



























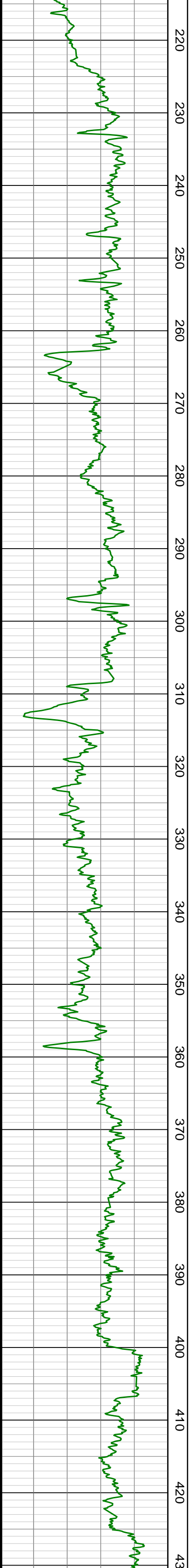
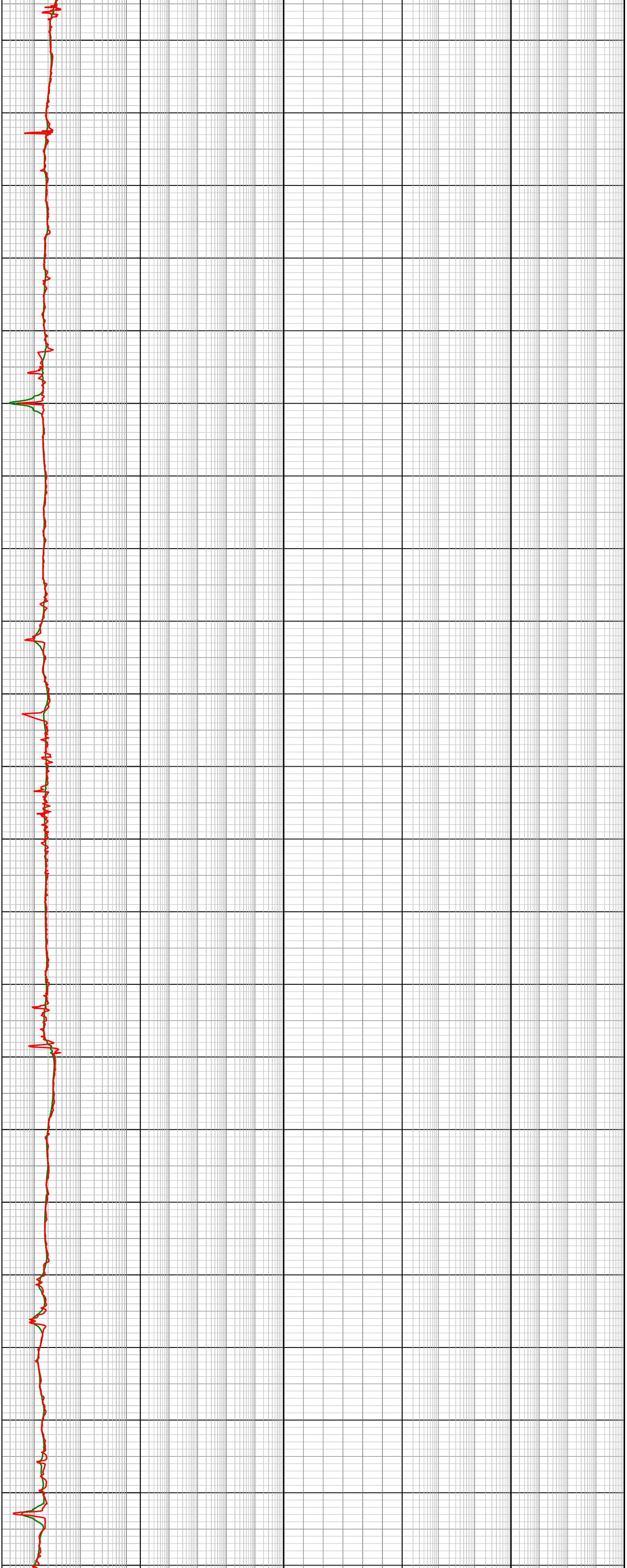


