

Survey type: Vertical Seismic Profile
Company: International Ocean Discovery Program
Well: Expedition 384, Site U1555G
Field: Engineering Testing
Country: Iceland
Run: 1
Date: 8/15/2020

Recorded by: K. Swain

Witnessed by: Dan Marone

Well Information

Company	International Ocean Discovery Program
Well	Expedition 384, Site U1555G
Field	Engineering Testing
Country	Iceland
State	Atlantic
Logging Date	8/15/2020
Run Number	1
Service Order	
Well Head (Latitude)	N 1.22685
Well Head (Longitude)	E 83.7303
Well Head (X Coordinate)	0.0 UTM
Well Head (Y Coordinate)	0.0 UTM
Total Depth - Driller	1843.5 m
Total Depth - Logger	1840.0 m
Maximum Hole Deviation	0.0 deg
Azimuth of Maximum Deviation	
Program Version	19C0-187
Bit Size	9.875 in
Recorded by	K. Swain
Witnessed by	Dan Marone

Elevation Information

Permanent Datum	Sea Floor
Elevation Permanent Datum	-1534.6 m
Above Permanent Datum	1534.6 m
Drilling Measured From	Rig Floor
Derrick Floor	11.0 m
Ground Level	-1523.6 m
Kelly Bush	11.0 m
Log Measured From	Rig Floor
Elevation Log Zero	11.0 m

Depth Corrected Information

Water Velocity	1500.0 m/s
Seismic Reference Datum	0.0 m

Remarks

Hole drilled with RCB bottom hole assembly (BHA) at 9-7/8" BS
Drill pipe set at 1737 mbrf.
Fluid type was Sepeolite mud weighted with Barite to a density of ppg (g/cc)
Depth recorded from drill floor; logs presented as-logged without depth corrections or shifts, as per client instructions.
All logs presented in wireline measured depth below rig floor (MDBRF).
Caliper opened during upward passes; closed inside pipe.
Hole size corrections made using caliper measurements for upward passes.
AHC used from TD then switched off to facilitate pipe entry.
10.5 lb/gal mud pumped in hole prior to logging.

Well Information

Well Type	Vertical
Rig / Platform Type	Drillship
Well Reference Azimuth (Magnetic, True, or Grid North)	Magnetic

Elevation Information

Water Depth	1523m
Water Temperature	20c
Water Salinity	
Weathered Zone Depth	
Elevation Depth	11m drillfloor

Sea Condition

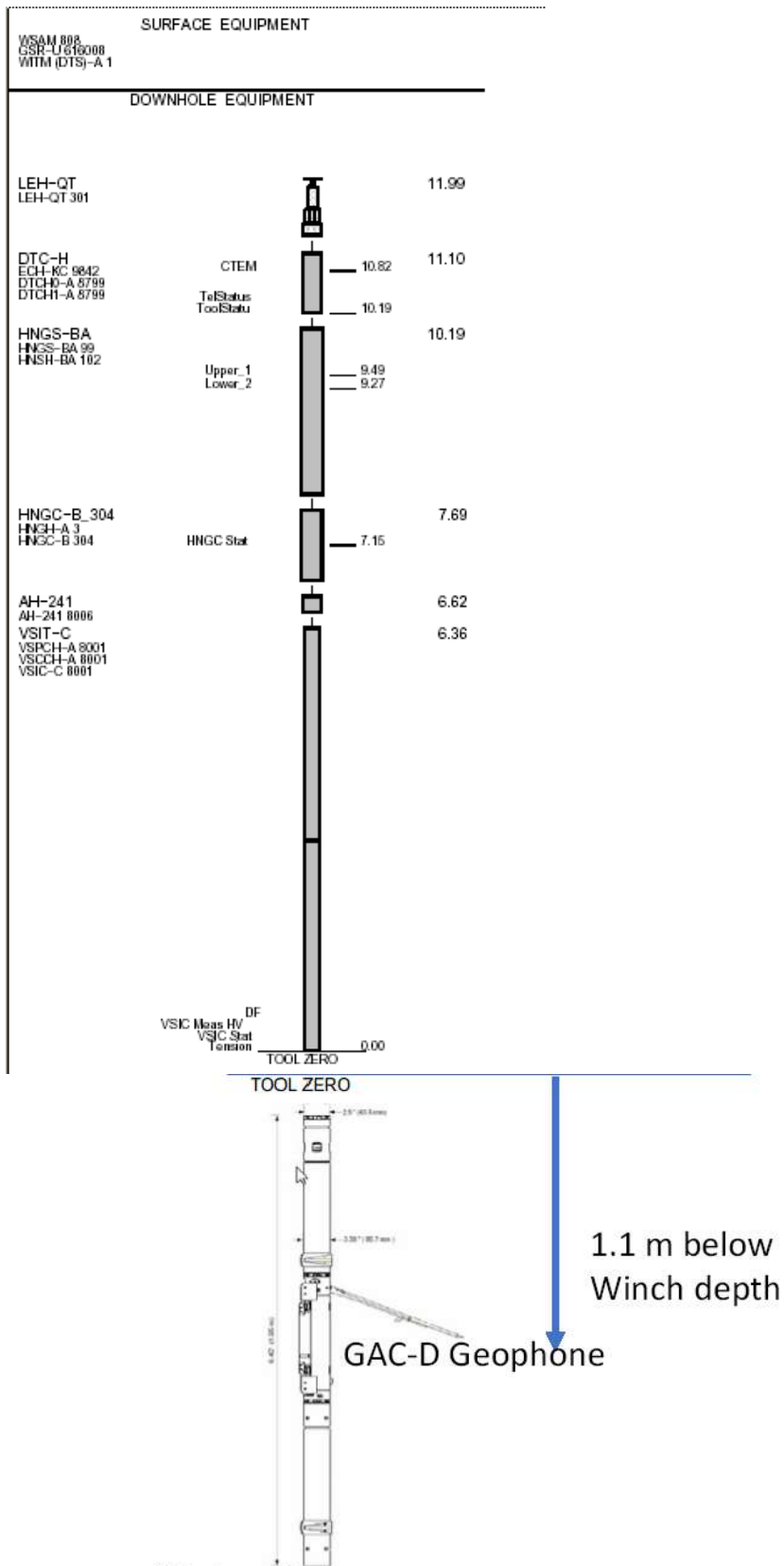
Sea Condition	0.5-1m heave
Wave Height	
High Tide Level	
High Tide Time	
Low Tide Level	
Low Tide Time	

Velocity Information

Weathered Velocity	
Elevation Velocity	

Downhole Equipment Information

Tool Type	VSI single shuttle
Surface Equipment	WSI
Combined Tool	EDTC-B
Number of Shuttles	1
Nominal Receiver Spacing	1.1m below tool zero
Gimbaled (Y/N)	Y
Downhole Geophone Type	GAC-D
Sensitivity	0.54
Natural Frequency	20.0
Damping Factor	5.74
DC Resistance	1500
Receiver #1	VSIS-PC 8006
Receiver #2	
Receiver #3	
Receiver #4	
Receiver #5	
Receiver #6	
Receiver #7	
Receiver #8	



VSP

General Information

Survey Type	Zero Offset VSP
Surface Recording Length	1000.0 ms
Surface Sampling Rate	1.0 ms
Downhole Recording Length	5000.0 ms
Downhole Sampling Rate	1.0 ms
Top of Survey	1767.1 m
Bottom of Survey	1827.6 m
Number of Shots	13
Number of Downhole Traces	13
Number of Downhole Traces used for Processing	10

Stack Summary Listing (1/1) from VSI_002_A_geo_wavelfield_z.ldf

Stack Number	Measured Depth [m]	True Vertical Depth [m]	Measured Time [s]	One-way Vertical Time [s]	Two-way Vertical Time [s]	Interval Velocity [m/s]	Average Velocity [m/s]	RMS Velocity [m/s]
	0	0	0	0	0			
						1517.0		
4	1767.1	1756.1	1.1520	1.1576	2.3152		1517.0	1517.0
						4402.0		
3	1827.6	1816.6	1.1658	1.1713	2.3427		1550.8	1581.7

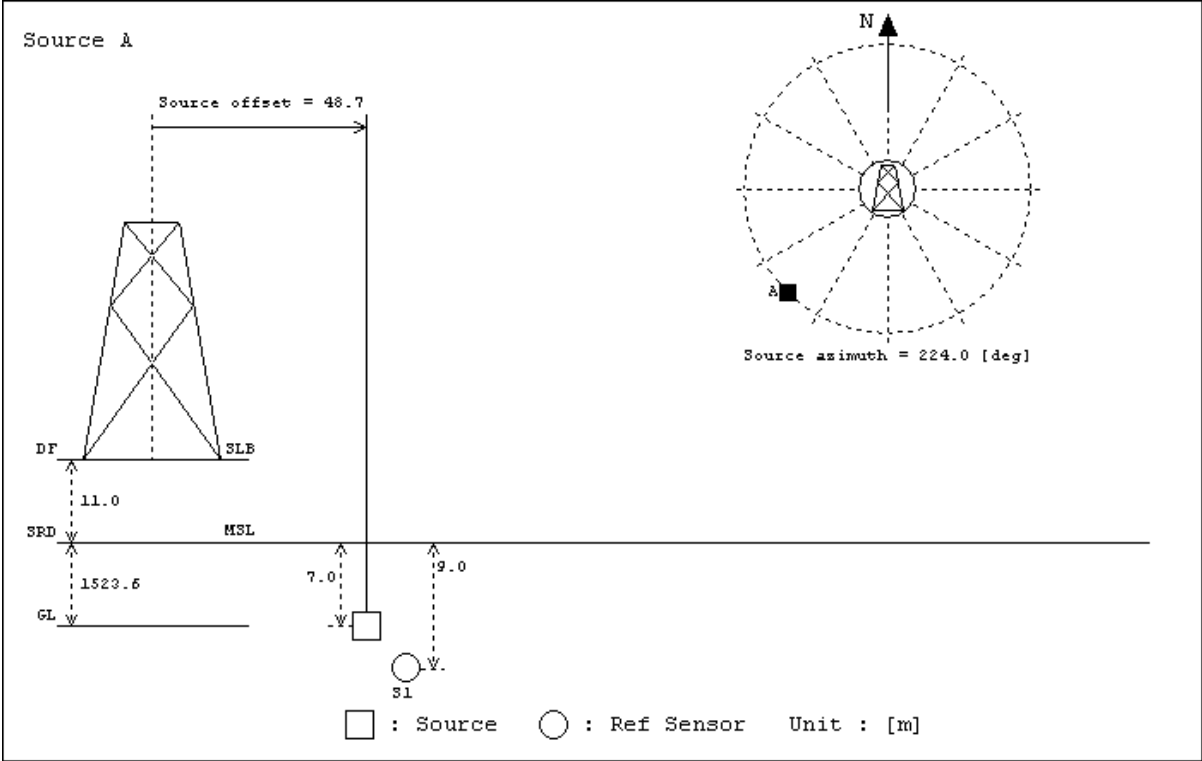
Shot Summary Listing (1/1)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
1767.1	1	4	-0.3	10.6	794.8	8, 9, 10, 11, 12
1827.6	1	3	1.1	11.0	824.3	1, 3, 4, 5, 7

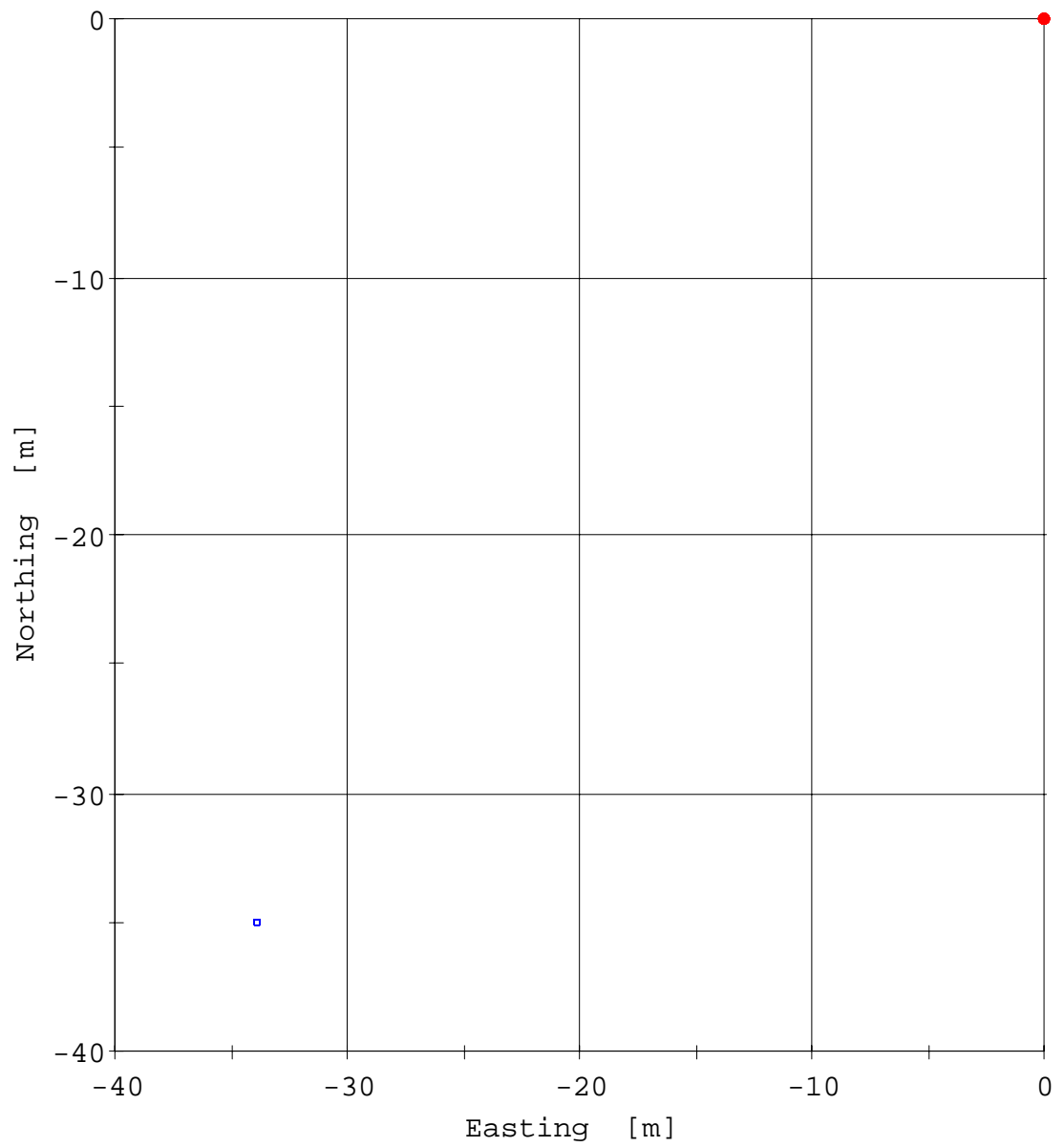
Observer's Note (1/1)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
1827.6	06:23:44	SHOT	1	3	A	good
1827.6	06:27:14	SHOT	2	3	A	
1827.6	06:27:54	SHOT	3	3	A	good
1827.6	06:28:21	SHOT	4	3	A	good
1827.6	06:28:39	SHOT	5	3	A	good
1827.6	06:28:57	SHOT	6	3	A	
1827.6	06:29:15	SHOT	7	3	A	good
1767.1	06:44:27	SHOT	8	4	A	good
1767.1	06:45:02	SHOT	9	4	A	good
1767.1	06:46:07	SHOT	10	4	A	good
1767.1	06:46:30	SHOT	11	4	A	good
1767.1	06:47:09	SHOT	12	4	A	good
1767.1	06:47:36	SHOT	13	4	A	bad

