



**PIONEER**

Pioneer Energy Services

**CEMENT BOND LOG  
WITH GAMMA RAY**

Company		Renegade Oil and Gas LLC			
Well		Howland #2			
Field		Deer Trail			
County		Adams		State Colorado	
Location:		API # : 05-001-07984		Other Services	
		2300' FNL 2030' FEL			
		SEC 25 TWP 2S RGE 60W			
Permanent Datum		Ground Level Elevation		4871'	
Log Measured From		KB 10' Above Perm. Datum		K.B. 4881'	
Drilling Measured From		Kelly Bushing		D.F. 4880'	
				G.L. 4871'	
Date of Service		6 June 2016			
Run Number		One			
Depth Driller or PBTD		6325'			
Depth Logger		6188'			
Bottom Log Interval		6185'			
Top Log Interval					
Open Hole Size		7.875			
Type Fluid		Water			
Fluid Level		Surface			
Fluid Density		8.3 lbs/ gal			
Max. Recorded Temperature		N/A			
Max. Wellhead Pressure		Zero			
Wellhead Connection		None			
Estimated Cement Top		See Log			
Unit Number		P129			
Wireline Size		9/32			
Location		Ft. Morgan			
Recorded By		Cory Burns			
Witnessed By		Ed Ingye			
		Size		Wt/Ft	
				Top	
				Bottom	
Tubing Record					
Surface Casing		8.625		24#	
Production Casing		4.5		10.5	
Liner Record					

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew		Tool Data - Services	Serial Number
Engineer:			
Operator:			
Operator:			
Operator:			

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
--------	-------------	-----------	-------------	-------------	-----------	-------------