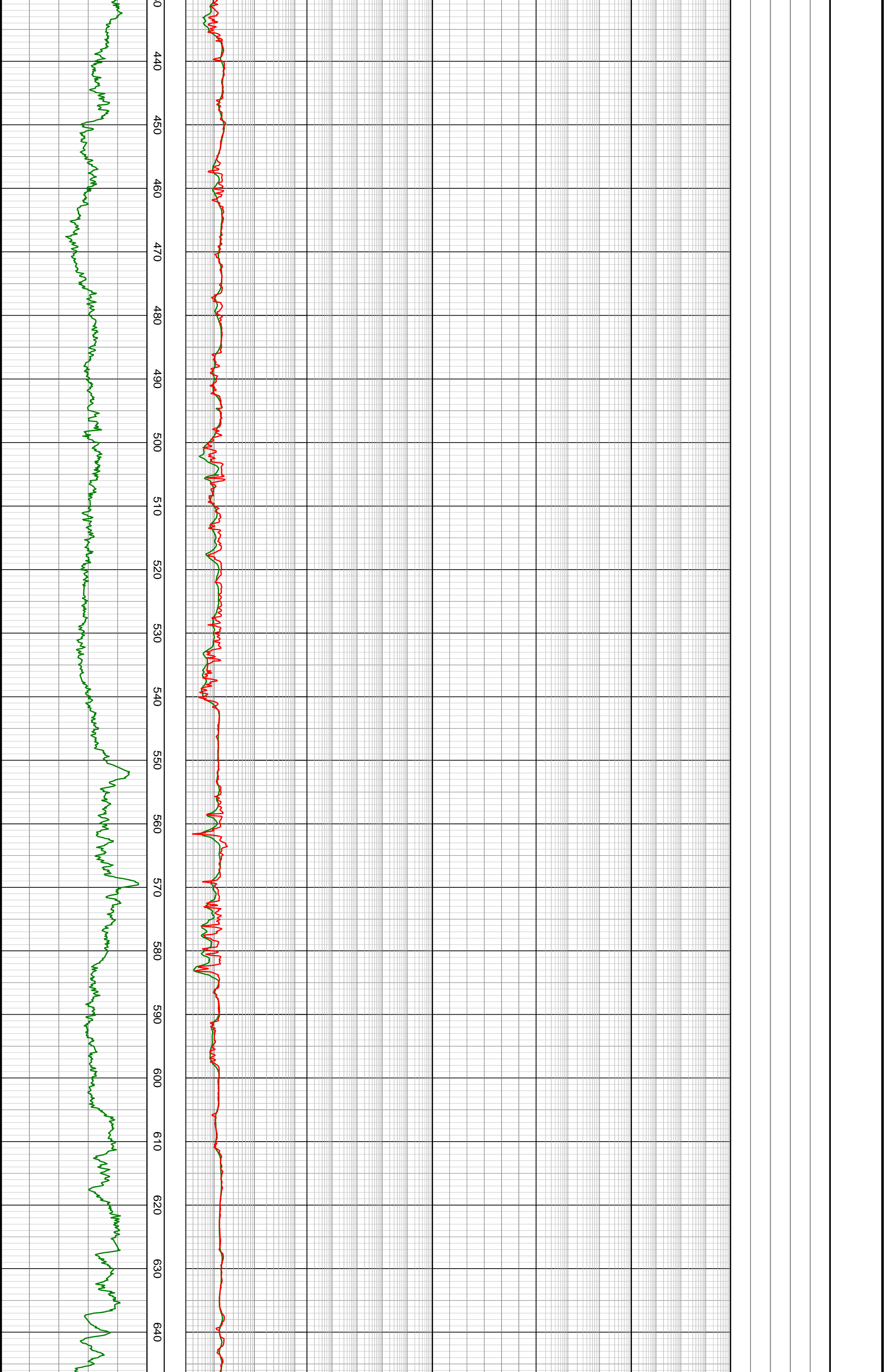
16/2-13 A

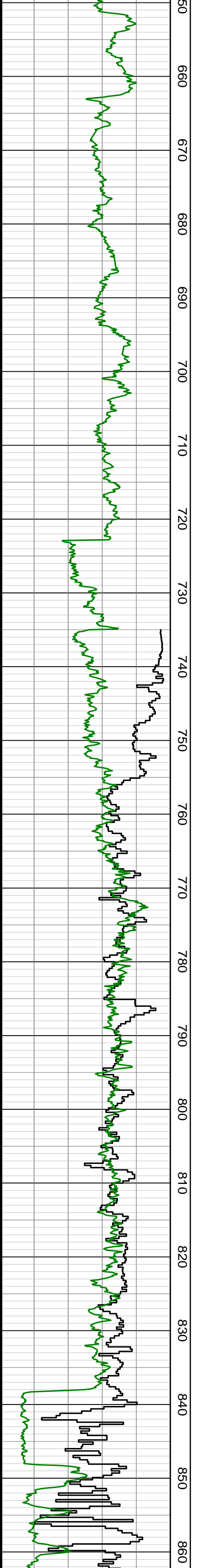
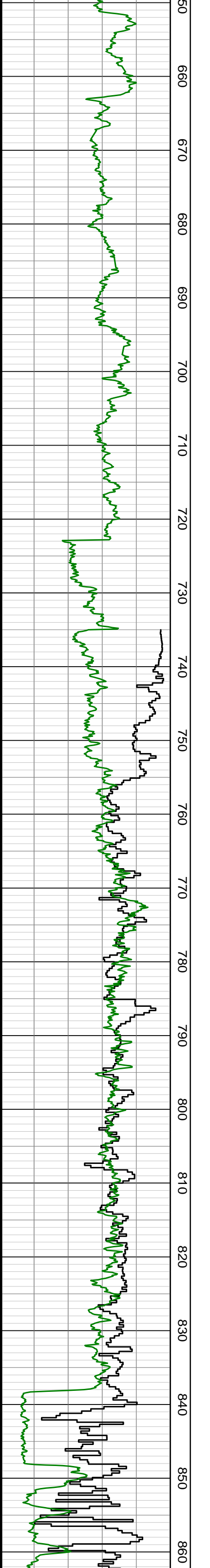
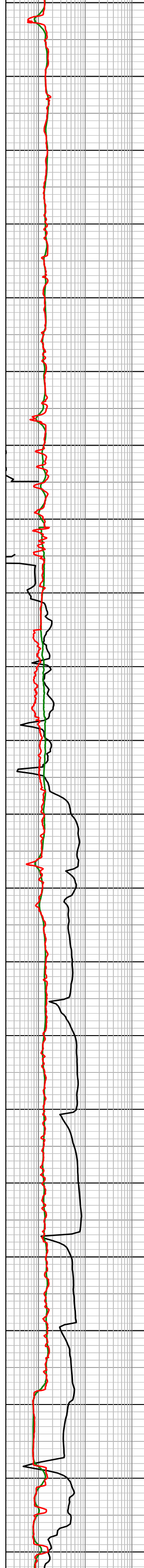
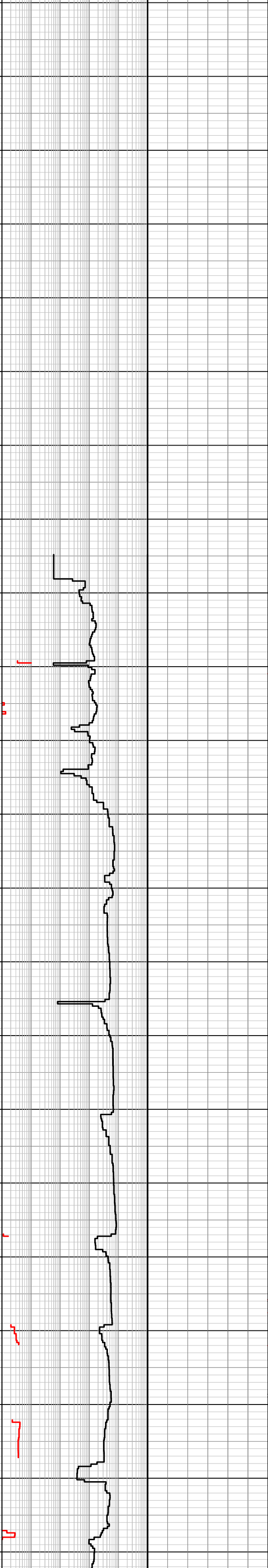
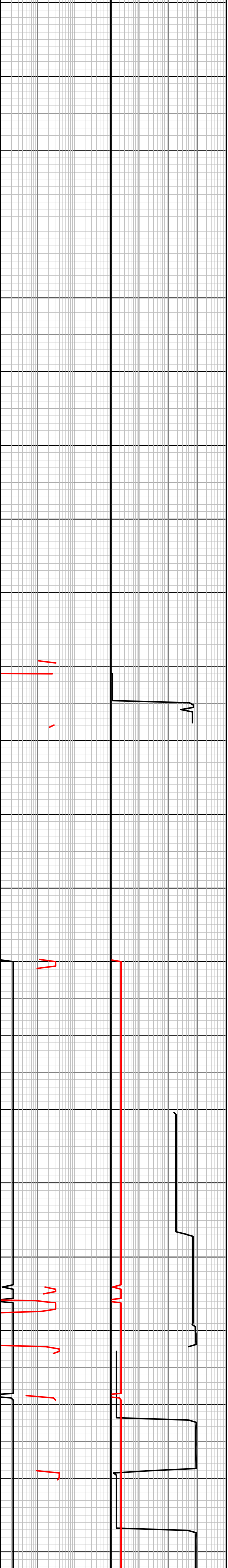
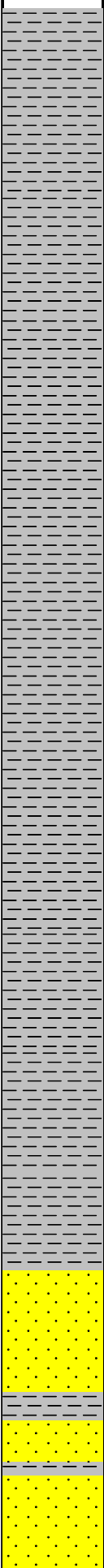
Gas Ratio Log

