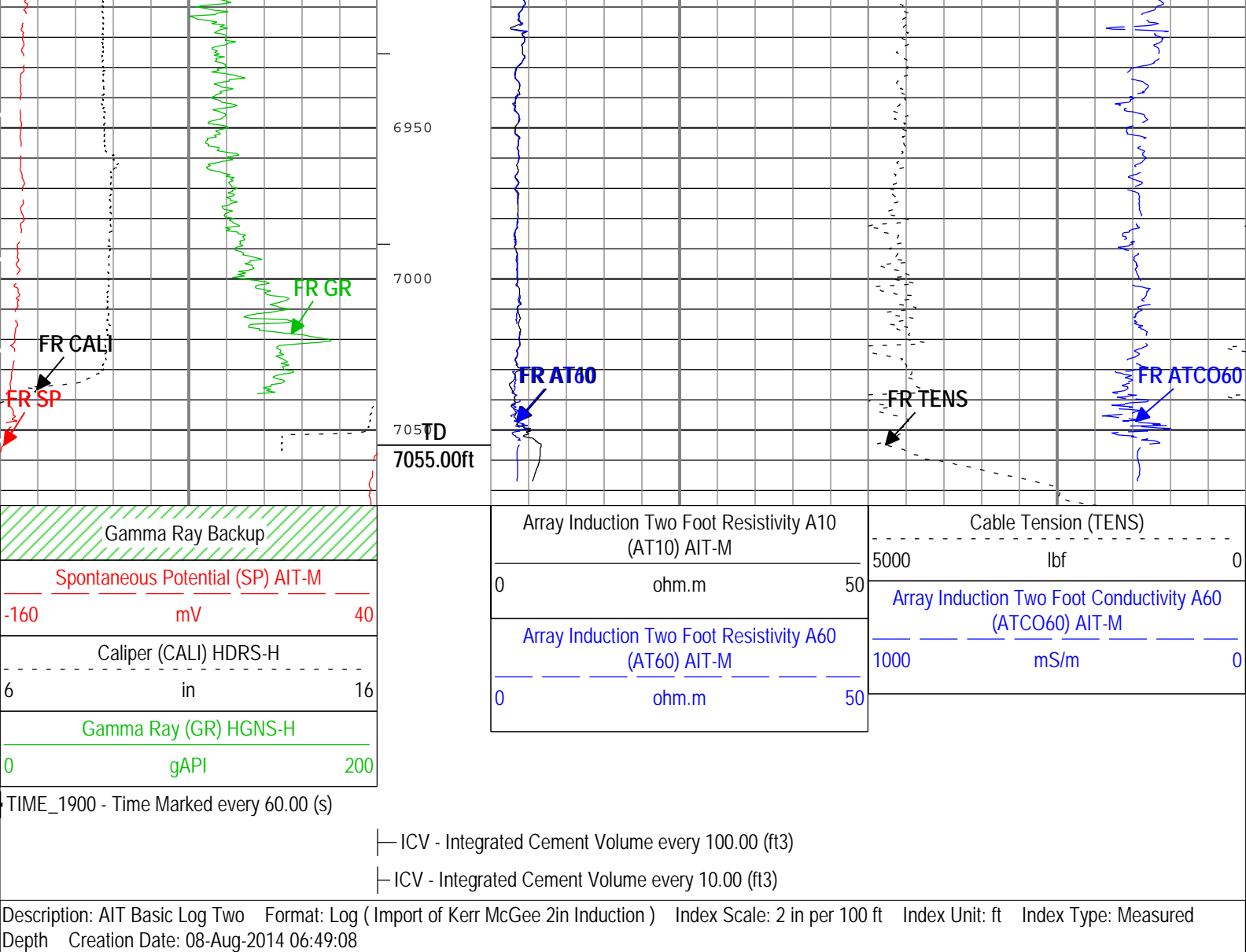






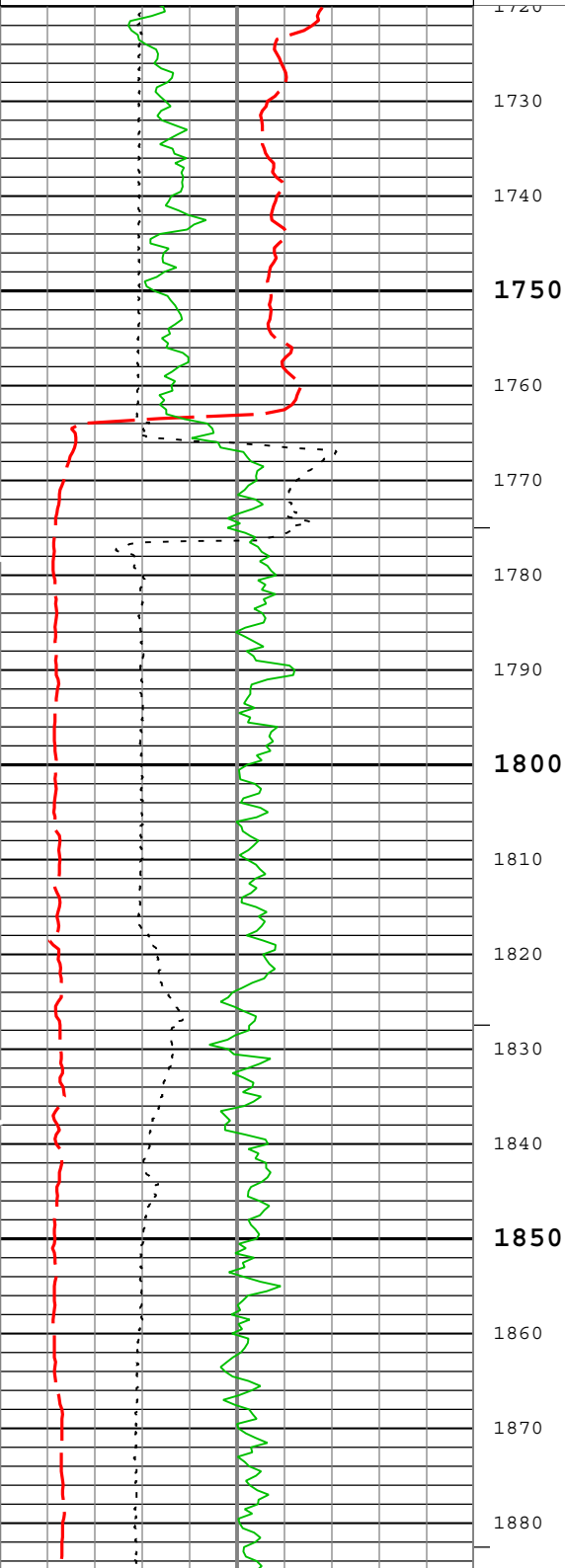
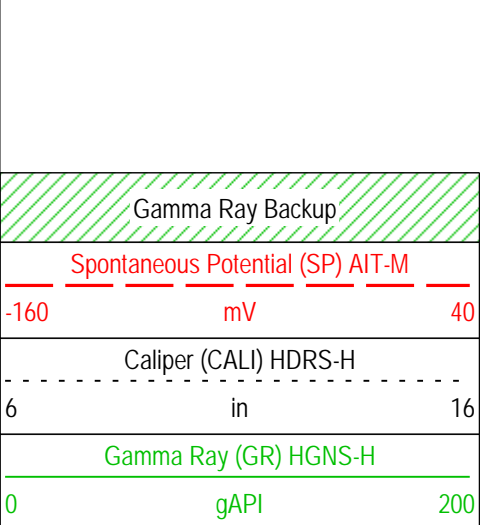


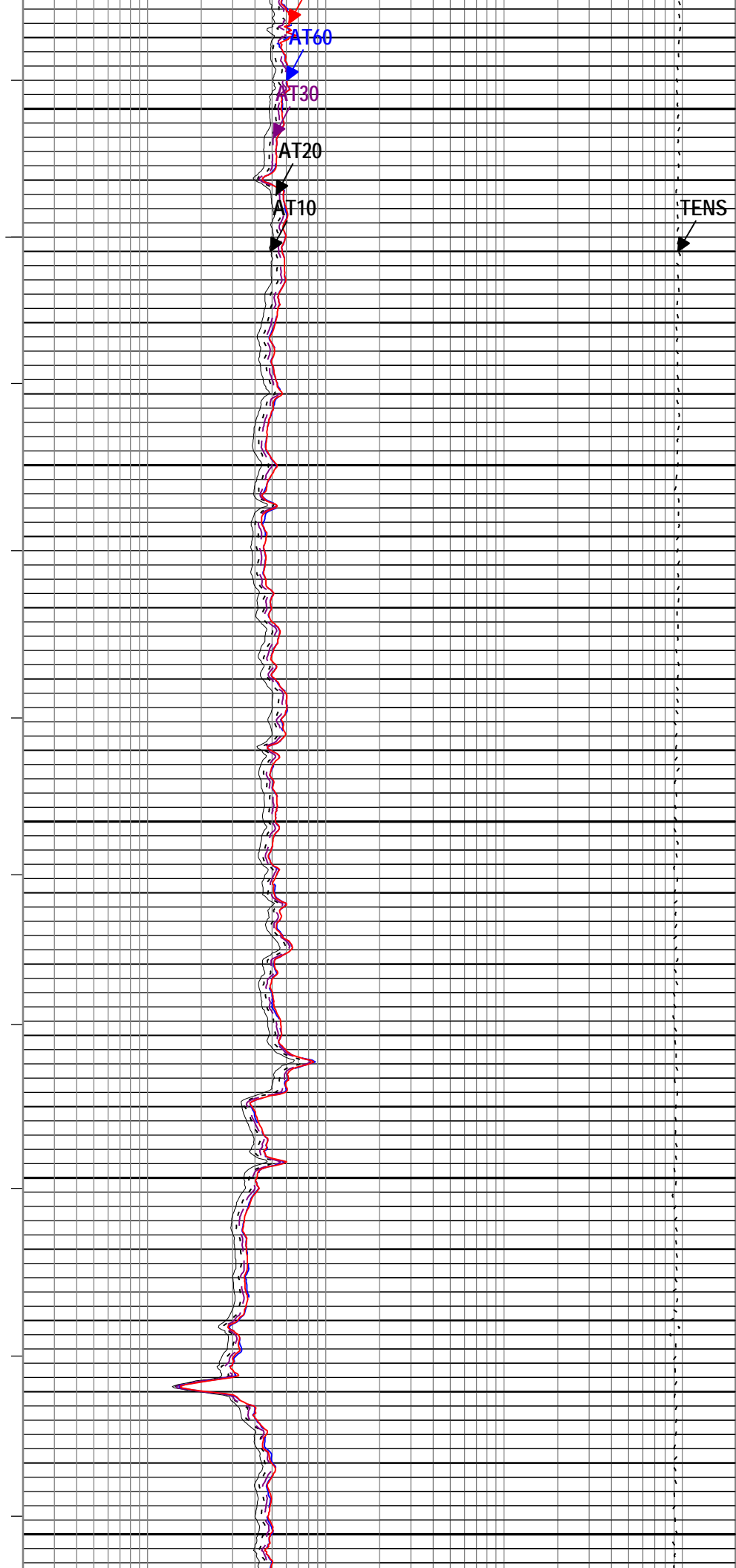
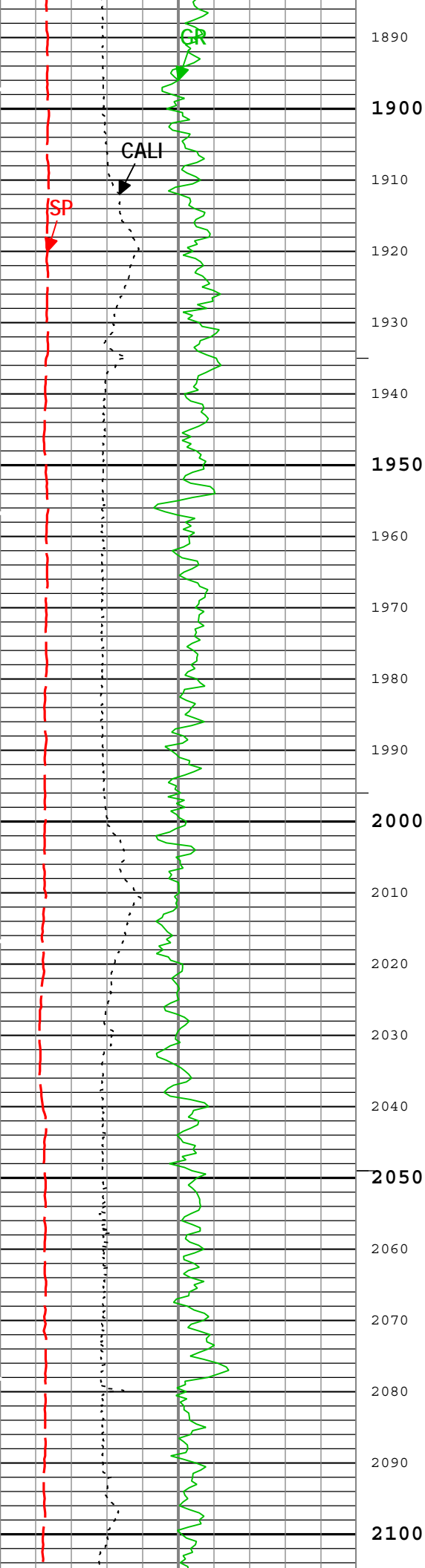


