

Company: Omimex Petroleum Inc

Well: Sagehorn 14-34-6-45

Field: Ballyneal

County: Phillips State: Colorado

## Platform Express

## Triple Combo

## Linear

County: Phillips  
Field: Ballyneal  
Location: SESW Sec.34, T6N, R45W  
Well: Sagehorn 14-34-6-45  
Company: Omimex Petroleum Inc

Location:		Elev.:	
SESW Sec.34, T6N, R45W		K.B.	3871.00 ft
SHL: 733' FSL & 1899' FWL		G.L.	3865.00 ft
Lat/Long: 40.441640/-102.371340		D.F.	3870.00 ft
Permanent Datum:	Ground Level	Elev.:	3865.00 f
Log Measured From:	Kelly Bushing	6.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		
API Serial No.	Section:	Township:	Range:
05-095-0	34	6N	45W

Logging Date 09-Dec-2014

Run Number ONE

Depth Driller 2698.00 ft

Schlumberger Depth 2698.00 ft

Bottom Log Interval 2698.00 ft

Top Log Interval 498.25 ft

Casing Driller Size @ Depth 7 in @ 495.00 ft

Casing Schlumberger 495 ft

Bit Size 6.25 in

Type Fluid In Hole WBM

Density 8.5 lbm/gal

Fluid Loss PH 4 cm3

Source of Sample Active Tank

RM @ Meas Temp 0.23 ohm.m @ 71.57 degF

RMF @ Meas Temp 0.16 ohm.m @ 75 degF

RMC @ Meas Temp 0.33 ohm.m @ 75 degF

Source RMF RMC Calculated

RM @ BHT RMF @ BHT 0.15 @ 110 0.11 @ 110

Max Recorded Temperatures 110 degF

Circulation Stopped 09-Dec-2014 08:30:00

Logger on Bottom 09-Dec-2014 13:50:00

Unit Number 9108 Location: Fort Morgan

Recorded By Nolan Welsh

Witnessed By Paul Dekaye

## 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 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.

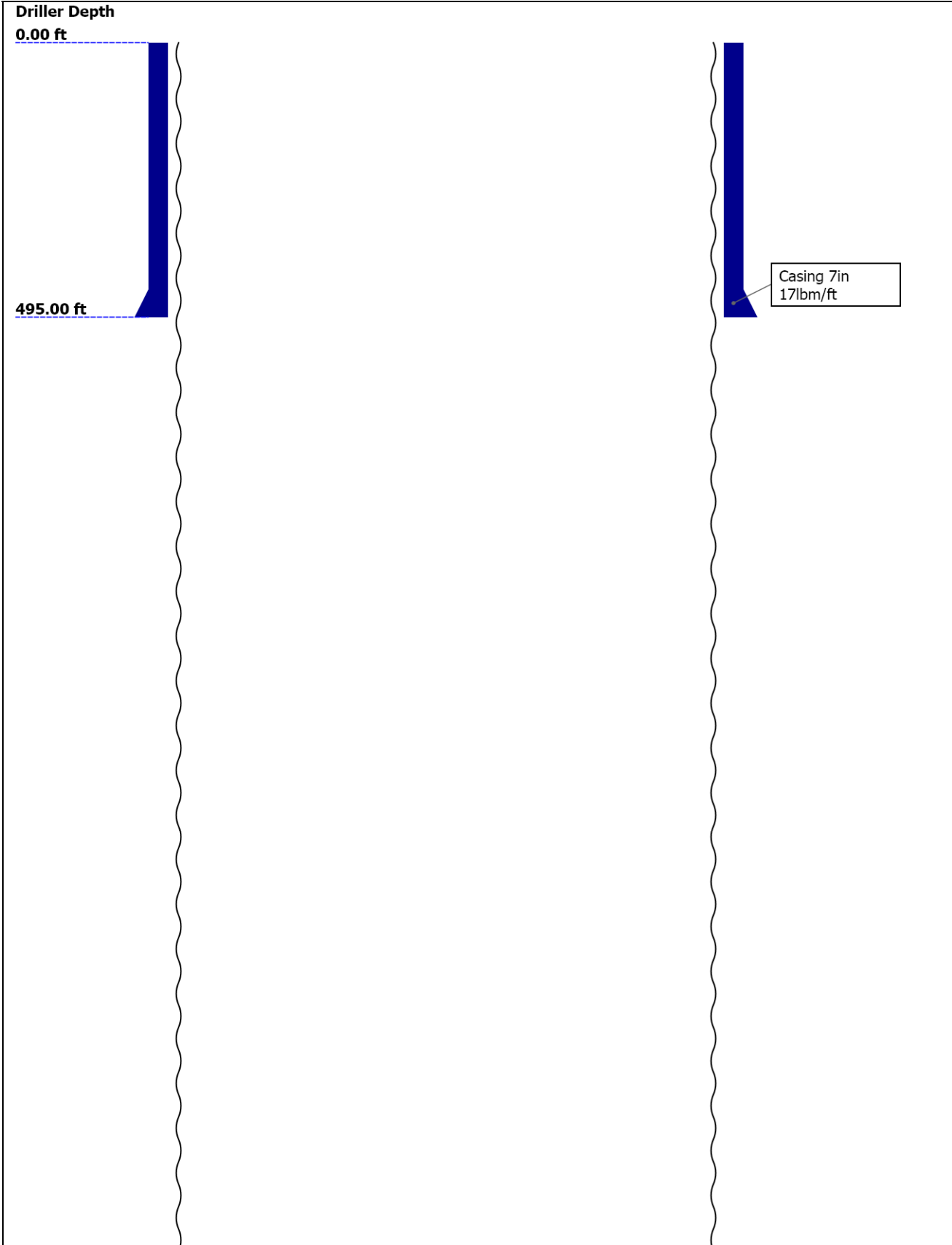
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Well Sketch



2698.00 ft

Open Hole 6.25in

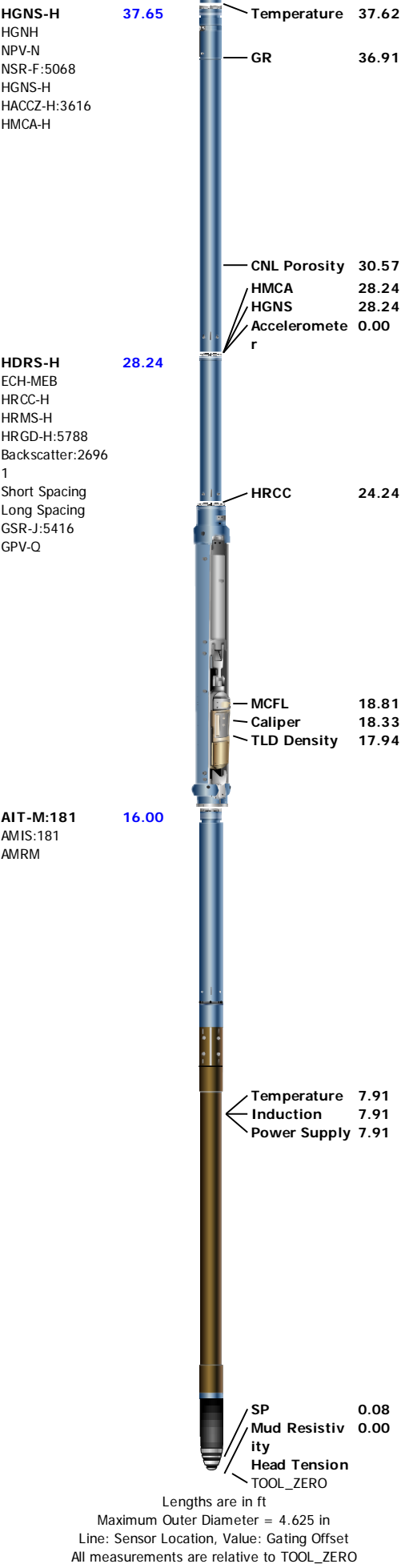
Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	6.25					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	2698					
Bottom Logger ( ft )	2698					
Casing						
Size ( in )	7					
Weight ( lbm/ft )	17					
Inner Diameter ( in )	6.538					
Grade	N/A					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	495					
Bottom Logger ( ft )	495					

Operational Run Summary

Parameter ( unit )	ONE					
Date Log Started	09-Dec-2014					
Time Log Started	13:19:04					
Date Log Finished	09-Dec-2014					
Time Log Finished	14:55:03					
Top Log Interval ( ft )	498.25					
Bottom Log Interval ( ft )	2698.00					
Total Depth ( ft )	2698.00					
Max Hole Deviation ( deg )	0.00					
Azimuth of Max Deviation ( deg )	0.00					
Bit Size ( in )	6.250					
Logging Unit Number	9108					
Logging Unit Location	Fort Morgan					
Recorded By	Nolan Welsh					
Witnessed By	Paul Dekaye					
Service Order Number	CXPX-00071					

Service Order Number		EXPX-00071					
Borehole Fluids							
Parameter( unit )	ONE						
Fluid Type	Water						
Fluid Name	WBM						
Max Recorded Temperatures ( degF )	110						
Source of Sample	Active Tank						
Salinity ( ppm )	11600						
Density ( lbm/gal )	8.5						
Funnel Viscosity ( s )	28						
Fluid Loss ( cm3 )	4						
PH	8						
Date/Time Circulation Stopped	09-Dec-2014 08:30:00						
Date Logger on Bottom	09-Dec-2014						
Time Logger on Bottom	13:50:00						
Source RMF	Calculated						
RMC	Calculated						
RM @ Meas Temp ( ohm.m@degF )	0.23 @ 71.57						
RMF @ Meas Temp ( ohm.m@degF )	0.16 @ 75						
RMC @ Meas Temp ( ohm.m@degF )	0.33 @ 75						
RM @ BHT ( ohm.m@degF )	0.15 @ 110						
RMF @ BHT ( ohm.m@degF )	0.11 @ 110						
RMC @ BHT ( ohm.m@degF )	0.23 @ 110						
Total Solid ( % )							
High Gravity Solids ( % )							
Remarks and Equipment Summary							
ONE: Toolstring				ONE: Remarks			
Equip name	Length	MP name	Offset	Toolstring run as per tool sketch.			
LEH-QT	55.57			Matrix: Limestone MDEN: 2.71 g/cm3			
LEH-QT				Rig: Excell #2			
DTC-H	52.65			Crew: Troy Ocanus, Jeffery Schossow			
ECH-KC		CTEM	51.75				
DTC-H		HV	0.00				
		ToolStatus	49.65				
Weight[2]	49.65	TelStatus	49.65				
GPIT-F	45.65						
GPIH-B		GPIT-F Incl	44.23				
GPIC-F		ometer					
DHRU-F							
		GPIT	0.00				
Weight[1]	41.65						



## Depth Summary

		ONE													
Depth Measuring Device															
Type				IDW-JA											
Serial Number				5896											
Calibration Date				13-Aug-2014											
Calibrator Serial Number															
Calibration Cable Type				7-46-AXS											
Wheel Correction 1				-3											
Wheel Correction 2				-2											
Tension Device															
Type				CMTD-B/A											
Serial Number				1109											
Calibration Date				18-Nov-2014											
Calibrator Serial Number				441345A											
Number of Calibration Points				10											
Calibration Root Mean Square Error				36											
Calibration Peak Error				69											
Logging Cable															
Type				7-46A-XS											
Serial Number				U711136											
Length				18000.00 ft											
Conveyance Type				Wireline											
Rig Type				Land											
ONE: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															
Tool Zero Check At Surface															
Survey Record															
Survey Calculation															
Method :				Minimum Radius of Curvature				DLS Method :				Lubinski			
North Reference :				True North				Total Correction Formula :				Magnetic Dec			
Rig Location															
Latitude :				40.441640 degrees				Longitude :				-102.37134 degrees			
Tie In Point															
Measured Depth:		0.00 ft		Inclination:		0.00 deg		Azimuth:		0.00 deg					
True Vertical Depth:		0.00 ft		North Displacement:		0.00 ft		East Displacement:		0.00 ft					
Survey Quality Index															
9 : Manual				28 : Tie-In Point											
Survey Correction Index															
0 : No correction															
Survey Description Index															
0 : Not Flagged Survey															
Seq	MD (ft)	Incl (deg)	Azim (deg)	Course (ft)	TVD (ft)	V Sec (ft)	N/ -S (ft)	E/ -W (ft)	Closure (ft)	at Azim (deg)	DLS deg/100ft	Tool Type	QI	CI	DI
1	0.00	0.00	0.00	- - - -	0.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP	28	0	0
2	16.00	0.41	153.64	16.00	16.00	-0.05	-0.05	0.03	0.07	153.64	2.55	GPIT-F	9	0	0
3	46.00	0.35	122.85	30.00	46.00	-0.20	-0.20	0.15	0.26	142.59	0.70	GPIT-F	9	0	0
4	76.00	0.24	99.94	30.00	76.00	-0.26	-0.26	0.29	0.39	131.55	0.54	GPIT-F	9	0	0
5	106.00	0.11	205.77	30.00	106.00	-0.30	-0.30	0.34	0.46	130.97	0.99	GPIT-F	9	0	0
6	136.00	0.16	328.85	30.00	136.00	-0.29	-0.29	0.31	0.43	133.12	0.82	GPIT-F	9	0	0
7	166.00	0.22	173.53	30.00	166.00	-0.31	-0.31	0.29	0.43	136.52	1.24	GPIT-F	9	0	0
8	196.00	0.07	84.58	30.00	196.00	-0.36	-0.36	0.31	0.49	138.96	0.75	GPIT-F	9	0	0

	9	226.00	0.13	3.11	30.00	226.00	-0.33	-0.33	0.33	0.46	134.34	0.45	GPIT-F	9	0	0
10		256.00	0.06	332.03	30.00	256.00	-0.28	-0.28	0.33	0.43	130.37	0.28	GPIT-F	9	0	0
11		286.00	0.19	42.48	30.00	286.00	-0.23	-0.23	0.36	0.43	122.70	0.61	GPIT-F	9	0	0
12		316.00	0.38	335.57	30.00	316.00	-0.10	-0.10	0.35	0.36	105.93	1.18	GPIT-F	9	0	0
13		346.00	0.53	353.83	30.00	346.00	0.13	0.13	0.29	0.33	66.08	0.68	GPIT-F	9	0	0
14		376.00	0.82	355.38	30.00	376.00	0.48	0.48	0.26	0.56	28.38	0.97	GPIT-F	9	0	0
15		406.00	0.74	336.80	30.00	405.99	0.87	0.87	0.17	0.89	10.77	0.88	GPIT-F	9	0	0
16		436.00	0.89	248.46	30.00	435.99	0.96	0.96	-0.13	0.98	352.53	3.80	GPIT-F	9	0	0
17		466.00	1.27	359.77	30.00	465.99	1.21	1.21	-0.34	1.25	344.15	5.97	GPIT-F	9	0	0
18		496.00	1.19	256.01	30.00	495.98	1.47	1.47	-0.65	1.61	336.22	6.43	GPIT-F	9	0	0
19		526.00	1.43	243.38	30.00	525.98	1.22	1.22	-1.28	1.77	313.64	1.27	GPIT-F	9	0	0
20		556.00	1.51	247.33	30.00	555.97	0.90	0.90	-1.98	2.17	294.46	0.43	GPIT-F	9	0	0
21		586.00	1.71	246.50	30.00	585.95	0.57	0.57	-2.76	2.82	281.70	0.67	GPIT-F	9	0	0
22		616.00	1.67	243.22	30.00	615.94	0.20	0.20	-3.56	3.58	273.16	0.35	GPIT-F	9	0	0
23		646.00	1.47	242.15	30.00	645.93	-0.18	-0.18	-4.29	4.30	267.60	0.66	GPIT-F	9	0	0
24		676.00	1.39	245.64	30.00	675.92	-0.51	-0.51	-4.96	4.99	264.14	0.39	GPIT-F	9	0	0
25		706.00	1.31	249.02	30.00	705.91	-0.78	-0.78	-5.61	5.68	262.06	0.37	GPIT-F	9	0	0
26		736.00	1.35	247.60	30.00	735.90	-1.04	-1.04	-6.26	6.36	260.56	0.17	GPIT-F	9	0	0
27		766.00	1.30	253.26	30.00	765.90	-1.27	-1.27	-6.91	7.02	259.57	0.47	GPIT-F	9	0	0
28		796.00	1.29	243.44	30.00	795.89	-1.52	-1.52	-7.54	7.71	258.59	0.74	GPIT-F	9	0	0
29		826.00	1.18	250.62	30.00	825.88	-1.78	-1.78	-8.14	8.33	257.69	0.63	GPIT-F	9	0	0
30		856.00	1.22	246.41	30.00	855.87	-2.01	-2.01	-8.72	8.96	257.04	0.33	GPIT-F	9	0	0
31		886.00	0.78	233.58	30.00	885.87	-2.26	-2.26	-9.18	9.45	256.19	1.65	GPIT-F	9	0	0
32		916.00	0.56	229.77	30.00	915.87	-2.47	-2.47	-9.45	9.78	255.35	0.76	GPIT-F	9	0	0
33		946.00	0.53	218.65	30.00	945.87	-2.67	-2.67	-9.65	10.01	254.52	0.36	GPIT-F	9	0	0
34		976.00	0.39	195.30	30.00	975.87	-2.88	-2.88	-9.76	10.17	253.58	0.78	GPIT-F	9	0	0
35		1006.00	0.40	182.89	30.00	1005.86	-3.08	-3.08	-9.80	10.27	252.54	0.29	GPIT-F	9	0	0
36		1036.00	0.46	194.86	30.00	1035.86	-3.30	-3.30	-9.83	10.37	251.44	0.36	GPIT-F	9	0	0
37		1066.00	0.54	144.51	30.00	1065.86	-3.53	-3.53	-9.78	10.40	250.14	1.44	GPIT-F	9	0	0
38		1096.00	0.58	140.75	30.00	1095.86	-3.77	-3.77	-9.60	10.30	248.59	0.18	GPIT-F	9	0	0
39		1126.00	0.62	134.83	30.00	1125.86	-4.00	-4.00	-9.39	10.20	246.95	0.24	GPIT-F	9	0	0
40		1156.00	0.54	130.04	30.00	1155.86	-4.20	-4.20	-9.17	10.07	245.38	0.29	GPIT-F	9	0	0
41		1186.00	0.78	136.40	30.00	1185.86	-4.44	-4.44	-8.92	9.97	243.52	0.84	GPIT-F	9	0	0
42		1216.00	0.71	120.62	30.00	1215.85	-4.69	-4.69	-8.62	9.81	241.46	0.72	GPIT-F	9	0	0
43		1246.00	0.71	129.11	30.00	1245.85	-4.90	-4.90	-8.31	9.65	239.49	0.35	GPIT-F	9	0	0
44		1276.00	0.87	120.87	30.00	1275.85	-5.13	-5.13	-7.97	9.48	237.24	0.65	GPIT-F	9	0	0
45		1306.00	0.81	117.44	30.00	1305.85	-5.35	-5.35	-7.59	9.28	234.85	0.25	GPIT-F	9	0	0
46		1336.00	0.79	118.65	30.00	1335.84	-5.54	-5.54	-7.22	9.09	232.49	0.08	GPIT-F	9	0	0
47		1366.00	1.01	117.75	30.00	1365.84	-5.76	-5.76	-6.81	8.92	229.74	0.71	GPIT-F	9	0	0
48		1396.00	0.96	117.07	30.00	1395.83	-6.00	-6.00	-6.35	8.73	226.61	0.15	GPIT-F	9	0	0
49		1426.00	0.98	119.03	30.00	1425.83	-6.24	-6.24	-5.90	8.60	223.40	0.12	GPIT-F	9	0	0
50		1456.00	1.07	122.21	30.00	1455.83	-6.51	-6.51	-5.44	8.50	219.87	0.34	GPIT-F	9	0	0
51		1486.00	1.13	118.05	30.00	1485.82	-6.80	-6.80	-4.94	8.40	216.01	0.35	GPIT-F	9	0	0
52		1516.00	1.16	117.55	30.00	1515.81	-7.08	-7.08	-4.41	8.33	211.93	0.08	GPIT-F	9	0	0
53		1546.00	1.25	110.47	30.00	1545.81	-7.34	-7.34	-3.84	8.27	207.62	0.59	GPIT-F	9	0	0
54		1576.00	1.08	109.88	30.00	1575.80	-7.55	-7.55	-3.26	8.23	203.39	0.57	GPIT-F	9	0	0
55		1606.00	1.31	108.89	30.00	1605.79	-7.75	-7.75	-2.67	8.20	199.03	0.76	GPIT-F	9	0	0
56		1636.00	1.37	112.48	30.00	1635.79	-8.00	-8.00	-2.02	8.27	194.16	0.35	GPIT-F	9	0	0
57		1666.00	1.40	111.91	30.00	1665.78	-8.28	-8.28	-1.35	8.40	189.25	0.11	GPIT-F	9	0	0
58		1696.00	1.49	112.93	30.00	1695.77	-8.56	-8.56	-0.65	8.60	184.34	0.31	GPIT-F	9	0	0
59		1726.00	1.57	115.81	30.00	1725.76	-8.89	-8.89	0.08	8.89	179.49	0.37	GPIT-F	9	0	0
60		1756.00	1.72	116.17	30.00	1755.74	-9.27	-9.27	0.85	9.32	174.75	0.52	GPIT-F	9	0	0
61		1786.00	1.76	119.48	30.00	1785.73	-9.70	-9.70	1.66	9.84	170.30	0.35	GPIT-F	9	0	0
62		1816.00	1.78	116.83	30.00	1815.72	-10.13	-10.13	2.47	10.43	166.28	0.28	GPIT-F	9	0	0

63	1846.00	1.83	120.67	30.00	1845.70	-10.59	-10.59	3.30	11.09	162.69	0.43	GPIT-F	9	0	0
64	1876.00	1.77	121.40	30.00	1875.69	-11.07	-11.07	4.11	11.81	159.65	0.21	GPIT-F	9	0	0
65	1906.00	1.79	122.23	30.00	1905.67	-11.56	-11.56	4.90	12.57	157.04	0.12	GPIT-F	9	0	0
66	1936.00	1.88	123.70	30.00	1935.66	-12.09	-12.09	5.71	13.35	154.73	0.33	GPIT-F	9	0	0
67	1966.00	1.89	125.95	30.00	1965.64	-12.65	-12.65	6.52	14.24	152.74	0.25	GPIT-F	9	0	0
68	1996.00	1.90	127.83	30.00	1995.62	-13.25	-13.25	7.31	15.12	151.10	0.21	GPIT-F	9	0	0
69	2026.00	1.83	132.10	30.00	2025.61	-13.88	-13.88	8.06	16.04	149.84	0.52	GPIT-F	9	0	0
70	2056.00	1.86	132.98	30.00	2055.59	-14.53	-14.53	8.77	16.96	148.87	0.12	GPIT-F	9	0	0
71	2086.00	1.84	133.55	30.00	2085.58	-15.19	-15.19	9.48	17.91	148.04	0.08	GPIT-F	9	0	0
72	2116.00	1.79	132.89	30.00	2115.56	-15.84	-15.84	10.17	18.83	147.30	0.20	GPIT-F	9	0	0
73	2146.00	1.77	131.02	30.00	2145.55	-16.47	-16.47	10.86	19.72	146.59	0.20	GPIT-F	9	0	0
74	2176.00	1.74	129.77	30.00	2175.53	-17.06	-17.06	11.56	20.60	145.87	0.15	GPIT-F	9	0	0
75	2206.00	1.73	133.85	30.00	2205.52	-17.67	-17.67	12.24	21.49	145.28	0.41	GPIT-F	9	0	0
76	2236.00	1.69	135.04	30.00	2235.51	-18.29	-18.29	12.88	22.38	144.85	0.19	GPIT-F	9	0	0
77	2266.00	1.70	134.77	30.00	2265.49	-18.92	-18.92	13.51	23.26	144.47	0.05	GPIT-F	9	0	0
78	2296.00	1.51	136.76	30.00	2295.48	-19.52	-19.52	14.10	24.08	144.17	0.67	GPIT-F	9	0	0
79	2326.00	1.24	140.06	30.00	2325.47	-20.06	-20.06	14.57	24.80	144.00	0.92	GPIT-F	9	0	0
80	2356.00	1.04	140.04	30.00	2355.47	-20.52	-20.52	14.96	25.39	143.91	0.67	GPIT-F	9	0	0
81	2386.00	1.02	140.08	30.00	2385.46	-20.93	-20.93	15.30	25.92	143.83	0.08	GPIT-F	9	0	0
82	2416.00	0.99	143.22	30.00	2415.46	-21.34	-21.34	15.63	26.44	143.78	0.20	GPIT-F	9	0	0
83	2446.00	0.93	142.30	30.00	2445.45	-21.74	-21.74	15.93	26.97	143.76	0.23	GPIT-F	9	0	0
84	2476.00	0.88	142.13	30.00	2475.45	-22.12	-22.12	16.22	27.43	143.74	0.17	GPIT-F	9	0	0
85	2506.00	0.87	142.48	30.00	2505.45	-22.48	-22.48	16.50	27.89	143.71	0.03	GPIT-F	9	0	0
86	2536.00	0.81	134.87	30.00	2535.44	-22.81	-22.81	16.79	28.31	143.64	0.41	GPIT-F	9	0	0
87	2566.00	0.69	140.21	30.00	2565.44	-23.10	-23.10	17.06	28.71	143.55	0.46	GPIT-F	9	0	0
88	2596.00	0.72	133.58	30.00	2595.44	-23.37	-23.37	17.31	29.07	143.47	0.29	GPIT-F	9	0	0
89	2626.00	0.92	131.41	30.00	2625.44	-23.66	-23.66	17.63	29.49	143.30	0.68	GPIT-F	9	0	0
90	2656.00	0.65	130.46	30.00	2655.43	-23.93	-23.93	17.94	29.92	143.14	0.90	GPIT-F	9	0	0

