

VDL CCL  
GAMMA RAY  
CEMENT BOND LOG

Company NOBLE ENERGY  
Well HSR-MELCHIOR #13-17  
Field WATTENBERG  
County WELD State CO

Location: API #: 05-123-15510  
SWSW  
LAT/LONG: 40.307046/-104.693728  
SEC 17 TWP 4N RGE 65W  
Permanent Datum GL Elevation 4733'  
Log Measured From KB  
Drilling Measured From KB  
Other Services  
Elevation  
K.B. 4734'  
D.F. 4733'  
G.L. 4733'

Company NOBLE ENERGY  
Well HSR-MELCHIOR #13-17  
Field WATTENBERG  
County WELD  
State CO

Date 2-21-20

Run Number ONE  
Depth Driller 7301'  
Depth Logger 664'  
Bottom Logged Interval 656'  
Top Log Interval SURFACE  
Open Hole Size 12.25"  
Type Fluid WATER  
Density / Viscosity 8.4#  
Max. Recorded Temp. N/A  
Estimated Cement Top SEE LOG  
Time Well Ready 8:00  
Time Logger on Bottom 8:10  
Equipment Number 420  
Location EATON, CO  
Recorded By NAZARETH DIONNE  
Witnessed By SCOTT MAREZ

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	8.625"	24#	SURFACE	345'
Prot. String				
Production String	4.5"	11.6#	SURFACE	7290'
Liner				