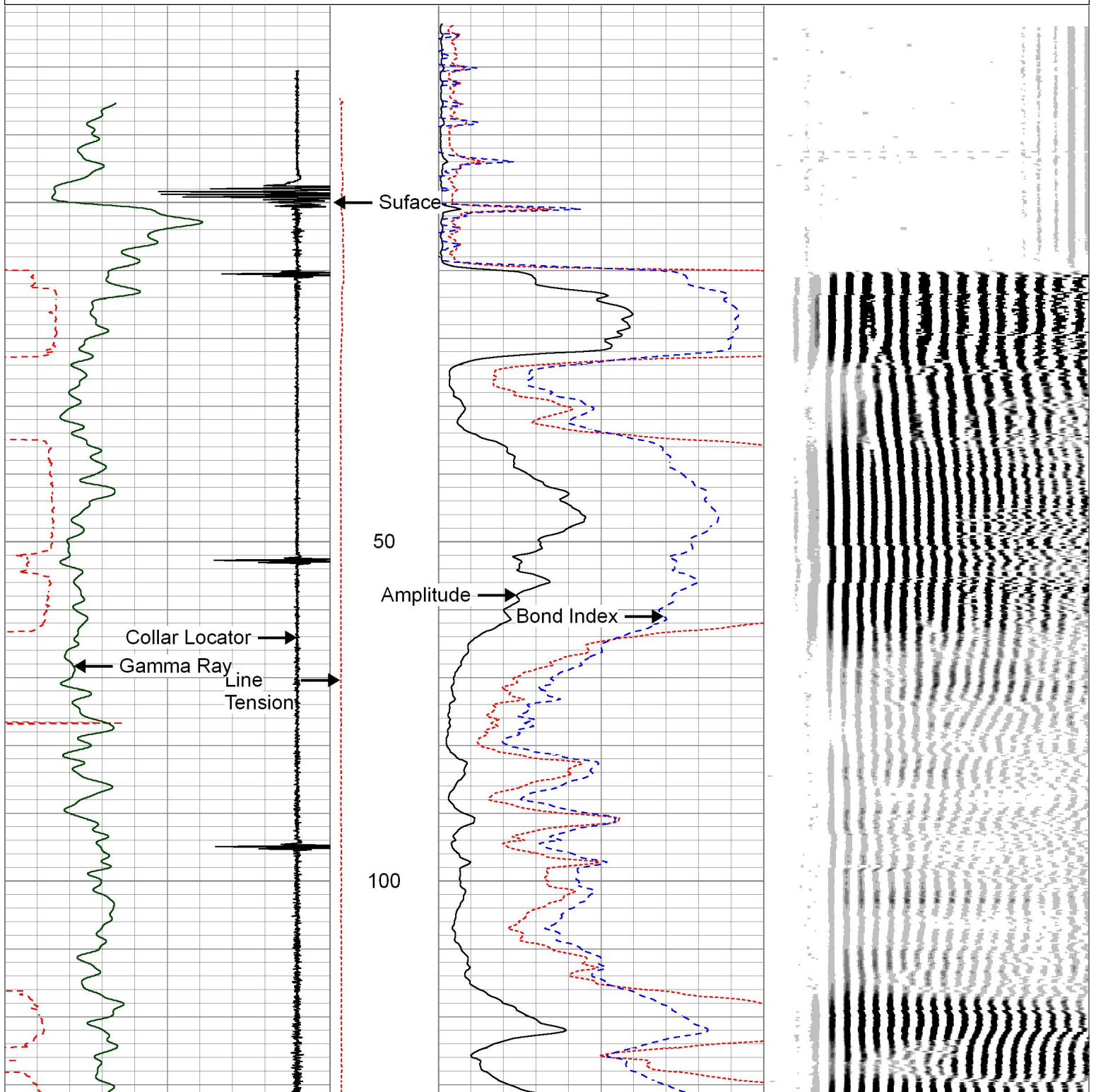


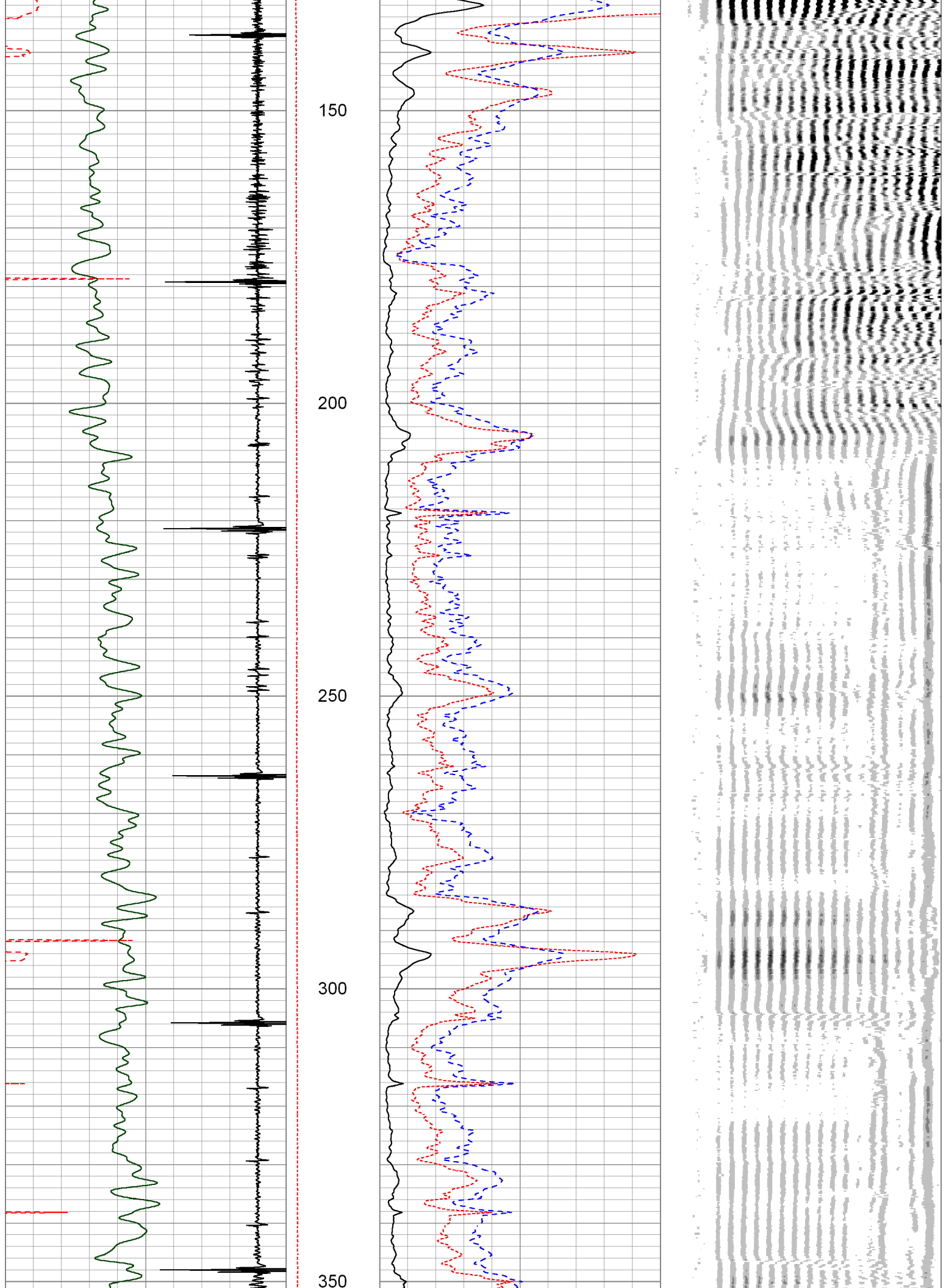
# Main Pass Surface

Zero PSI On Well

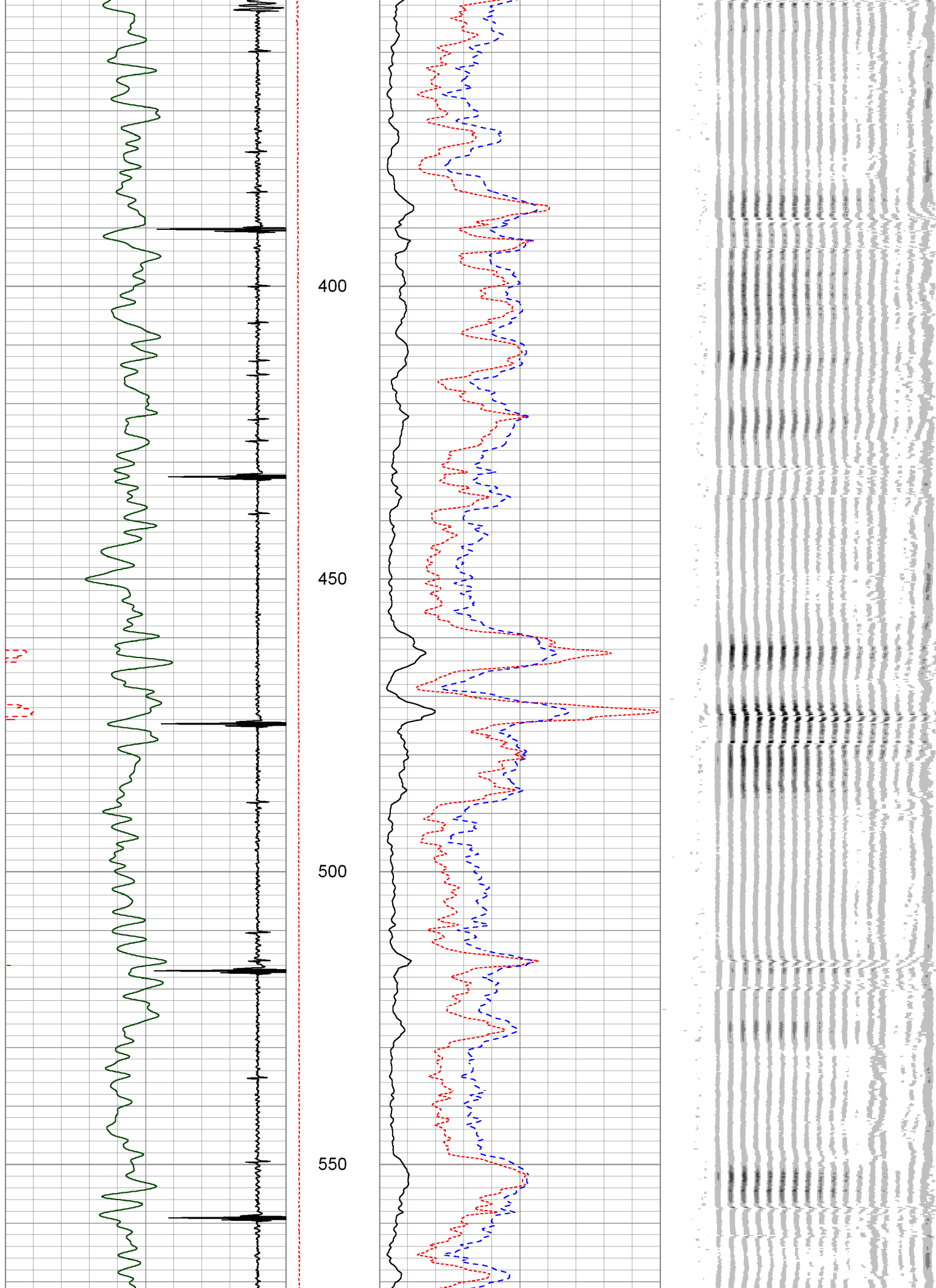
Database File      howland #2.db  
Dataset Pathname    pass6  
Presentation Format   pinr\_cbl  
Dataset Creation    Wed Jun 29 12:19:12 2016  
Charted by           Depth in Feet scaled 1:240

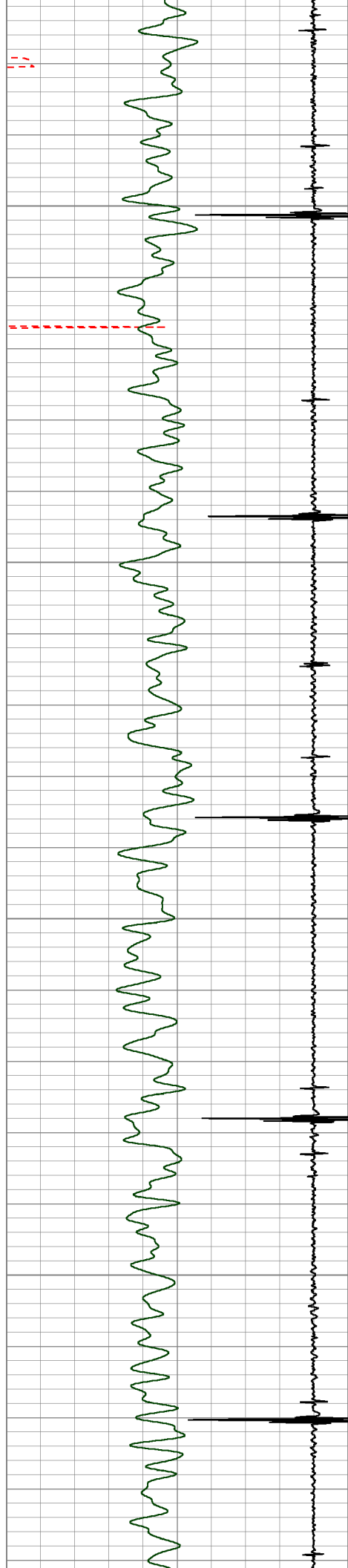
260	Travel Time (usec)	160	Line	0	Amplitude (mV)	100	200	VDL	1200
-9	Collar Locator	1	Tension	1	Bond Index	0			
0	Gamma Ray (GAPI)	200	0 (lb2000)						









