



RADIAL CEMENT BOND
GAMMA RAY
CCL LOG


Company	NOBLE ENERGY	Location:	API # : 05-123-13233	Other Services			
Well	MOSER UPRR 32-3 1	Well	MOSER UPRR 32-3 1				
Field	WATTENBURG	Field	WATTENBURG				
County	WELD	County	WELD				
State	CO	State	CO				
Permanent Datum		GL	Elevation	4,761'			
Log Measured From		K.B. OF 11'	Elevation	K.B. 4,772'			
Drilling Measured From		KELLY BUSHING	Elevation	D.F. 4,771'			
			Elevation	G.L. 4,761'			
Date	11-21-2017						
Run Number	ONE						
Depth Driller	7.218'						
Depth Logger	5.083'						
Bottom Logged Interval	5.075'						
Top Log Interval	3.826'						
Open Hole Size	7 7/8"						
Type Fluid	WATER						
Density / Viscosity	1.0						
Max. Recorded Temp.	145 DEG. F.						
Estimated Cement Top	N/A						
Time Well Ready	ON ARRIVAL						
Time Logger on Bottom	N/A						
Equipment Number	3812						
Location	GREELEY, CO						
Recorded By	CODY FORNENGO						
Witnessed By	R.DENT						
Borehole Record		Tubing Record					
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record	Size		Wgt/Ft		Top		Bottom
Surface String	8 5/8"		24#		SURFACE		494
Prot. String							
Production String	4 1/2"		15.10#		SURFACE		7,208'
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.