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

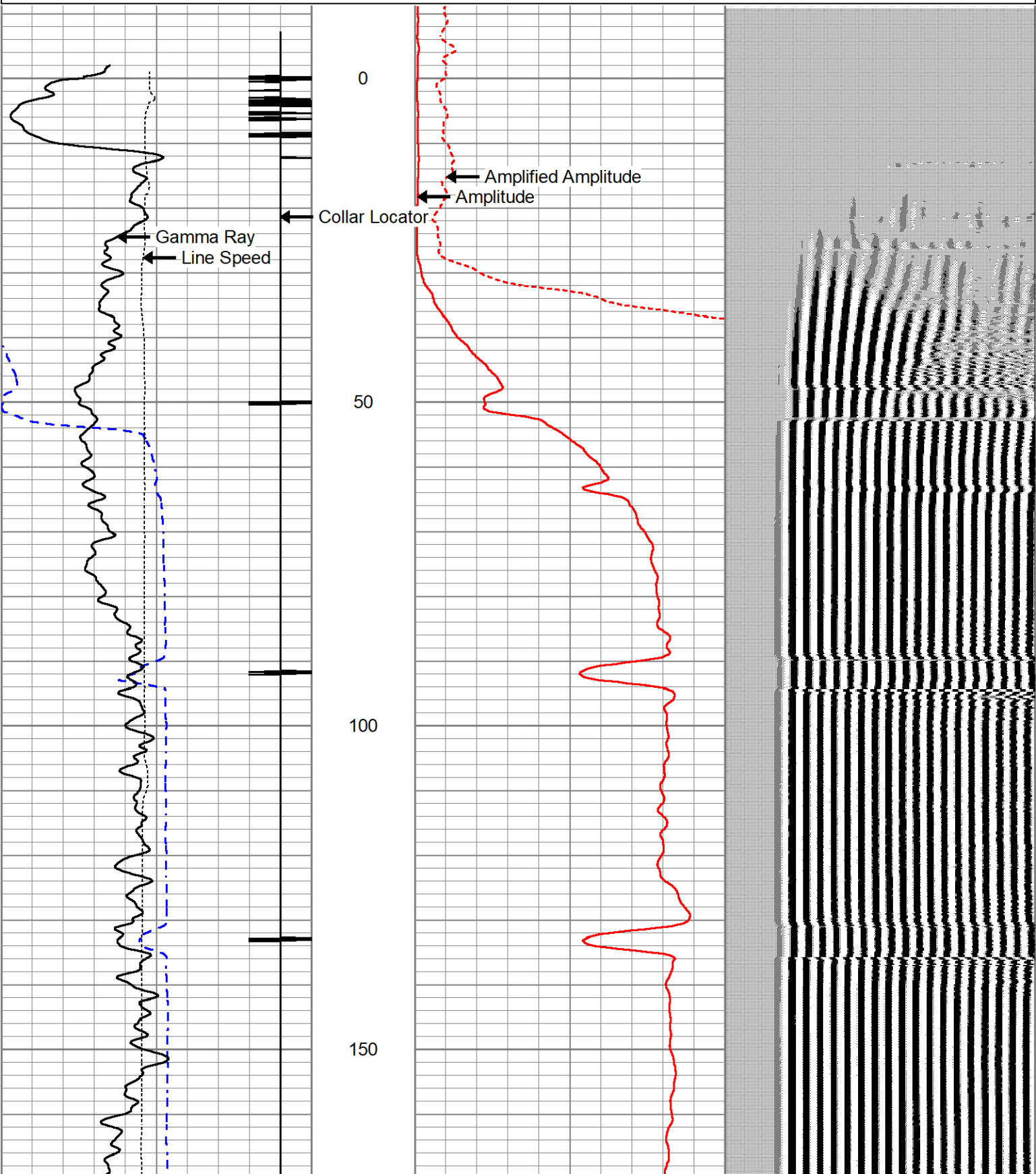
Comments

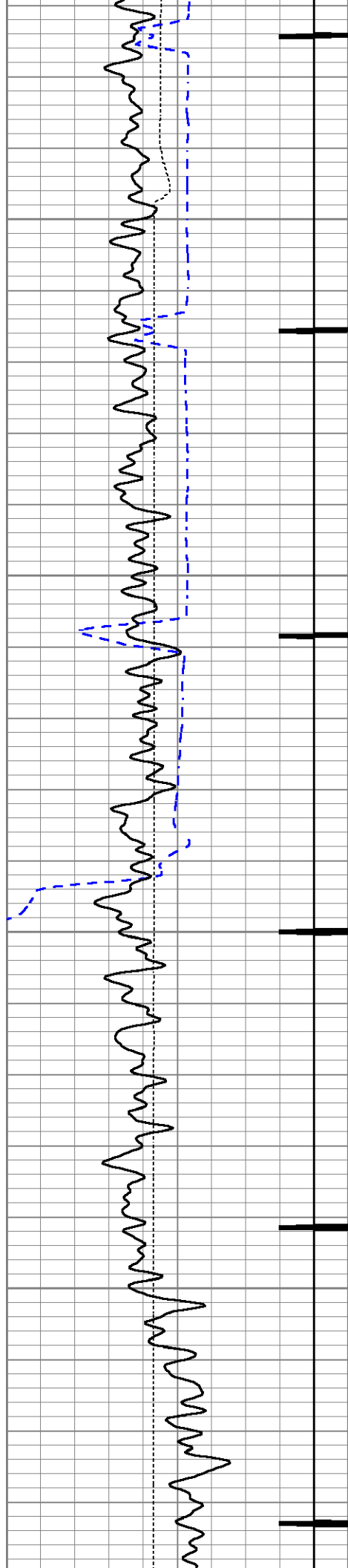
LOG RAN PER CUSTOMER REQUEST  
LOG RAN WITH 0 PSI SURFACE INDUCED PRESSURE  
  
THANK YOU FOR CHOOSING A-PLUS WELL SERVICES



MAIN PASS 0 PSI

300	TT3FT (usec)	200	0	Amplified Amplitude (mV)	10	200	VDL (usec)	1200
-9	Collar Locator	1	0	Amplitude (mV)	100			
0	Gamma Ray (GAPI)	200						
-500	Line Speed (ft/min)	500						