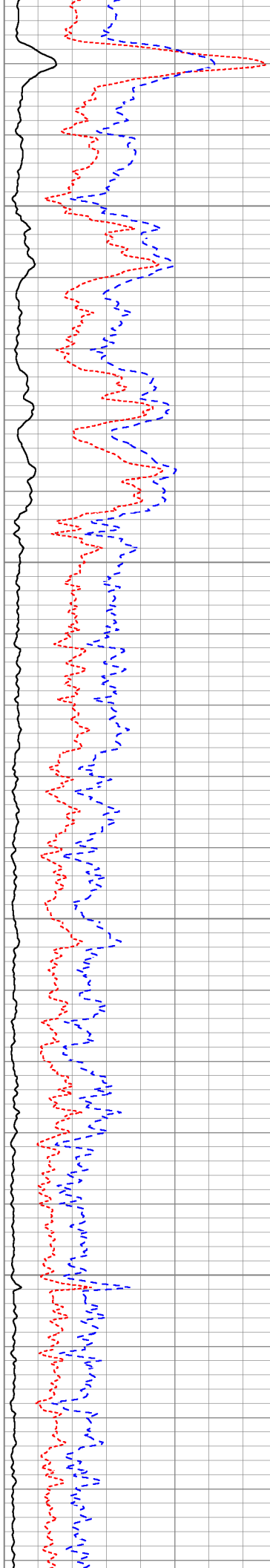


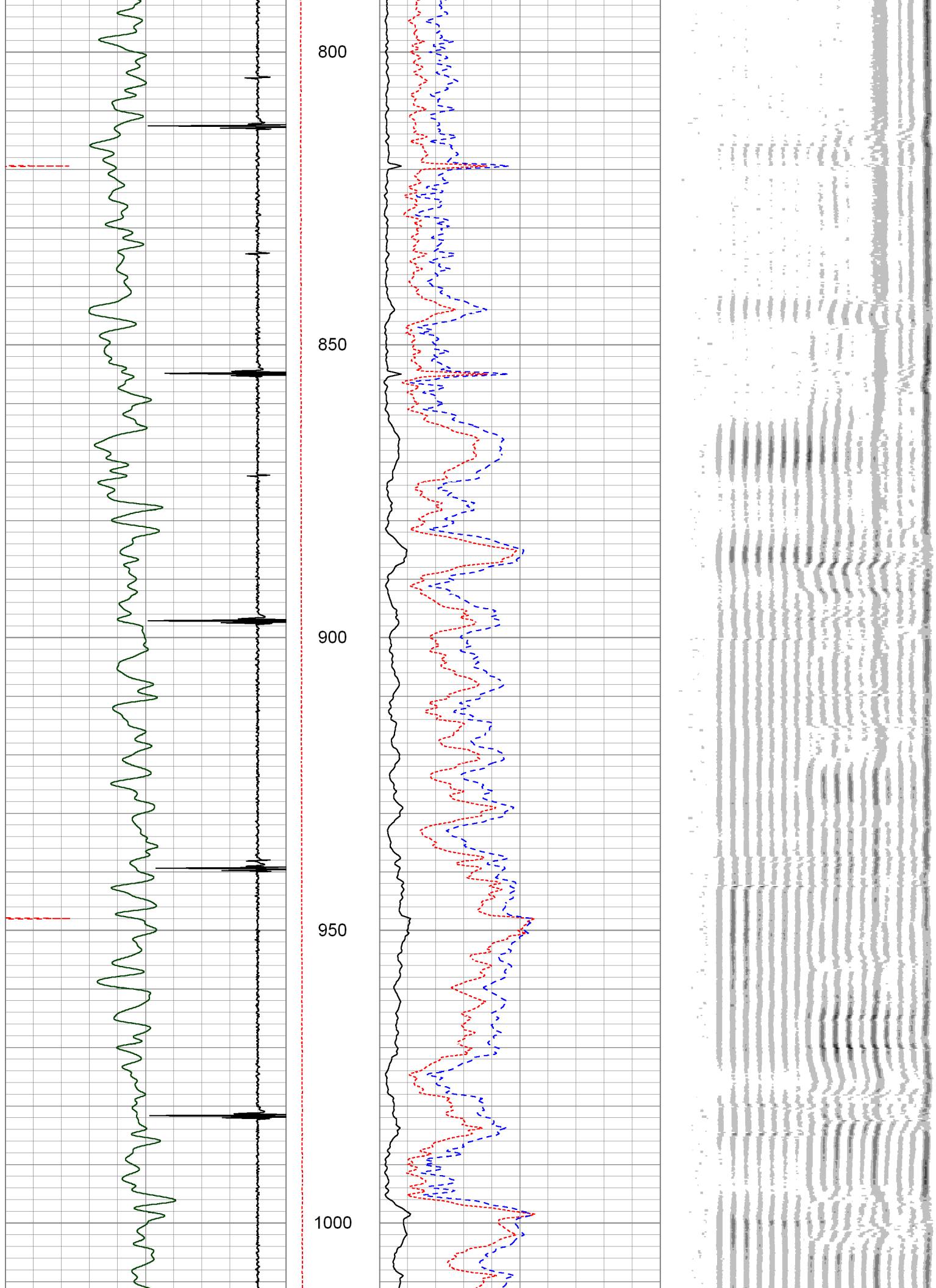
600

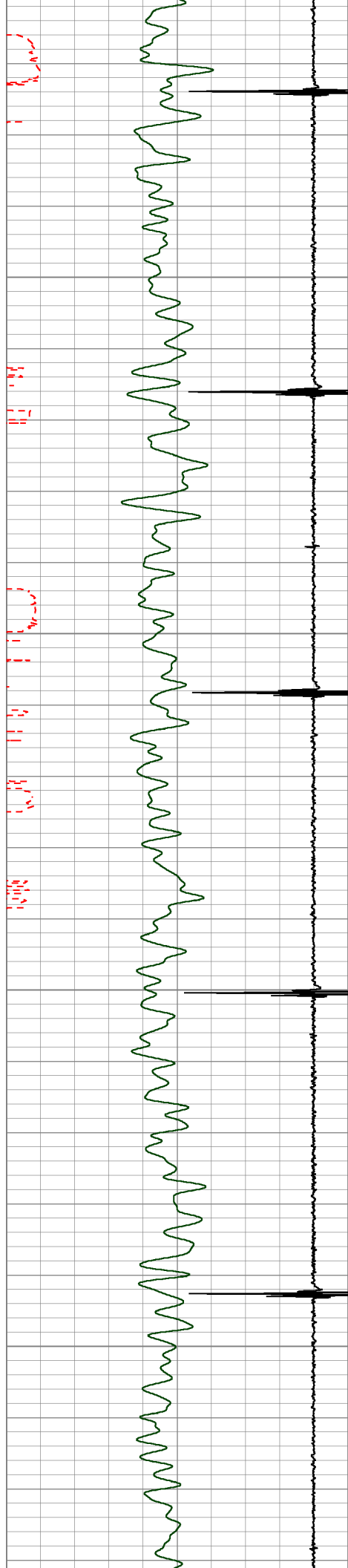
650

700

750





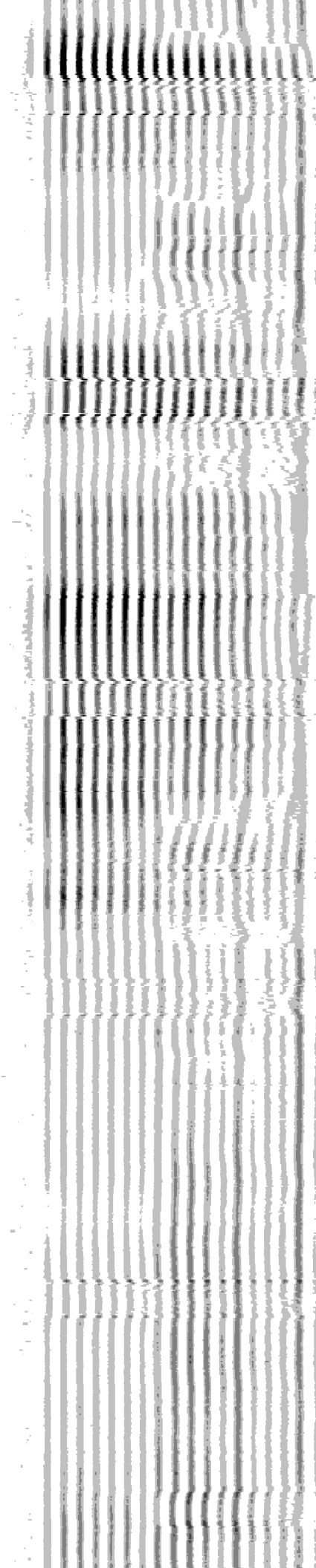
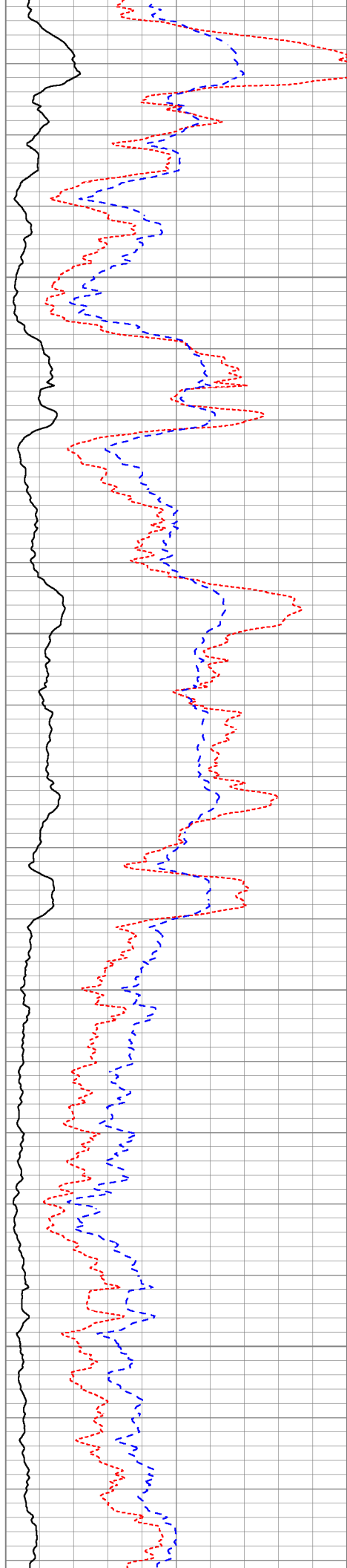


1050

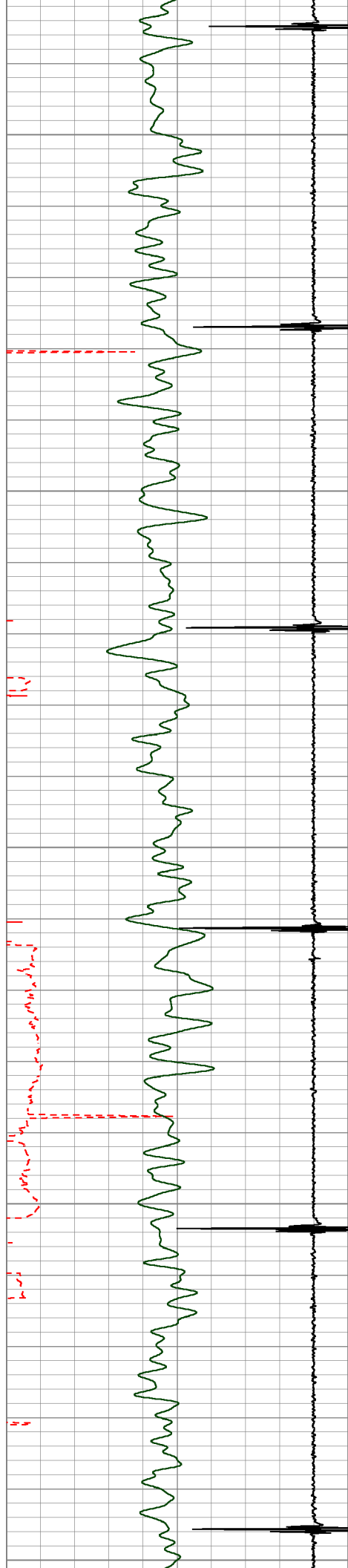
1100

1150

1200







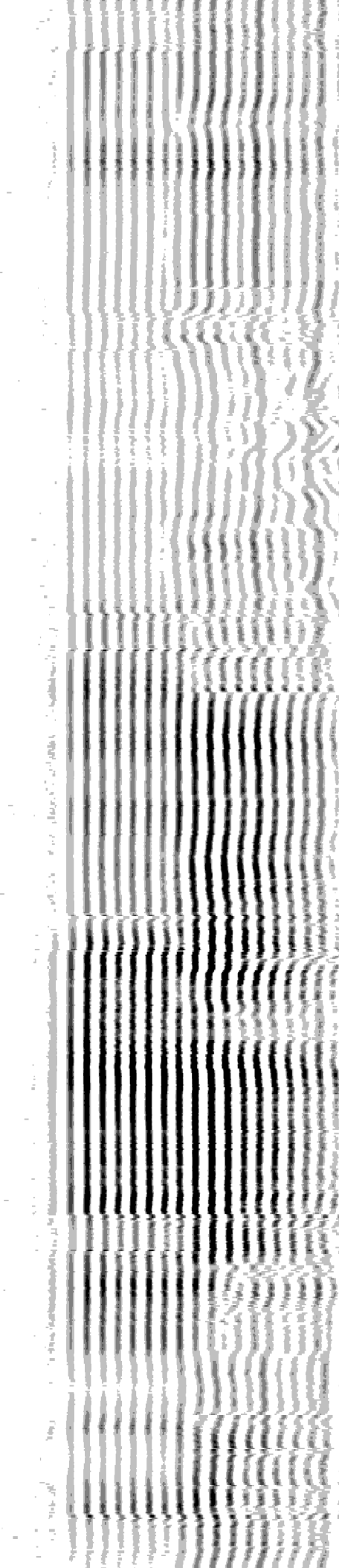
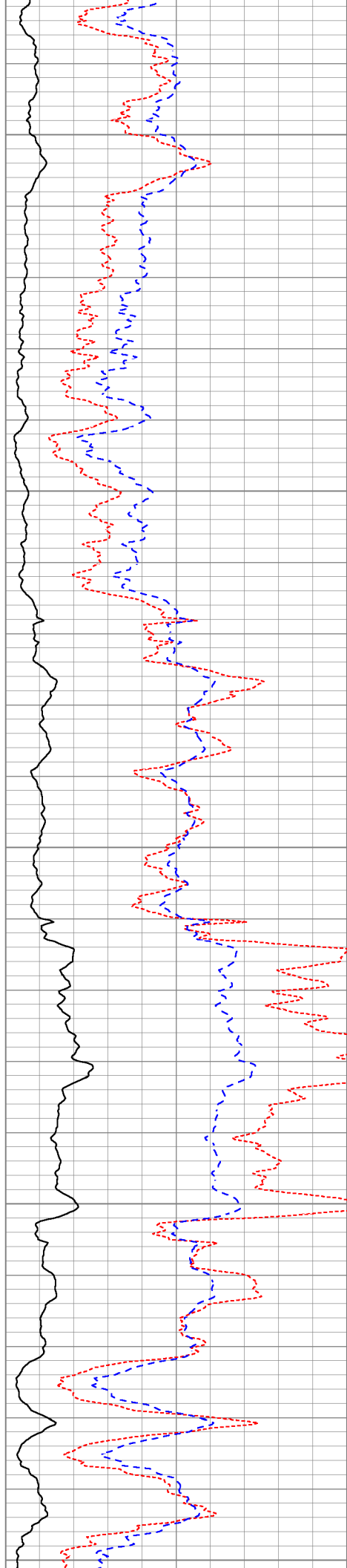
1250