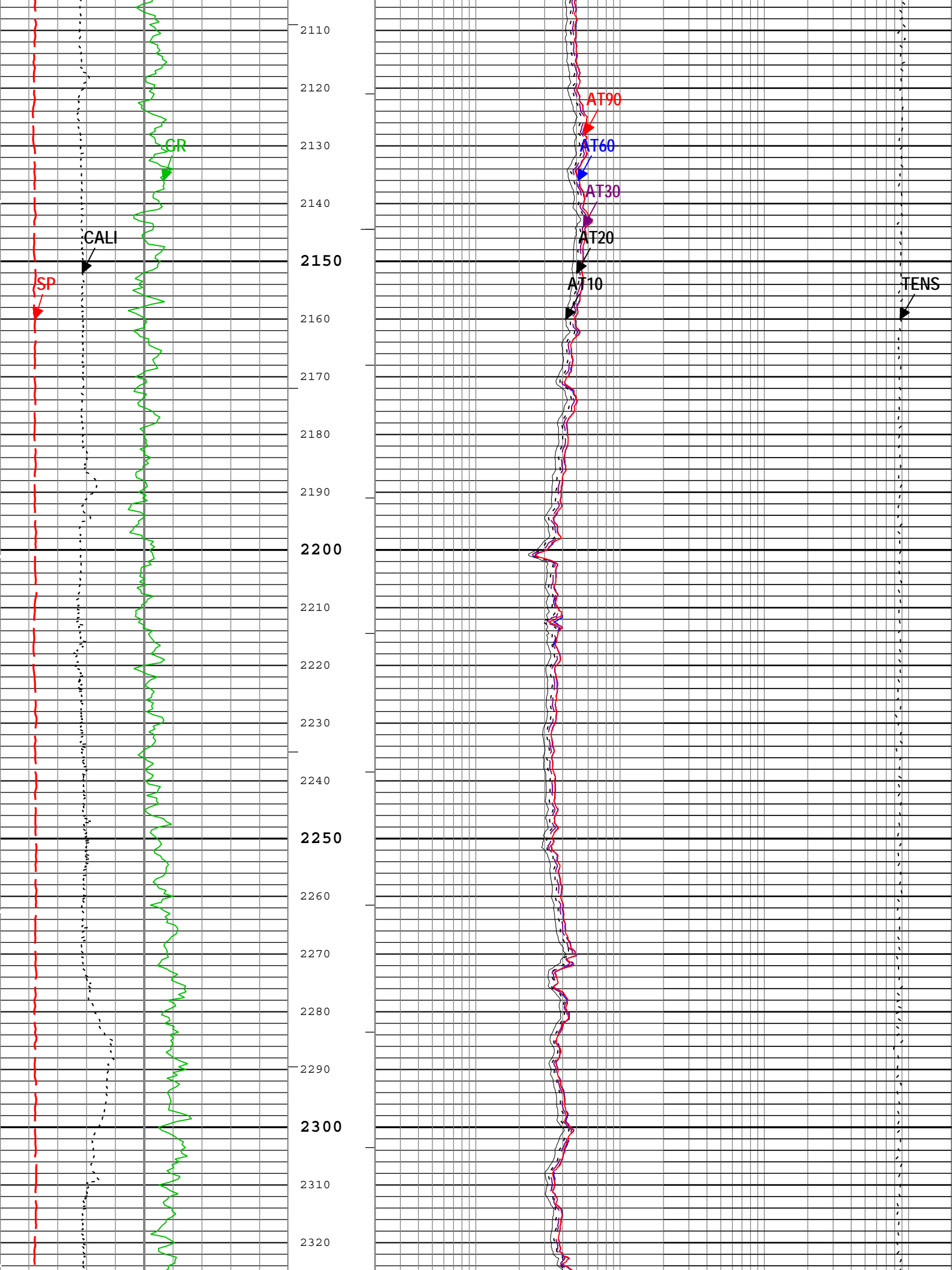


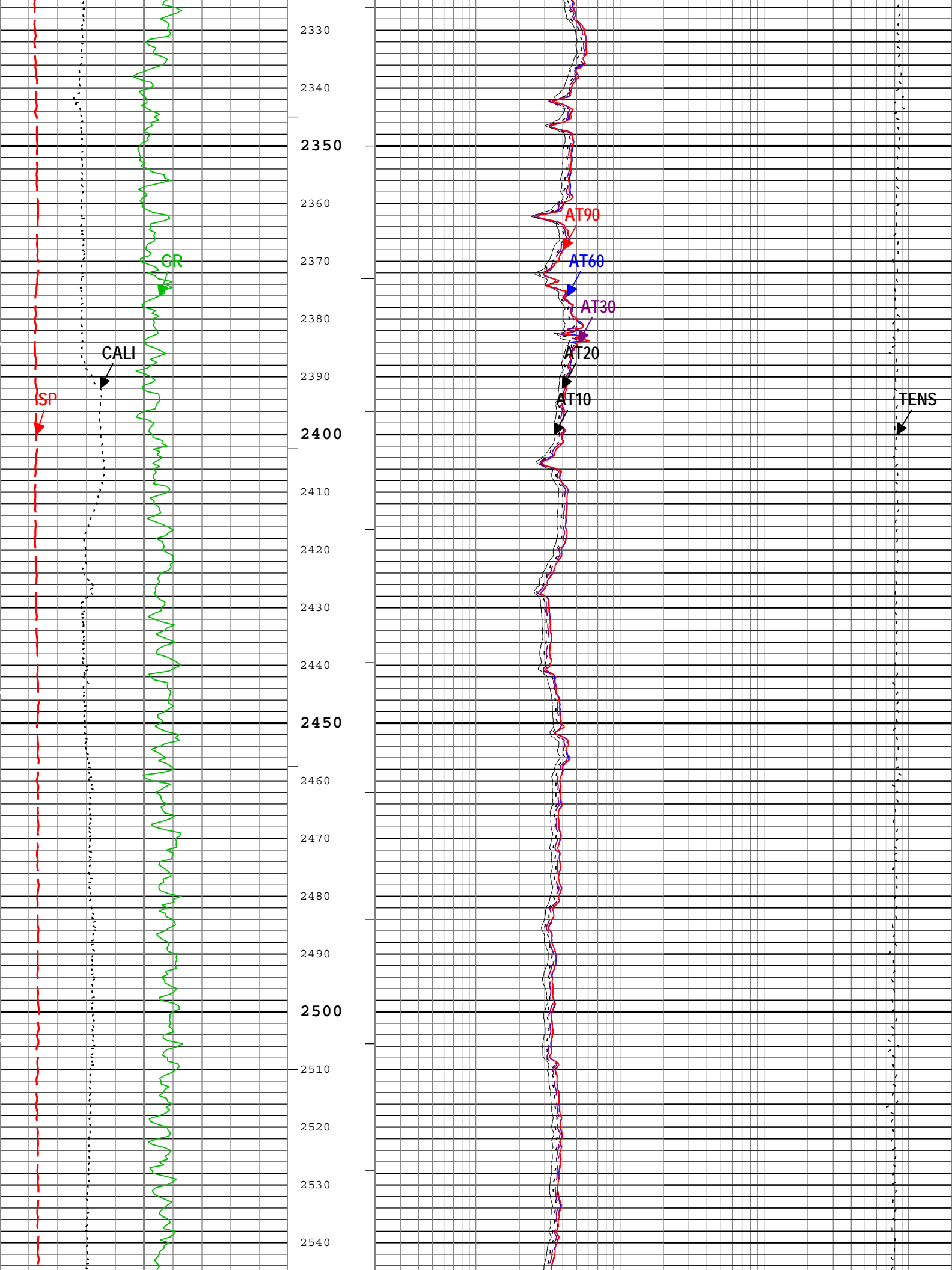
Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ACDE	Array Induction Casing Detection Enable	AIT-M	Yes	
ASTA	Array Induction Tool Standoff	AIT-M	1.125	in
BARI	Barite Mud Presence Flag	Borehole	Yes	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	8.75	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.068	in
CBLO	Casing Bottom (Logger)	WLSESSION	1762	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	9.625	in
DFD	Drilling Fluid Density	Borehole	10.2	lbm/gal
FCD	Future Casing (Outer) Diameter	WLSESSION	7	in
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
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	
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft

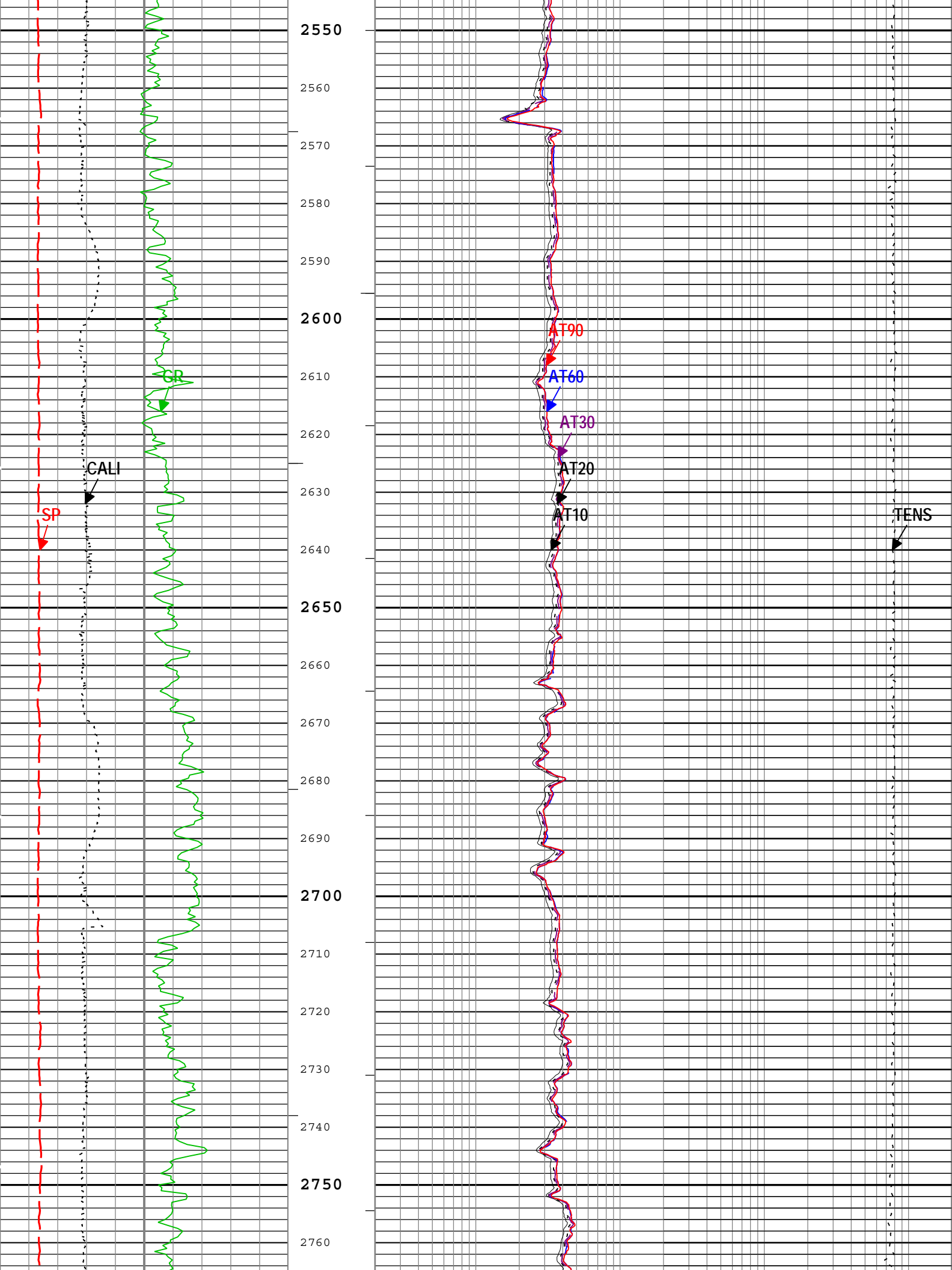
Tool Control Parameters				
Parameter	Description	Tool	Value	Unit

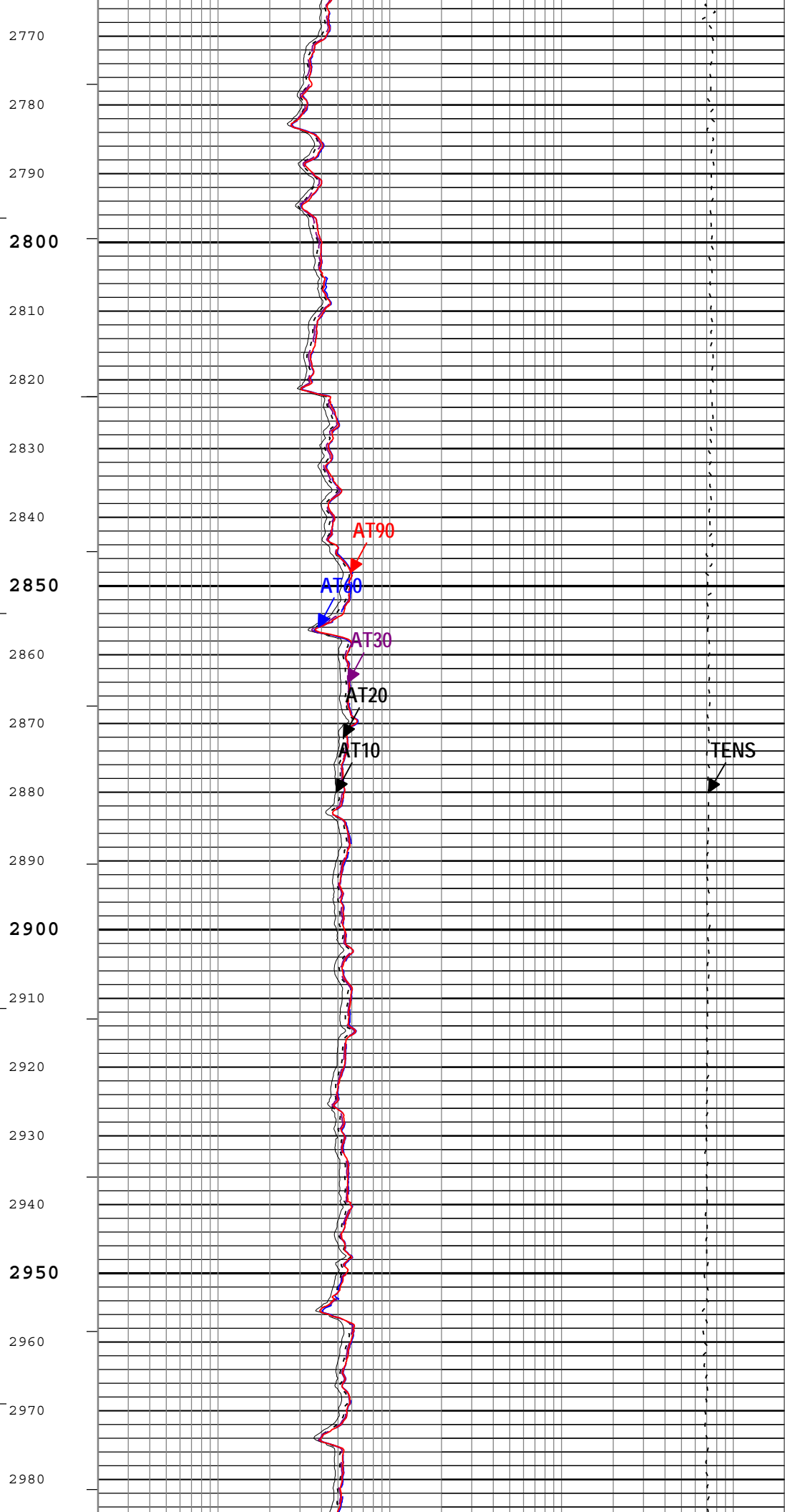
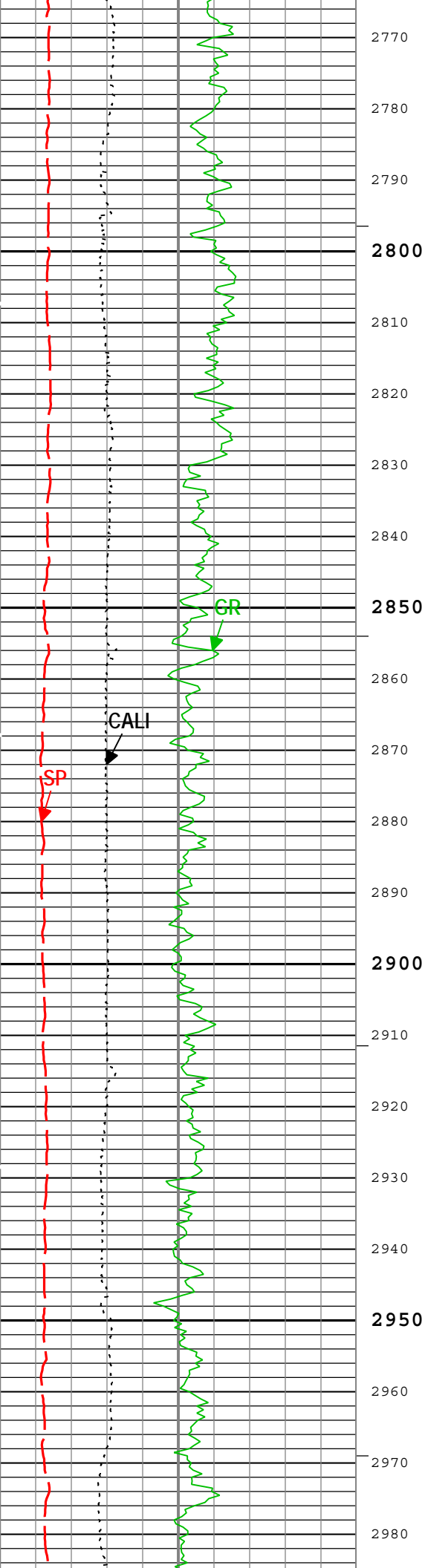


