810 Quail Street
Suite E
Lakewood, Colorado
80215
Office: 303.279.0171
FAX: 303.278.0135
www.colog.com

Full-Waveform Sonic

COMPANY	Excelsior Mining
WELL	NSH-022
FIELD	Gunnison
COUNTY	Cochise
STATE	AZ

Company Excelsior Mining
Well NSH-022
Field Gunnison
County Cochise
State AZ

LOCATION
NSH-022

QTR **SEC** **TWP** **RGE**

OTHER SERVICES
Acoustic Televiewer
Caliper
T-Fl. Res
Electric Resistivity

PERMANENT DATUM GROUND LEVEL **ELEVATION** NA

LOG MEAS. FROM GROUND LEVEL 0.0' **ABOVE PERMINANT DATUM**

DRILLING MEAS. FROM GROUND LEVEL

DATE ACQUIRED	15 January 2015			
RUN NUMBER	2			
LOG TYPE	Sonic			
DEPTH-DRILLER	1170'			
DEPTH-LOGGER	1149'			
BTM LOG INTERVAL	1147.0'			
TOP LOG INTERVAL	1.0'			
RECORDED BY	C. ONeil			
WITNESSED BY	C. Price			
PROBE TYPE, S/N	TRSS, 9209			
LOGGING SPEED	12 ft/min			
A.S.D.E.	0.17'			
SAMPLE INTERVAL	0.1'			

BOREHOLE RECORD				**CASING RECORD**			
RUN No.	**BIT**	**FROM**	**TO**	**SIZE**	**WGT.**	**FROM**	**TO**
ONE	11 5/8"	650'	TD	14"	STEEL	GS	20'
	12"	20'	650'				

NA - Not Available, N/A - Not Applicable

COMMENTS

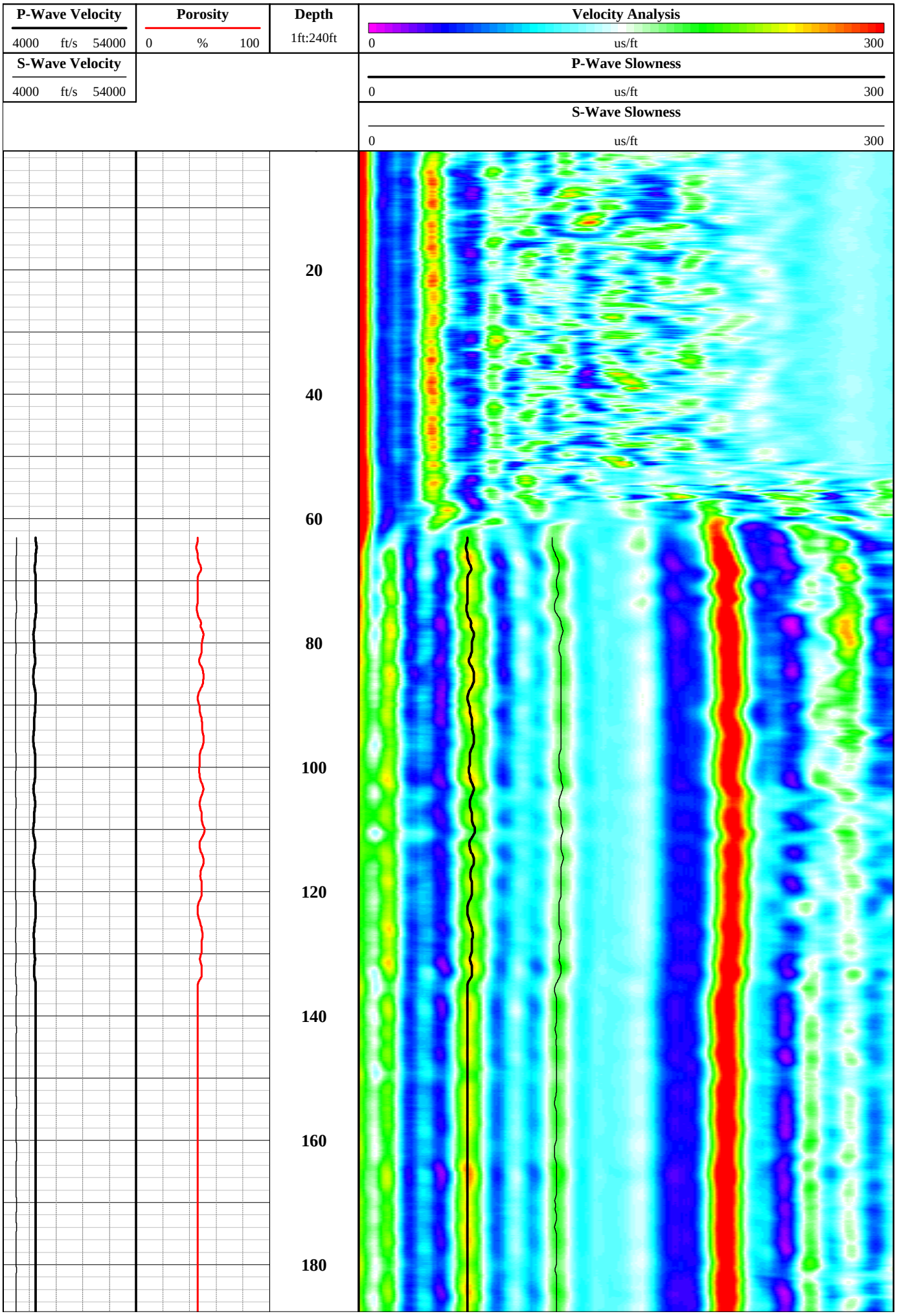
Water-level = started at 17' at 6:30 am gradually dropping to 237' by 9:00 pm.