Source Geometry Sketch

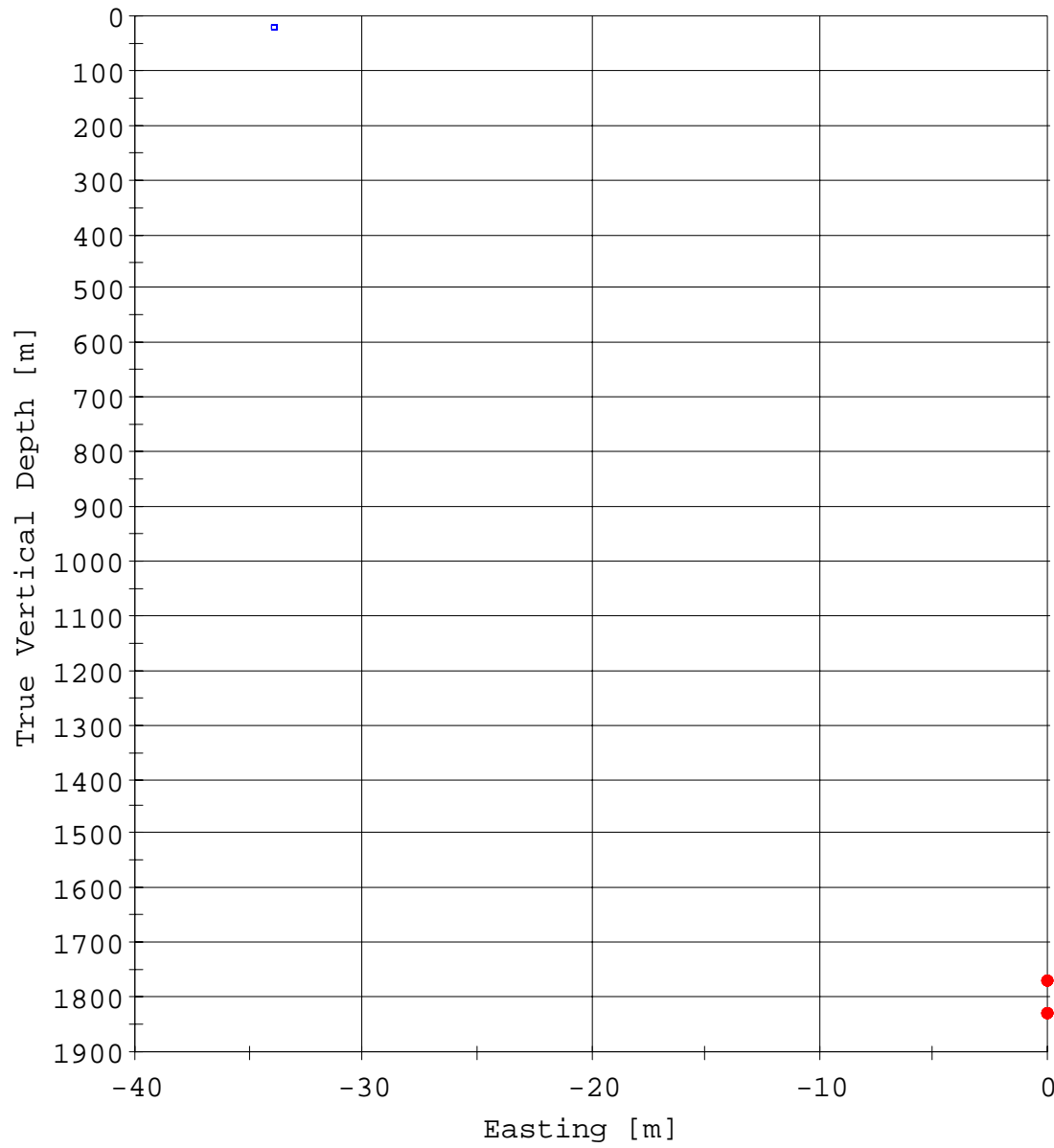


Geometry Infomation (X-Y)



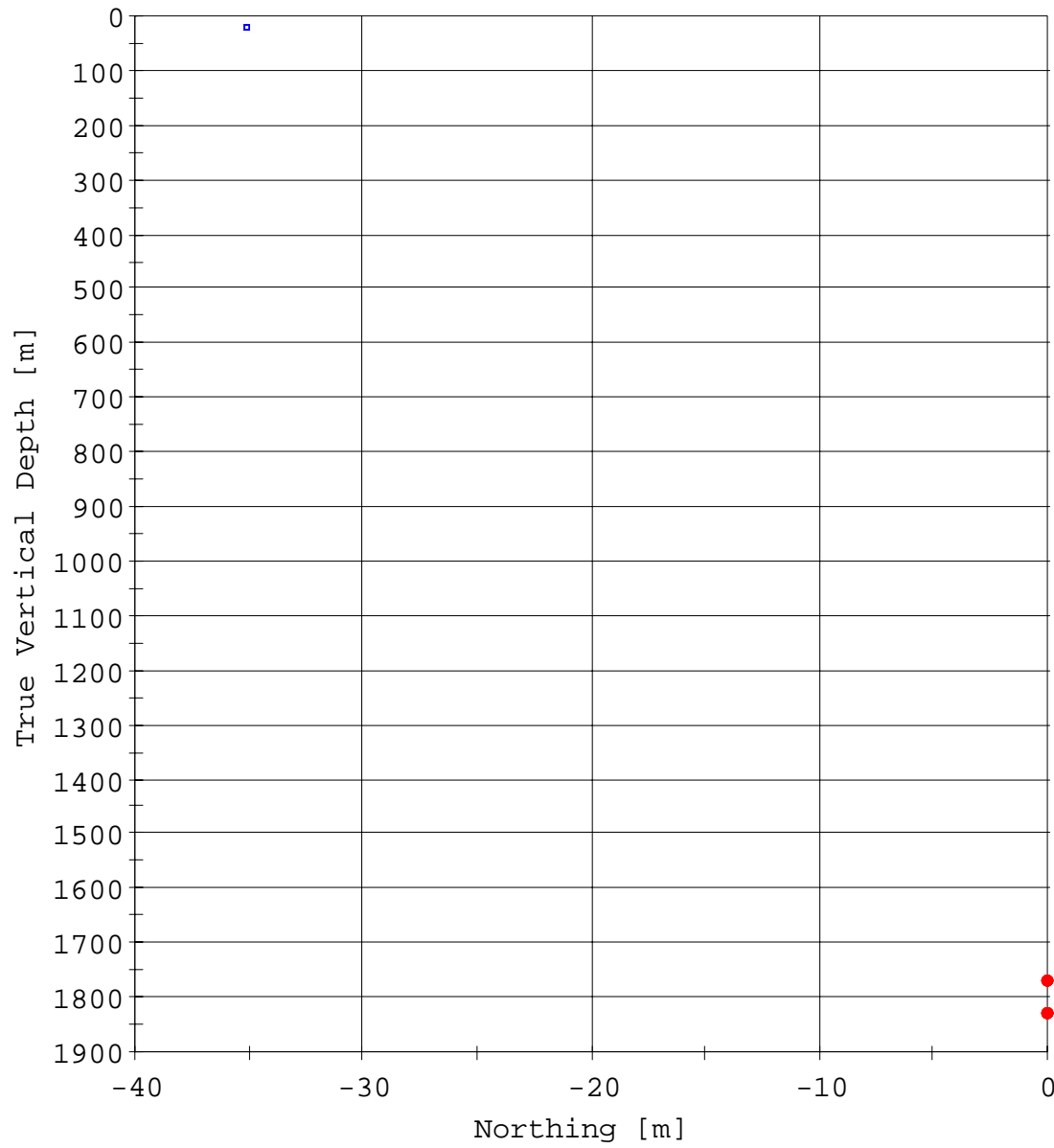
● Receiver Position
□ Source Position

Geometry Infomation (X-Z)



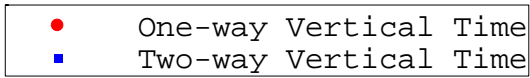
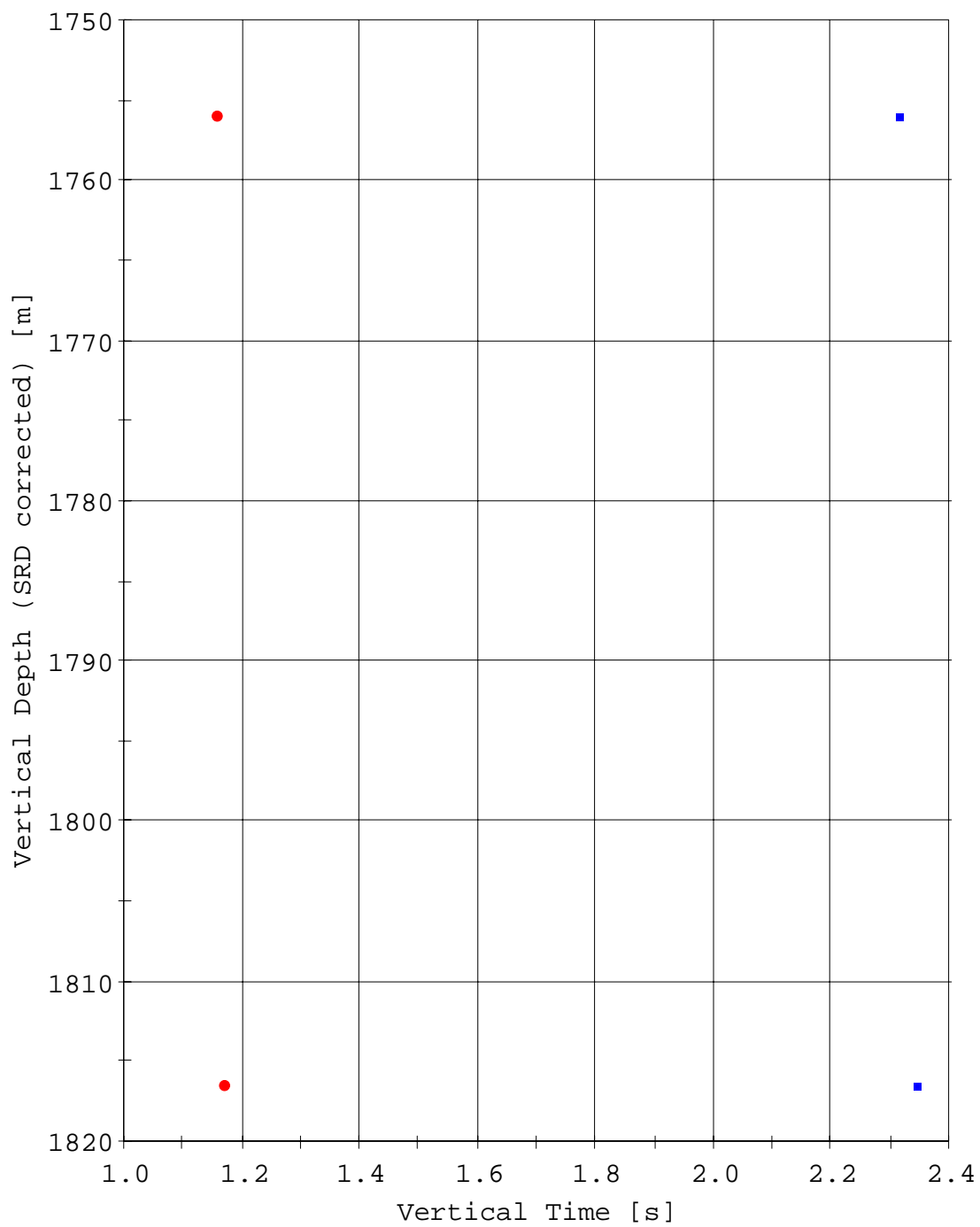
● Receiver Position
□ Source Position

Geometry Infomation (Y-Z)

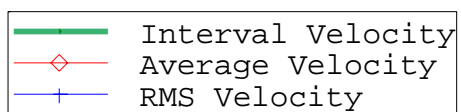
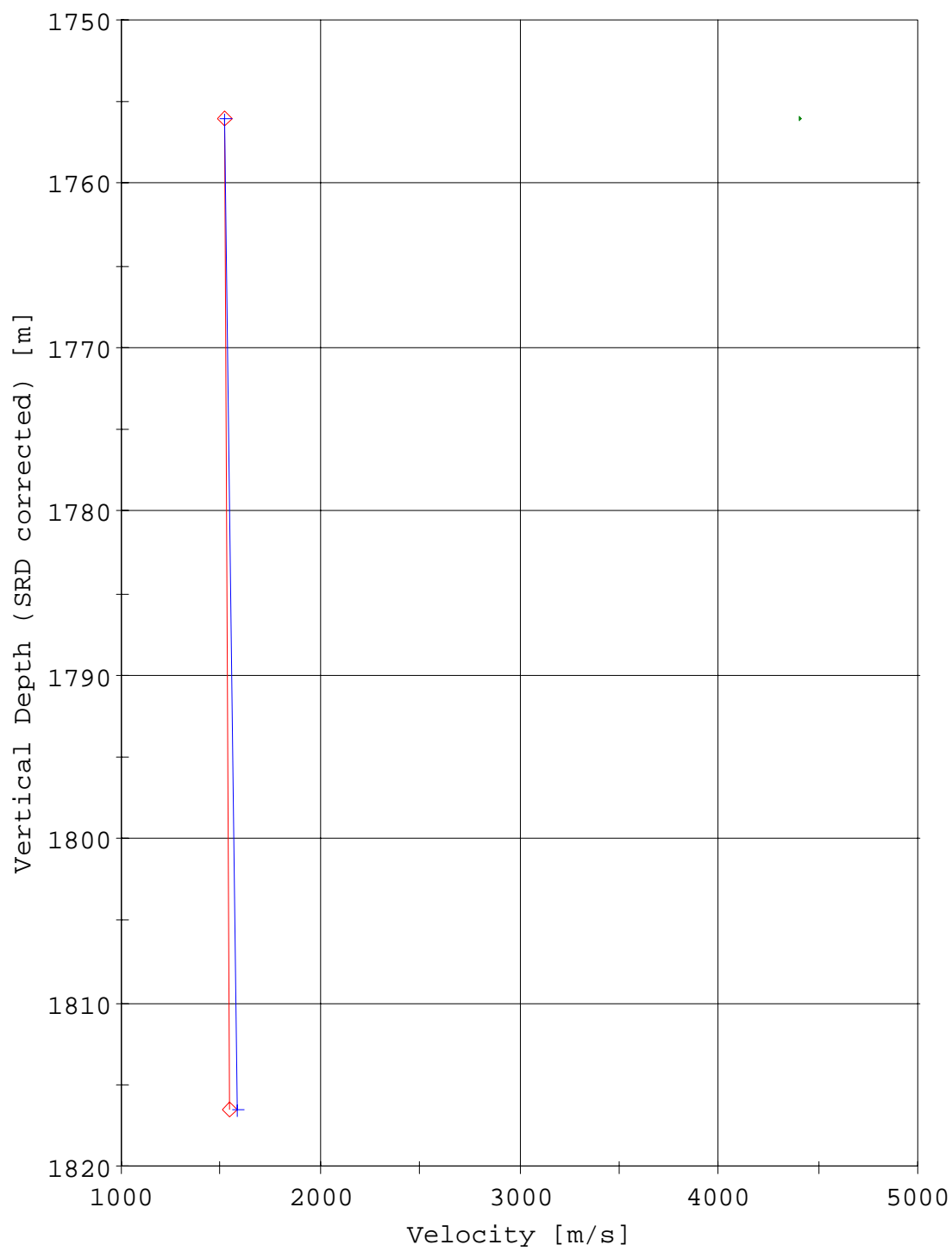