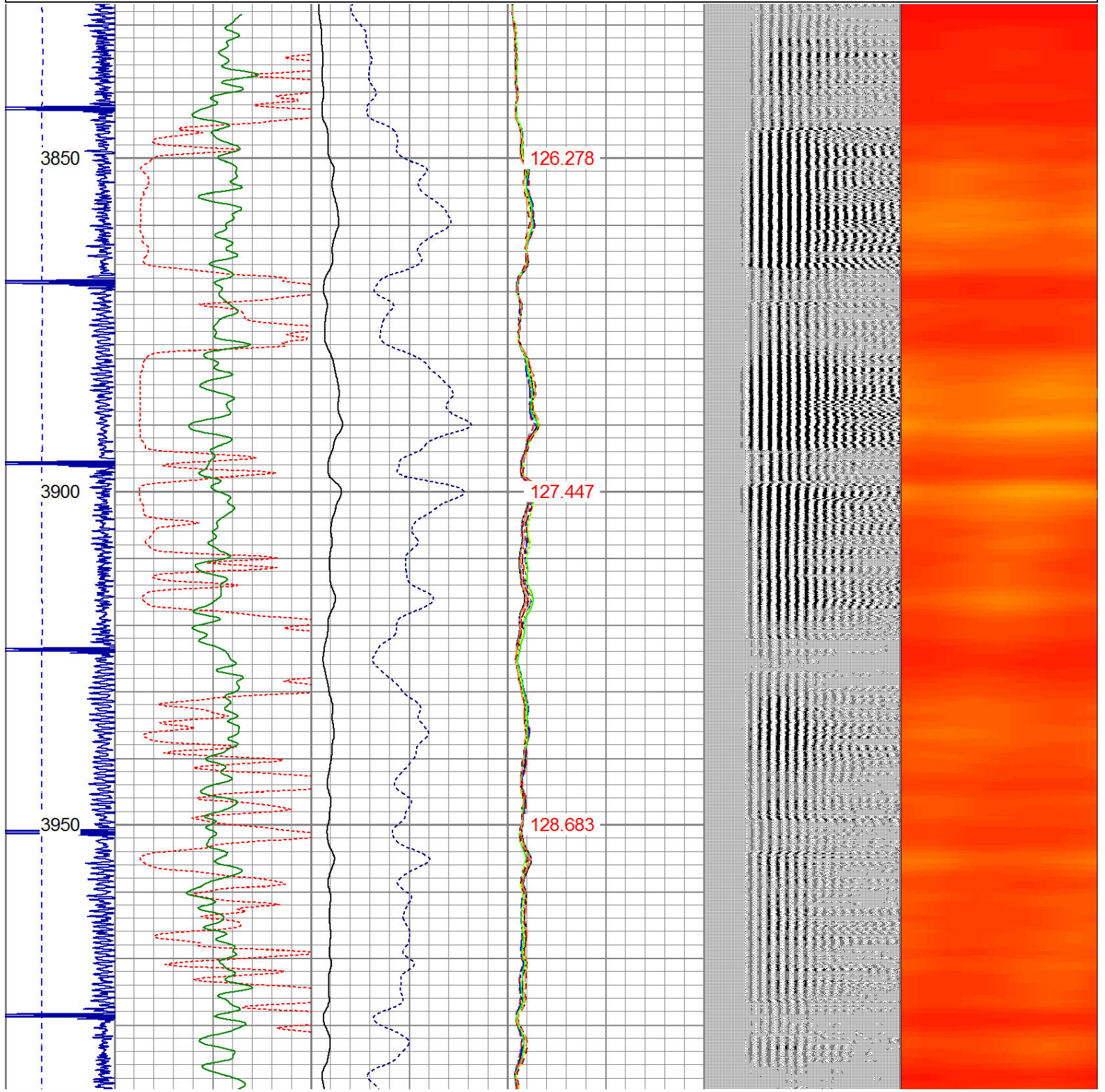
Comments

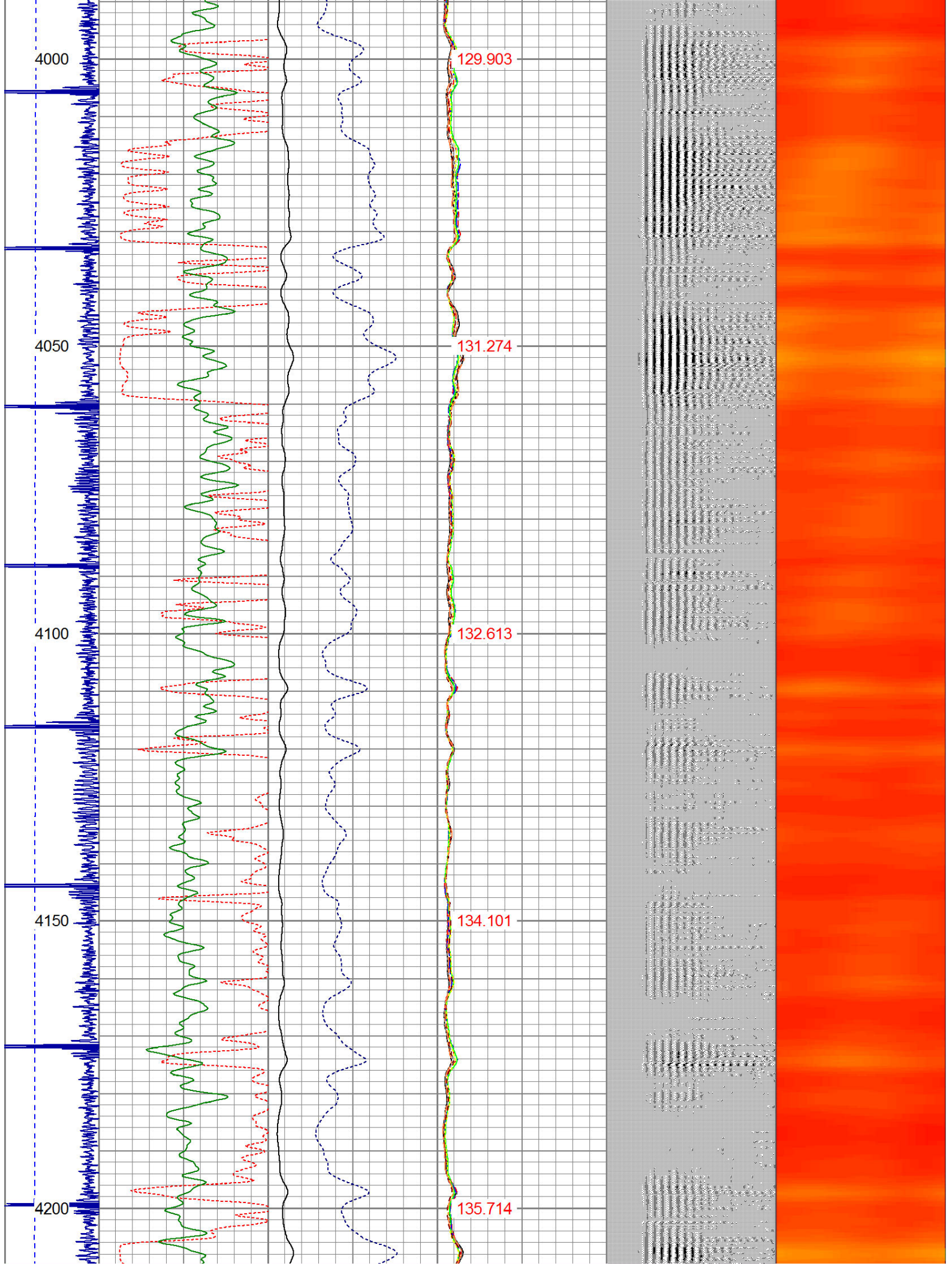
RAN CBL TO VERIFY CEMENT COVERAGE
RAN CBL OFF 11' KB
SUSSEX PERFORATIONS OPEN FLUID BECAME INCREASING GASSEY FROM 4,420' ON UP

