

Survey type: Vertical Seismic Profile (VSP)
Company: International Ocean
Discovery Program
Well: Expedition 359, Site U1467E
Field: Maldives Monsoon & Sea Level
Country:
Run: 2
Date: 6-Nov-2015

Recorded by: C. Furman

Witnessed by: A. Slagle, T. Ludmann

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Well Information

Well Type	Dedicated Logging Hole
Rig / Platform Type	Drill Ship
Well Reference Azimuth (Magnetic, True, or Grid North)	Magnetic North

Elevation Information

Water Depth	498.4 m
Water Temperature	25 degC
Water Salinity	
Weathered Zone Depth	
Elevation Depth	0

Sea Condition

Sea Condition	Calm
Wave Height	Neg.
High Tide Level	
High Tide Time	
Low Tide Level	
Low Tide Time	

Velocity Information

Weathered Velocity	
Elevation Velocity	

Downhole Equipment Information

Tool Type	VSI
Surface Equipment	WSAM / WSI
Combined Tool	EDTC (GR & Telem)
Number of Shuttles	1
Nominal Receiver Spacing	N/A
Gimbaled (Y/N)	Y
Downhole Geophone Type	GAC-D
Sensitivity	
Natural Frequency	
Damping Factor	
DC Resistance	
Receiver #1	S/N: VSIS-PA 8608
Receiver #2	
Receiver #3	
Receiver #4	
Receiver #5	
Receiver #6	
Receiver #7	
Receiver #8	

Operational Time Breakdown

DATE	Time Start	Time Taken Hr : min	OPERATION
6-Nov-15	6:10	0:15	Tool Rig-up start
6-Nov-15	6:25	1:15	Tool Rigged up; power up, RIH to TD
6-Nov-15	7:40	0:20	Tool at TD; correlate GR to match depth to Run 1 Main pass
6-Nov-15	8:00	2:40	Begin Seismic Survey
6-Nov-15	10:40	0:35	End Seismic Survey
6-Nov-15	11:15	0:25	Tools at surface; begin R/D
6-Nov-15	11:40		Tools rigged down; end of seismic operations
			HRS -TOTAL OPERATING TIME

VSP

General Information

Survey Type	Zero Offset VSP
Surface Recording Length	500.0 ms
Surface Sampling Rate	1.0 ms
Downhole Recording Length	3000.0 ms
Downhole Sampling Rate	1.0 ms
Top of Survey	655.0 m
Bottom of Survey	1182.4 m
Number of Shots	94
Number of Downhole Traces	94
Number of Downhole Traces used for Processing	56

Stack Summary Listing (1/1) from VSI_003_GGun250_geo_wavelfield_z.1df

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			
						1610.7		
13	655.0	655.0	0.4038	0.4066	0.8132		1610.7	1610.7
						1807.1		
12	694.9	694.9	0.4259	0.4287	0.8574		1620.9	1621.5
						4114.0		
11	744.9	744.9	0.4380	0.4409	0.8817		1689.6	1738.7
						1765.7		
10	794.9	794.9	0.4663	0.4692	0.9384		1694.2	1740.4
						1381.8		
9	844.9	844.9	0.5024	0.5054	1.0107		1671.8	1717.2
						3386.1		
8	895.0	895.0	0.5172	0.5201	1.0403		1720.6	1786.3
						1603.4		
7	944.9	944.9	0.5483	0.5513	1.1026		1714.0	1776.5
						3160.9		
14	994.9	994.9	0.5641	0.5671	1.1342		1754.3	1829.4
						2361.3		
5	1044.9	1044.9	0.5853	0.5883	1.1766		1776.2	1851.2
						2092.3		
4	1099.9	1099.9	0.6115	0.6146	1.2291		1789.7	1862.1
						3173.9		
1	1143.0	1143.0	0.6251	0.6281	1.2563		1819.6	1900.1
						1947.3		
3	1164.8	1164.8	0.6363	0.6393	1.2787		1821.8	1900.9
						5158.2		
2	1182.4	1182.4	0.6397	0.6427	1.2855		1839.6	1932.8

Shot Summary Listing (1/1)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
655.0	1	13	-8.7	13.2	1006.0	81, 82, 85, 87, 88
694.9	1	12	-8.2	13.5	882.5	75, 76, 77, 78, 79
744.9	1	11	-8.3	12.8	815.0	65, 66, 67, 70, 73
794.9	1	10	-8.3	12.7	889.5	53, 55, 56, 58, 61, 62
844.9	1	9	-8.0	12.2	887.3	49, 50, 51
895.0	1	8	-8.1	12.1	880.7	45
944.9	1	7	-7.9	13.1	872.3	33, 34, 35, 36, 37
994.9	1	14	13.4	15.3	1054.6	90, 91, 92, 93, 94, 95
1044.9	1	5	-19.3	12.9	941.0	24, 25, 26, 27, 28
1099.9	1	4	-22.2	14.7	882.9	18, 19, 20, 22, 23
1143.0	1	1	-22.9	15.0	928.0	2, 3, 4
1164.8	1	3	-22.3	7.8	965.5	14, 15
1182.4	1	2	-22.3	4.9	874.4	8, 9, 10, 11, 12

Observer's Note (1/2)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
1143.0	02:53:24	SHOT	1	1	GGun250	Early pick
1143.0	02:53:45	SHOT	2	1	GGun250	
1143.0	02:54:03	SHOT	3	1	GGun250	
1143.0	02:54:21	SHOT	4	1	GGun250	
1143.0	02:54:39	SHOT	5	1	GGun250	Bad DH WF
1143.0	02:54:58	SHOT	6	1	GGun250	
1143.0	02:55:16	SHOT	7	1	GGun250	
1182.4	03:12:01	SHOT	8	2	GGun250	
1182.4	03:12:19	SHOT	9	2	GGun250	
1182.4	03:12:37	SHOT	10	2	GGun250	
1182.4	03:12:55	SHOT	11	2	GGun250	
1182.4	03:13:14	SHOT	12	2	GGun250	
1164.8	03:18:42	SHOT	13	3	GGun250	Bad DH waveform
1164.8	03:19:01	SHOT	14	3	GGun250	Bad wave
1164.8	03:19:42	SHOT	15	3	GGun250	Bad wave
1164.8	03:20:06	SHOT	16	3	GGun250	Bad wave
1164.8	03:20:42	SHOT	17	3	GGun250	Bad Wave -- this station could be manually picked
1099.9	03:30:28	SHOT	18	4	GGun250	
1099.9	03:30:47	SHOT	19	4	GGun250	
1099.9	03:31:05	SHOT	20	4	GGun250	
1099.9	03:31:23	SHOT	21	4	GGun250	Marginal DH WF
1099.9	03:31:41	SHOT	22	4	GGun250	
1099.9	03:31:59	SHOT	23	4	GGun250	
1044.9	03:41:54	SHOT	24	5	GGun250	
1044.9	03:42:12	SHOT	25	5	GGun250	
1044.9	03:42:30	SHOT	26	5	GGun250	
1044.9	03:42:48	SHOT	27	5	GGun250	
1044.9	03:43:06	SHOT	28	5	GGun250	
994.9	03:52:06	SHOT	29	6	GGun250	No gun
994.9	03:52:59	SHOT	30	6	GGun250	No Gun
994.9	03:53:17	SHOT	31	6	GGun250	No Gun
944.9	04:02:23	SHOT	32	7	GGun250	Noisy
944.9	04:02:41	SHOT	33	7	GGun250	
944.9	04:02:59	SHOT	34	7	GGun250	
944.9	04:03:17	SHOT	35	7	GGun250	
944.9	04:03:35	SHOT	36	7	GGun250	
944.9	04:03:53	SHOT	37	7	GGun250	
895.0	04:12:27	SHOT	38	8	GGun250	Usable
895.0	04:12:46	SHOT	39	8	GGun250	
895.0	04:13:04	SHOT	40	8	GGun250	Bad DH WF
895.0	04:13:31	SHOT	41	8	GGun250	Bad DH WF
895.0	04:14:05	SHOT	42	8	GGun250	
895.0	04:14:25	SHOT	43	8	GGun250	Junk
895.0	04:14:43	SHOT	44	8	GGun250	
895.0	04:15:01	SHOT	45	8	GGun250	
844.9	04:23:18	SHOT	46	9	GGun250	
844.9	04:23:36	SHOT	47	9	GGun250	
844.9	04:23:54	SHOT	48	9	GGun250	Bad WF
844.9	04:24:12	SHOT	49	9	GGun250	
844.9	04:24:30	SHOT	50	9	GGun250	
844.9	04:24:48	SHOT	51	9	GGun250	
794.9	04:33:02	SHOT	52	10	GGun250	No pick
794.9	04:33:24	SHOT	53	10	GGun250	
794.9	04:33:48	SHOT	54	10	GGun250	Noise
794.9	04:34:11	SHOT	55	10	GGun250	Wrong Pick
794.9	04:34:29	SHOT	56	10	GGun250	
794.9	04:34:47	SHOT	57	10	GGun250	No Pick
794.9	04:35:05	SHOT	58	10	GGun250	
794.9	04:35:23	SHOT	59	10	GGun250	No pick

Observer's Note (2/2)

Well depth[m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
794.9	04:36:15	SHOT	60	10	GGun250	Bad Wave
794.9	04:36:33	SHOT	61	10	GGun250	
794.9	04:36:57	SHOT	62	10	GGun250	
744.9	04:44:41	SHOT	63	11	GGun250	Bad pick
744.9	04:45:18	SHOT	65	11	GGun250	
744.9	04:45:36	SHOT	66	11	GGun250	
744.9	04:45:54	SHOT	67	11	GGun250	
744.9	04:46:12	SHOT	68	11	GGun250	Contaminated Waveform
744.9	04:47:24	SHOT	69	11	GGun250	Bad DH WF
744.9	04:47:43	SHOT	70	11	GGun250	
744.9	04:48:01	SHOT	71	11	GGun250	Bad Wave
744.9	04:48:19	SHOT	72	11	GGun250	Bad Pick
744.9	04:48:37	SHOT	73	11	GGun250	Noisy, but OK
694.9	04:57:09	SHOT	74	12	GGun250	Junk
694.9	04:57:27	SHOT	75	12	GGun250	
694.9	04:57:45	SHOT	76	12	GGun250	
694.9	04:58:03	SHOT	77	12	GGun250	
694.9	04:58:22	SHOT	78	12	GGun250	
694.9	04:58:40	SHOT	79	12	GGun250	
655.0	05:05:57	SHOT	80	13	GGun250	No Pick
655.0	05:06:15	SHOT	81	13	GGun250	
655.0	05:07:00	SHOT	82	13	GGun250	
655.0	05:07:18	SHOT	83	13	GGun250	Junk
655.0	05:07:38	SHOT	84	13	GGun250	Junk
655.0	05:08:25	SHOT	85	13	GGun250	
655.0	05:08:45	SHOT	86	13	GGun250	Late Pick
655.0	05:09:03	SHOT	87	13	GGun250	
655.0	05:09:21	SHOT	88	13	GGun250	
994.9	05:30:06	SHOT	89	14	GGun250	No gun
994.9	05:30:29	SHOT	90	14	GGun250	Wrong Pick
994.9	05:30:47	SHOT	91	14	GGun250	
994.9	05:31:06	SHOT	92	14	GGun250	
994.9	05:31:24	SHOT	93	14	GGun250	
994.9	05:31:42	SHOT	94	14	GGun250	
994.9	05:32:00	SHOT	95	14	GGun250	

Source Configuration (Air Gun)

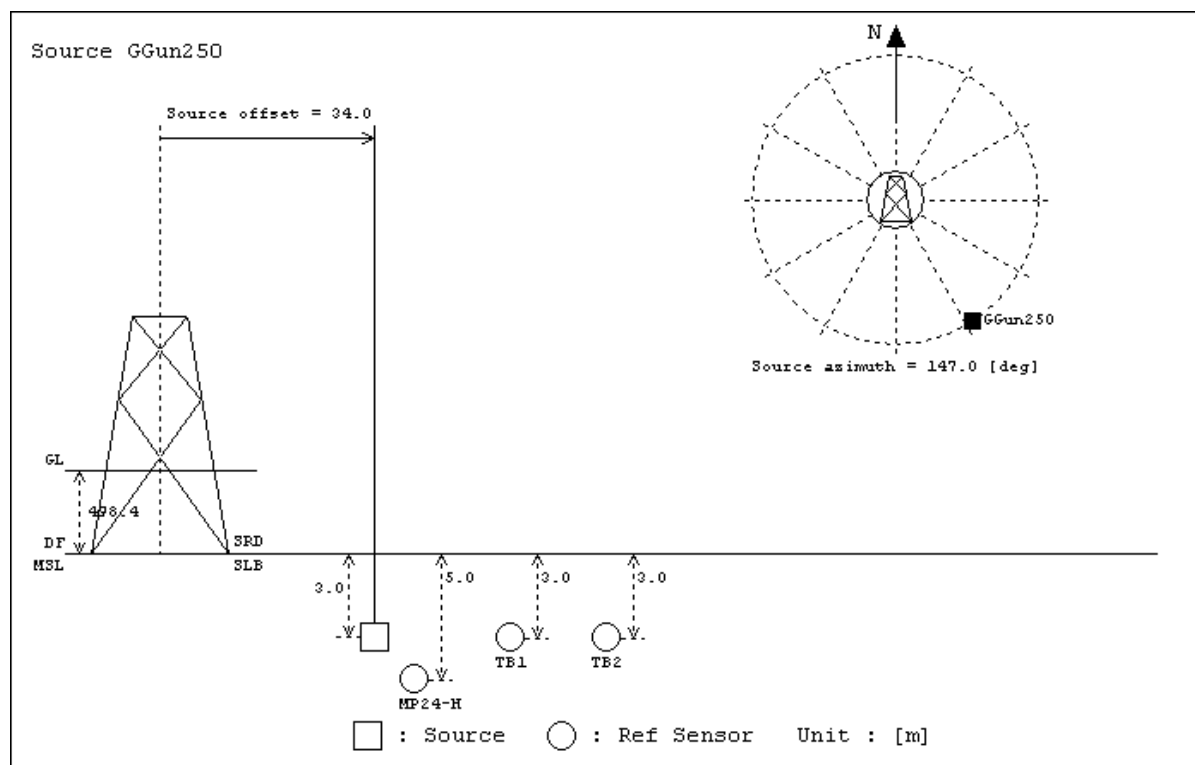
Source Location (Rig, Boat, Pit, Borehole)	Gun Cluster suspended from #3 Crane (Port side, aft)
Source Group ID (A, B, C, ...)	
Source Offset (for fixed offset)	34m
Source Azimuth (for fixed offset)	147 deg (mag)
Source Depth from Surface	3 m
Source Depth from Logging Zero	14 m