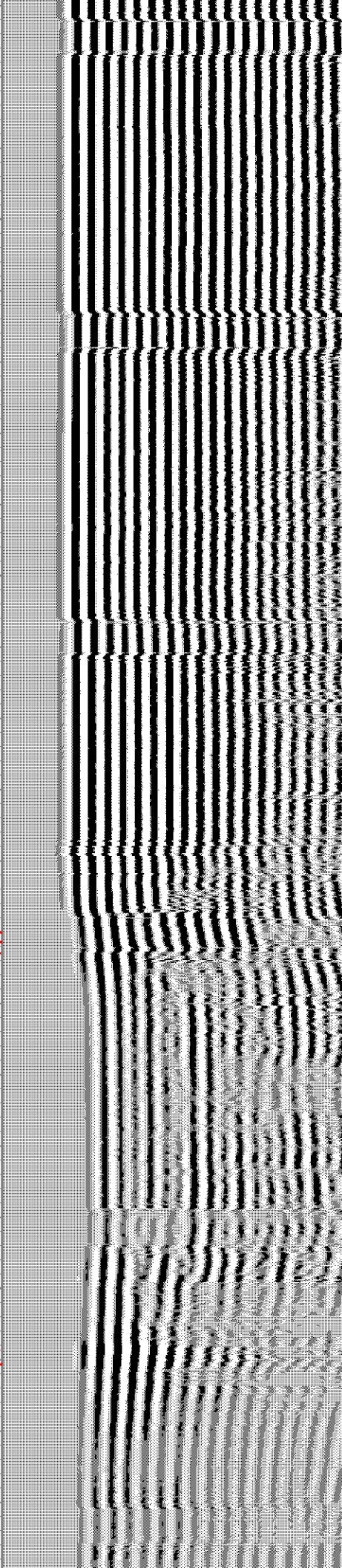
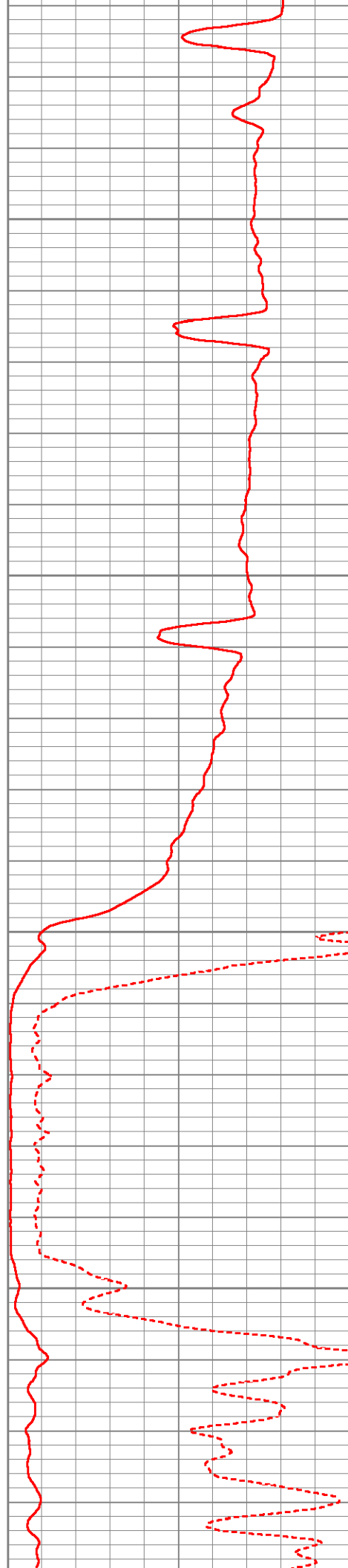