ONE

1" Induction

Integration Summary															
Output Channel(s)		Output Description				Input Parameter				Output Value			Unit		
ICV		Integrated Cement Volume				GCSE_UP_PASS, FCD				239.03			ft3		

Software Version															
Acquisition System									Version						
MaxWell									4.0.9163.3000						
Application Patch									Patch-SP-10767_26570-4.0.9163.3001						

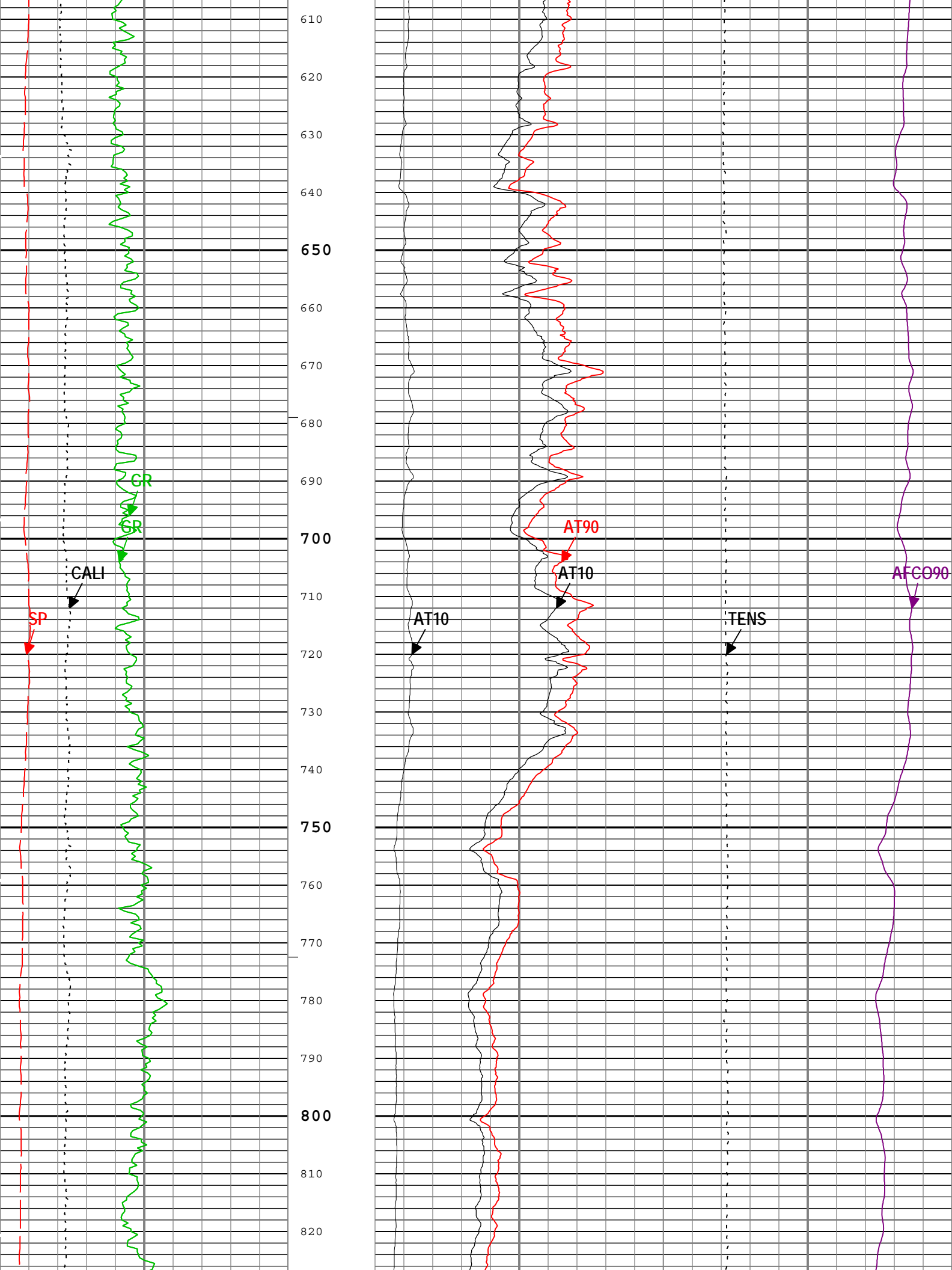
Computation		Description										Version			
Borehole		Borehole Ensemble provides common Borehole Parameters and Channels										4.0.9469.3000			
Tool Elements		Description							Software Version			Firmware Version			
HRCC-H		HILT High-Resolution Control Cartridge, 150 degC							4.0.9575.3000						
HGNS-H		HILT Gamma-Ray and Neutron Sonde, 150 degC							4.0.9575.3000						
AMIS		Array Induction Sonde - M							4.0.9535.3000						

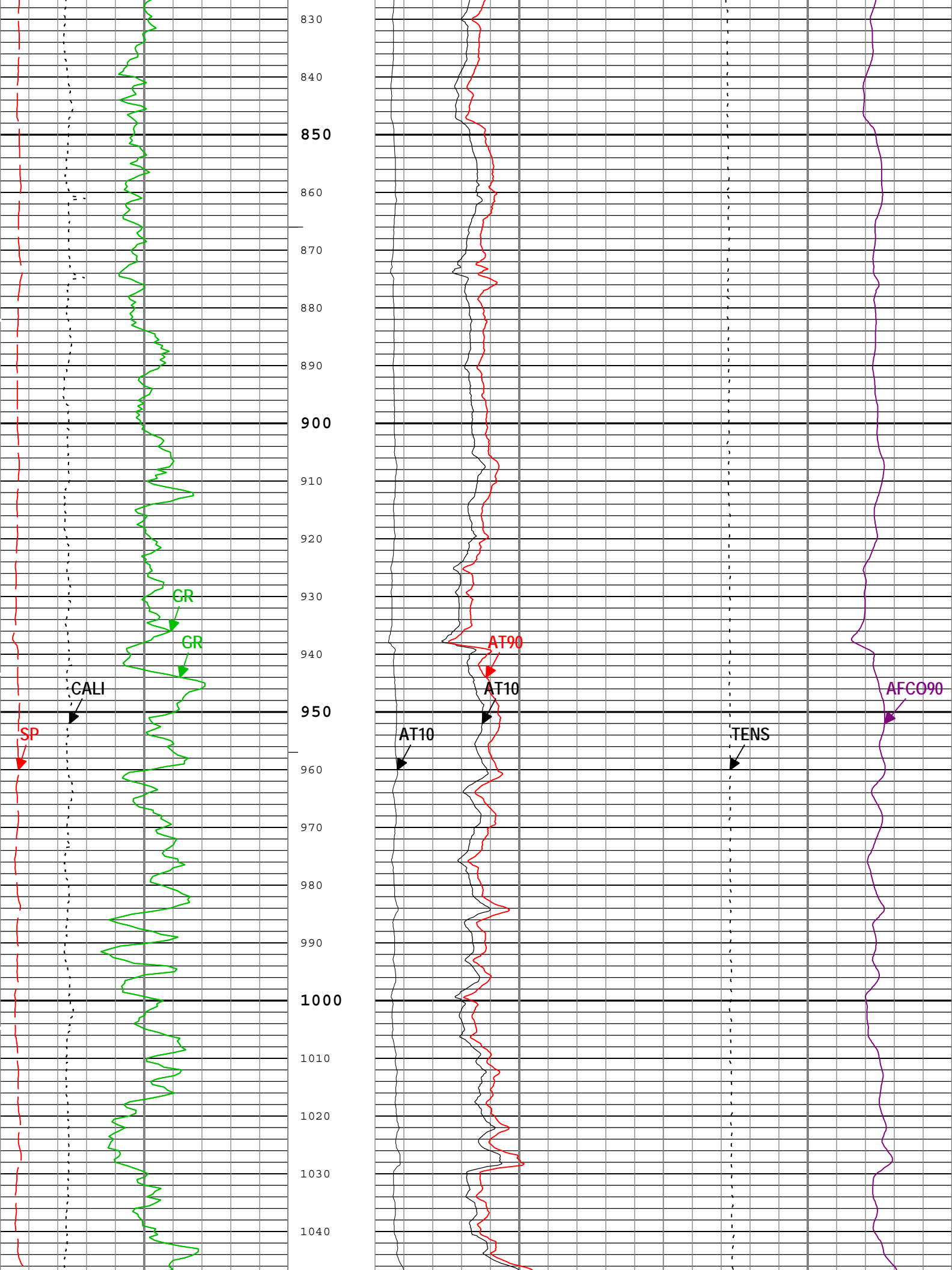
Pass Summary															
Run Name	Pass Objective		Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift		Include Parallel Data				
ONE	Main[3]:Up		Up	54.64 ft	2700.43 ft	09-Dec-2014 2:09:10 PM	09-Dec-2014 2:54:47 PM	ON	0.00 ft		Yes				

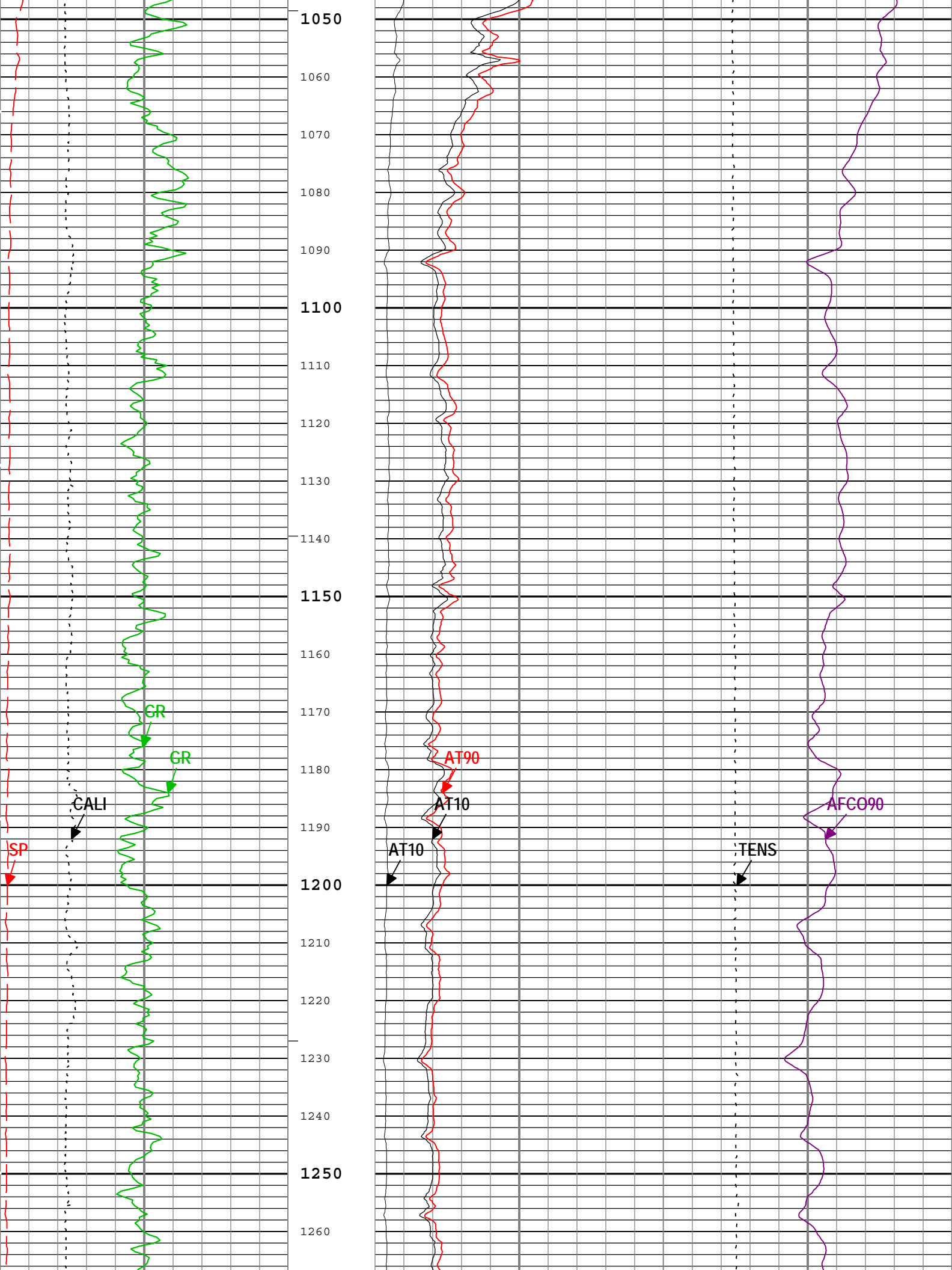
All depths are referenced to toolstring zero

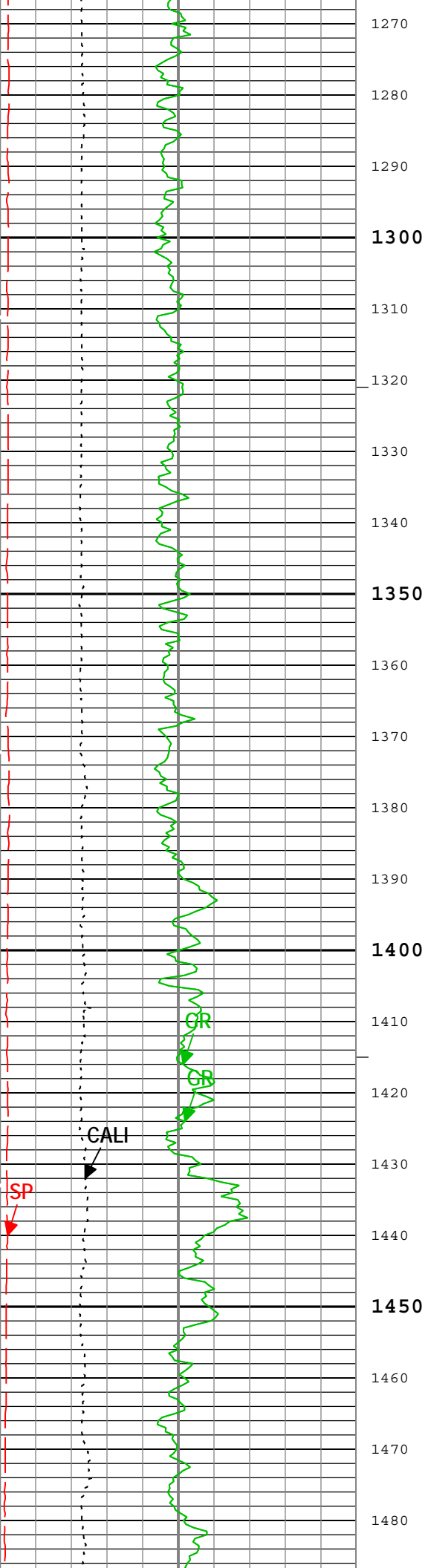




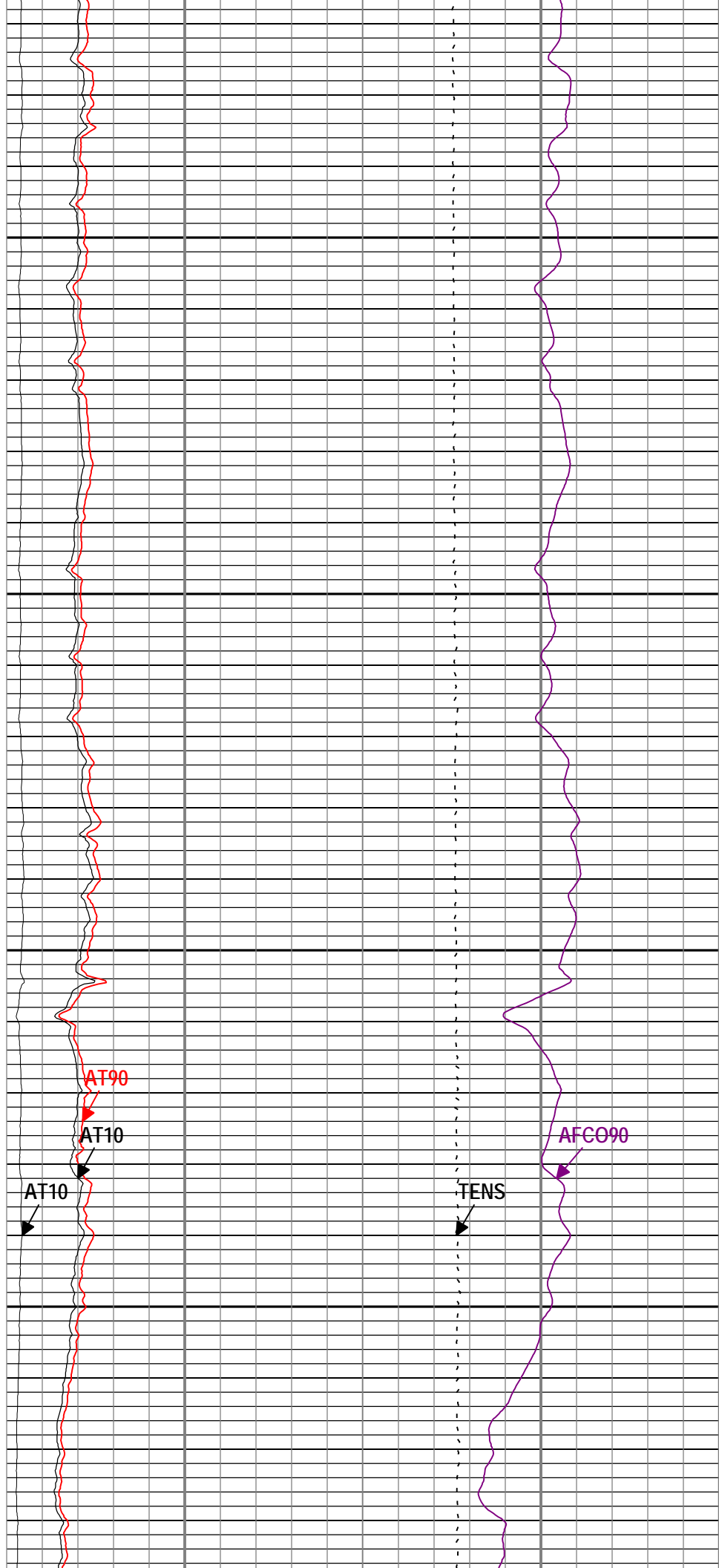






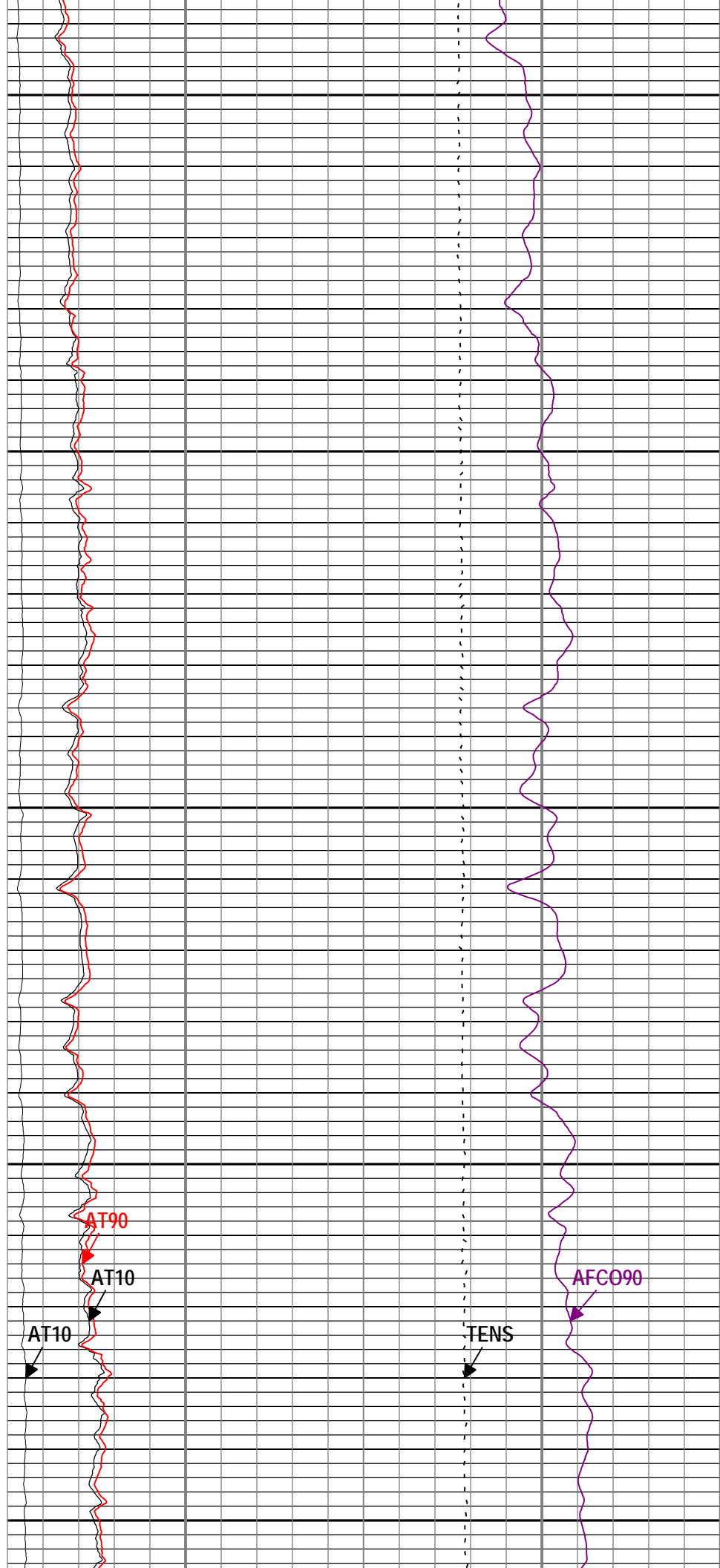
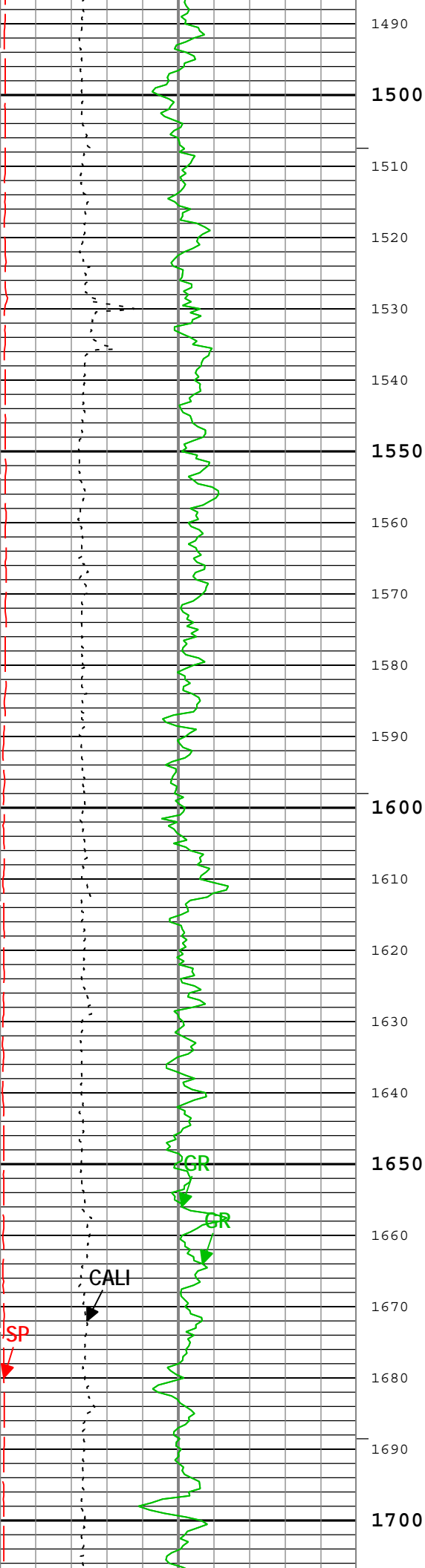