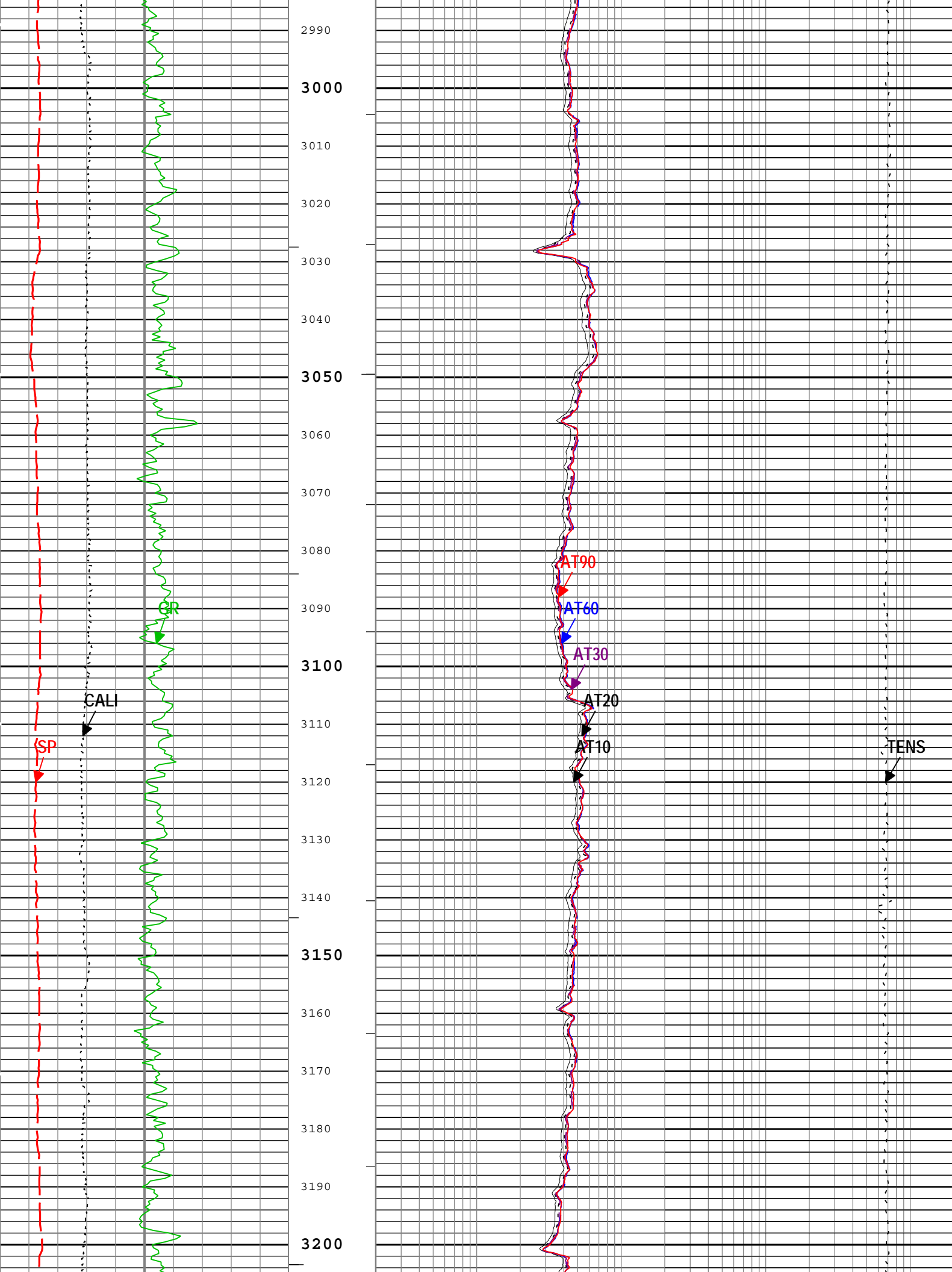


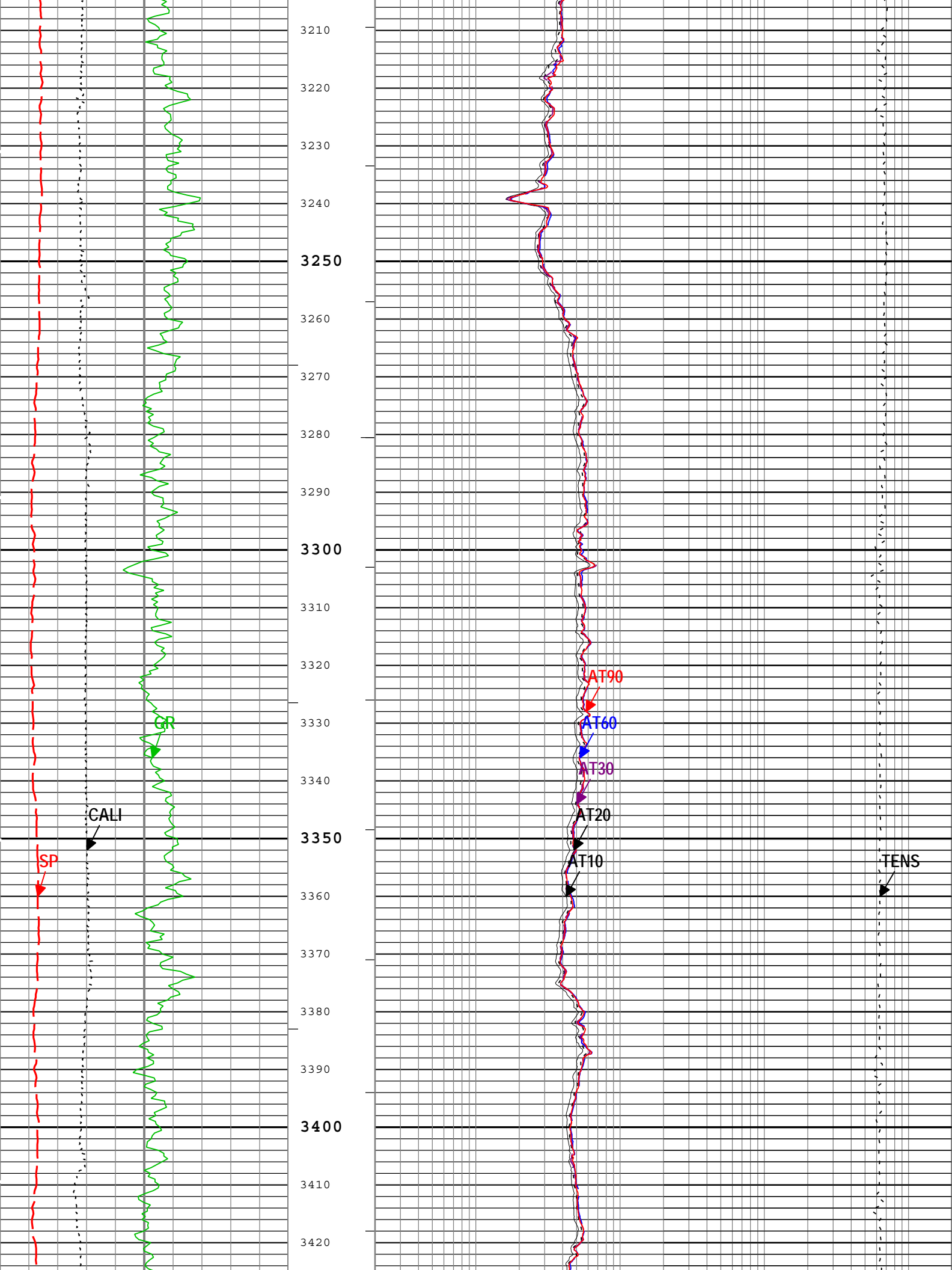


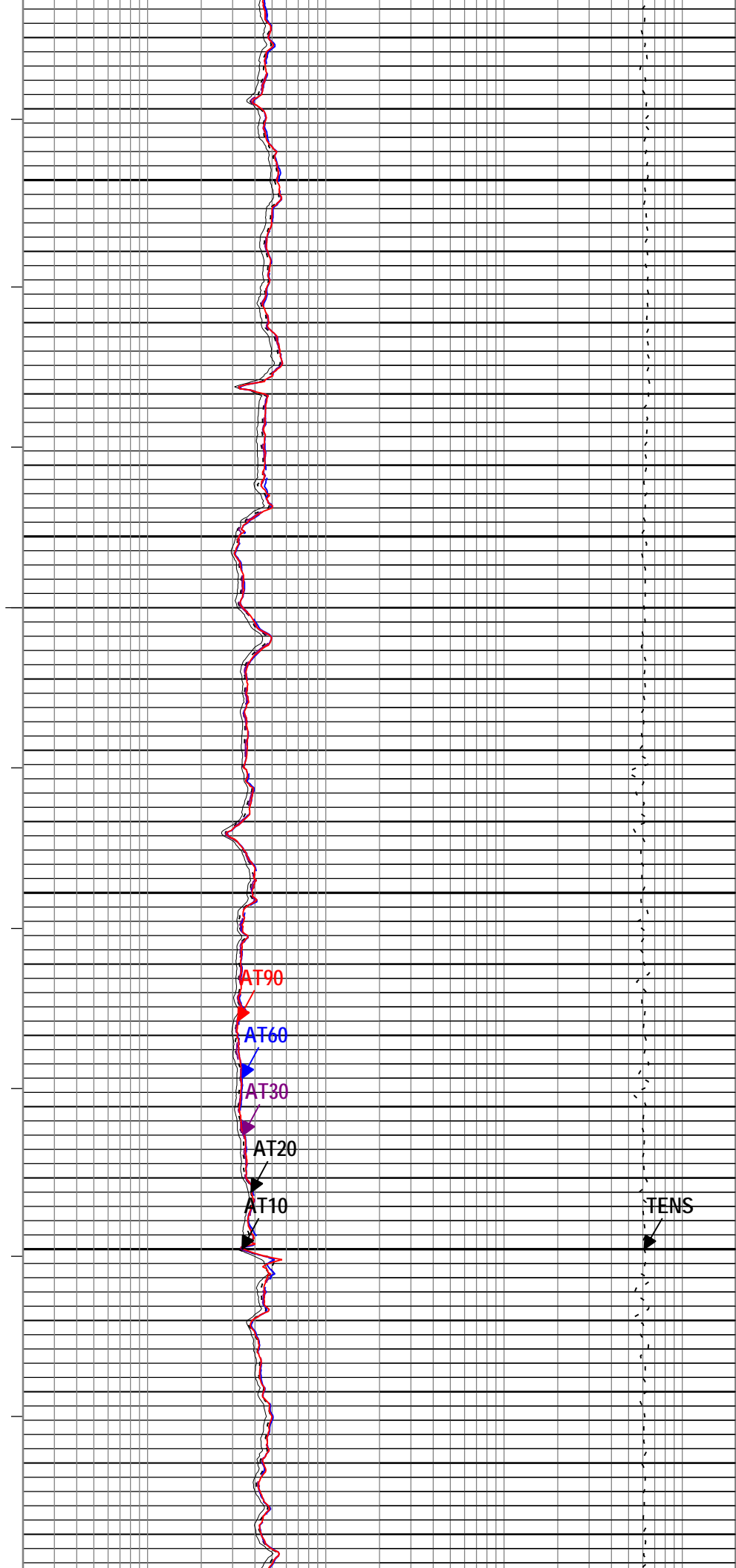
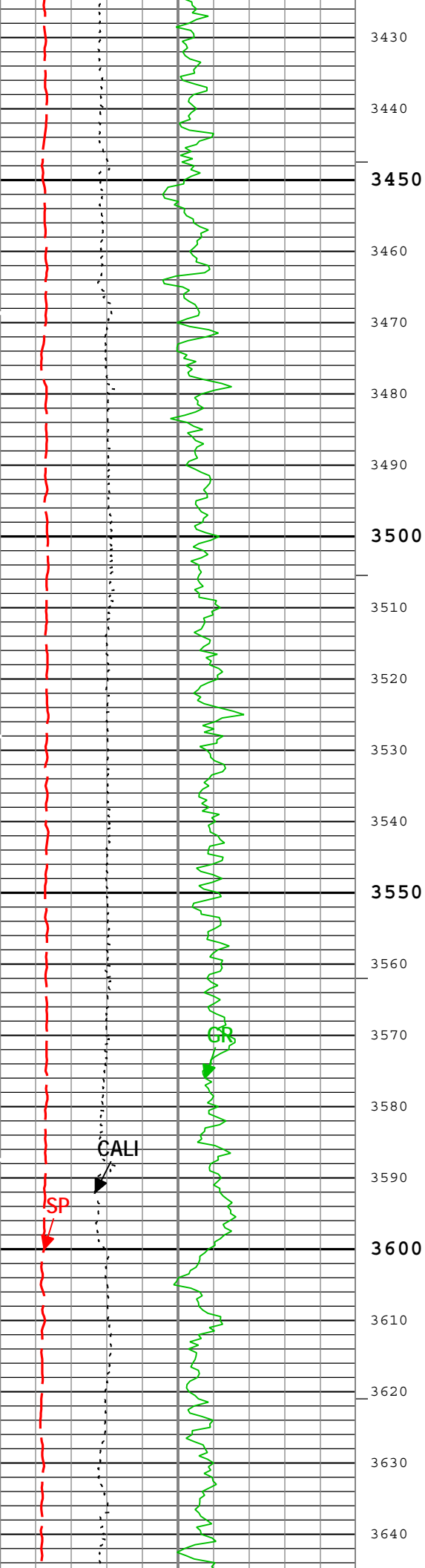