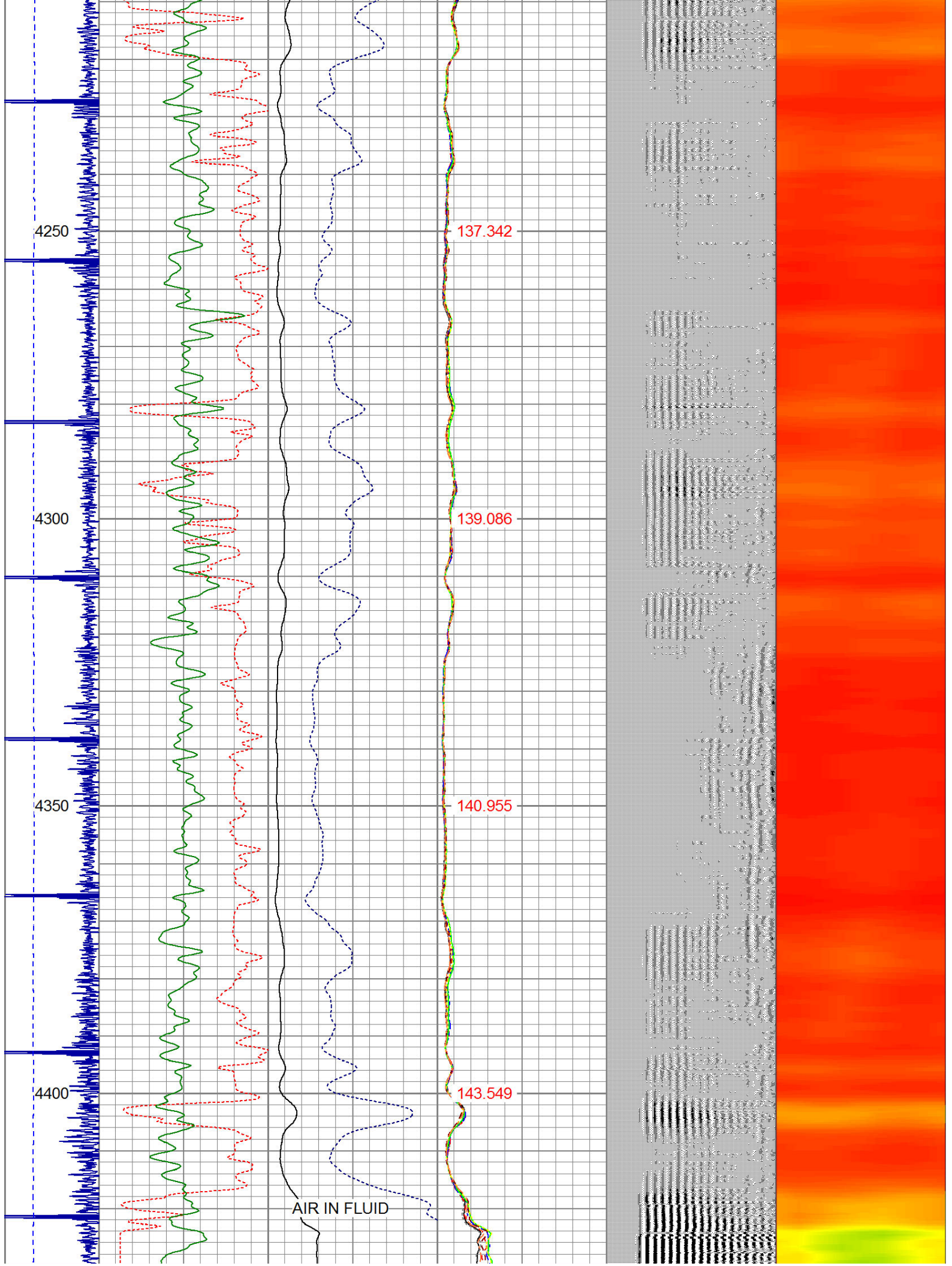
Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
HEAD/COIL	15.13		1_4	1.00	1.36	5.00