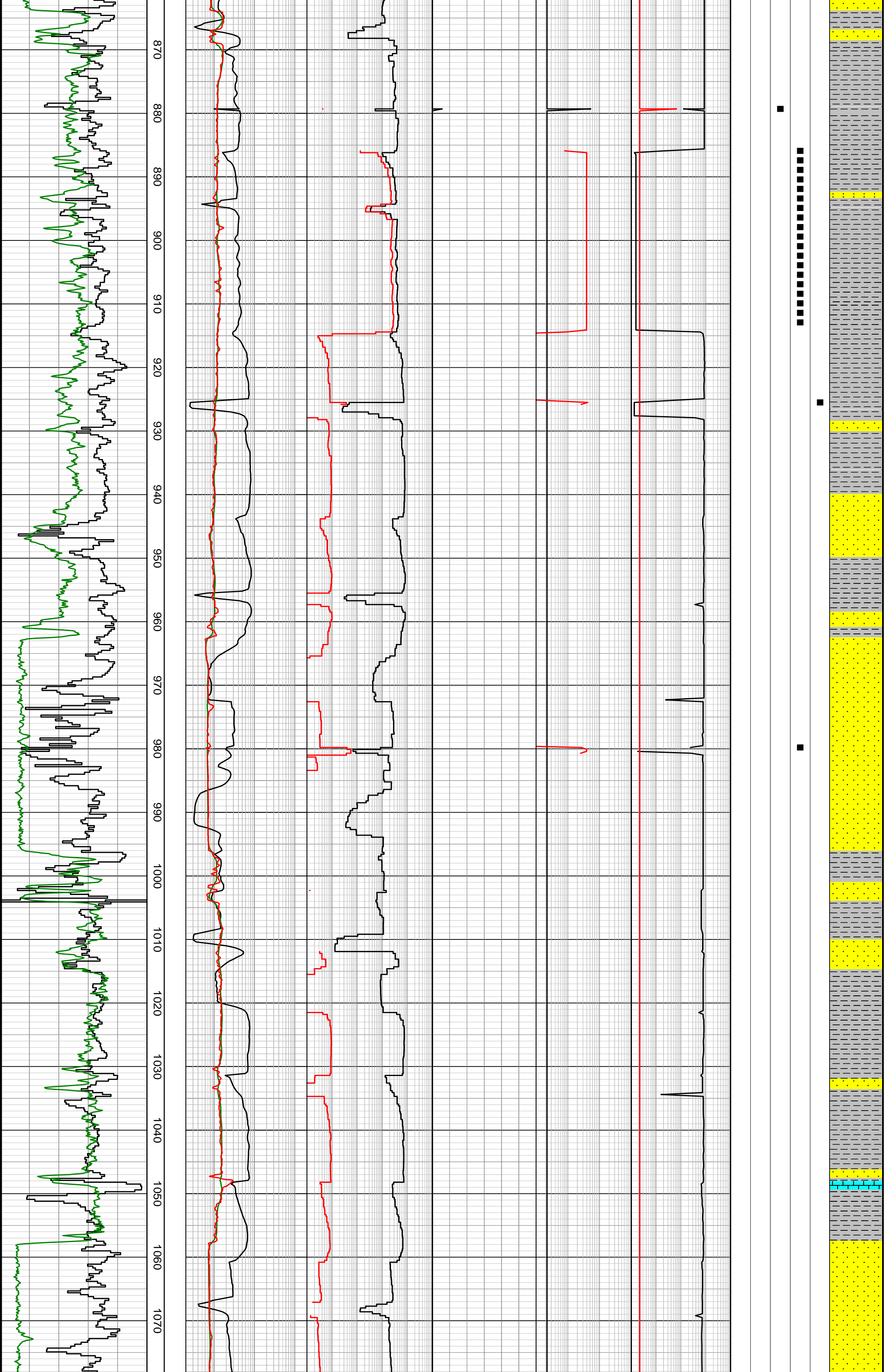
<div>CompanyLundin Norway AS</div> <div>Well16/2-13 A</div> <div>FieldJohan Sverdrup</div> <div>Norway</div> <div>Well Location:58° 49' 58.455" N2° 39' 10.263" E</div> <div>NOR Number2139</div> <div>Spud Date01/Sept/12</div> <div>RKB-Fluids24 m</div> <div>RKB-Seabed140 m</div> <div>ContractorTransocean Drilling Co</div> <div>RigTransocean Arctic</div> <div>Installation TypeSemi-Submersible</div> <div>Depth Out2776 m</div> <div>Vdepth Out2776 m</div> <div>Completion Statusn/a</div>			<div>BOREHOLE RECORD</div> <div>12.25 in.8.5 in.</div> <div>ToToToToToTo</div> <div>2495 m2776 m</div> <div>/</div> <div>1849 m2101.7 m</div> <div>TVD</div>						<div>BAKER HUGHES LOG SUITE</div> <div>Formation Evaluation Log</div> <div>Engineering Summary Log</div> <div>Gas Ratio Log</div> <div>Drilling Data Pressure Log</div>			
			<div>CASING RECORD</div> <div>9.625 in.</div> <div>ToToToToToTo</div> <div>2487.5 m</div> <div>/</div> <div>1842.6 m</div> <div>TVD</div>						<div>ABBREVIATIONS</div> <div>NBNew Bit</div> <div>SWGSwab Gas</div> <div>RRBRerun Bit</div> <div>SVGSurvey Gas</div> <div>CBCore Bit</div> <div>GWRGas Water Ratio</div> <div>WOBWeight On Bit</div> <div>MWMud Density</div> <div>RPMRevs Per Minute</div> <div>VFunnel Viscosity</div> <div>FLCFlow Check</div> <div>F</div> <div>Filtrate API</div> <div>PRPoor Returns</div> <div>FCFilter Cake</div> <div>NRNo Returns</div> <div>PVPlastic Viscosity</div> <div>LATLogged After Trip</div> <div>YPYield Point</div> <div>BGBackground Gas</div> <div>SOLSolids</div> <div>FGFormation Gas</div> <div>SDSand</div> <div>TGTrip Gas</div> <div>CISalinity</div> <div>WTGWiper Trip Gas</div> <div>OWROil Water Ratio</div> <div>CGCG</div> <div>ESElectric Stability</div>			
			<div>MUD TYPE</div> <div>Enviromul Yellow OB Mud</div> <div>ToToToToToTo</div> <div>2776 m</div> <div>/</div> <div>2101.7 m</div> <div>TVD</div>									
			<div>QUALIFIER SYMBOLS</div> <div><div></div><div>Calcareous</div><div></div><div>Dolomitic</div><div></div><div>Mica</div><div></div><div>Kaolinite</div><div></div><div>Pyrite</div></div>									
			<div></div> <div>Glaucanitic</div> <div></div> <div>Carbonaceous</div> <div></div> <div>Fossil frags</div> <div></div> <div>Chert</div> <div></div> <div>Tuff</div>									
<div>LOG INTERVAL</div> <div>Depth In735 m</div> <div>To2776 m</div> <div>MWD Start735 m</div> <div>To2776 m</div> <div>Scale1:500</div>												
<div>BAKER HUGHES CREW</div> <div>Unit No.427</div> <div>Data EngineersS.PettersenA.Nygaard</div> <div>A.StrandT.Thomas</div> <div>Logging EngineersT.HalhjemI.Gundby</div> <div>M.GriffinE.KalstøT.Baghirov</div>						<div>LITHOLOGY SYMBOLS</div> <div></div> <div>Limestone</div> <div></div> <div>Dolomite</div> <div></div> <div>Chalk</div> <div></div> <div>Sandstone</div> <div></div> <div>Siltstone</div> <div></div> <div>Shale</div> <div></div> <div>Claystone</div> <div></div> <div>Coal</div> <div></div> <div>Halite</div> <div></div> <div>Anhydrite</div>						
						<div>SYMBOLS</div> <div></div> <div>Casing shoe</div> <div></div> <div>Test Interval</div> <div></div> <div>Core Interval</div> <div>No Recovery</div> <div></div> <div>Wireline Logs</div> <div></div> <div>Wireline test</div> <div></div> <div>SideWall Core</div> <div></div> <div>Sidewall Core</div> <div></div> <div>No Recovery</div>						