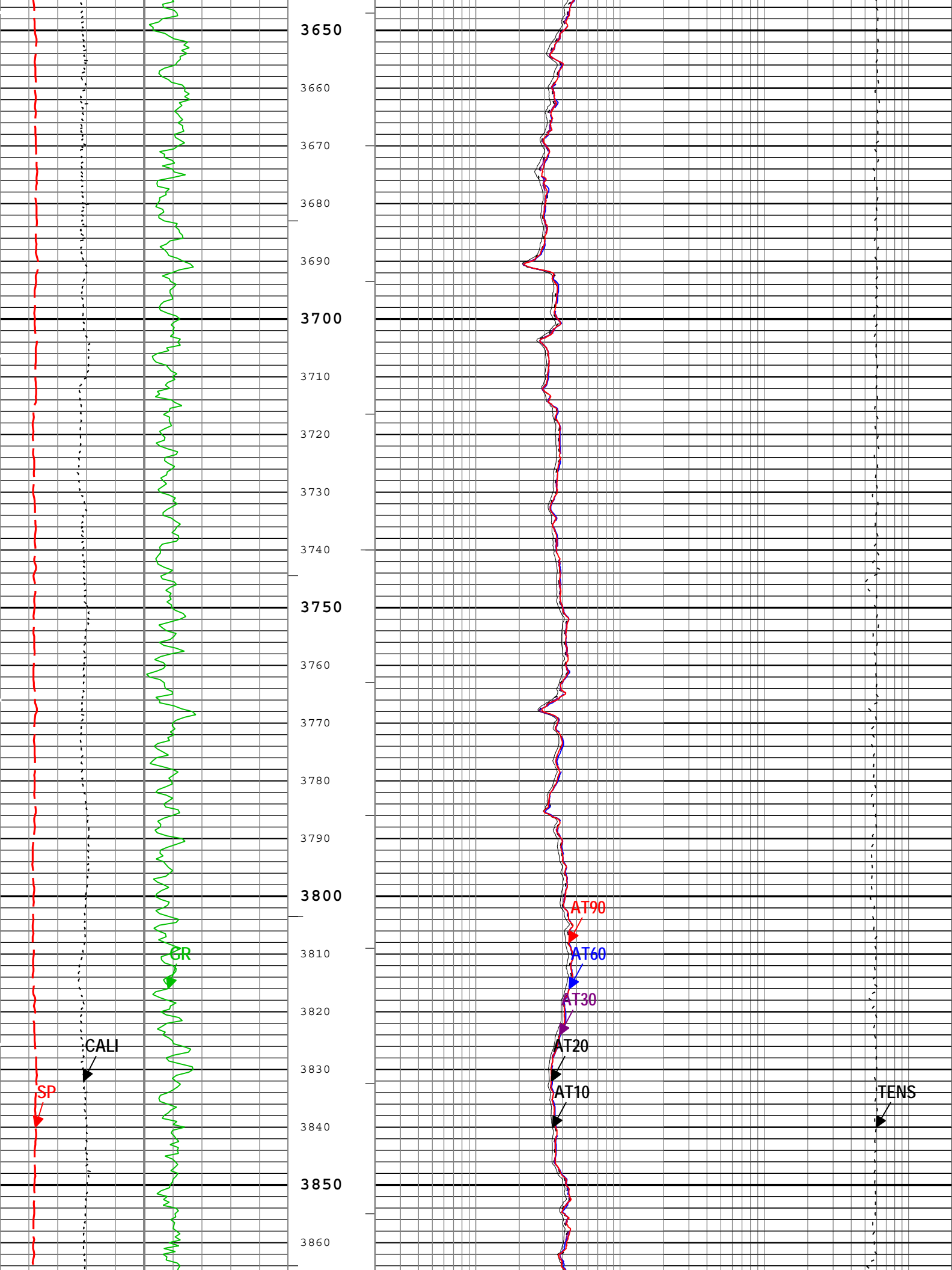


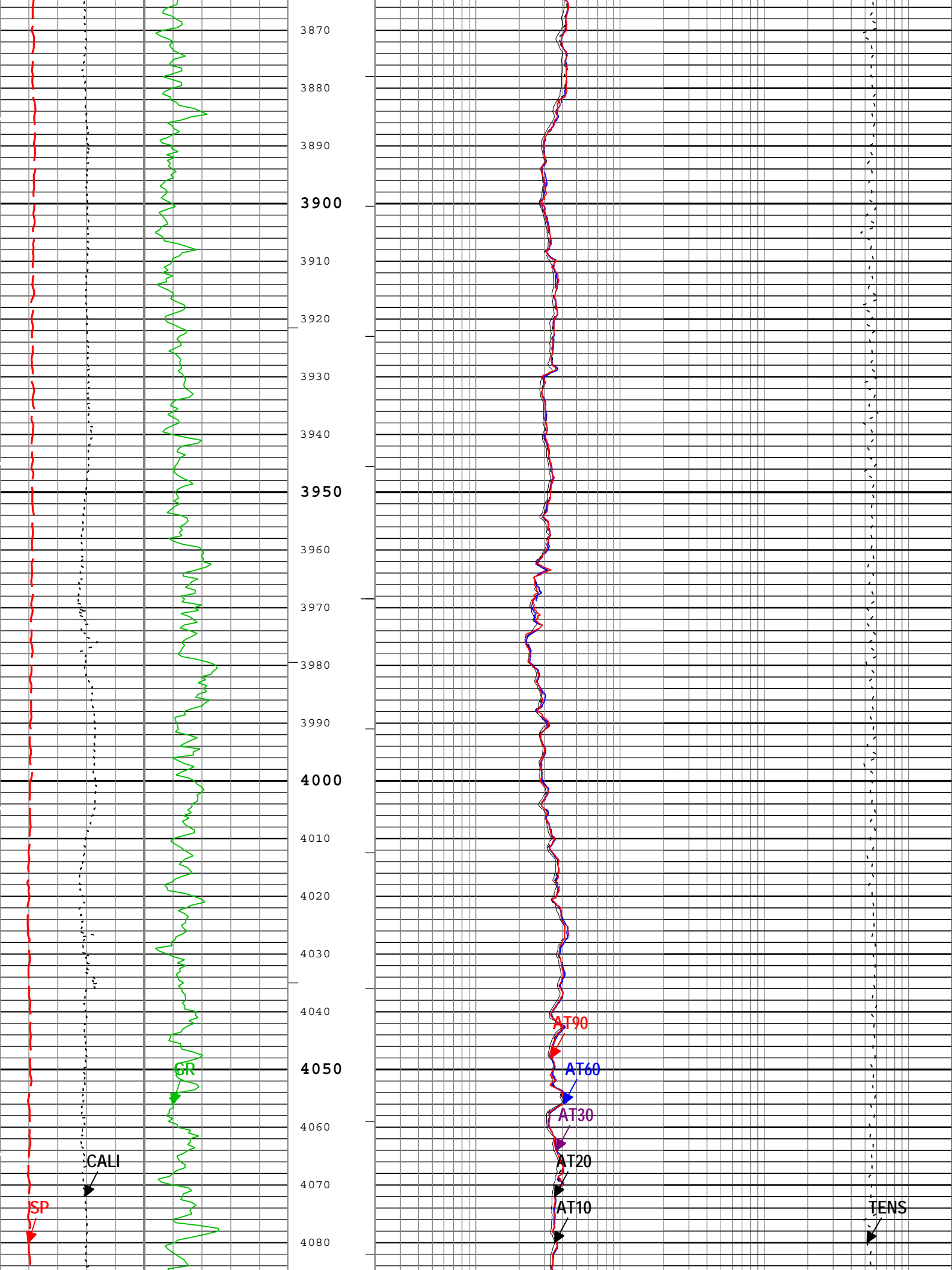


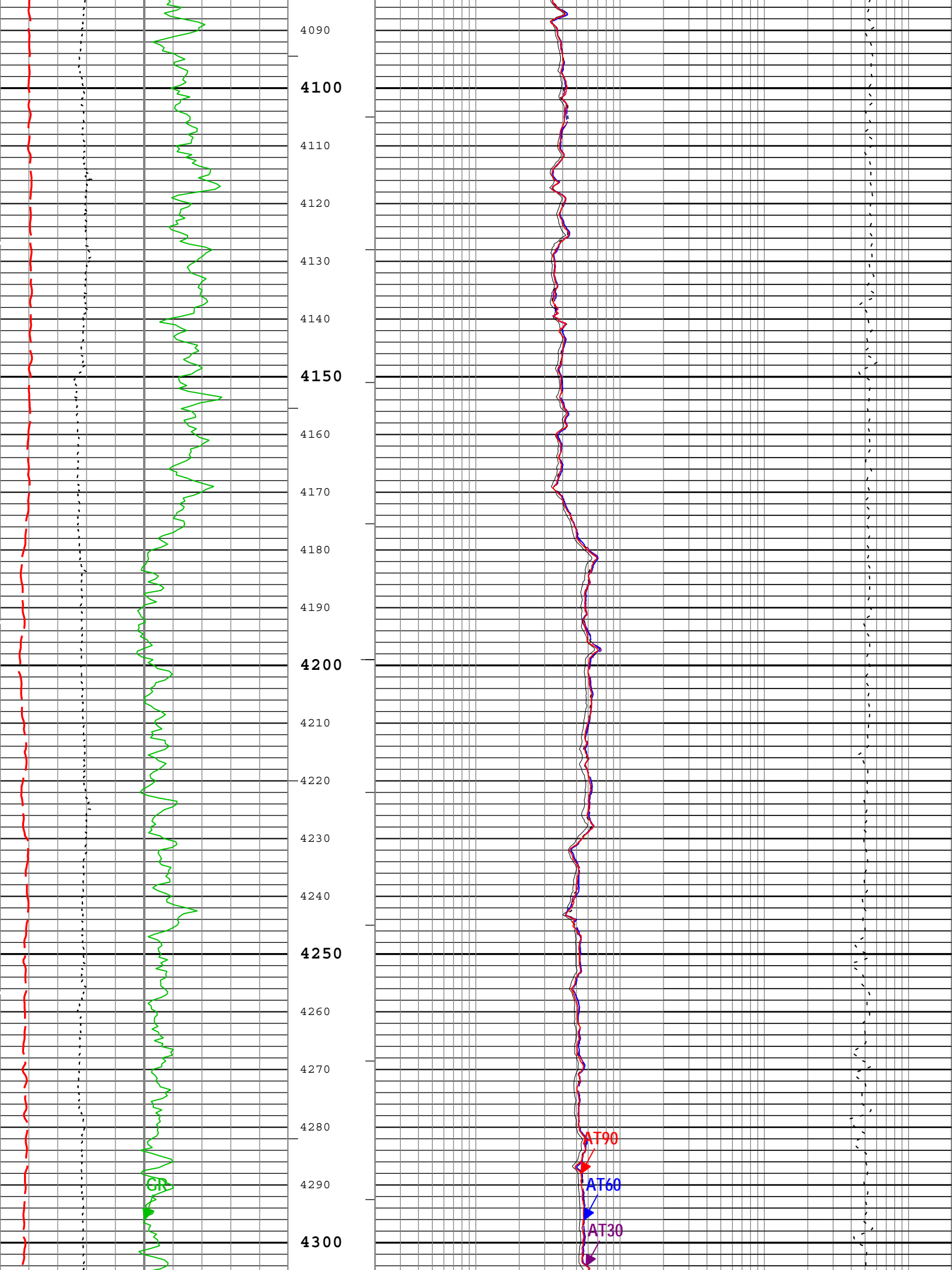


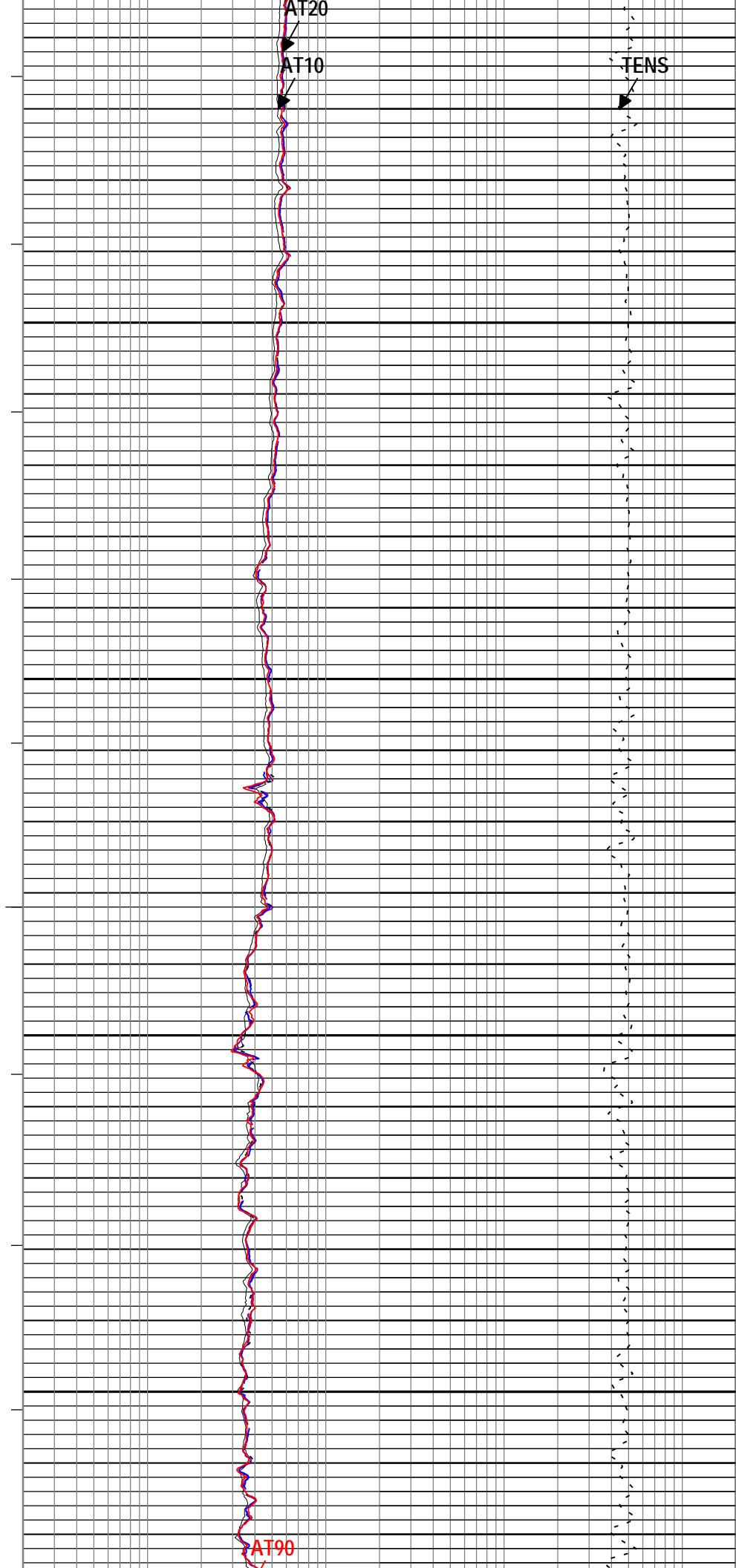
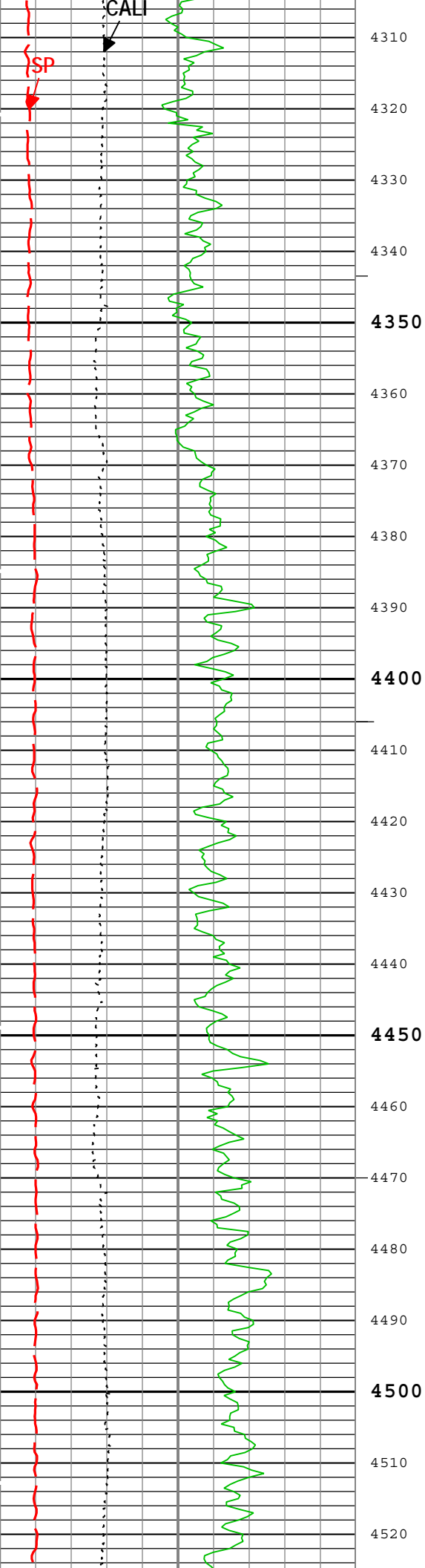


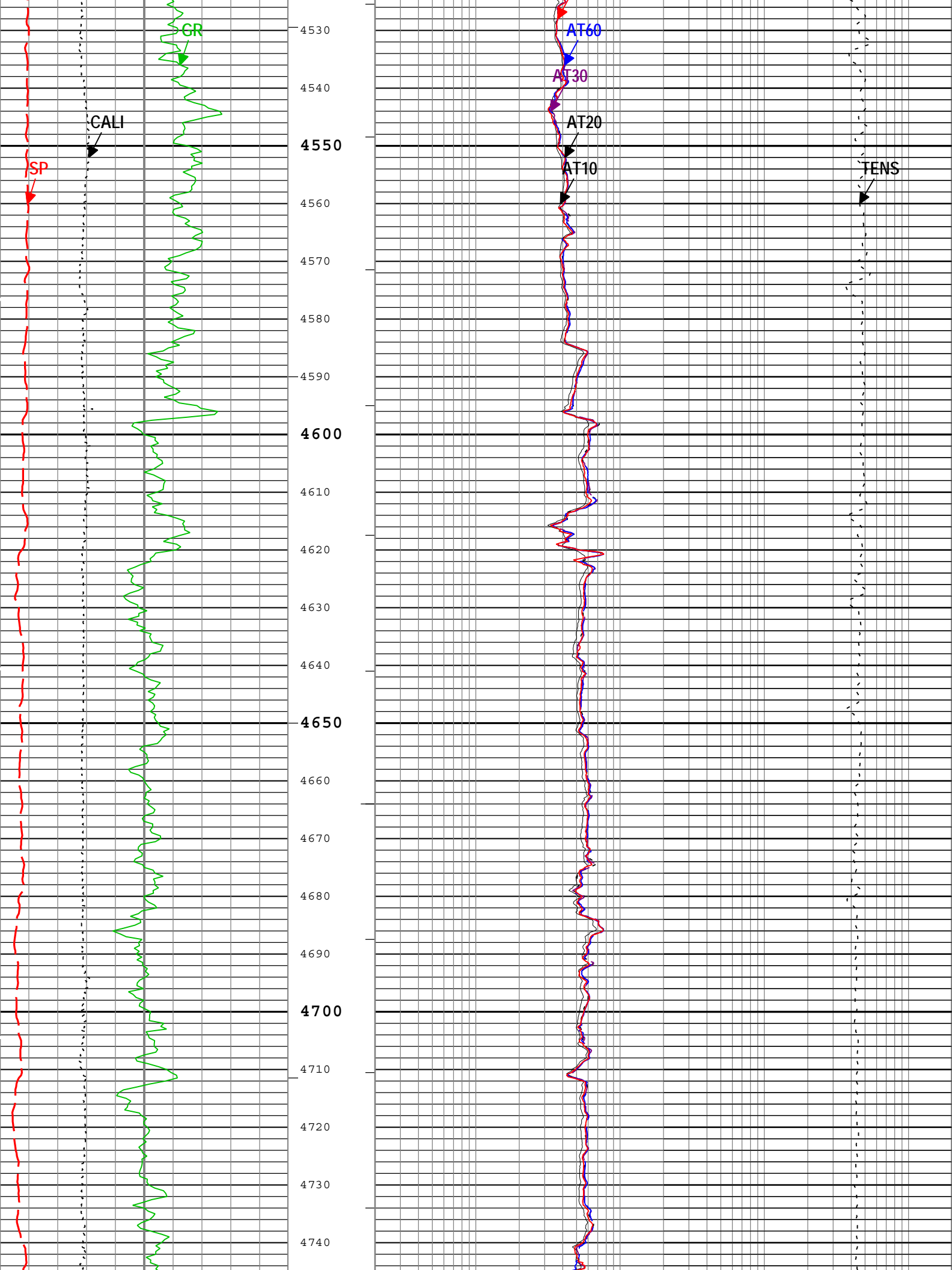


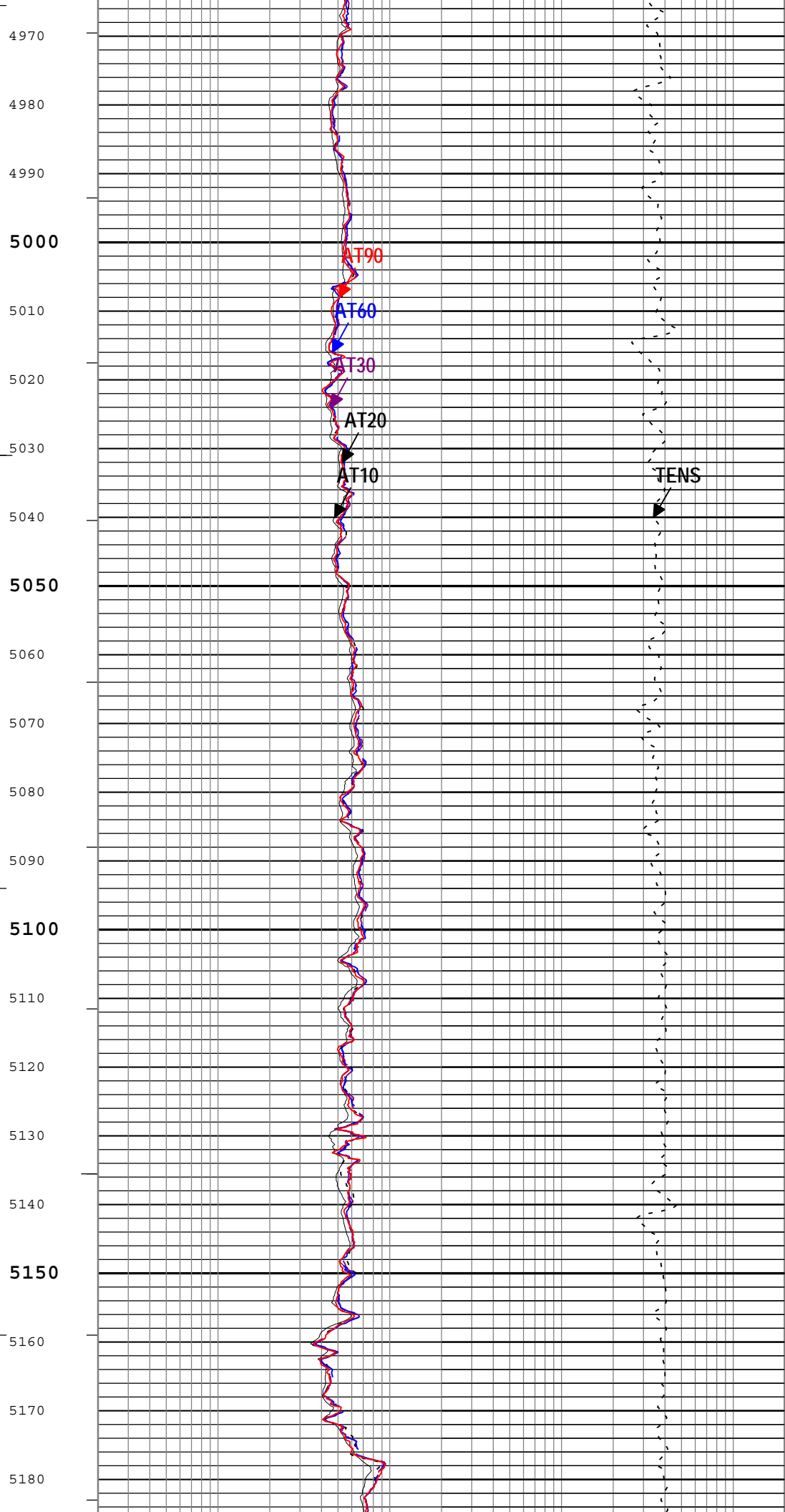
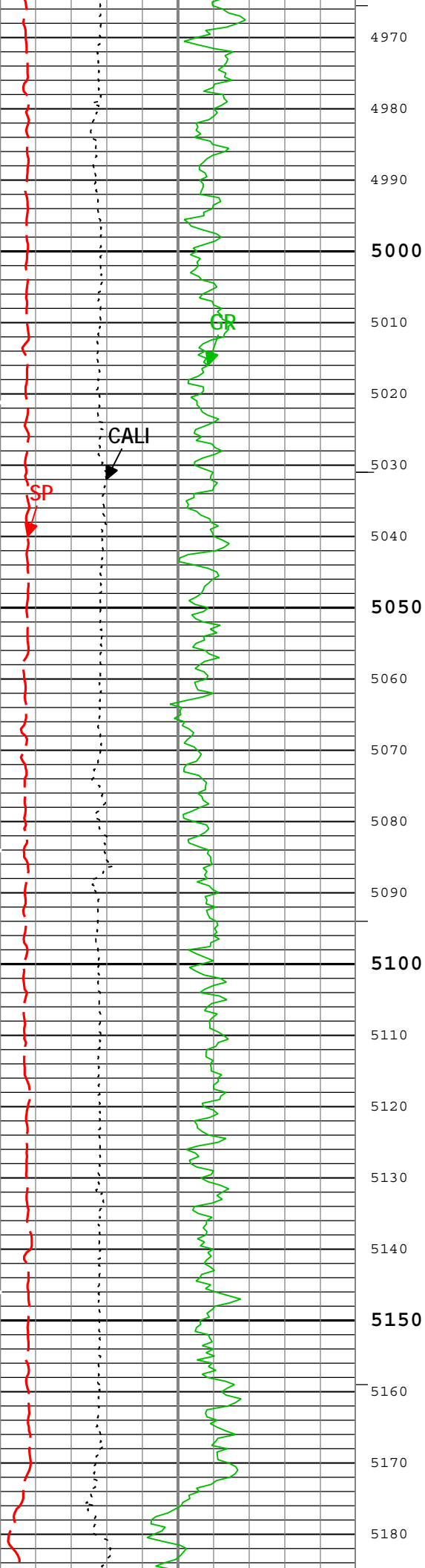