200

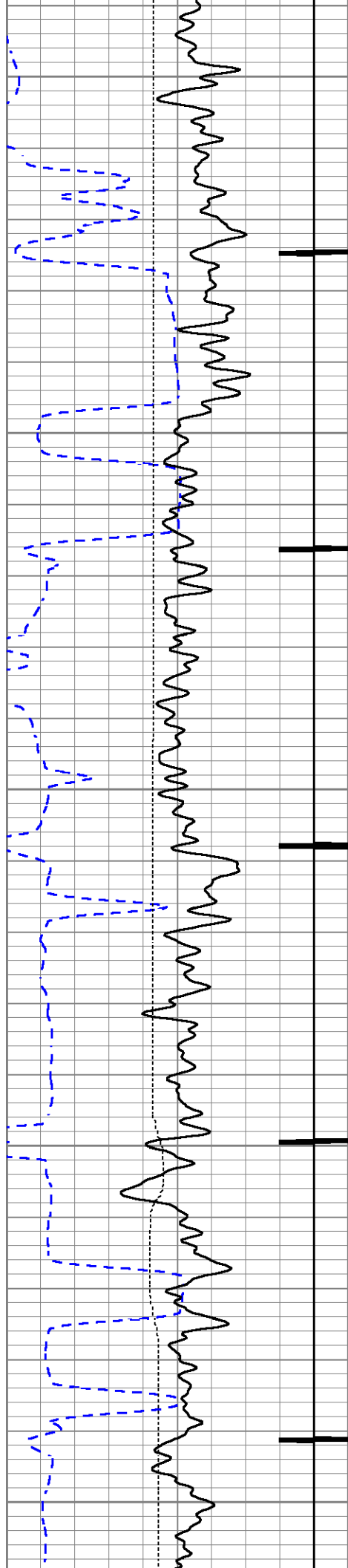
250

300

350







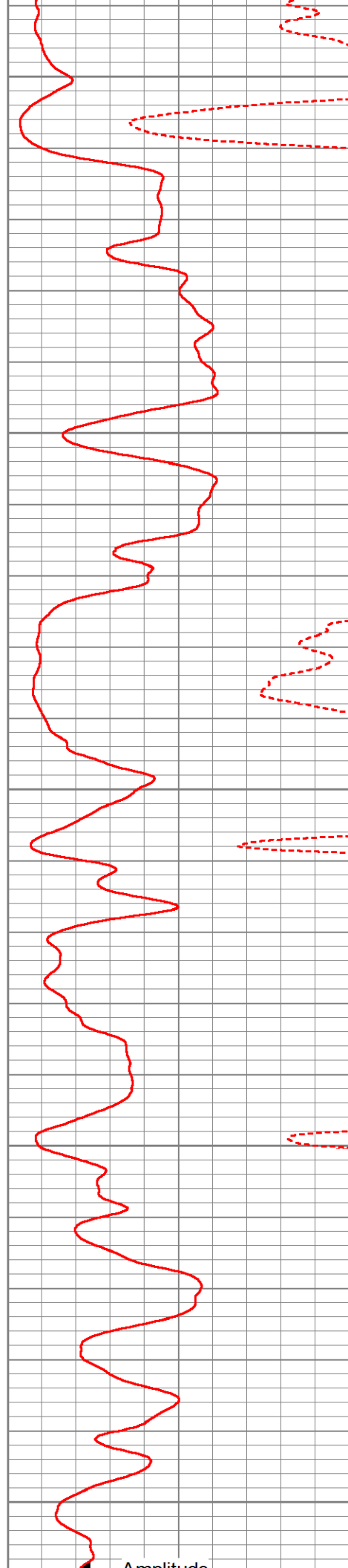
400

450

