

**BROWARD COUNTY BLASTING MONITORING DATA
FOR CITY OF MIRAMAR
BLASTING OCCURRING IN MIAMI-DADE COUNTY
NOVEMBER 2017**

LOCATION #1: Riviera Isles (NE)

LOCATION #2: Riviera Isles (SW)

LOCATION #3: Hungtinton South

DATE	STATION LOCATION	TIME	READING (PPV)*
10/24/2017	LOCATION #3	10:35 AM	0.073
10/26/2017	LOCATION #3	11:35 AM	0.040
11/01/2017	LOCATION #1	1:38 PM	0.108
11/01/2017	LOCATION #3	1:36 PM	0.100
11/06/2017	LOCATION #1	2:24 PM	0.048
11/07/2017	LOCATION #1	12:38 PM	0.060
11/07/2017	LOCATION #3	12:36 PM	0.088
11/08/2017	LOCATION #1	12:53 PM	0.060
11/09/2017	LOCATION #1	12:39 PM	0.073
11/09/2017	LOCATION #3	12:36 PM	0.125
11/13/2017	LOCATION #1	2:24 PM	0.043
11/14/2017	LOCATION #1	12:09 PM	0.095
11/14/2017	LOCATION #3	12:06 PM	0.118
11/15/2017	LOCATION #1	3:39 PM	0.068
11/15/2017	LOCATION #3	3:36 PM	0.053
11/16/2017	LOCATION #1	12:41 PM	0.048
11/16/2017	LOCATION #3	11:26 AM	0.053
11/16/2017	LOCATION #3	11:31 AM	0.173
11/17/2017	LOCATION #1	12:39 PM	0.070
11/17/2017	LOCATION #3	12:36 PM	0.148
11/20/2017	LOCATION #1	3:09 PM	0.155
11/20/2017	LOCATION #3	3:06 PM	0.098
11/21/2017	LOCATION #1	2:39 PM	0.058
11/21/2017	LOCATION #3	2:36 PM	0.063
11/22/2017	LOCATION #1	2:24 PM	0.143
11/22/2017	LOCATION #3	2:21 PM	0.113

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 10/24/2017 10:35:04
Event No: 71
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

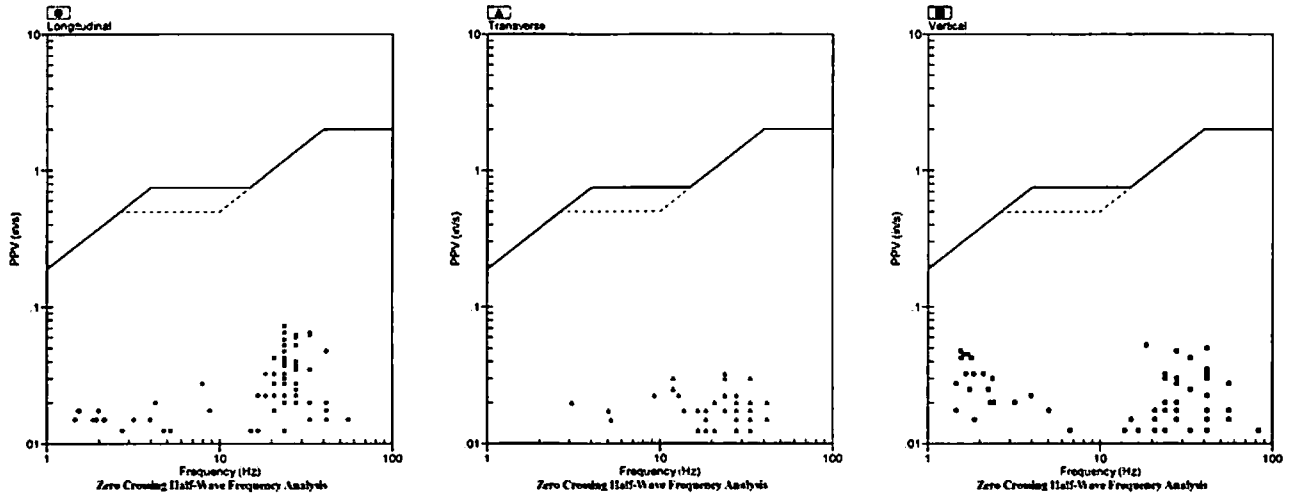
Summary Data

	L	T	V
PPV (in/s)	0.073	0.033	0.053
FREQ (Hz)	23.8	23.8	18.5
PD (.001")	1.45	0.95	4.65
PPA (g)	0.039	0.013	0.033
Peak Vector Sum:	0.085 in/s		
Peak Air Pressure:	106 db		
	0.00062 PSI @ 15.2 Hz		

Additional Info:

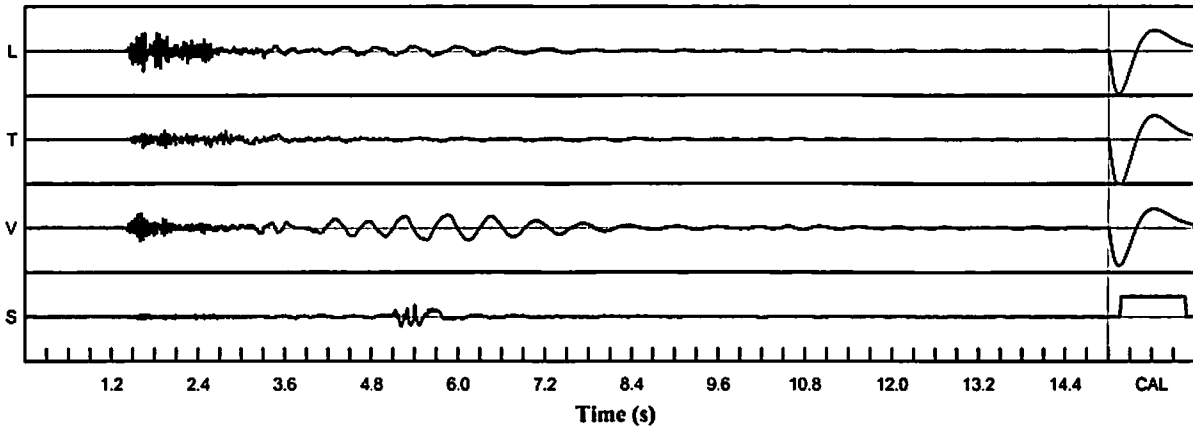
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 71