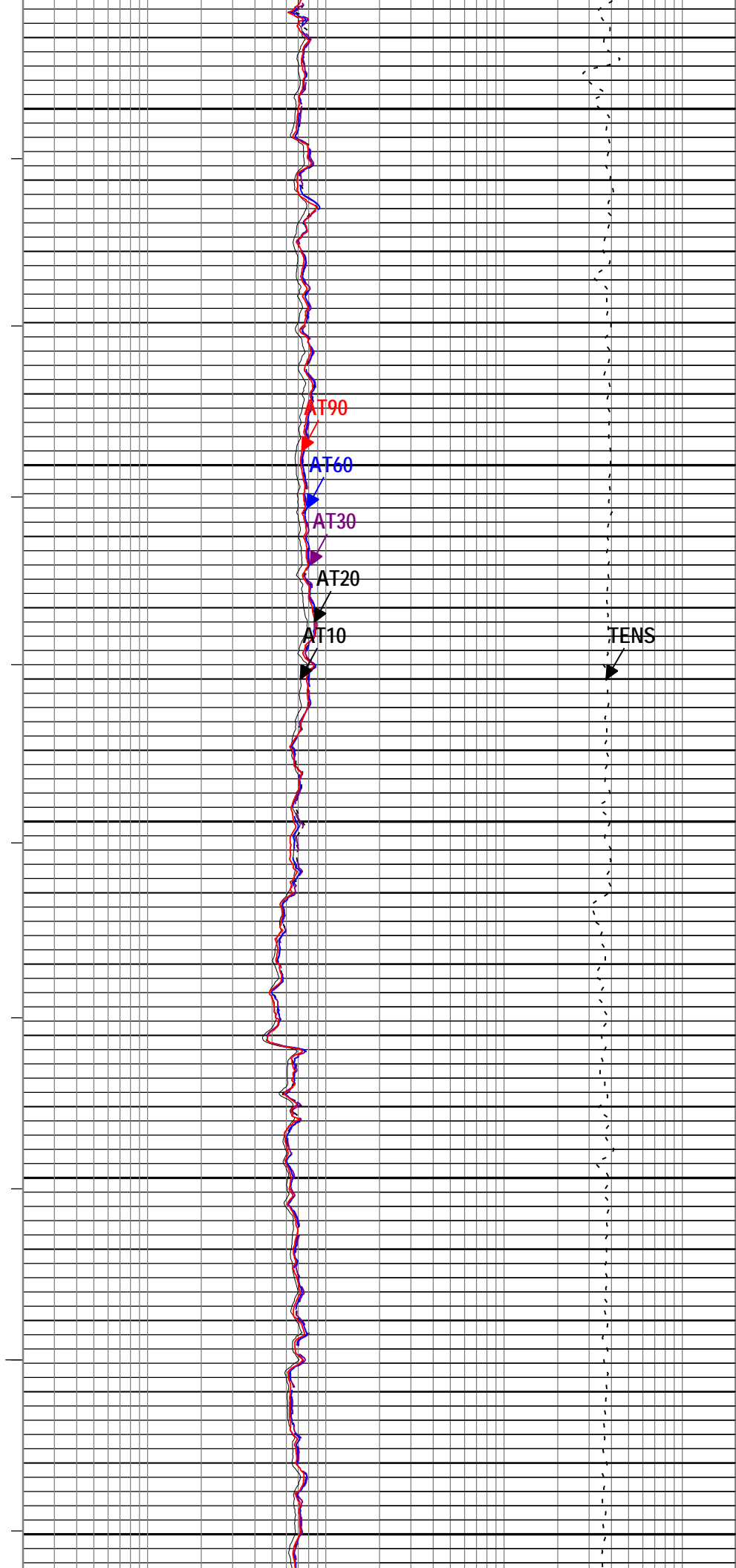
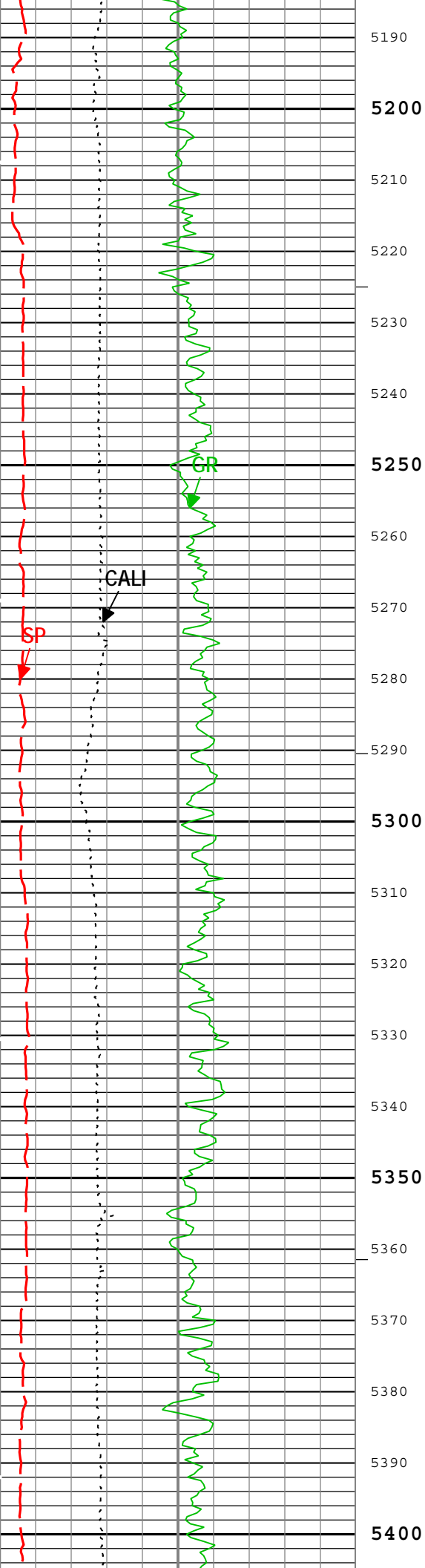