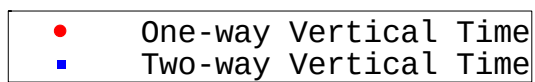
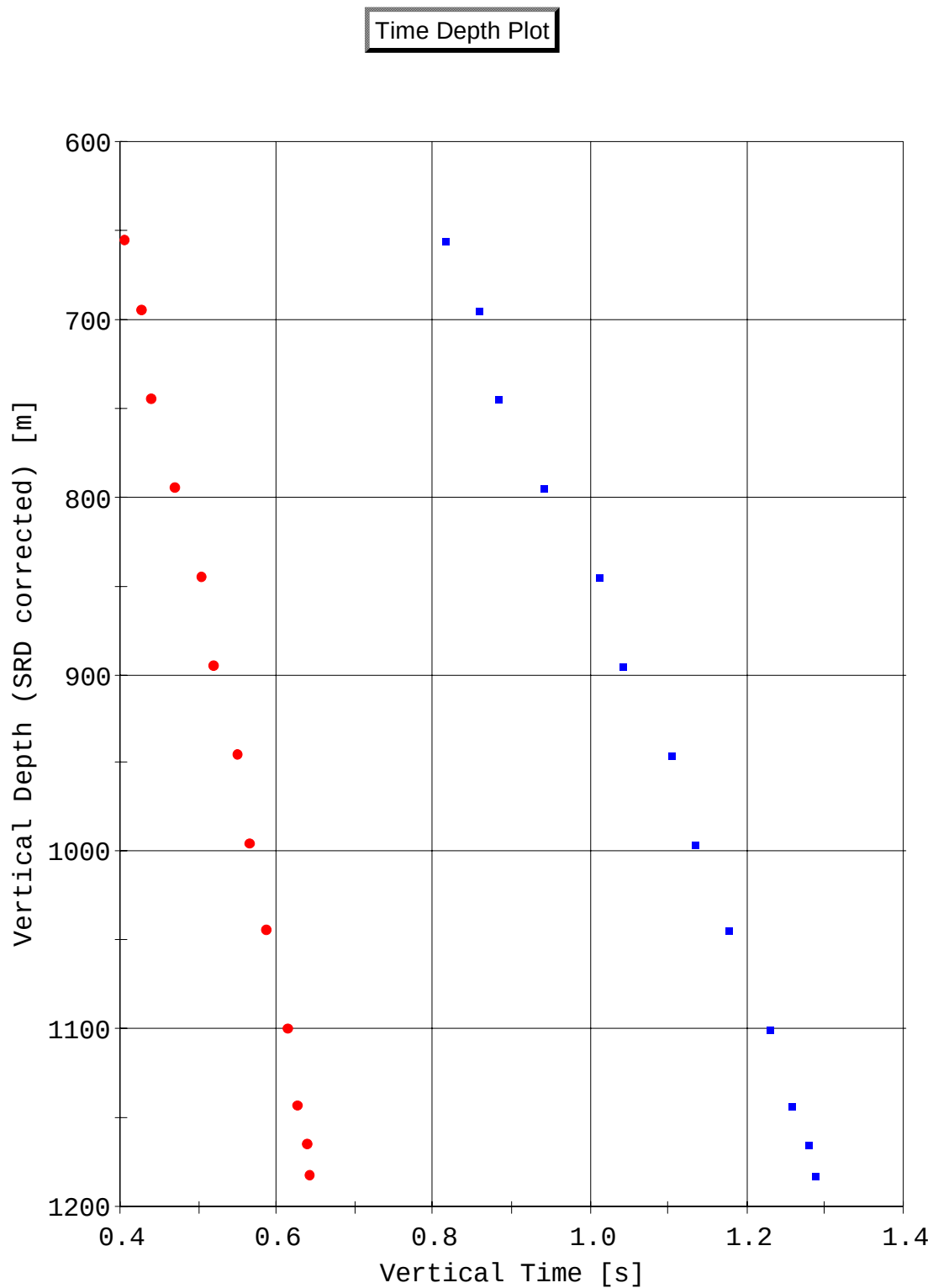
Gun Controller Type	WSI
Gun Controller Model Name	WSI
Gun Controller Serial Number	864
Gun Type	G-Gun
Gun Serial Number(s)	1
Gun Configuration (3 Gun Cluster, Gun Array, etc.)	2-gun cluster (only one gun used; one idle)
Gun Chamber Volumes	250 cu. in. per gun
Gun Pit/Borehole Information	Ocean
Compressor Type	Rig Air Supply
Compressor Flow Rate	N/A
Air Regulator Pressure	1800 PSI

Surface Sensor Configuration

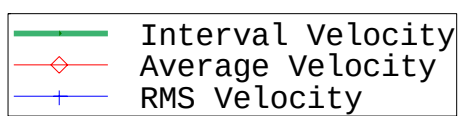
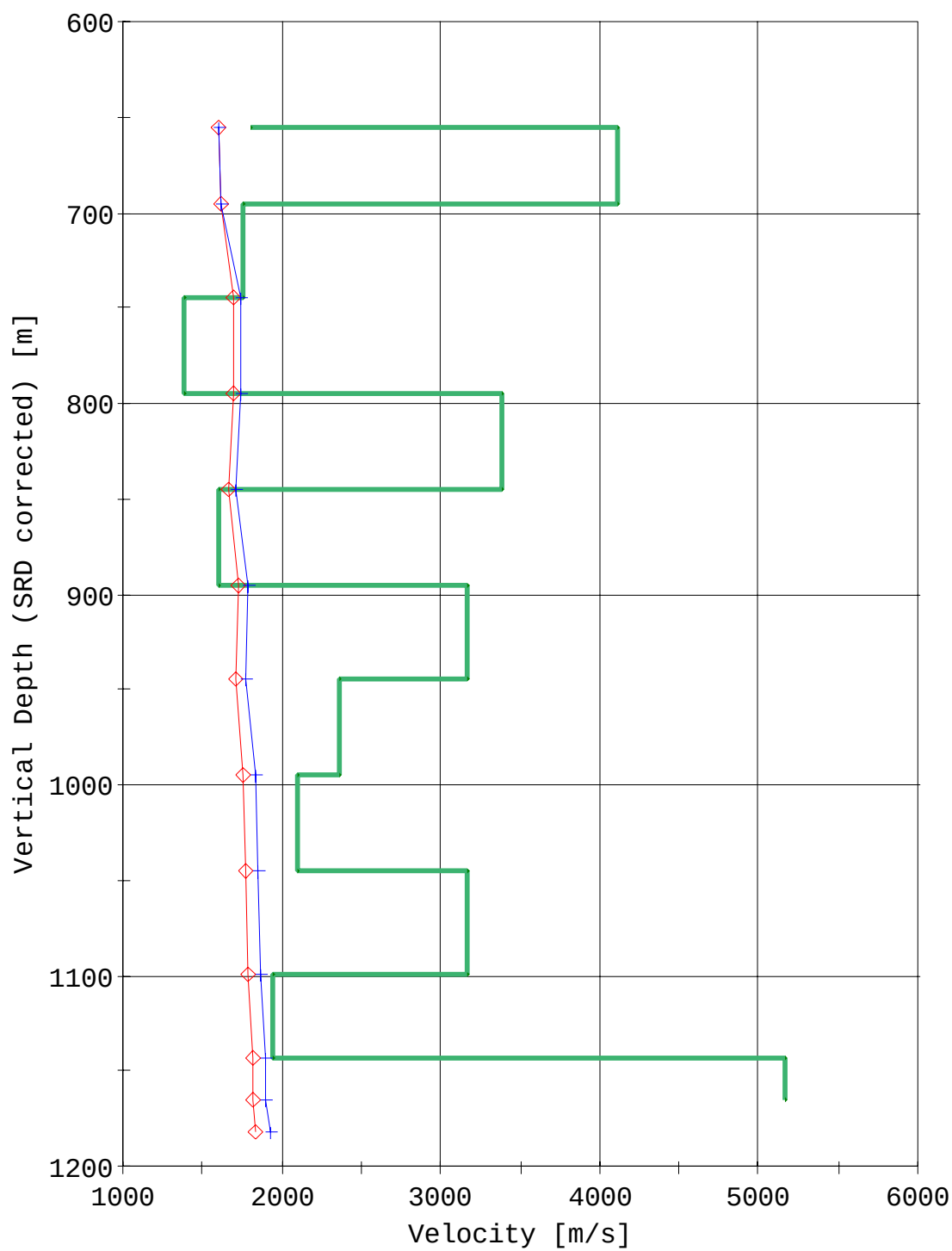
Number of Surface Reference Sensors	1
Surface Recording Length	500 ms
Surface Sampling Rate	1 ms
Sensor Type (S1)	MP-24H Hydrophone
Sensor Type (S2)	
Sensor Type (S3)	
Sensor Depth from Surface (S1)	5m
Sensor Depth from Surface (S2)	
Sensor Depth from Surface (S3)	
Sensor Depth from Logging Zero (S1)	16m
Sensor Depth from Logging Zero (S2)	
Sensor Depth from Logging Zero (S3)	
Sensor Offset from Source (S1)	0m (suspended directly below source)
Sensor Offset from Source (S2)	
Sensor Offset from Source (S3)	

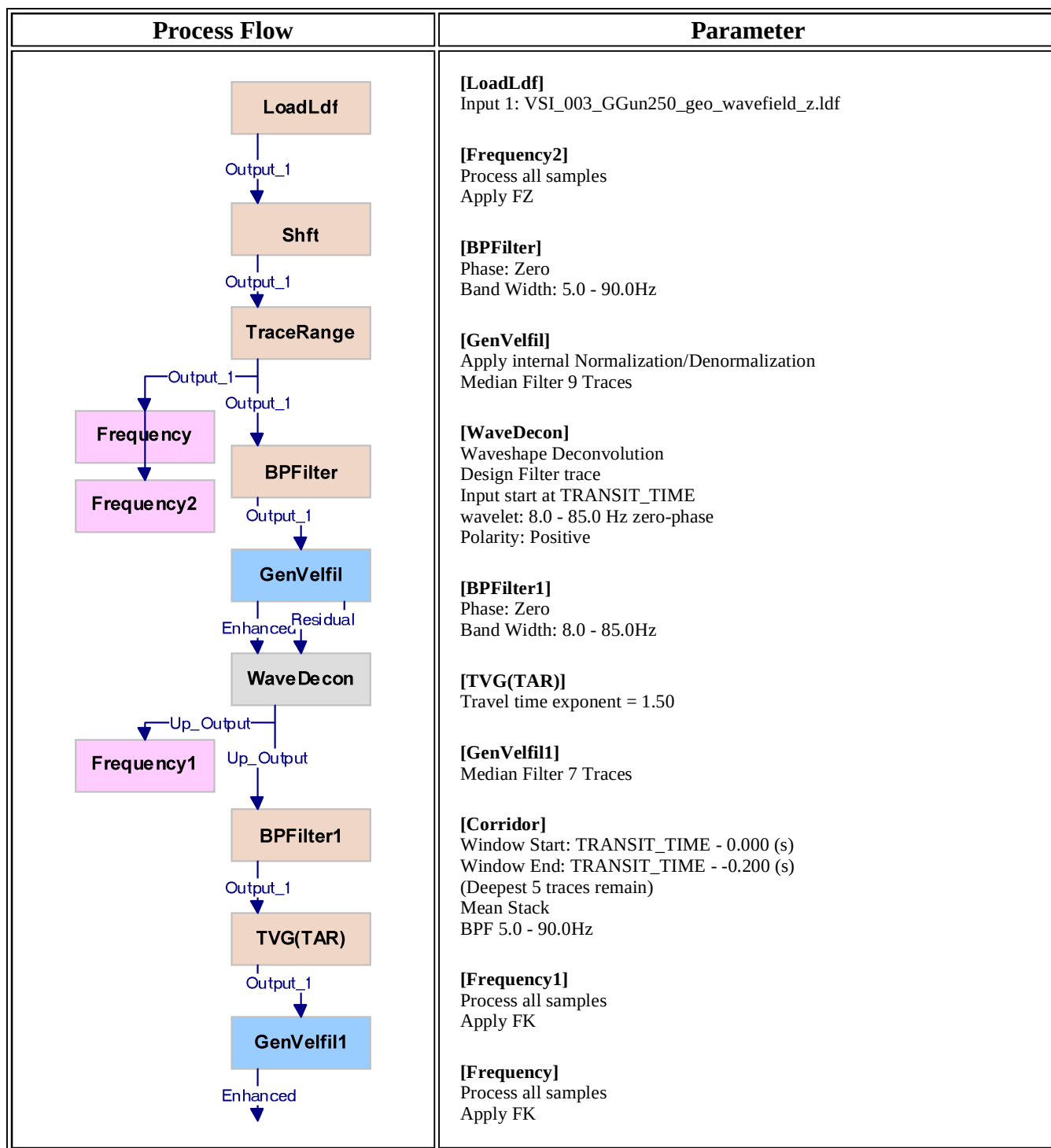
Source Geometry Sketch





Velocity Plot





[LoadLdf]

FileLoadLdf Parameters

Input 1: VSI_003_GGun250_geo_wavefield_z.ldf

[Shft]

Shift Parameters

Shift: + TT_SRD to TT Difference - 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 = CABLE_LENGTH

Output is Frequency Domain

Compute Amplitude spectrum in dB

[BPFfilter]

BPF Parameters

Butterworth Filter, Zero Phase

Characteristic: 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

Window 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

[BPFfilter1]

BPF Parameters

Butterworth Filter, Zero Phase

Characteristic: 8.000 Hz to 85.000 Hz Order 3

[TVG(TAR)]

Time-Varying Gain Parameters

Window start at TRANSIT_TIME - 0.000000
Window length = 2.999000
Travel time exponent = 1.500000
Exponential Weighting = 0.000000

[GenVelfil1]

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 = CABLE_LENGTH
Output is FK Domain
Compute Amplitude spectrum in dB

[Frequency]