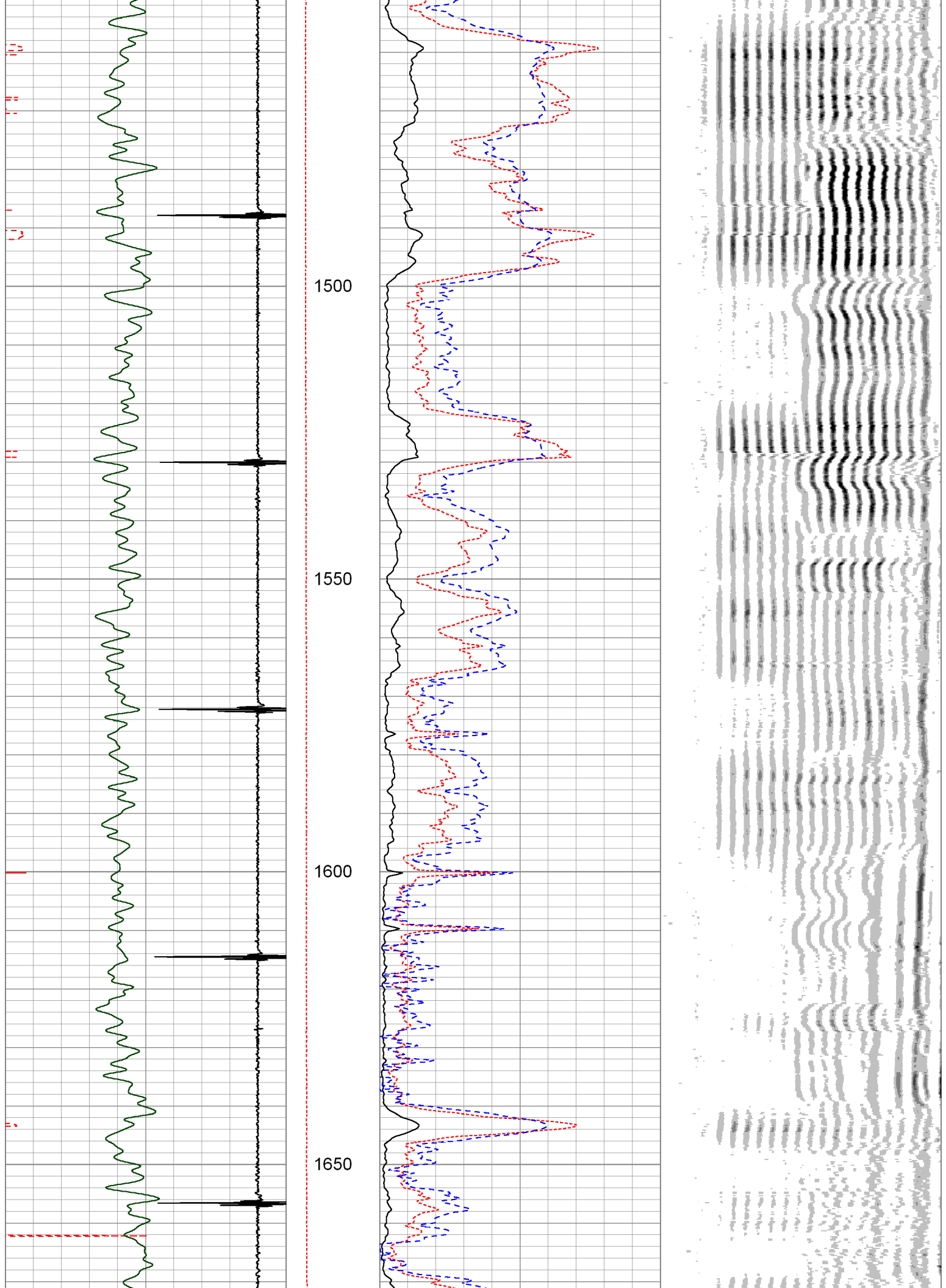
1300

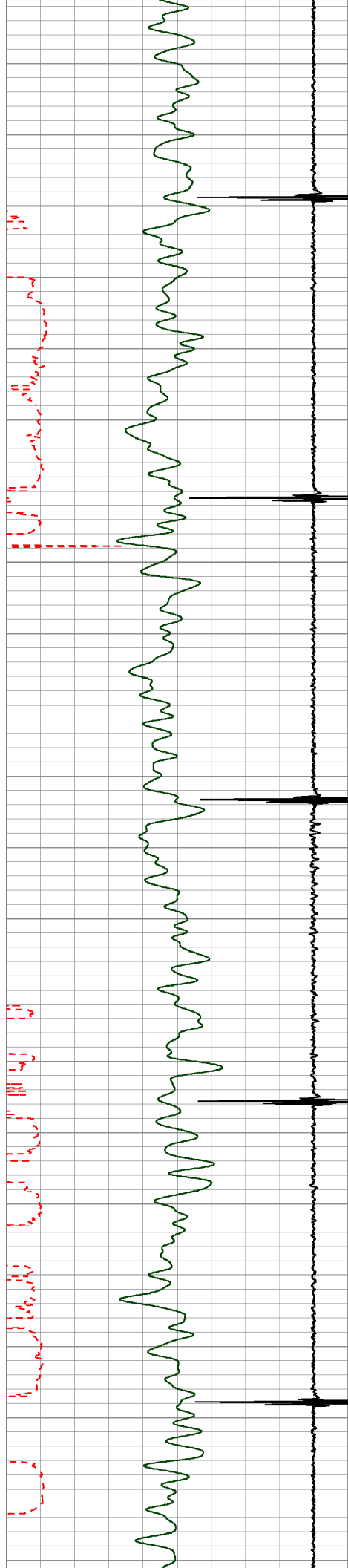
1350

1400

1450





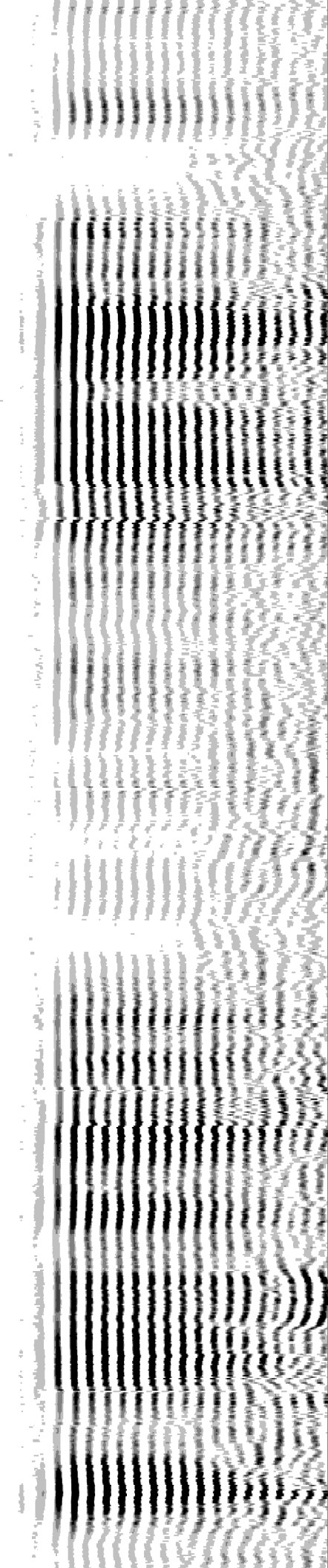
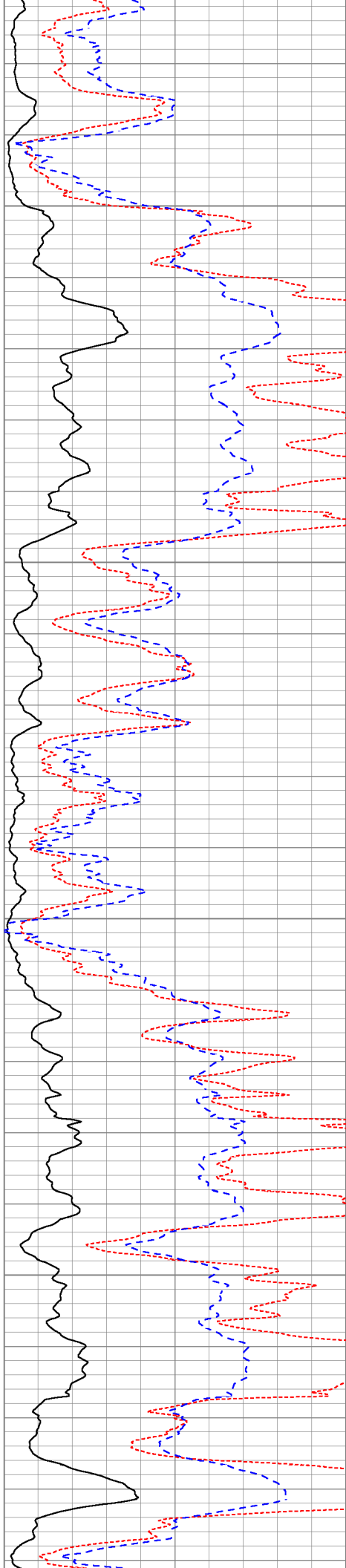


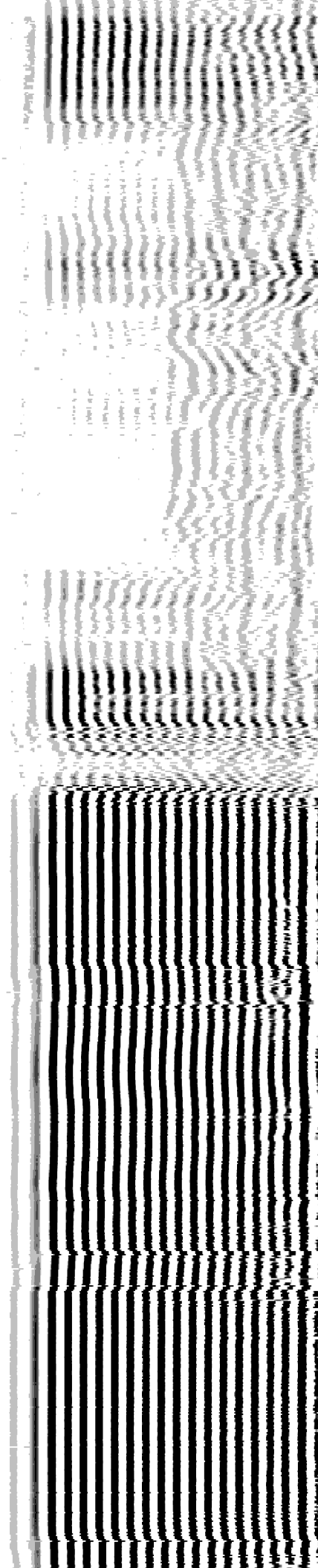
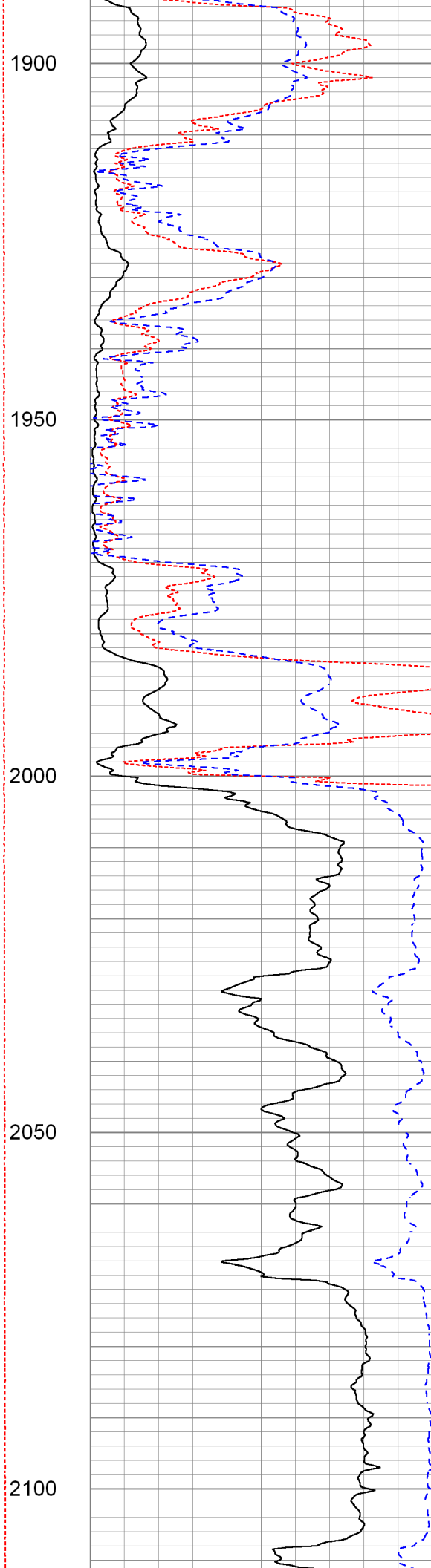
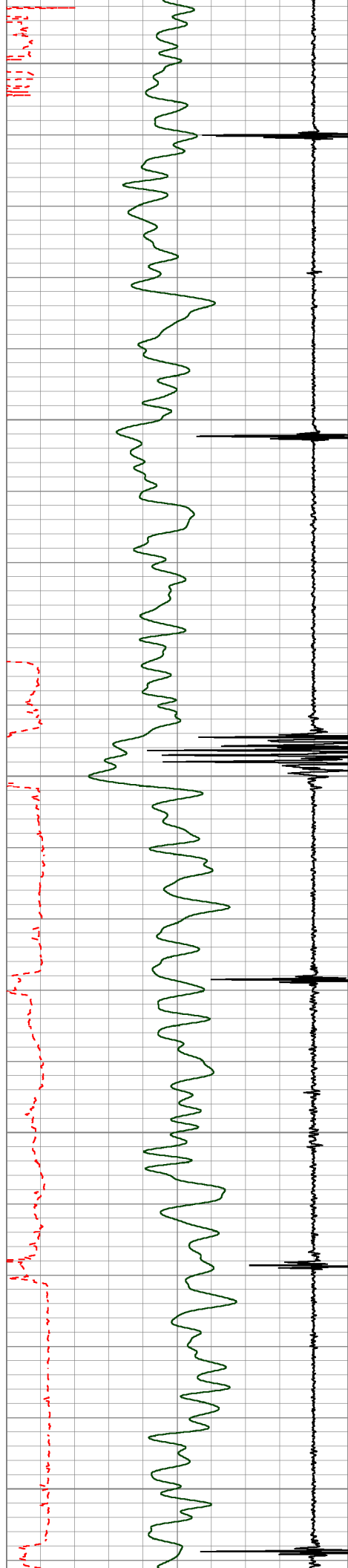
1700