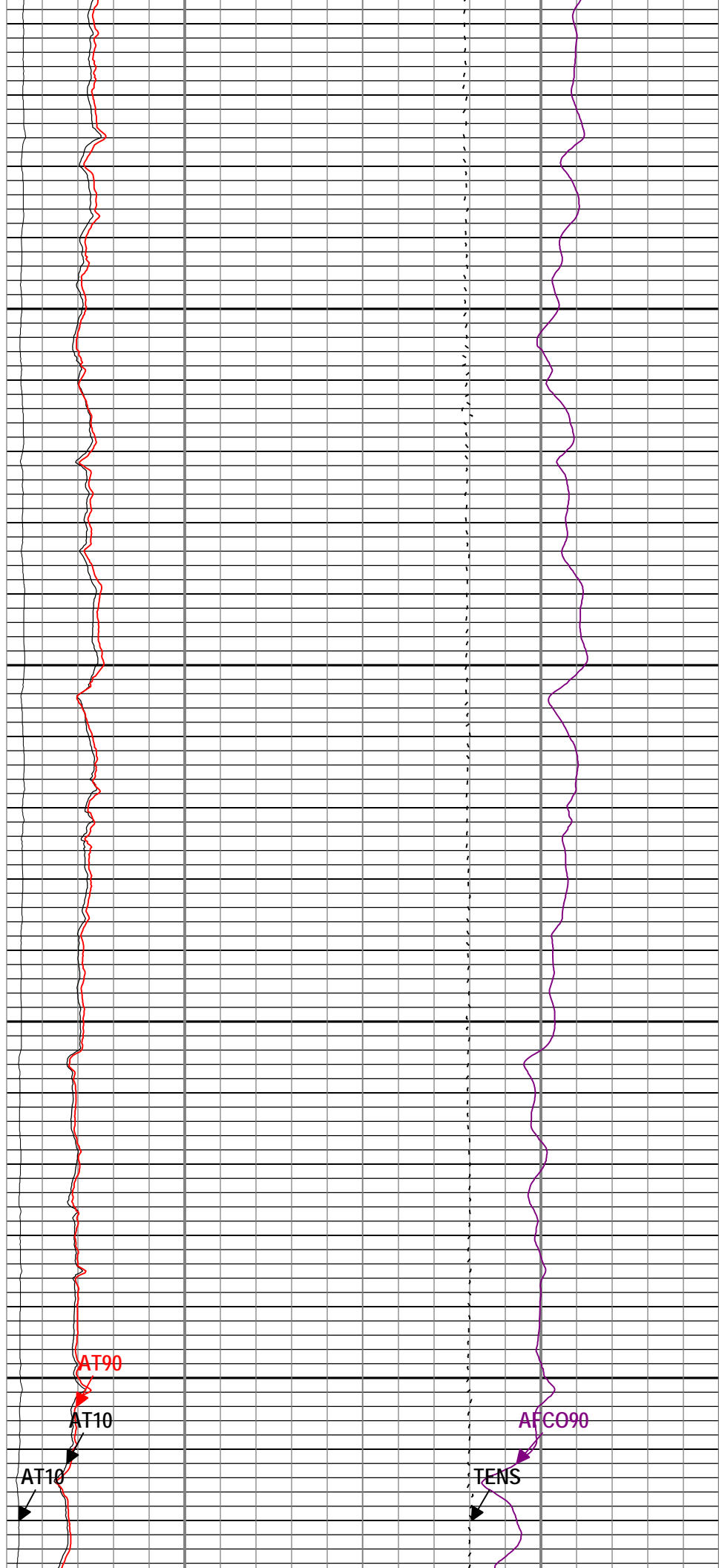
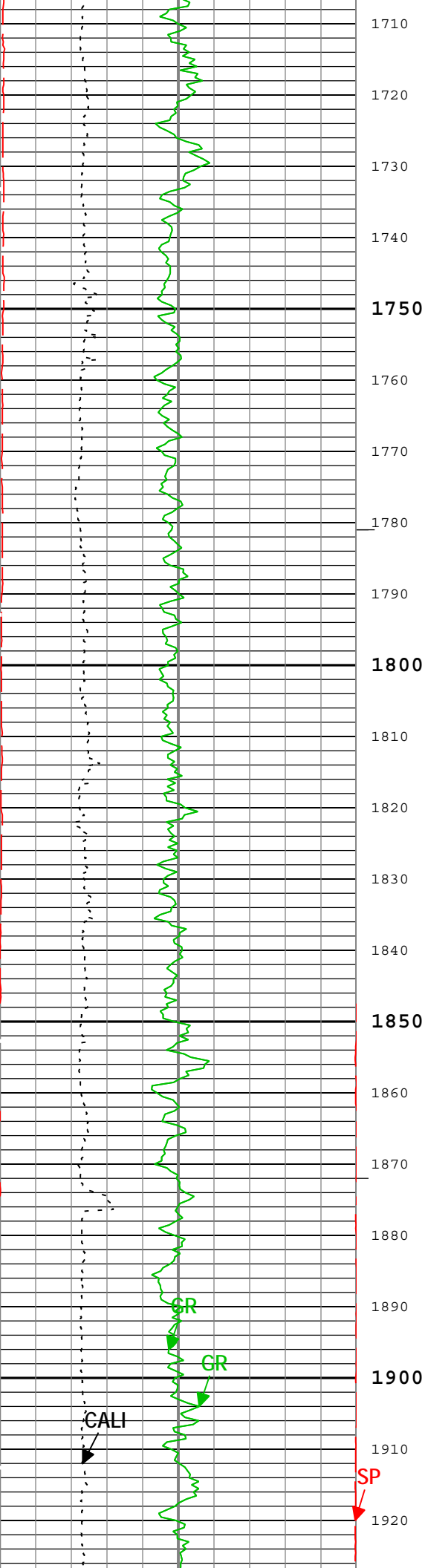
1270  
1280  
1290  
**1300**  
1310  
1320  
1330  
1340  
**1350**  
1360  
1370  
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1420  
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**1450**  
1460  
1470  
1480

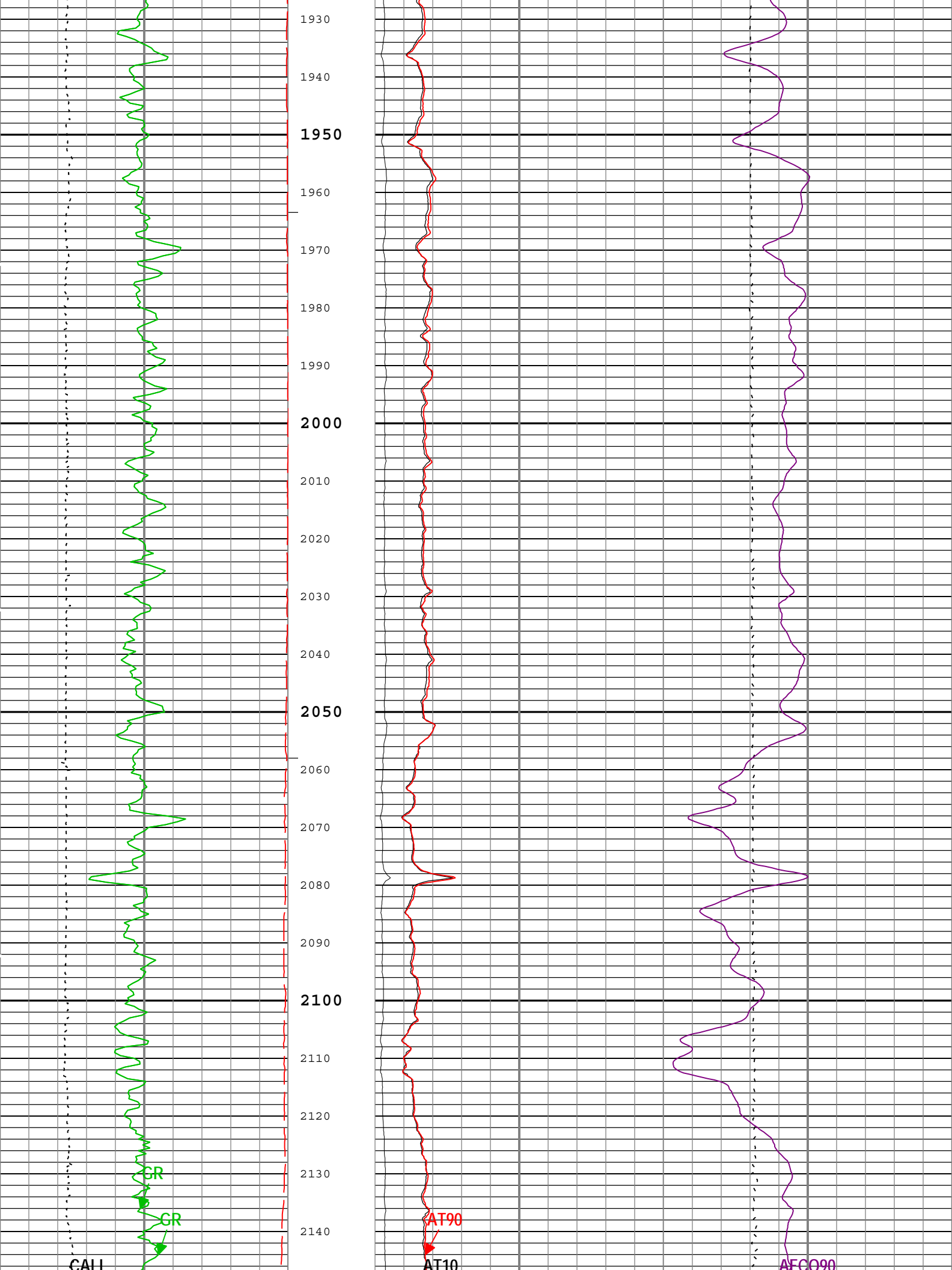


**AT90**  
**AT10**  
**AT10**

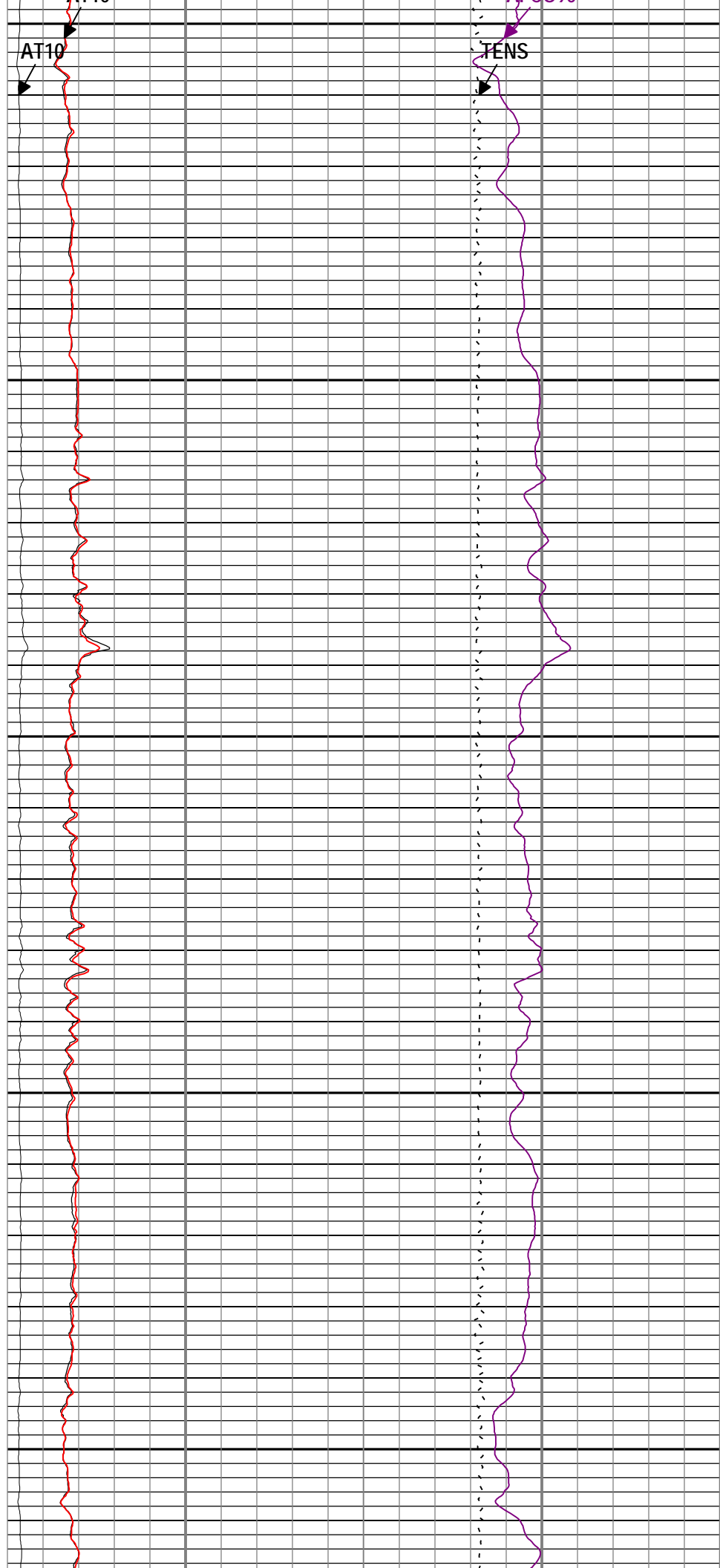
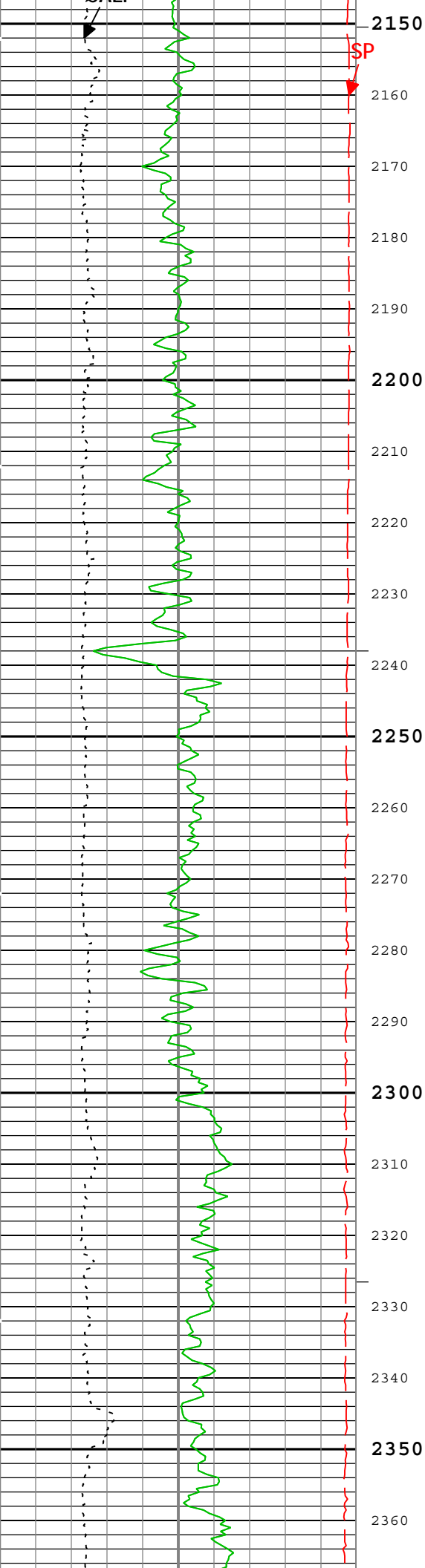
**TENS**  
**AFCO90**

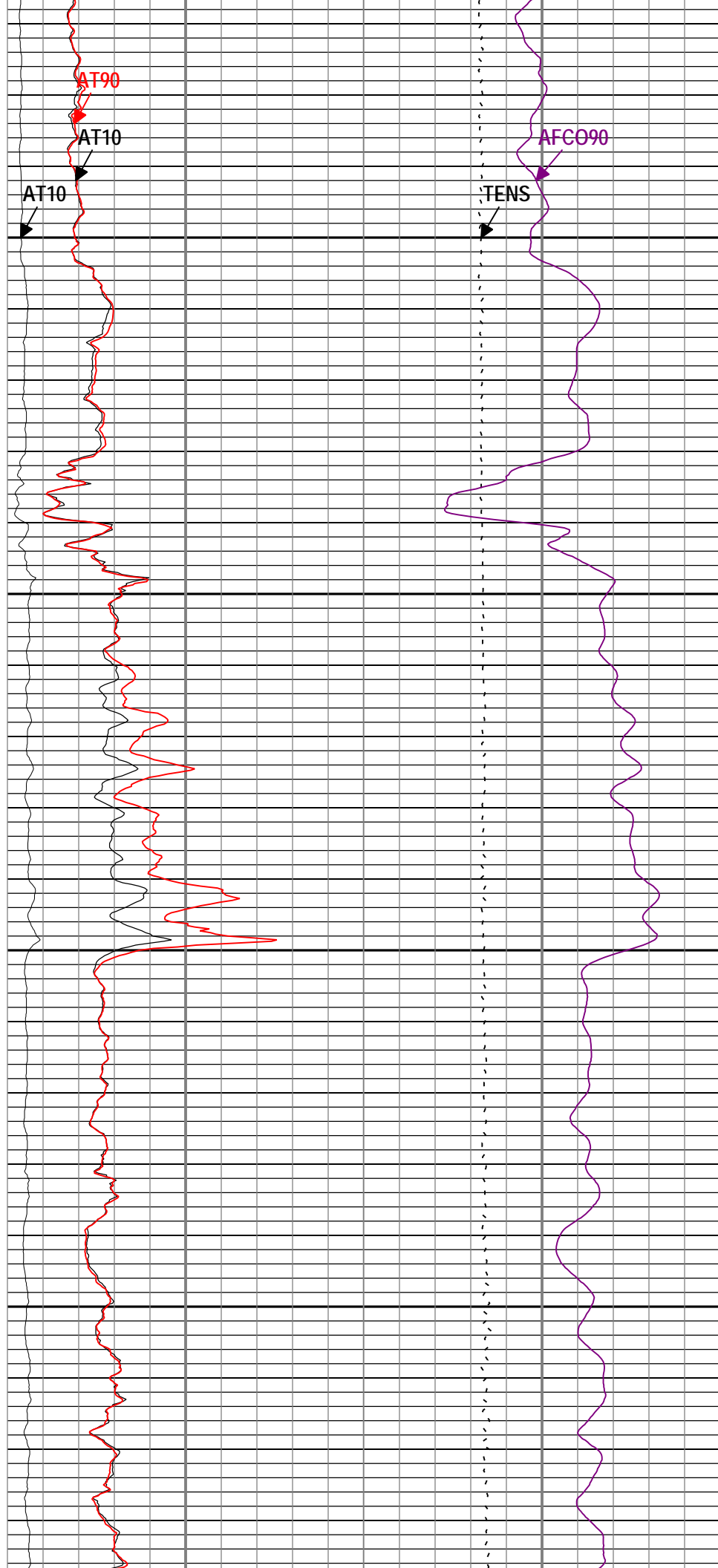
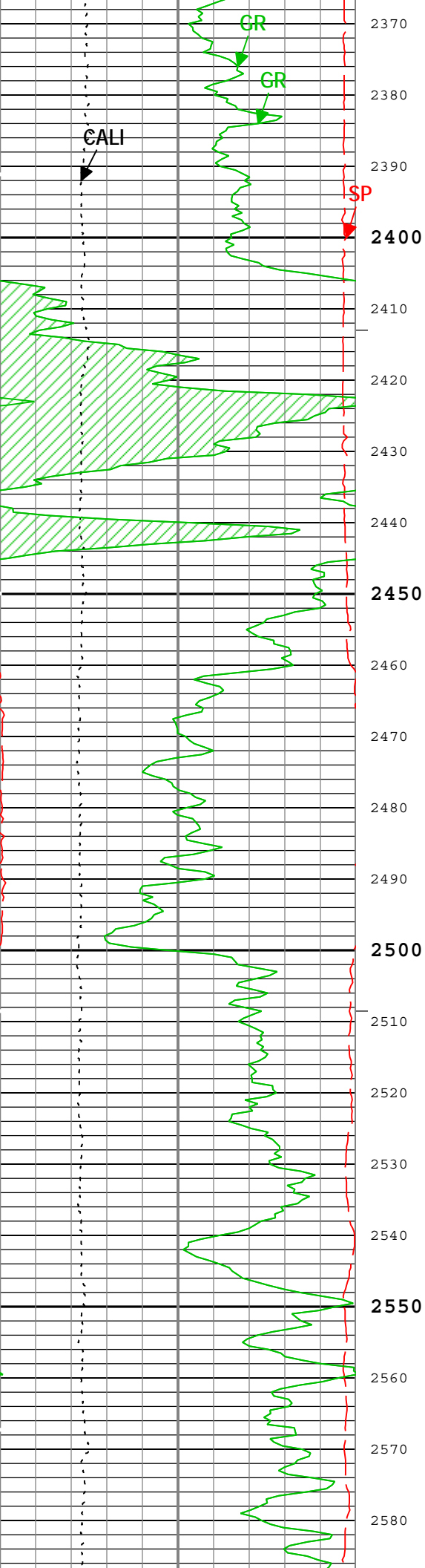