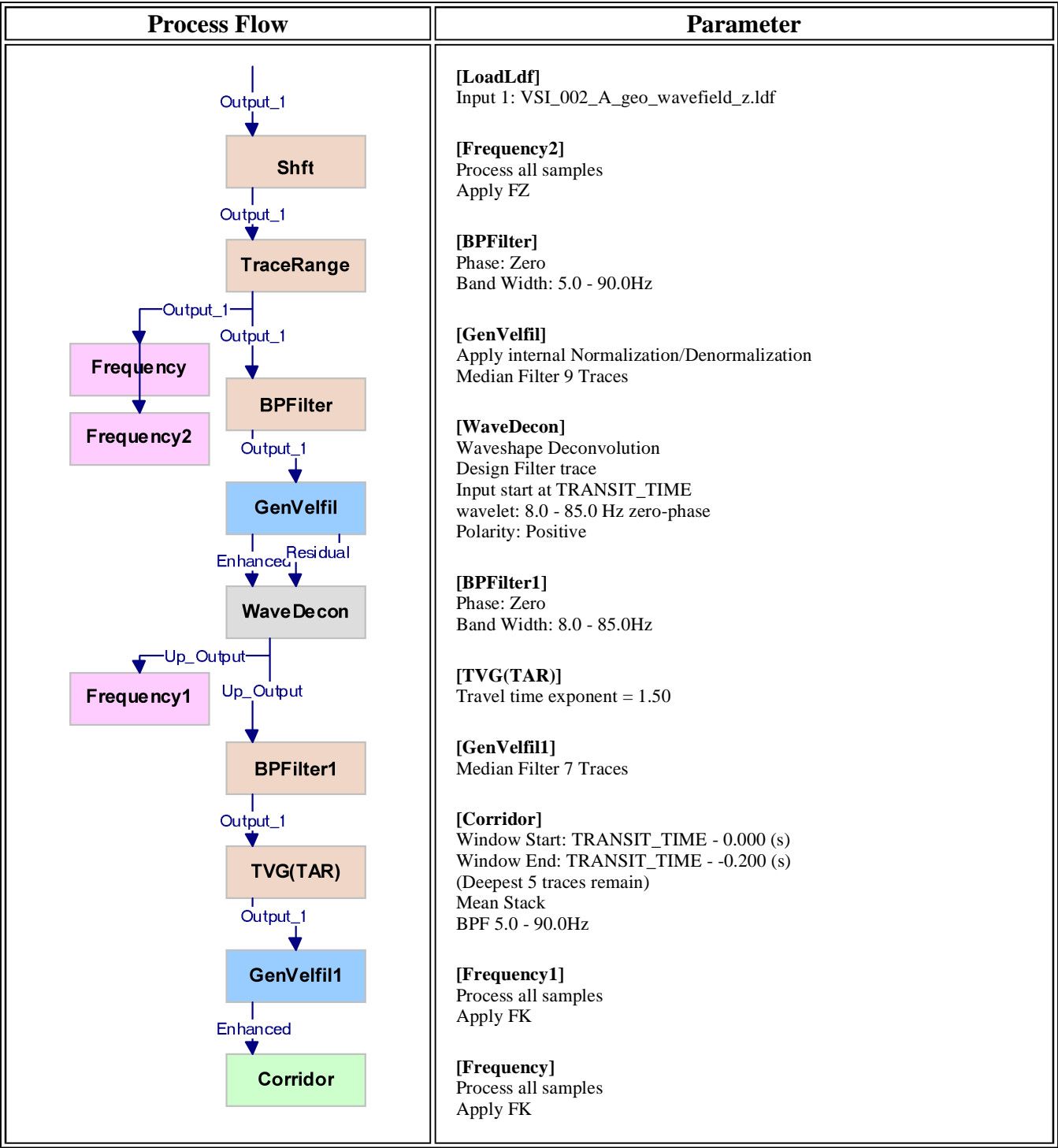
● Receiver Position
□ Source Position

Time Depth Plot



Velocity Plot





[LoadLdf]

FileLoadLdf Parameters

Input 1: VSI_002_A_geo_wavelfield_z.ldf

[Shft]

Shift Parameters

Shift: + TIME_OF_FIRST_DATA - 0 s

Update selected headers

[TraceRange]

Trace Range Set Manual Parameters

Trace Range Set Parameters

Remove Bad Trace

[Frequency2]

Spectral Analyser Parameters

Process all samples

Depth/Offset header = ACQUISITION_SHOT_NUMBER

Output is Frequency Domain

Compute Amplitude spectrum in dB

[BPFilter]

BPF Parameters

Butterworth Filter, Zero Phase

Charasteristic: 5.000 Hz to 90.000 Hz Order 3

[GenVelfil]

Mean/Median Generalized Velocity Filter Parameters

Align events using times of TRANSIT_TIME x 1.000

Compute both enhanced and residual output

Apply internal Normalization/Denormalization based on RMS of time window

From TRANSIT_TIME - 0.020 s

Windown length = 0.500 s

Median Stacking

Stacking window (traces): 9

Stacking window (samples): 1

Source and receiver coordinates Parameters

Source Offset: SOURCE_LINE_POSITION_RHO

Source Depth: SOURCE_LINE_POSITION_Z

Receiver Offset: RECEIVER_LINE_POSITION_RHO

Receiver Depth: RECEIVER_LINE_POSITION_Z

[WaveDecon]

Waveshaping deconvolution Parameters

Design Filter trace by trace

Filter input start at TRANSIT_TIME - 0.080 s

Filter input window: 1.000 s

Filter Length is filter input window

Desired wavelet created by filtered unit impulse from 8.000 Hz to 85.000 Hz , zero-phase

Positive wavelet polarity

Wavelet delay time = Filter Length / 2

White noise (%): 5.000

Waveshaping optimization Parameters

[BPFilter1]

BPF Parameters

Butterworth Filter, Zero Phase

Charasteristic: 8.000 Hz to 85.000 Hz Order 3

[TVG(TAR)]

Time-Varying Gain Parameters

Window start at TRANSIT_TIME - 0.000000
Window length = 4.999000
Travel time exponent = 1.500000
Exponential Weighting = 0.000000

[GenVelfill]

Mean/Median Generalized Velocity Filter Parameters
Align events using times of TRANSIT_TIME x -1.000
Compute both enhanced and residual output
Median Stacking
Stacking window (traces): 7
Stacking window (samples): 1
Source and receiver coordinates Parameters
Source Offset: SOURCE_LINE_POSITION_RHO
Source Depth: SOURCE_LINE_POSITION_Z
Receiver Offset: RECEIVER_LINE_POSITION_RHO
Receiver Depth: RECEIVER_LINE_POSITION_Z

[Corridor]

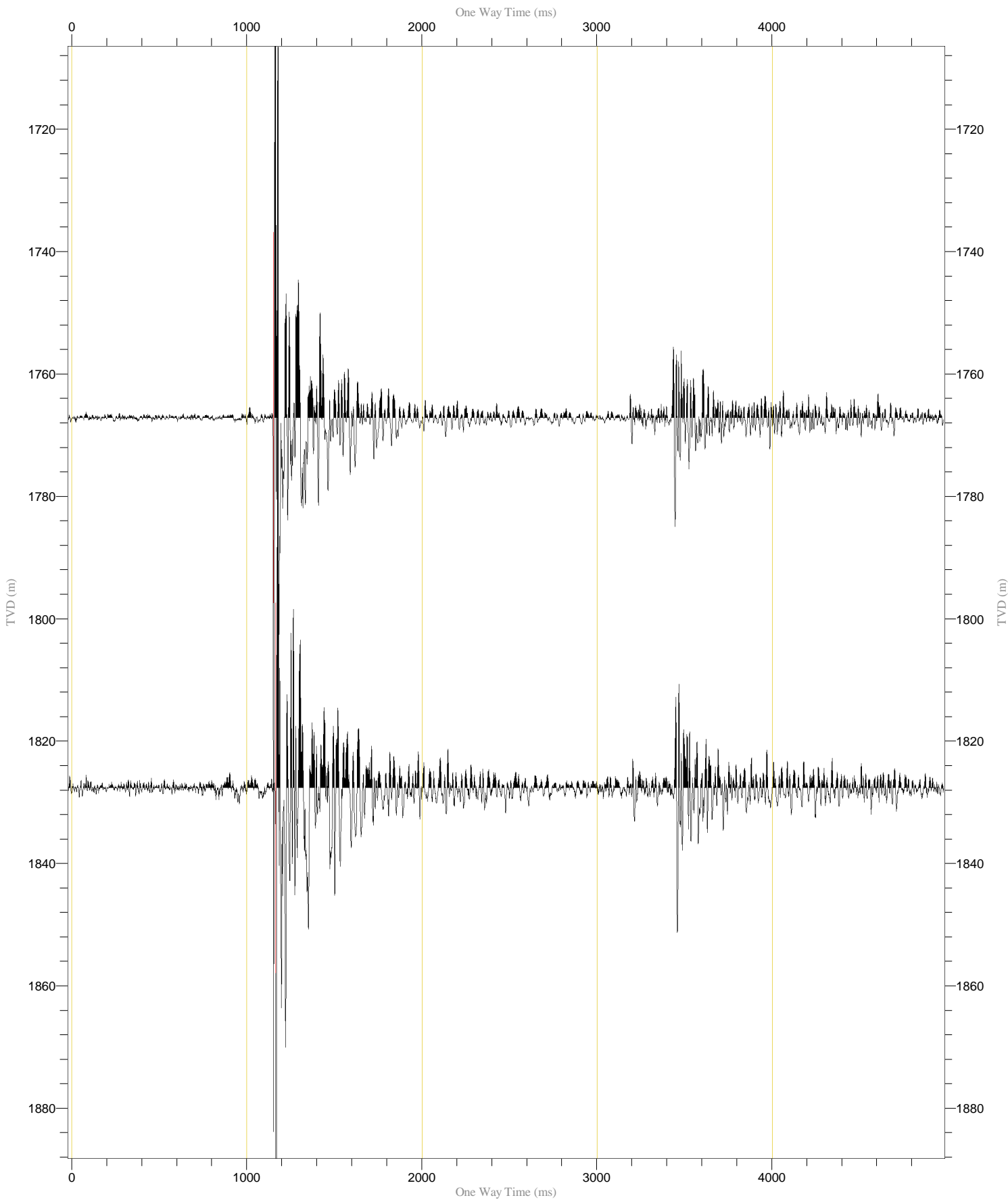
Corridor stack Parameters
Mute before TRANSIT_TIME - 0 s
Mute after TRANSIT_TIME - -0.200 s
All traces except the deepest (traces): 5
Depth header: RECEIVER_POSITION_Z
Mean stack
Apply +TT with TRANSIT_TIME
Replicate corridor stack x 10
Apply BPF on resulting corridor stack
BPF Parameters
Butterworth Filter, Zero Phase
Characteristic: 5.000 Hz to 90.000 Hz Order 3

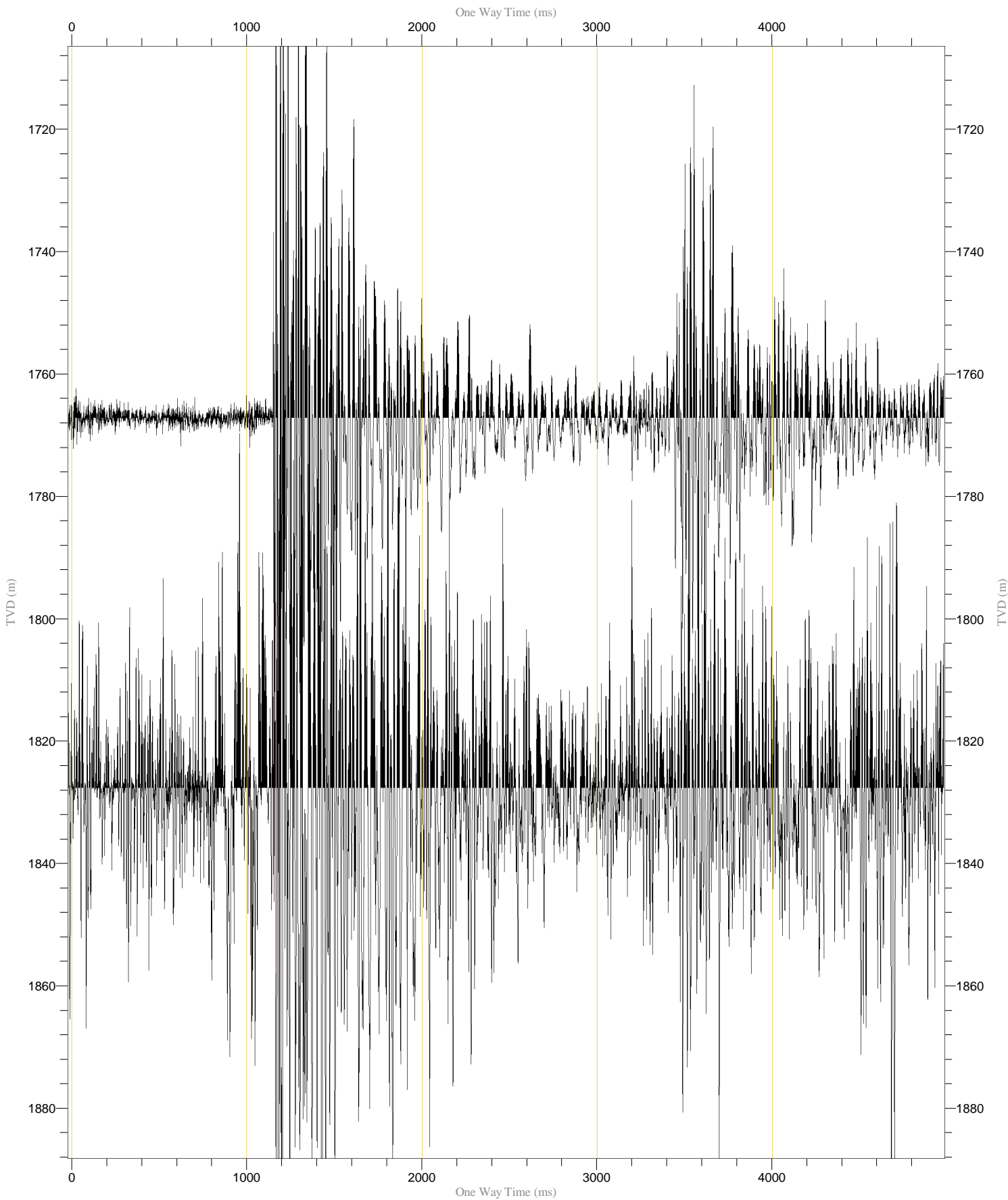
[Frequency1]

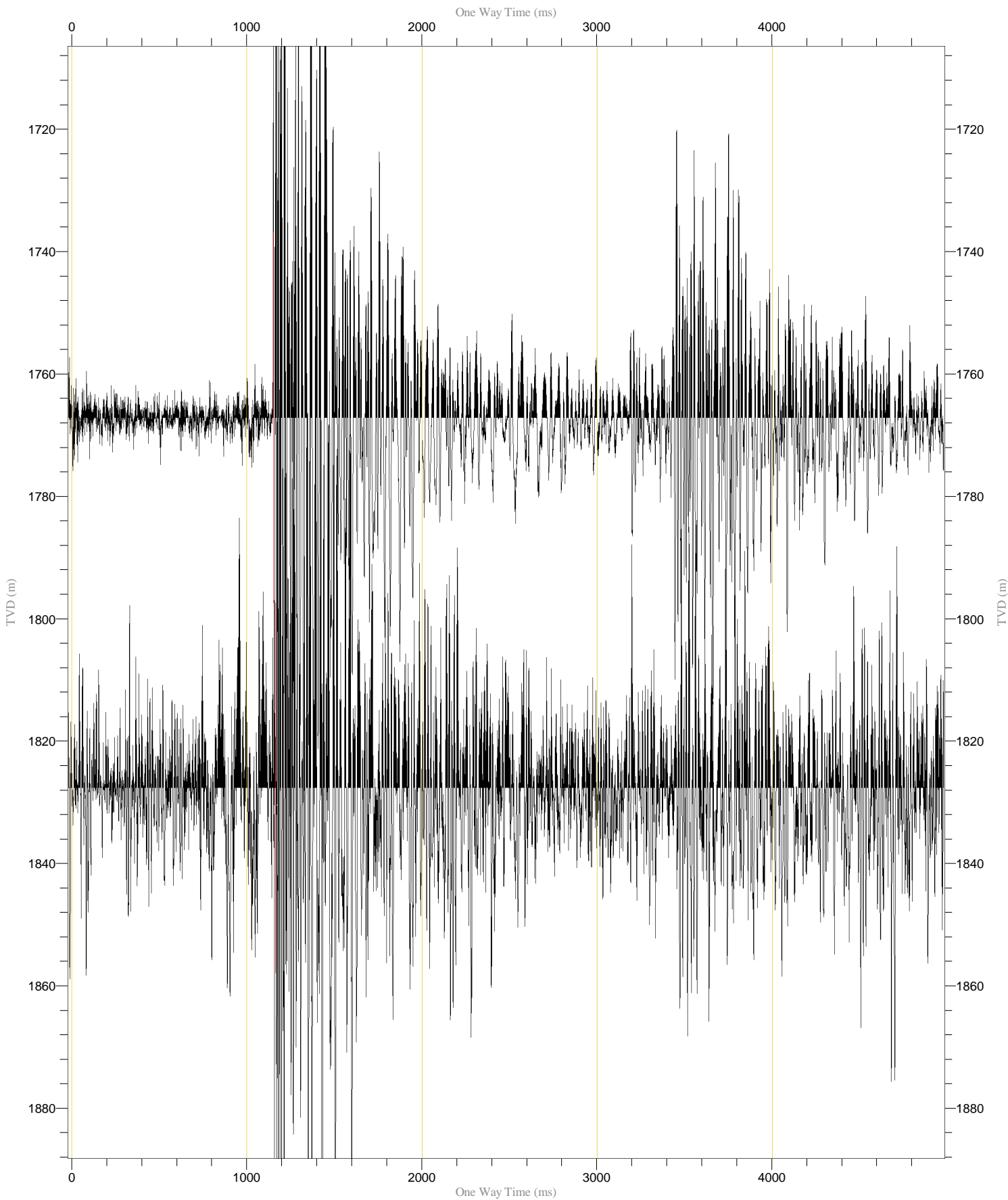
Spectral Analyser Parameters
Process all samples
Depth/Offset header = ACQUISITION_SHOT_NUMBER
Output is FK Domain
Compute Amplitude spectrum in dB