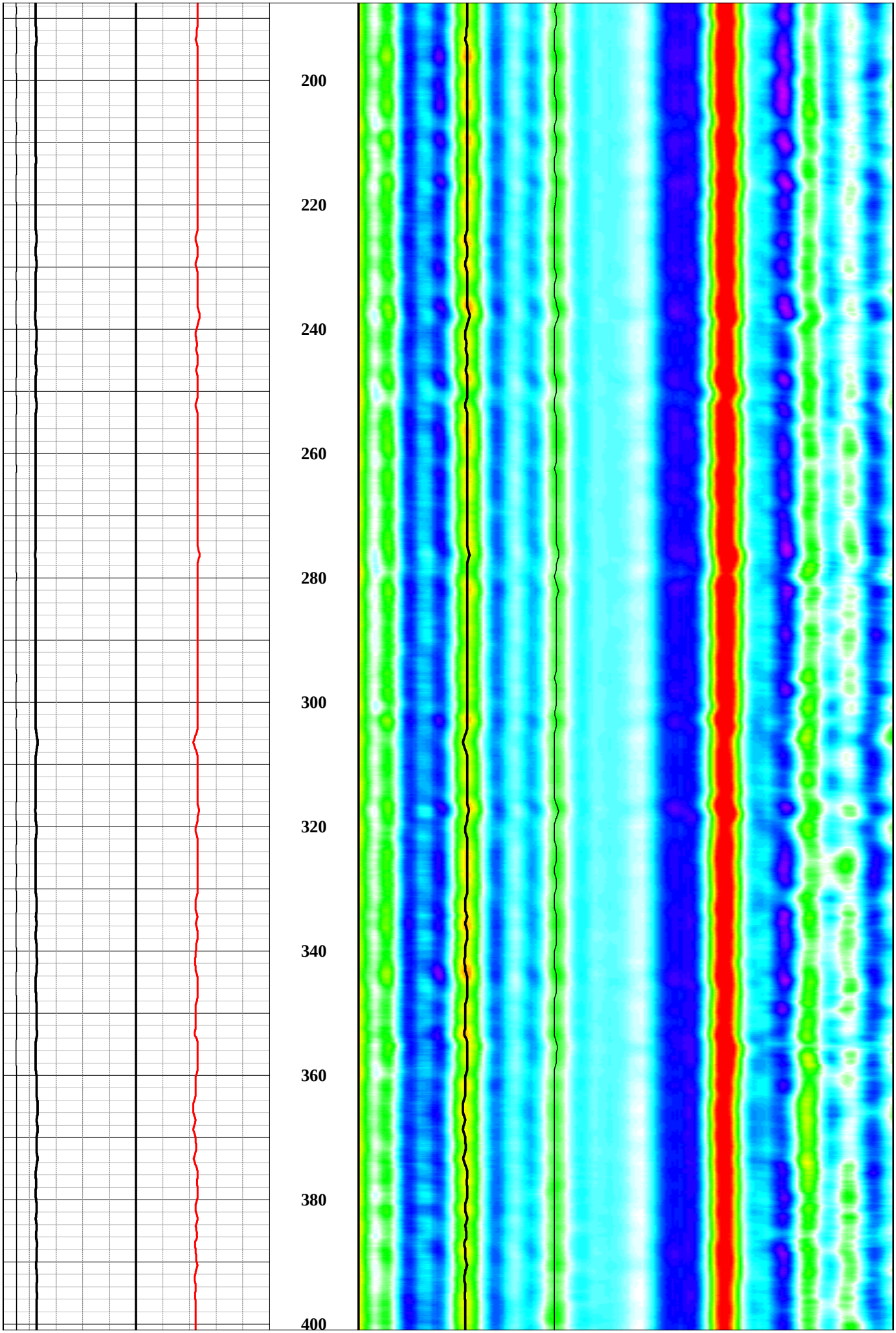
Porosity Calculation

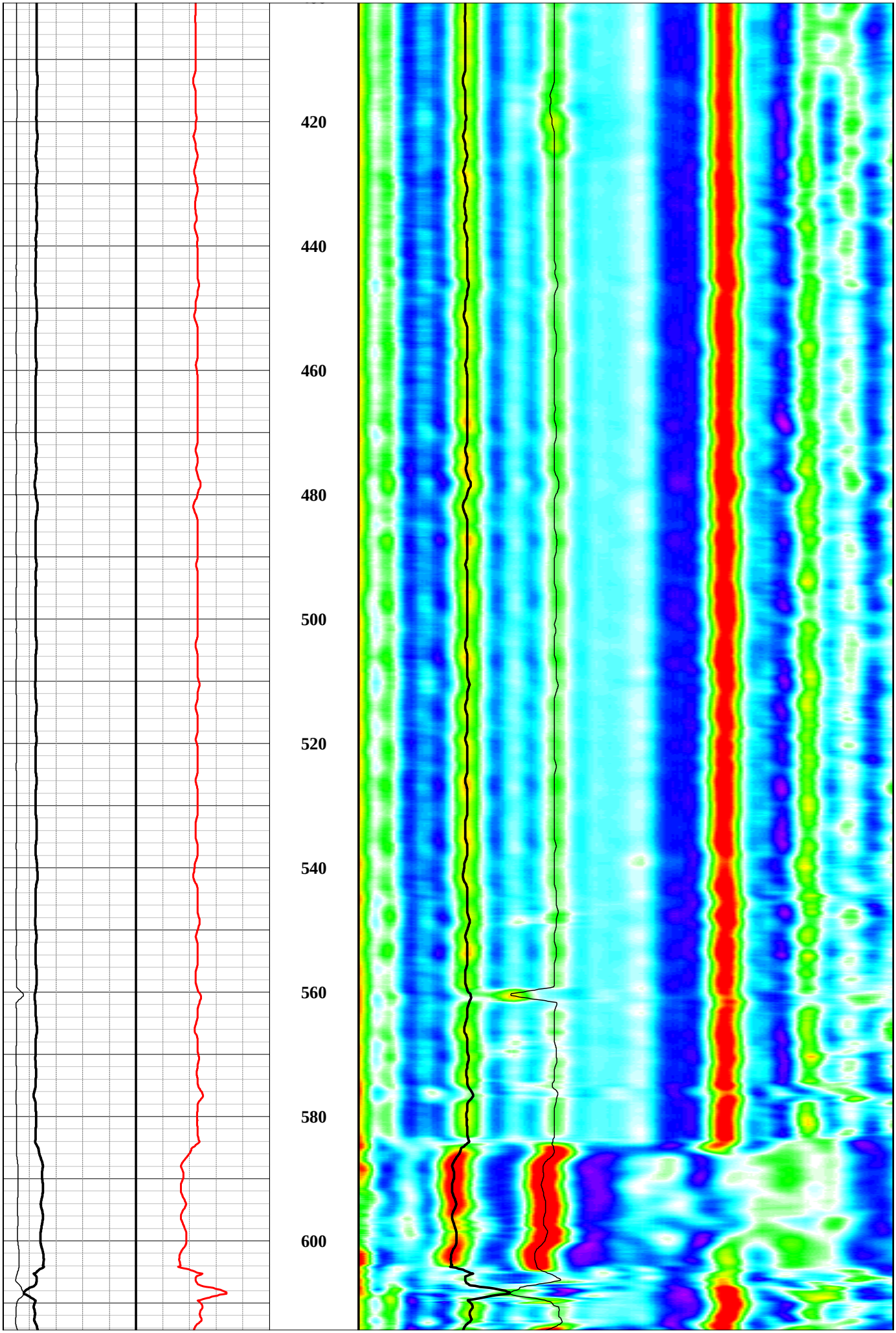
Porosity = (delta t log - delta t matrix) / (delta t fluid - delta t matrix)