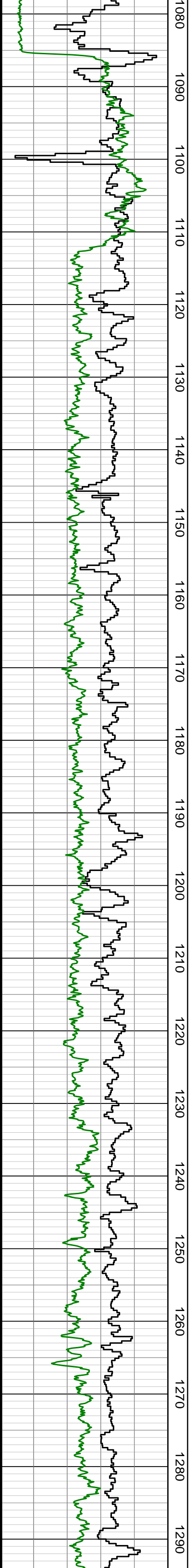
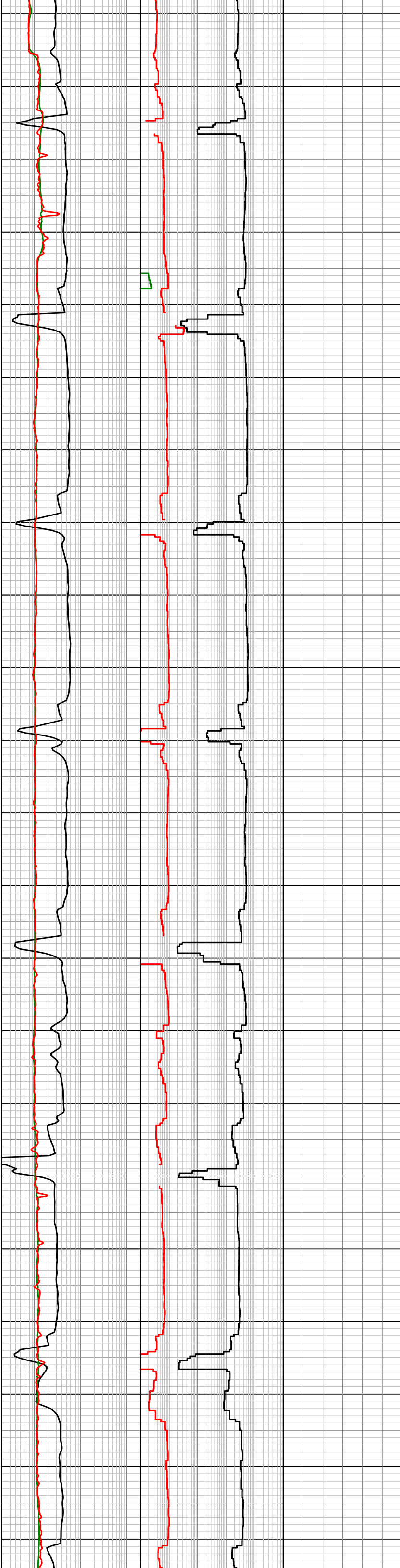
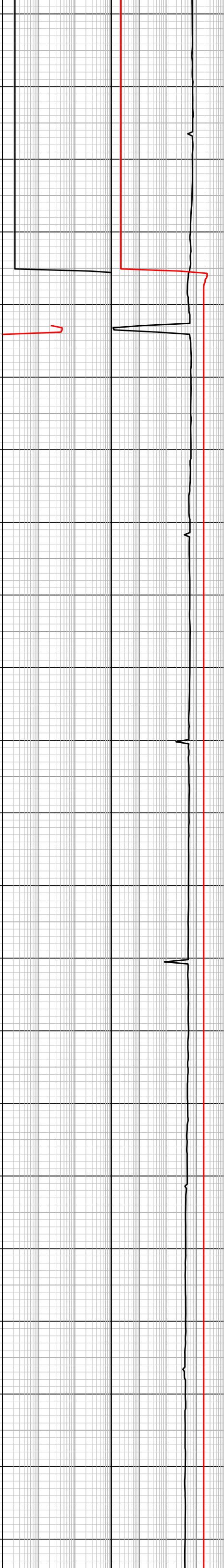
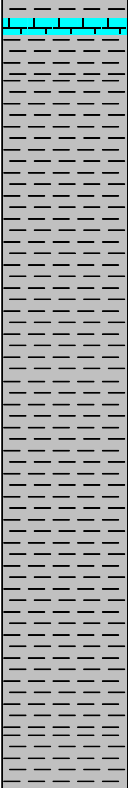
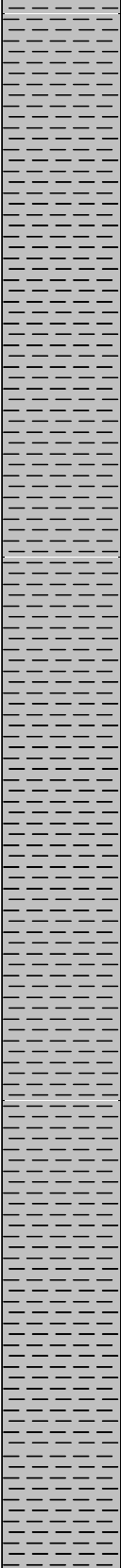
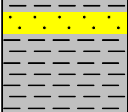
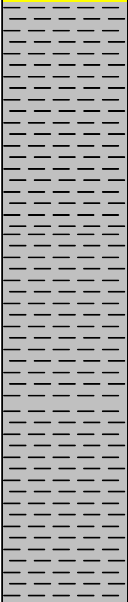
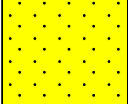
[illegible]