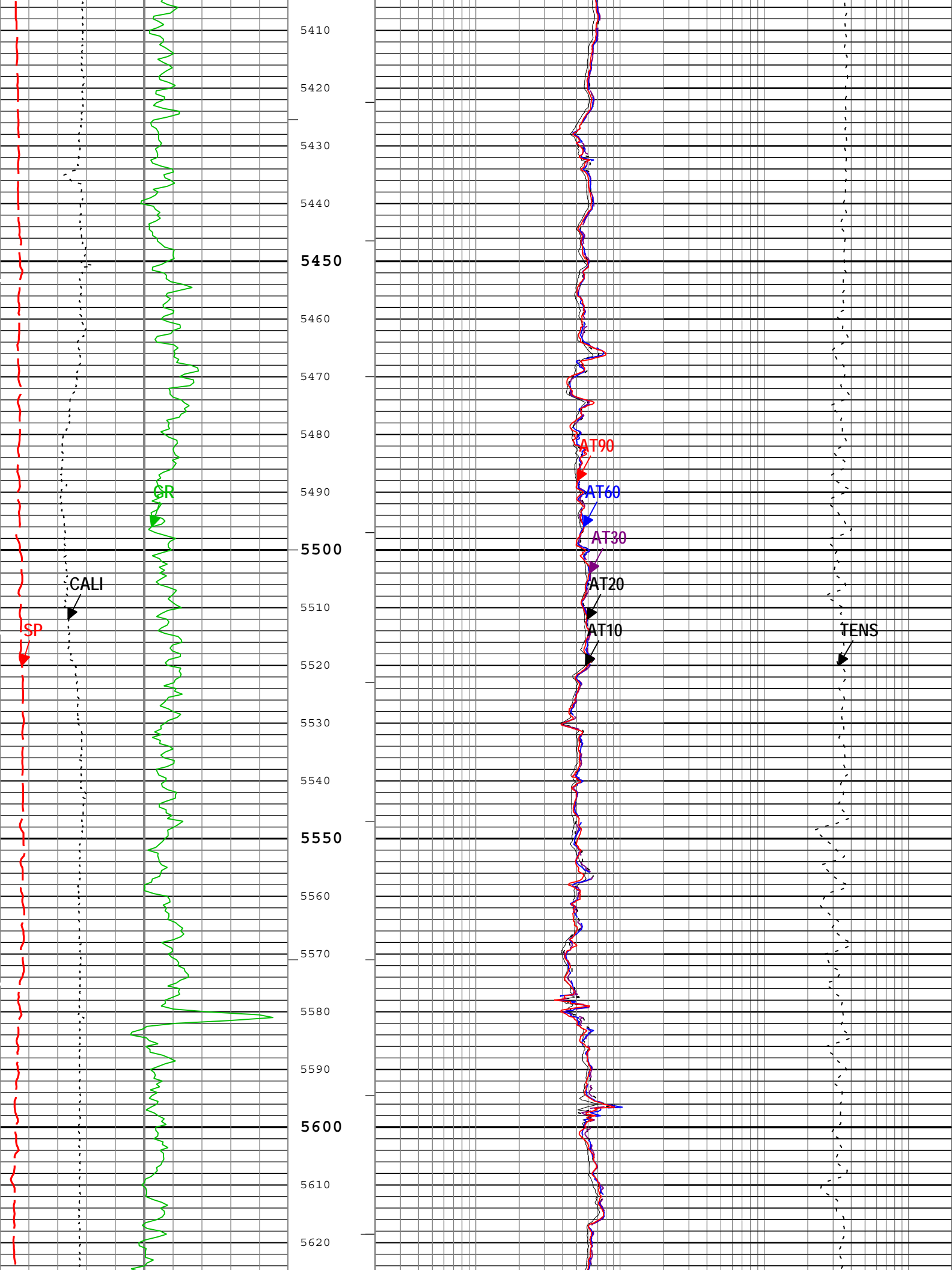


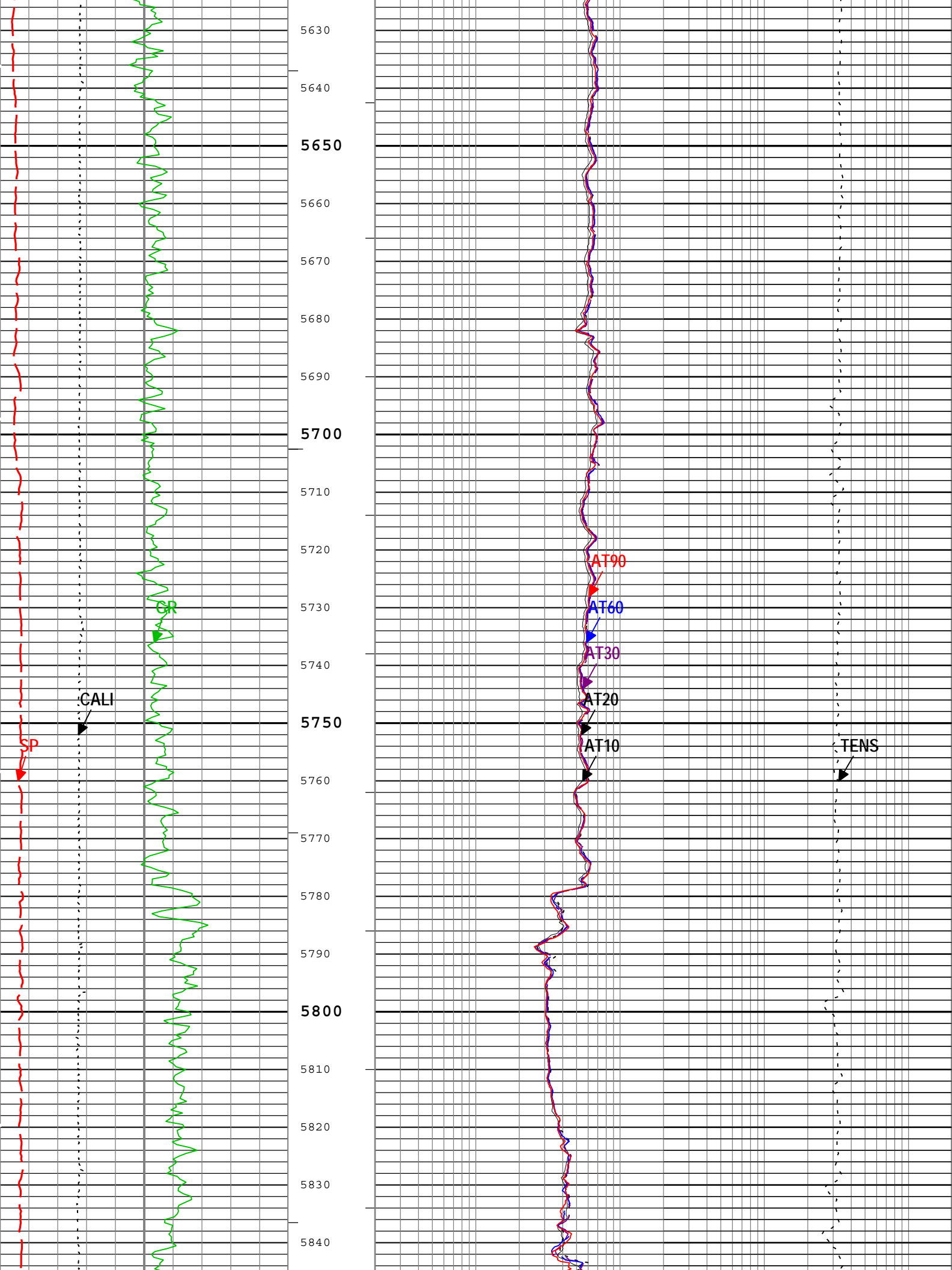


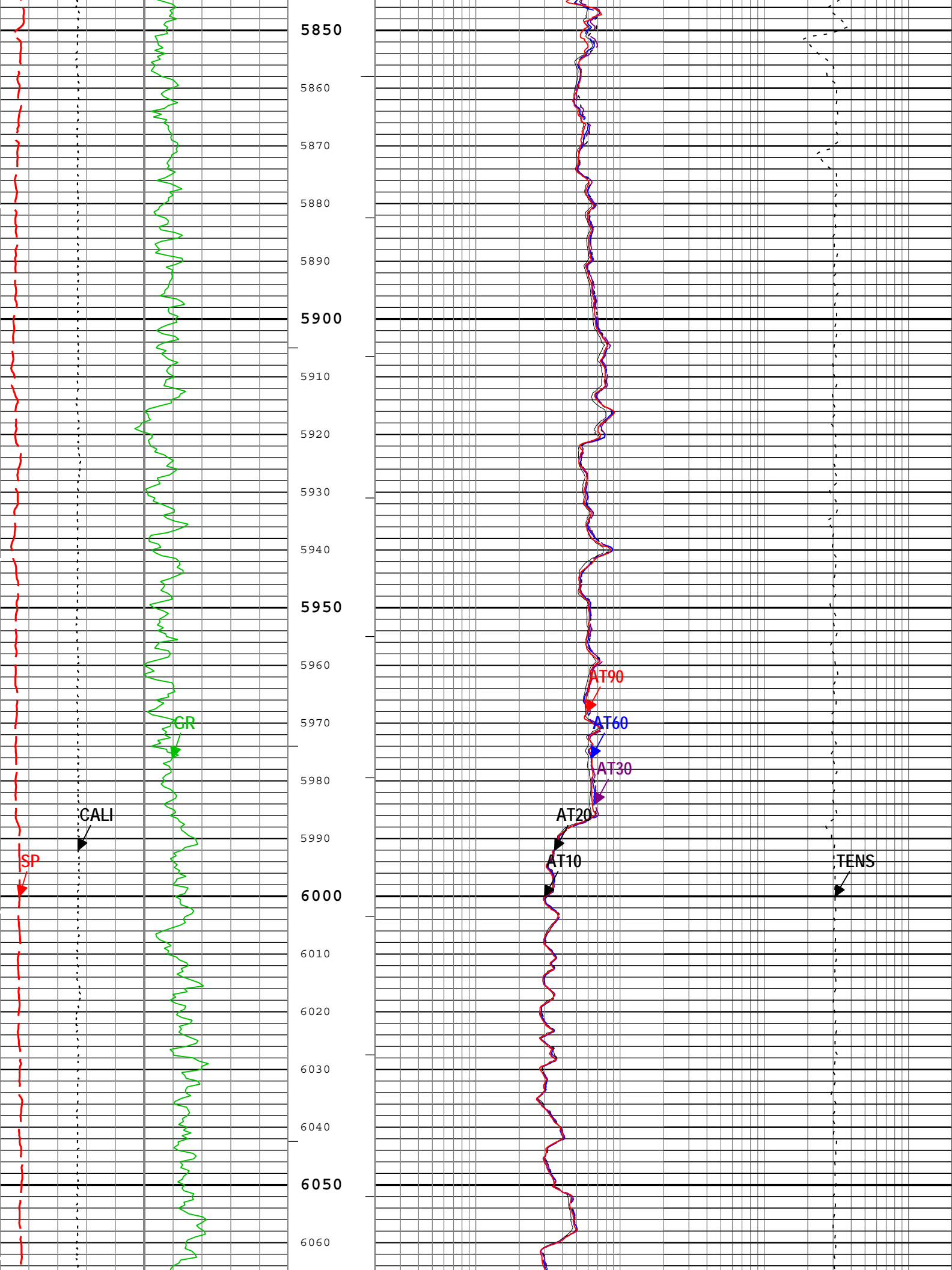


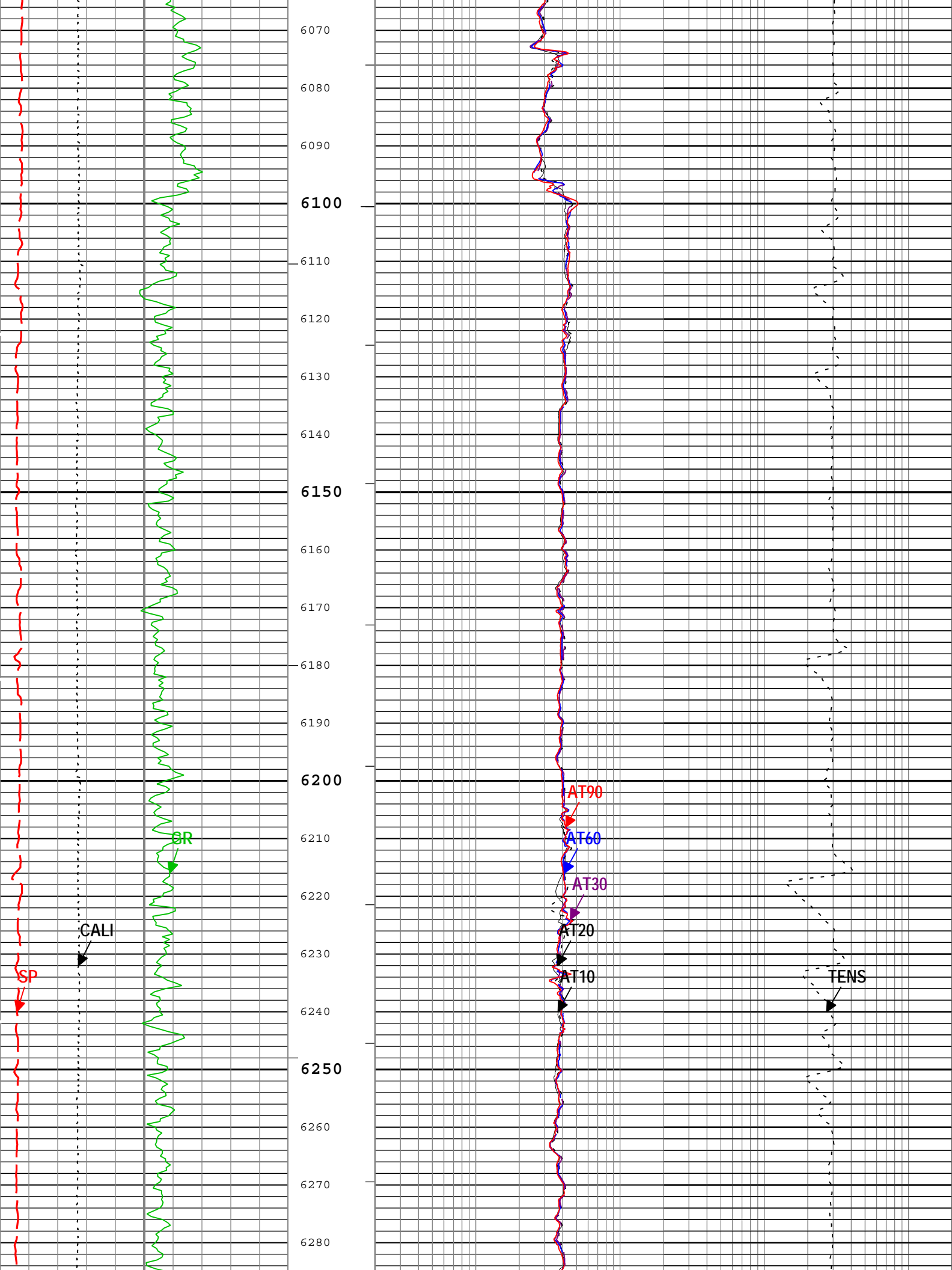


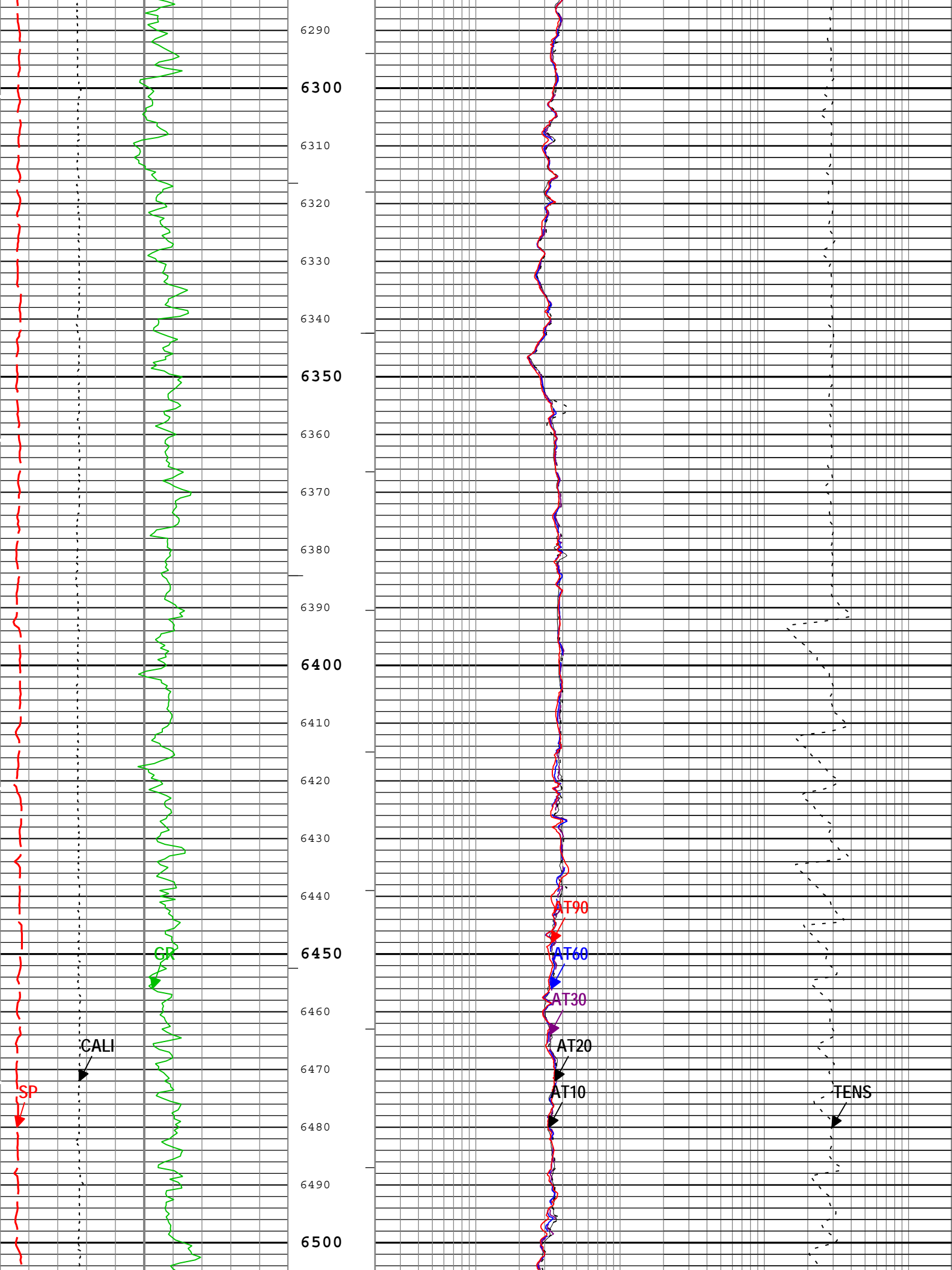


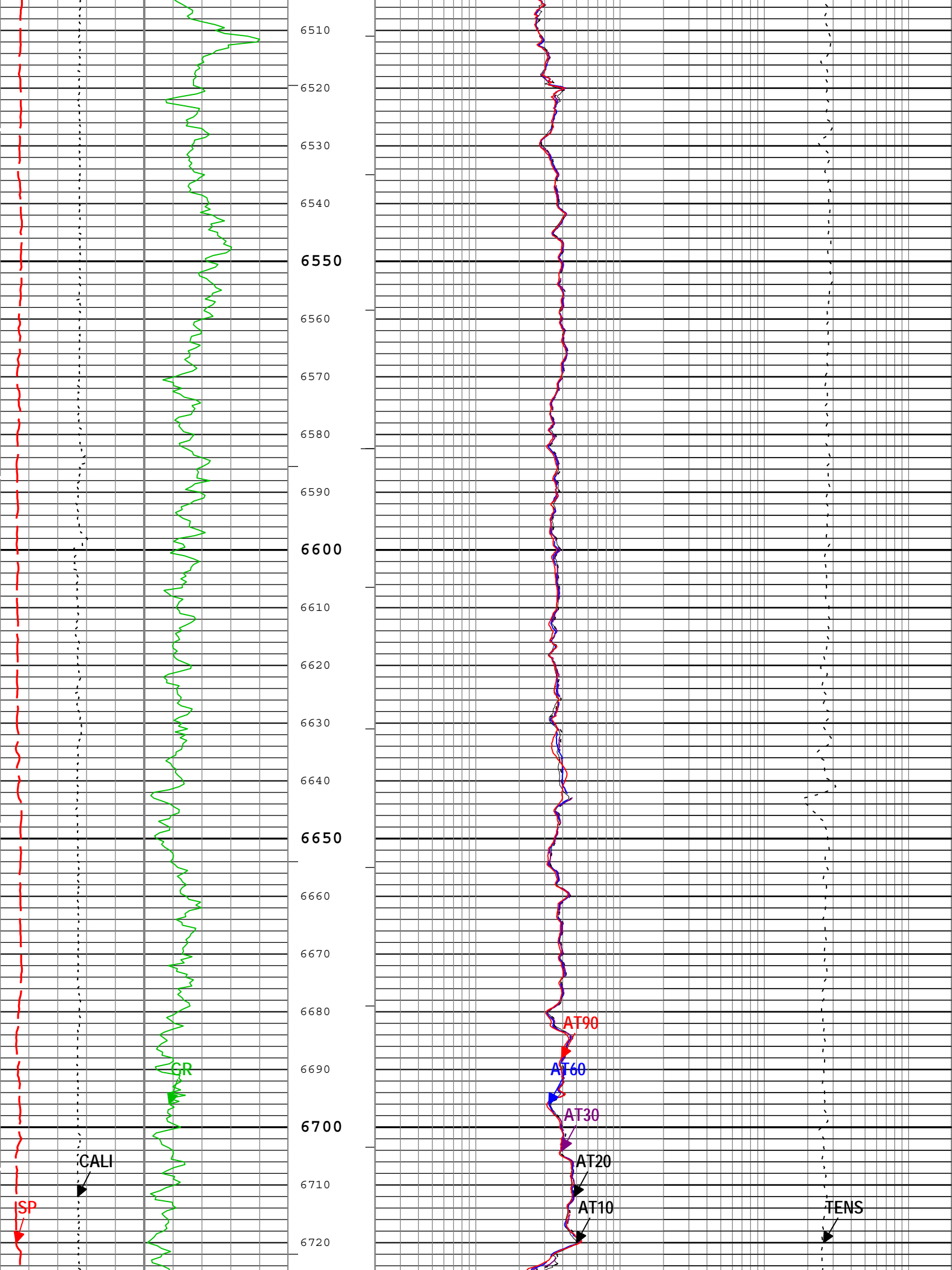


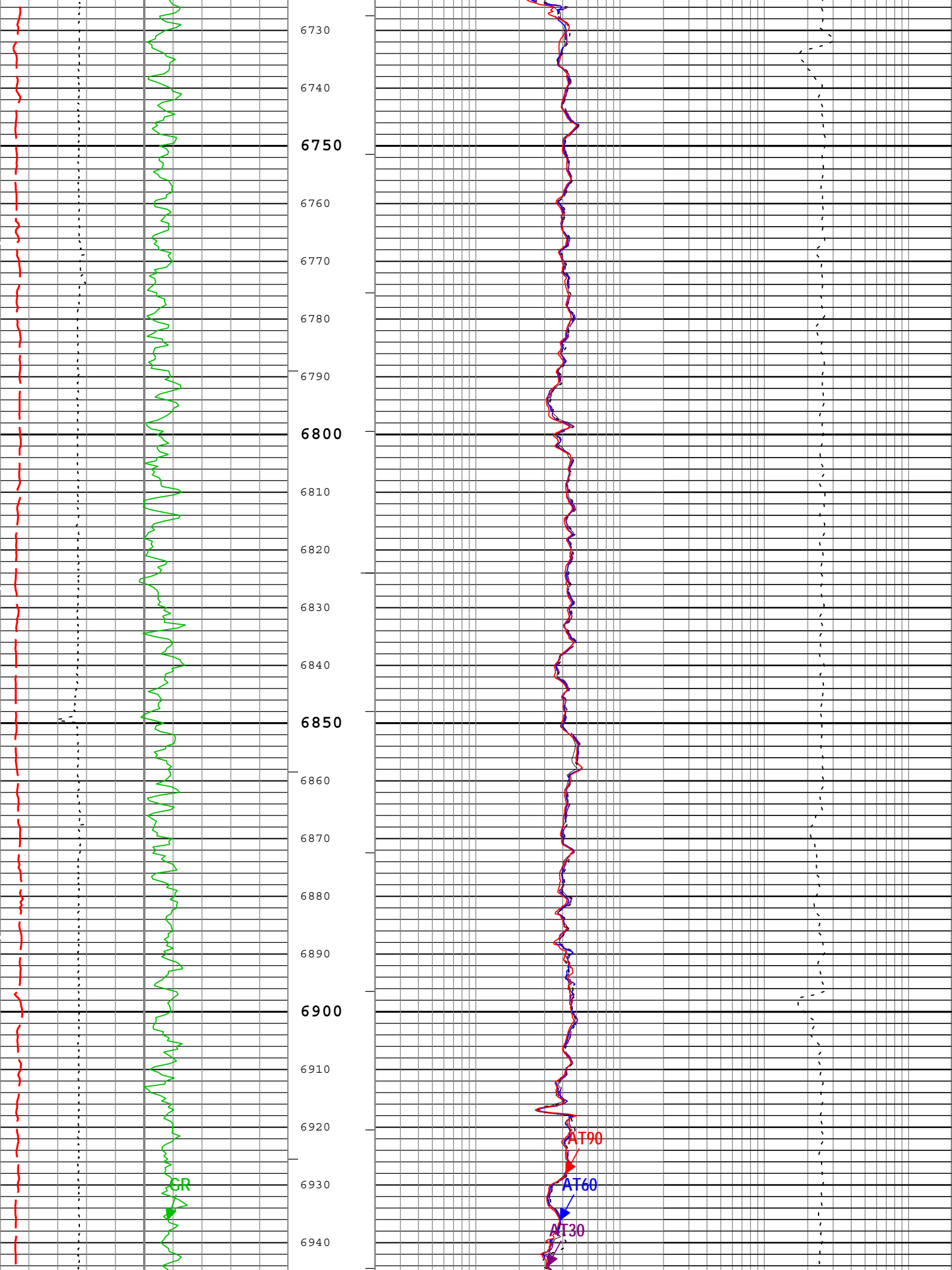


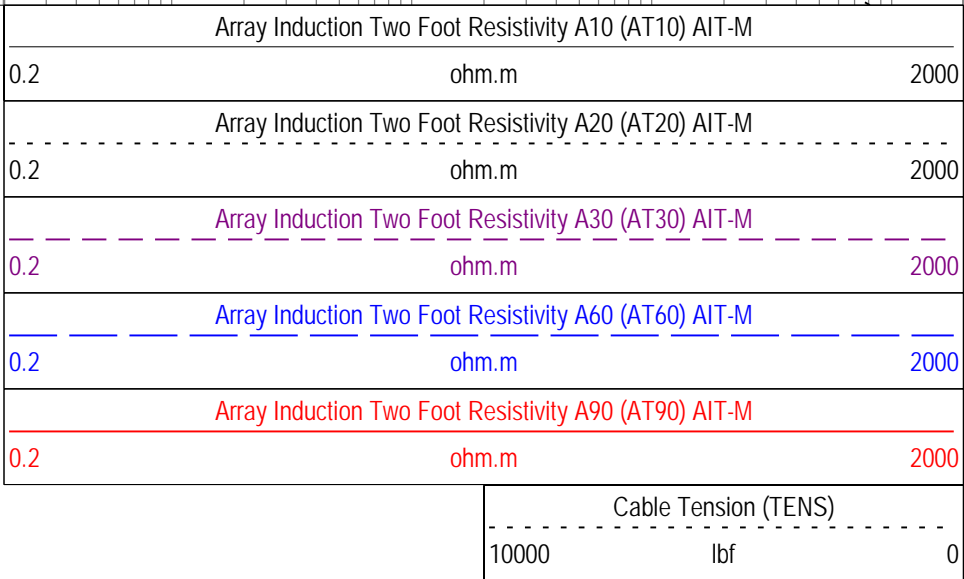
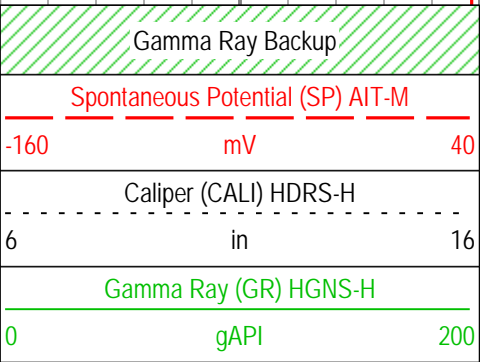
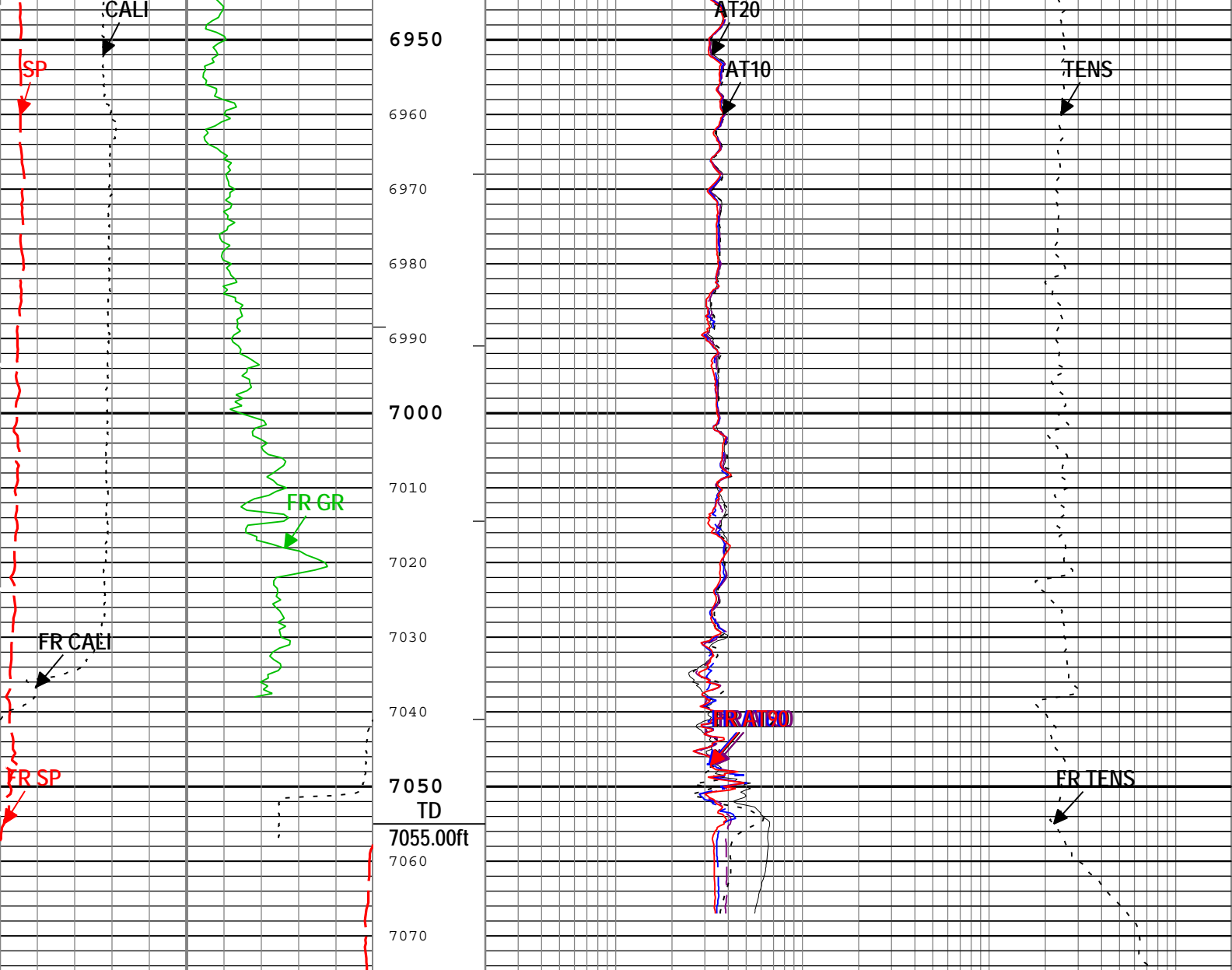












—ICV - Integrated Cement Volume every 100.00 (ft3)
—ICV - Integrated Cement Volume every 10.00 (ft3)
—TIME_1900 - Time Marked every 60.00 (s)
—IHV - Integrated Hole Volume every 100.00 (ft3)
—IHV - Integrated Hole Volume every 10.00 (ft3)

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ACDE	Array Induction Casing Detection Enable	AIT-M	Yes	
ASTA	Array Induction Tool Standoff	AIT-M	1.125	in
BARI	Barite Mud Presence Flag	Borehole	Yes	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	8.75	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.068	in
CBLO	Casing Bottom (Logger)	WLSESSION	1762	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	9.625	in
DFD	Drilling Fluid Density	Borehole	10.2	lbm/gal
FCD	Future Casing (Outer) Diameter	WLSESSION	7	in