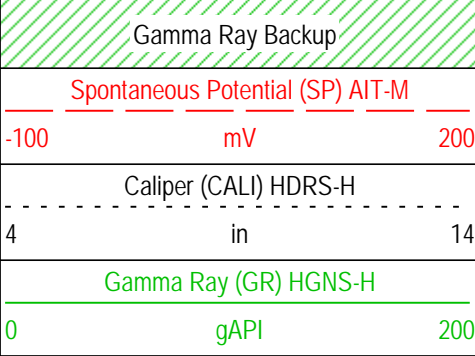
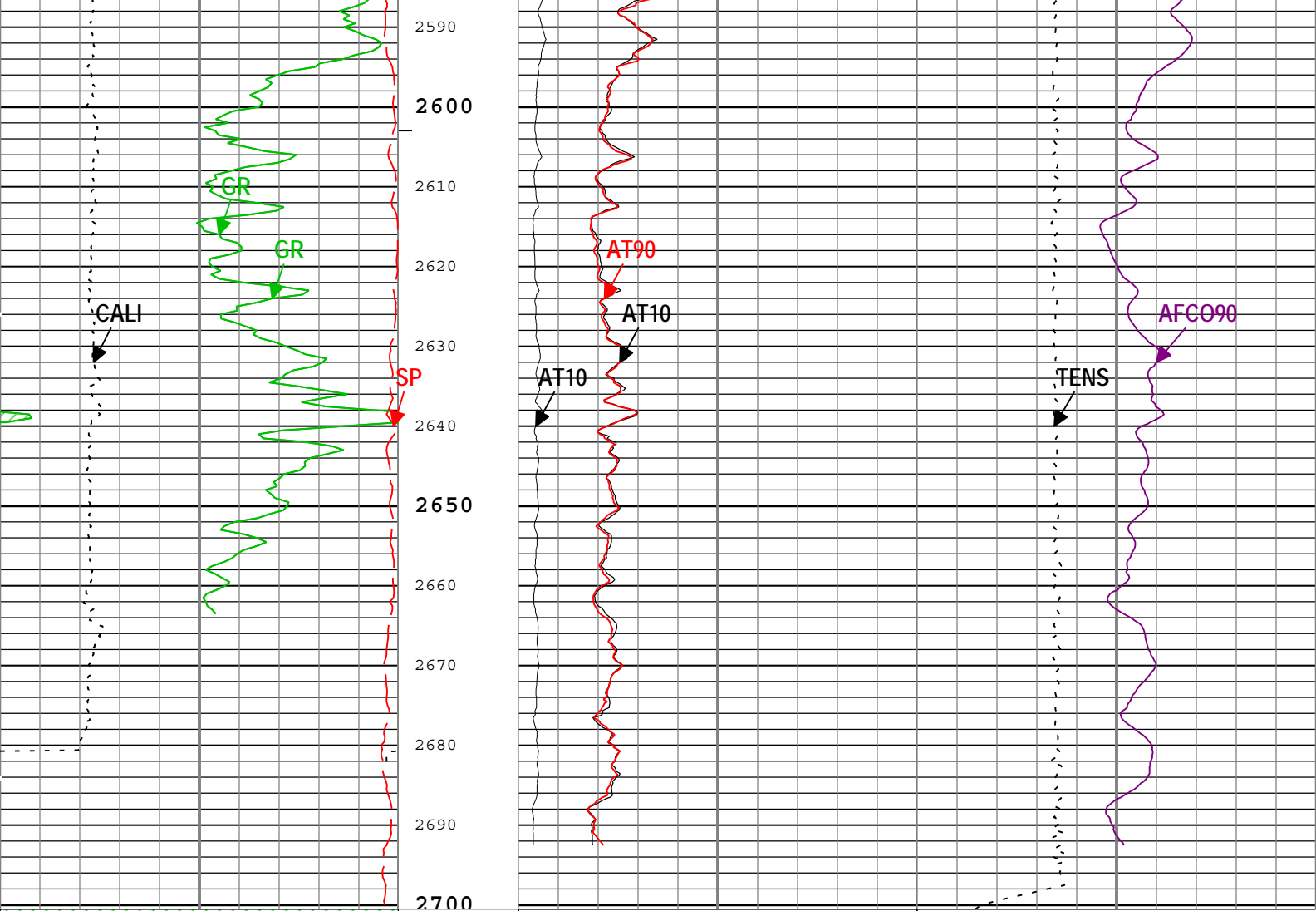












Array Induction Two Foot Resistivity A10 (AT10) AIT-M		
0	ohm.m	50
Array Induction Two Foot Resistivity A10 (AT10) AIT-M		
0	ohm.m	10
Array Induction Two Foot Resistivity A90 (AT90) AIT-M		
0	ohm.m	10

Cable Tension (TENS)		
0	lbf	5000
Array Induction Four Foot Conductivity A90 (AFCO90) AIT-M		
1000	mS/m	0

— ICV - Integrated Cement Volume every 100.00 (ft3)

TIME\_1900 - Time Marked every 60.00 (s)

— ICV - Integrated Cement Volume every 10.00 (ft3)

Description: AIT Basic Log Two Format: Log ( EMD 1in Induction ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Dec-2014 15:19:23

## 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	0.125	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	6.25	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.075	in

CBLO	Casing Bottom (Logger)	WLSESSION	495	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DFD	Drilling Fluid Density	Borehole	8.5	lbm/gal
FCD	Future Casing (Outer) Diameter	WLSESSION	4.5	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	
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

ONE				
2" Induction				

Integration Summary				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	239.03	ft3

Software Version				
Acquisition System			Version	
MaxWell			4.0.9163.3000	
Application Patch			Patch-SP-10767_26570-4.0.9163.3001	
Computation	Description			Version
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels			4.0.9469.3000
Tool Elements	Description		Software Version	Firmware Version
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC		4.0.9575.3000	
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC		4.0.9575.3000	
AMIS	Array Induction Sonde - M		4.0.9535.3000	

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Main[3]:Up	Up	54.64 ft	2700.43 ft	09-Dec-2014 2:09:10 PM	09-Dec-2014 2:54:47 PM	ON	0.00 ft	Yes

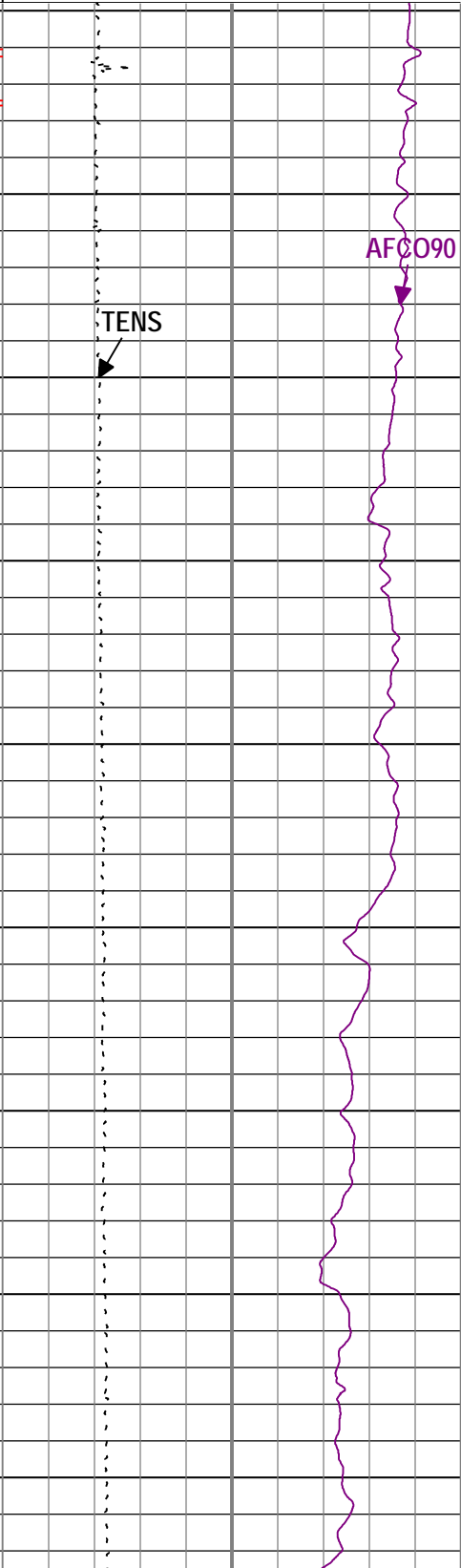
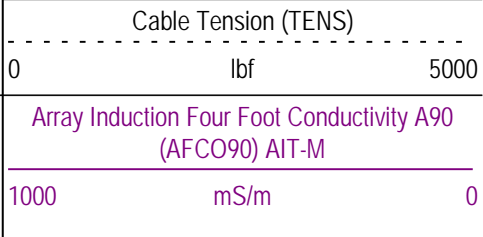
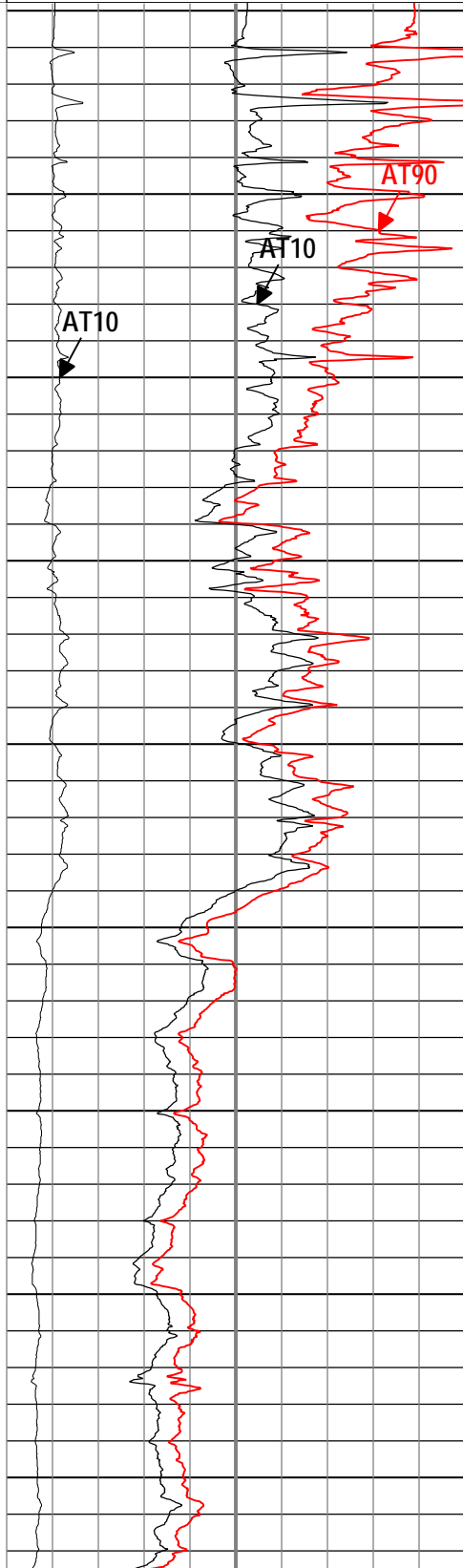
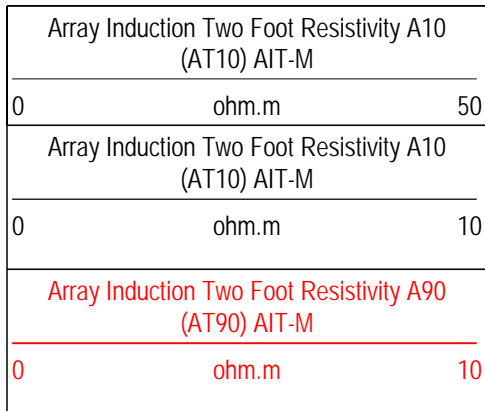
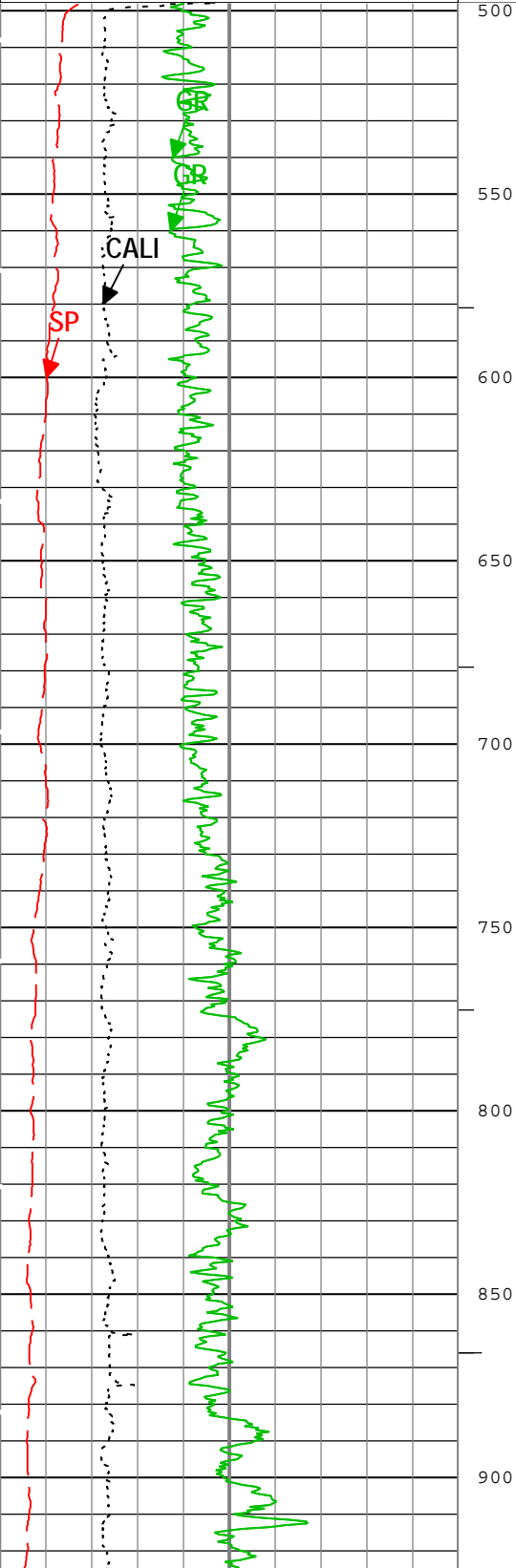
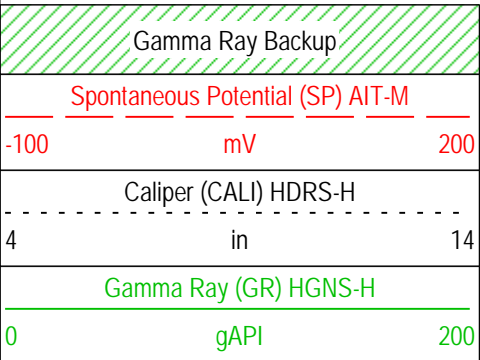
All depths are referenced to toolstring zero									
Log	Company:Omimex Petroleum Inc						Well:Sagehorn 14-34-6-45		
	ONE: Main[3]:Up:S006								

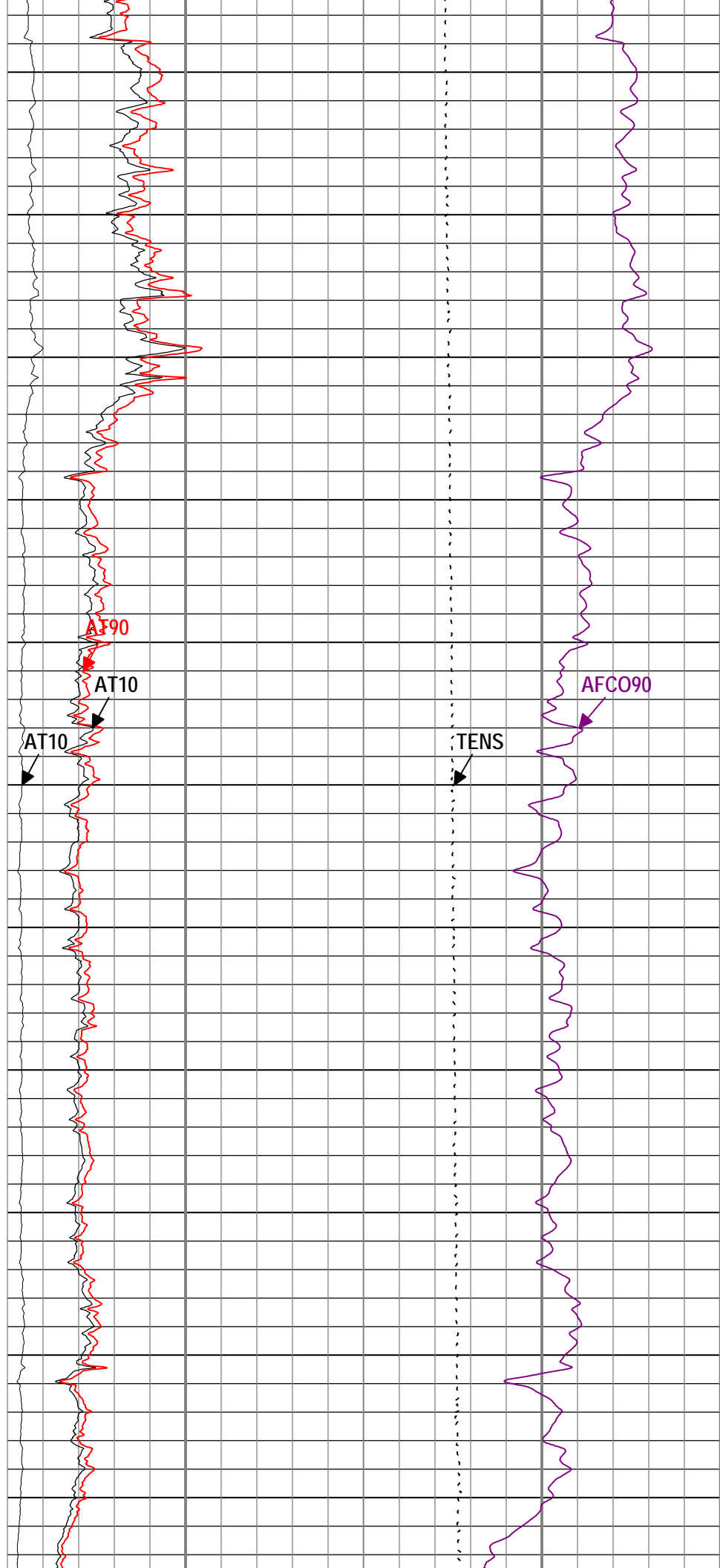
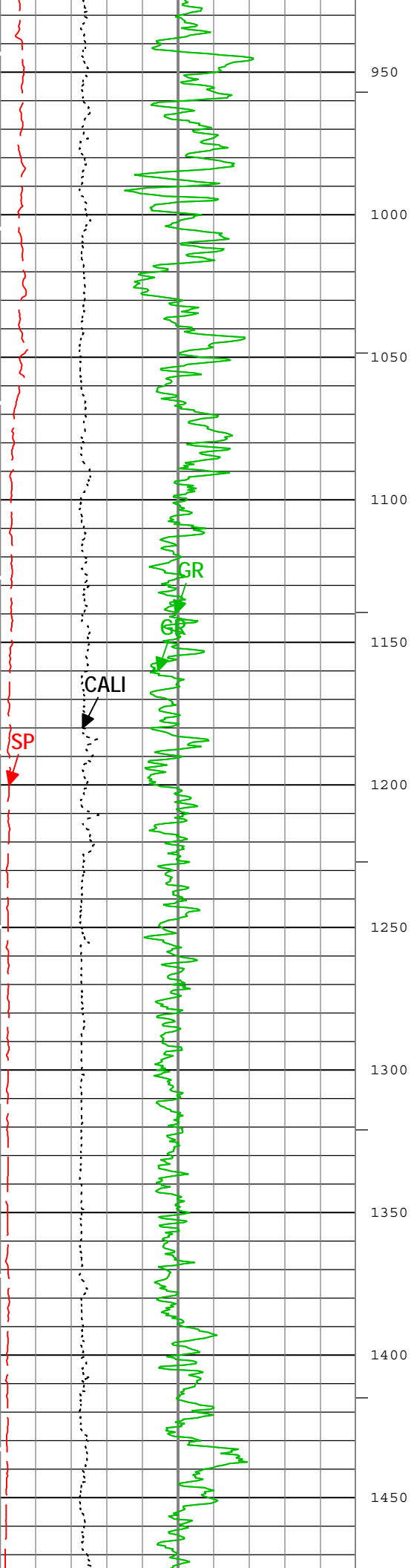
Description: AIT Basic Log Two
Format: Log ( EMD 2in Induction )
Index Scale: 2 in per 100 ft
Index Unit: ft
Index Type: Measured Depth
Creation Date: 09-Dec-2014 15:19:25

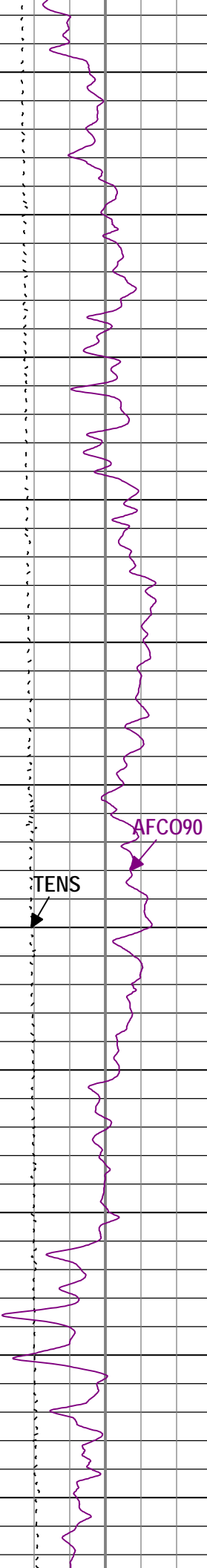
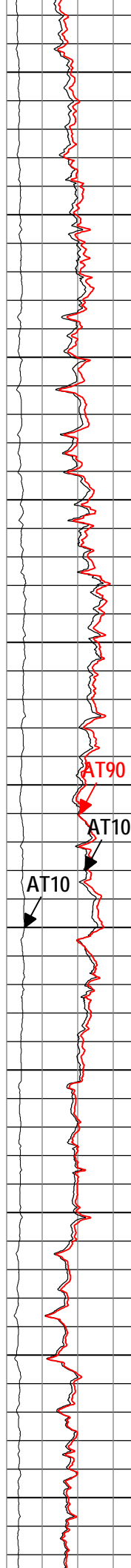
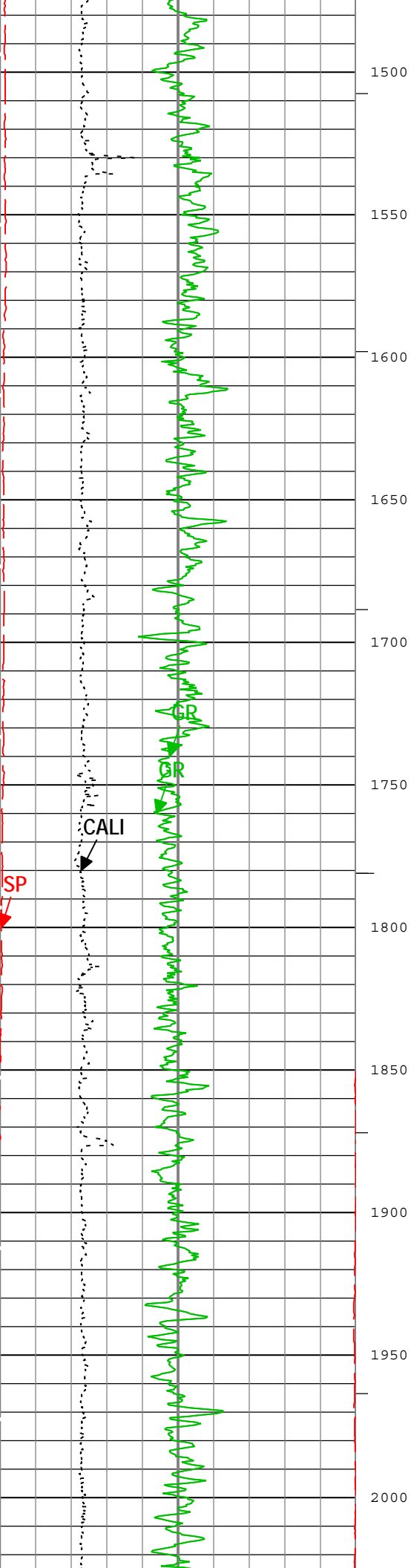
Channel	Source	Sampling
AFCO90	AIT-M:AMIS:AMIS	3in
AT10	AIT-M:AMIS:AMIS	3in
AT90	AIT-M:AMIS:AMIS	3in
CALI	HDRS-H:HRCC-H:HRCC-H	1in
GR	HGNS-H:HGNS-H:HGNS-H	6in
ICV	Borehole	6in
SP	AIT-M:AMIS:AMIS	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