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

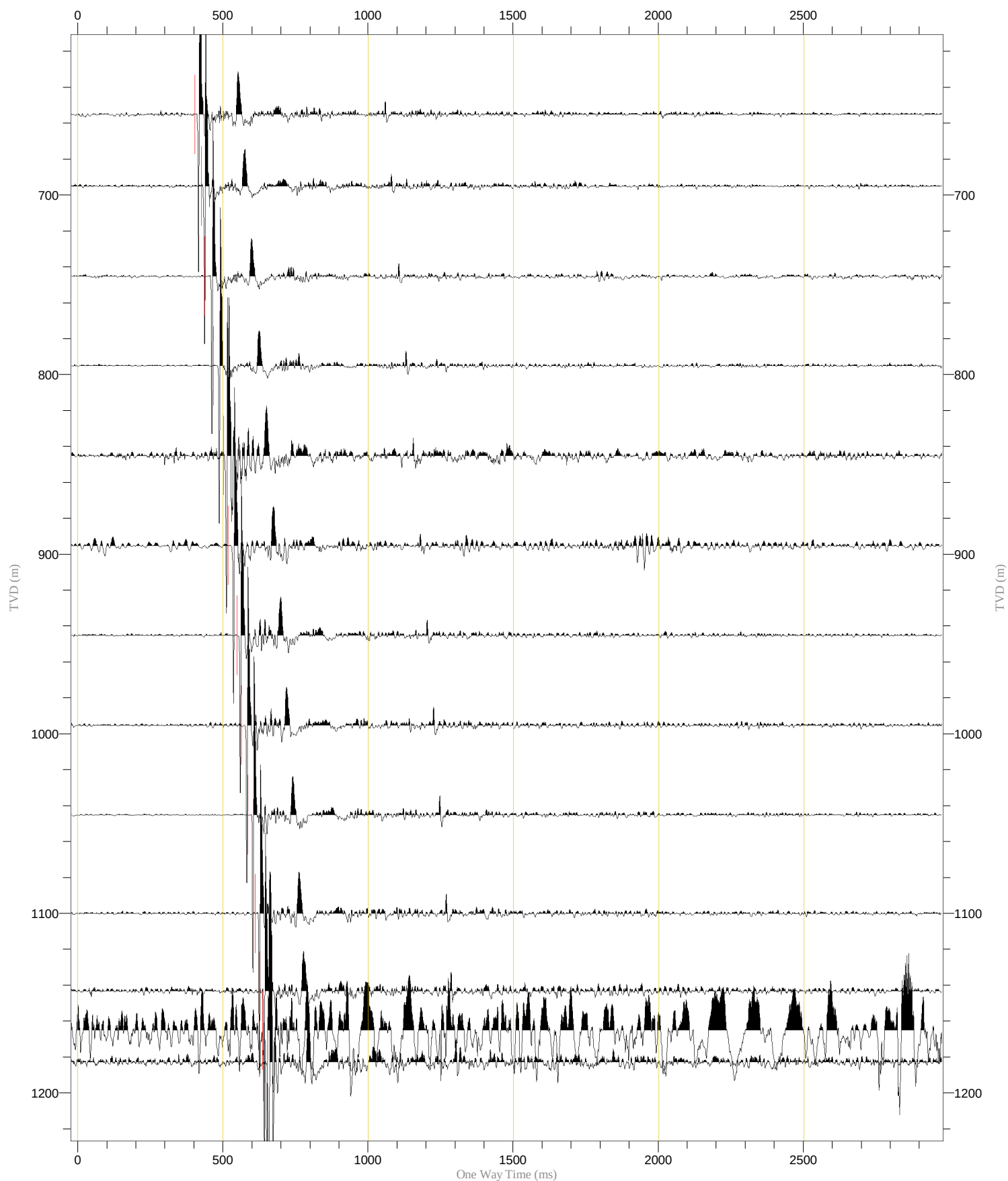
Raw Stack (Z)

Normalization Trace by Trace (250%)

Polarity Normal

One Way Time (ms)

Scaling 5.7 cm/sec, 1/2830



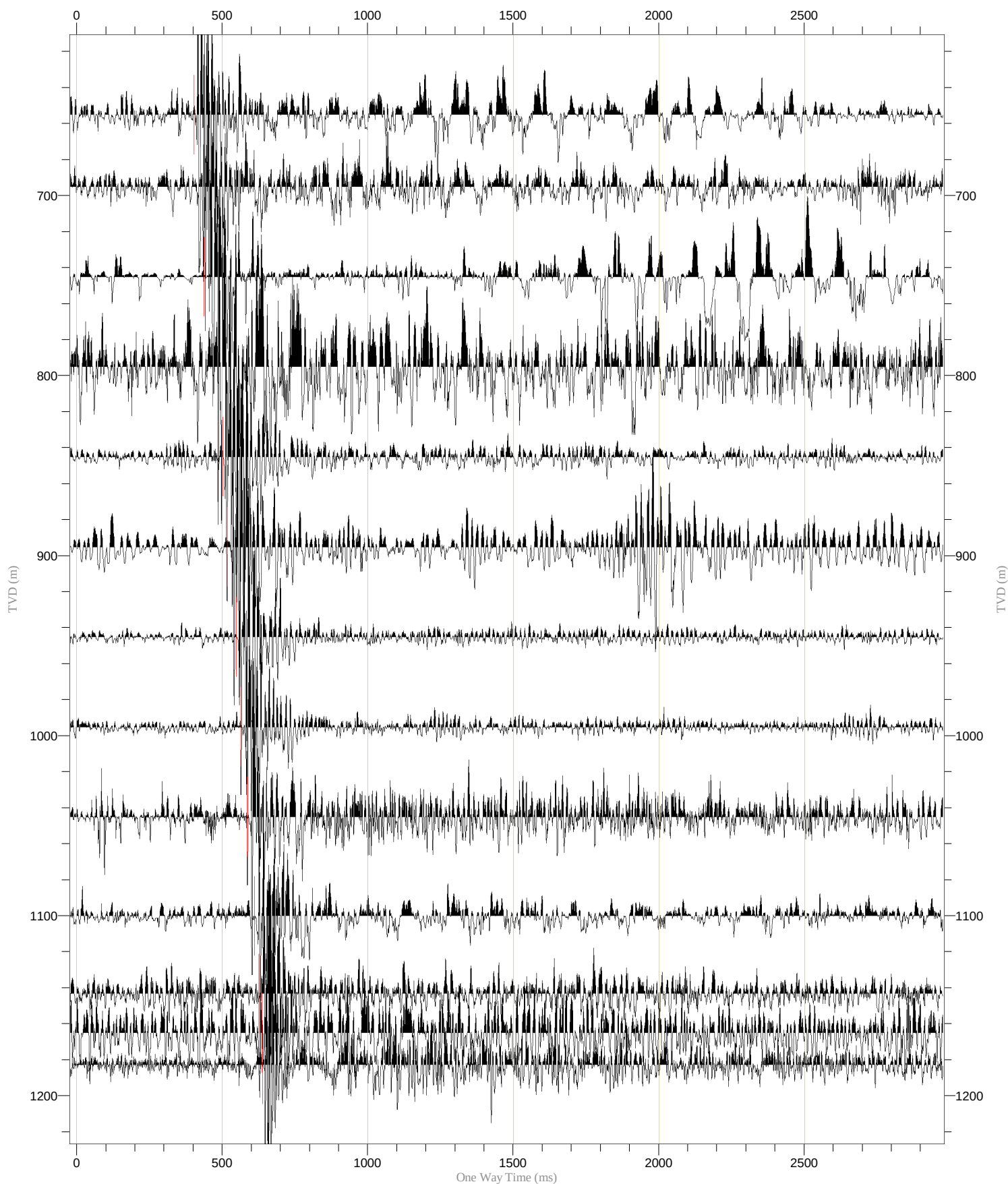
Raw Stack (X)

Normalization Trace by Trace (250%)

Polarity Normal

One Way Time (ms)

Scaling 5.7 cm/sec, 1/2830



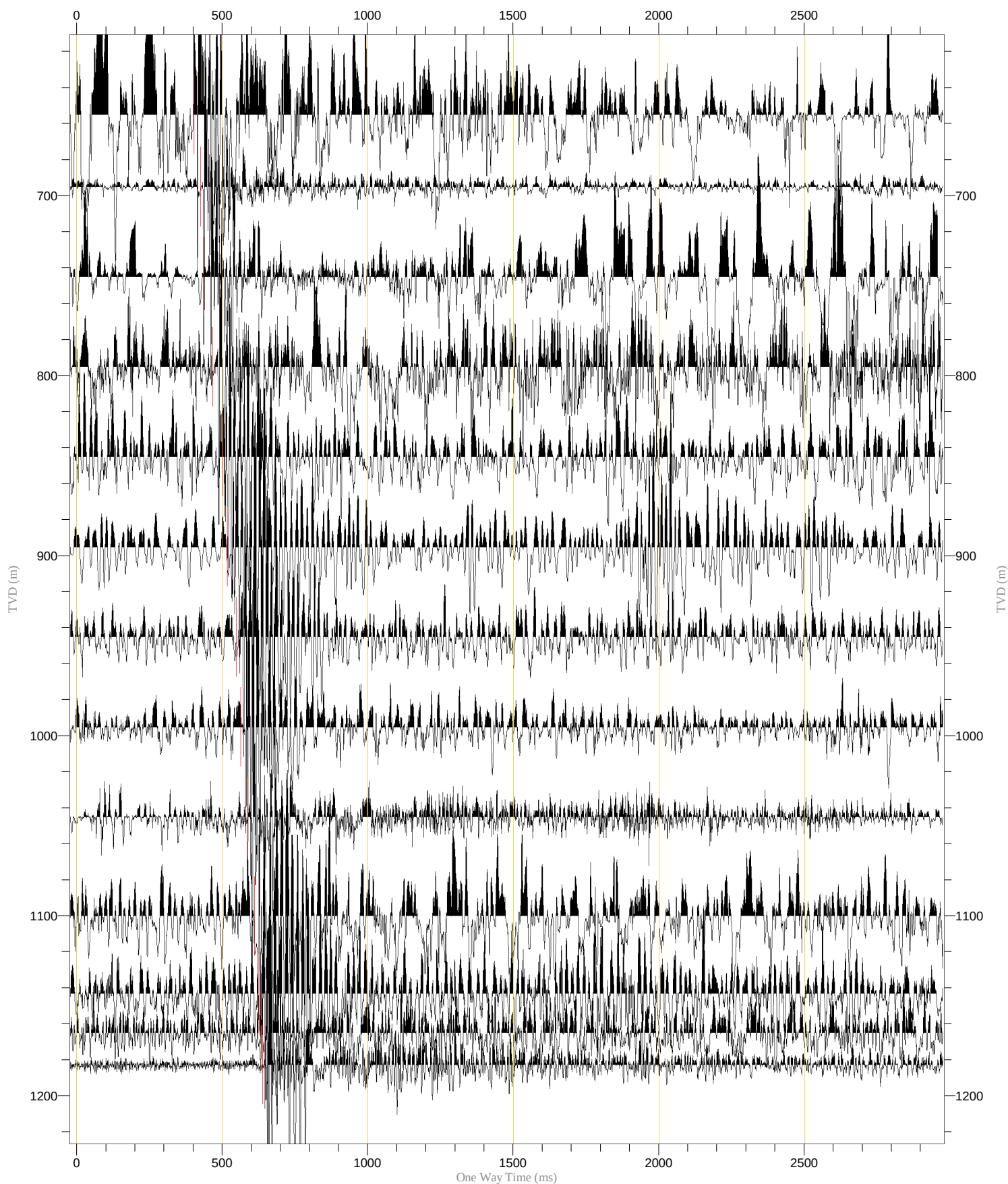
Raw Stack (Y)

Normalization Trace by Trace (250%)

Polarity Normal

One Way Time (ms)

Scaling 5.7 cm/sec, 1/2830



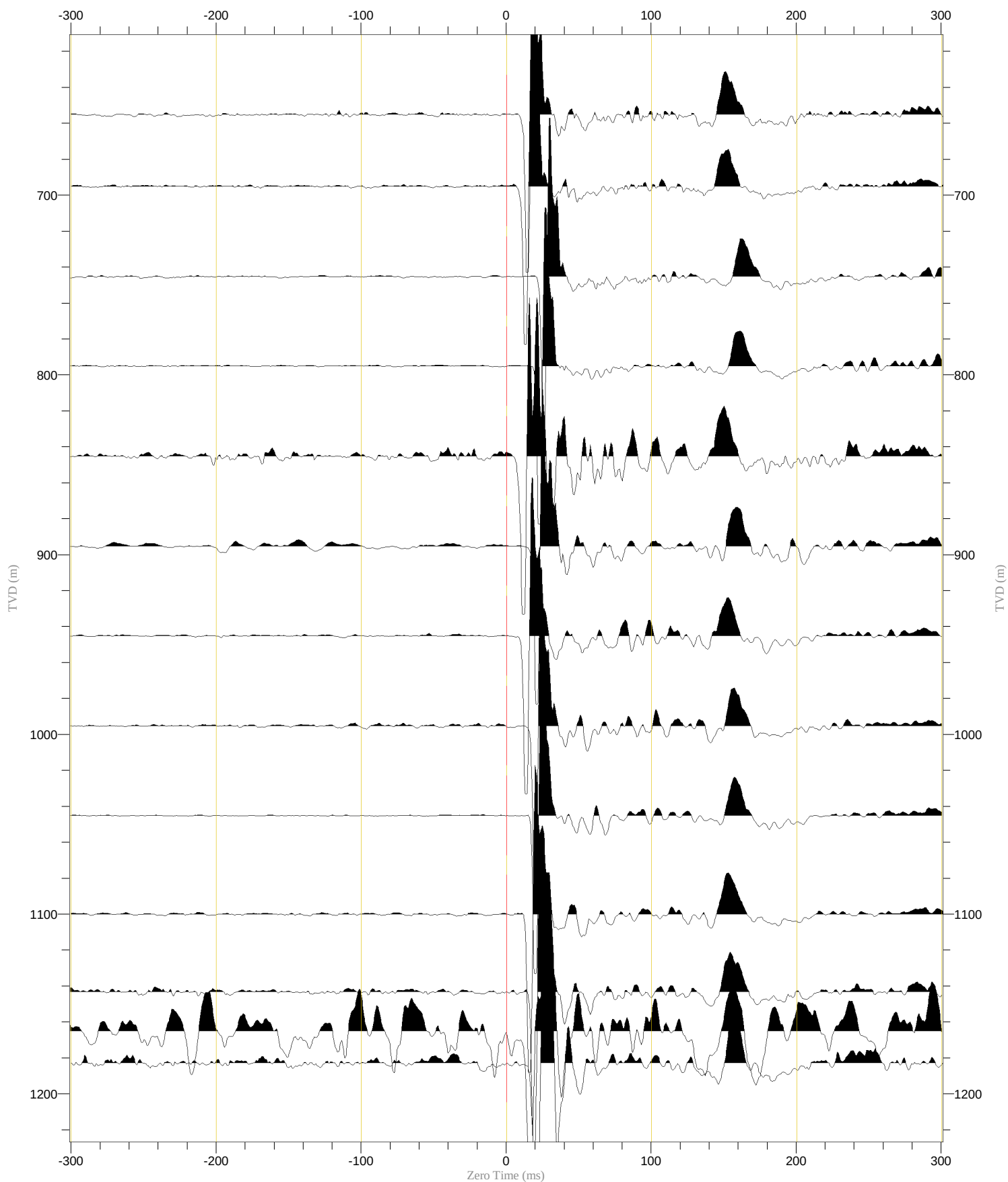
Raw Stack (Z) (Magnified)

Normalization Trace by Trace (250%)