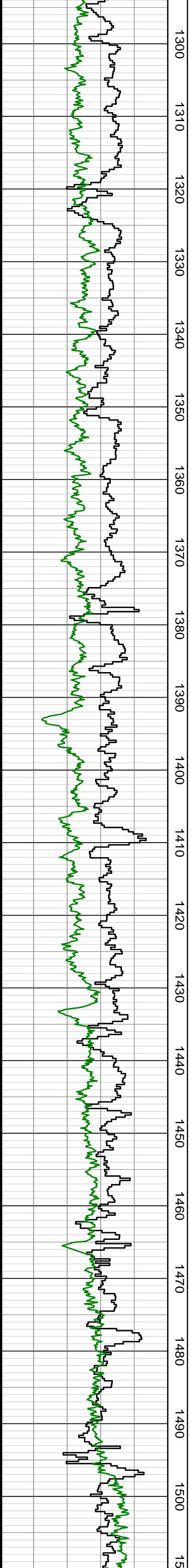
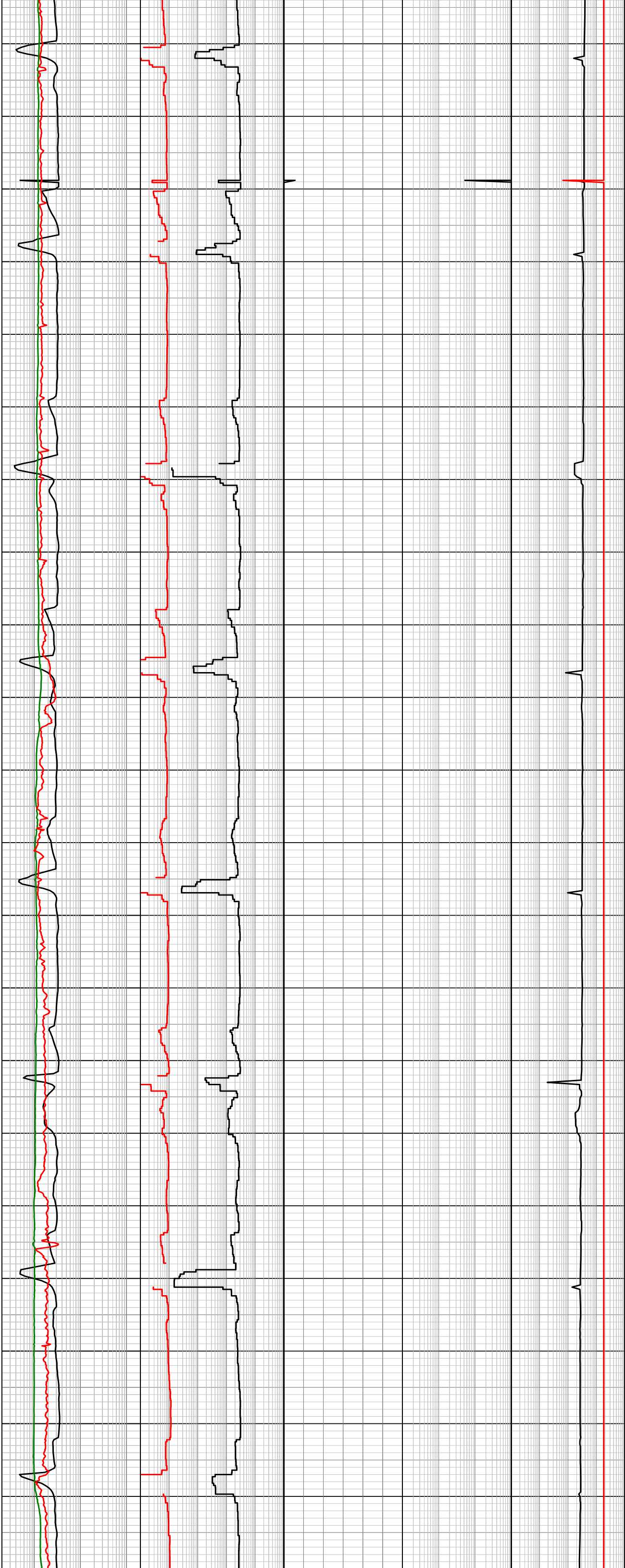
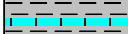