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
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	
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

Two

5" Induction RA

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Two	Log[2]:Up	Up	71.32 ft	7075.21 ft	08-Aug-2014 4:00:16 AM	08-Aug-2014 5:44:41 AM	ON	13.25 ft	Yes
Two	Repeat[3]:Up	Up	1613.30 ft	2066.56 ft	08-Aug-2014 5:52:42 AM	08-Aug-2014 6:01:17 AM	ON	13.78 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Kerr McGee Oil & Gas Onshore LP

Well:Banded 37C-27HZ

Two: Repeat[3]:Up:S010

Description: AIT Basic Log Two Format: Log (KM 5in Induction RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 08-Aug-2014 06:49:12

—|IHV - Integrated Hole Volume every 10.00 (ft3)

—|IHV - Integrated Hole Volume every 100.00 (ft3)

TIME_1900 - Time Marked every 60.00 (s)

—|ICV - Integrated Cement Volume every 10.00 (ft3)

—|ICV - Integrated Cement Volume every 100.00 (ft3)

Main To Repeat

Repeat To Main

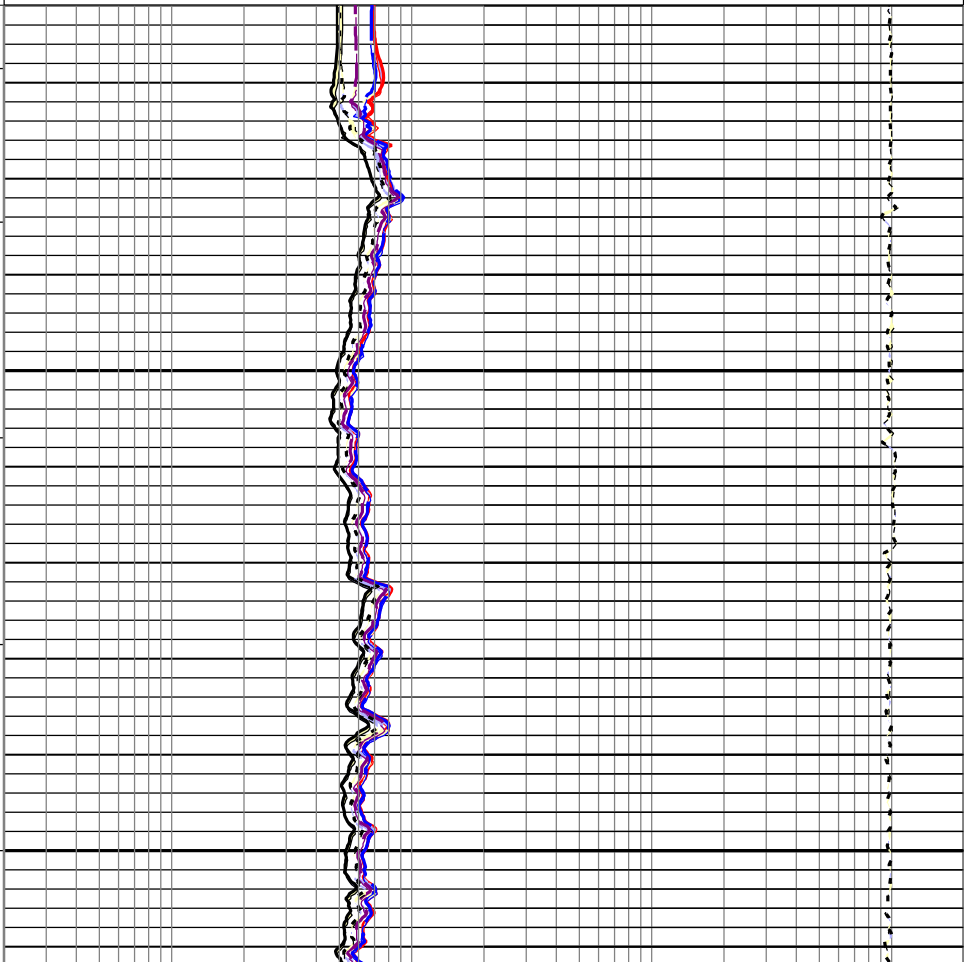
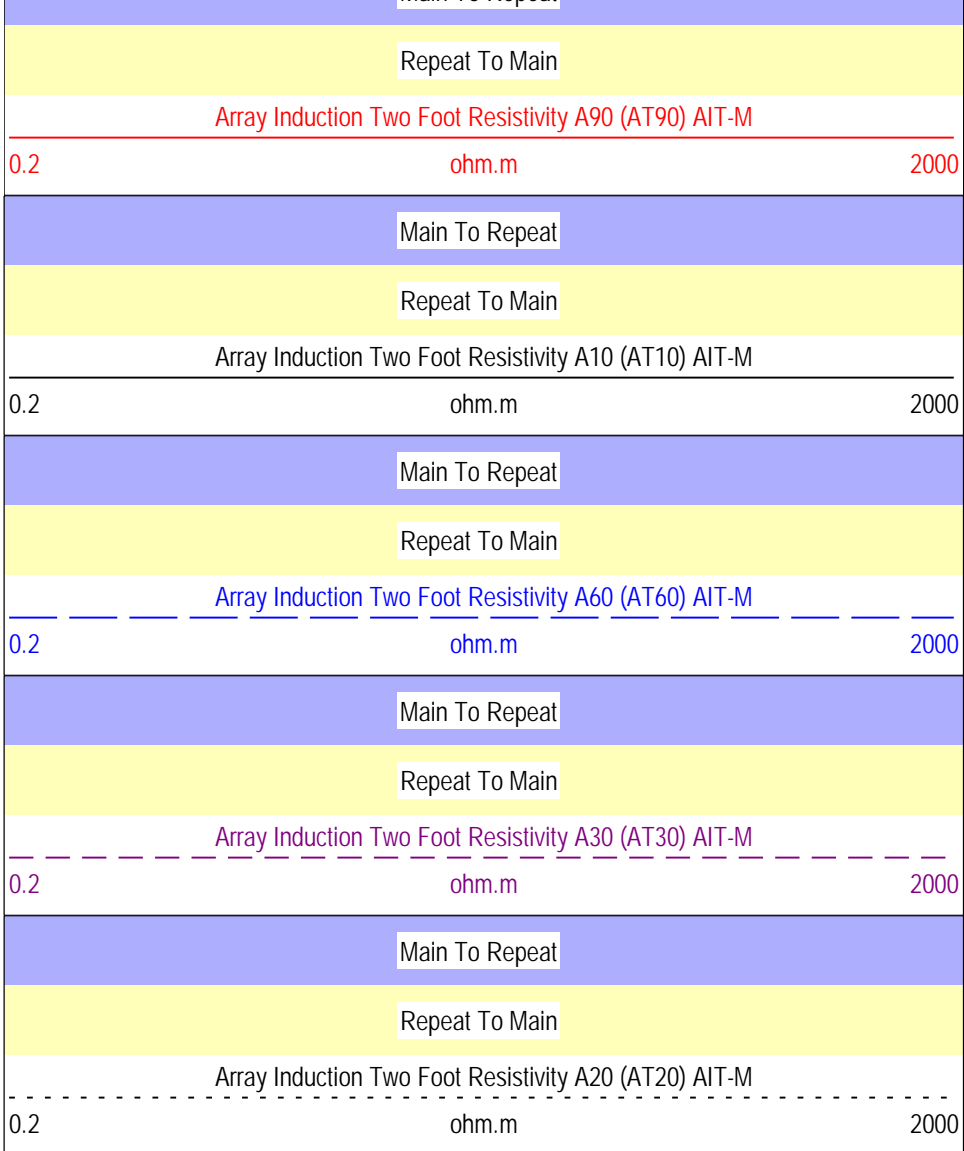
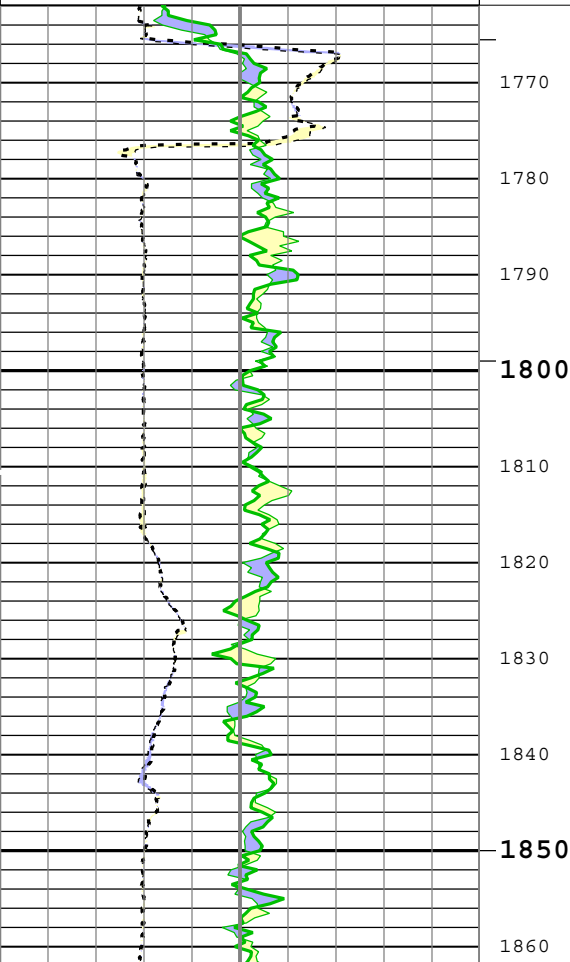
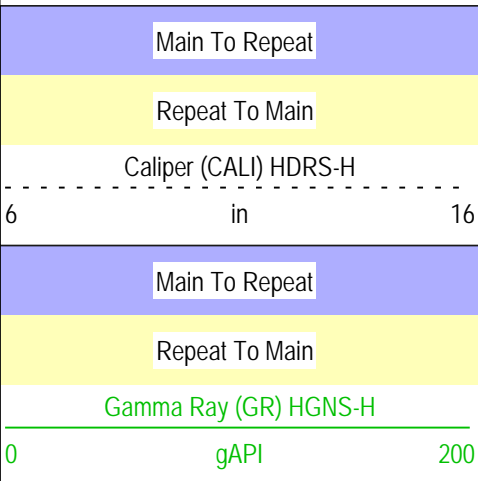
Cable Tension (TENS)