Polarity Normal

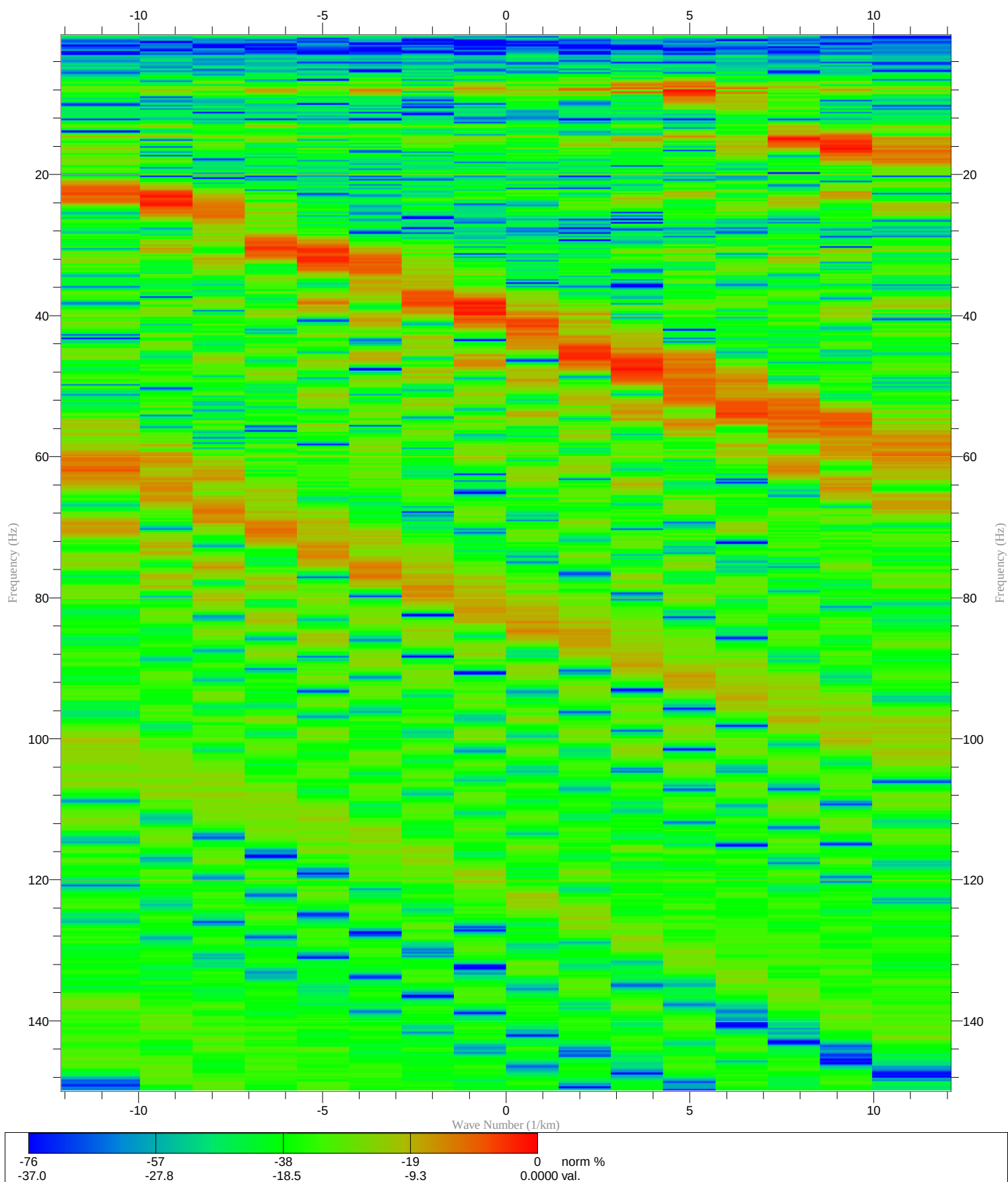
Zero Time (ms)

Scaling 28.5 cm/sec, 1/2830



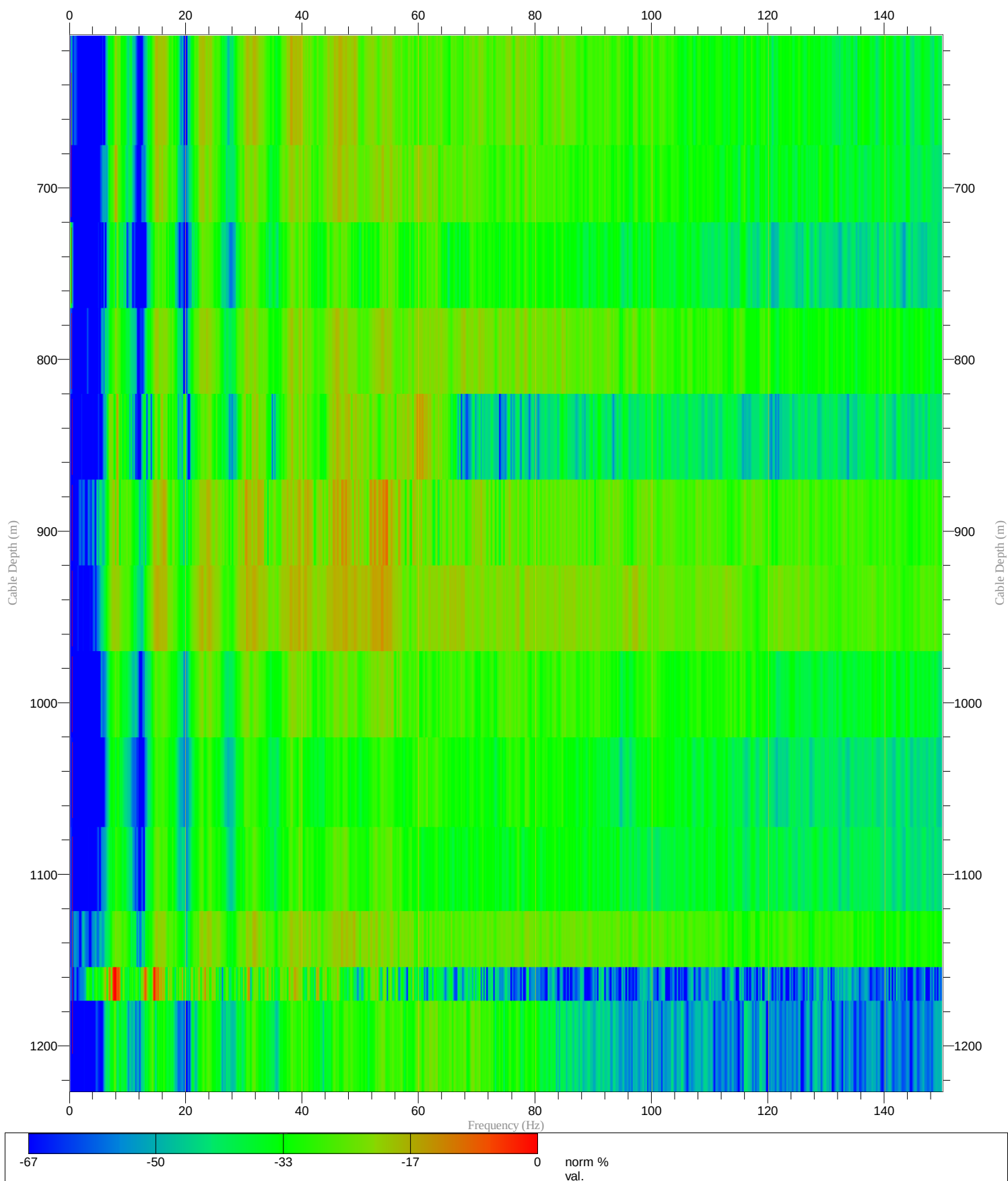
VSP Raw Stack (Z) FK
Apply FK

Normalization First Trace in Gather (100%)
Polarity Normal
Frequency (Hz)
Scaling 0.14 cm/Hz, 1.38(1/km)/cm



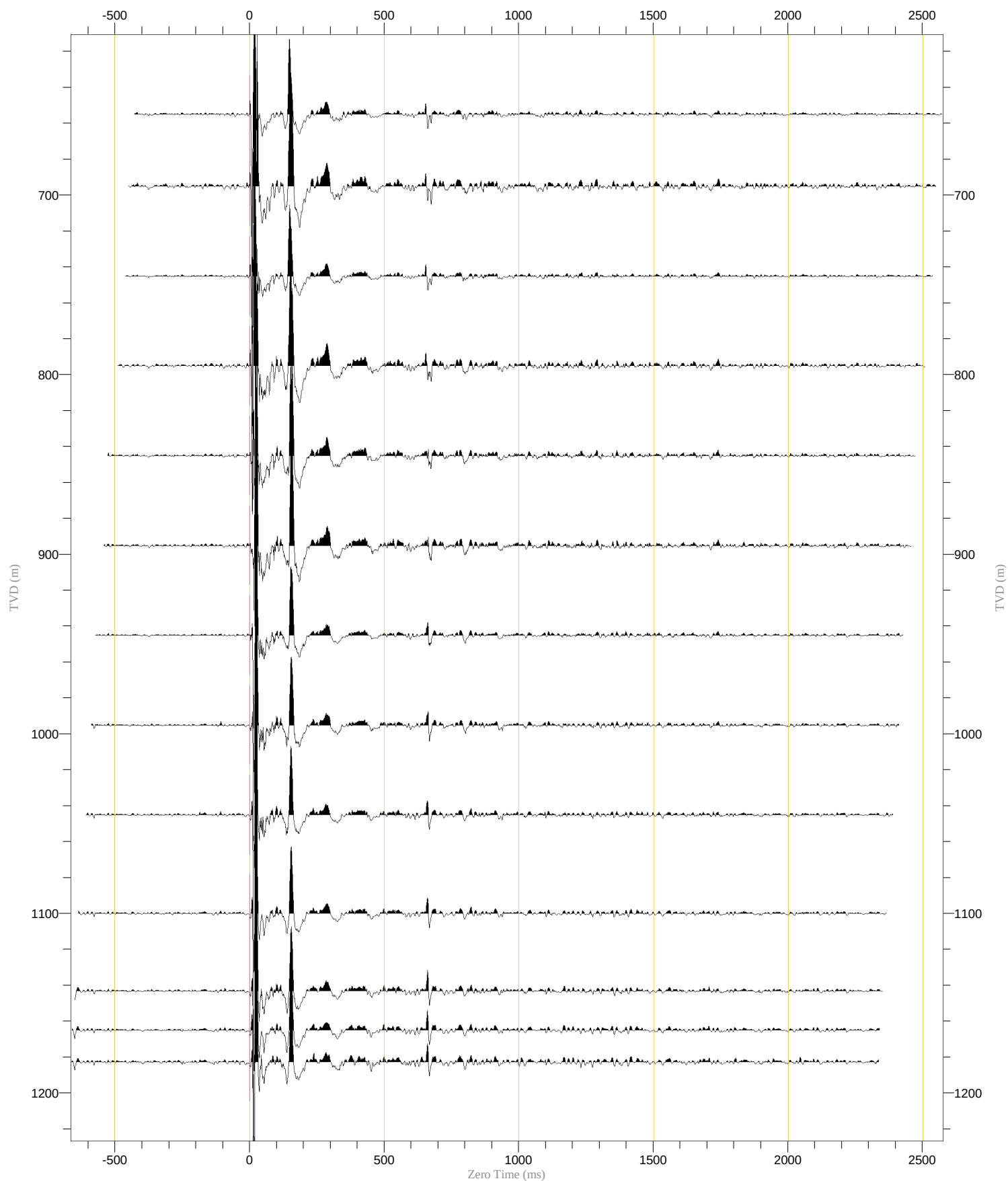
VSP Raw Stack (Z) FZ
Apply FZ

Normalization Trace by Trace (100%)
Polarity Normal
Frequency (Hz)
Scaling 0.1 cm/Hz, 1/2840



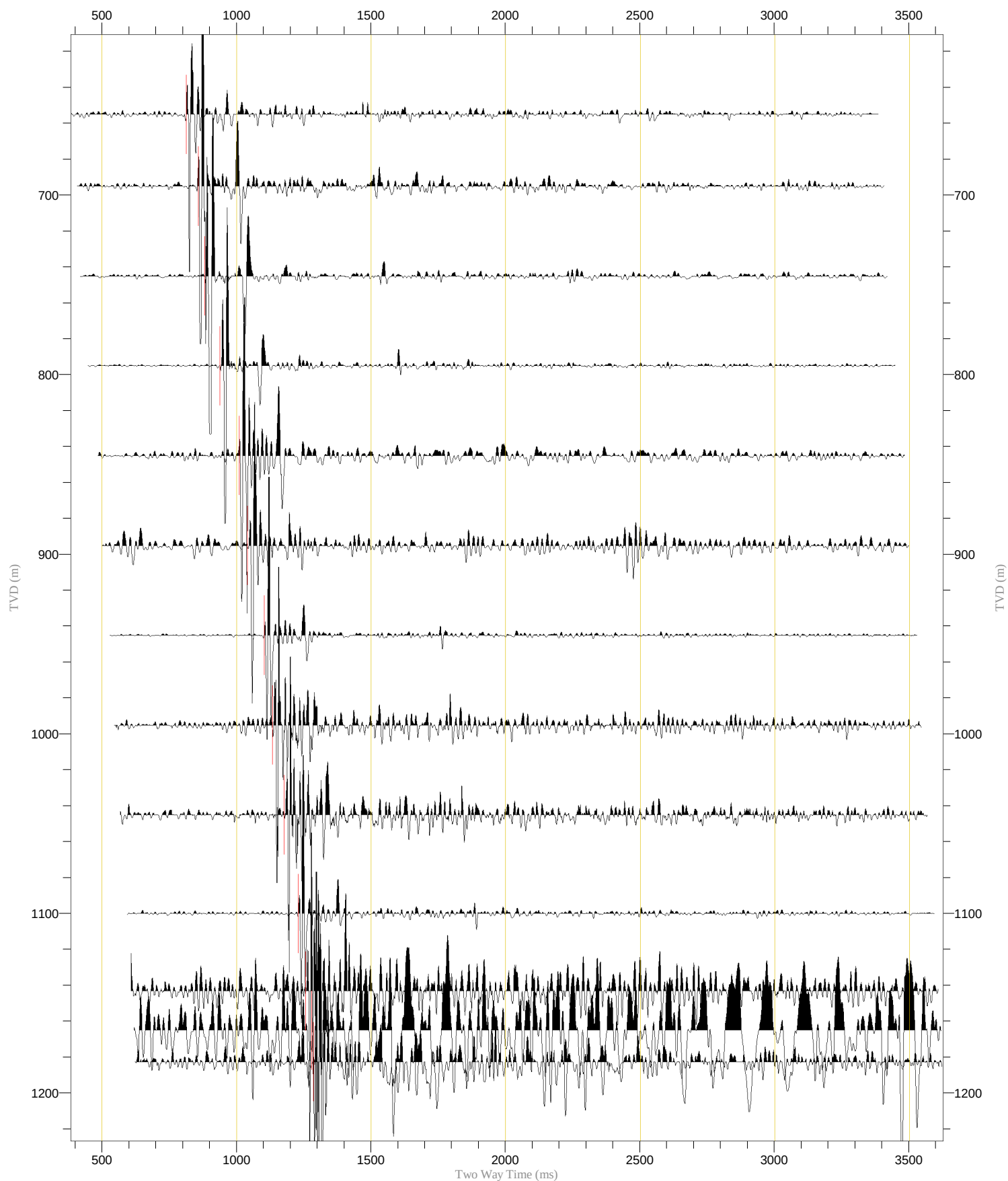
VSP Downgoing
BPF 5.0 - 90.0Hz
Median Filter 9 Traces

Normalization Trace by Trace (250%)
Polarity Normal
Zero Time (ms)
Scaling 5.3 cm/sec, 1/2830