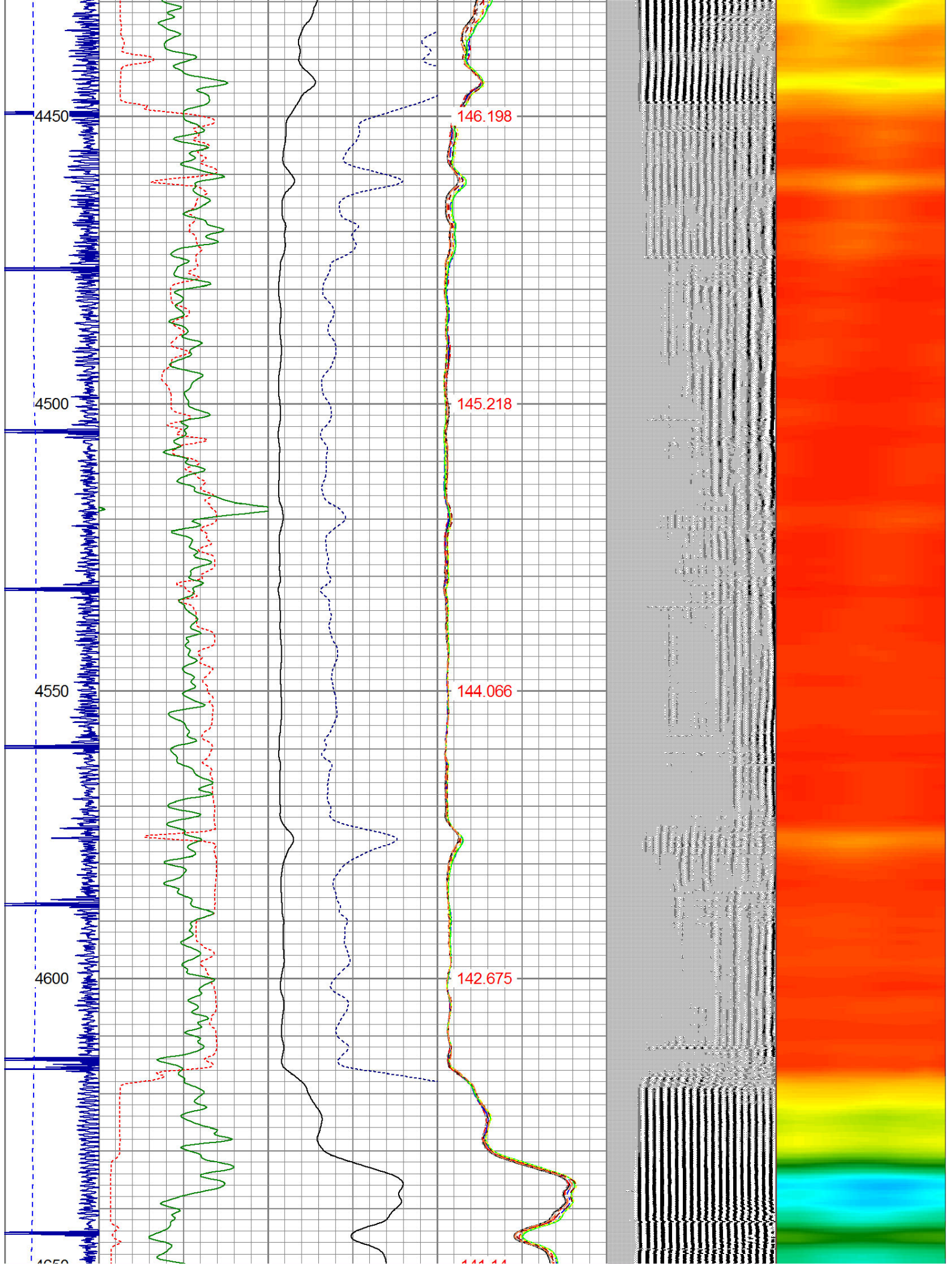
HEADVOLT	16.15					
IntTemp	14.71					
WVF3FT	11.46					
WVFCAL	11.46					
WVFS1	11.46					
WVFS2	11.46					
WVFS3	11.46					
WVFS4	11.46					
WVFS5	11.46					
WVFS6	11.46					
WVFS7	11.46					
WVFS8	11.46					
WVF5FT	10.46					
CNLSC	6.00					
CNSSC	5.17					
CCL	3.64					
GR	0.90					
<div> <div> Dataset: Total Length: Total Weight: O.D. </div> <div> moser uprr 32-3 1.db: field/well/run1/pass10 17.13 ft 165.00 lb 2.75 in </div> </div>						