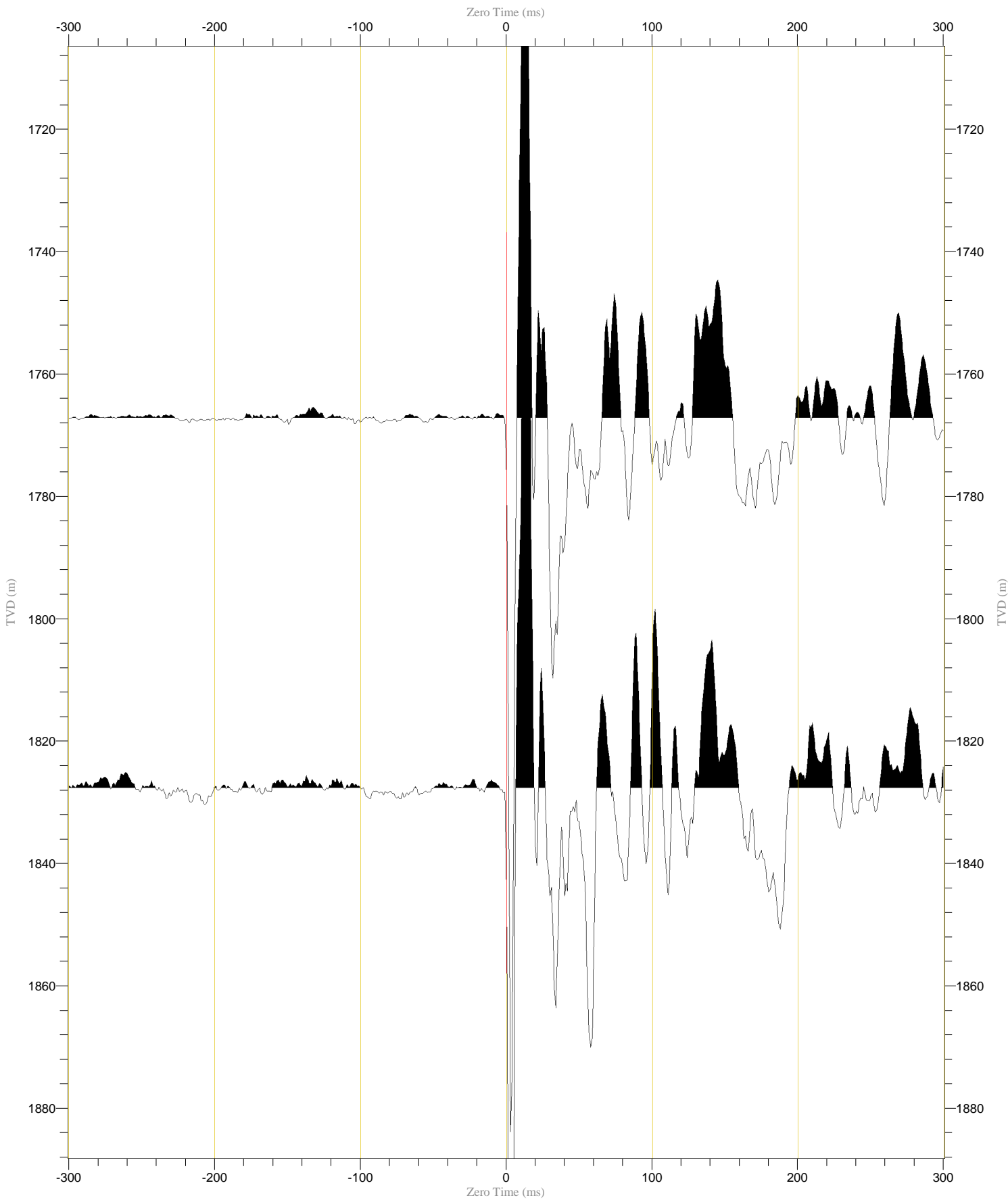
[Frequency]

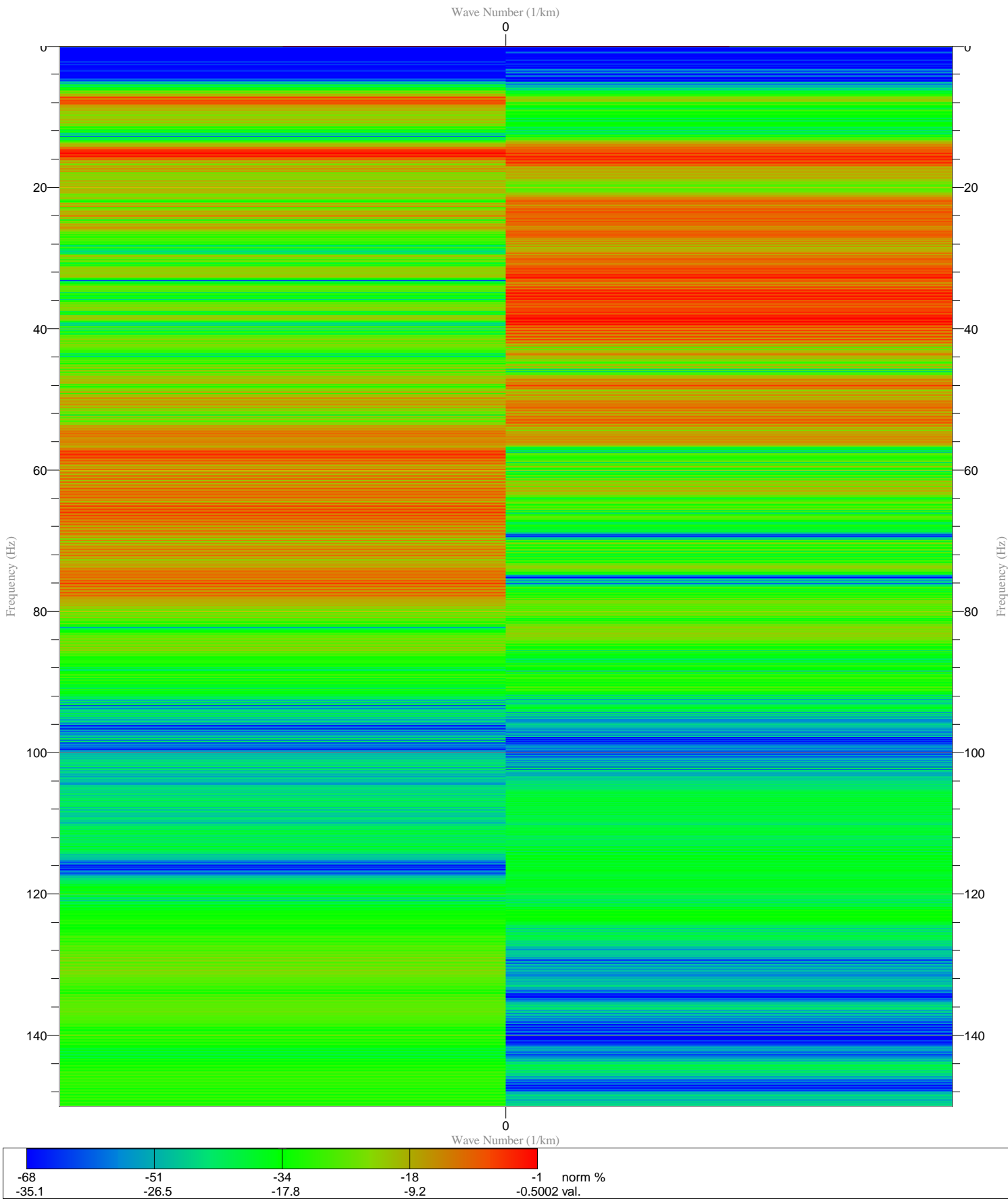
Spectral Analyser Parameters
Process all samples
Depth/Offset header = ACQUISITION_SHOT_NUMBER
Output is FK Domain
Compute Amplitude spectrum in dB