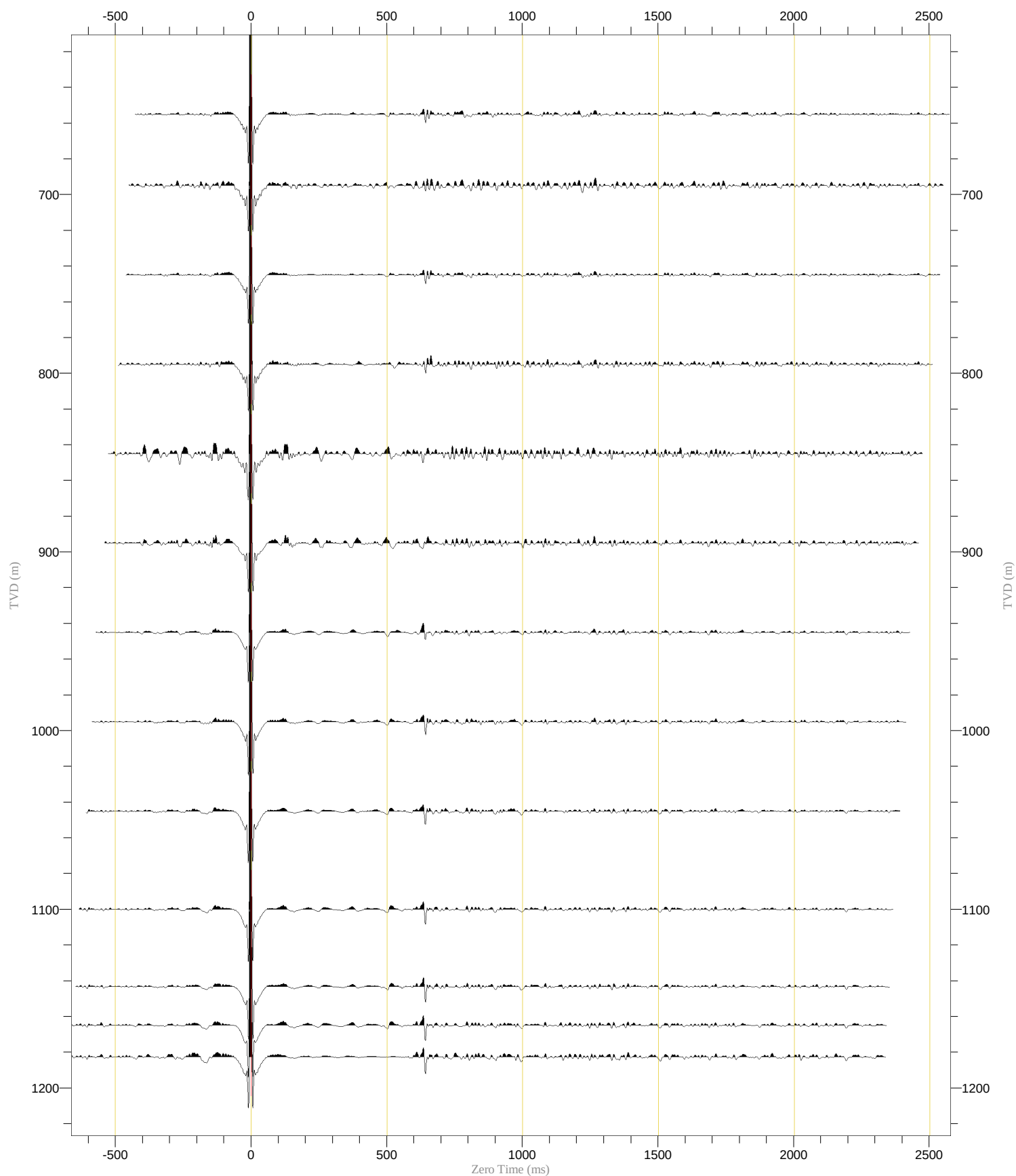
VSP Upgoing
BPF 5.0 - 90.0Hz
Median Filter 9 Traces

Normalization Trace by Trace (250%)
Polarity Normal
Two Way Time (ms)
Scaling 5.3 cm/sec, 1/2830



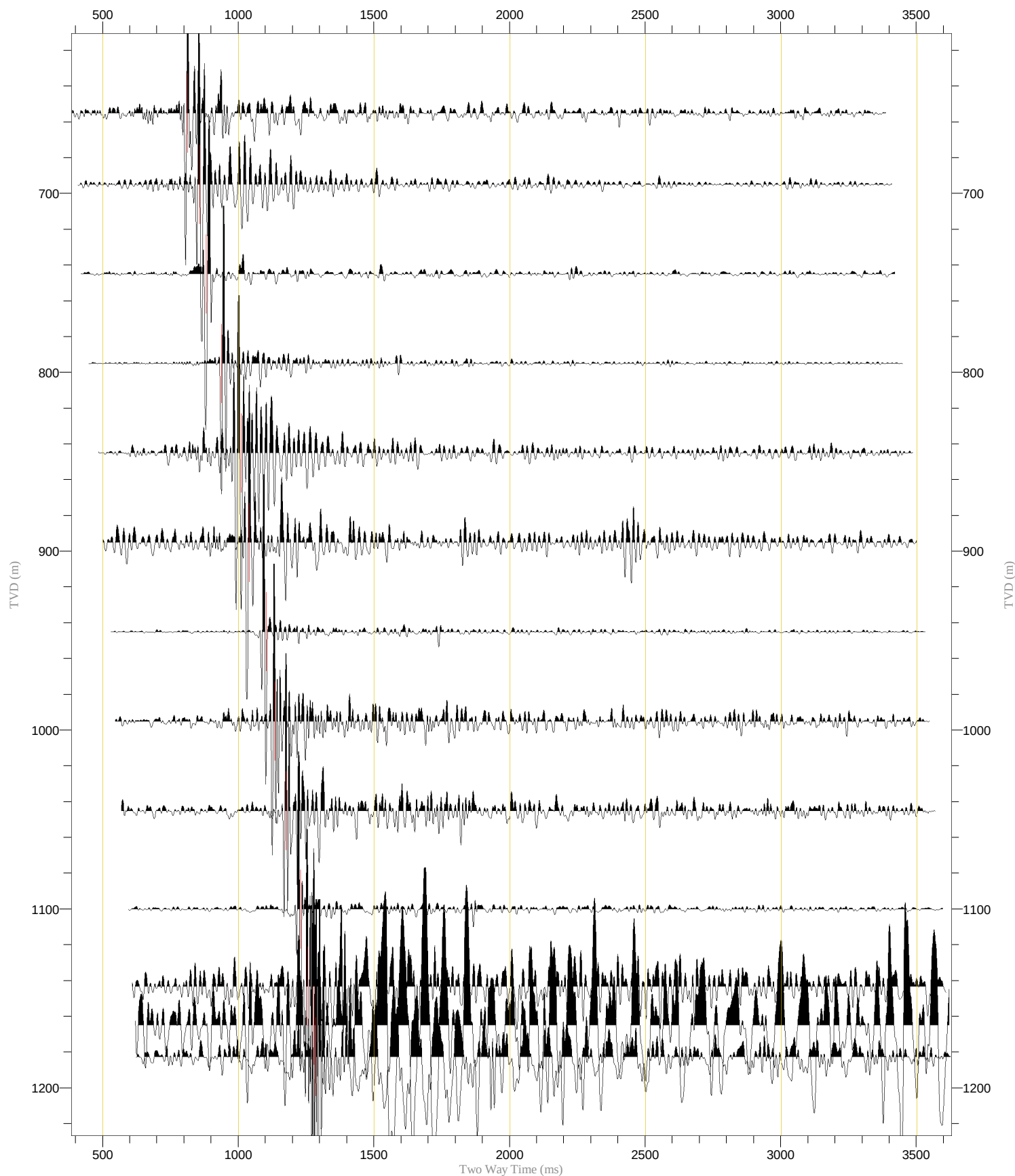
VSP Waveshape decon downgoing
BPF 5.0 - 90.0Hz
Median Filter 9 Traces
Waveshape Decon.(wavelet: 8.0 - 85.0 Hz zero-phase)

Normalization Trace by Trace (250%)
Polarity Normal
Zero Time (ms)
Scaling 5.3 cm/sec, 1/2870



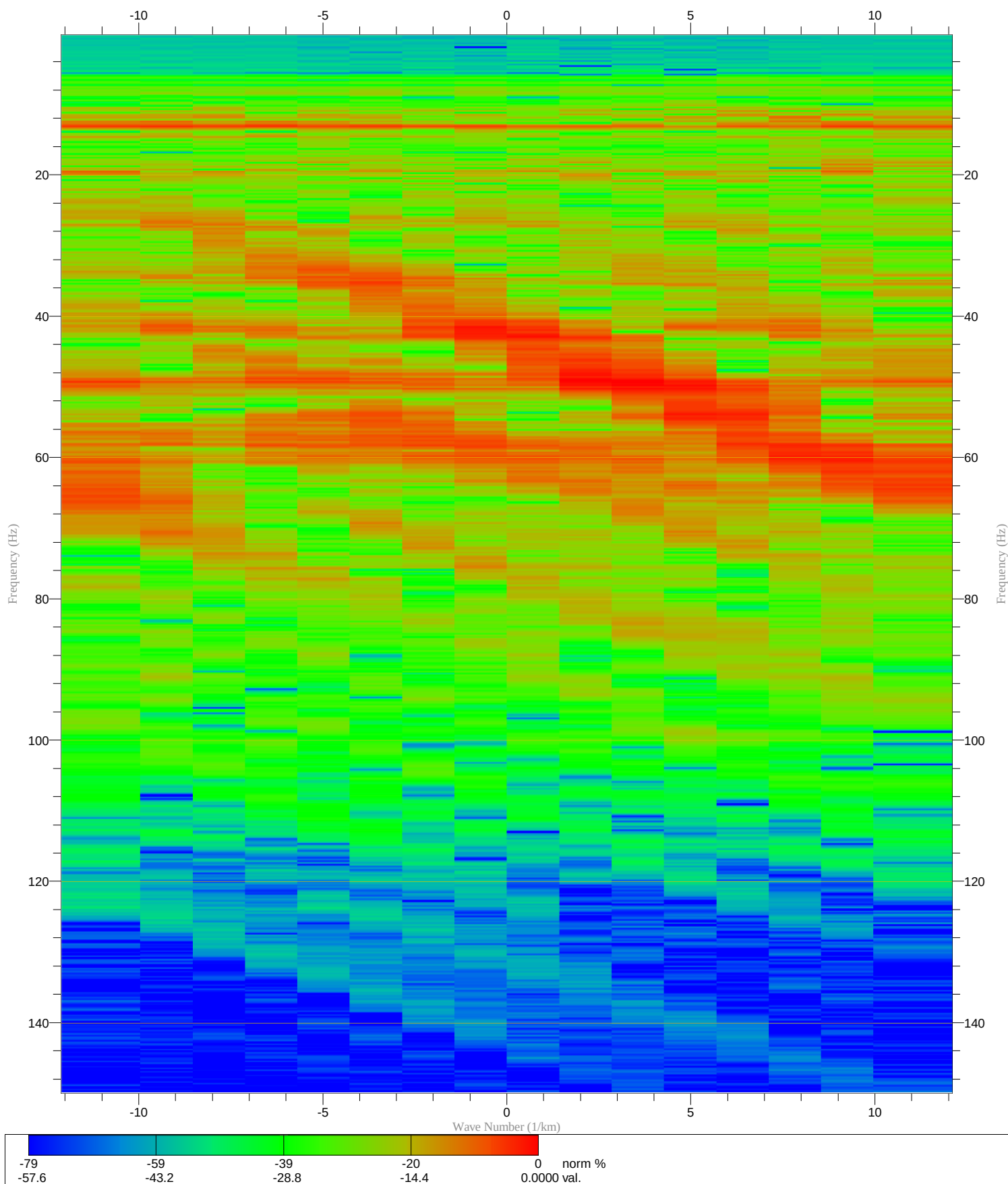
VSP Waveshape decon upgoing
BPF 5.0 - 90.0Hz
Median Filter 9 Traces
Waveshape Decon.(wavelet: 8.0 - 85.0 Hz zero-phase)

Normalization Trace by Trace (250%)
Polarity Normal
Two Way Time (ms)
Scaling 5.3 cm/sec, 1/2870



VSP Waveshape decon upgoing FK
Apply FK

Normalization First Trace in Gather (100%)
Polarity Normal
Frequency (Hz)
Scaling 0.14 cm/Hz, 1.38(1/km)/cm



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

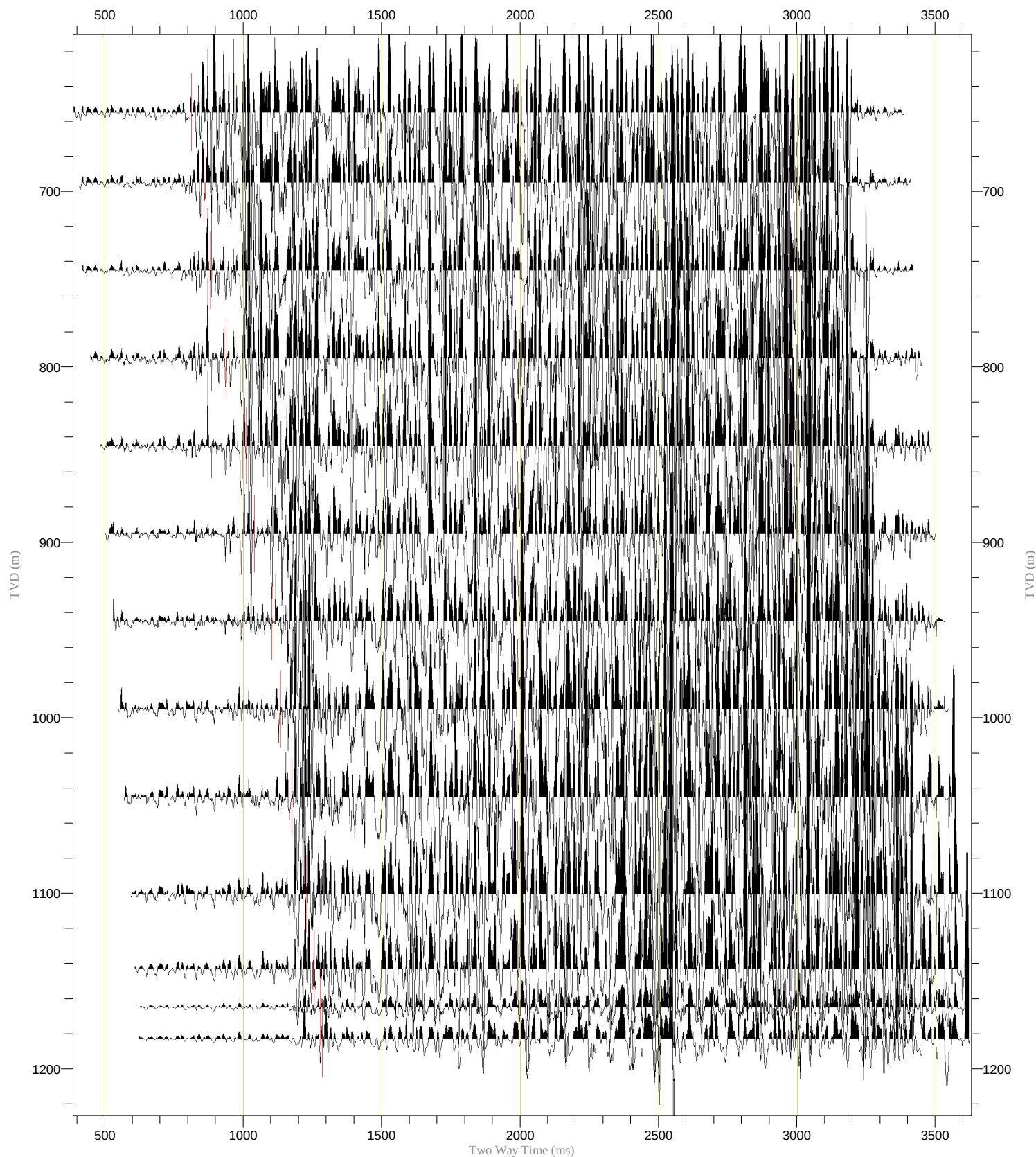
Median Filter 7 Traces

Normalization Trace by Trace (250%)