1750

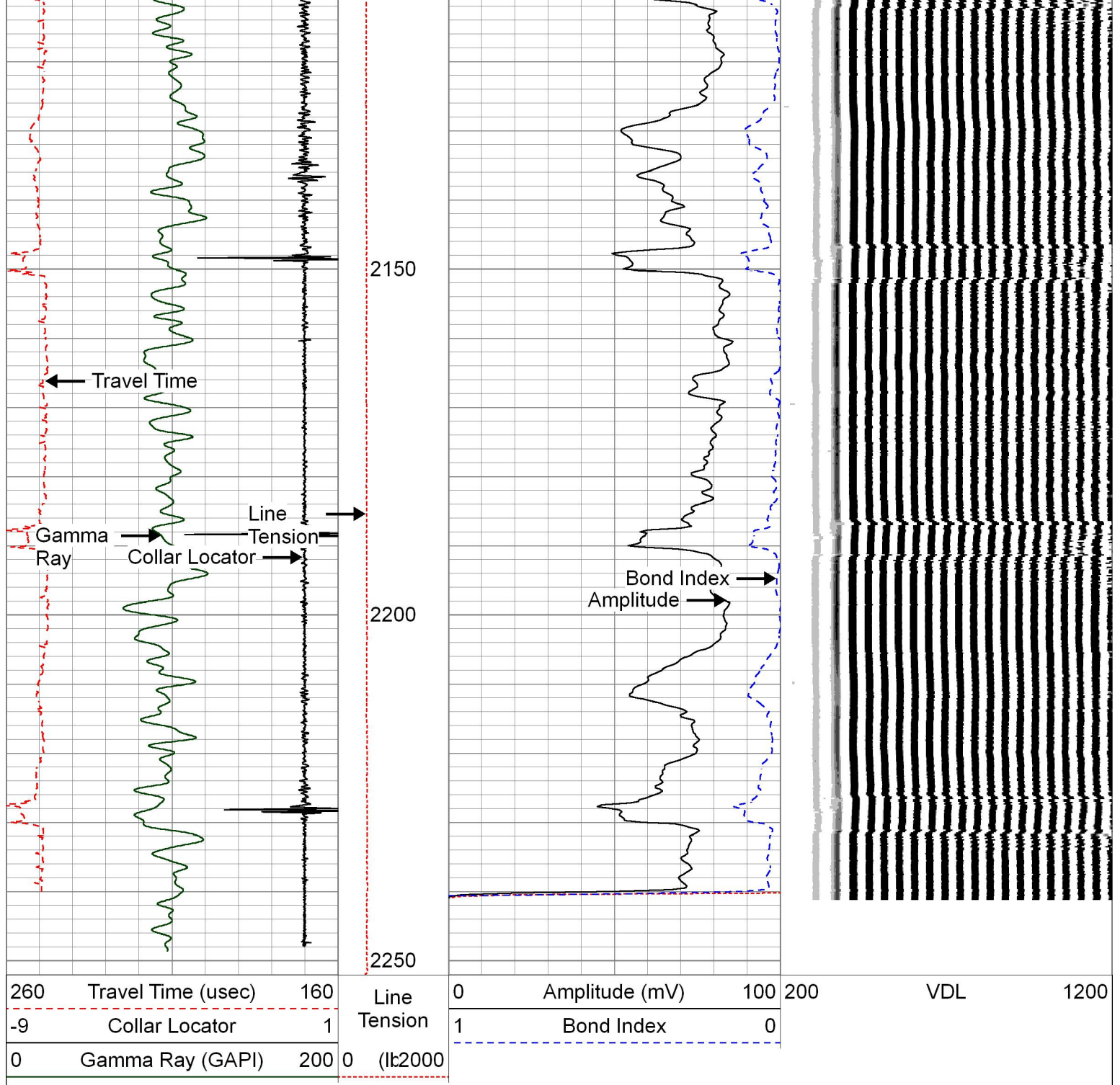
1800


1850











**PIONEER**  
Pioneer Energy Services

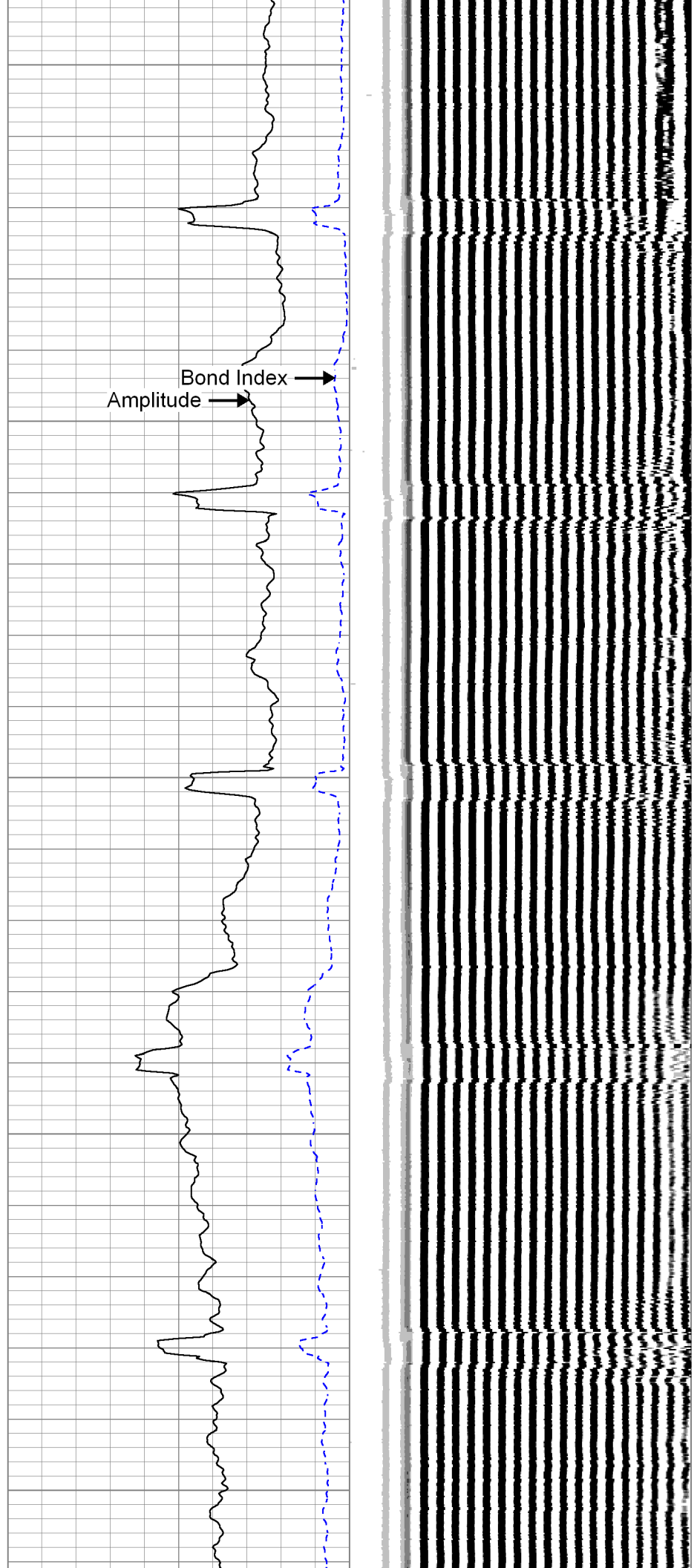
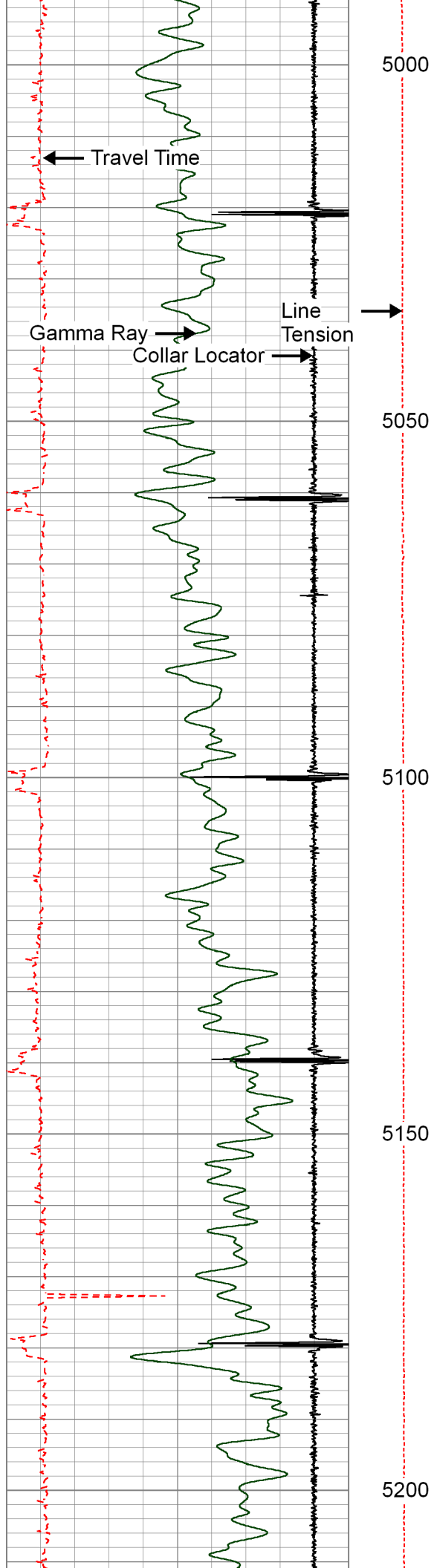
## Main Pass Bottom Hole