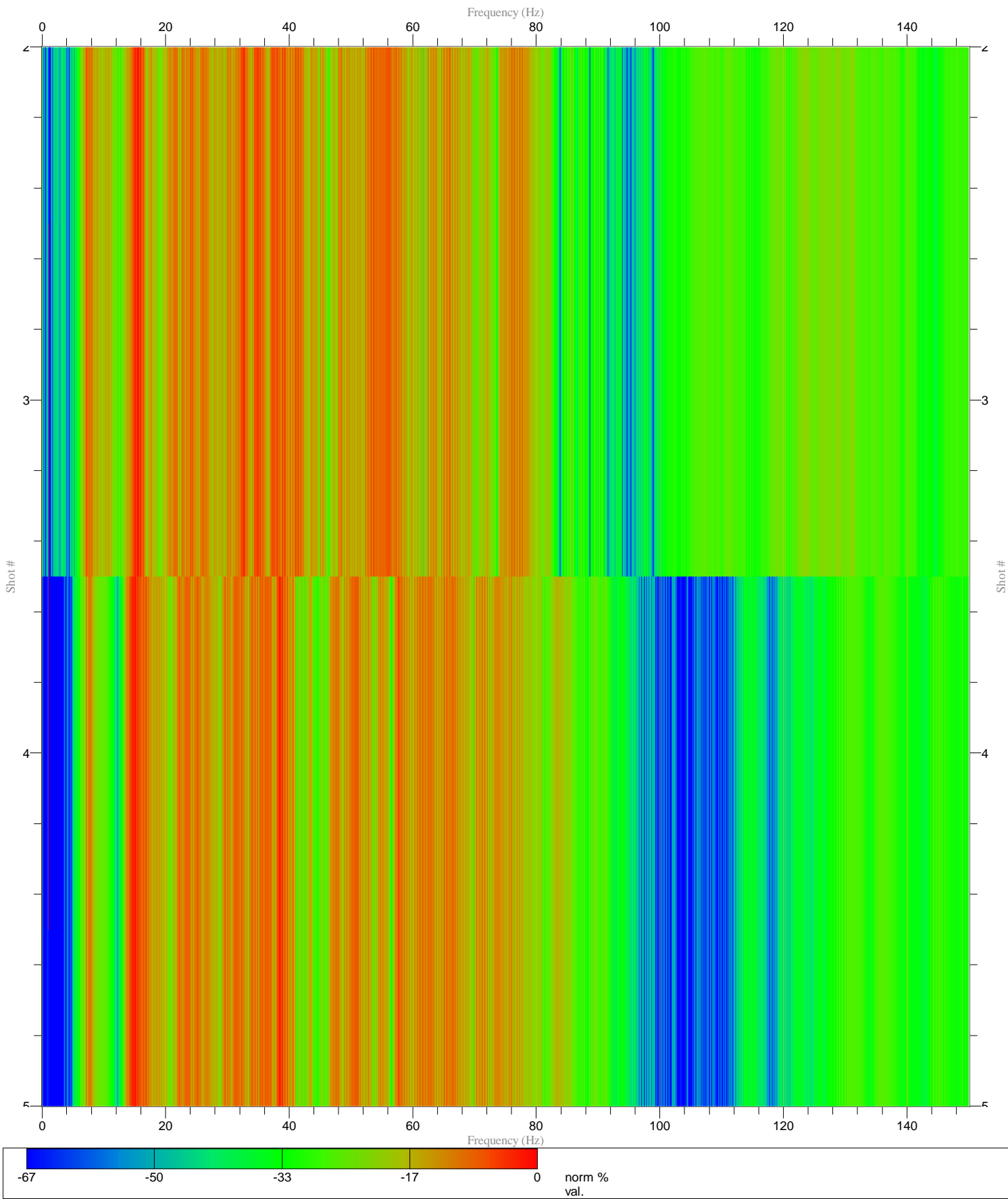


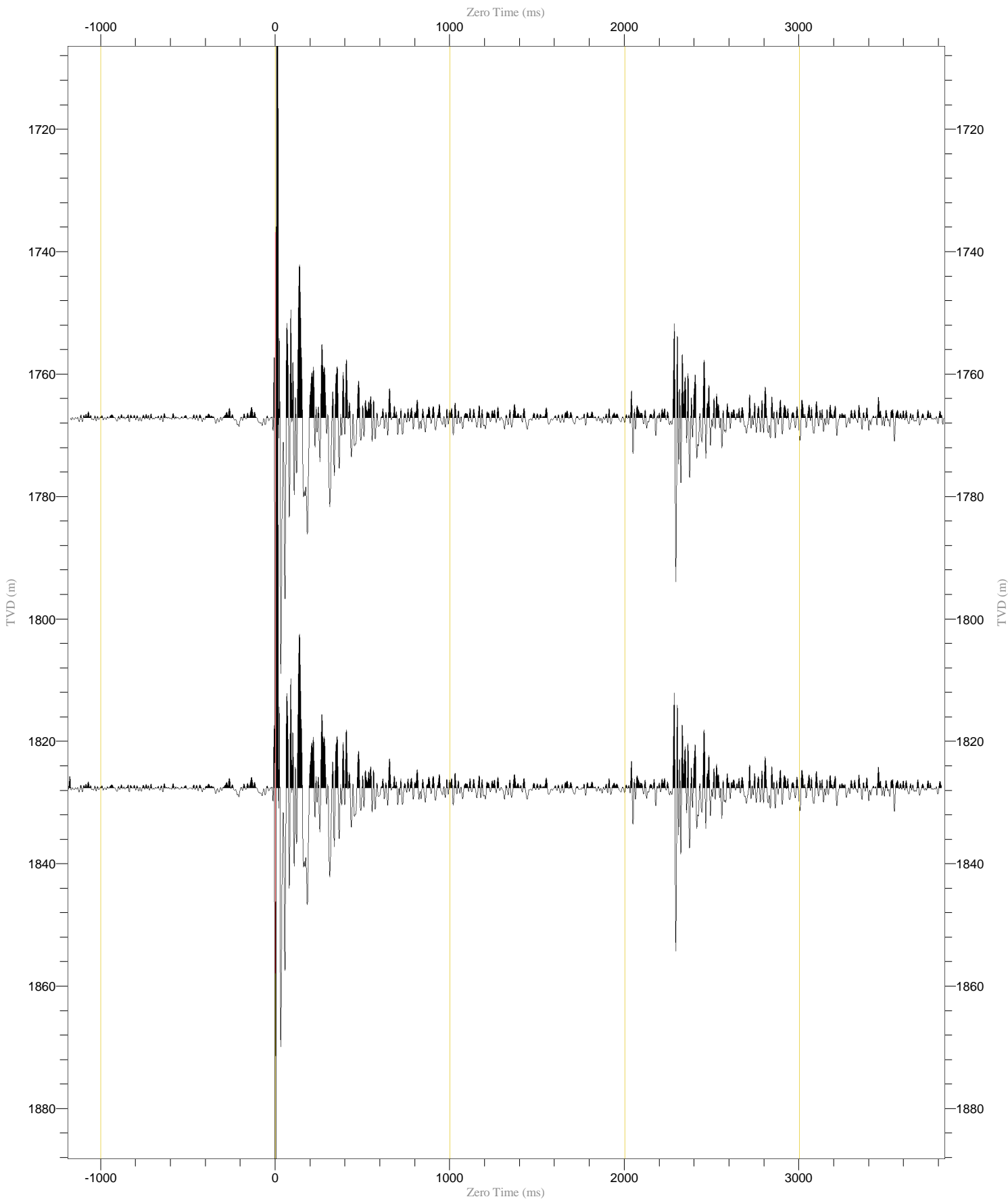


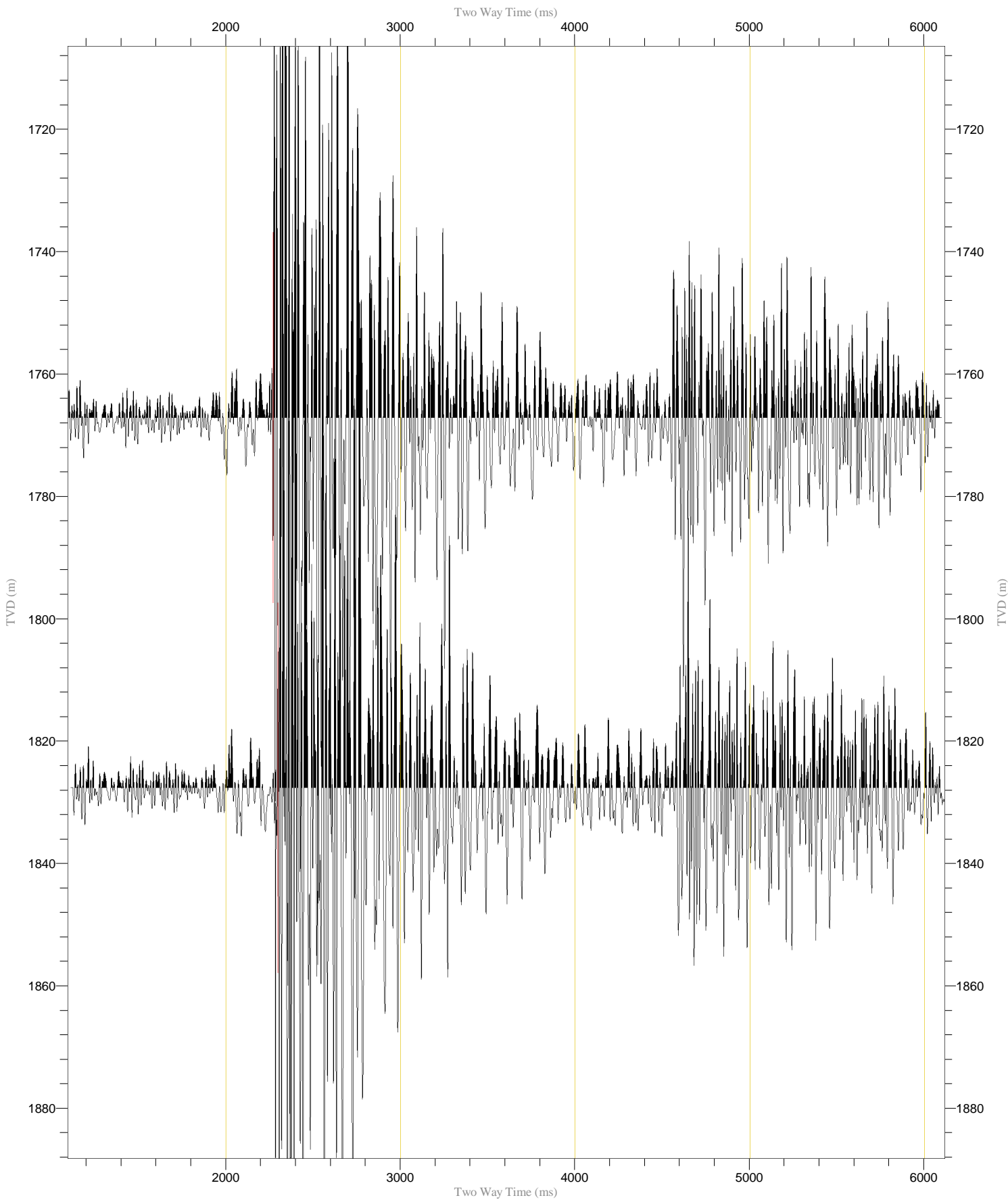


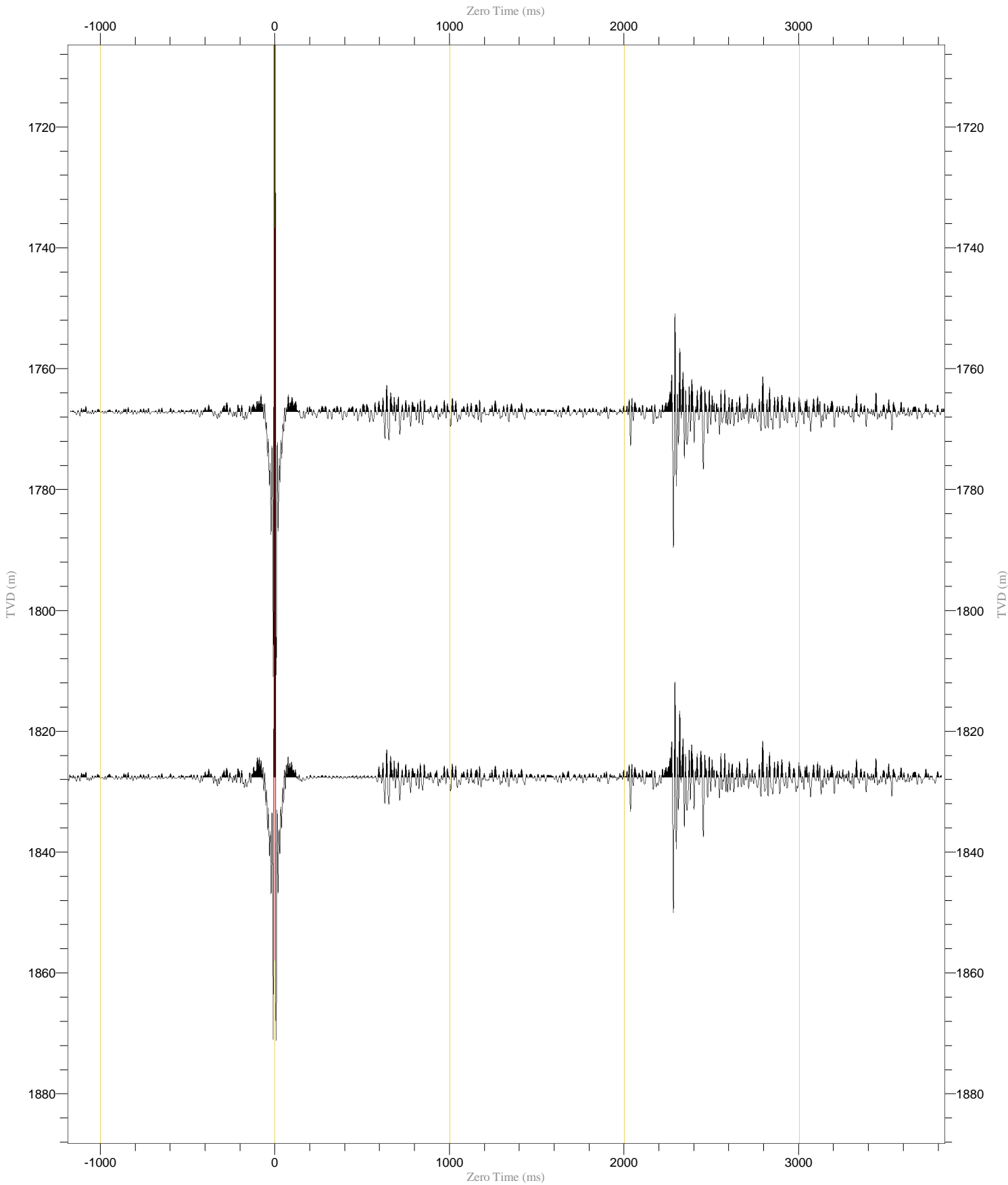


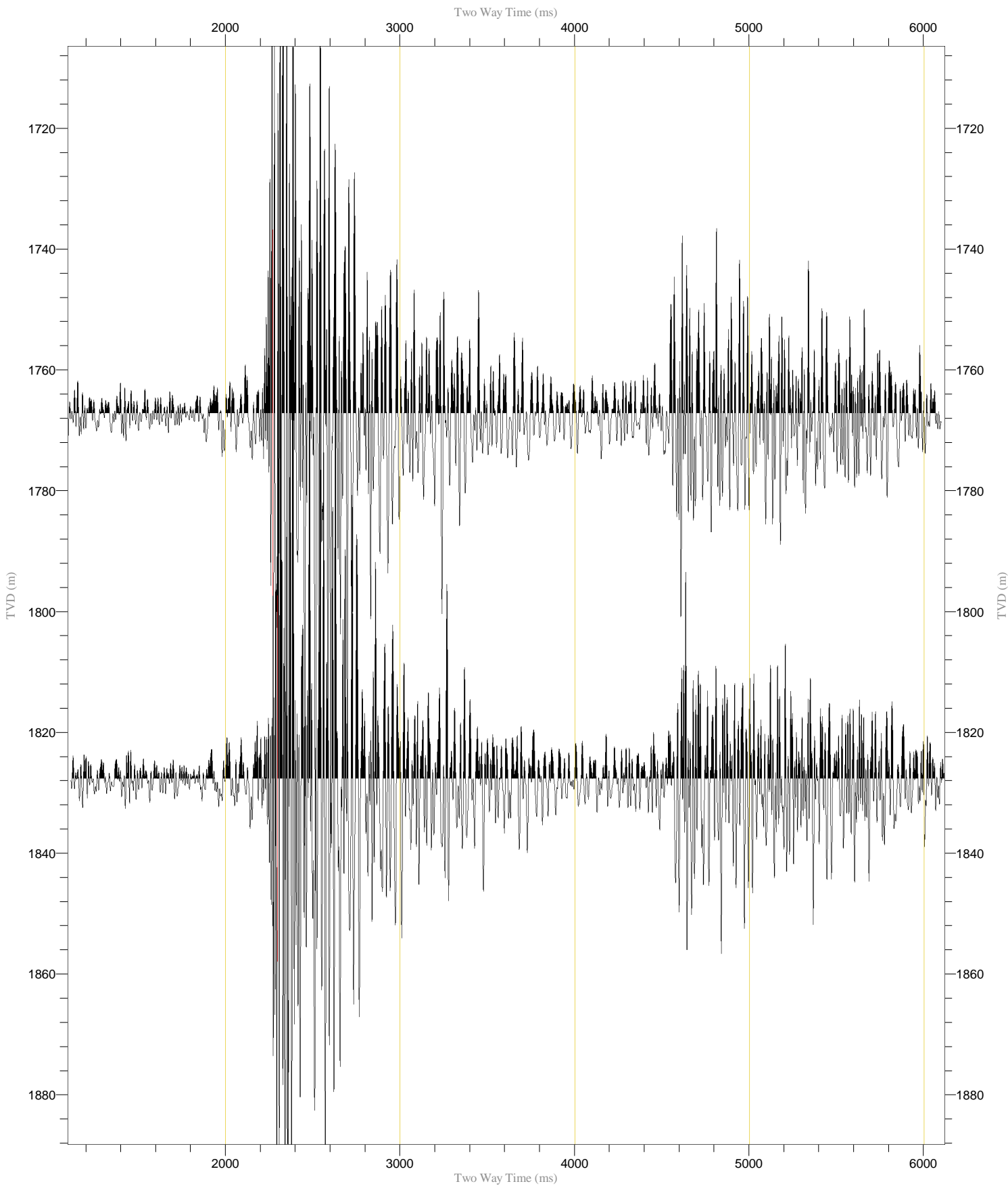


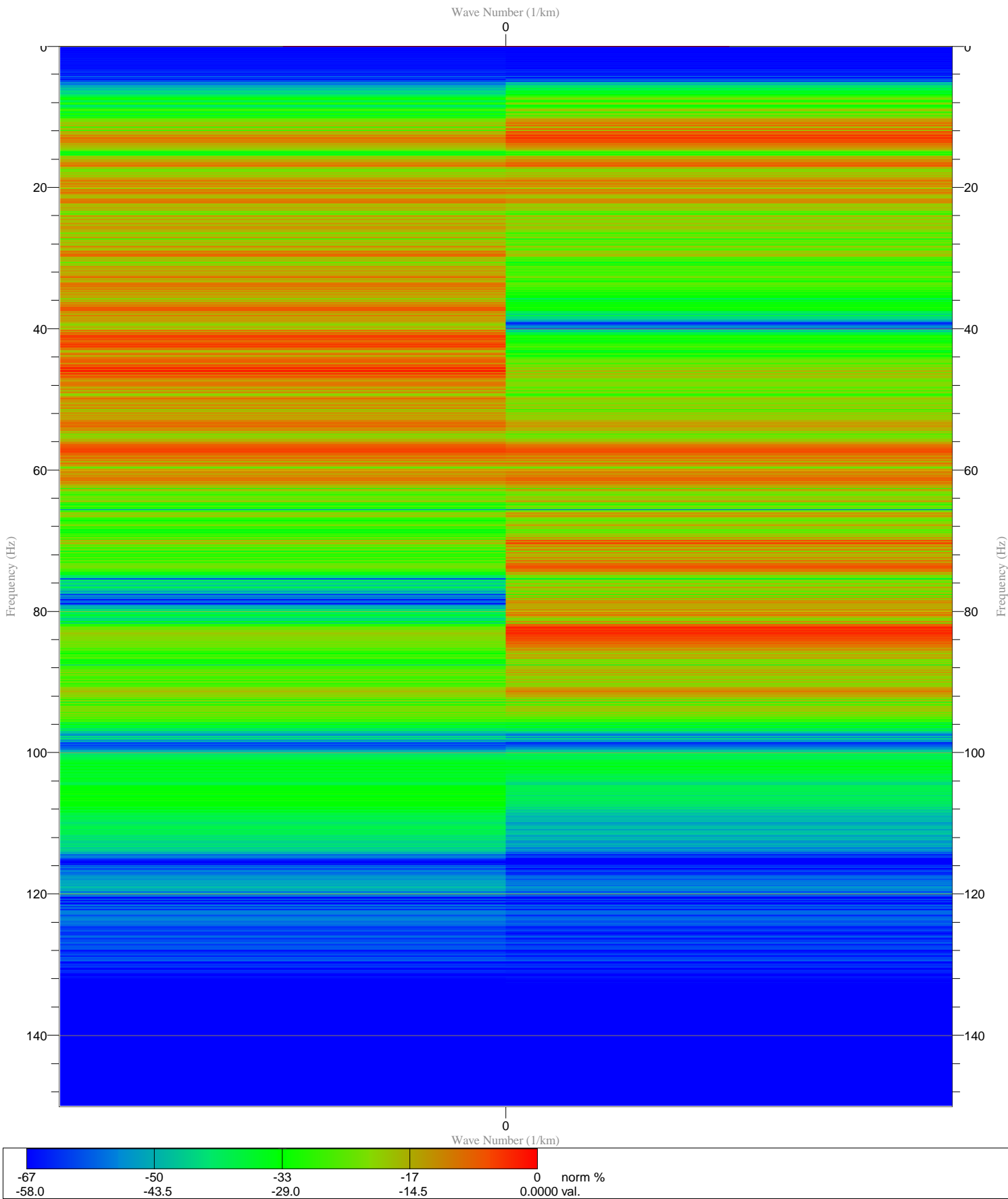




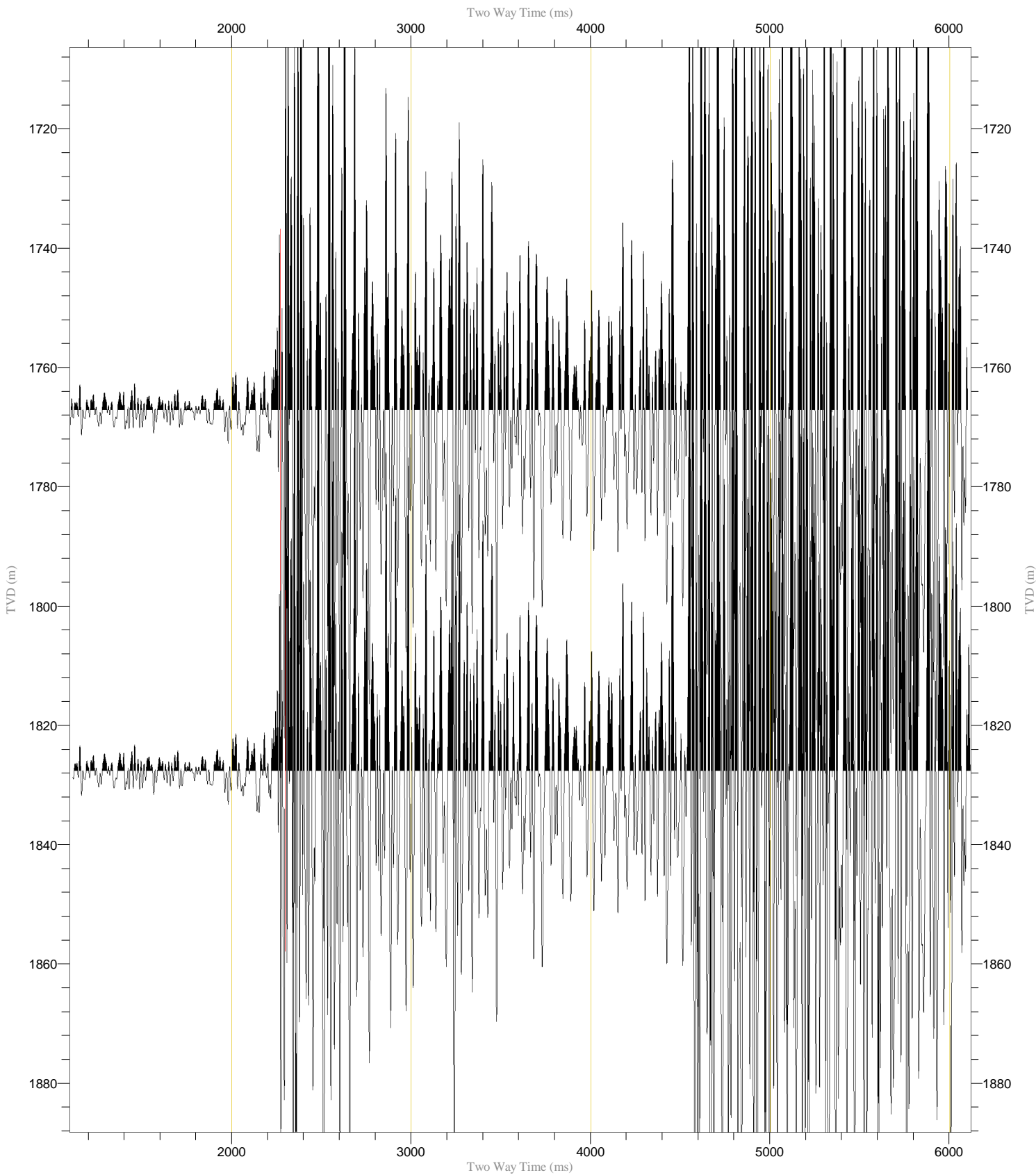






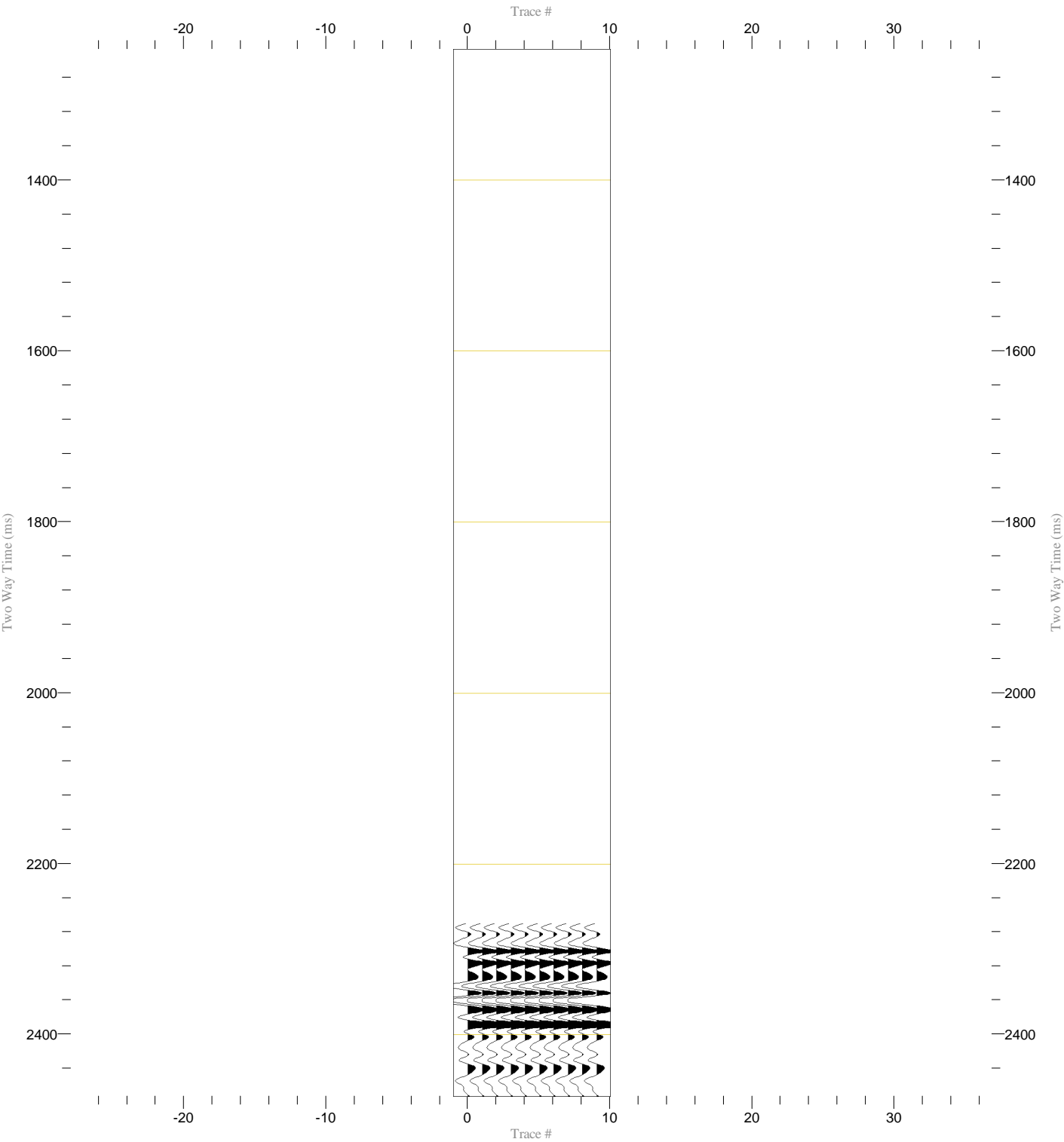


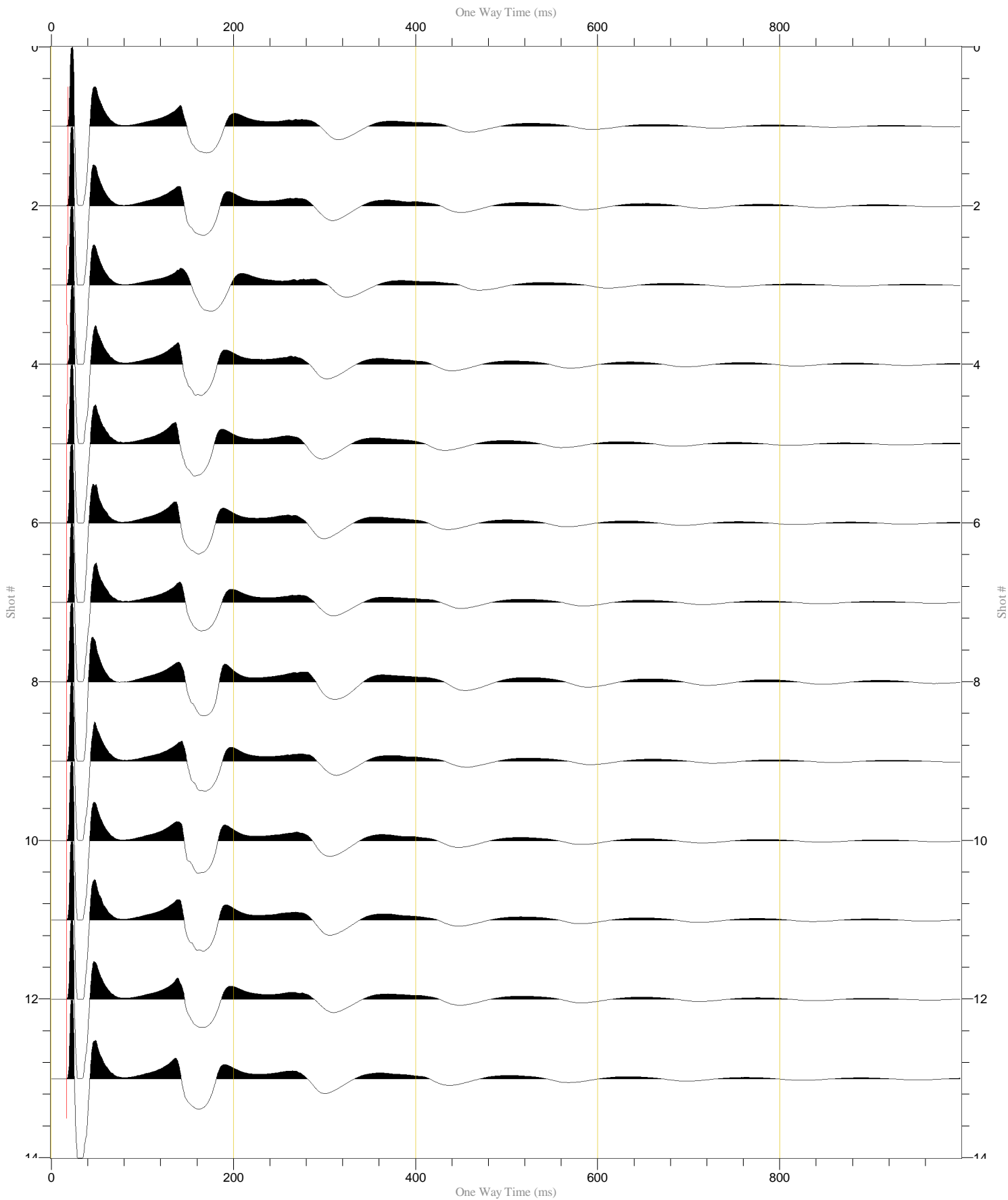
VSP Corridor Stack (Input) BPF 5.0 - 90.0Hz Median Filter 9 Traces Waveshape Decon.