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

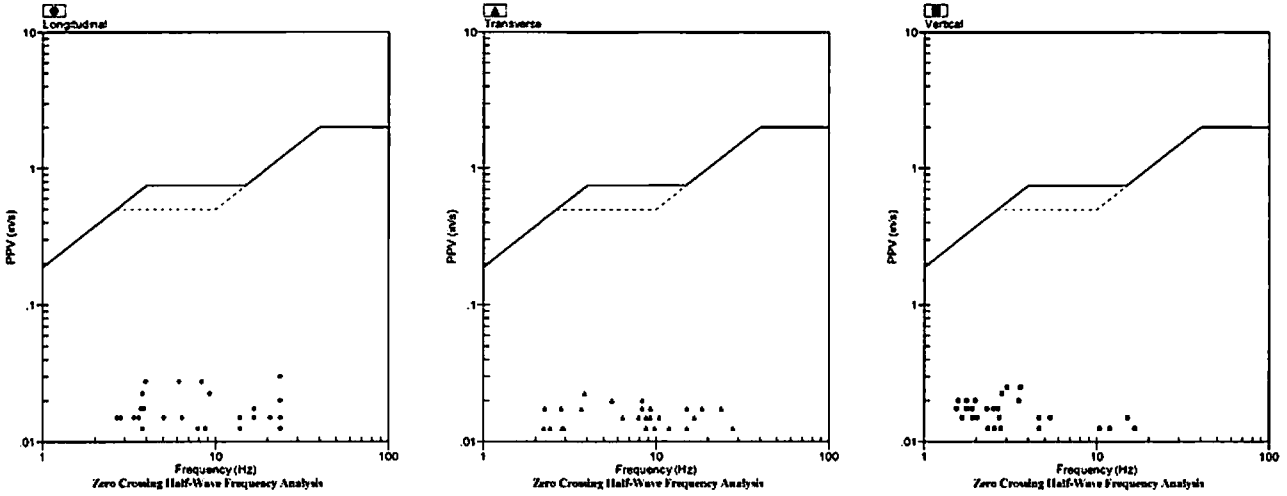
Serial No: 5150 v3.67
Date: 10/26/2017 11:35:02
Event No: 72
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

	L	T	V
PPV (in/s)	0.040	0.023	0.025
FREQ (Hz)	6.4	16.7	3.0
PD (.001")	1.07	0.87	1.70
PPA (g)	0.013	0.007	0.007
Peak Vector Sum:	0.045 in/s		
Peak Air Pressure:	95 db		
	0.00023 PSI @ 1.3 Hz		

Additional Info:

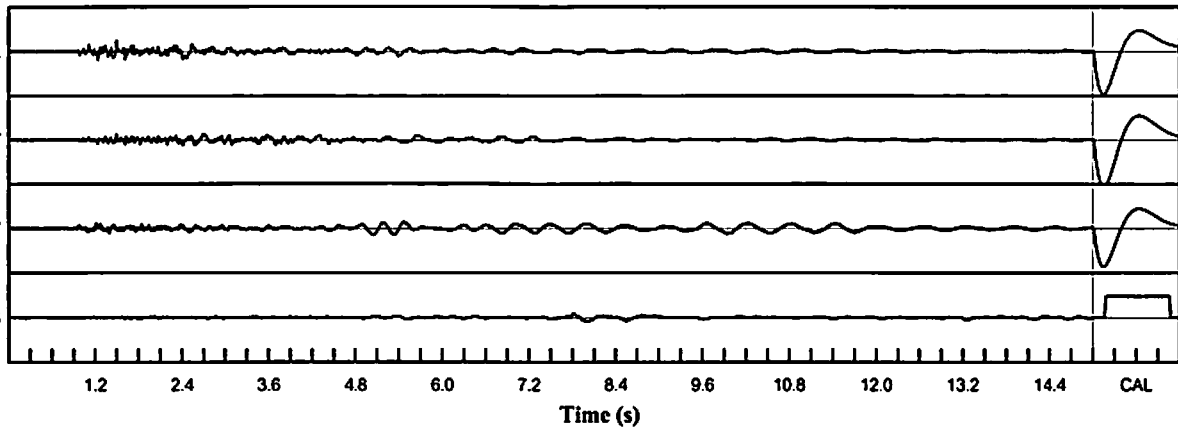
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 72



Velocity Waveform Graph Scale
Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

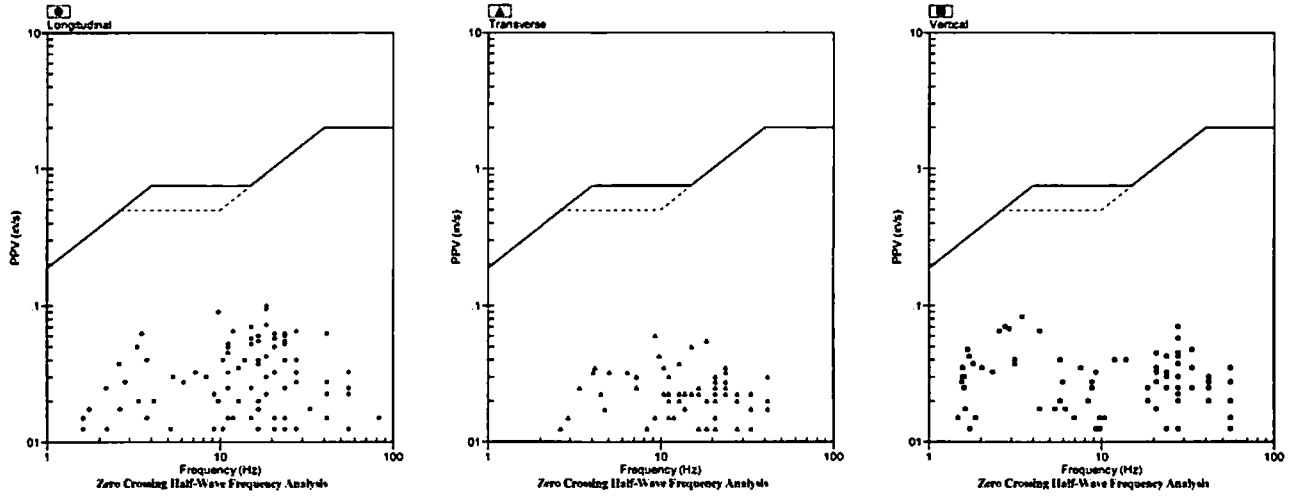
Serial No: 5150 v3.67
Date: 11/01/2017 13:35:31
Event No: 73
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