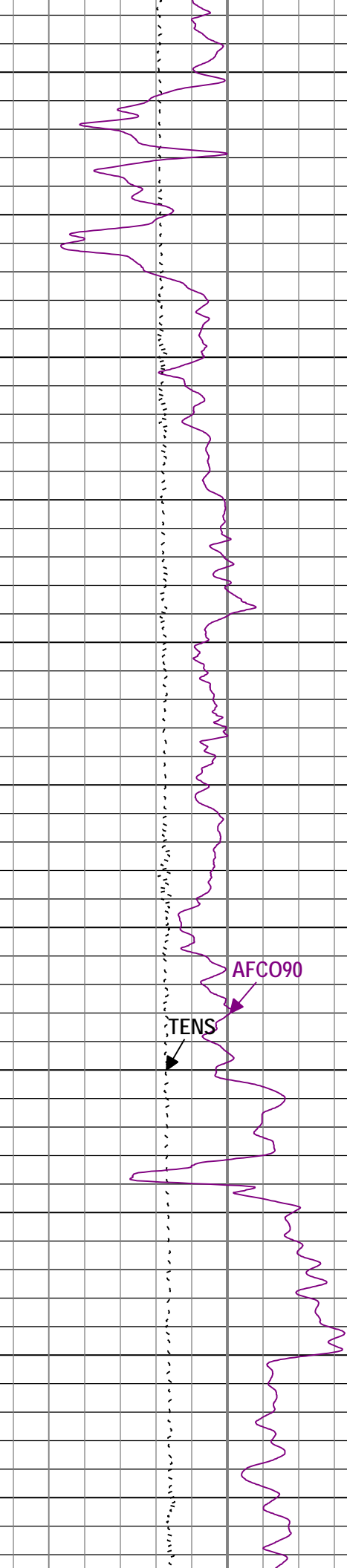
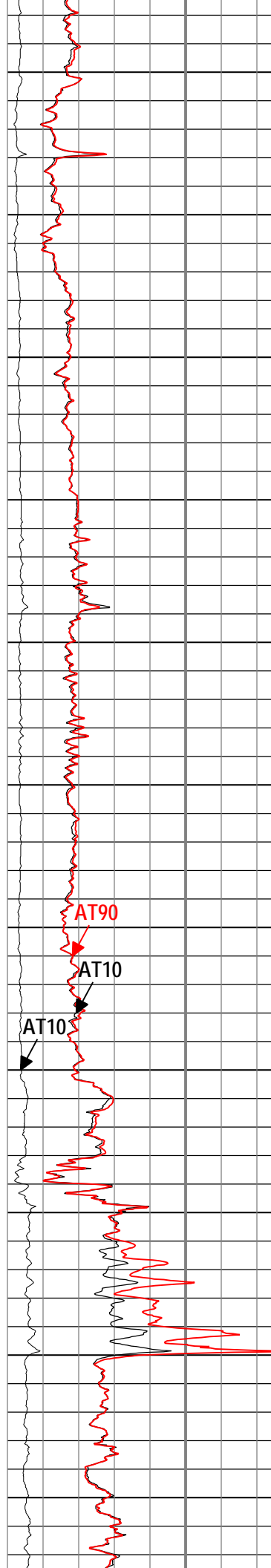
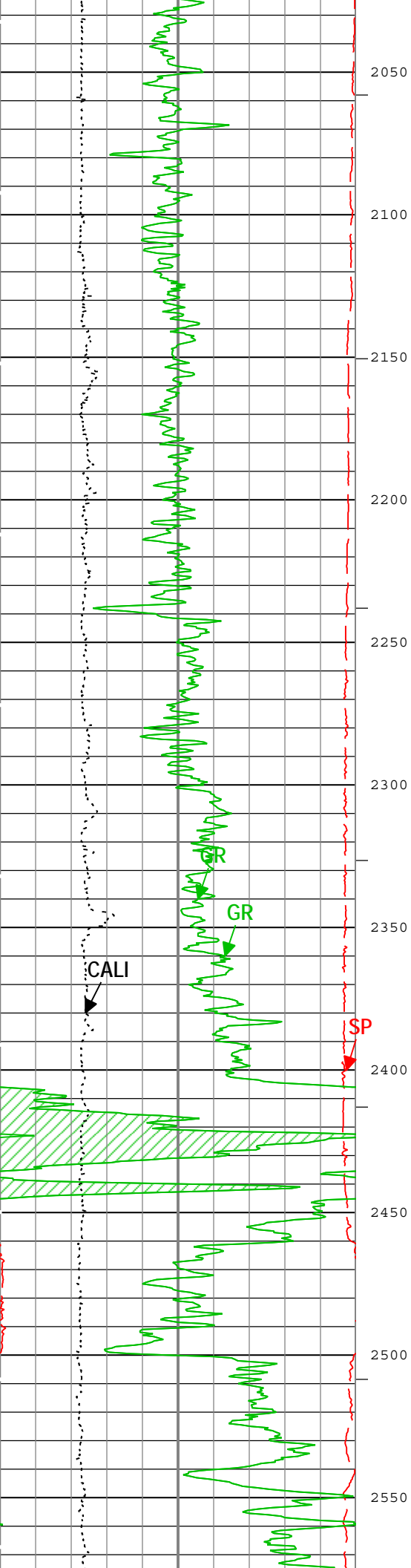
└─ ICV - Integrated Cement Volume every 10.00 (ft3)		
└─ ICV - Integrated Cement Volume every 100.00 (ft3)		

TIME\_1900 - Time Marked every 60.00 (s)

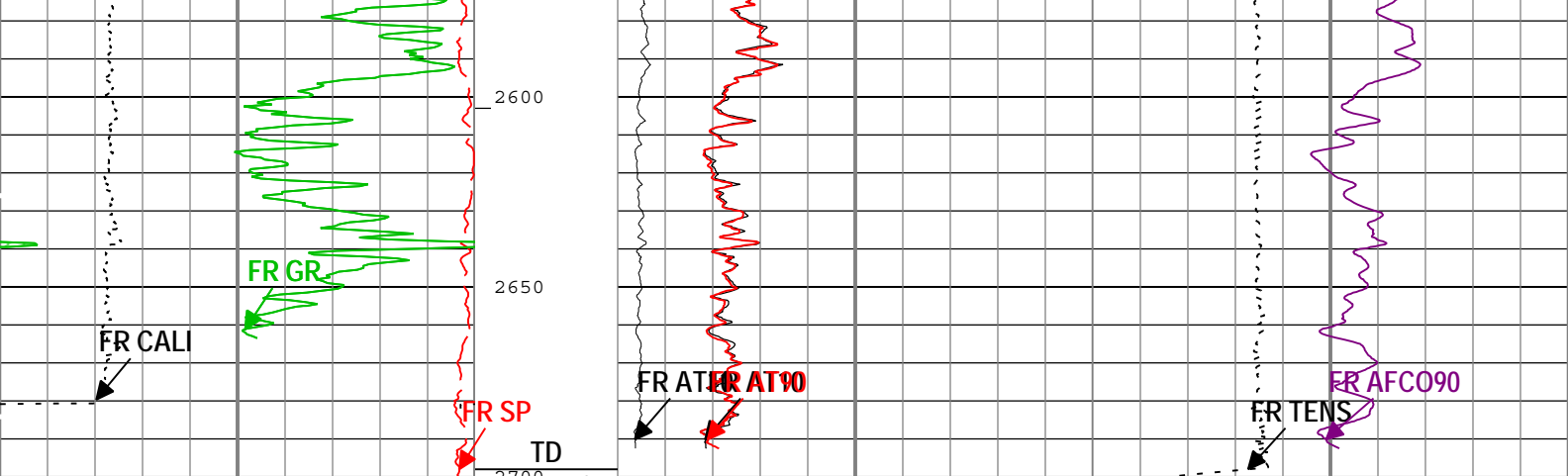












Gamma Ray Backup		
Spontaneous Potential (SP) AIT-M		
-100	mV	200
Caliper (CALI) HDRS-H		
4	in	14
Gamma Ray (GR) HGNS-H		
0	gAPI	200

Array Induction Two Foot Resistivity A10 (AT10) AIT-M		
0	ohm.m	50
Array Induction Two Foot Resistivity A10 (AT10) AIT-M		
0	ohm.m	10
Array Induction Two Foot Resistivity A90 (AT90) AIT-M		
0	ohm.m	10

Cable Tension (TENS)		
0	lbf	5000
Array Induction Four Foot Conductivity A90 (AFCO90) AIT-M		
1000	mS/m	0

TIME\_1900 - Time Marked every 60.00 (s)

— ICV - Integrated Cement Volume every 100.00 (ft3)

— ICV - Integrated Cement Volume every 10.00 (ft3)

Description: AIT Basic Log Two Format: Log ( EMD 2in Induction ) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Dec-2014 15:19:25

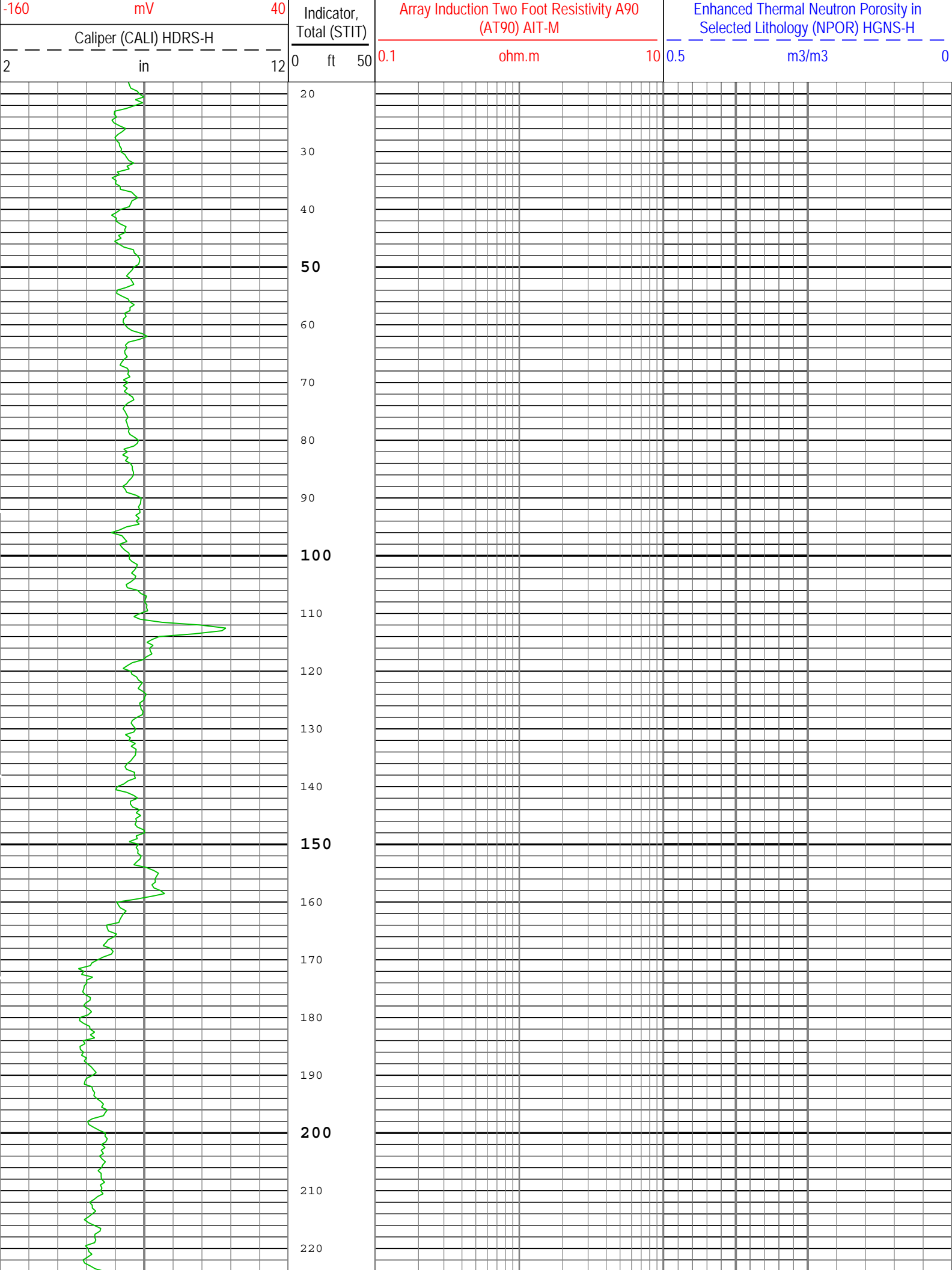
Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ACDE	Array Induction Casing Detection Enable	AIT-M	Yes	
ASTA	Array Induction Tool Standoff	AIT-M	0.125	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	6.25	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.075	in
CBLO	Casing Bottom (Logger)	WLSESSION	495	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DFD	Drilling Fluid Density	Borehole	8.5	lbm/gal
FCD	Future Casing (Outer) Diameter	WLSESSION	4.5	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	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft

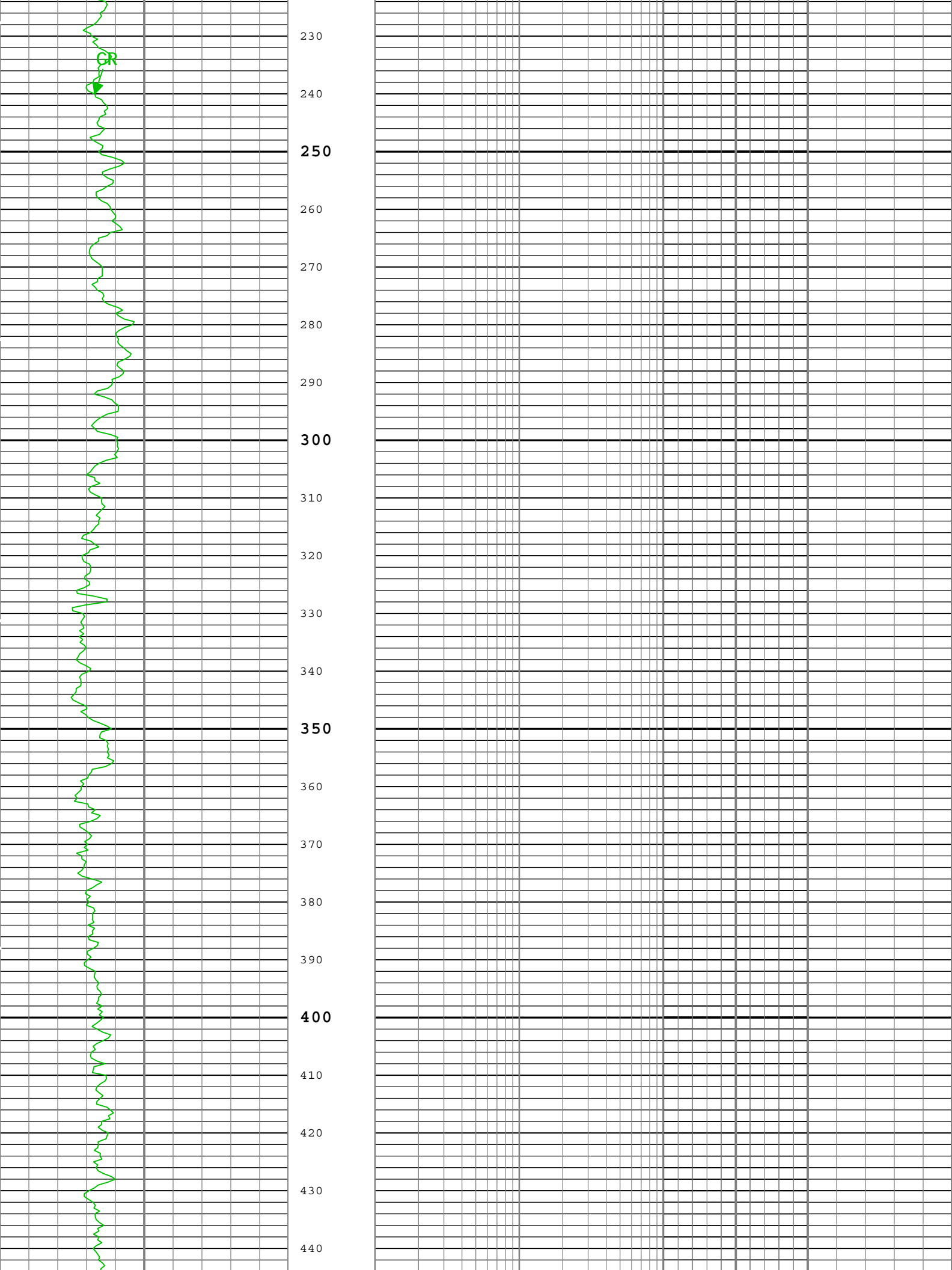
Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

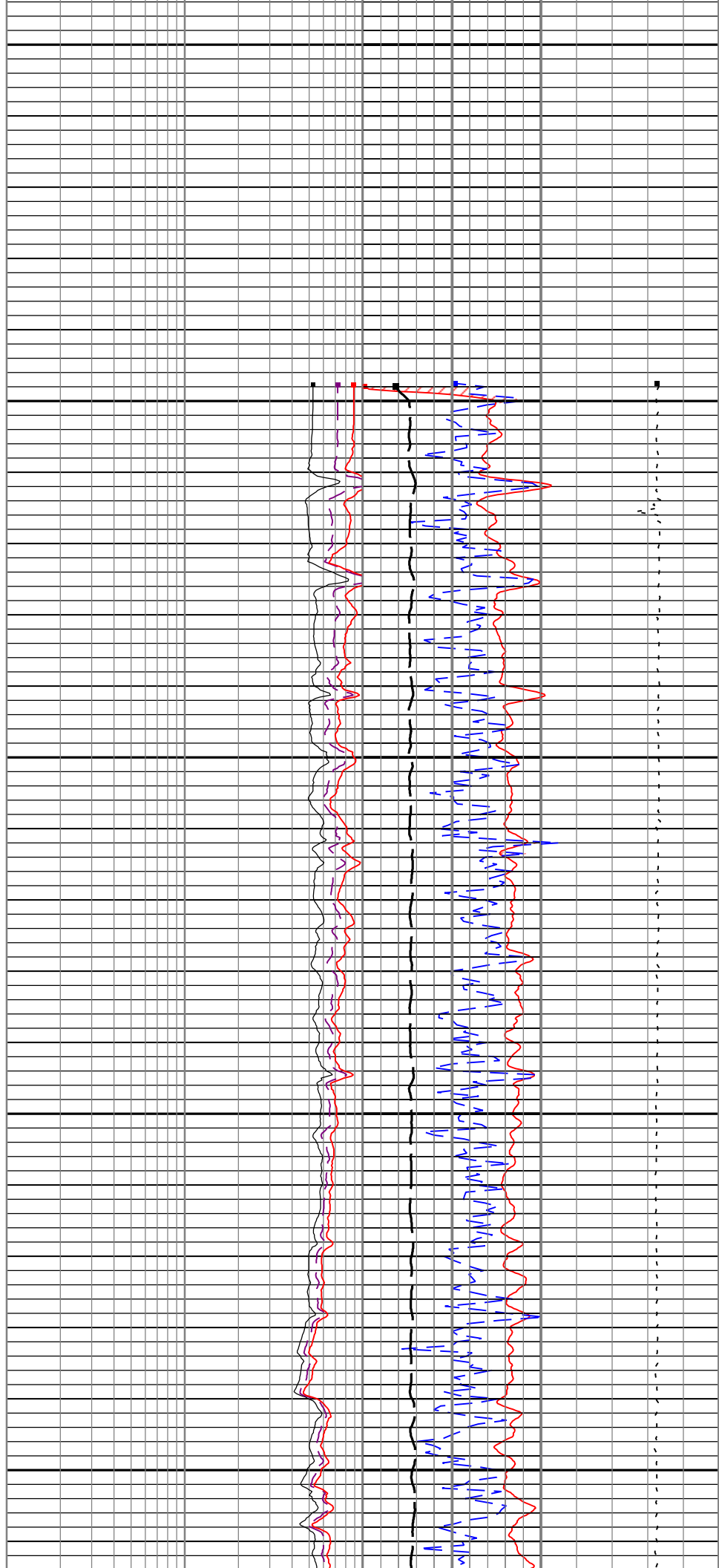
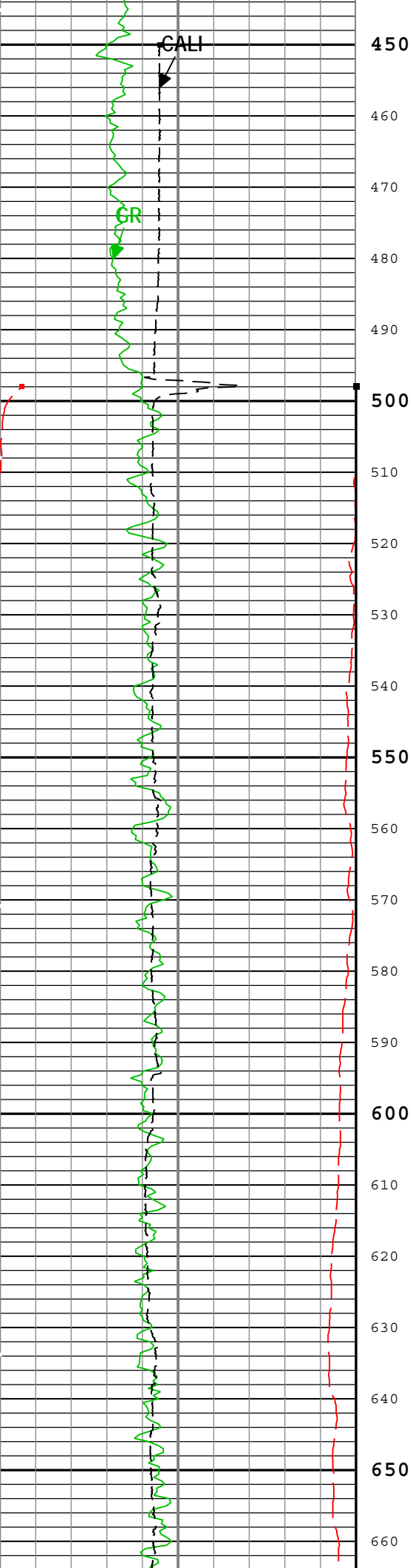
ONE