(wavelet: 8.0 - 85.0 Hz zero-phase) BPF 8.0 - 85.0Hz Travel time exponent = 1.50 Median Filter 7 Traces	Normalization Trace by Trace (250%) Polarity Normal Two Way Time (ms) Scaling 3.4 cm/sec, 1/880	
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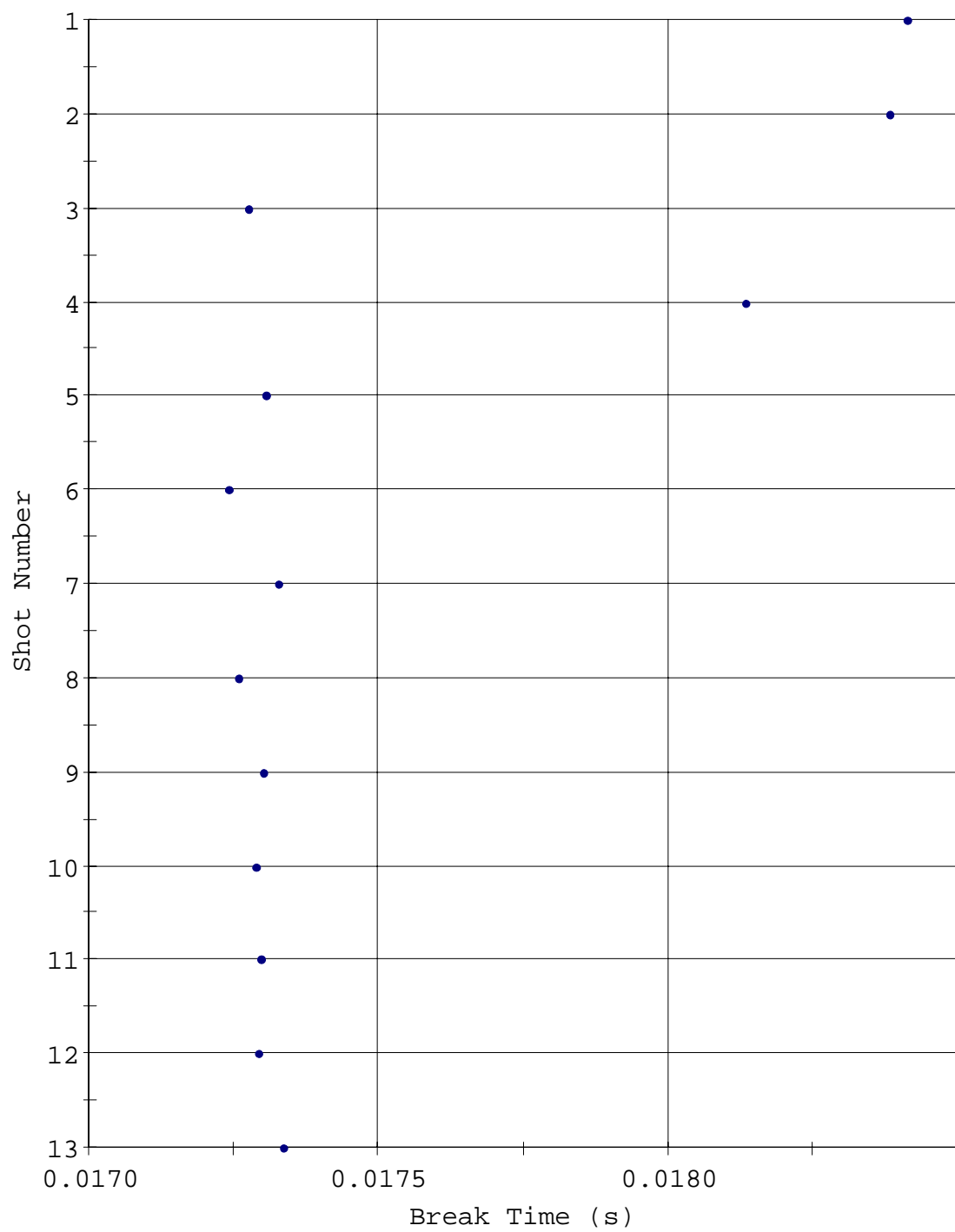
VSP Corridor Stack (output)
BPF 5.0 - 90.0Hz
Median Filter 9 Traces
Waveshape Decon.(wavelet: 8.0 - 85.0 Hz zero-phase)
BPF 8.0 - 85.0Hz
Travel time exponent = 1.50
Median Filter 7 Traces
Corridor Stack (Mean): BPF 5.0 - 90.0Hz

Normalization Trace by Trace (250%)
Polarity Normal
Two Way Time (ms)
Scaling 15.00 cm/sec, 4.01/cm