	L	T	V
PPV (in/s)	0.100	0.060	0.083
FREQ (Hz)	18.5	9.3	3.5
PD (.001")	2.28	1.42	3.92
PPA (g)	0.039	0.020	0.026
Peak Vector Sum:	0.108 in/s		
Peak Air Pressure:	102 db		
	0.00041 PSI @ 3.3 Hz		

Additional Info:

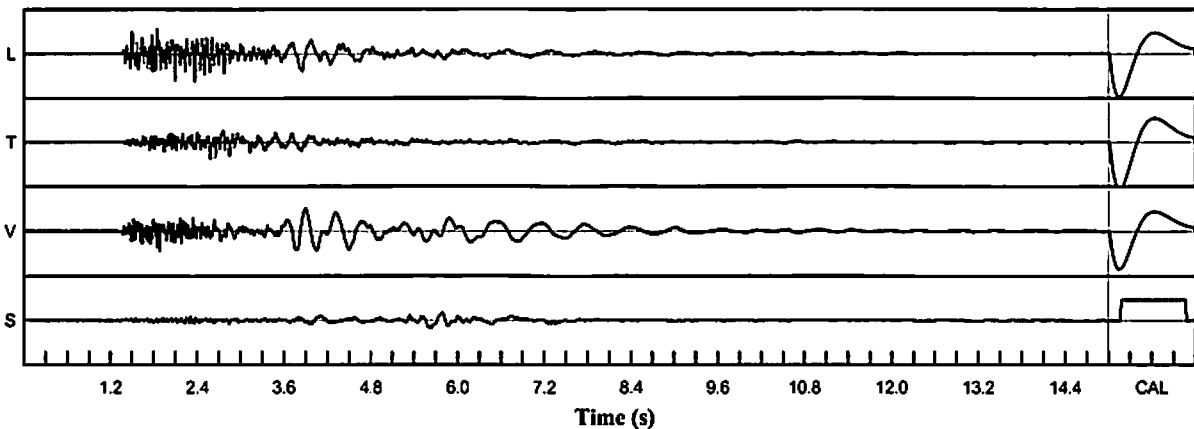
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 73



Velocity Waveform Graph Scale
Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 11/07/2017 12:35:31
Event No: 74
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

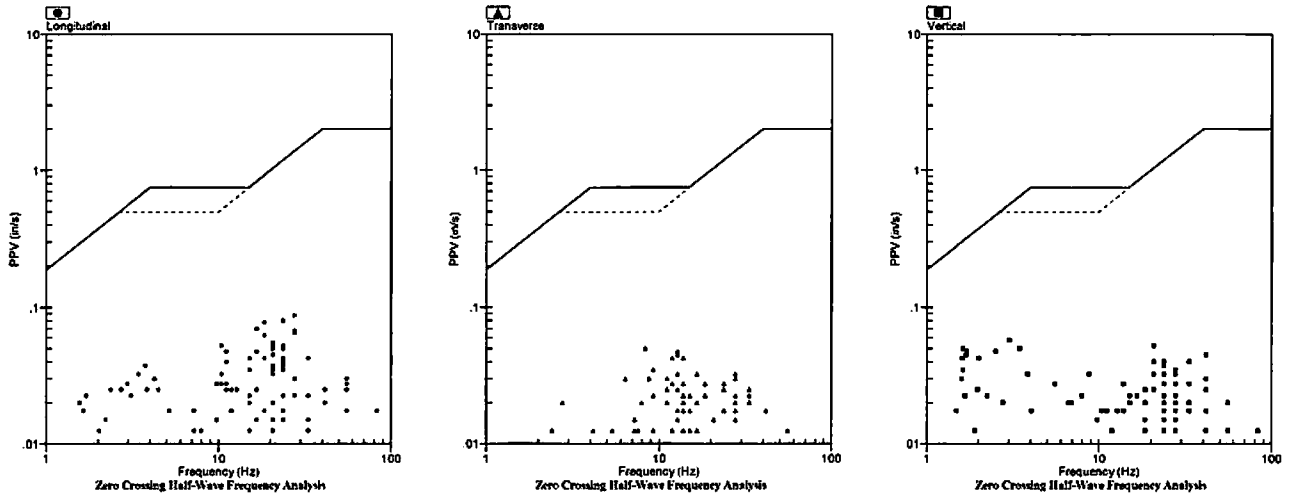
Summary Data

	L	T	V
PPV (in/s)	0.088	0.050	0.058
FREQ (Hz)	27.8	8.3	3.0
PD (.001")	1.53	1.07	4.65
PPA (g)	0.039	0.020	0.026
Peak Vector Sum:	0.098 in/s		
Peak Air Pressure:	103 db		
	0.00048 PSI @ 4.2 Hz		

Additional Info:

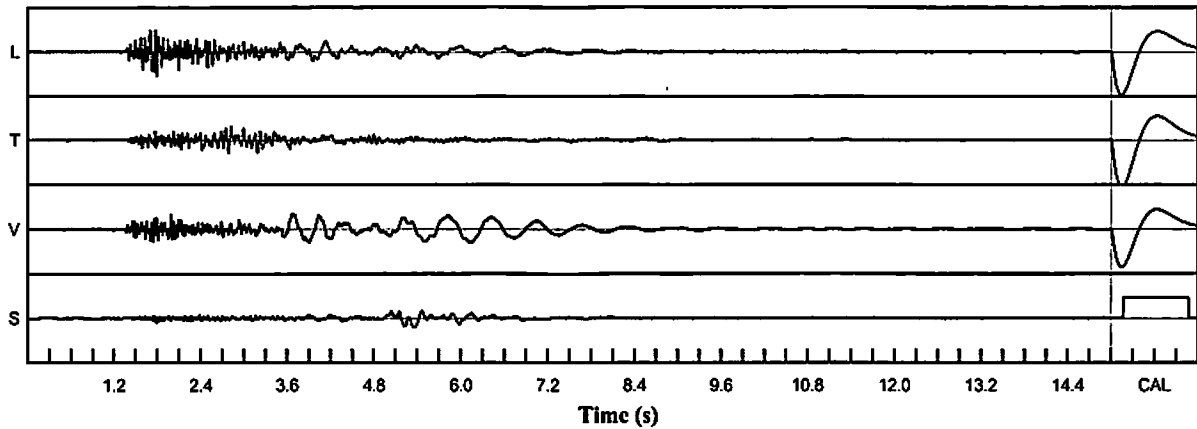
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 74



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

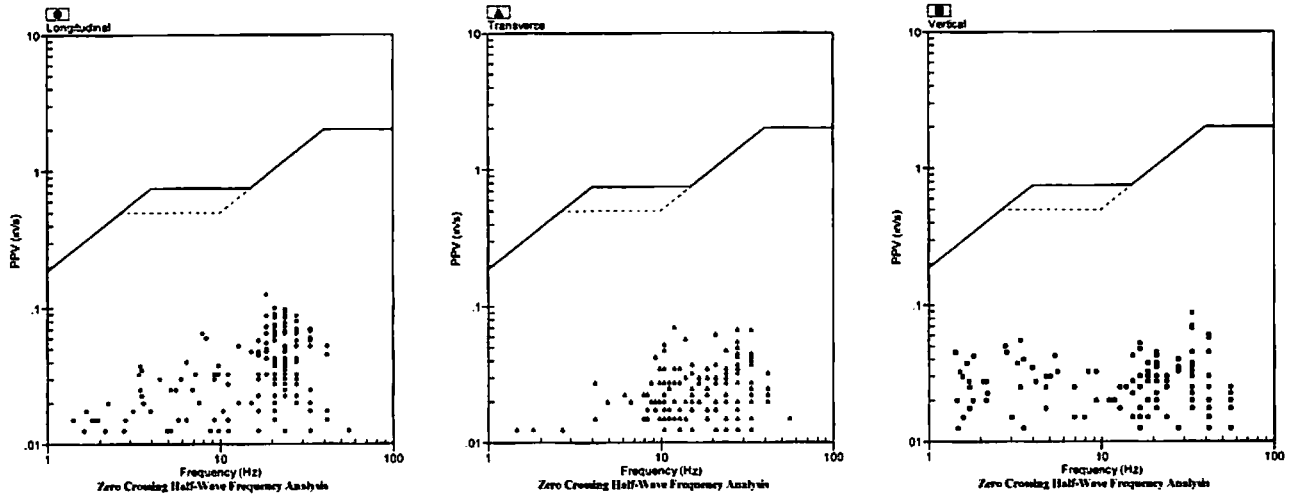
Serial No: 5150 v3.67
Date: 11/09/2017 12:35:53
Event No: 75
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

	L	T	V
PPV (in/s)	0.125	0.070	0.088
FREQ (Hz)	18.5	11.9	33.3
PD (.001")	1.63	1.17	3.41
PPA (g)	0.052	0.033	0.052
Peak Vector Sum:	0.138 in/s		
Peak Air Pressure:	102 db		
	0.00041 PSI @ 6.7 Hz		

Additional Info:

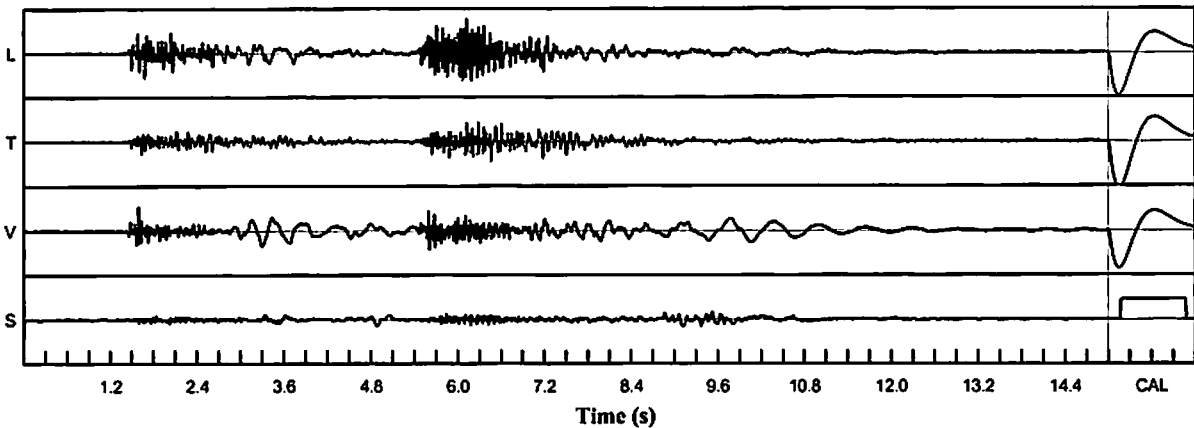
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 75



Velocity Waveform Graph Scale
Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 11/14/2017 12:05:53
Event No: 76
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