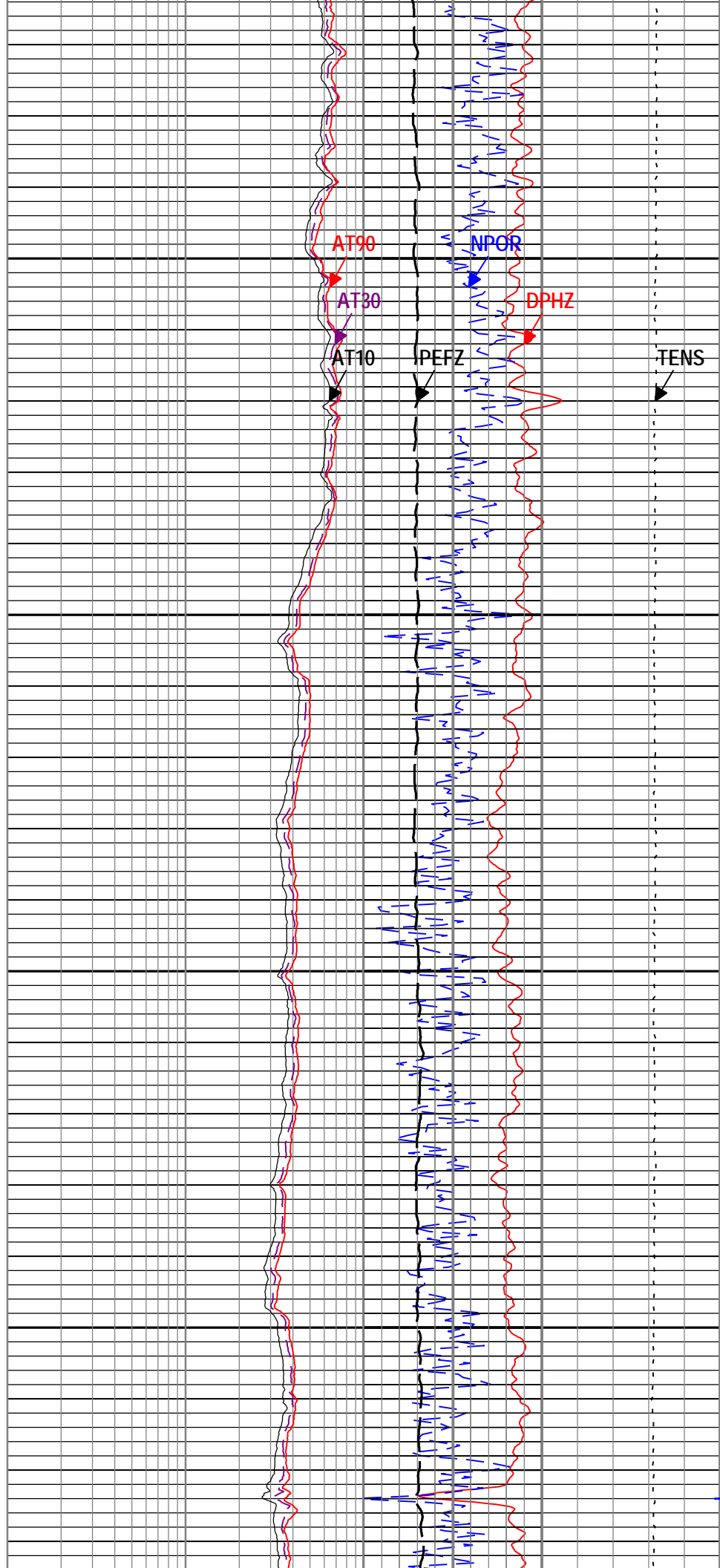
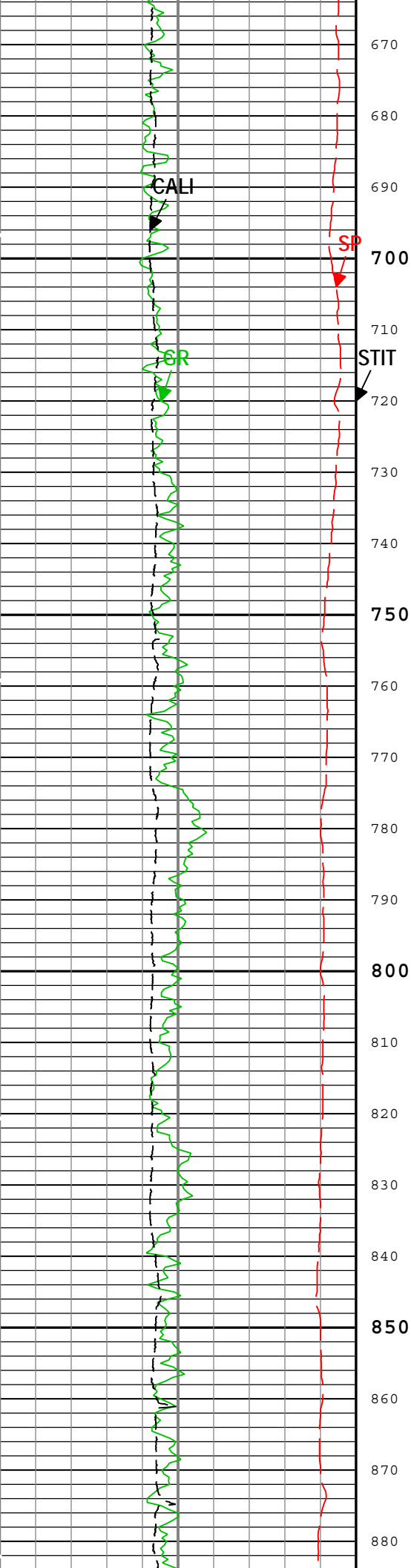
5" Triple Combo

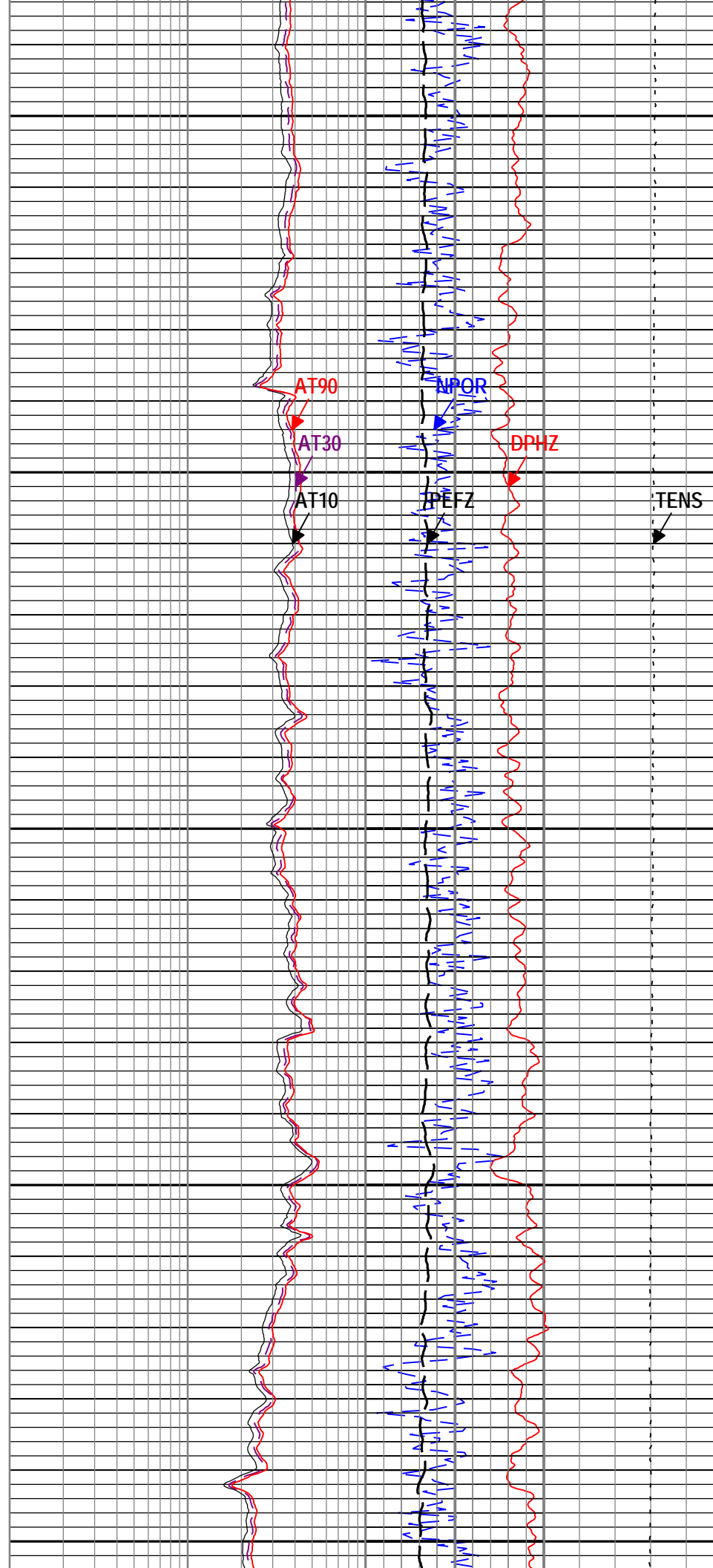
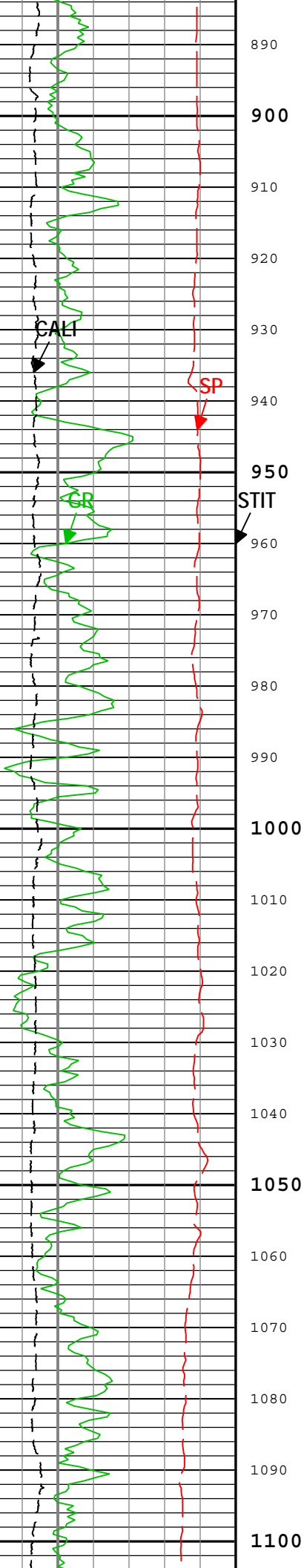
Software Version									
Acquisition System						Version			
MaxWell						4.0.9163.3000			
Application Patch						Patch-SP-10767_26570-4.0.9163.3001			
Computation		Description						Version	
HENVIR		Computation Ensemble for the HGNS Neutron environmental corrections						4.0.9469.3000	
DepthCorrection		DepthCorrection						4.0.9469.3000	
Tool Elements		Description				Software Version		Firmware Version	
HRCC-H		HILT High-Resolution Control Cartridge, 150 degC				4.0.9575.3000			
HRGD-H		HILT Resistivity Gamma-Ray Density Device, 150 degC				4.0.9575.3000			
HGNS-H		HILT Gamma-Ray and Neutron Sonde, 150 degC				4.0.9575.3000			
AMIS		Array Induction Sonde - M				4.0.9535.3000			
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Main[3]:Up	Up	54.64 ft	2700.43 ft	09-Dec-2014 2:09:10 PM	09-Dec-2014 2:54:47 PM	ON	0.00 ft	Yes
All depths are referenced to toolstring zero									
Log	Company:Omimex Petroleum Inc						Well:Sagehorn 14-34-6-45		
ONE: Main[3]:Up:S006									
Description: HGNS standard resolution porosities for Platform Express    Format: Log ( EMD 5in Triple Combo Linear )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 09-Dec-2014 15:19:26									
Channel	Source		Sampling						
AT10	AIT-M:AMIS:AMIS		3in						
AT30	AIT-M:AMIS:AMIS		3in						
AT90	AIT-M:AMIS:AMIS		3in						
CALI	HDRS-H:HRCC-H:HRCC-H		1in						
DPHZ	HDRS-H:HRMS-H:HRGD-H		2in						
GR	HGNS-H:HGNS-H:HGNS-H		6in						
NPOR	HGNS-H:HGNS-H:HGNS-H		6in						
PEFZ	HDRS-H:HRMS-H:HRGD-H		2in						
SP	AIT-M:AMIS:AMIS		6in						
STIT	DepthCorrection		6in						
TENS	WLWorkflow		6in						
TIME_1900	WLWorkflow		0.1in						
TIME_1900 - Time Marked every 60.00 (s)									
						Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H			
						010			
						Gas Effect			
						NPOR Backup			
						Array Induction Two Foot Resistivity A10 (AT10) AIT-M			
						0.1ohm.m10			
						Cable Tension (TENS)			
						6000lbf0			
Gamma Ray (GR) HGNS-H						Array Induction Two Foot Resistivity A30 (AT30) AIT-M			
0gAPI200						Standard Resolution Density Porosity (DPHZ) HDRS-H			
Spontaneous Potential (SP) AIT-M						0.5ft3/ft30			
Stuck Tool									

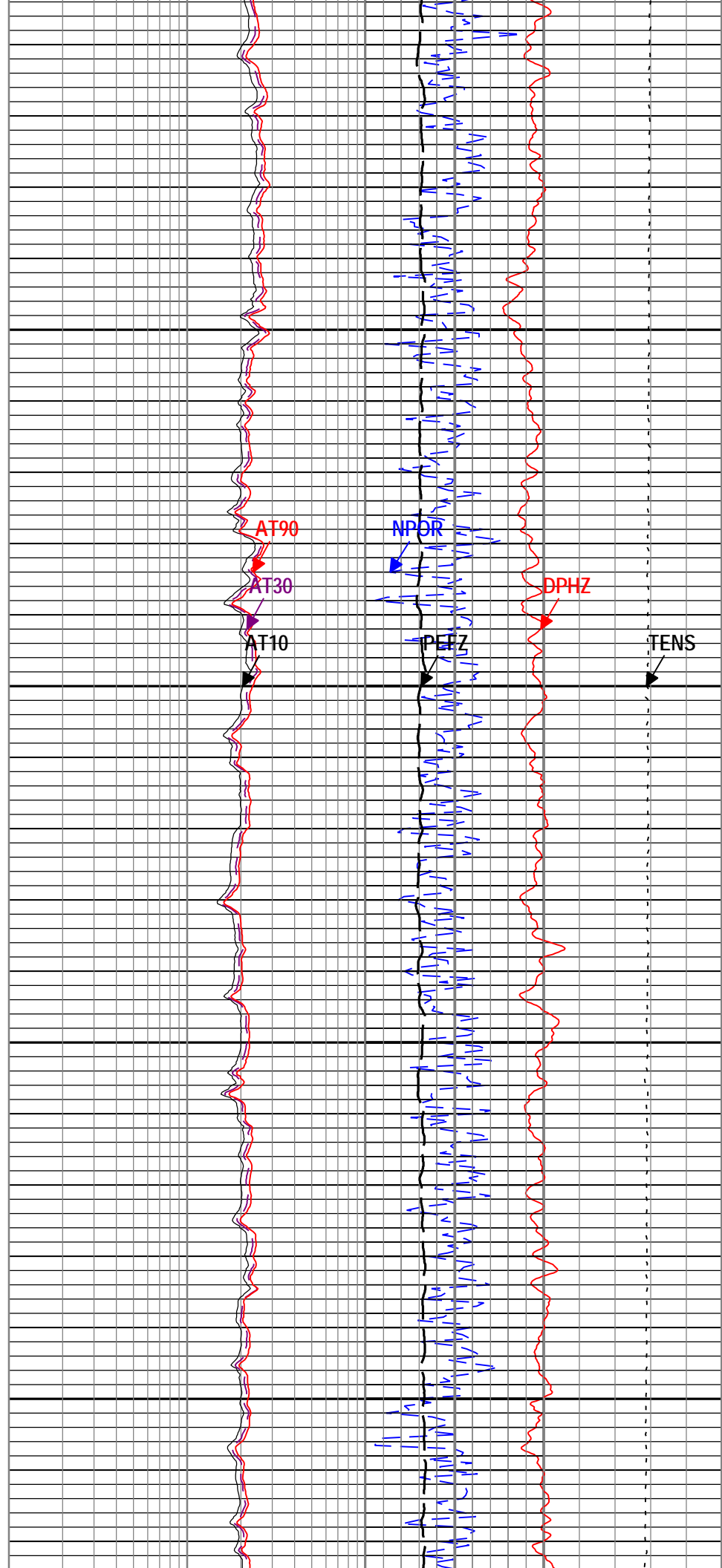
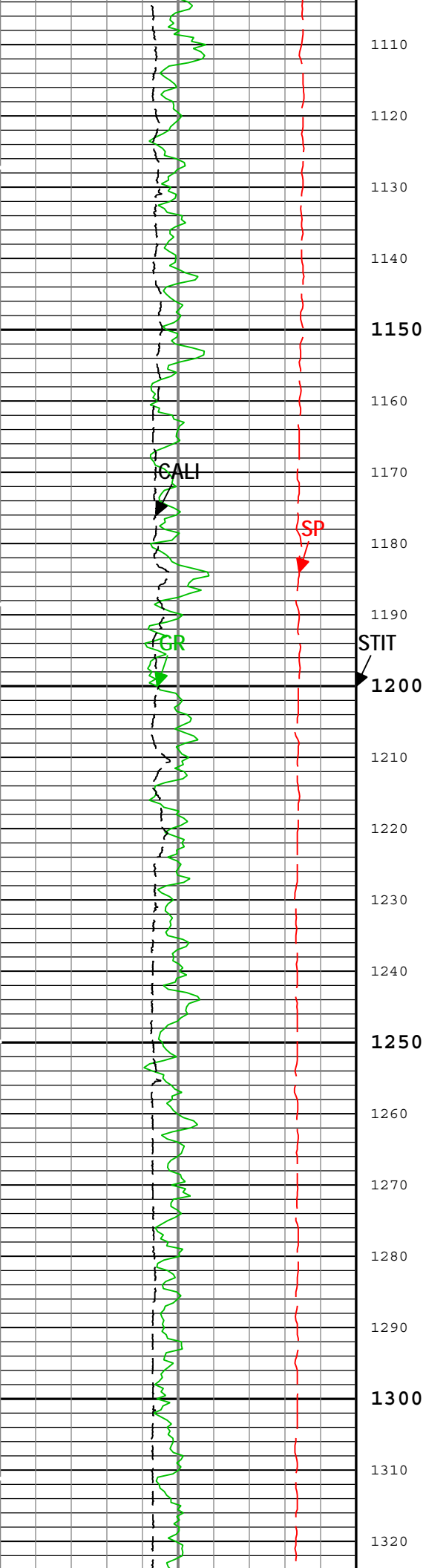






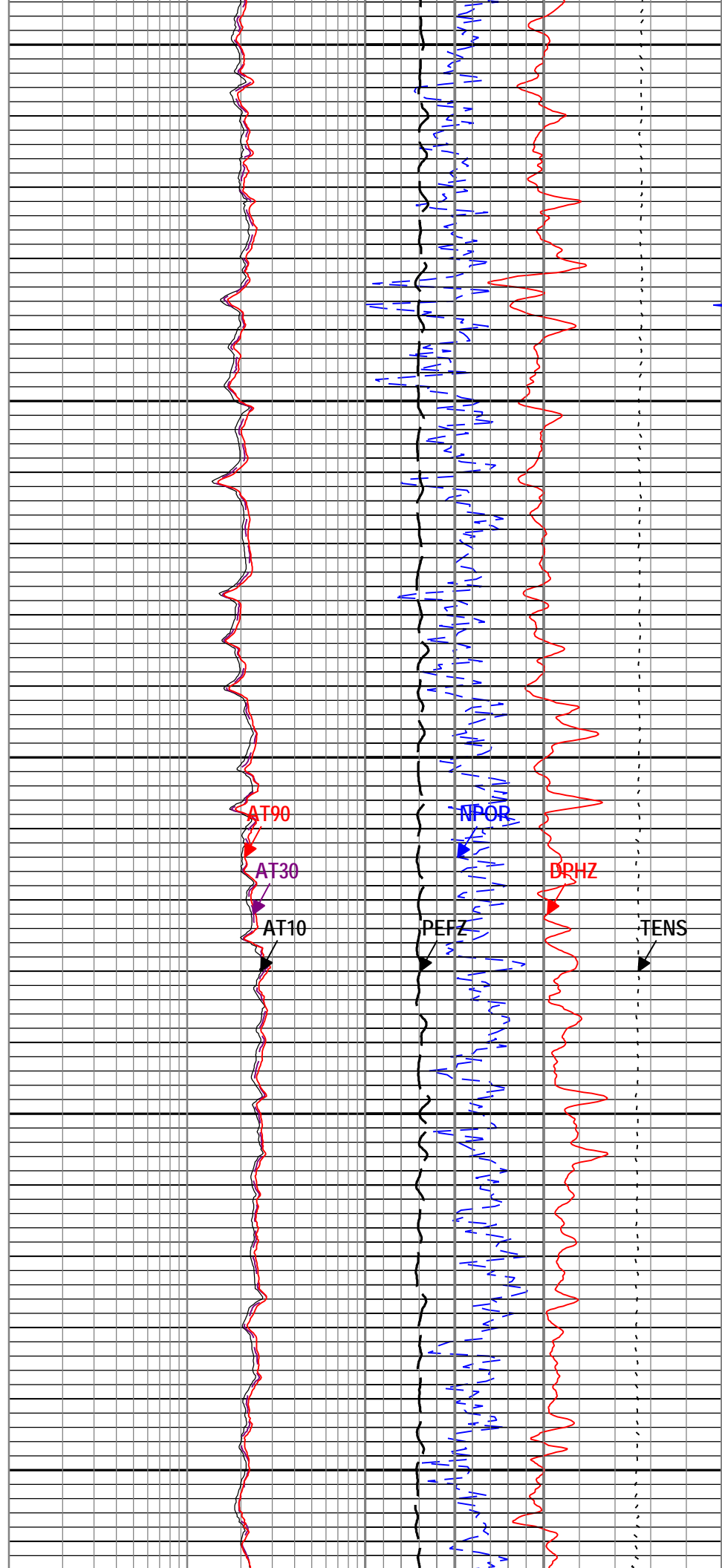
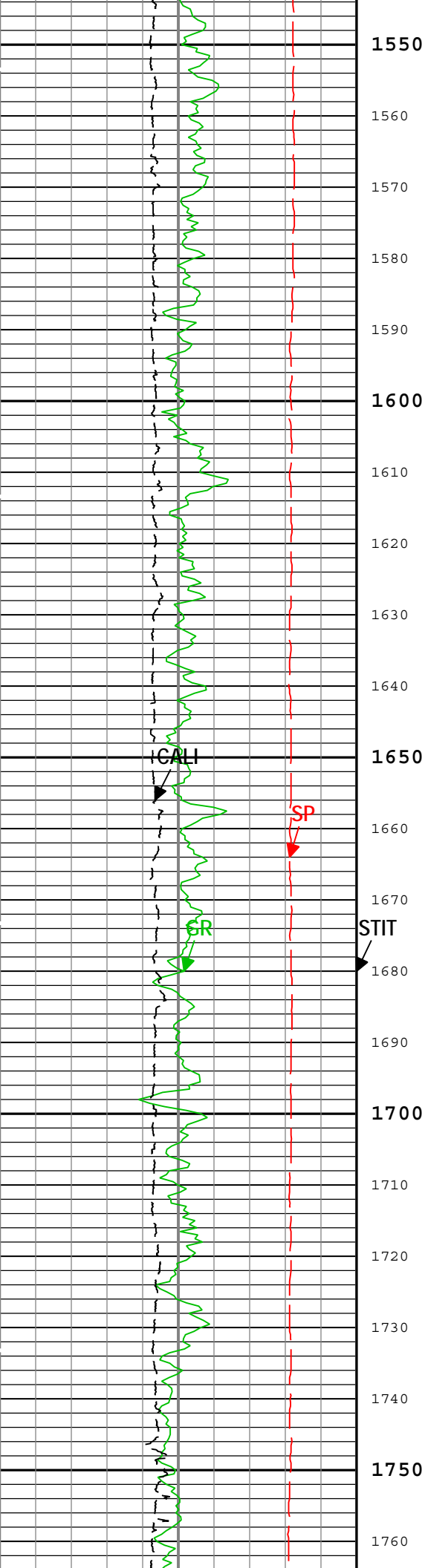