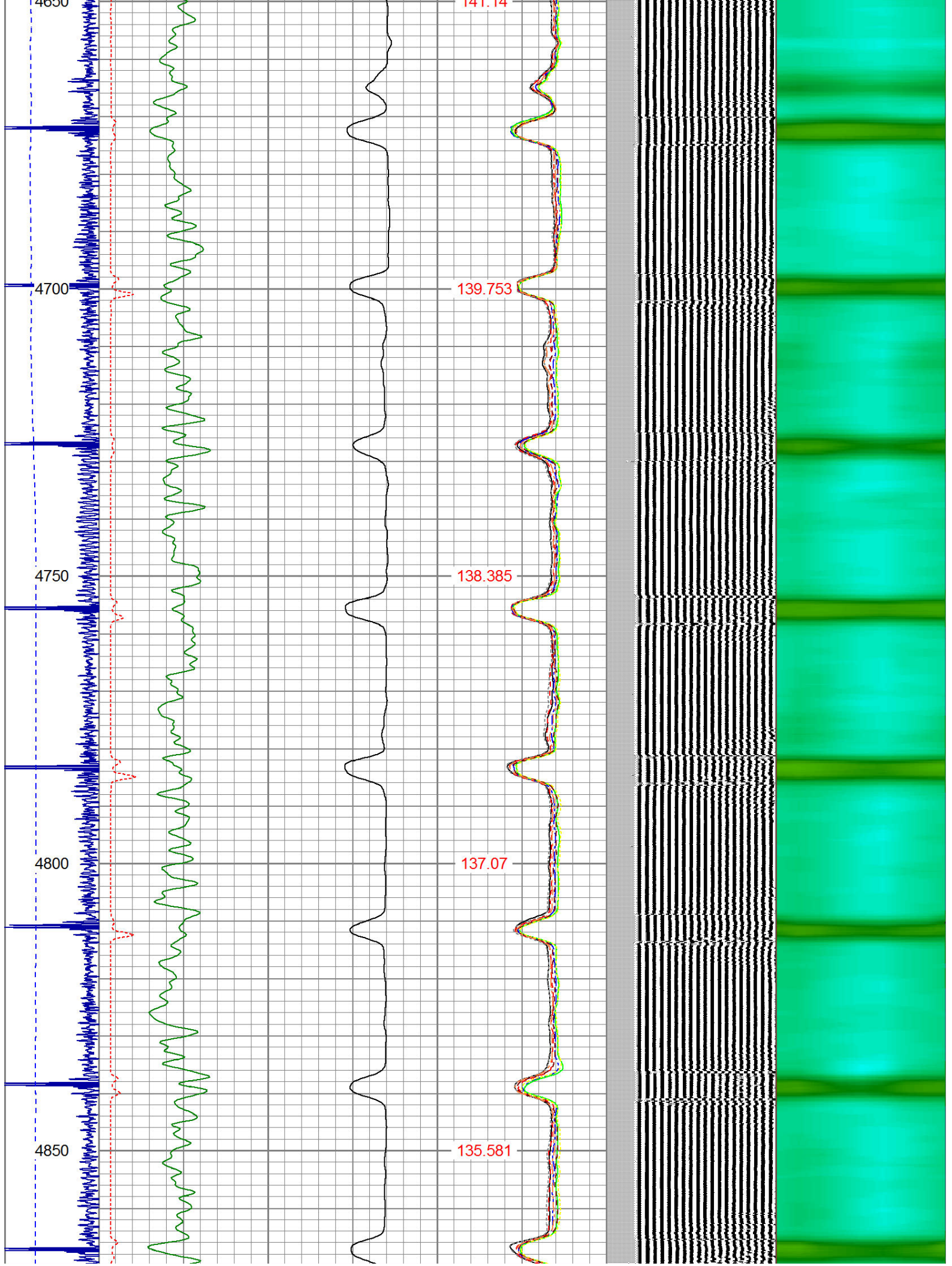
-9	CCL	1	200	TT (usec)	1100	0	AMP (mV)	100	0	AMPS1	100	200	VDL	1200	1	Cement Map	8
LSPD (ft/min)	0	250	0	GR (GAPI)	200	0	AMPx5 (mV)	20	0	AMPS2	100		1	100			
			200	GR (GAPI)	400				0	AMPS3	100						
									0	AMPS4	100						
									0	AMPS5	100						
									0	AMPS6	100						
									0	AMPS7	100						
									0	AMPS8	100						
									IntTemp (degF)								