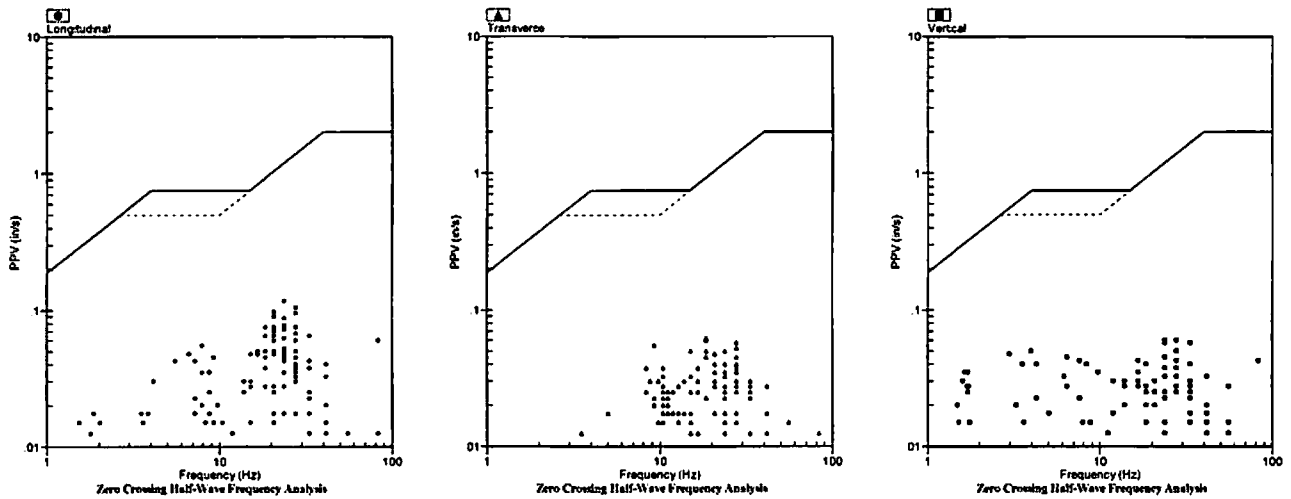
Summary Data

	L	T	V
PPV (in/s)	0.118	0.063	0.063
FREQ (Hz)	23.8	18.5	23.8
PD (.001")	1.30	1.00	3.27
PPA (g)	0.052	0.026	0.033
Peak Vector Sum:	0.128 in/s		
Peak Air Pressure:	101 db		
	0.00032 PSI @ 27.8 Hz		

Additional Info:

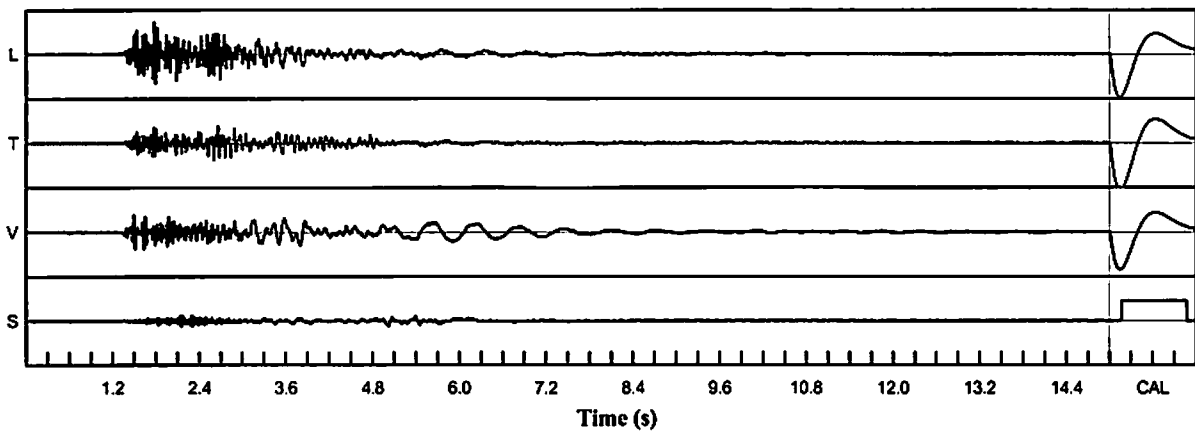
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 76



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 11/15/2017 15:35:50
Event No: 77
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

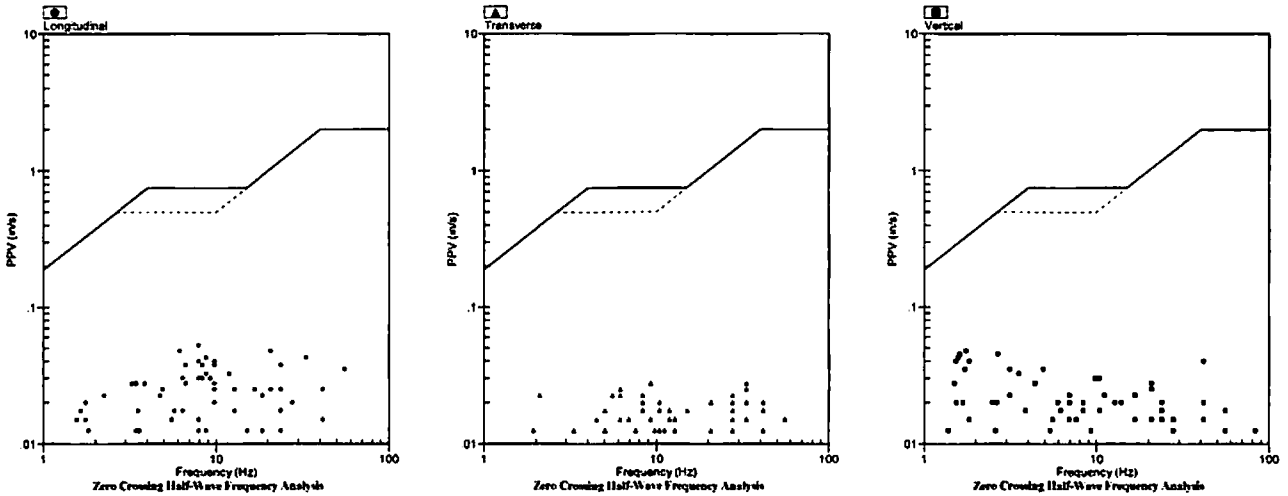
Summary Data

	L	T	V
PPV (in/s)	0.053	0.028	0.048
FREQ (Hz)	7.9	33.3	1.8
PD (.001")	1.34	1.44	3.58
PPA (g)	0.026	0.020	0.026
Peak Vector Sum:	0.055 in/s		
Peak Air Pressure:	98 db		
	0.00027 PSI @ 3.8 Hz		