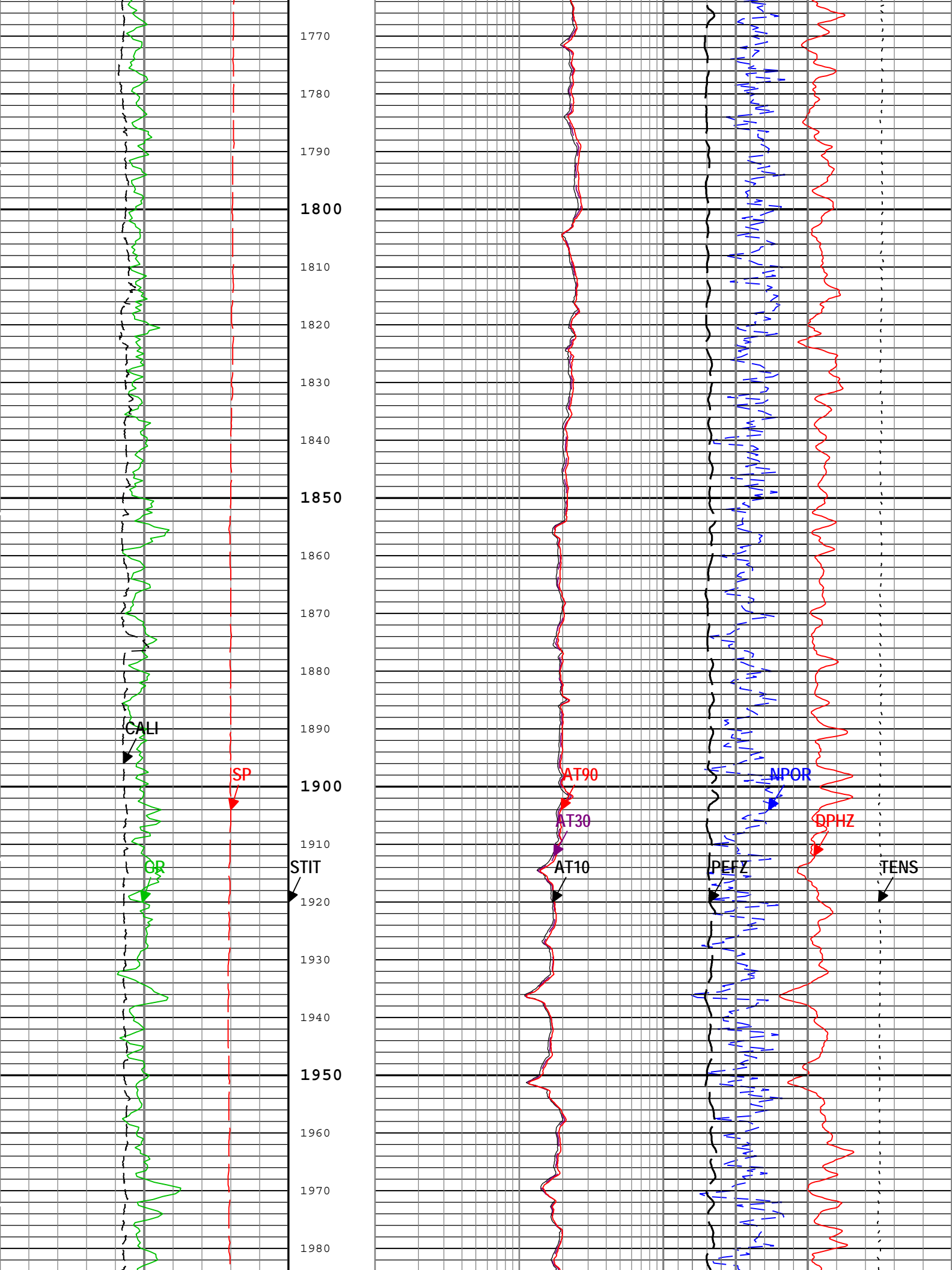


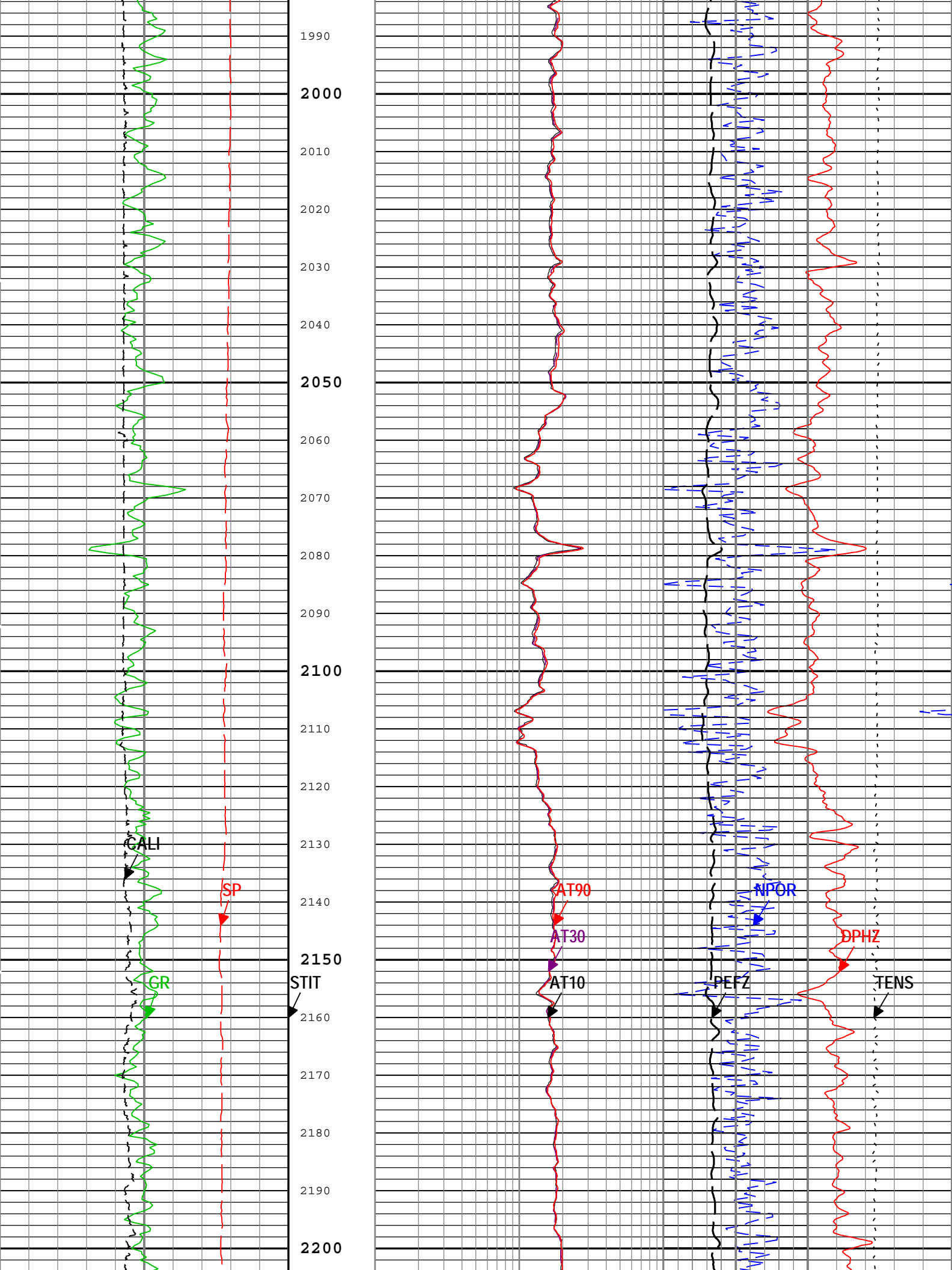


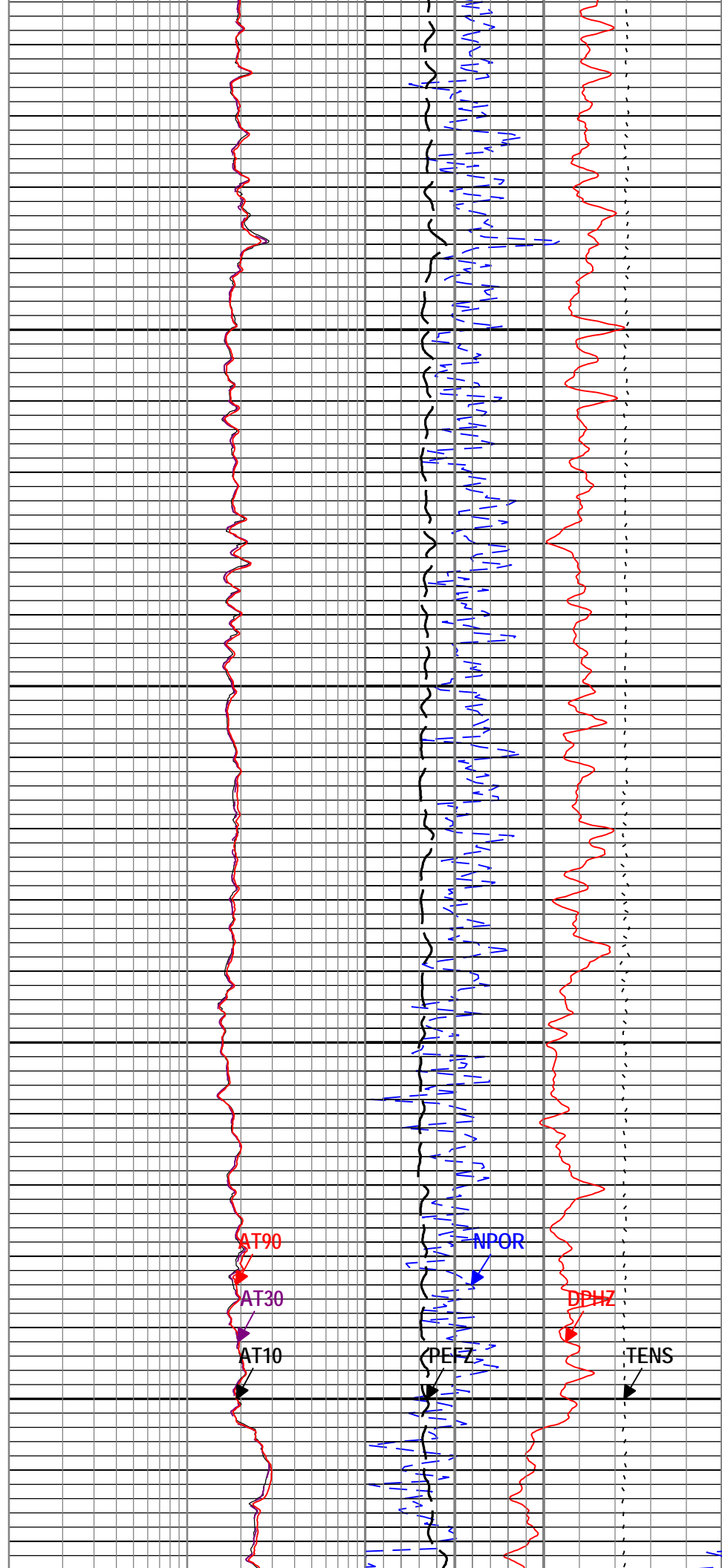
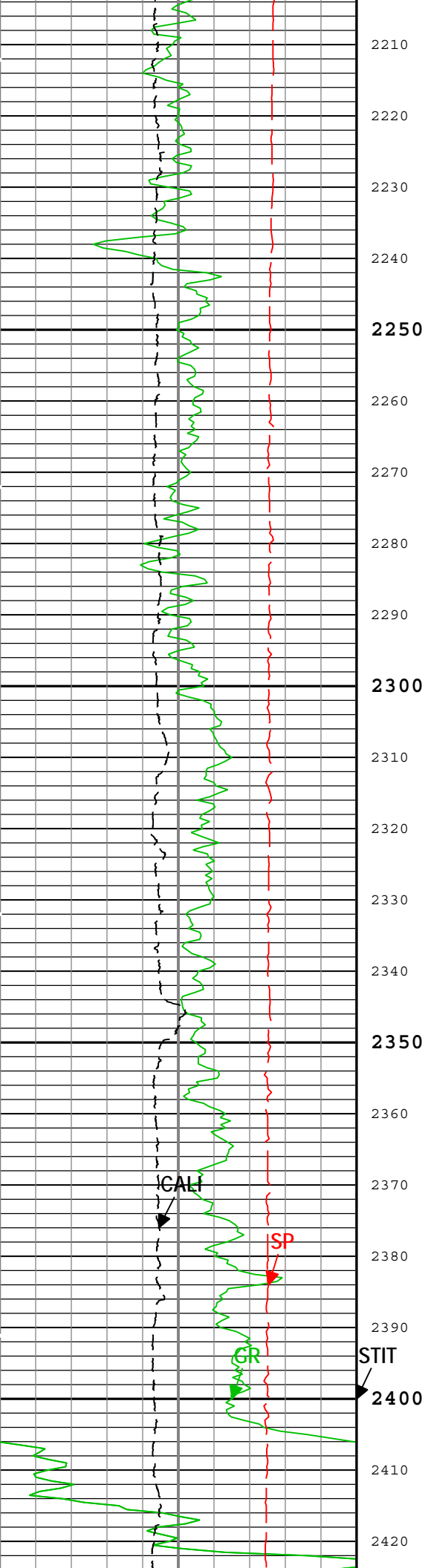


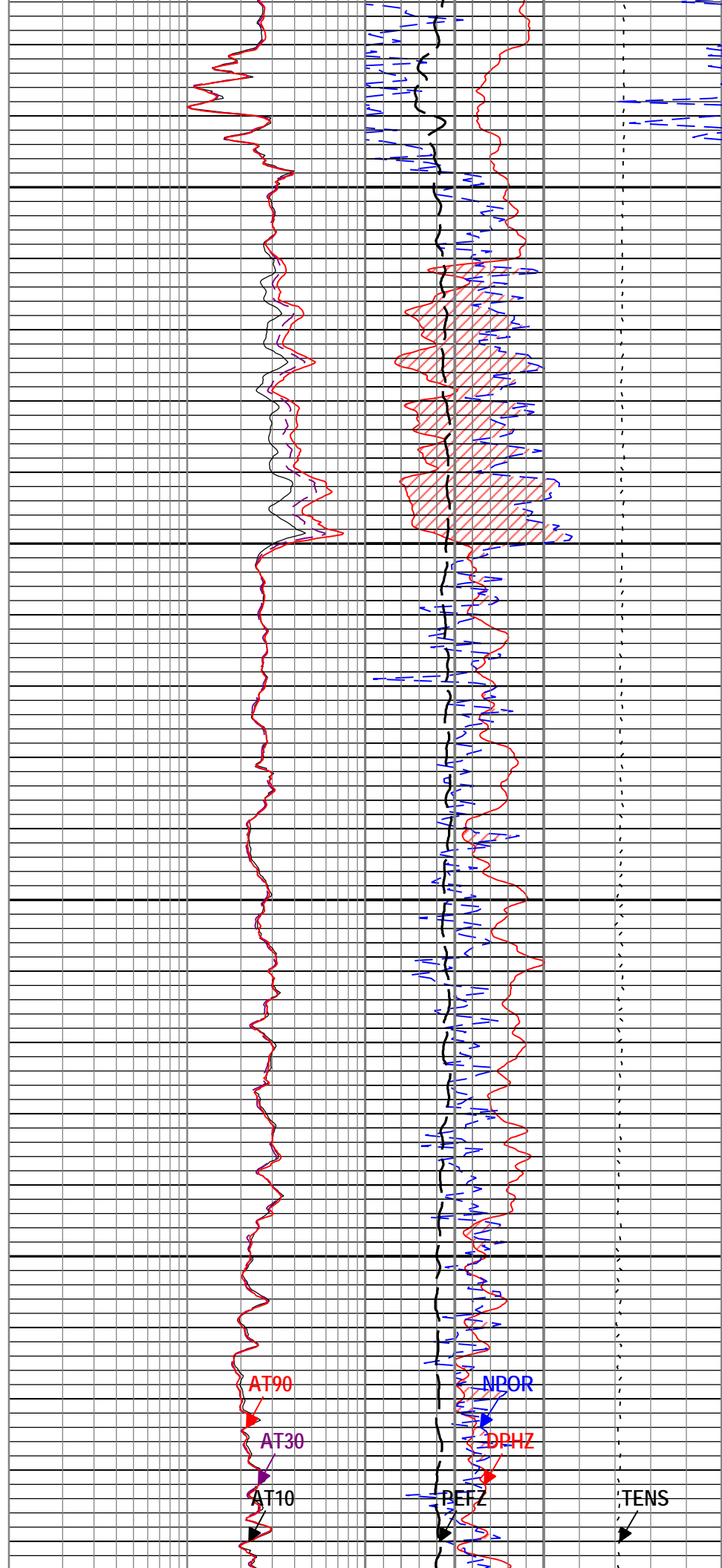
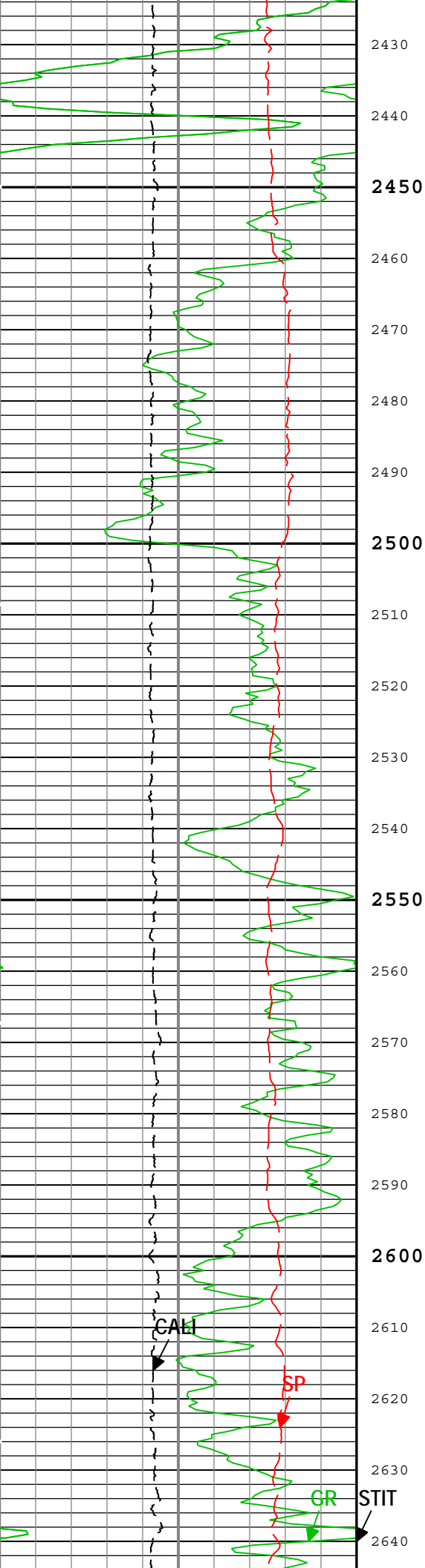


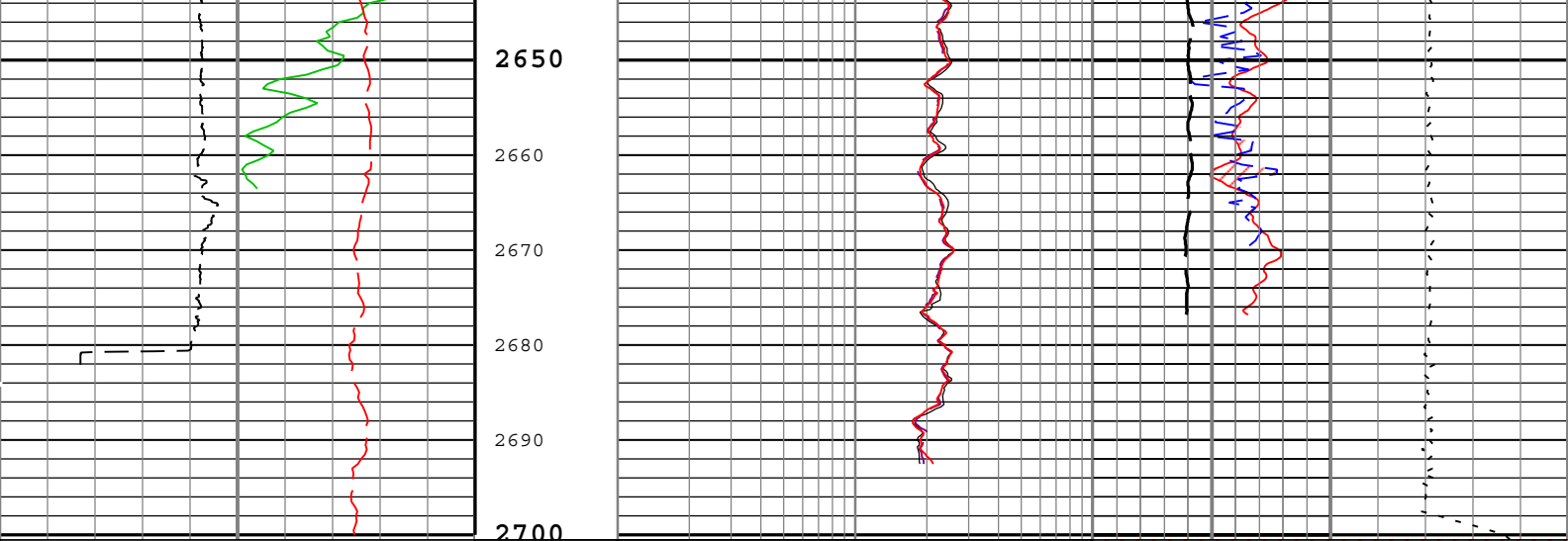












Gamma Ray (GR) HGNS-H			Stuck Tool Indicator, Total (STIT)	Array Induction Two Foot Resistivity A10 (AT10) AIT-M			Gas Effect				
0	gAPI			200	0.1	ohm.m		10	NPOR Backup		
Spontaneous Potential (SP) AIT-M				0	Array Induction Two Foot Resistivity A30 (AT30) AIT-M			Cable Tension (TENS)			
-160	mV				40	0.1	ohm.m		10	6000 lbf 0	
Caliper (CALI) HDRS-H			Array Induction Two Foot Resistivity A90 (AT90) AIT-M			Standard Resolution Density Porosity (DPHZ) HDRS-H					
2	in		12	0.1	ohm.m		10	0.5	ft3/ft3 0		
							Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H				
							0.5 m3/m3 0				
							Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H				
							0 10				

TIME\_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express    Format: Log ( EMD 5in Triple Combo Linear )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 09-Dec-2014 15:19:26

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	0.125	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	110	degF
BS	Bit Size	WLSESSION	6.25	in
BSAL	Borehole Salinity	Borehole	11600	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.075	in
CBLO	Casing Bottom (Logger)	WLSESSION	495	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.5	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	WBM	

DHC	Density Hole Correction	HDRS-H	Bit Size	
FD	Fluid Density	Borehole	1	g/cm3
FSAL	Formation Salinity	Borehole	0	ppm
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	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	75	degF
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.16	ohm.m
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	2698	ft

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
HMCA_BRD_TYPE	HMCA Board Type	HGNS-H	1	
HRGD_BRD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h
ONE				

Triple Combo Repeat Analysis									
------------------------------	--	--	--	--	--	--	--	--	--

Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Repeat[2]:Up	Up	2379.08 ft	2701.44 ft	09-Dec-2014 1:55:29 PM	09-Dec-2014 2:02:34 PM	ON	0.00 ft	Yes
ONE	Main[3]:Up	Up	54.64 ft	2700.43 ft	09-Dec-2014 2:09:10 PM	09-Dec-2014 2:54:47 PM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