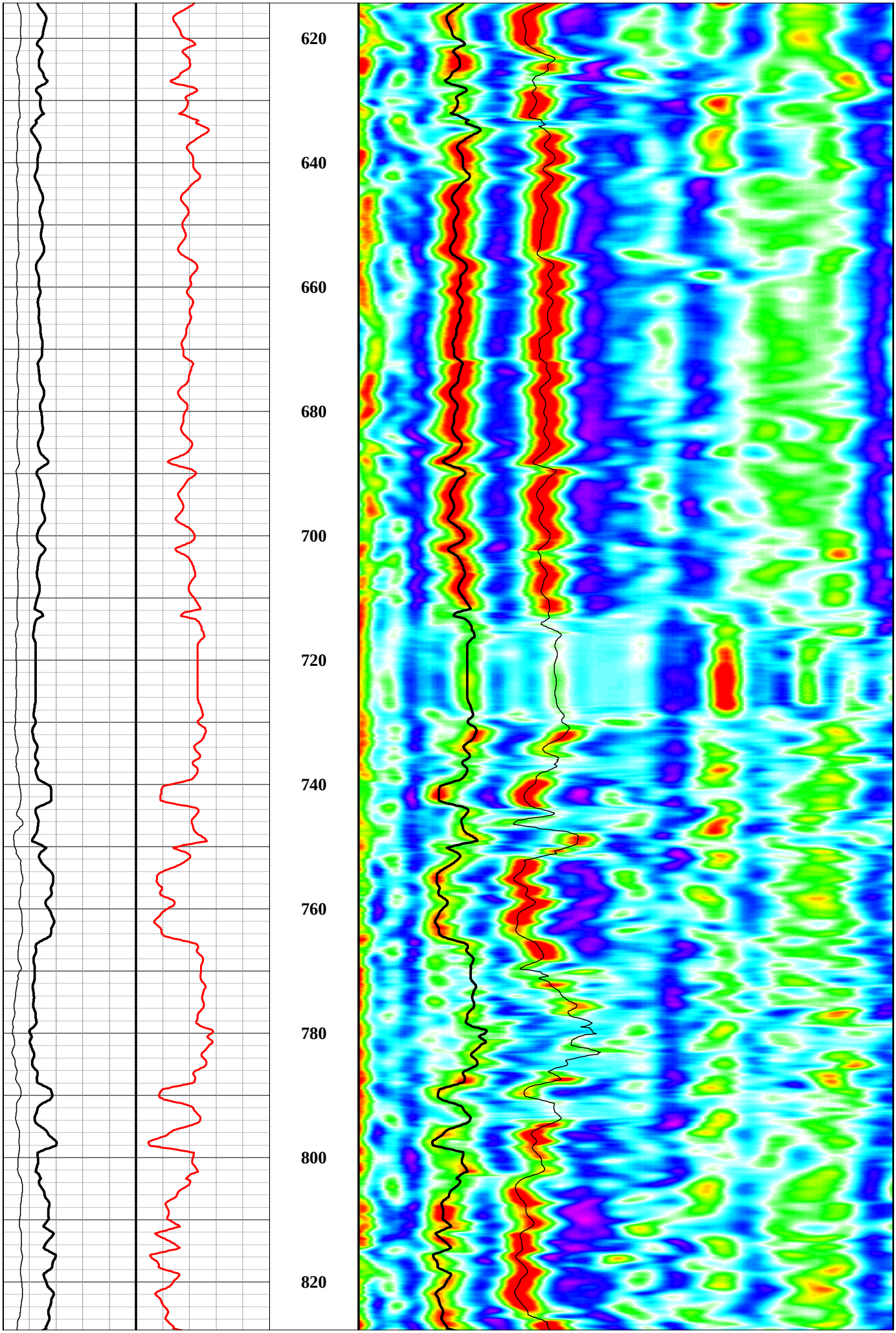
Where: delta t log = P-Wave Velocity
delta t matrix = Maximum Value of P-Wave Velocity (26200 ft/s)
delta t fluid = Fluid velocity of borehole (assumption of clear water ~ 5000 ft/s)