Additional Info:

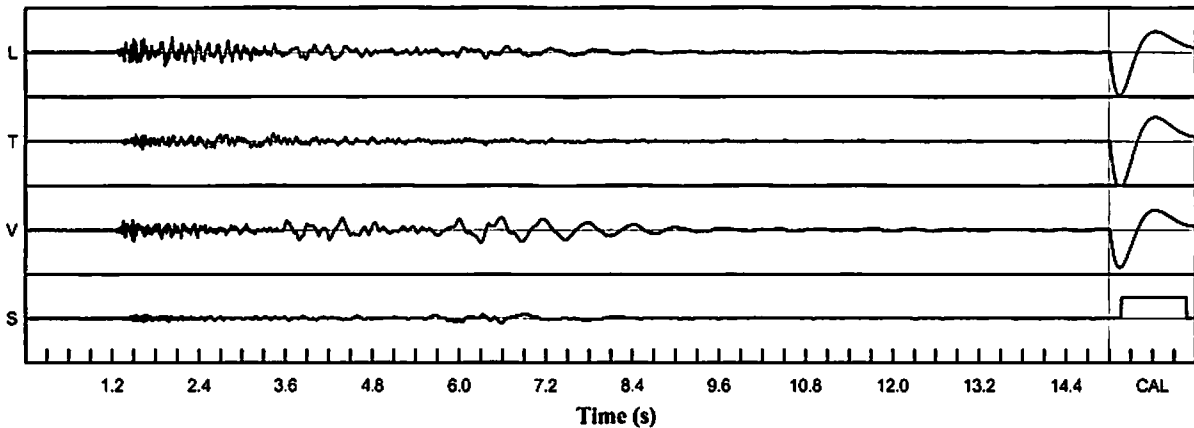
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 77



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 11/16/2017 11:26:15
Event No: 78
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

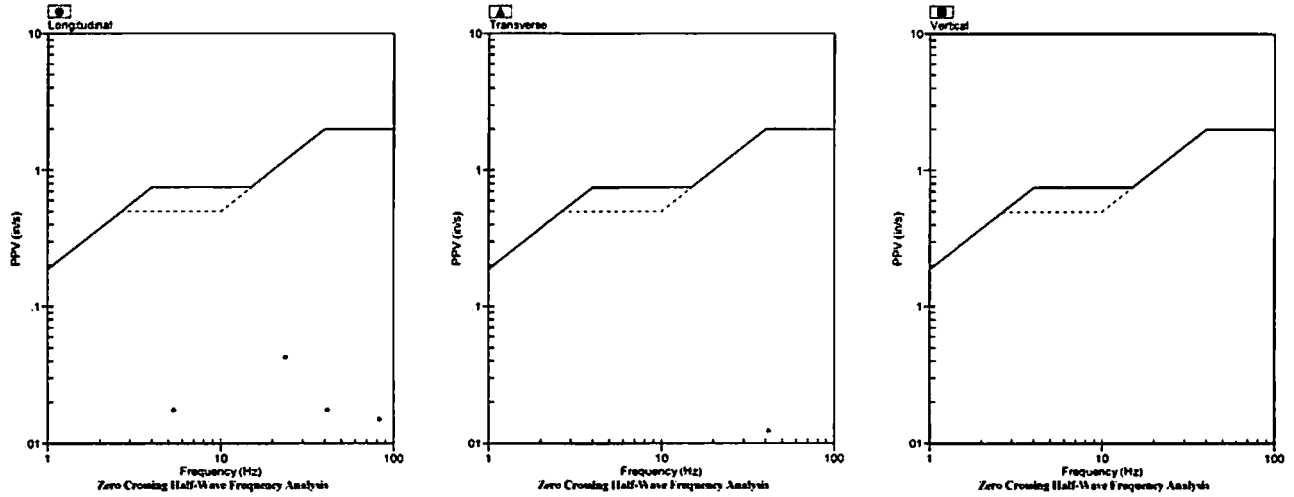
Summary Data

	L	T	V
PPV (in/s)	0.053	0.023	0.008
FREQ (Hz)	7.9	6.2	6.7
PD (.001")	1.04	0.50	0.21
PPA (g)	0.026	0.013	0.007
Peak Vector Sum:	0.058 in/s		
Peak Air Pressure:	115 db		
	0.00175 PSI @ 12.8 Hz		

Additional Info:

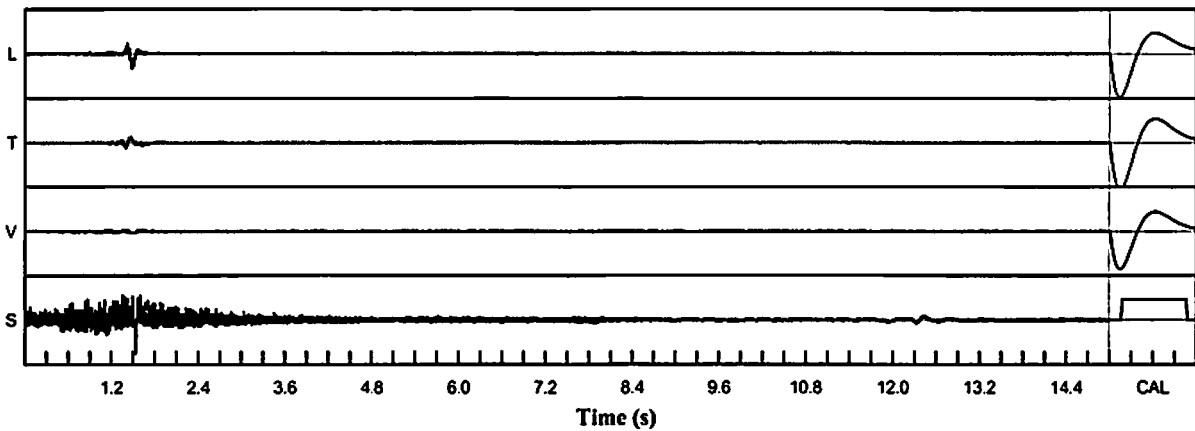
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 78