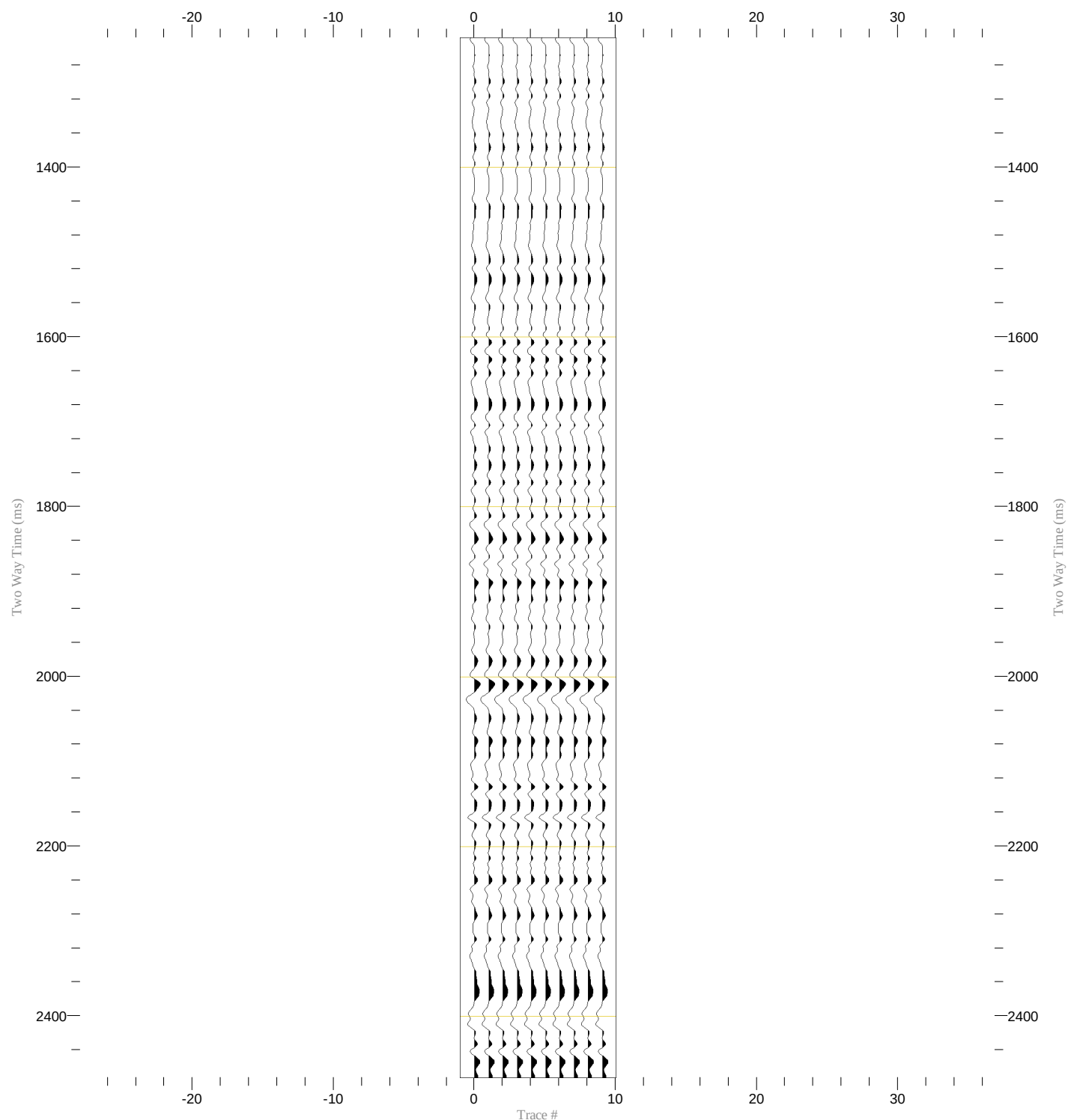
Polarity Normal

Two Way Time (ms)

Scaling 5.3 cm/sec, 1/2980



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	
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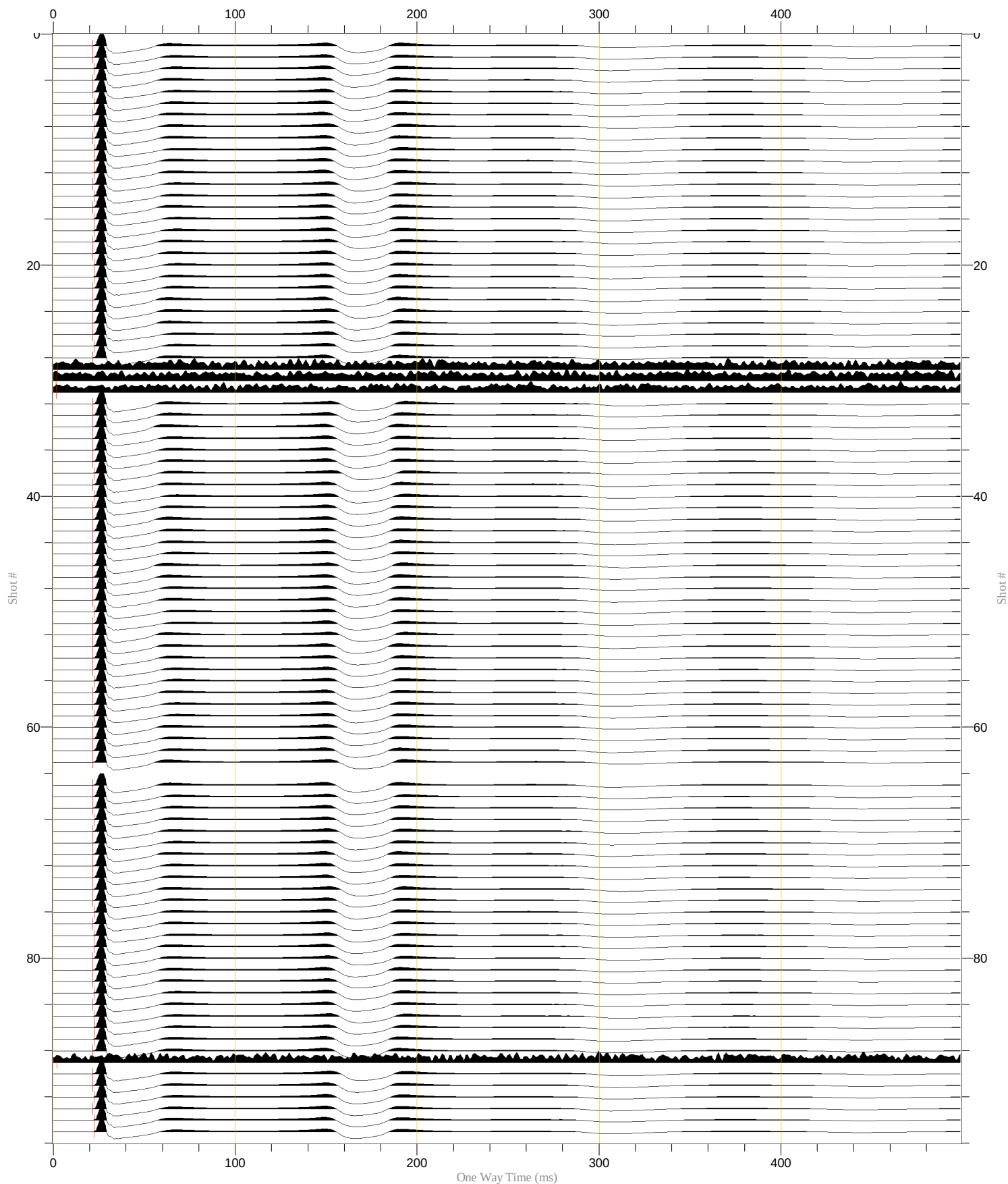
Source Sensor Signature

Normalization Trace by Trace (100%)

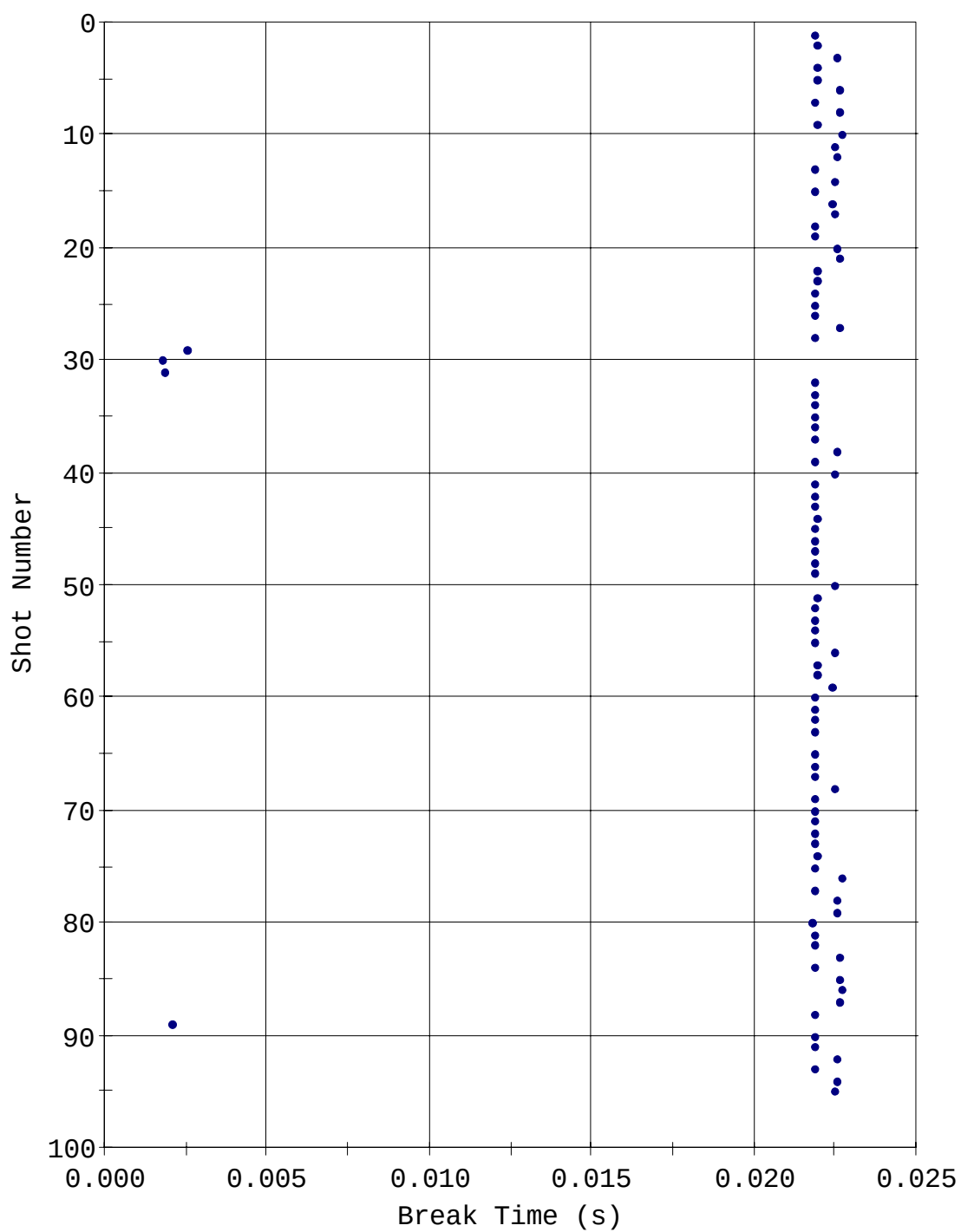
Polarity Normal

One Way Time (ms)