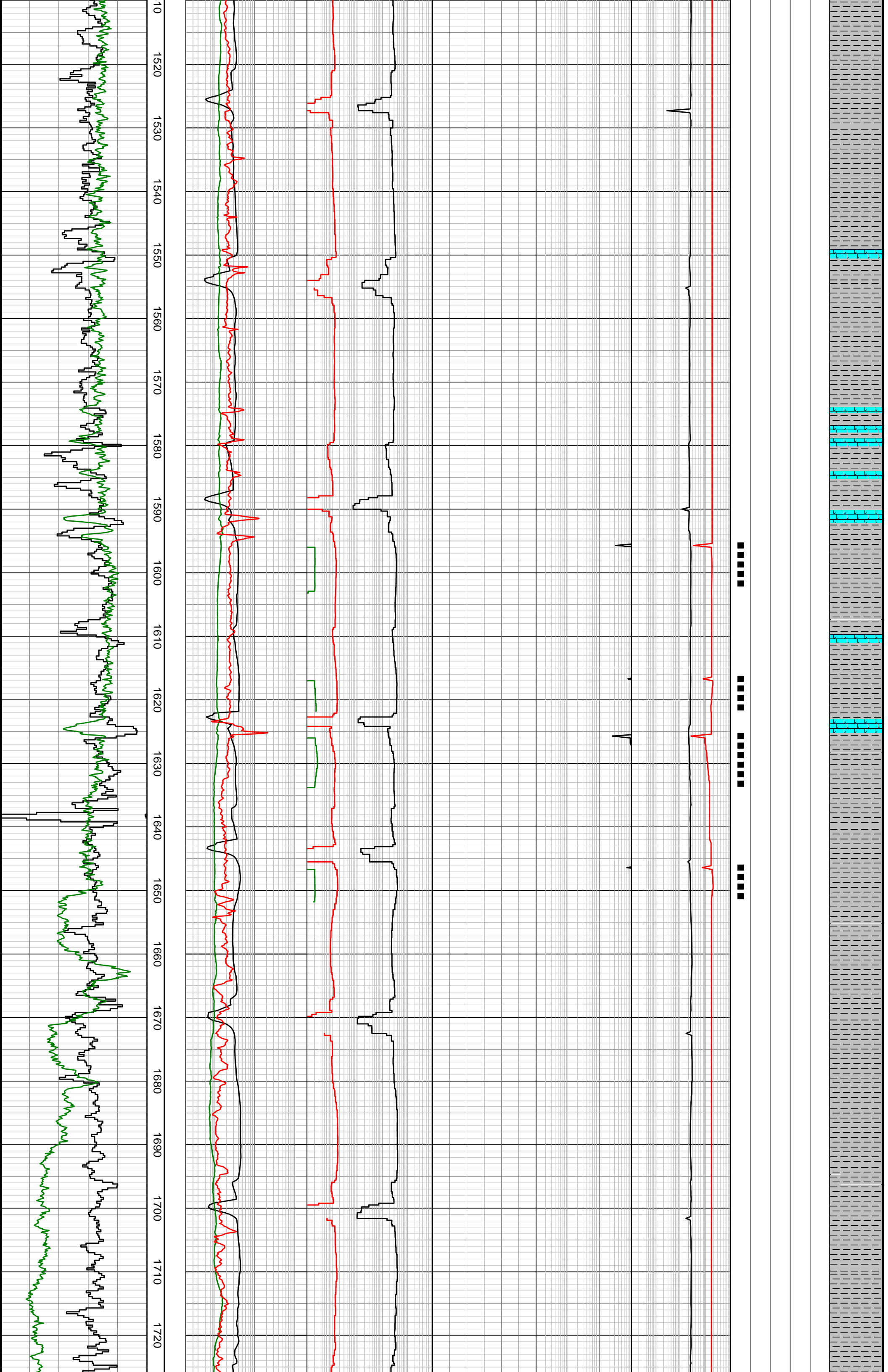


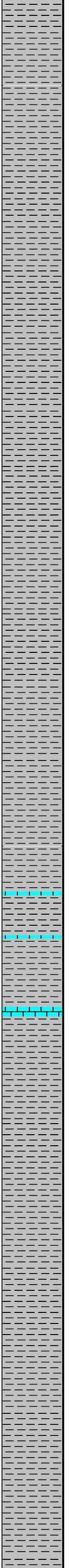






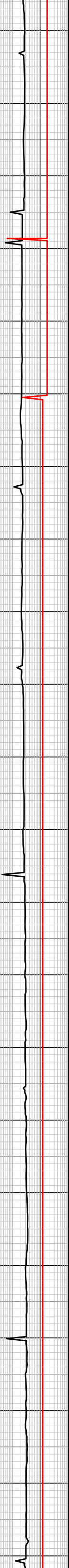






■ ■ ■ ■

■



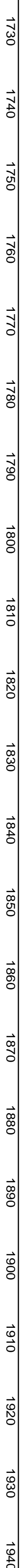
■