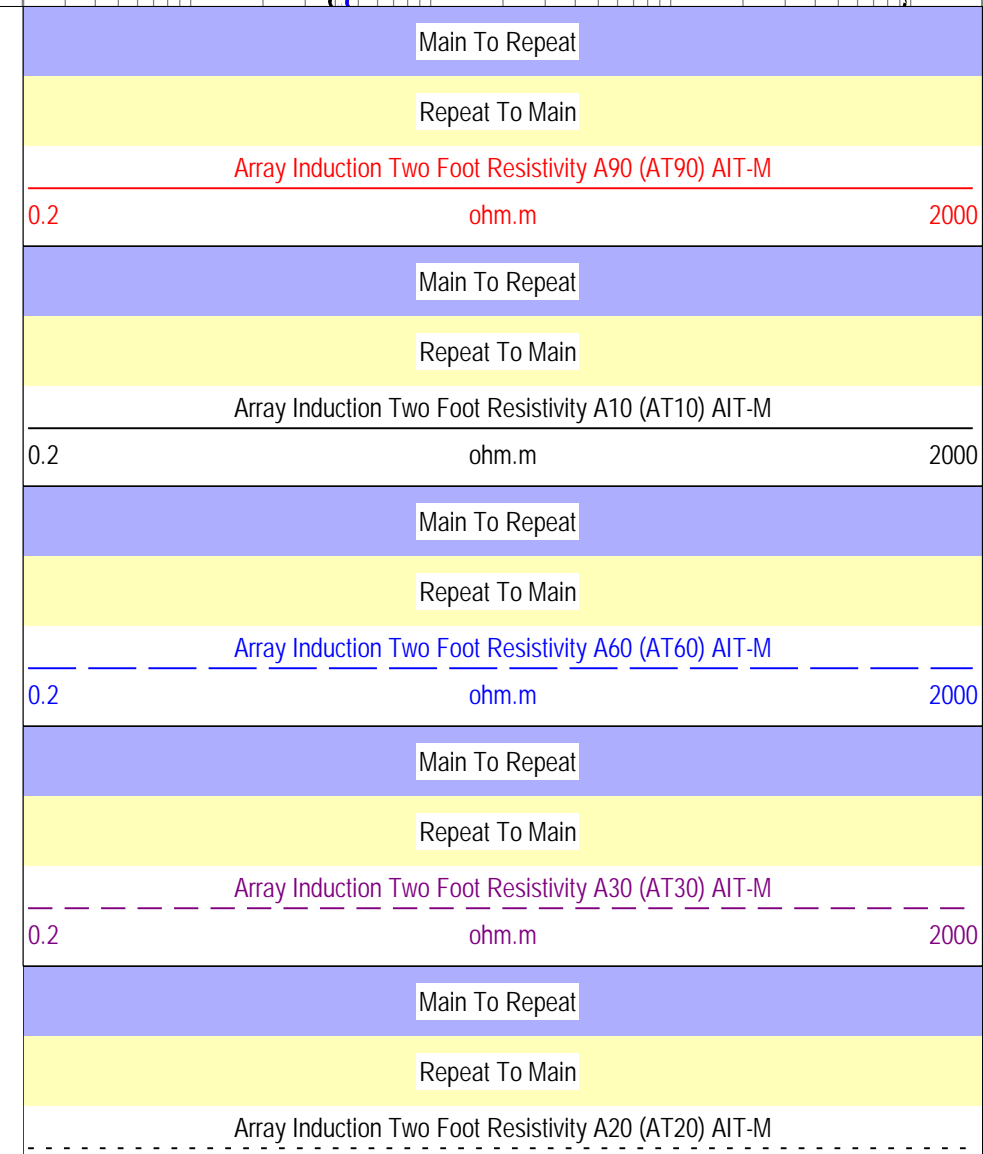
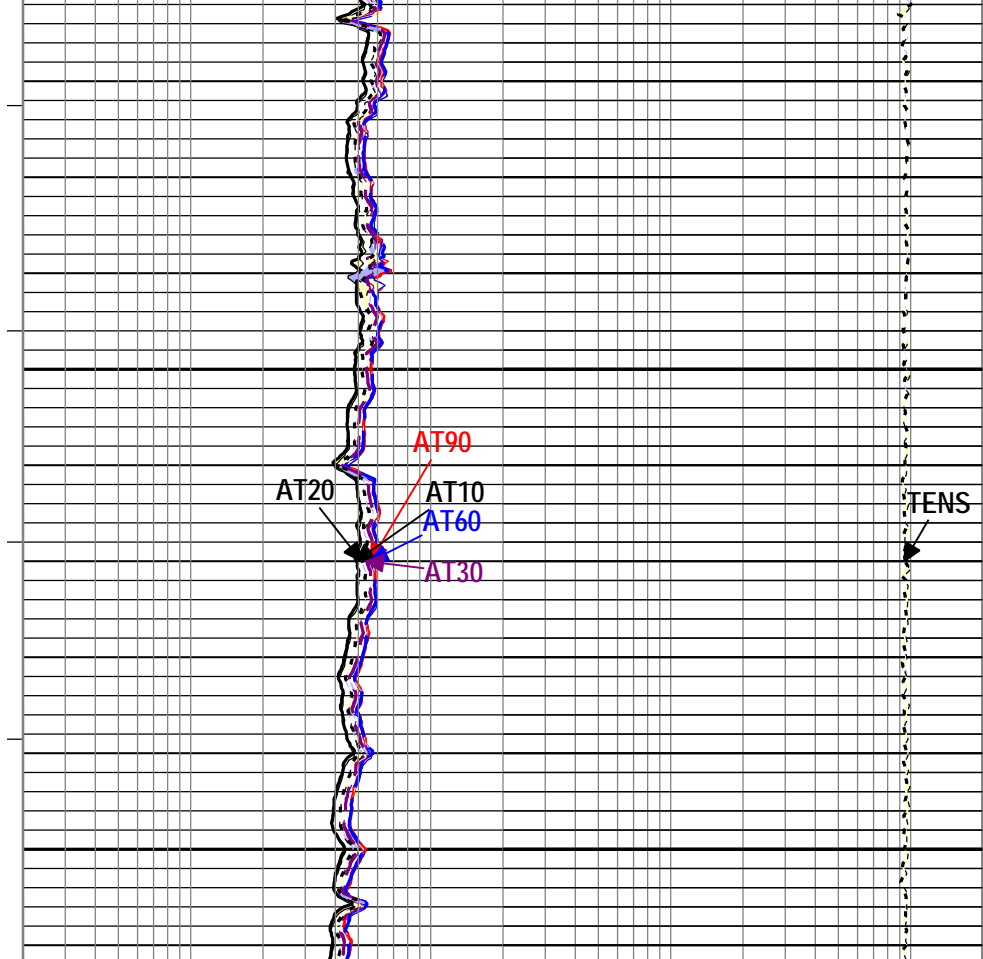
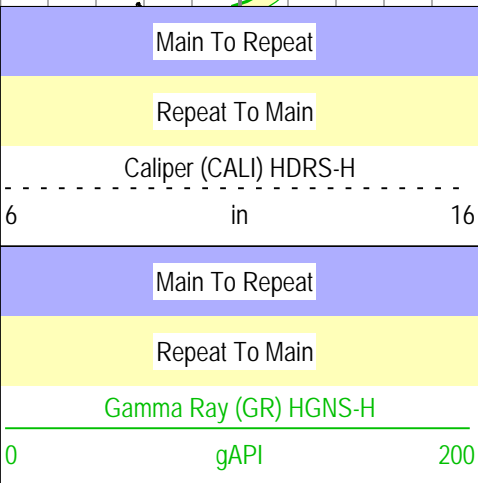
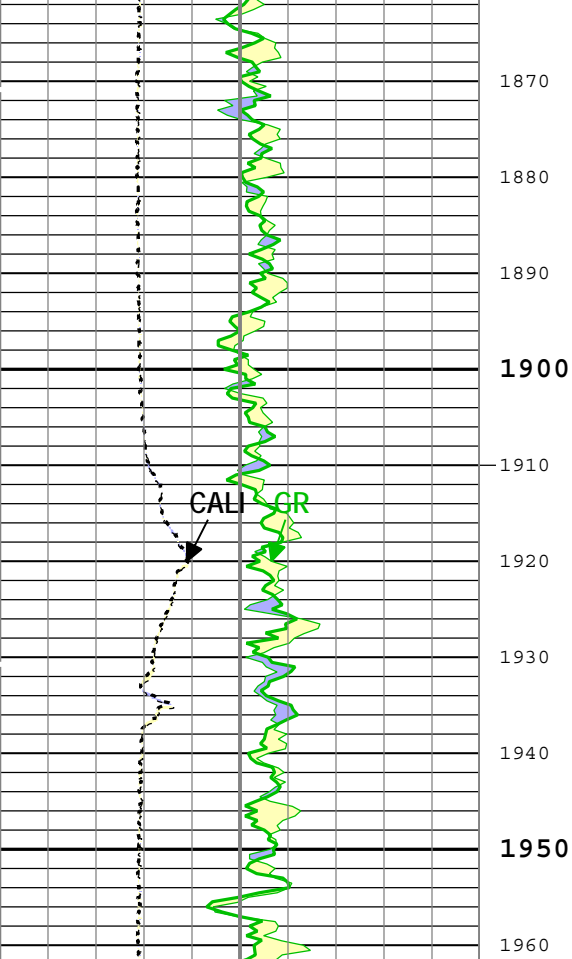
10000

lbf

0

Main To Repeat





0.2

ohm.m

2000

Main To Repeat

Repeat To Main

Cable Tension (TENS)

10000lbf0

└─ICV - Integrated Cement Volume every 100.00 (ft3)

└─ICV - Integrated Cement Volume every 10.00 (ft3)

TIME_1900 - Time Marked every 60.00 (s)

└─IHV - Integrated Hole Volume every 100.00 (ft3)

└─IHV - Integrated Hole Volume every 10.00 (ft3)

Description: AIT Basic Log Two Format: Log (KM 5in Induction RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 08-Aug-2014 06:49:12

Calibration Report							
AIT-M (Array Induction Tool - M) Calibration - Run Two							
Primary Equipment :							
File code for AIT-MA Sonde Tool Element			AMIS		181		
Auxiliary Equipment :							
File code for AIT Bottom Nose Tool Element			AMRM		181		
AIT Sonde Calibration - Test Loop Gain							
Master (EEPROM):		15:52:07 18-Jun-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Gain - 0		Master	1.000	0.950	1.016	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Phase - 0	deg	Master	0	-3.000	-0.873	3.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Gain - 1		Master	1.000	0.950	1.016	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Phase - 1	deg	Master	0	-3.000	-0.523	3.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Gain - 2		Master	1.000	0.950	1.020	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Phase - 2	deg	Master	0	-3.000	-0.285	3.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Gain - 3		Master	1.000	0.950	1.017	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Phase - 3	deg	Master	0	-3.000	-0.364	3.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Gain - 4		Master	1.000	0.950	0.996	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Phase - 4	deg	Master	0	-3.000	0.047	3.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Gain - 5		Master	1.000	0.950	0.992	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Phase - 5	deg	Master	0	-3.000	-0.306	3.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Gain - 6		Master	1.000	0.950	0.998	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Phase - 6	deg	Master	0	-3.000	-0.014	3.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Gain - 7		Master	1.000	0.950	1.012	1.050	<div><div></div><div></div><div></div><div></div><div></div></div>
Test Loop Phase - 7	deg	Master	0	-3.000	-0.171	3.000	<div><div></div><div></div><div></div><div></div><div></div></div>
AIT Sonde Calibration - Sonde Error Correction							
Master (EEPROM):		15:52:07 18-Jun-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-105.375	119.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 0		Master	-----	-2250.000	128.249	2250.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	154.526	204.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 1		Master	-----	-625.000	-120.438	625.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	113.010	156.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 2		Master	-----	-350.000	-106.668	350.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	49.722	89.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 3		Master	-----	-250.000	-9.512	250.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	25.368	35.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 4		Master	-----	-63.000	-11.301	63.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	10.767	24.000	<div><div></div><div></div><div></div><div></div><div></div></div>
Sonde Error Correction Quad - 5		Master	-----	-50.000	10.041	50.000	<div><div></div><div></div><div></div><div></div><div></div></div>

[illegible]

Temperature Plus	V	Master Before Before-Master		0.870 0.870 -----	0.919 0.919 0.000	0.960 0.960 -----	<div><div></div><div></div><div></div><div></div></div>
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HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run Two			
Primary Equipment :			
	HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3828
	HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	3760
Auxiliary Equipment :			
	HRDD Backscatter Detector	Backscatter	
	HRDD Long Spacing Detector	Long Spacing	
	HRDD Short Spacing Detector	Short Spacing	
	Cesium 137 Gamma-Ray Logging Source	GSR-J	5471
	HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3828
	HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	3863
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):		20:30:24 07-Aug-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div></div>
Small Ring	in	Before	8.00	6.00	7.93	10.00	<div><div></div><div></div><div></div><div></div></div>
Large Ring	in	Before	12.00	9.00	12.27	15.00	<div><div></div><div></div><div></div><div></div></div>

HDRS Density Calibration - Inversion Results							
Master (EEPROM):		19:57:24 07-Aug-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div></div>
Rho Aluminum	g/cm3	Master	2.596	2.586	2.597	2.606	<div><div></div><div></div><div></div><div></div></div>
Rho Magnesium	g/cm3	Master	1.686	1.676	1.686	1.696	<div><div></div><div></div><div></div><div></div></div>
Pe Aluminum		Master	2.570	2.470	2.573	2.670	<div><div></div><div></div><div></div><div></div></div>
Pe Magnesium		Master	2.650	2.550	2.612	2.750	<div><div></div><div></div><div></div><div></div></div>

HDRS Density Calibration - Deviation Summary							
Master (EEPROM):		19:57:24 07-Aug-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div></div>
BS Average Deviation	%	Master	0	-0.6000	0.3581	0.6000	<div><div></div><div></div><div></div><div></div></div>
BS Max Deviation	%	Master	0	-1.6000	0.7597	1.6000	<div><div></div><div></div><div></div><div></div></div>
SS Average Deviation	%	Master	0	-1.0000	0.2058	1.0000	<div><div></div><div></div><div></div><div></div></div>
SS Max Deviation	%	Master	0	-2.5000	0.5896	2.5000	<div><div></div><div></div><div></div><div></div></div>
LS Average Deviation	%	Master	0	-1.5000	0.8070	1.5000	<div><div></div><div></div><div></div><div></div></div>
LS Max Deviation	%	Master	0	-3.5000	1.9199	3.5000	<div><div></div><div></div><div></div><div></div></div>

HDRS Density Calibration - Background Summary							
Master (EEPROM):		19:57:24 07-Aug-2014		Before (Measured):		20:43:07 07-Aug-2014	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div><div></div><div></div><div></div><div></div></div>
BS Window Ratio		Master	1.0000		0.7352		<div><div></div><div></div><div></div><div></div></div>
		Before	0.7352	0.6985	0.7345	0.7720	
		Before-Master	-----	-----	-0.0007	-----	
BS Window Sum	1/s	Master	1		23918		<div><div></div><div></div><div></div><div></div></div>
		Before	23918	22723	23916	25114	
		Before-Master	-----	-----	-2	-----	
SS Window Ratio		Master	1.0000		0.4821		<div><div></div><div></div><div></div><div></div></div>
		Before	0.4821	0.4580	0.4863	0.5062	
		Before-Master	-----	-----	0.0042	-----	
SS Window Sum	1/s	Master	1		9772		<div><div></div><div></div><div></div><div></div></div>
		Before	9772	9284	9770	10261	
		Before-Master	-----	-----	-2	-----	
LS Window Ratio		Master	1.0000		0.2994		<div><div></div><div></div><div></div><div></div></div>
		Before	0.2994	0.2845	0.3012	0.3144	
		Before-Master	-----	-----	0.0018	-----	
LS Window Sum	1/s	Master	1		1176		<div><div></div><div></div><div></div><div></div></div>
		Before	1176	1117	1179	1225	
		Before-Master	-----	-----	3	-----	

		Before	1176	1117	1178	1235	
		Before-Master	-----	-----	2	-----	

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM):		19:57:24 07-Aug-2014		Before (Measured):		20:43:07 07-Aug-2014	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS PM High Voltage	V	Master		1000	1375	2400	
		Before		1000	1379	2400	
		Before-Master	-----	-100	4	100	
SS PM High Voltage	V	Master		1000	1632	2400	
		Before		1000	1647	2400	
		Before-Master	-----	-100	15	100	
LS PM High Voltage	V	Master		1000	1188	2400	
		Before		1000	1194	2400	
		Before-Master	-----	-100	6	100	

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM):		19:57:24 07-Aug-2014		Before (Measured):		20:43:07 07-Aug-2014	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Crystal Resolution	%	Master		5.00	10.72	25.00	
		Before		5.00	10.64	25.00	
		Before-Master	-----	-1.00	-0.08	1.00	
SS Crystal Resolution	%	Master		5.00	9.28	20.00	
		Before		5.00	9.43	20.00	
		Before-Master	-----	-1.00	0.15	1.00	
LS Crystal Resolution	%	Master		5.00	8.42	20.00	
		Before		5.00	8.45	20.00	
		Before-Master	-----	-1.00	0.03	1.00	

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured):		20:39:36 07-Aug-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Main Resistivity	ohm.m	Before	3875	3565	3860	4185	
Deep Resistivity	ohm.m	Before	3830	3524	3800	4136	
Shallow Resistivity	ohm.m	Before	3830	3524	3815	4136	

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

Primary Equipment :						
	HILT Gamma-Ray and Neutron Sonde, 150 degC		HGNS-H		4865	
Auxiliary Equipment :						
	HGNS Accelerometer, 150 degC		HACCZ-H		6991	
	AmBe Neutron Logging Source		NSR-F		2554	
Calibration Parameter :						
	Water Temperature					
	Housing Size					
	JIG-BKG (Jig minus background reference)		165			

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured):		03:13:55 08-Aug-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.1	32.8	

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM):		00:00:00 15-May-2007					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Accelerometer Manufacturer		Master			QAT_160		
Accelerometer Reference Temperature	degF	Master		30.2	77.0	122.0	
Accelerometer Coefficients - 0		Master	-----	-----	-4298.000	-----	
Accelerometer Coefficients - 1		Master	-----	-----	50.180	-----	
Accelerometer Coefficients - 2		Master	-----	-----	-0.002	-----	
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 4		Master	-----	-----	2.754	-----	
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----	


Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 8		Master	-----	-----	300.500	-----	
Accelerometer Coefficients - 9		Master	-----	-----	0.994	-----	

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM):		14:29:32 23-Jul-2014		Before (Measured):		20:28:17 07-Aug-2014	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	27.5	40.0	
		Before	0	5.0	26.6	40.0	
		Before-Master	-----	-4.1	-0.9	4.1	
Far Zero Measurement	1/s	Master	0	5.0	28.9	40.0	
		Before	0	5.0	27.6	40.0	
		Before-Master	-----	-4.3	-1.3	4.3	
Near Plus Measurement	1/s	Master	6031.0	4700.0	5764.0	6900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
Far Plus Measurement	1/s	Master	2793.0	1900.0	2396.0	2900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
Near Corrected Plus Measurement	1/s	Master		4700.0	5720.0	6900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
Far Corrected Plus Measurement	1/s	Master		1900.0	2356.0	2900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured):		20:30:52 07-Aug-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	73.3	120.0	
RGR Plus Measurement	gAPI	Before	185.4	157.1	174.9	206.3	
GR Calibration Gain		Before	0.89	0.80	0.94	1.05	

Company:	Kerr McGee Oil & Gas Onshore LP	
Well:	Banded 37C-27HZ	
Field:	Wattenberg	
County:	Weld	

Platform Express
Array Induction
with Linear Correlation