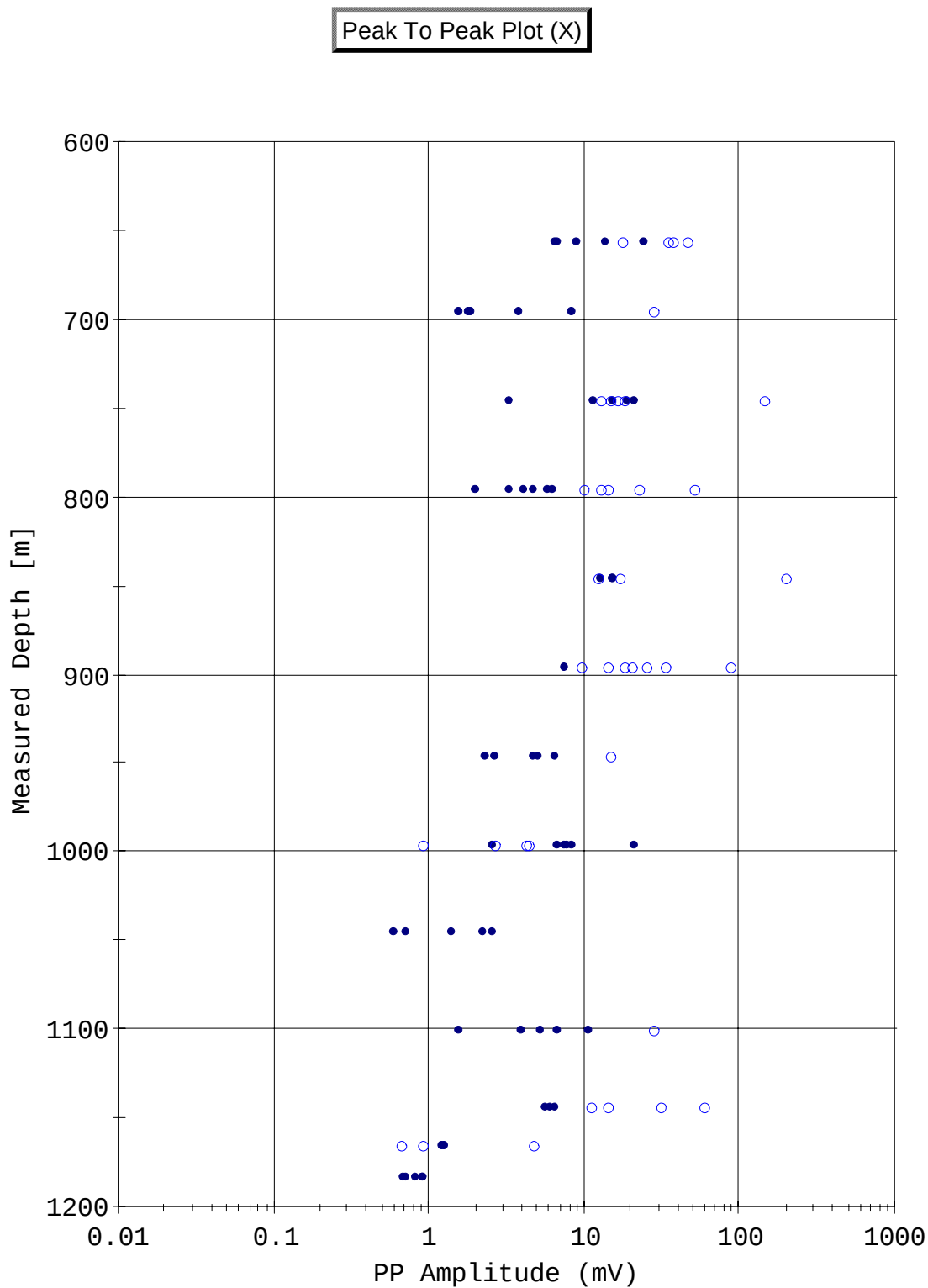
Scaling 35.67 cm/sec, 4.42/cm

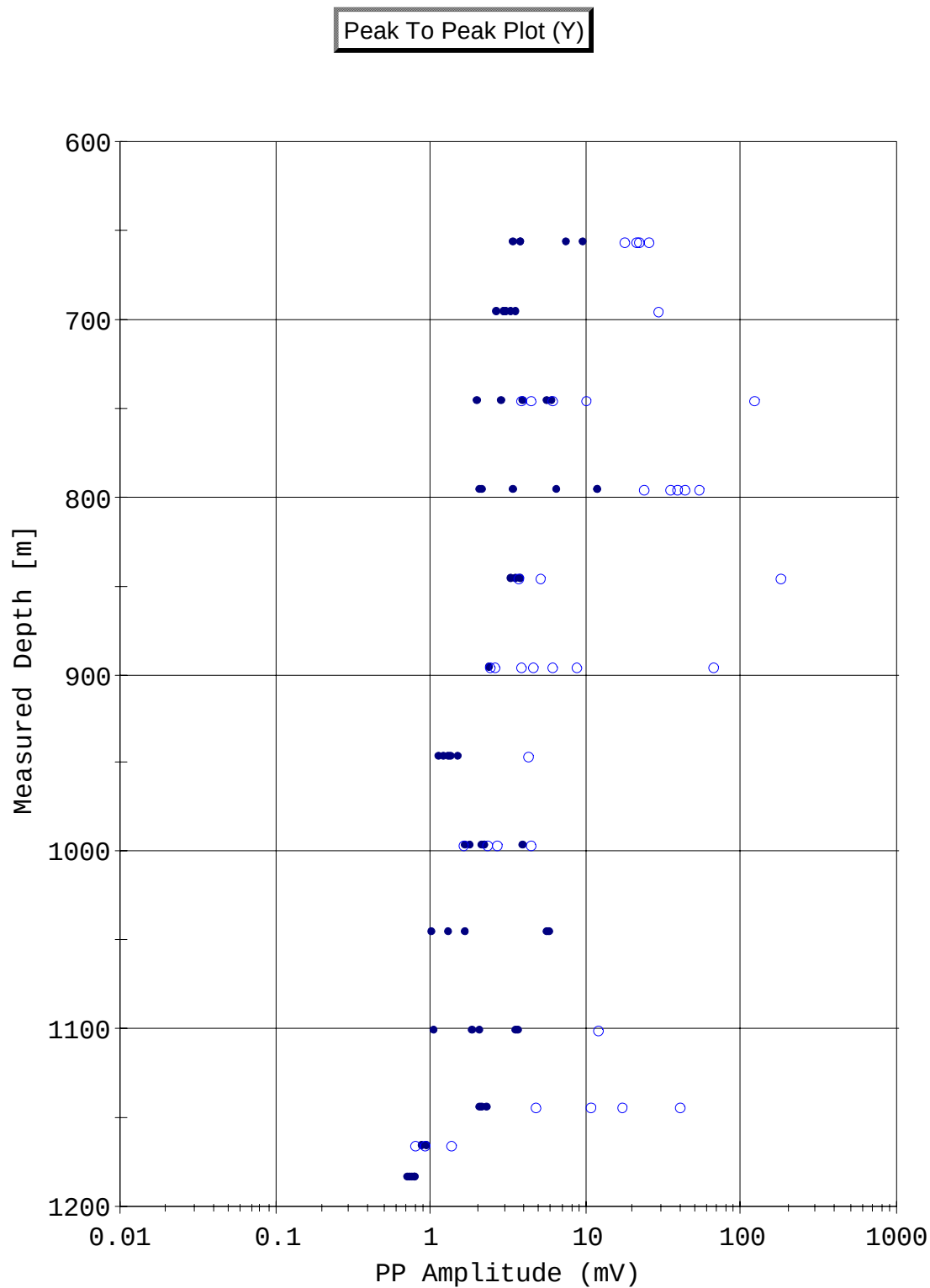


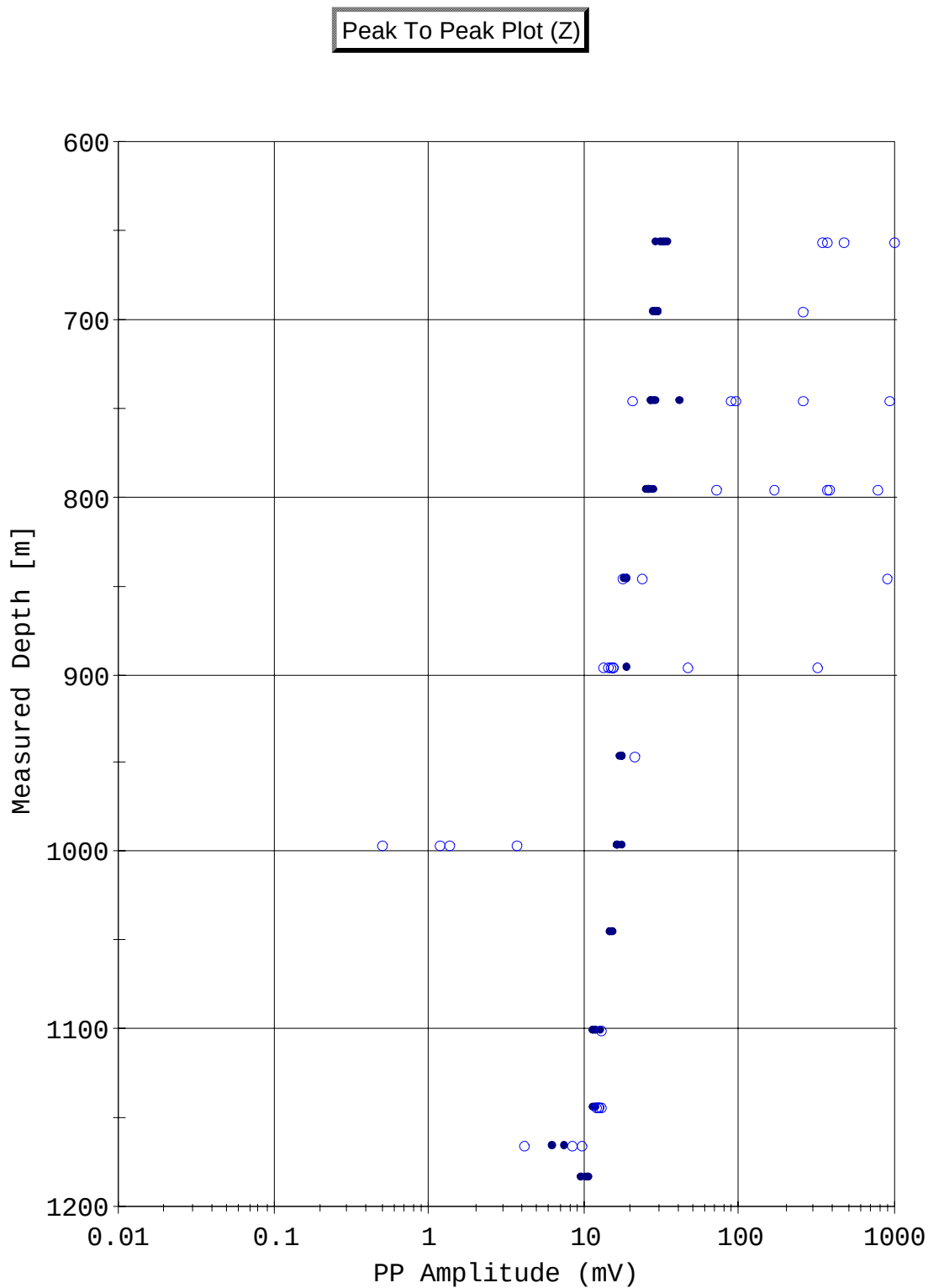
Surface Sensor QC Plot Page

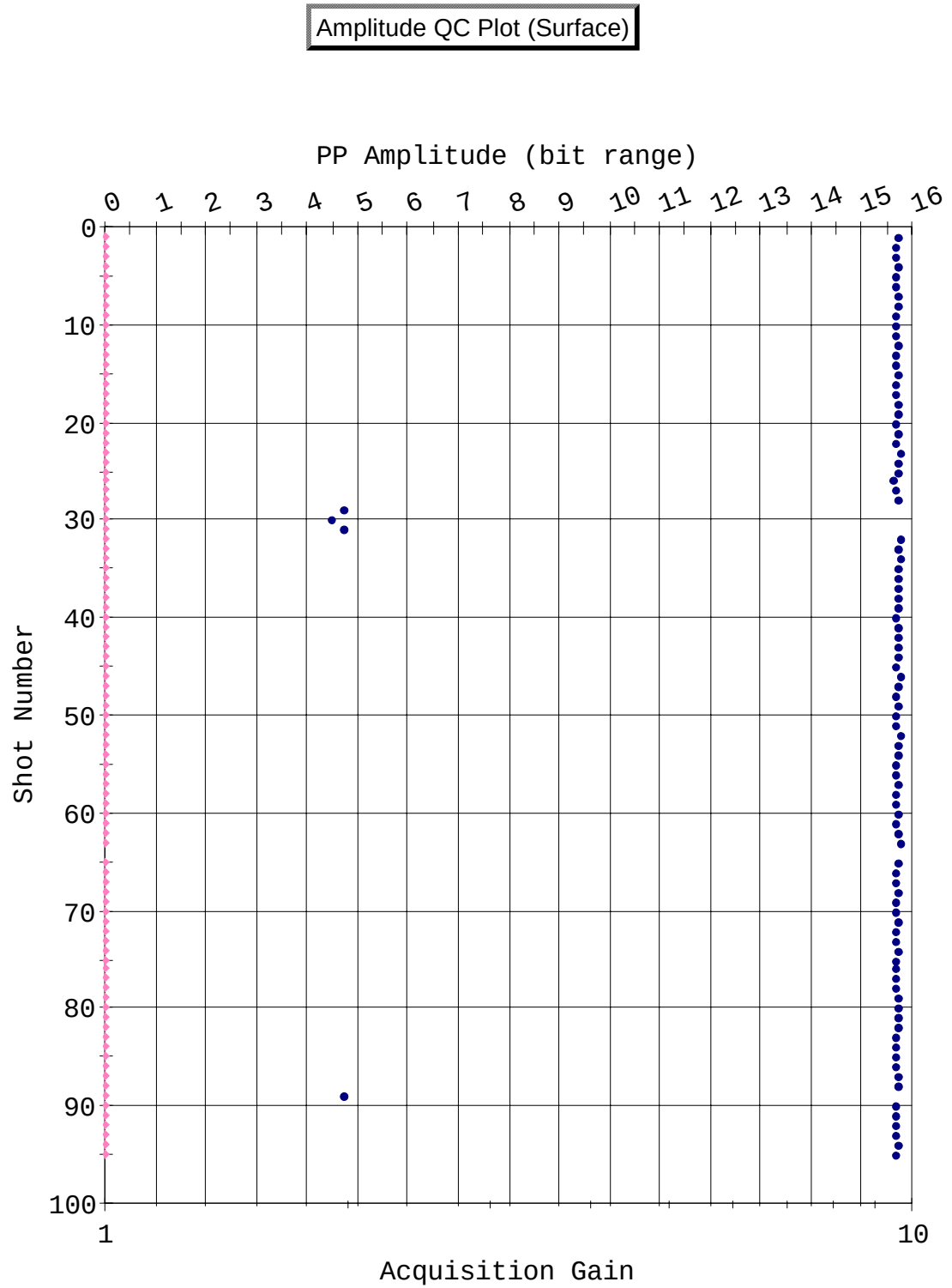


• Surface Sensor Break Time

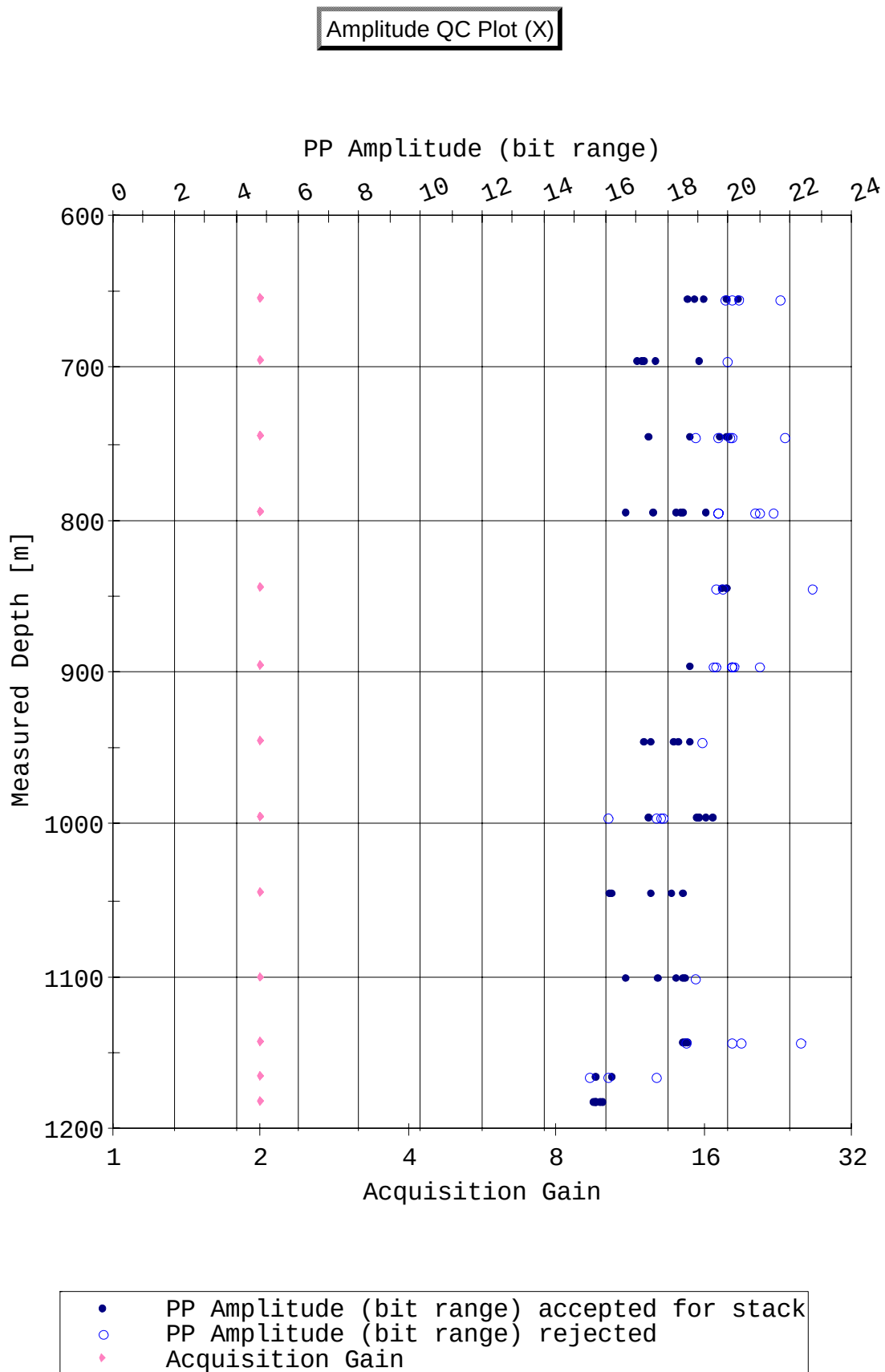


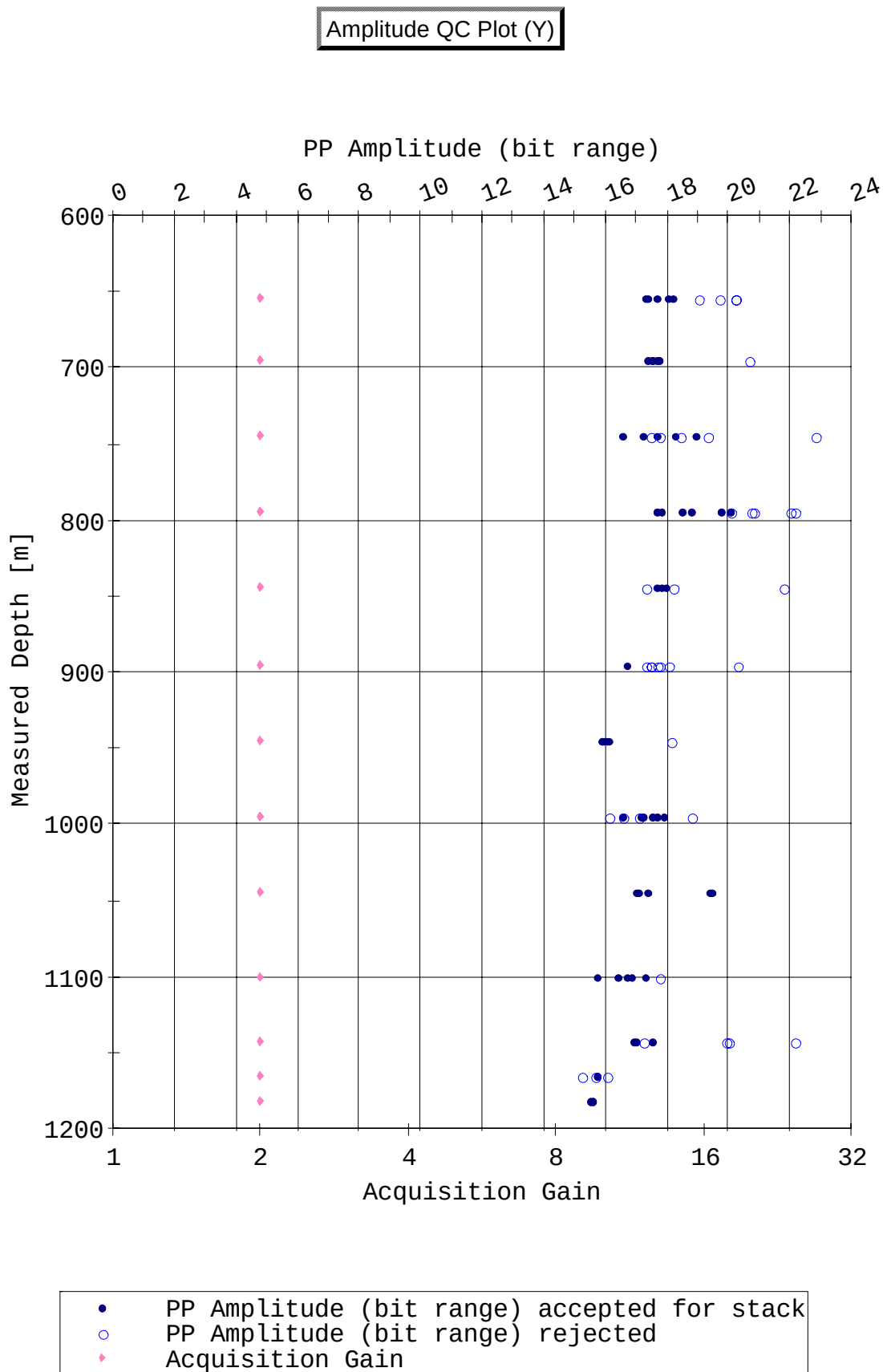


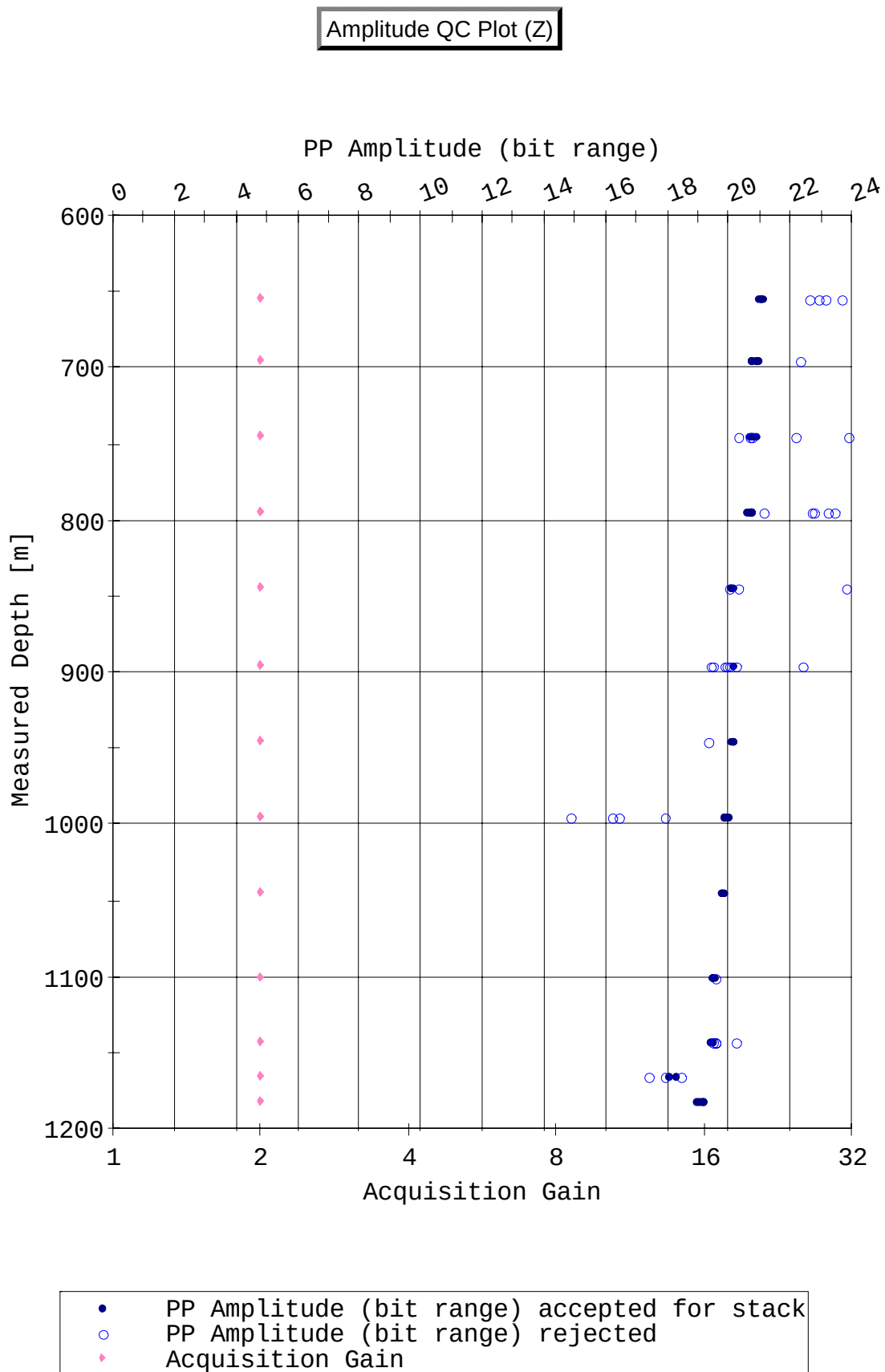




- PP Amplitude (bit range) accepted for stack
- PP Amplitude (bit range) rejected
- ◆ Acquisition Gain







Observer's Note (1/2)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
1143.0	02:53:24	SHOT	1	1	GGun250	Early pick
1143.0	02:53:45	SHOT	2	1	GGun250	
1143.0	02:54:03	SHOT	3	1	GGun250	
1143.0	02:54:21	SHOT	4	1	GGun250	
1143.0	02:54:39	SHOT	5	1	GGun250	Bad DH WF
1143.0	02:54:58	SHOT	6	1	GGun250	
1143.0	02:55:16	SHOT	7	1	GGun250	
1182.4	03:12:01	SHOT	8	2	GGun250	
1182.4	03:12:19	SHOT	9	2	GGun250	
1182.4	03:12:37	SHOT	10	2	GGun250	
1182.4	03:12:55	SHOT	11	2	GGun250	
1182.4	03:13:14	SHOT	12	2	GGun250	
1164.8	03:18:42	SHOT	13	3	GGun250	Bad DH waveform
1164.8	03:19:01	SHOT	14	3	GGun250	Bad wave
1164.8	03:19:42	SHOT	15	3	GGun250	Bad wave
1164.8	03:20:06	SHOT	16	3	GGun250	Bad wave
1164.8	03:20:42	SHOT	17	3	GGun250	Bad Wave -- this station could be manually picked
1099.9	03:30:28	SHOT	18	4	GGun250	
1099.9	03:30:47	SHOT	19	4	GGun250	
1099.9	03:31:05	SHOT	20	4	GGun250	
1099.9	03:31:23	SHOT	21	4	GGun250	Marginal DH WF
1099.9	03:31:41	SHOT	22	4	GGun250	
1099.9	03:31:59	SHOT	23	4	GGun250	
1044.9	03:41:54	SHOT	24	5	GGun250	
1044.9	03:42:12	SHOT	25	5	GGun250	
1044.9	03:42:30	SHOT	26	5	GGun250	
1044.9	03:42:48	SHOT	27	5	GGun250	
1044.9	03:43:06	SHOT	28	5	GGun250	
994.9	03:52:06	SHOT	29	6	GGun250	No gun
994.9	03:52:59	SHOT	30	6	GGun250	No Gun
994.9	03:53:17	SHOT	31	6	GGun250	No Gun
944.9	04:02:23	SHOT	32	7	GGun250	Noisy
944.9	04:02:41	SHOT	33	7	GGun250	
944.9	04:02:59	SHOT	34	7	GGun250	
944.9	04:03:17	SHOT	35	7	GGun250	
944.9	04:03:35	SHOT	36	7	GGun250	
944.9	04:03:53	SHOT	37	7	GGun250	
895.0	04:12:27	SHOT	38	8	GGun250	Usable
895.0	04:12:46	SHOT	39	8	GGun250	
895.0	04:13:04	SHOT	40	8	GGun250	Bad DH WF