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 11/16/2017 11:30:52
Event No: 79
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

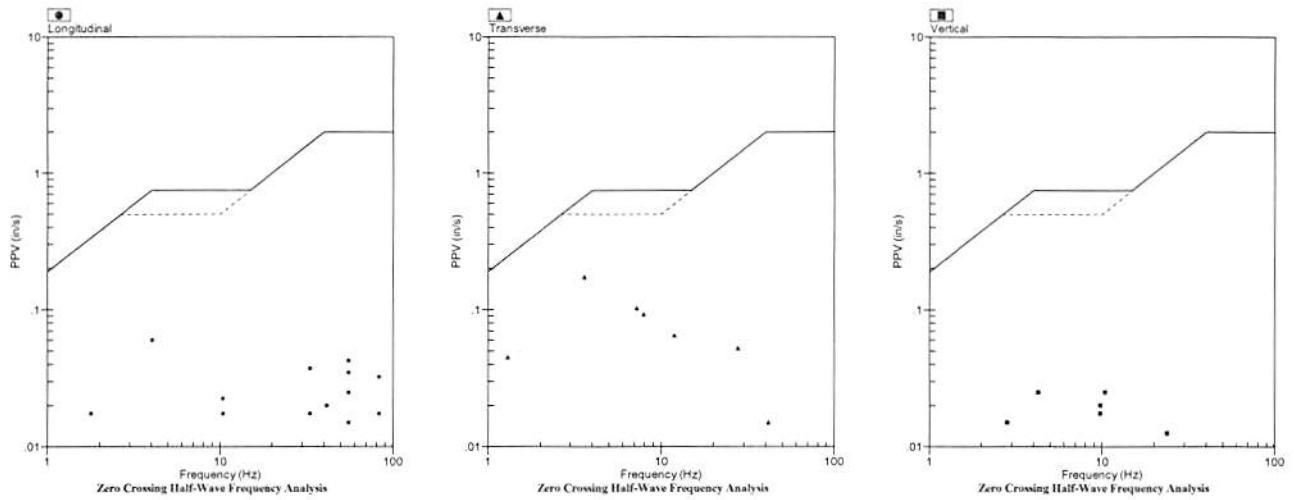
Summary Data

	L	T	V
PPV (in/s)	0.060	0.173	0.025
FREQ (Hz)	4.1	3.6	10.4
PD (.001")	1.98	6.34	0.82
PPA (g)	0.046	0.078	0.013
Peak Vector Sum:	0.178 in/s		
Peak Air Pressure:	117 db		
	0.00201 PSI @ 166.7 Hz		

Additional Info:

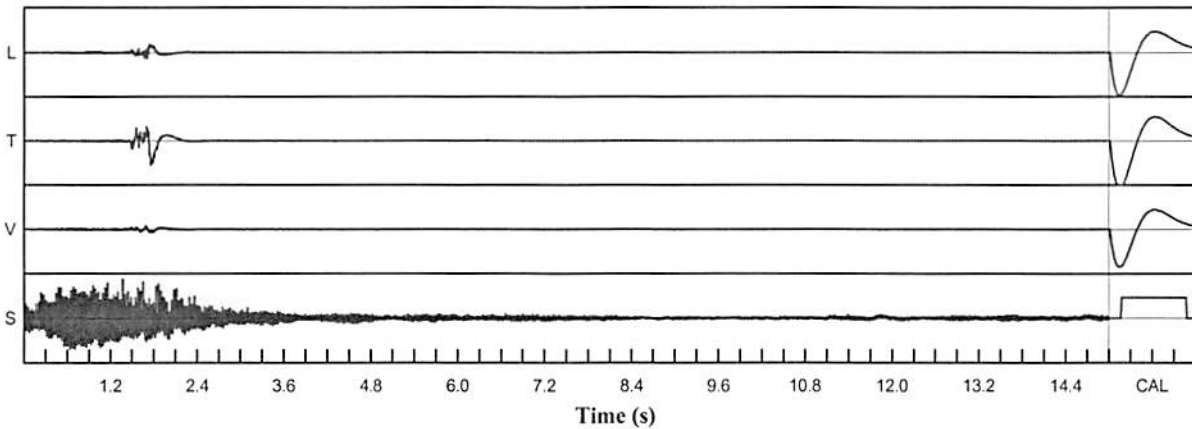
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 79



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.320 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 11/17/2017 12:36:22
Event No: 80
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