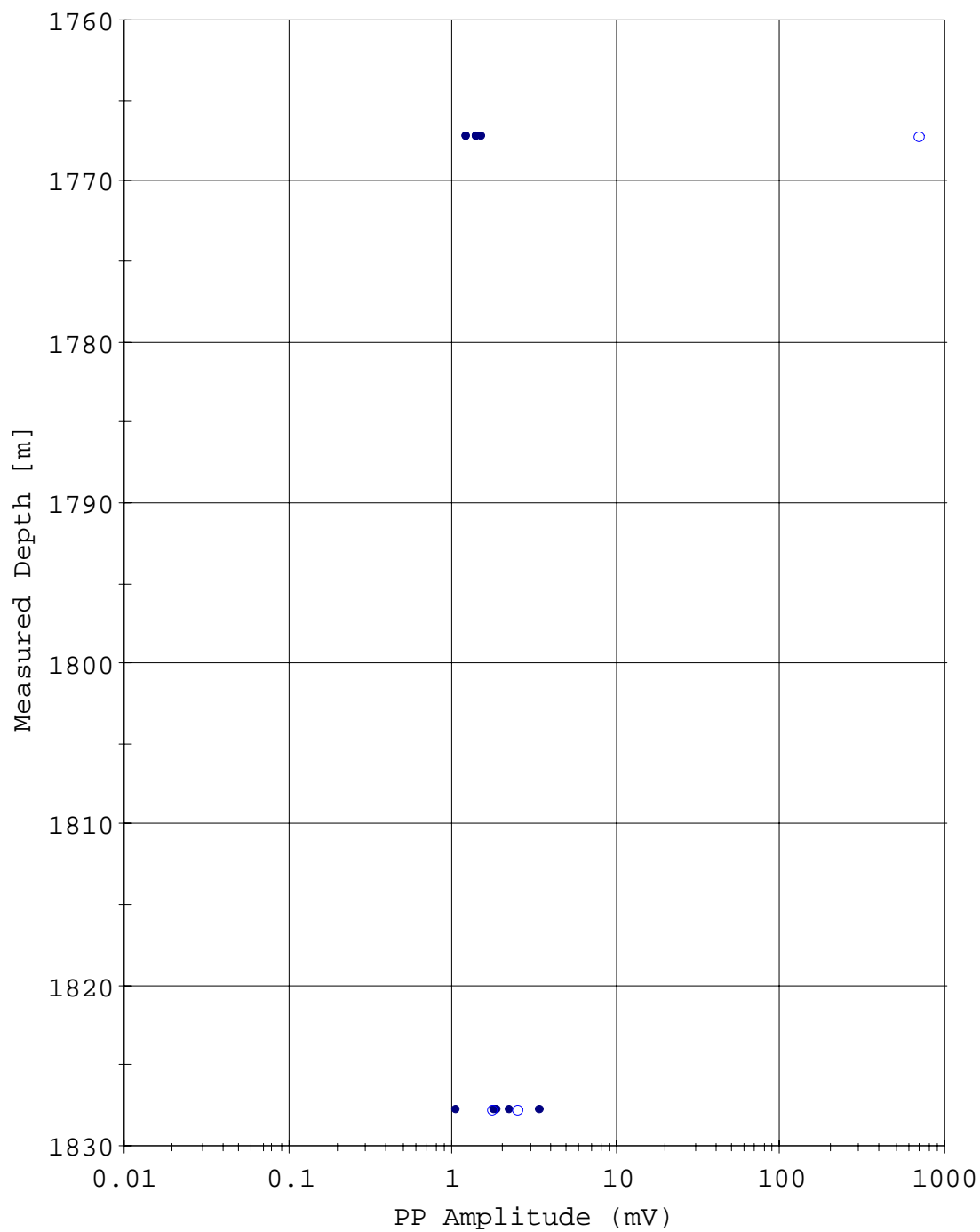


Surface Sensor QC Plot Page



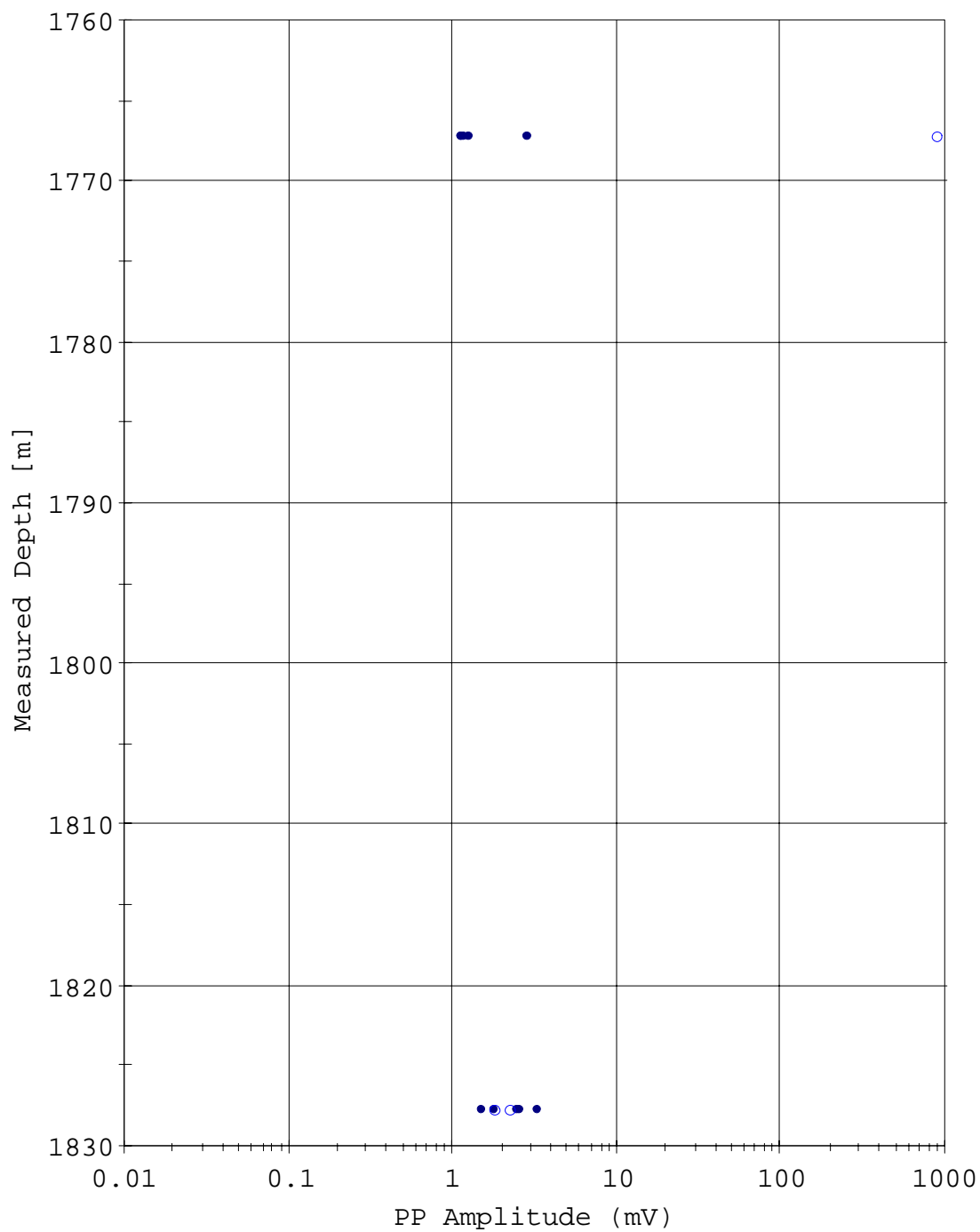
• Surface Sensor Break Time

Peak To Peak Plot (X)



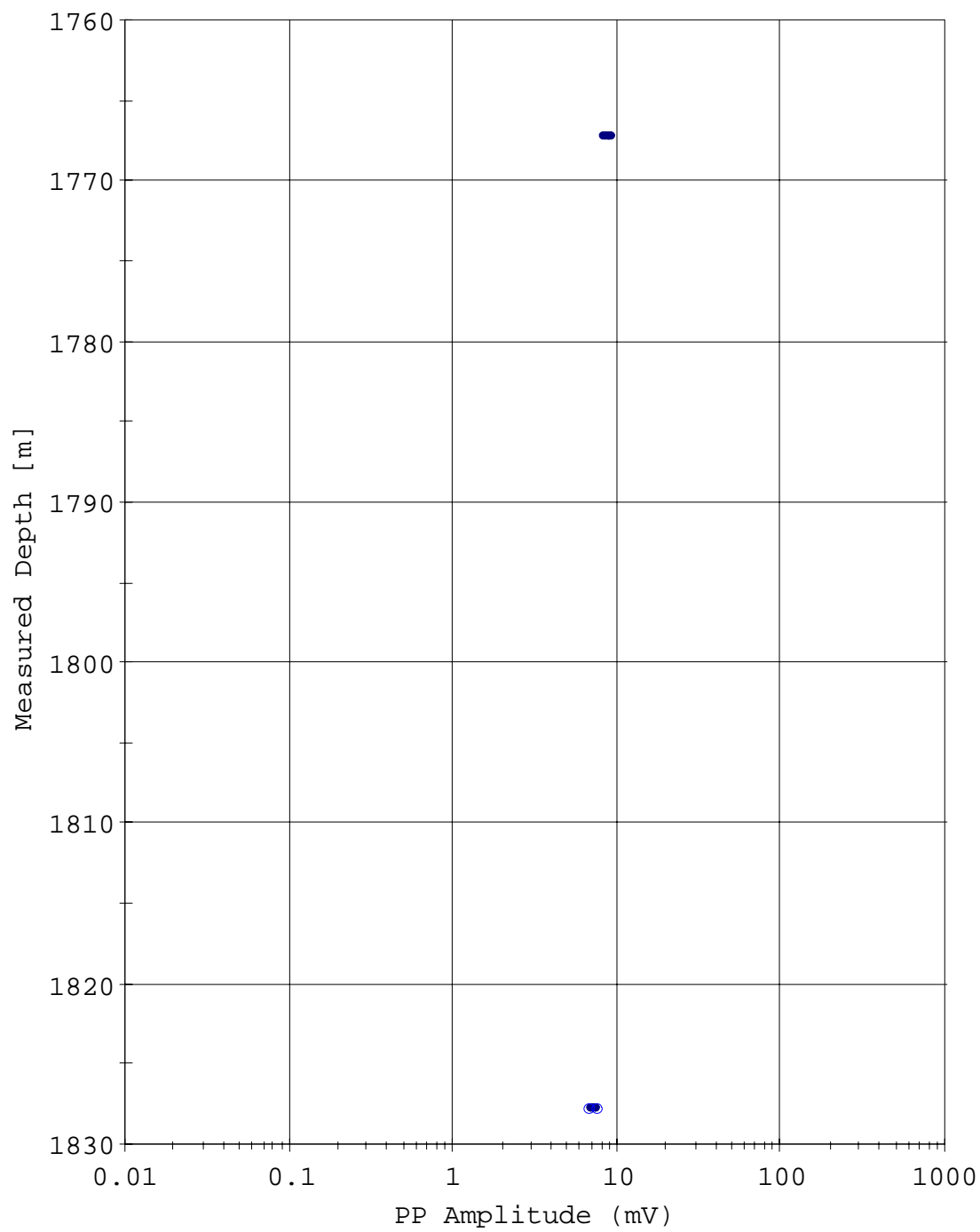
- PP Amplitude (mV) accepted for stack
- PP Amplitude (mV) rejected

Peak To Peak Plot (Y)



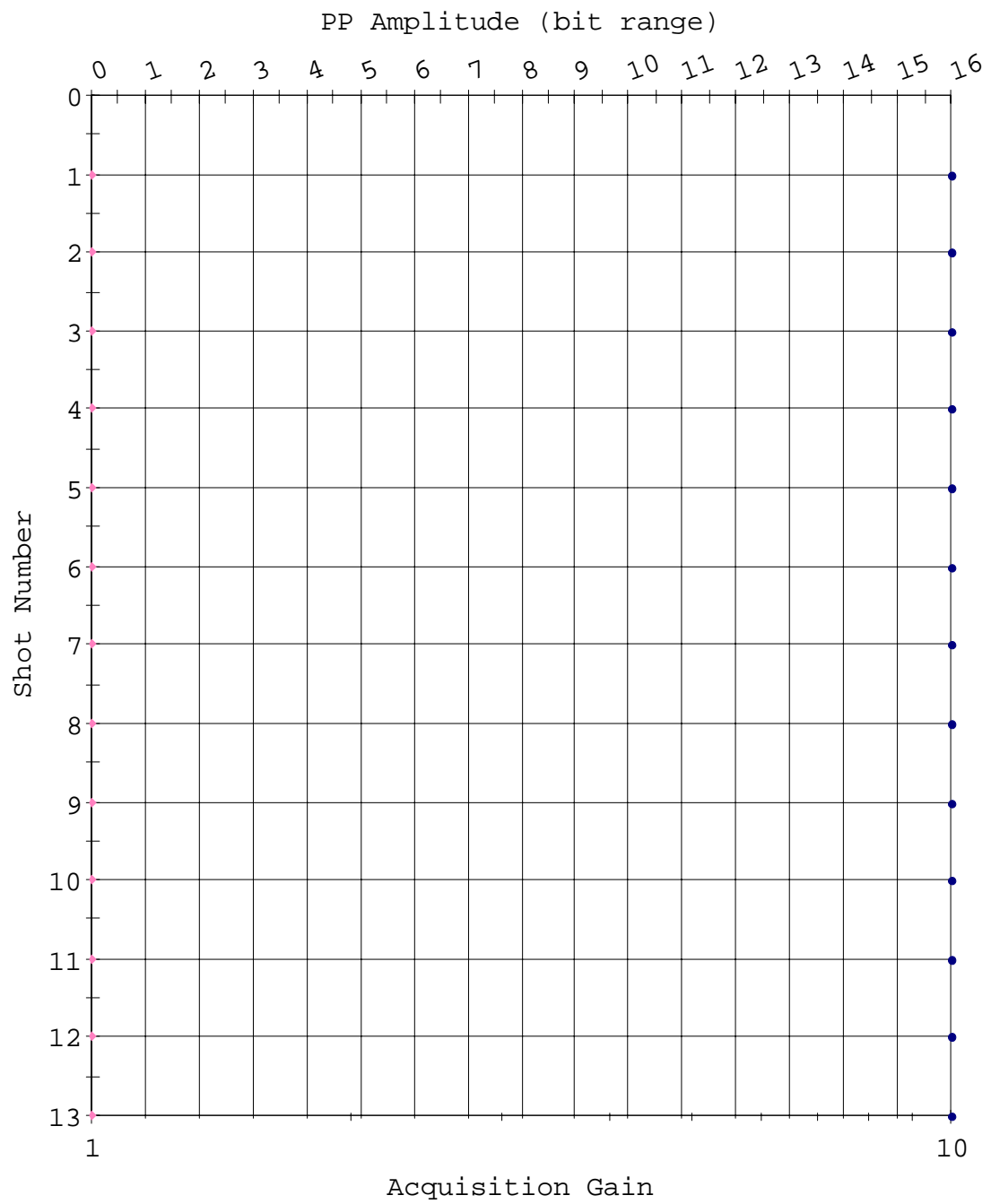
- PP Amplitude (mV) accepted for stack
- PP Amplitude (mV) rejected

Peak To Peak Plot (Z)