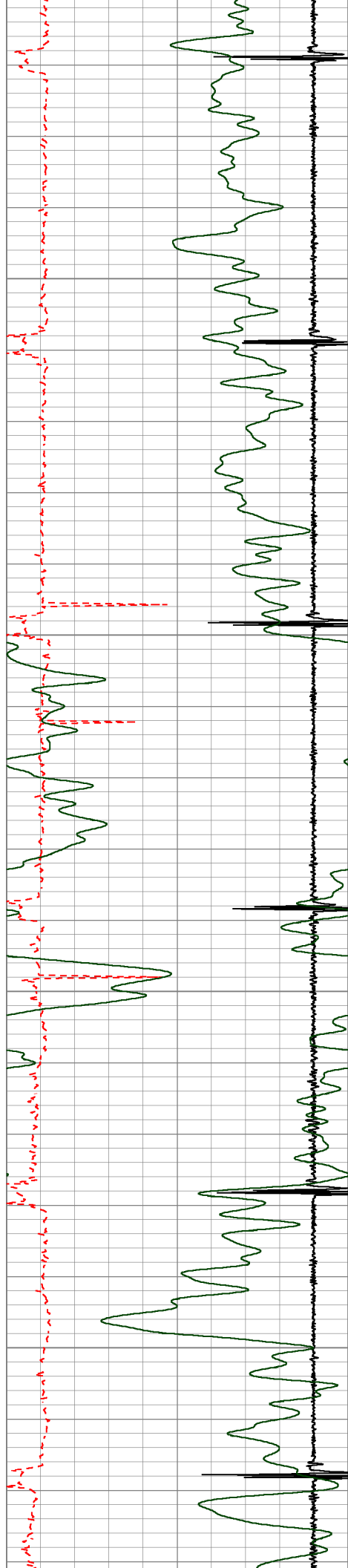
Zero PSI On Well

Database File	howland #2.db
Dataset Pathname	pass5.1
Presentation Format	pinr_cbl
Dataset Creation	Wed Jun 29 12:51:14 2016
Charted by	Depth in Feet scaled 1:240

260	Travel Time (usec)	160	Line Tension	0	Amplitude (mV)	100	200	VDL	1200
-9	Collar Locator	1		1	Bond Index	0			
0	Gamma Ray (GAPI)	200	0 (lb2000)						





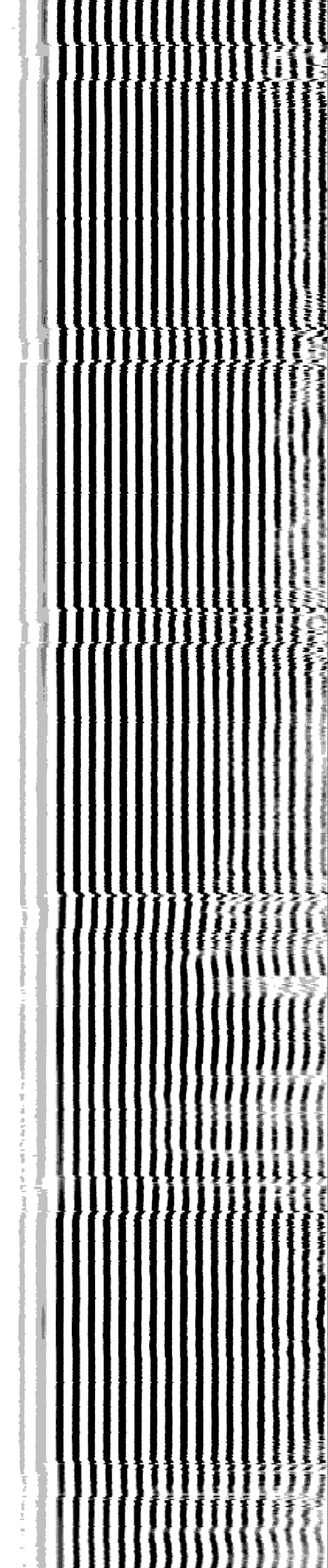
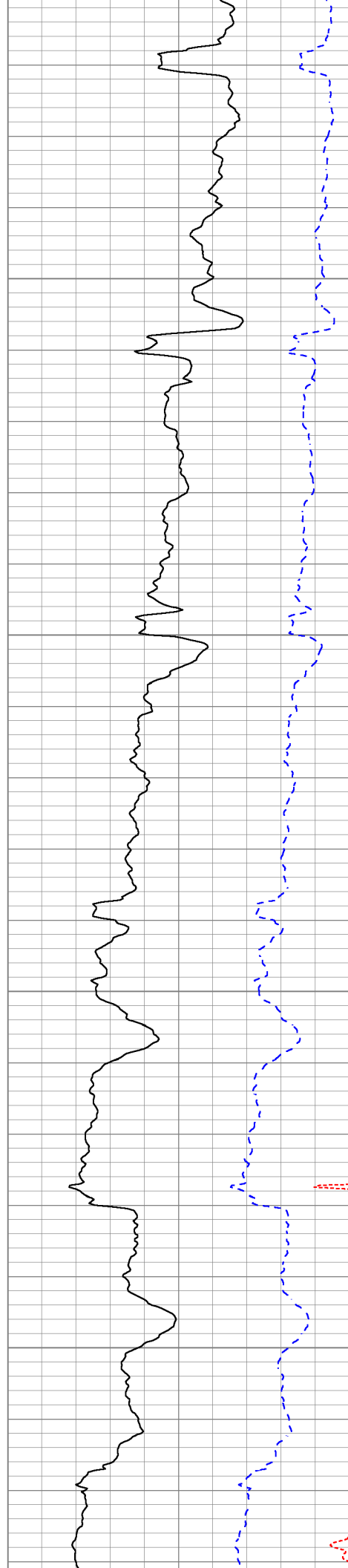