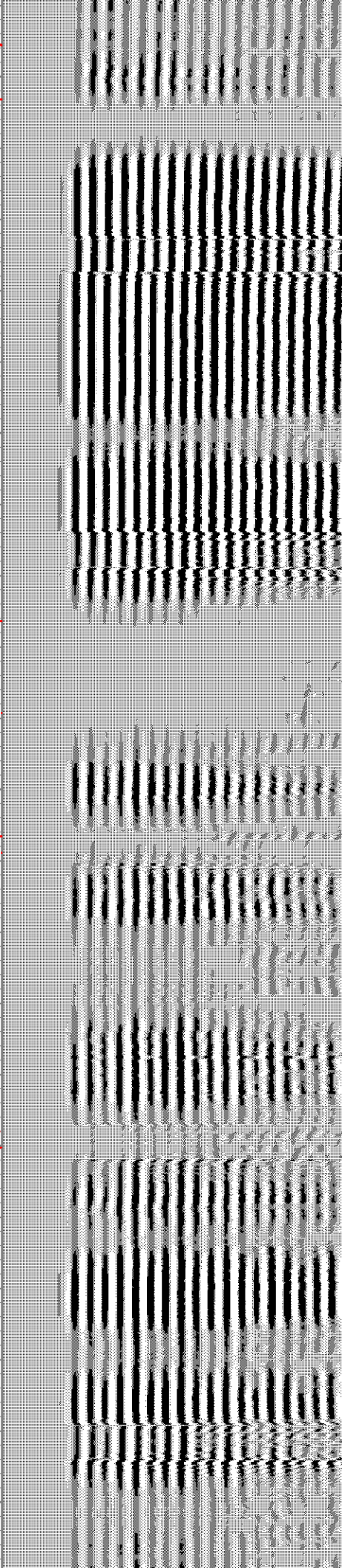
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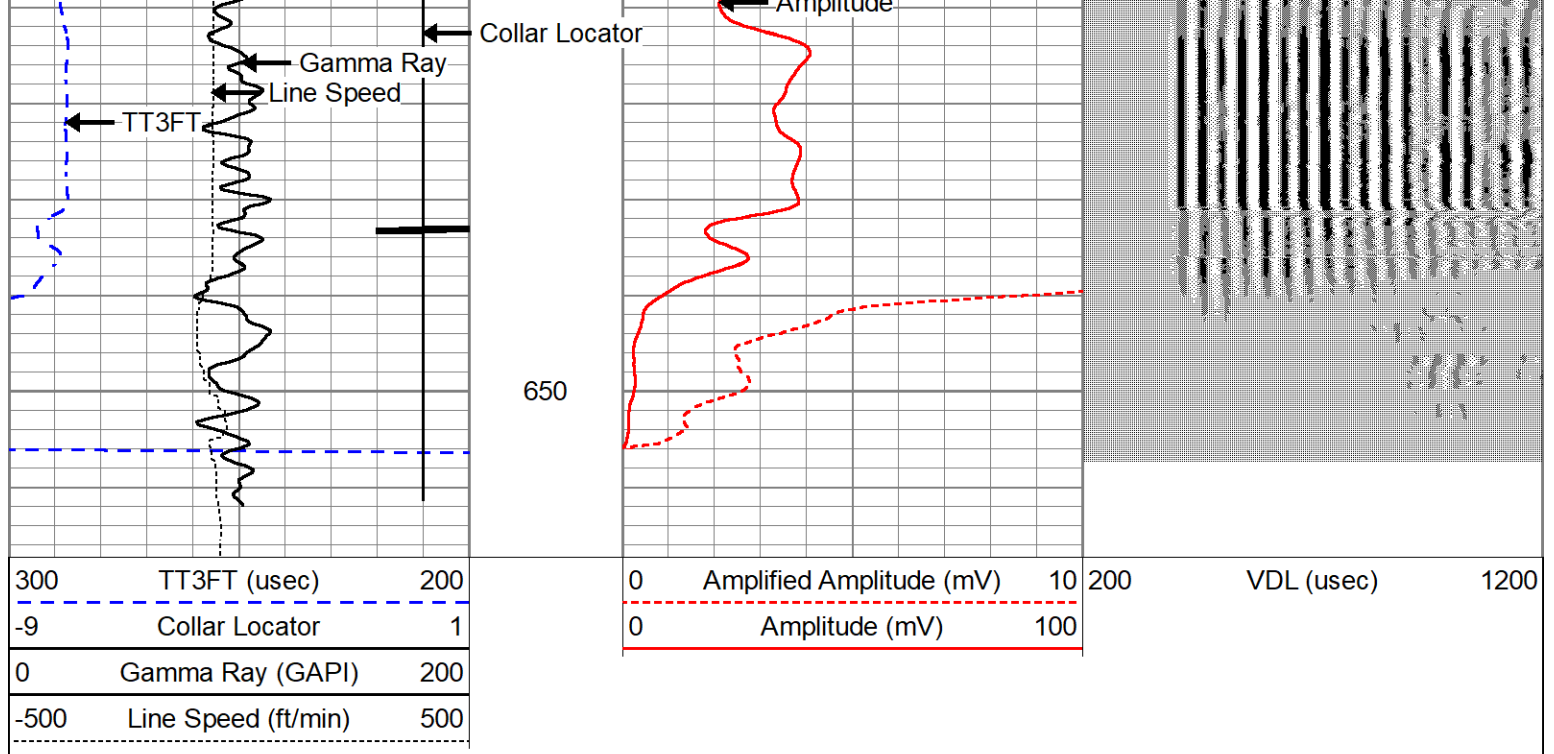
550