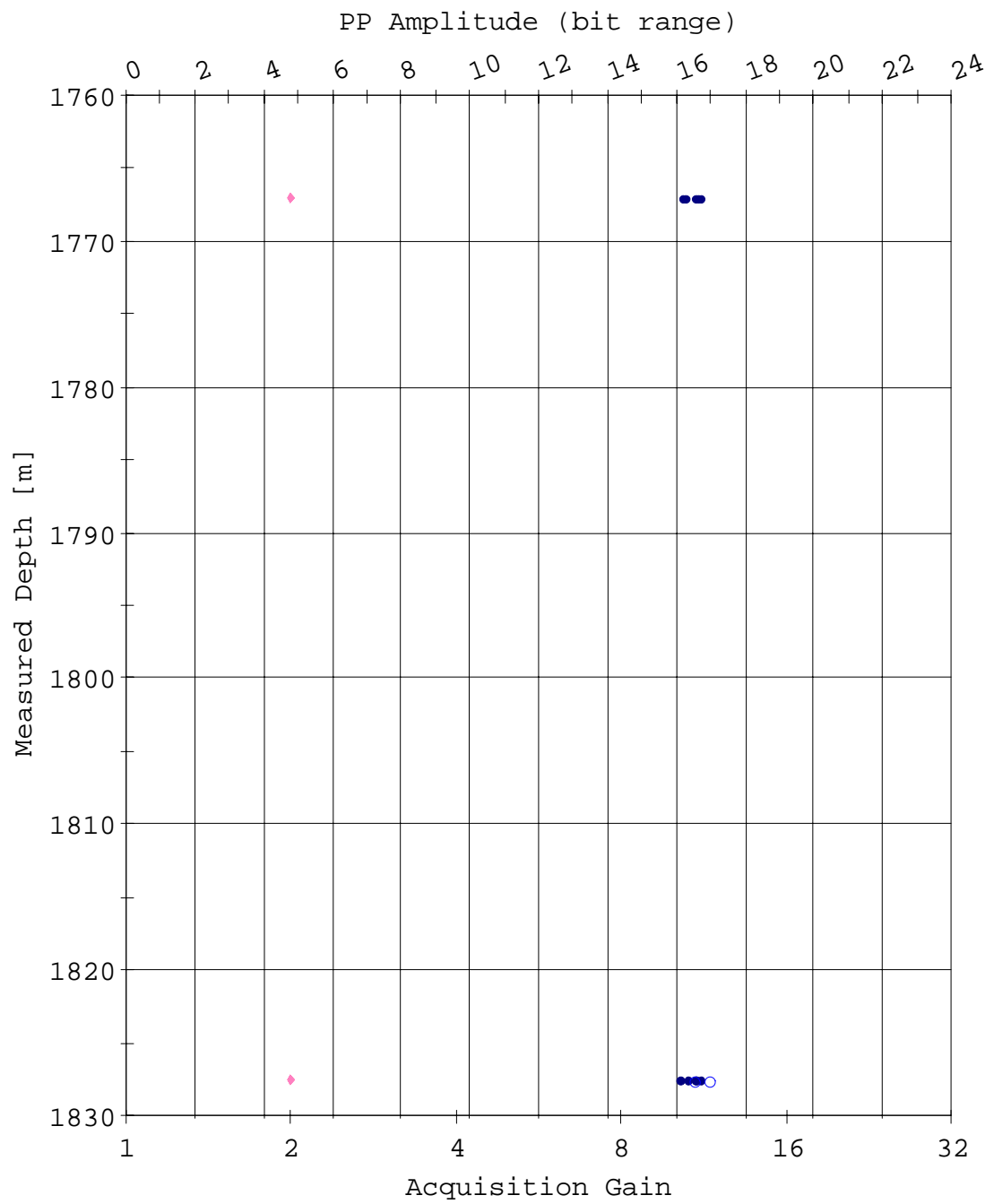
- PP Amplitude (mV) accepted for stack
- PP Amplitude (mV) rejected

Amplitude QC Plot (Surface)



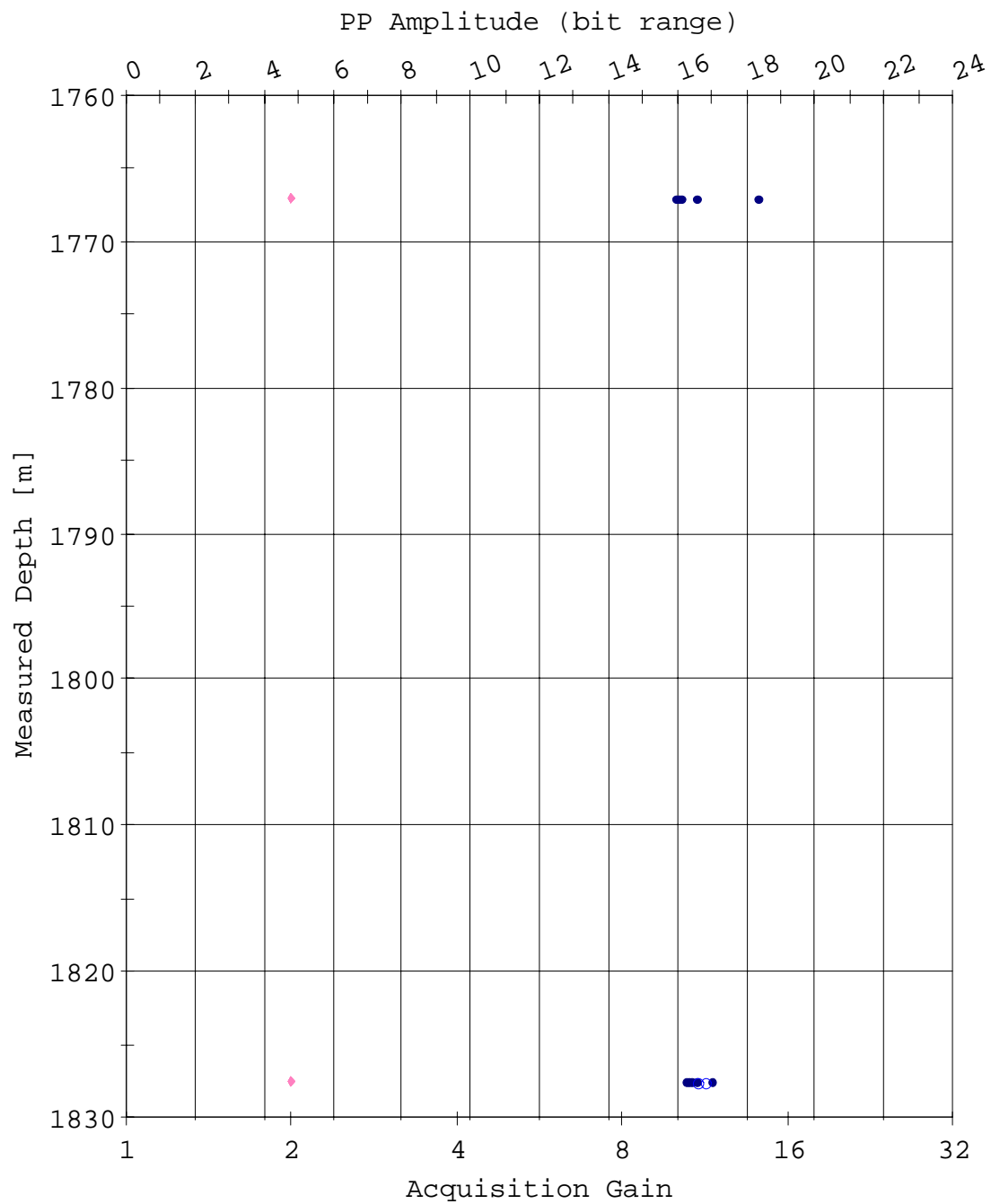
- PP Amplitude (bit range) accepted for stack
- PP Amplitude (bit range) rejected
- ◆ Acquisition Gain

Amplitude QC Plot (X)



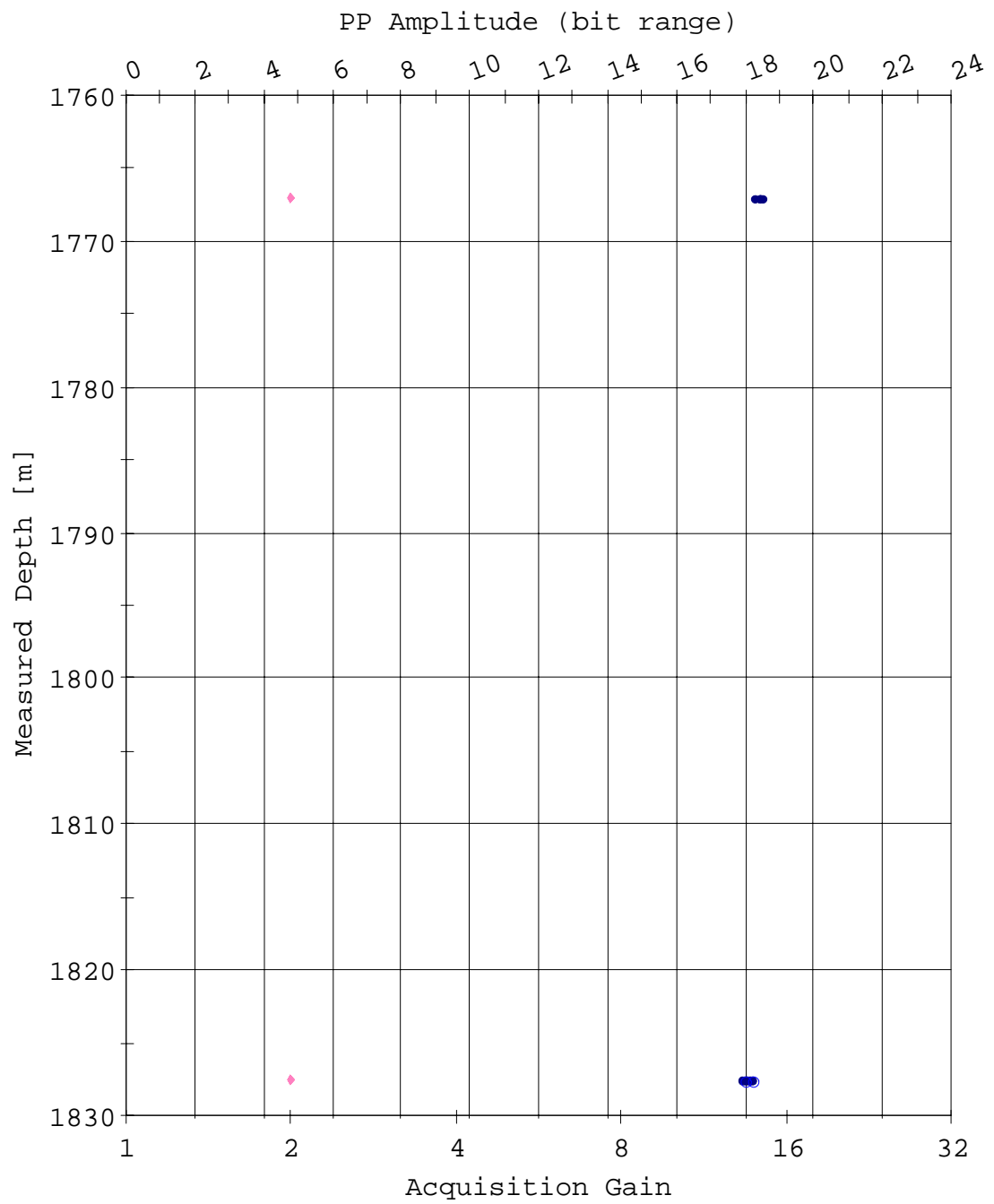
- PP Amplitude (bit range) accepted for stack
- PP Amplitude (bit range) rejected
- ◆ Acquisition Gain

Amplitude QC Plot (Y)



- PP Amplitude (bit range) accepted for stack
- PP Amplitude (bit range) rejected
- ◆ Acquisition Gain

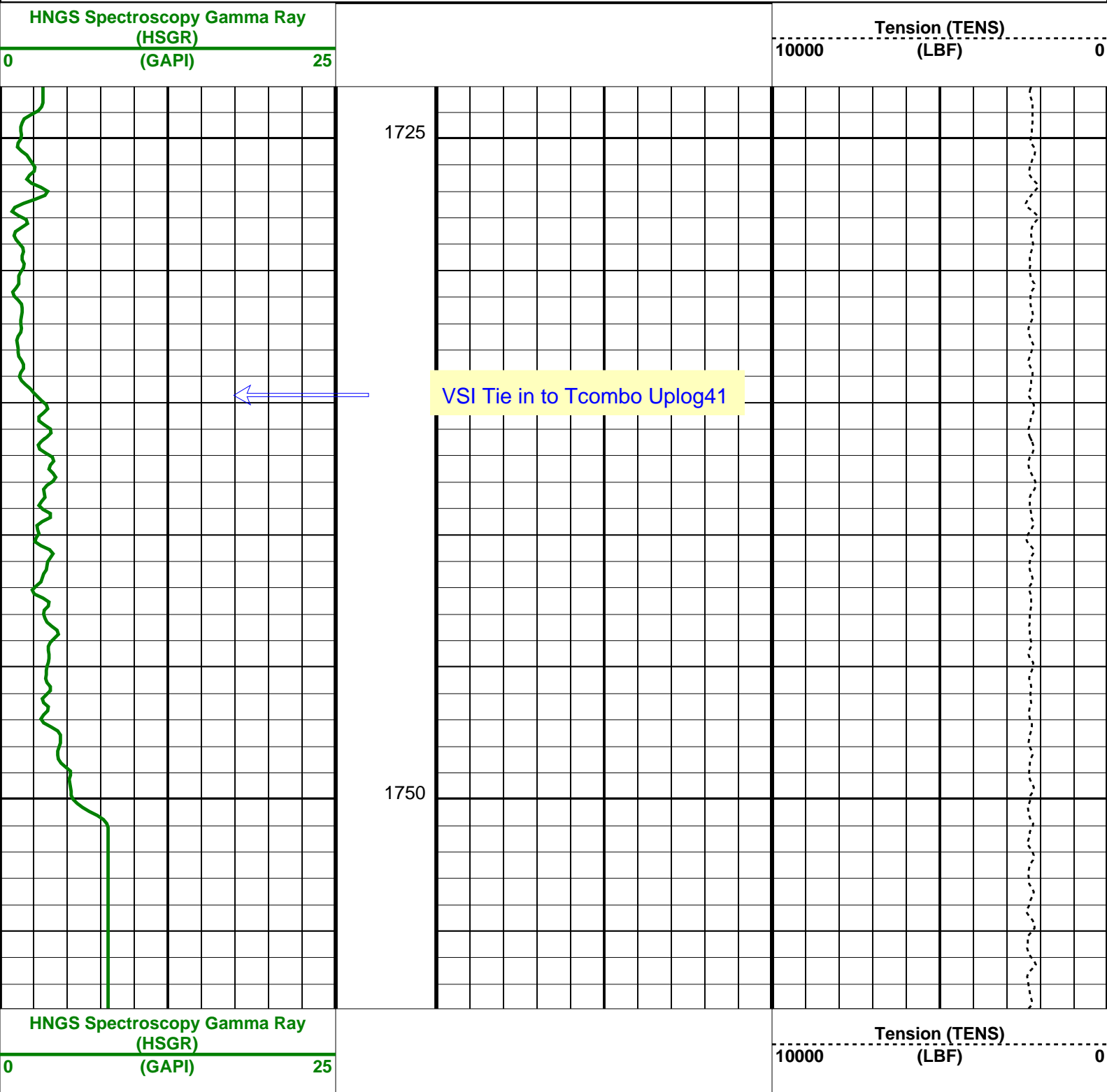
Amplitude QC Plot (Z)



- PP Amplitude (bit range) accepted for stack
- PP Amplitude (bit range) rejected
- ◆ Acquisition Gain

Output DLIS Files					
DEFAULT	VSIT_NGS_059LUP	FN:80	PRODUCER	16-Aug-2020 06:00	1757.9 M
1723.6 M					
BACKUP	VSIT_NGS_059LUP	FN:81	PRODUCER	16-Aug-2020 06:00	1757.9 M
1723.6 M					

OP System Version: 19C0-187					
VSIT-C	19C0-187	HNGC-B_304	19C0-187		
HNGS-BA	19C0-187	DTC-H	19C0-187		



Parameters		
DLIS Name	Description	Value

HNGS-BA: Hostile Natural Gamma Ray Sonde				
BAR1	HNGS Detector 1 Barite Constant	1		
BAR2	HNGS Detector 2 Barite Constant	1		
BHK	HNGS Borehole Potassium Correction Concentration	0		
BHS	Borehole Status	OPEN		
CSD1	Inner Casing Outer Diameter	0	IN	
CSD2	Outer Casing Outer Diameter	0	IN	
CSW1	Inner Casing Weight	0	LB/F	
CSW2	Outer Casing Weight	0	LB/F	
DBCC	HNGS Barite Constant Correction Flag	NONE		
GCSE	Generalized Caliper Selection	BS		
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW		
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW		
HABK	HNGS Borehole Potassium Running Average	-0.00251729		
HALF	HNGS Alpha Filter Length	60	IN	
HCRB	HNGS Apply Borehole Potassium Correction	NONE		
HMWM	Mud Weighting Material	BARI		
HNPE	HNGS Processing Enable	YES		
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS	
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS	
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES		
TPOS	Tool Position	ECCE		
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.00989		
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.04266		
System and Miscellaneous				
BS	Bit Size	9.875	IN	
Format: CORRELATION Vertical Scale: 1:200 Graphics File Created: 16-Aug-2020 06:00				
OP System Version: 19C0-187				
VSIT-C	19C0-187	HNGC-B_304	19C0-187	
HNGS-BA	19C0-187	DTC-H	19C0-187	
Output DLIS Files				
DEFAULT	VSIT_NGS_059LUP	FN:80	PRODUCER	16-Aug-2020 06:00
BACKUP	VSIT_NGS_059LUP	FN:81	PRODUCER	16-Aug-2020 06:00