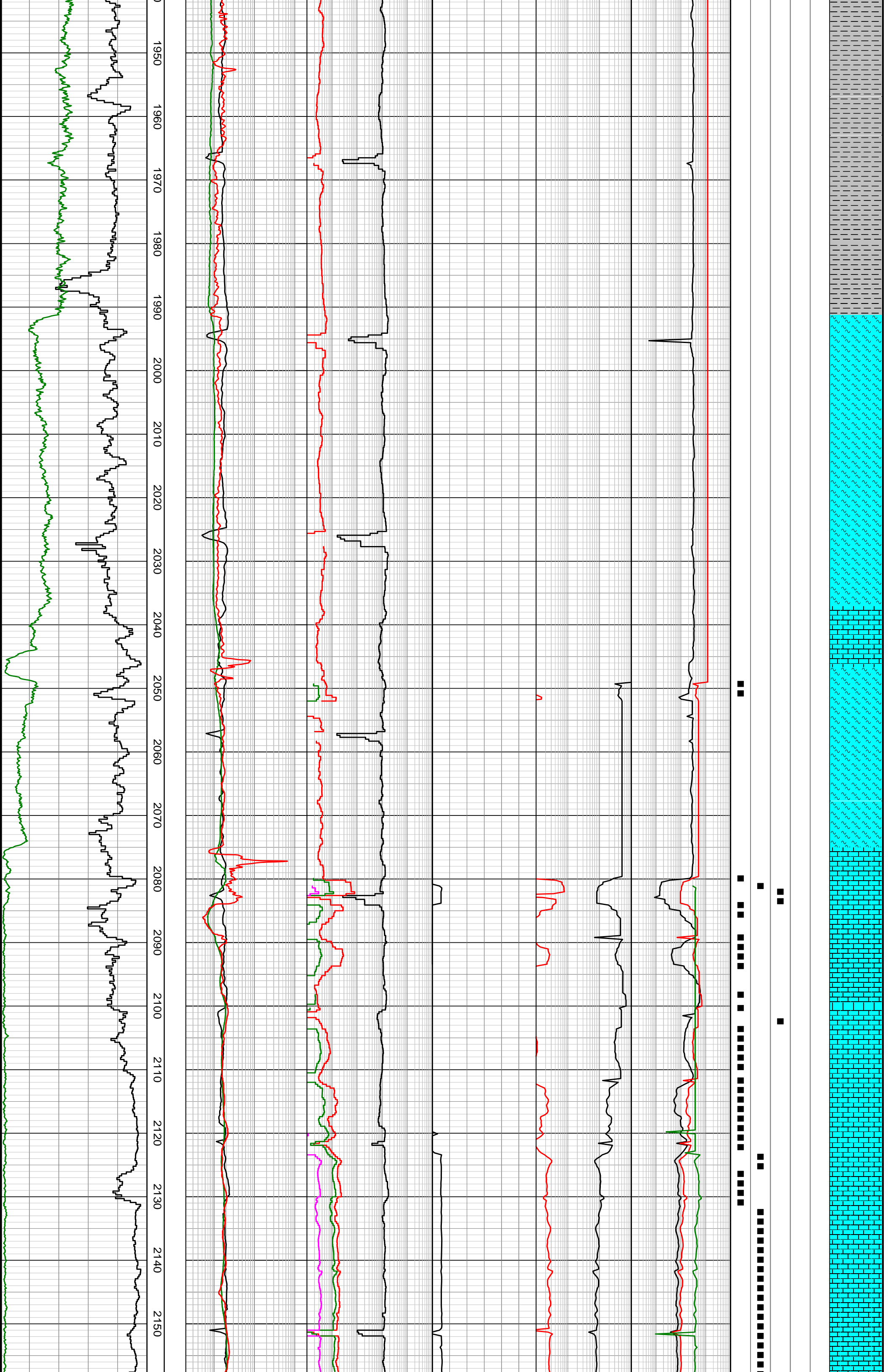
■

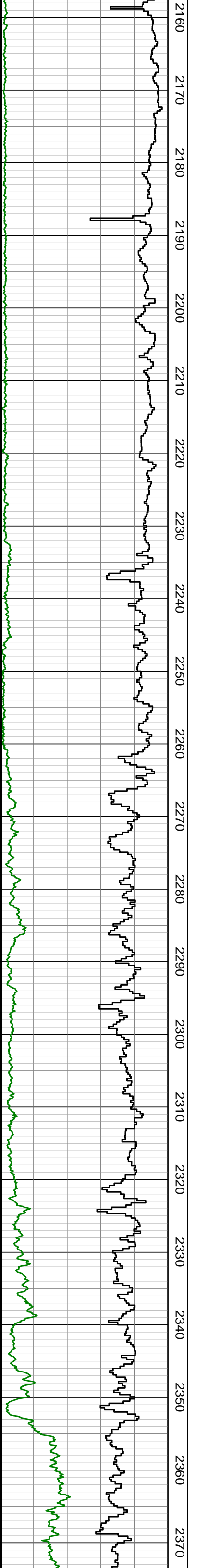
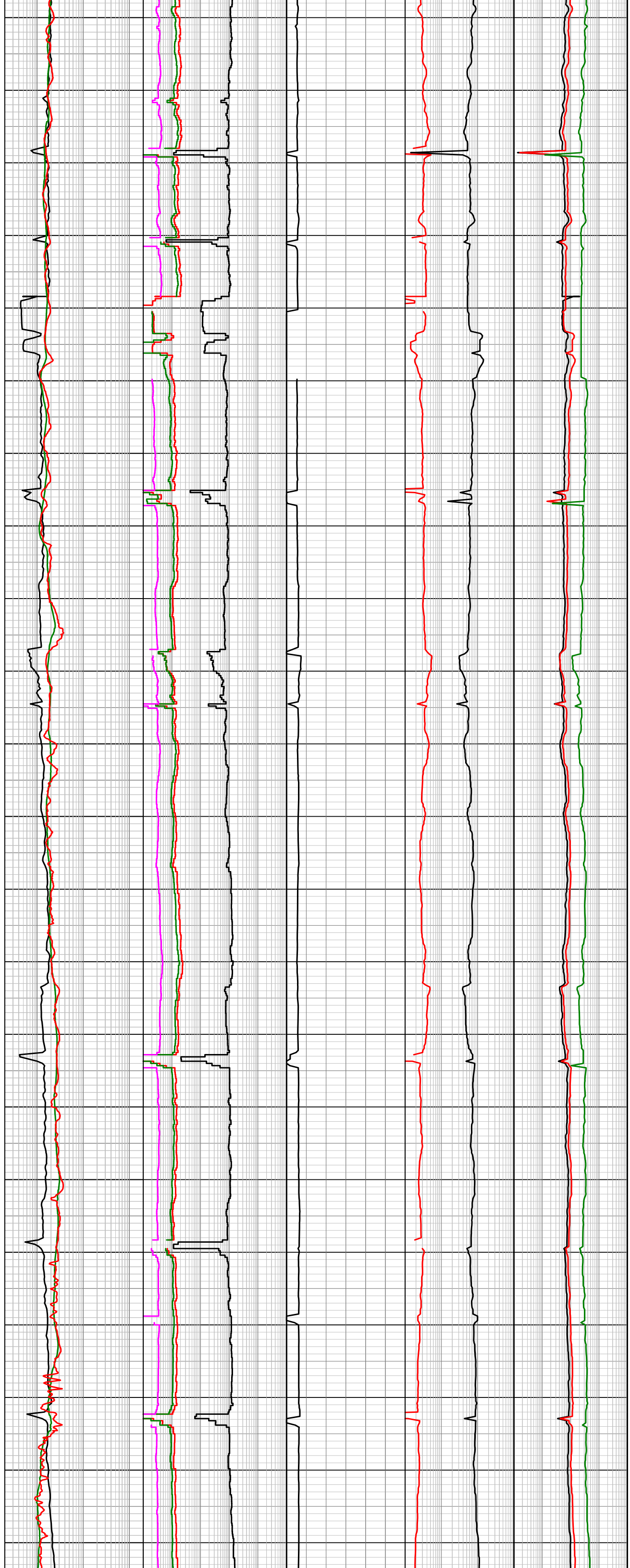
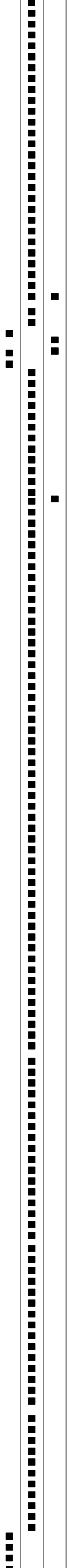
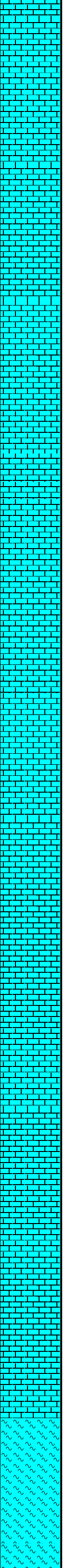
■