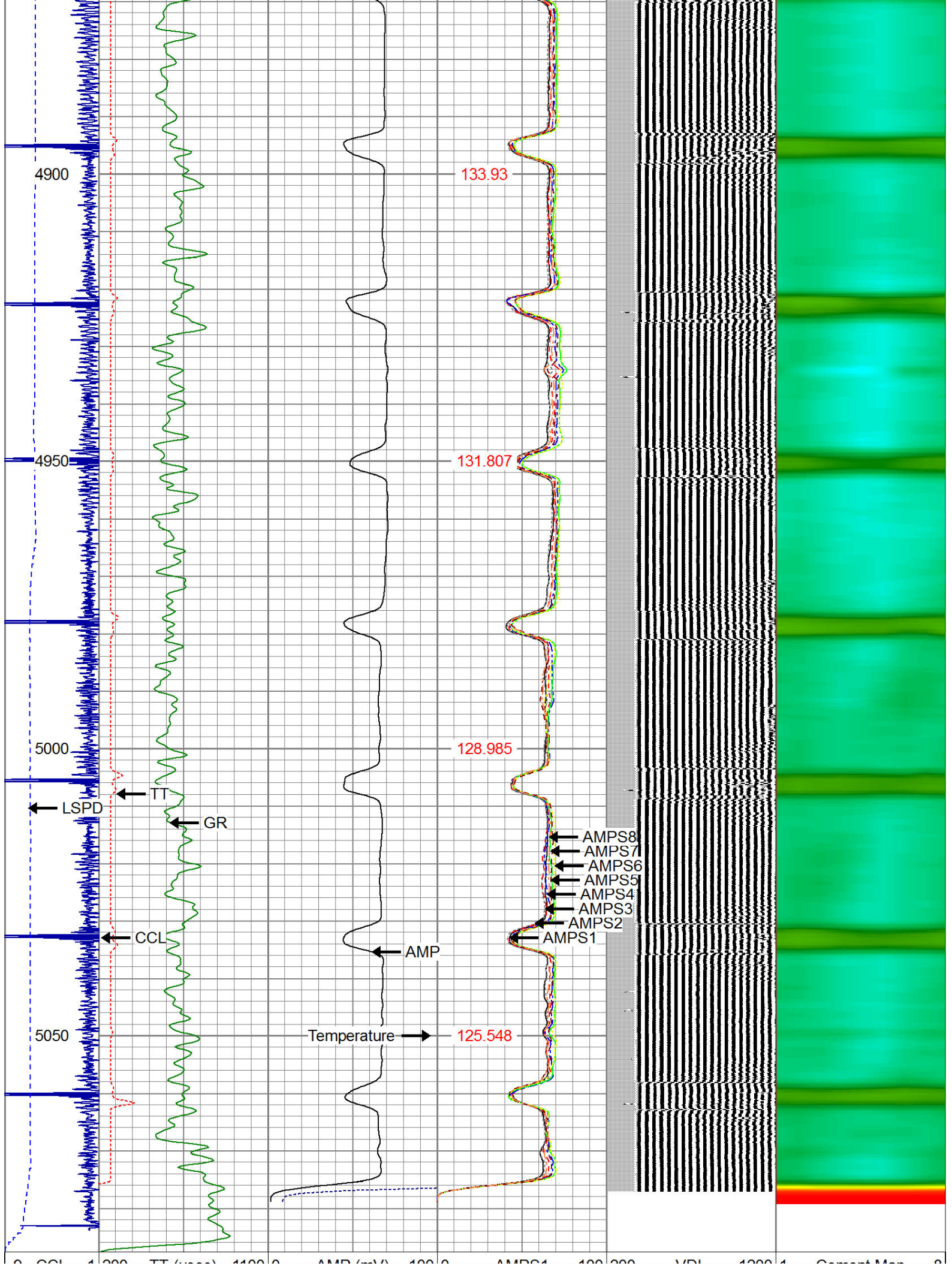












9	CCL	1	200	11	(usec)	1100	0	AMP	(mV)	100	0	AMPS1	100	200	VDL	1200	1	Cement Map	8
LSPD	0	GR (GAPI)	200	0	AMPx5 (mV)	20	0	AMPS2	100								1		100
(ft/min)	200	GR (GAPI)	400				0	AMPS3	100										
0	250						0	AMPS4	100										
							0	AMPS5	100										
							0	AMPS6	100										
							0	AMPS7	100										
							0	AMPS8	100										
							IntTemp												
							(degF)												

Calibration Report						
Database File:		moser uprr 32-3 1.db				
Dataset Pathname:		pass10				
Dataset Creation:		Tue Nov 21 16:28:00 2017 by Log SCH 120126				
Gamma Ray Calibration Report						
Serial Number:		275				
Tool Model:		Probe				
Performed:		Tue Sep 23 07:13:12 2014				
Calibrator Value:		100.0		GAPI		
Background Reading:		35.0		cps		
Calibrator Reading:		160.0		cps		
Sensitivity:		1.0000		GAPI/cps		
Compensated Neutron Calibration Report						
Serial Number:		275				
Tool Model:		Probe_B				
CALIBRATION		Wed Jul 30 08:47:19 2008				
Detector		Readings		Target		Normalization
Short Space		5001.20	cps	0.00	cps	1.0000
Long Space		1029.31	cps	0.00	cps	1.0000
PRE-SURVEY VERIFICATION						
Detector		Readings		Measured		Target
1)	Short Space	cps				
	Long Space	cps		pu		pu
2)	Short Space	cps				
	Long Space	cps		pu		
3)	Short Space	cps				
	Long Space	cps		pu		
POST-SURVEY VERIFICATION						
Detector		Readings		Measured		Target
1)	Short Space	cps				
	Long Space	cps		pu		pu
2)	Short Space	cps				
	Long Space	cps		pu		pu

3) Short Space
Long Space

cps
cps

pu

pu

Segmented Cement Bond Log Calibration Report

Serial Number:
Tool Model:

Base
Probe

Calibration Casing Diameter:
Calibration Depth:

4.500
25.173

in
ft

Master Calibration, performed Tue Nov 21 16:04:34 2017:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.004	1.491	2.000	81.196	53.259	1.764
CAL	0.004	1.482				
5'	0.004	1.507	2.000	81.196	52.667	1.803
SUM						
S1	0.004	1.476	0.500	81.196	54.823	0.284
S2	0.005	1.456	0.500	81.196	55.614	0.241
S3	0.004	1.446	0.500	81.196	55.968	0.269
S4	0.004	1.481	0.500	81.196	54.650	0.272
S5	0.004	1.499	0.500	81.196	53.972	0.291
S6	0.004	1.523	0.500	81.196	53.105	0.291
S7	0.004	1.549	0.500	81.196	52.220	0.288
S8	0.004	1.514	0.500	81.196	53.417	0.298

Internal Reference Calibration, performed Tue Jun 05 07:53:42 2012:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.004	1.482	1.000	0.000

Air Zero Calibration, performed Tue Nov 21 16:02:21 2017:

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



Company NOBLE ENERGY
Well MOSER UPRR 32-3 1
Field WATTENBURG
County WELD
State CO