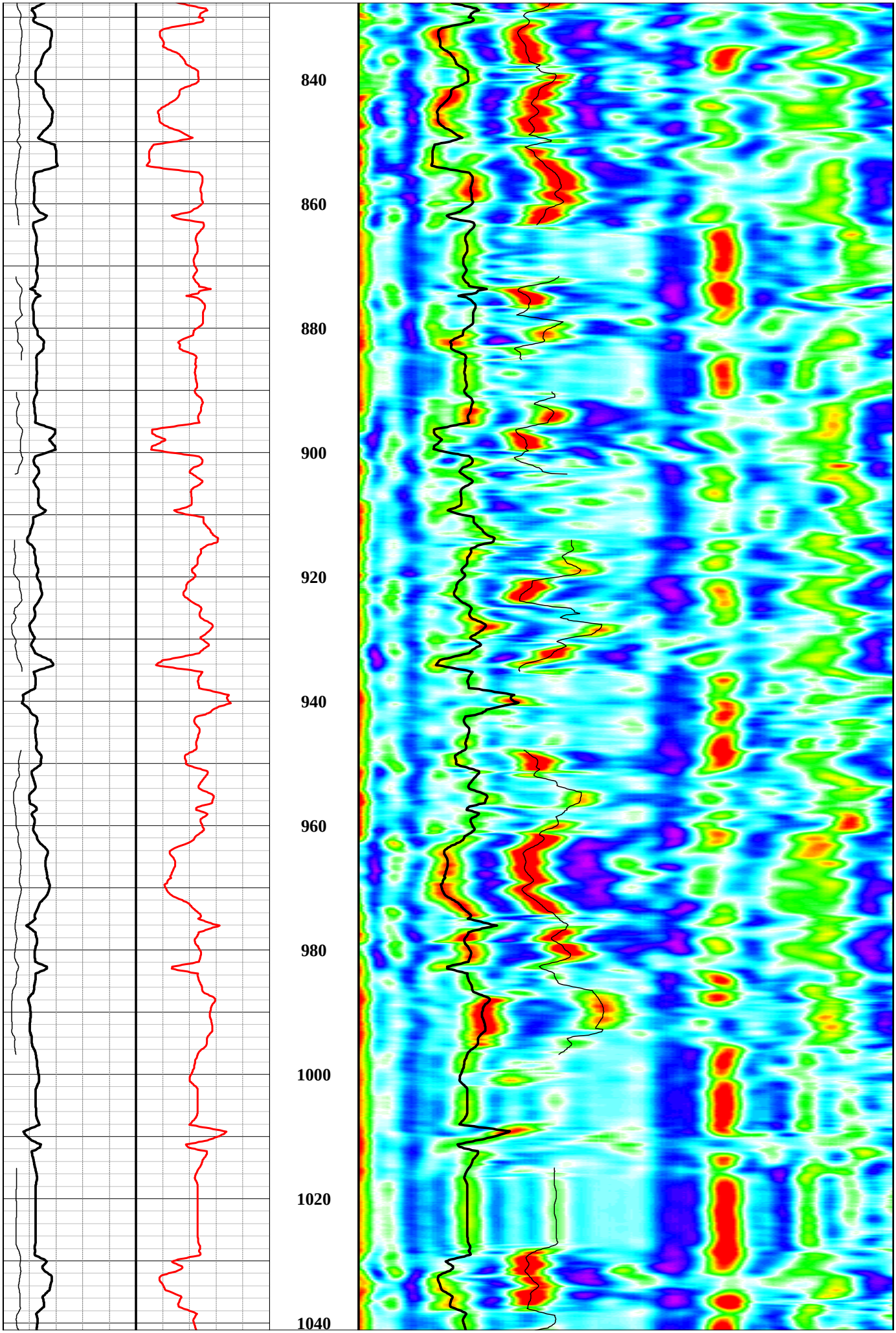
INPUT FILES:
NSH-022-SONIC-U.hed
NSH-022-SONIC-U.LGX