895.0	04:13:31	SHOT	41	8	GGun250	Bad DH WF
895.0	04:14:05	SHOT	42	8	GGun250	
895.0	04:14:25	SHOT	43	8	GGun250	Junk
895.0	04:14:43	SHOT	44	8	GGun250	
895.0	04:15:01	SHOT	45	8	GGun250	
844.9	04:23:18	SHOT	46	9	GGun250	
844.9	04:23:36	SHOT	47	9	GGun250	
844.9	04:23:54	SHOT	48	9	GGun250	Bad WF
844.9	04:24:12	SHOT	49	9	GGun250	
844.9	04:24:30	SHOT	50	9	GGun250	
844.9	04:24:48	SHOT	51	9	GGun250	
794.9	04:33:02	SHOT	52	10	GGun250	No pick
794.9	04:33:24	SHOT	53	10	GGun250	
794.9	04:33:48	SHOT	54	10	GGun250	Noise
794.9	04:34:11	SHOT	55	10	GGun250	Wrong Pick
794.9	04:34:29	SHOT	56	10	GGun250	
794.9	04:34:47	SHOT	57	10	GGun250	No Pick
794.9	04:35:05	SHOT	58	10	GGun250	
794.9	04:35:23	SHOT	59	10	GGun250	No pick

Observer's Note (2/2)

Well depth[m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
794.9	04:36:15	SHOT	60	10	GGun250	Bad Wave
794.9	04:36:33	SHOT	61	10	GGun250	
794.9	04:36:57	SHOT	62	10	GGun250	
744.9	04:44:41	SHOT	63	11	GGun250	Bad pick
744.9	04:45:18	SHOT	65	11	GGun250	
744.9	04:45:36	SHOT	66	11	GGun250	
744.9	04:45:54	SHOT	67	11	GGun250	
744.9	04:46:12	SHOT	68	11	GGun250	Contaminated Waveform
744.9	04:47:24	SHOT	69	11	GGun250	Bad DH WF
744.9	04:47:43	SHOT	70	11	GGun250	
744.9	04:48:01	SHOT	71	11	GGun250	Bad Wave
744.9	04:48:19	SHOT	72	11	GGun250	Bad Pick
744.9	04:48:37	SHOT	73	11	GGun250	Noisy, but OK
694.9	04:57:09	SHOT	74	12	GGun250	Junk
694.9	04:57:27	SHOT	75	12	GGun250	
694.9	04:57:45	SHOT	76	12	GGun250	
694.9	04:58:03	SHOT	77	12	GGun250	
694.9	04:58:22	SHOT	78	12	GGun250	
694.9	04:58:40	SHOT	79	12	GGun250	
655.0	05:05:57	SHOT	80	13	GGun250	No Pick
655.0	05:06:15	SHOT	81	13	GGun250	
655.0	05:07:00	SHOT	82	13	GGun250	
655.0	05:07:18	SHOT	83	13	GGun250	Junk
655.0	05:07:38	SHOT	84	13	GGun250	Junk
655.0	05:08:25	SHOT	85	13	GGun250	
655.0	05:08:45	SHOT	86	13	GGun250	Late Pick
655.0	05:09:03	SHOT	87	13	GGun250	
655.0	05:09:21	SHOT	88	13	GGun250	
994.9	05:30:06	SHOT	89	14	GGun250	No gun
994.9	05:30:29	SHOT	90	14	GGun250	Wrong Pick
994.9	05:30:47	SHOT	91	14	GGun250	
994.9	05:31:06	SHOT	92	14	GGun250	
994.9	05:31:24	SHOT	93	14	GGun250	
994.9	05:31:42	SHOT	94	14	GGun250	
994.9	05:32:00	SHOT	95	14	GGun250	