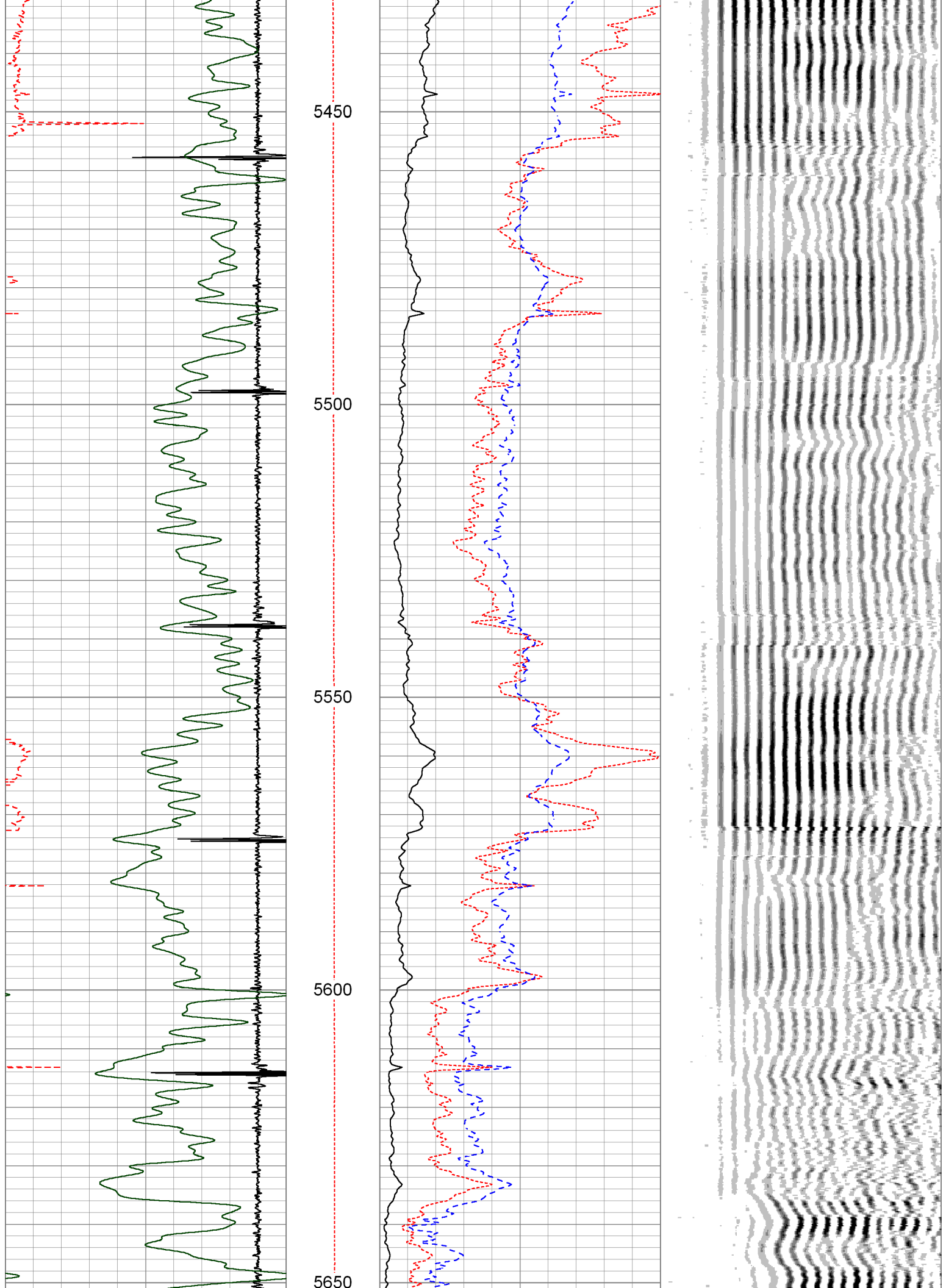
5250

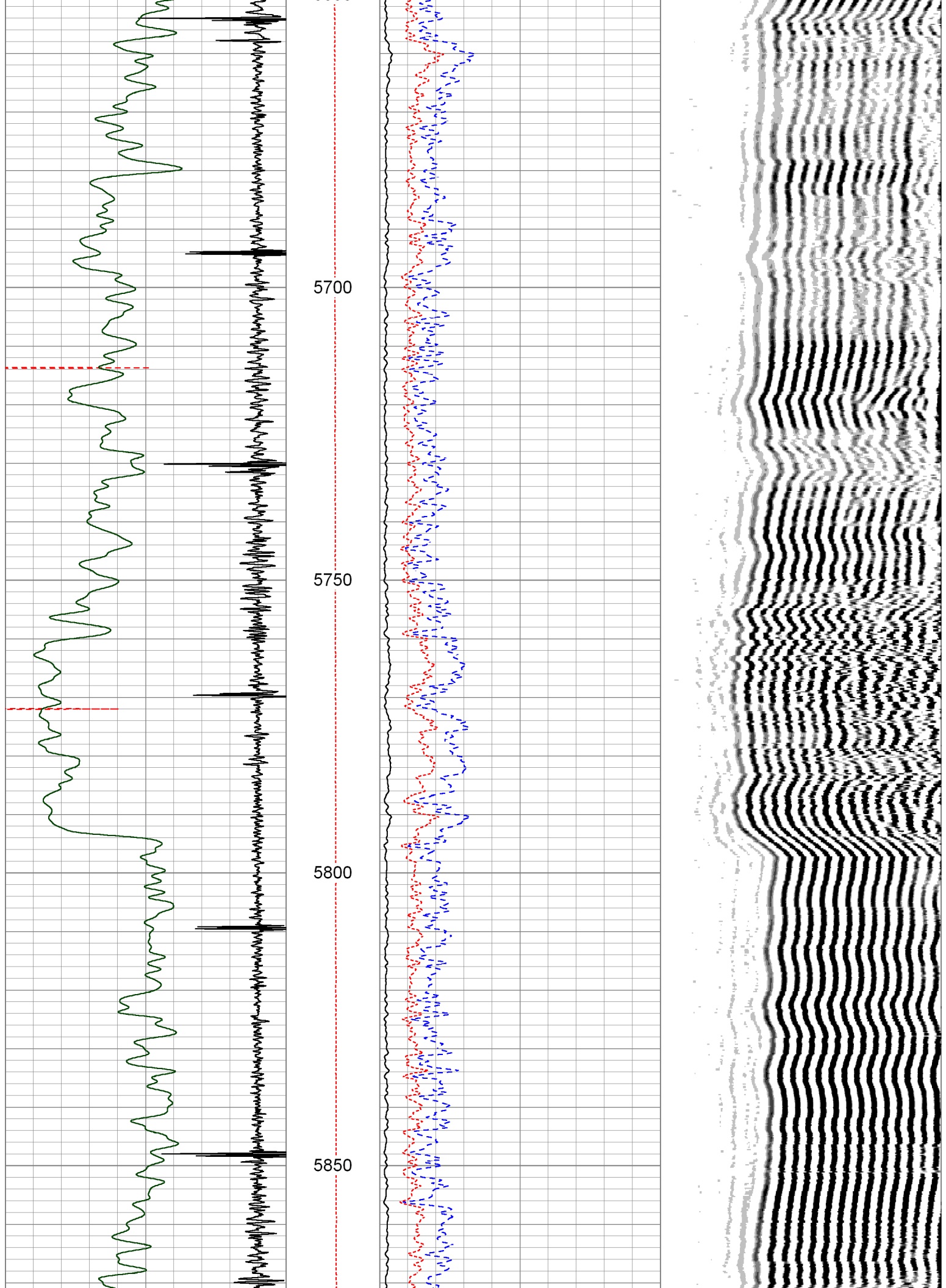
5300

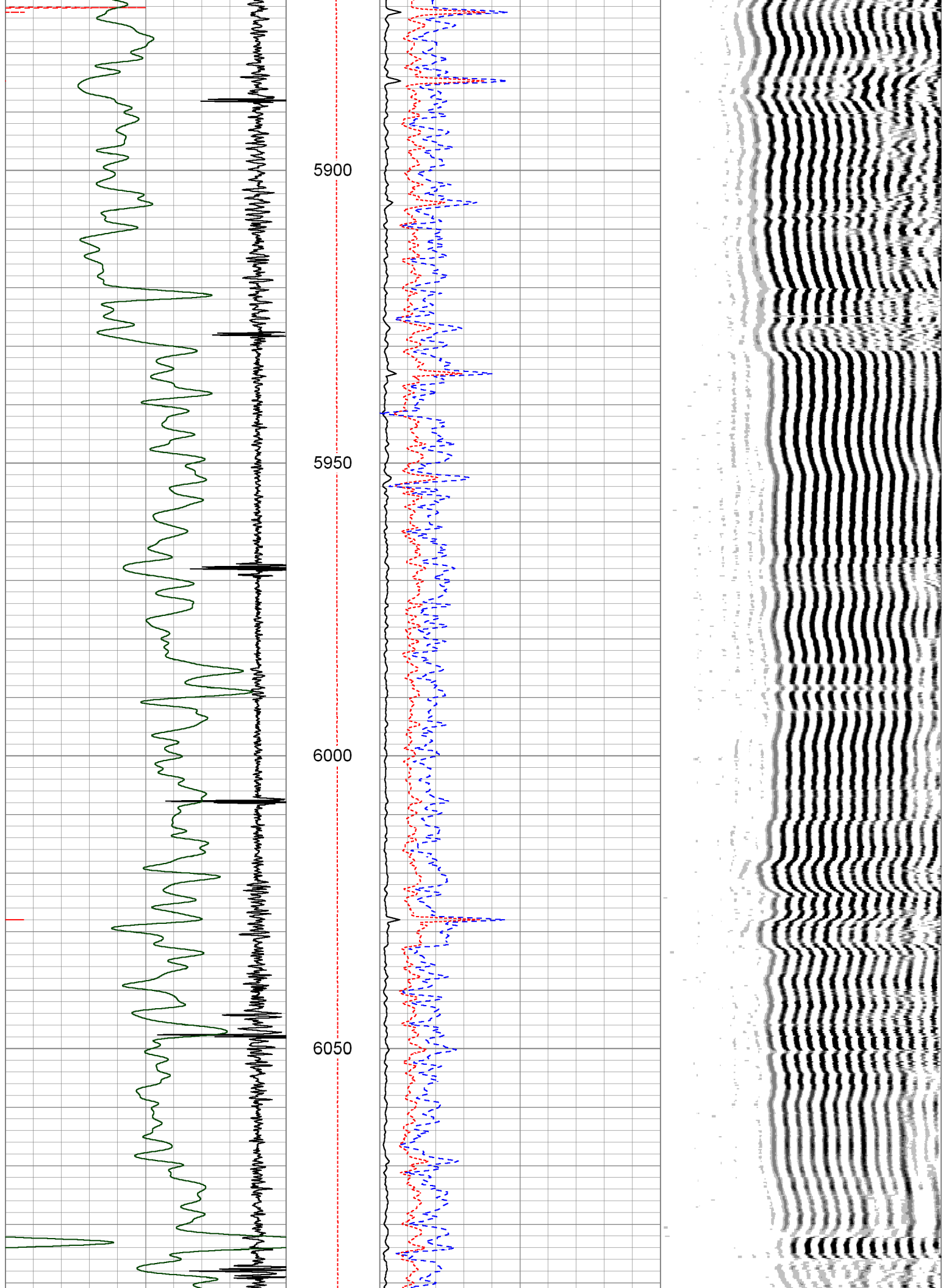
5350

5400

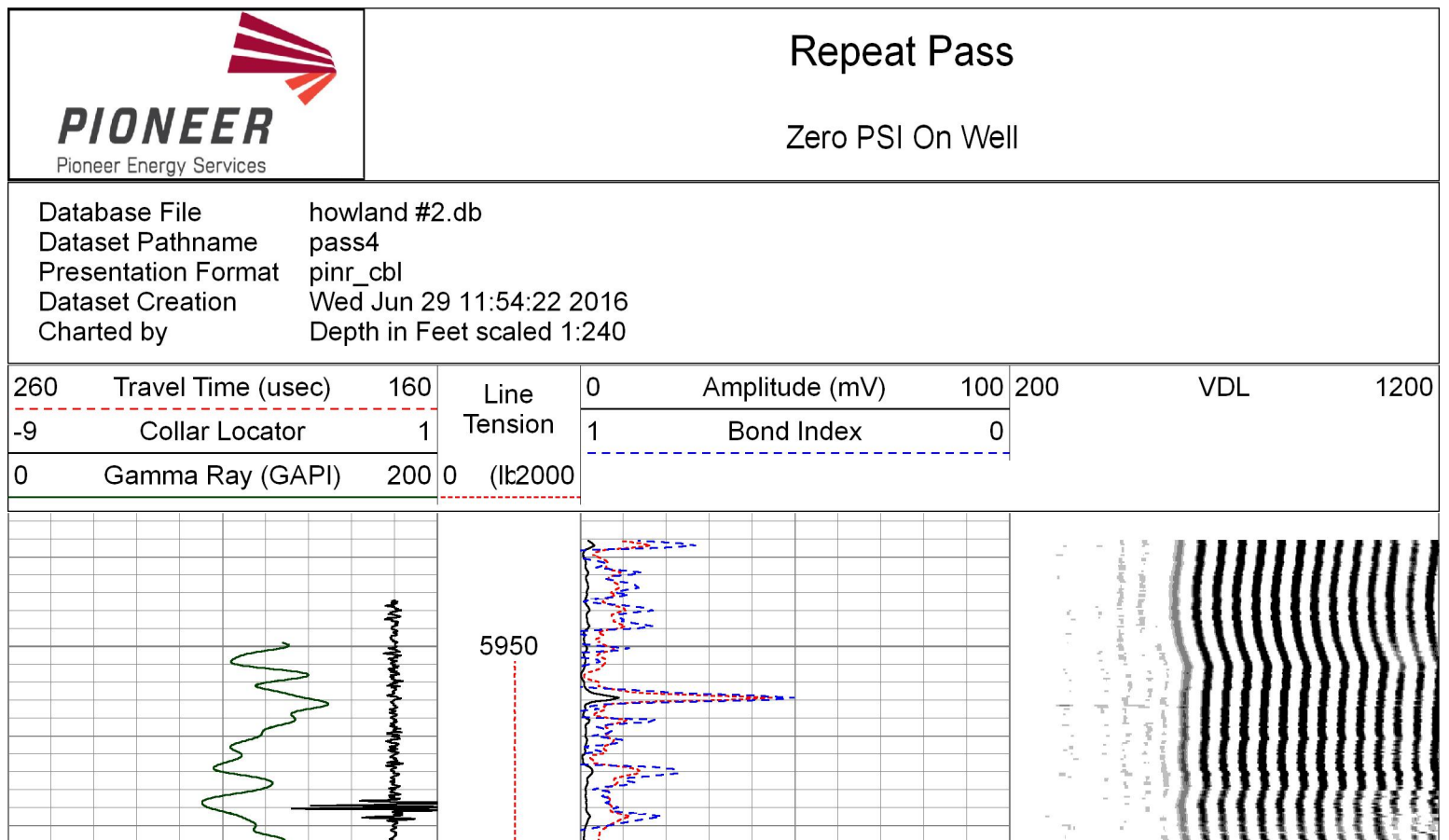
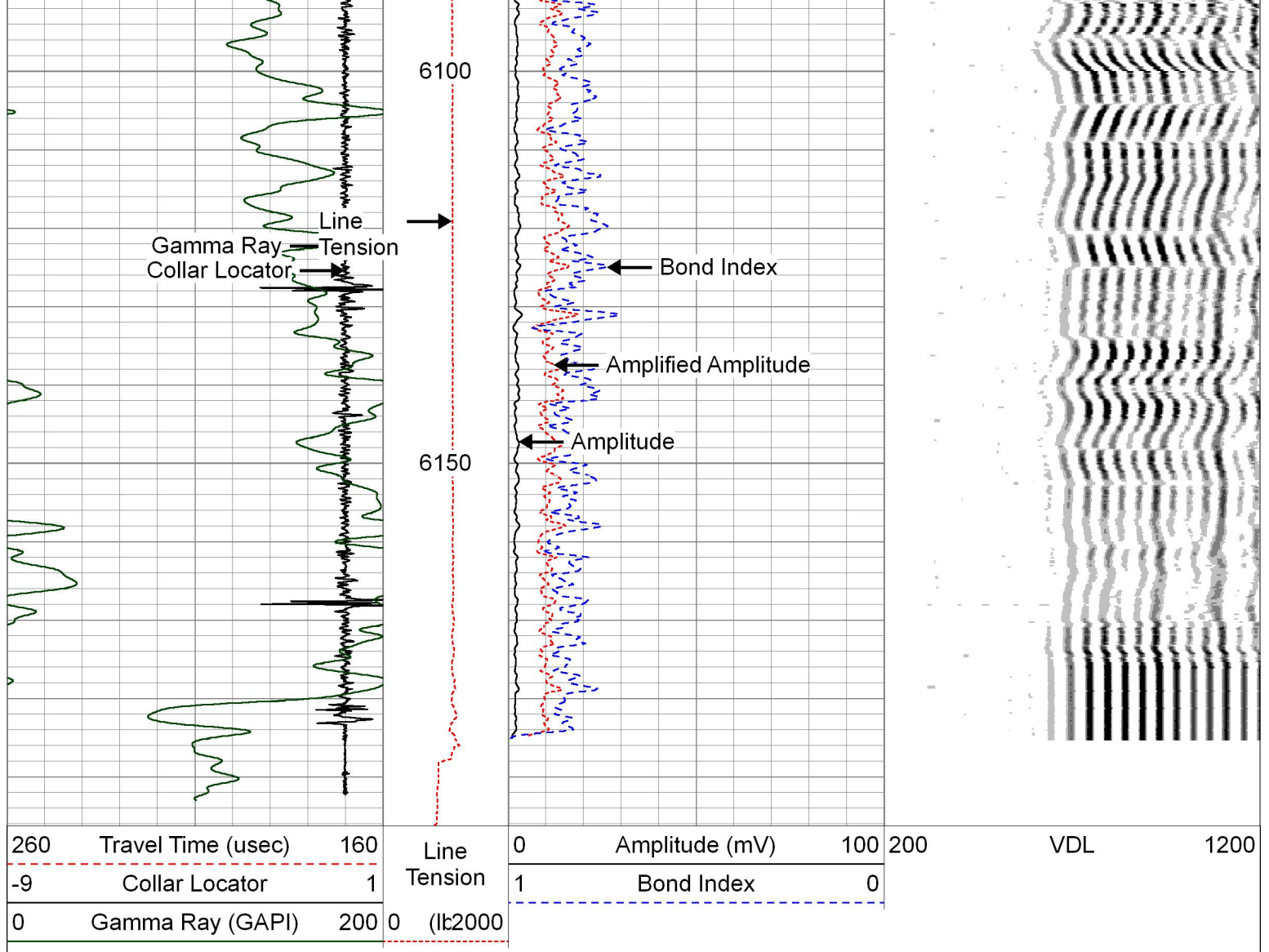


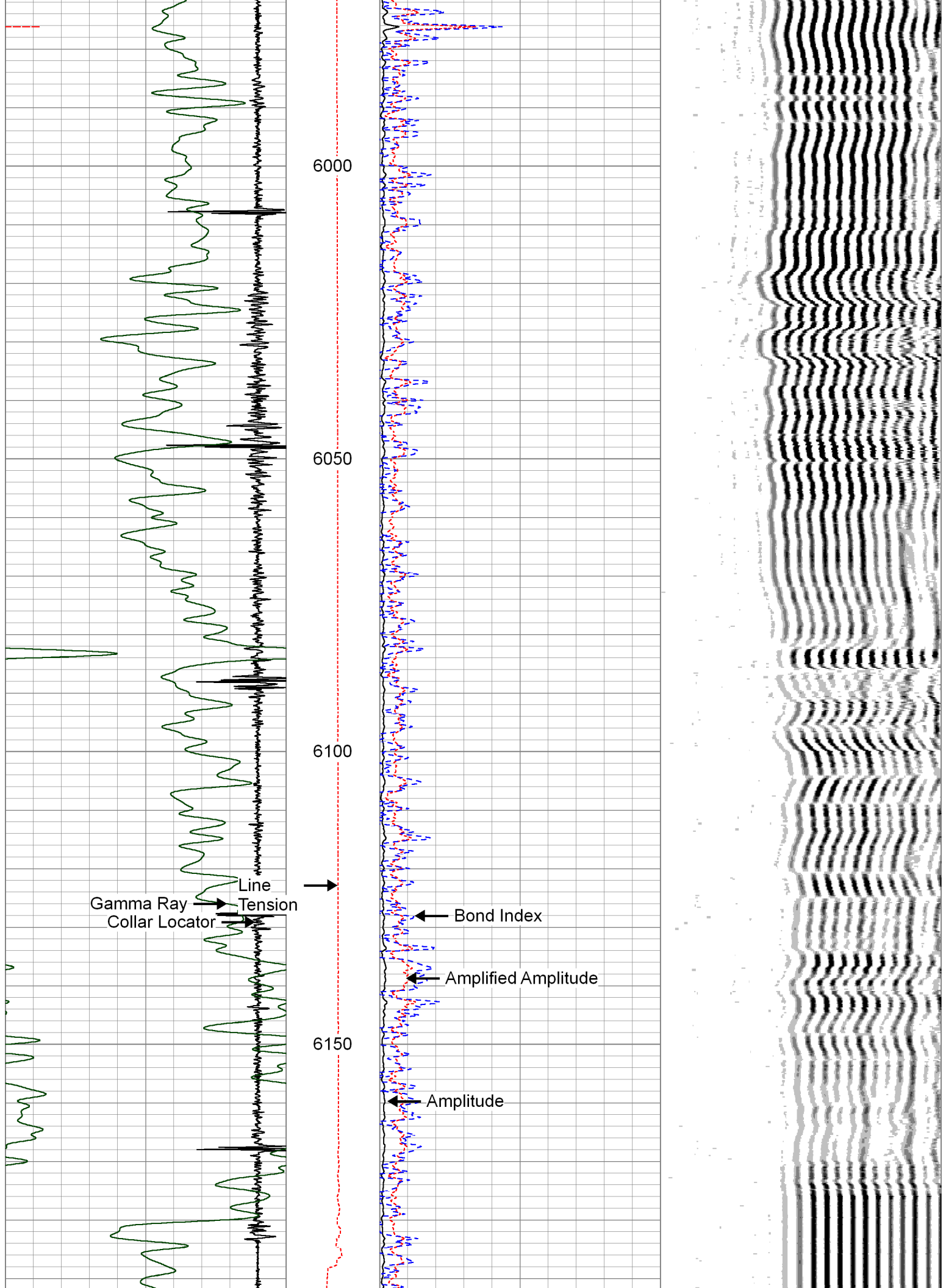


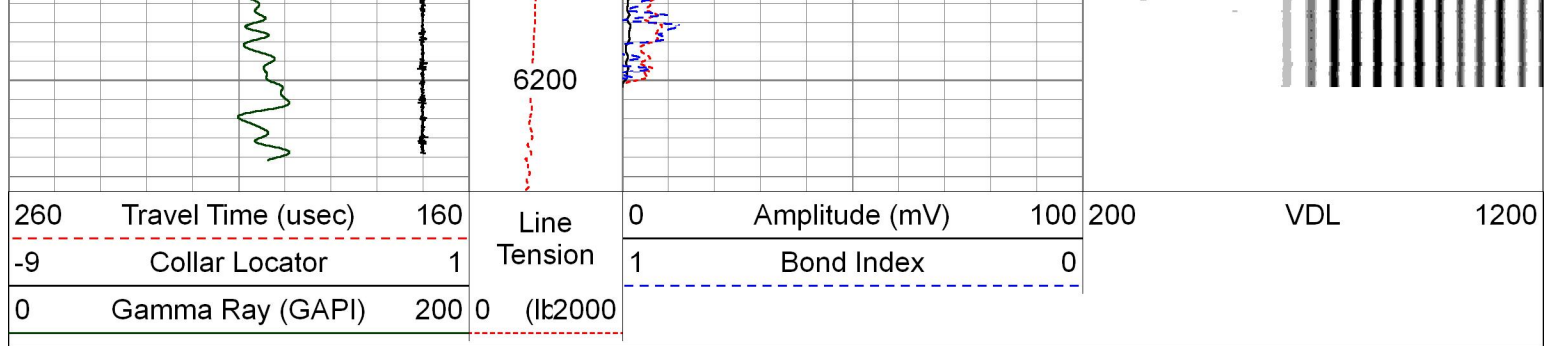












		Company	Renegade Oil and Gas LLC
		Well	Howland #2
		Field	Deer Trail
		County	Adams
		State	Colorado

Calibration Report		
Database File	howland #2.db	
Dataset Pathname	pass5.1	
Dataset Creation	Wed Jun 29 12:51:14 2016	

Gamma Ray Calibration Report		
Serial Number:	FW1212-24	
Tool Model:	275 Probe GR-CCL Corrosion	
Performed:	Tue Jun 28 15:15:41 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.8000	GAPI/cps

Segmented Cement Bond Log Calibration Report		
Serial Number:	1403-68	
Tool Model:	Probe275T	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	3312.450	ft

Master Calibration, performed (Derived):						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.000	0.998	1.000	81.196	80.320	1.027
CAL	0.010	1.669				
5'	0.000	0.760	1.000	81.196	105.491	1.000
SUM						
S1	-0.004	1.026	0.000	100.000	97.133	0.349
S2	0.000	1.060	0.000	100.000	94.307	-0.000
S3	-0.005	1.045	0.000	100.000	95.152	0.519
S4	-0.002	1.054	0.000	100.000	94.725	0.168
S5	-0.002	1.085	0.000	100.000	91.966	0.173
S6	-0.003	1.075	0.000	100.000	92.757	0.278

--