600



Amplitude





Calibration Report		
Database File	noble melchior 13-17 2-21-20.db	
Dataset Pathname	pass3	
Dataset Creation	Fri Feb 21 08:05:34 2020	

Gamma Ray Calibration Report		
Serial Number:	275	
Tool Model:	Probe	
Performed:	Thu May 09 10:03:43 2013	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps

Segmented Cement Bond Log Calibration Report		
Serial Number:	275	
Tool Model:	Probe	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	166.142	ft

Master Calibration, performed Fri Feb 21 07:57:39 2020:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.017	0.433	-0.450	81.196	196.194	-3.813
CAL						
5'	0.037	0.280	-0.450	81.196	335.884	-12.939
SUM						
S1						
S2						
S3						
S4						
S5						

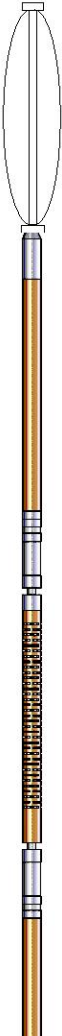
S6  
S7  
S8

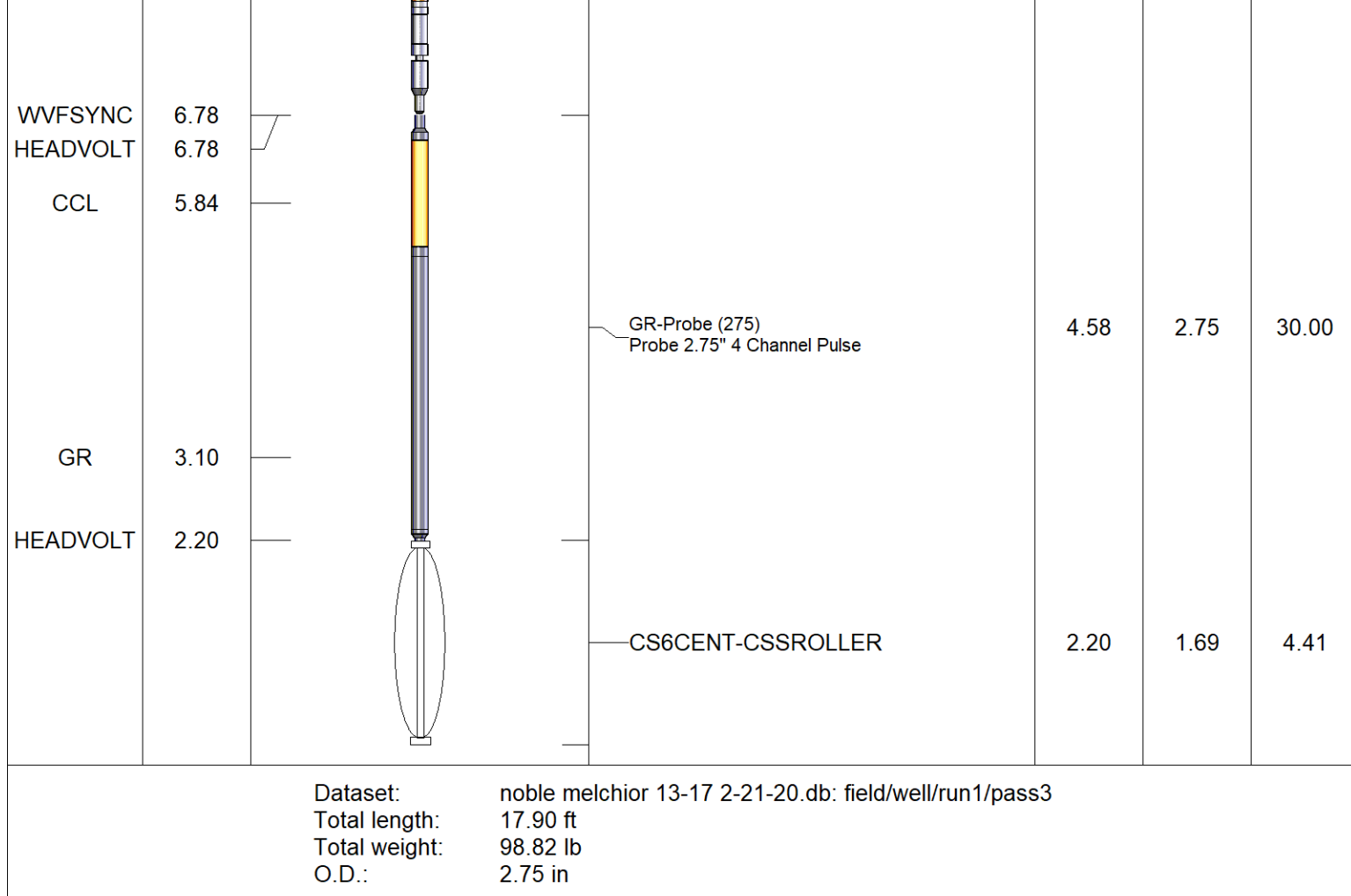
Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL						

Air Zero Calibration, performed Fri Feb 21 07:34:10 2020:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	0.000		0.000		0.000	
SUM						
S1						
S2						
S3						
S4						
S5						
S6						
S7						
S8						

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CS6CENT-CSSROLLER	2.20	1.69	4.41
WVF3FT	10.97		CBL-Probe (275) Probe 2.75" Dual Receiver Bond	8.92	2.75	60.00
WVF5FT	9.97					



Log Variables

DatabaseC:\ProgramData\Warrior\Data\noble melchior 13-17 2-21-20.db

Dataset field/well/run1/pass3/\_vars\_

Top - Bottom

BOREID in 7.875	BOTTEMP degF 100	CASEOD in 4.5	CASETHCK in 0	CASEWGHT lb/ft 11.6	MAXAMPL mV 0	MINAMPL mV 1	MINATTN db/ft 0.8
PERFS  No	PPT usec 0	SRFTEMP degF 0	TDEPTH ft 0				

Variable Description

BOREID : Borehole I.D.

BOTTEMP : Bottom Hole Temperature

CASEOD : Casing O.D.

CASETHCK : Casing Thickness

CASEWGHT : Casing Weight

MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude

MINATTN : Minimum Attenuation

PERFS : Perforation Flag

PPT : Predicted Pipe Time

SRFTEMP : Surface Temperature

TDEPTH : Total Depth