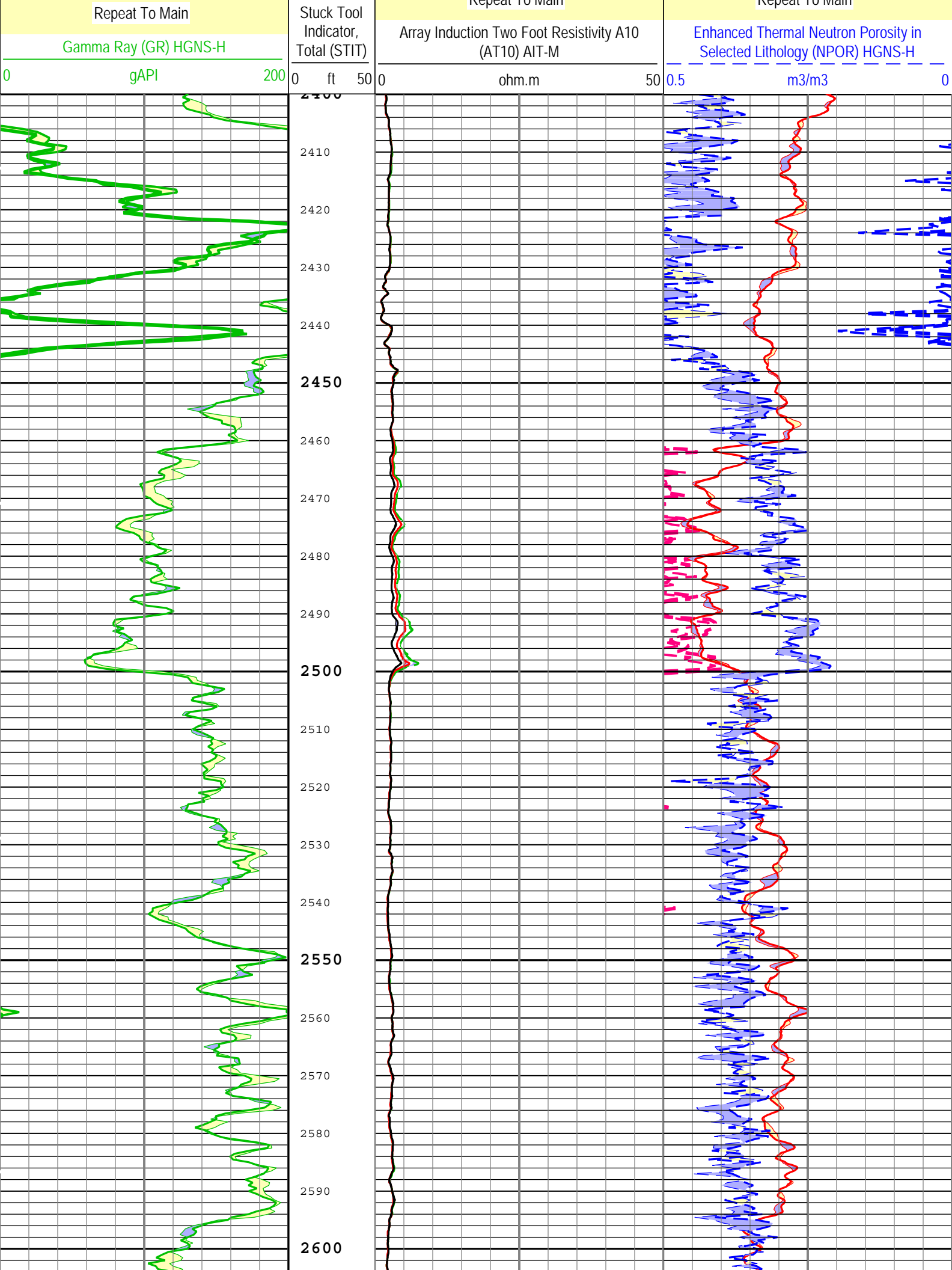
Log	<div>Company:Omimex Petroleum Inc      Well:Sagehorn 14-34-6-45</div> <div>ONE: Repeat[2]:Up:S006</div>								
-----	---	--	--	--	--	--	--	--	--

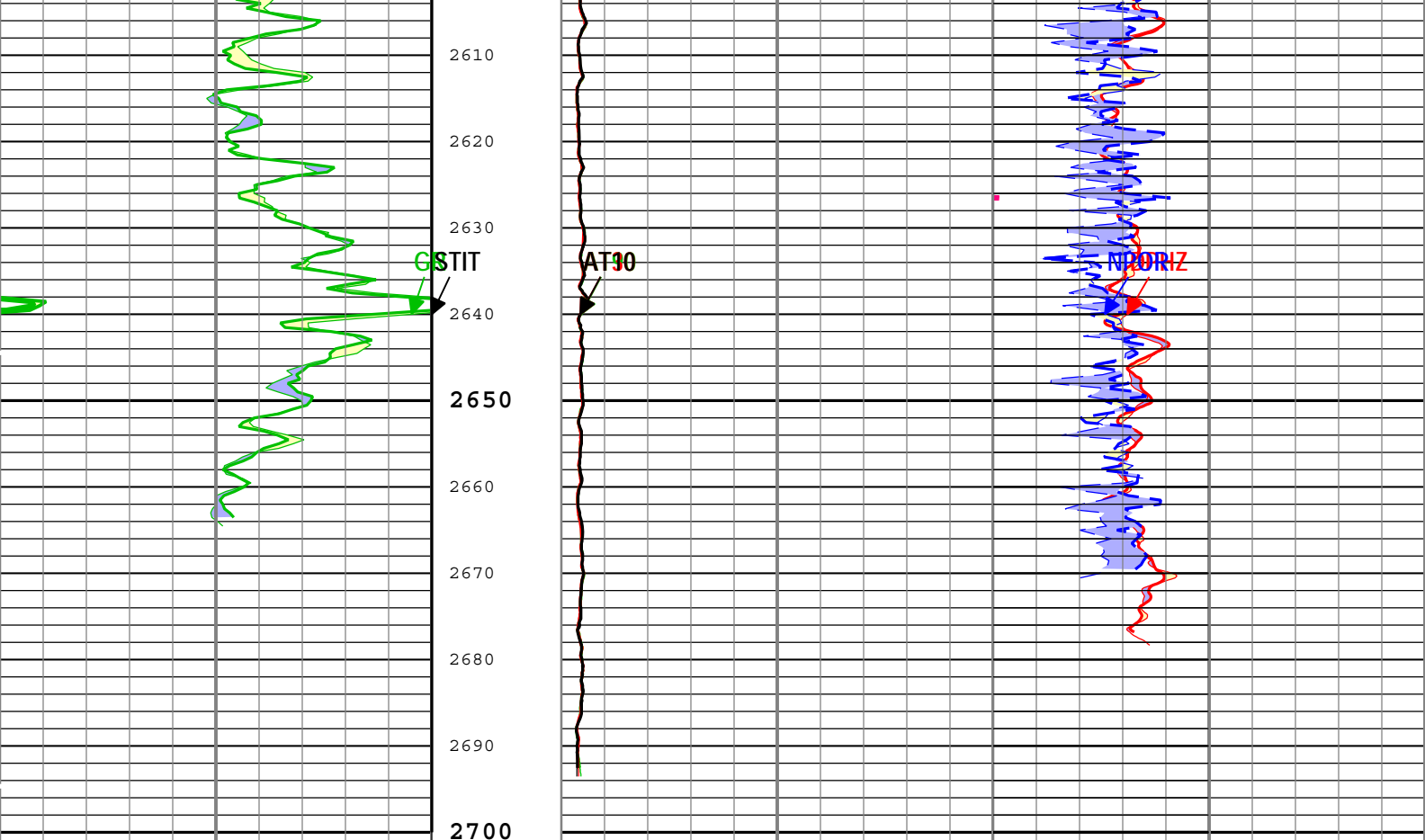
Description: HGNS standard resolution porosities for Platform Express    Format: Log ( EMD 5in Triple Combo Linear RA )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 09-Dec-2014 15:19:28

TIME\_1900 - Time Marked every 60.00 (s)

			Main To Repeat		Main To Repeat	
			Repeat To Main		Repeat To Main	
			<div>Array Induction Two Foot Resistivity A90 (AT90) AIT-M</div> <div>0ohm.m50</div>		<div>Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H</div> <div>-0.1ft3/ft3-0.5</div>	
<div>Main To Repeat</div> <div>Repeat To Main</div> <div>Gamma Ray (GR) HGNS-H</div> <div>200gAPI400</div>			Main To Repeat		Main To Repeat	
			Repeat To Main		Repeat To Main	
			<div>Array Induction Two Foot Resistivity A30 (AT30) AIT-M</div> <div>0ohm.m50</div>		<div>Standard Resolution Density Porosity (DPHZ) HDRS-H</div> <div>0.5ft3/ft30</div>	
<div>Main To Repeat</div> <div>Repeat To Main</div>			Main To Repeat		Main To Repeat	
			Repeat To Main		Repeat To Main	







Main To Repeat	
Repeat To Main	
Gamma Ray (GR) HGNS-H	
200 gAPI 400	
Main To Repeat	
Repeat To Main	
Gamma Ray (GR) HGNS-H	
0 gAPI 200	

Main To Repeat	
Repeat To Main	
Stuck Tool Indicator, Total (STIT)	
0 ft 50	

Main To Repeat	
Repeat To Main	
Array Induction Two Foot Resistivity A90 (AT90) AIT-M	
0 ohm.m 50	
Main To Repeat	
Repeat To Main	
Array Induction Two Foot Resistivity A30 (AT30) AIT-M	
0 ohm.m 50	
Main To Repeat	
Repeat To Main	
Array Induction Two Foot Resistivity A10 (AT10) AIT-M	
0 ohm.m 50	

Main To Repeat	
Repeat To Main	
Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H	
-0.1 ft3/ft3 -0.5	
Main To Repeat	
Repeat To Main	
Standard Resolution Density Porosity (DPHZ) HDRS-H	
0.5 ft3/ft3 0	
Main To Repeat	
Repeat To Main	
Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H	
0.5 m3/m3 0	

TIME\_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log ( EMD 5in Triple Combo Linear RA ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 09-Dec-2014 15:19:28

## Calibration Report

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

#### Primary Equipment :

File code for AIT-MA Sonde Tool Element

AMIS

181

#### Auxiliary Equipment :

File code for AIT Bottom Nose Tool Element

AMRM

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM):		23:01:59 22-Sep-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>
Test Loop Gain - 0		Master	1.000	0.950	1.041	1.050	<div></div>
Test Loop Phase - 0	deg	Master	0	-3.000	1.805	3.000	<div></div>
Test Loop Gain - 1		Master	1.000	0.950	1.017	1.050	<div></div>
Test Loop Phase - 1	deg	Master	0	-3.000	0.902	3.000	<div></div>
Test Loop Gain - 2		Master	1.000	0.950	1.017	1.050	<div></div>
Test Loop Phase - 2	deg	Master	0	-3.000	0.392	3.000	<div></div>
Test Loop Gain - 3		Master	1.000	0.950	1.016	1.050	<div></div>
Test Loop Phase - 3	deg	Master	0	-3.000	0.089	3.000	<div></div>
Test Loop Gain - 4		Master	1.000	0.950	1.009	1.050	<div></div>
Test Loop Phase - 4	deg	Master	0	-3.000	0.141	3.000	<div></div>
Test Loop Gain - 5		Master	1.000	0.950	0.991	1.050	<div></div>
Test Loop Phase - 5	deg	Master	0	-3.000	-0.110	3.000	<div></div>
Test Loop Gain - 6		Master	1.000	0.950	0.998	1.050	<div></div>
Test Loop Phase - 6	deg	Master	0	-3.000	0.235	3.000	<div></div>
Test Loop Gain - 7		Master	1.000	0.950	1.010	1.050	<div></div>
Test Loop Phase - 7	deg	Master	0	-3.000	-0.080	3.000	<div></div>

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM):		23:01:59 22-Sep-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-113.093	119.000	<div></div>
Sonde Error Correction Quad - 0		Master	-----	-2250.000	114.931	2250.000	<div></div>
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	157.599	204.000	<div></div>
Sonde Error Correction Quad - 1		Master	-----	-625.000	-170.942	625.000	<div></div>
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	115.105	156.000	<div></div>
Sonde Error Correction Quad - 2		Master	-----	-350.000	-99.364	350.000	<div></div>
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	49.447	89.000	<div></div>
Sonde Error Correction Quad - 3		Master	-----	-250.000	2.279	250.000	<div></div>
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	26.217	35.000	<div></div>
Sonde Error Correction Quad - 4		Master	-----	-63.000	-3.708	63.000	<div></div>
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	10.870	24.000	<div></div>
Sonde Error Correction Quad - 5		Master	-----	-50.000	21.802	50.000	<div></div>
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	9.914	15.000	<div></div>
Sonde Error Correction Quad - 6		Master	-----	-30.000	2.857	30.000	<div></div>
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.286	5.000	<div></div>
Sonde Error Correction Quad - 7		Master	-----	-30.000	1.530	30.000	<div></div>

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM):		23:01:59 22-Sep-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>
Coarse Gain		Master	1.000	0.800	0.914	1.200	<div></div>
Fine Gain		Master	1.000	0.800	0.910	1.200	<div></div>

AIT Electronics Check - Thru Calibration Check

Master (EEPROM):		23:01:59 22-Sep-2014		Before (Measured):		14:31:11 07-Dec-2014 Expired by 1 days	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>
Thru Cal Mag - 0	V	Master	-----	0.366	0.575	0.854	<div></div>
		Before	-----	0.366	0.575	0.854	<div></div>
		Before-Master	-----	-----	0.000	-----	<div></div>
Thru Cal Phase - 0	deg	Master	-----	137.000	-168.869	-103.000	<div></div>
		Before	-----	137.000	-166.517	-103.000	<div></div>
		Before-Master	-----	-----	2.352	-----	<div></div>
Thru Cal Mag - 1	V	Master	-----	0.762	1.178	1.778	<div></div>
		Before	-----	0.762	1.178	1.778	<div></div>
		Before-Master	-----	-----	0.000	-----	<div></div>
Thru Cal Phase - 1	deg	Master	-----	136.000	-169.968	-104.000	<div></div>
		Before	-----	136.000	-167.617	-104.000	<div></div>
		Before-Master	-----	-----	2.351	-----	<div></div>
Thru Cal Mag - 2	V	Master	-----	0.372	0.585	0.868	<div></div>
		Before	-----	0.372	0.585	0.868	<div></div>
		Before-Master	-----	-----	0.000	-----	<div></div>
Thru Cal Phase - 2	deg	Master	-----	132.000	-173.610	-108.000	<div></div>
		Before	-----	132.000	-171.264	-108.000	<div></div>
		Before-Master	-----	-----	2.346	-----	<div></div>

		Before-Master	-----	-----	2.346	-----	
Thru Cal Mag - 3	V	Master	-----	0.420	0.660	0.980	
		Before	-----	0.420	0.660	0.980	
		Before-Master	-----	-----	0.000	-----	
Thru Cal Phase - 3	deg	Master	-----	131.000	-174.388	-109.000	
		Before	-----	131.000	-172.041	-109.000	
		Before-Master	-----	-----	2.347	-----	
Thru Cal Mag - 4	V	Master	-----	0.804	1.233	1.876	
		Before	-----	0.804	1.233	1.876	
		Before-Master	-----	-----	0.000	-----	
Thru Cal Phase - 4	deg	Master	-----	125.000	179.345	-115.000	
		Before	-----	125.000	-178.308	-115.000	
		Before-Master	-----	-----	-357.653	-----	
Thru Cal Mag - 5	V	Master	-----	1.176	1.795	2.744	
		Before	-----	1.176	1.795	2.744	
		Before-Master	-----	-----	0.000	-----	
Thru Cal Phase - 5	deg	Master	-----	122.000	177.695	-118.000	
		Before	-----	122.000	-179.958	-118.000	
		Before-Master	-----	-----	-357.653	-----	
Thru Cal Mag - 6	V	Master	-----	1.176	1.794	2.744	
		Before	-----	1.176	1.794	2.744	
		Before-Master	-----	-----	0.000	-----	
Thru Cal Phase - 6	deg	Master	-----	121.000	177.703	-119.000	
		Before	-----	121.000	-179.949	-119.000	
		Before-Master	-----	-----	-357.652	-----	
Thru Cal Mag - 7	V	Master	-----	0.846	1.294	1.974	
		Before	-----	0.846	1.295	1.974	
		Before-Master	-----	-----	0.001	-----	
Thru Cal Phase - 7	deg	Master	-----	115.000	176.991	-125.000	
		Before	-----	115.000	179.334	-125.000	
		Before-Master	-----	-----	2.343	-----	
SPA Zero	mV	Master		-50.000	0.139	50.000	
		Before		-50.000	0.129	50.000	
		Before-Master	-----	-----	-0.010	-----	
SPA Plus	mV	Master		941.000	992.344	1040.000	
		Before		941.000	992.288	1040.000	
		Before-Master	-----	-----	-0.056	-----	
Temperature Zero	V	Master		-0.050	0.000	0.050	
		Before		-0.050	0.000	0.050	
		Before-Master	-----	-----	0.000	-----	
Temperature Plus	V	Master		0.870	0.919	0.960	
		Before		0.870	0.919	0.960	
		Before-Master	-----	-----	0.000	-----	

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	5788	
Auxiliary Equipment :			
HRDD Backscatter Detector	Backscatter	26961	
HRDD Long Spacing Detector	Long Spacing		
HRDD Short Spacing Detector	Short Spacing		
Cesium 137 Gamma-Ray Logging Source	GSR-J	5416	
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): 14:33:14 07-Dec-2014 Expired by 1 days							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Caliper	mm	Small	8.00	7.99	7.99	8.01	

Small Ring	in	Before	8.00	6.00	7.51	10.00	
Large Ring	in	Before	12.00	9.00	11.76	15.00	

## HDRS Density Calibration - Inversion Results

Master (EEPROM): 20:27:56 23-Nov-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Rho Aluminum	g/cm3	Master	2.596	2.586	2.601	2.606	
Rho Magnesium	g/cm3	Master	1.686	1.676	1.687	1.696	
Pe Aluminum		Master	2.570	2.470	2.551	2.670	
Pe Magnesium		Master	2.650	2.550	2.618	2.750	

## HDRS Density Calibration - Deviation Summary

Master (EEPROM): 20:27:56 23-Nov-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Average Deviation	%	Master	0	-0.6000	0.5423	0.6000	
BS Max Deviation	%	Master	0	-1.6000	1.2077	1.6000	
SS Average Deviation	%	Master	0	-1.0000	0.3823	1.0000	
SS Max Deviation	%	Master	0	-2.5000	1.8875	2.5000	
LS Average Deviation	%	Master	0	-1.5000	0.6426	1.5000	
LS Max Deviation	%	Master	0	-3.5000	1.9918	3.5000	

## HDRS Density Calibration - Background Summary

Master (EEPROM): 20:27:56 23-Nov-2014 Before (Measured): 14:39:03 07-Dec-2014 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Window Ratio		Master	1.0000		0.7470		
		Before	0.7470	0.7097	0.7478	0.7844	
		Before-Master	-----	-----	0.0008	-----	
BS Window Sum	1/s	Master	1		24968		
		Before	24968	23719	24944	26216	
		Before-Master	-----	-----	-24	-----	
SS Window Ratio		Master	1.0000		0.4888		
		Before	0.4888	0.4644	0.4906	0.5133	
		Before-Master	-----	-----	0.0018	-----	
SS Window Sum	1/s	Master	1		11963		
		Before	11963	11365	11907	12562	
		Before-Master	-----	-----	-56	-----	
LS Window Ratio		Master	1.0000		0.2999		
		Before	0.2999	0.2850	0.3017	0.3149	
		Before-Master	-----	-----	0.0018	-----	
LS Window Sum	1/s	Master	1		1352		
		Before	1352	1285	1342	1420	
		Before-Master	-----	-----	-10	-----	

## HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 20:27:56 23-Nov-2014 Before (Measured): 14:39:03 07-Dec-2014 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS PM High Voltage	V	Master		1000	1521	2400	
		Before		1000	1514	2400	
		Before-Master	-----	-100	-7	100	
SS PM High Voltage	V	Master		1000	1897	2400	
		Before		1000	1896	2400	
		Before-Master	-----	-100	-1	100	
LS PM High Voltage	V	Master		1000	1263	2400	
		Before		1000	1266	2400	
		Before-Master	-----	-100	3	100	

## HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 20:27:56 23-Nov-2014 Before (Measured): 14:39:03 07-Dec-2014 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Crystal Resolution	%	Master		5.00	10.97	25.00	
		Before		5.00	10.87	25.00	
		Before-Master	-----	-1.00	-0.10	1.00	
SS Crystal Resolution	%	Master		5.00	9.79	20.00	
		Before		5.00	9.82	20.00	
		Before-Master	-----	-1.00	0.03	1.00	
LS Crystal Resolution	%	Master		5.00	8.36	20.00	
		Before		5.00	8.34	20.00	
		Before-Master	-----	-1.00	-0.02	1.00	

## HDRS MCEI Calibration - MCEI Accumulations

# 

Before (Measured):		13:27:22 09-Dec-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Main Resistivity	ohm.m	Before	3875	3565	3889	4185	
Deep Resistivity	ohm.m	Before	3830	3524	3824	4136	
Shallow Resistivity	ohm.m	Before	3830	3524	3847	4136	

## 

Primary Equipment :			
HILT Gamma-Ray and Neutron Sonde, 150 degC		HGNS-H	
Auxiliary Equipment :			
HGNS Accelerometer, 150 degC		HACCZ-H	3616
Calibration Parameter :			
Water Temperature (Calibration Tank Water Temperature)		69.8	
Housing Size (Thermal Housing Size)		3.37	
JIG-BKG (Jig minus background reference)		165	

## 

Before (Measured):		13:22:04 09-Dec-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.1	32.8	

## 

Master (EEPROM):		00:00:00 15-Feb-2005					
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	----	----	-2323.000	----	
Accelerometer Coefficients - 1		Master	----	----	2.895	----	
Accelerometer Coefficients - 2		Master	----	----	0.001	----	
Accelerometer Coefficients - 3		Master	----	----	0.000	----	
Accelerometer Coefficients - 4		Master	----	----	2.764	----	
Accelerometer Coefficients - 5		Master	----	----	0.000	----	
Accelerometer Coefficients - 6		Master	----	----	0.000	----	
Accelerometer Coefficients - 7		Master	----	----	0.000	----	
Accelerometer Coefficients - 8		Master	----	----	298.500	----	
Accelerometer Coefficients - 9		Master	----	----	1.009	----	

## 

Master (EEPROM):		16:20:48 22-Oct-2014		Before (Measured): 14:32:11 07-Dec-2014 Expired by 1 days			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	28.0	40.0	
		Before	0	5.0	27.2	40.0	
		Before-Master	----	-4.2	-0.8	4.2	
Far Zero Measurement	1/s	Master	0	5.0	27.3	40.0	
		Before	0	5.0	26.9	40.0	
		Before-Master	----	-4.1	-0.4	4.1	
Near Plus Measurement	1/s	Master	6031.0	4700.0	5698.0	6900.0	
		Before	----	----	----	----	
		Before-Master	----	----	----	----	
Far Plus Measurement	1/s	Master	2793.0	1900.0	2348.0	2900.0	
		Before	----	----	----	----	
		Before-Master	----	----	----	----	
Near Corrected Plus Measurement	1/s	Master		4700.0	5673.0	6900.0	
		Before	----	----	----	----	
		Before-Master	----	----	----	----	
Far Corrected Plus Measurement	1/s	Master		1900.0	2321.0	2900.0	
		Before	----	----	----	----	
		Before-Master	----	----	----	----	

## 

Before (Measured):		14:31:24 07-Dec-2014 Expired by 1 days					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	