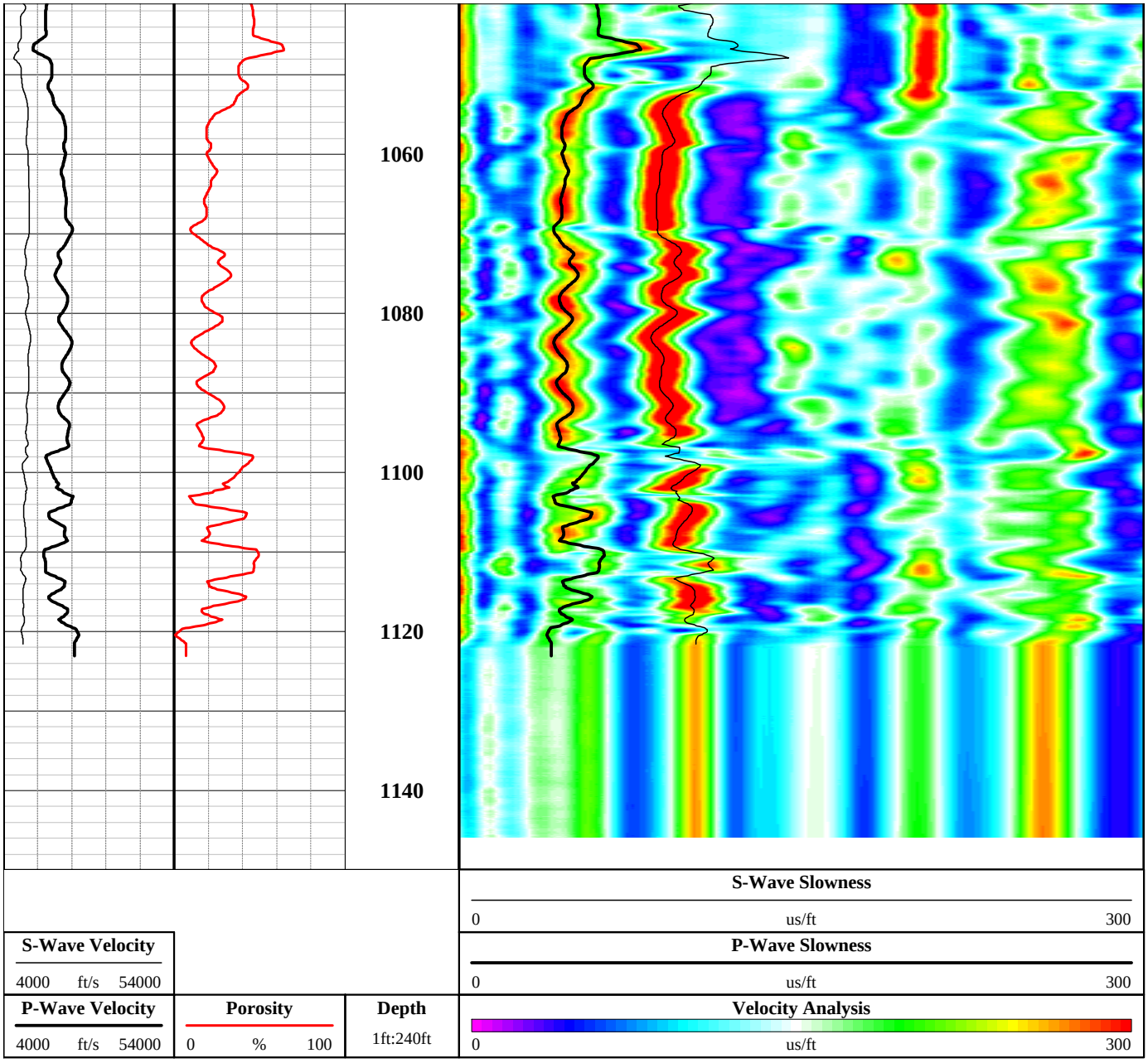

P-Wave Velocity
4000 ft/s 54000
S-Wave Velocity
4000 ft/s 54000
Porosity
0 % 100
Depth
1ft:240ft
Velocity Analysis
0 us/ft 300
P-Wave Slowness
0 us/ft 300
S-Wave Slowness
0 us/ft 300
20
40
60
80
100
120
140
160
180


200
220
240
260
280
300
320
340
360
380
400


420
440
460
480
500
520
540
560
580
600


620
640
660
680
700
720
740
760
780
800
820


840
860
880
900
920
940
960
980
1000
1020
1040


1060
1080
1100
1120
1140
S-Wave Slowness
0 us/ft 300
P-Wave Slowness
0 us/ft 300
Velocity Analysis
0 us/ft 300
S-Wave Velocity
4000 ft/s 54000
P-Wave Velocity
4000 ft/s 54000
Porosity
0 % 100
Depth
1ft:240ft