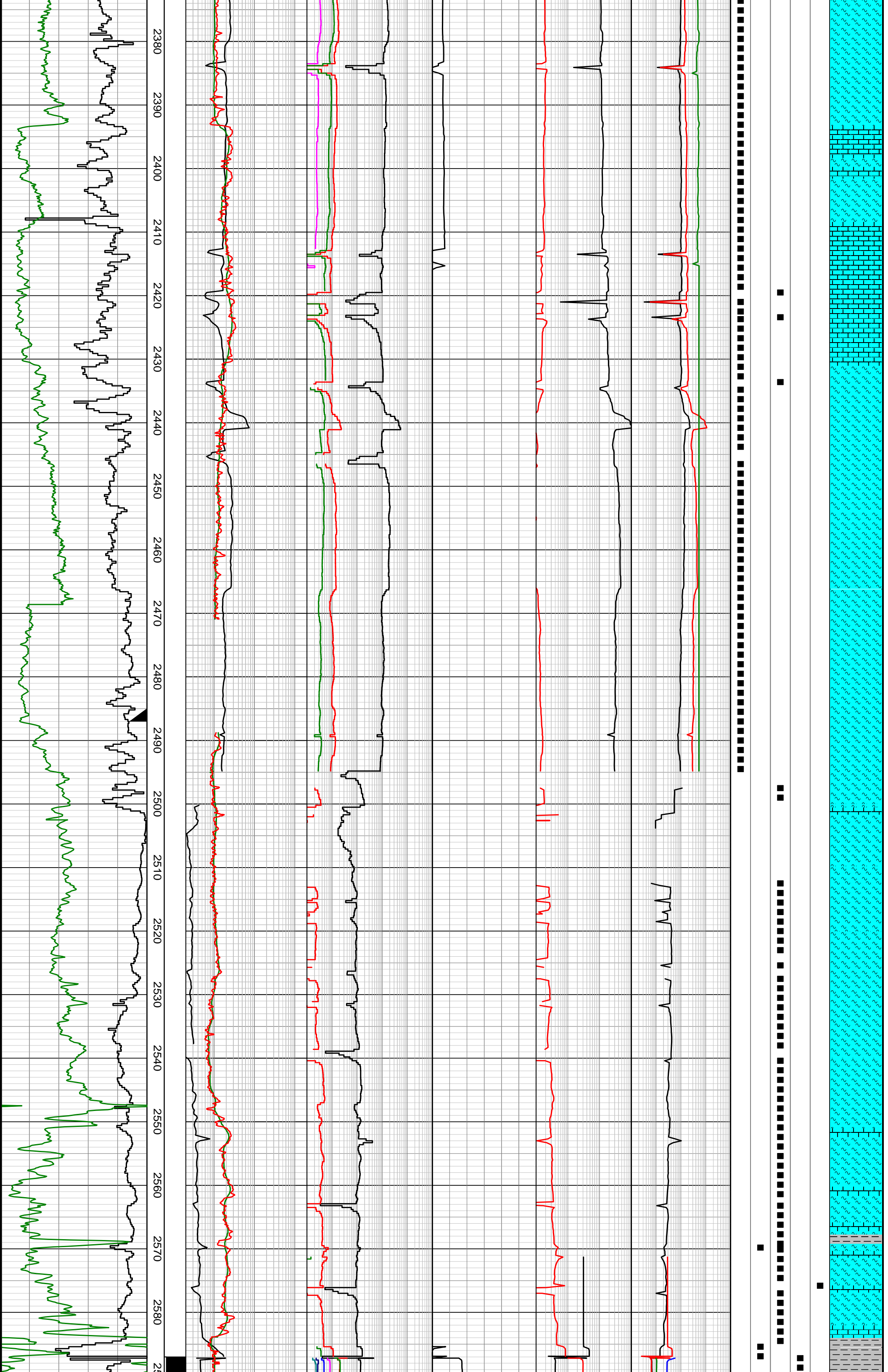


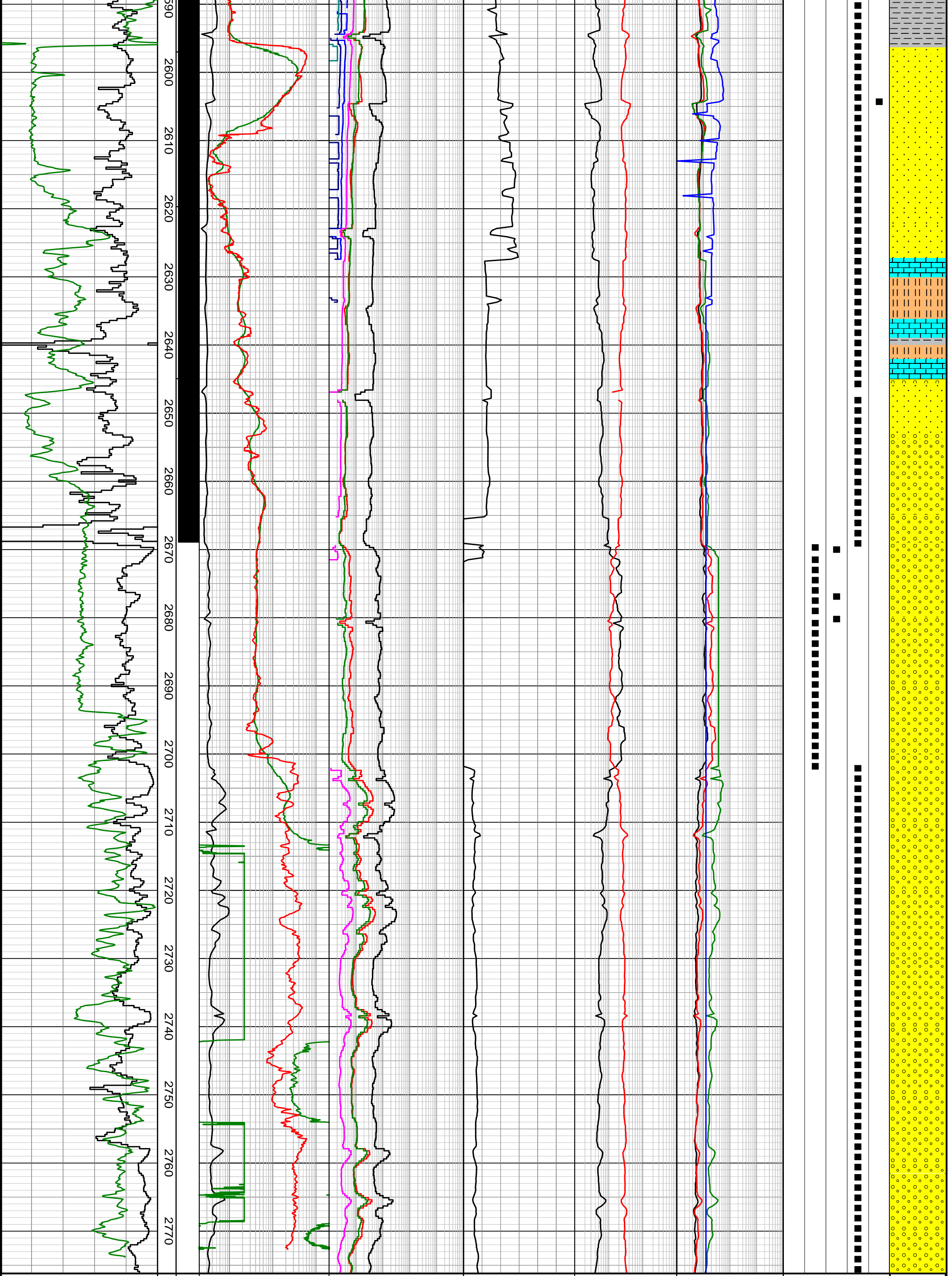
■











GAS RATIO LOG

Interpreted Lithology									
Analysis									
<div><div>■</div><div>■</div><div>■</div><div>■</div><div>■</div><div>■</div><div>■</div><div>■</div><div>■</div><div>■</div></div> <div>Residual Oil</div> <div>Oil</div> <div>CRS/Light Oil</div> <div>CRS</div> <div>Unproductive</div>									
C1 Ratios									
<div>1</div> <div>C1C2</div> <div>10000</div>									
<div>1</div> <div>C1C3</div> <div>10000</div>									
<div>1</div> <div>C1C4</div> <div>10000</div>									
<div>1</div> <div>C1C5</div> <div>10000</div>									
Oil Character									
<div>1</div> <div>LHR</div> <div>1000</div>									
<div>1</div> <div>GWR</div> <div>1000</div>									
Oil Character									
<div>1</div> <div>2</div> <div>3</div>									
Chromatograph Data									
<div>10</div> <div>100</div> <div>1000</div> <div>10000</div> <div>100000</div>									
<div>10</div> <div>100</div> <div>1000</div> <div>10000</div> <div>100000</div>									
<div>10</div> <div>100</div> <div>1000</div> <div>10000</div> <div>100000</div>									
<div>10</div> <div>100</div> <div>1000</div> <div>10000</div> <div>100000</div>									
<div>10</div> <div>100</div> <div>1000</div> <div>10000</div> <div>100000</div>									
Total Gas (%)									
<div>0.2</div> <div>2</div> <div>20</div>									
<div>Resistivity (AT) 400kHz (LS) (ohm.m)</div>									
<div>2</div> <div>20</div> <div>200</div>									
<div>Resistivity (PD) 2MHz (LS) (ohm.m)</div>									
<div>2</div> <div>20</div> <div>200</div>									
ROP (m/hr)									
<div>100</div> <div>80</div> <div>60</div> <div>40</div> <div>20</div>									
<div>0</div> <div>Gamma Ray Corrected (API)</div> <div>150</div>									
Core									
<div>MD meters 1:500</div>									