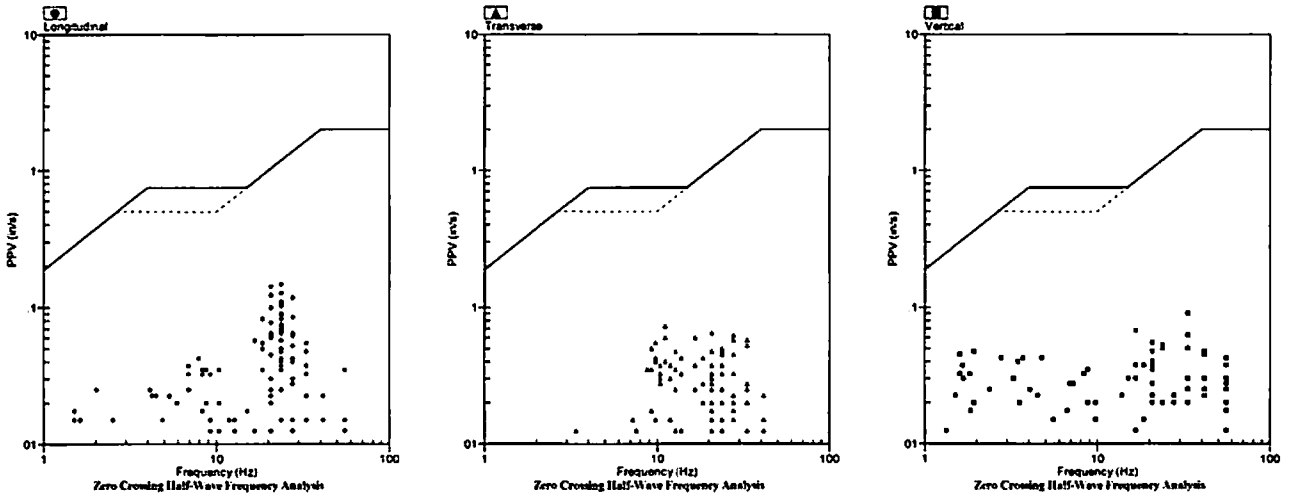
Summary Data

	L	T	V
PPV (in/s)	0.148	0.073	0.090
FREQ (Hz)	23.8	11.1	33.3
PD (.001")	1.34	1.35	3.99
PPA (g)	0.052	0.033	0.059
Peak Vector Sum:	0.155 in/s		
Peak Air Pressure:	101 db		
	0.00032 PSI @ 33.3 Hz		

Additional Info:

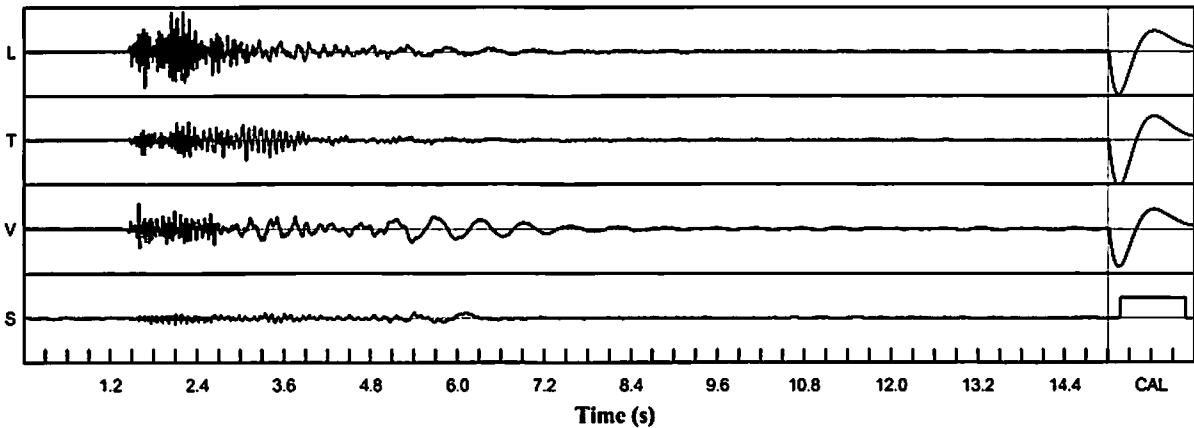
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 80



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 11/20/2017 15:05:53
Event No: 81
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

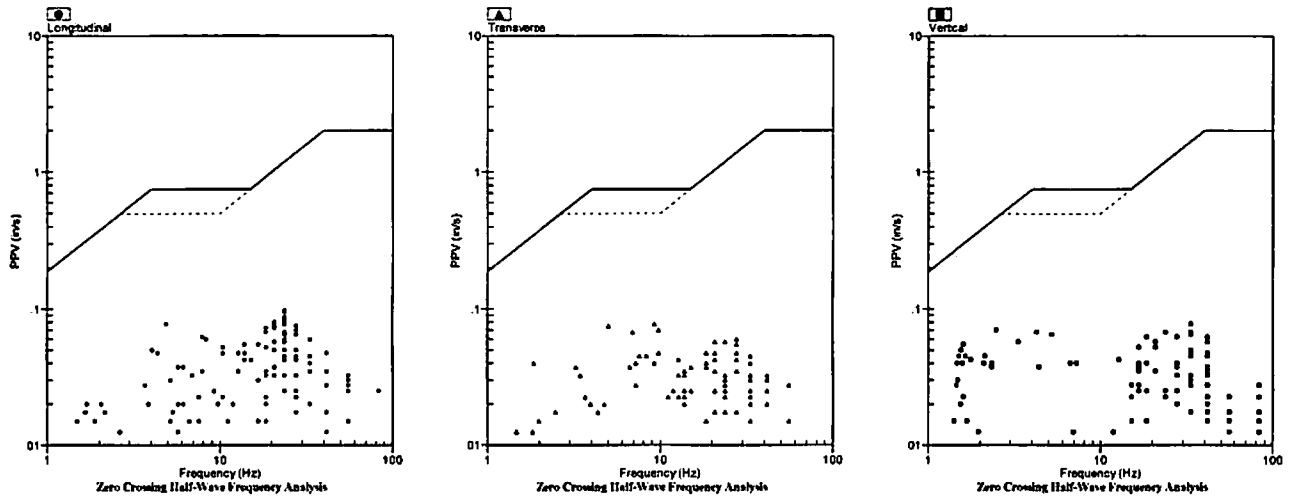
Summary Data

	L	T	V
PPV (in/s)	0.098	0.078	0.078
FREQ (Hz)	23.8	9.3	33.3
PD (.001")	1.94	2.02	4.64
PPA (g)	0.046	0.026	0.039
Peak Vector Sum:	0.113 in/s		
Peak Air Pressure:	101 db		
	0.00036 PSI @ 23.8 Hz		

Additional Info:

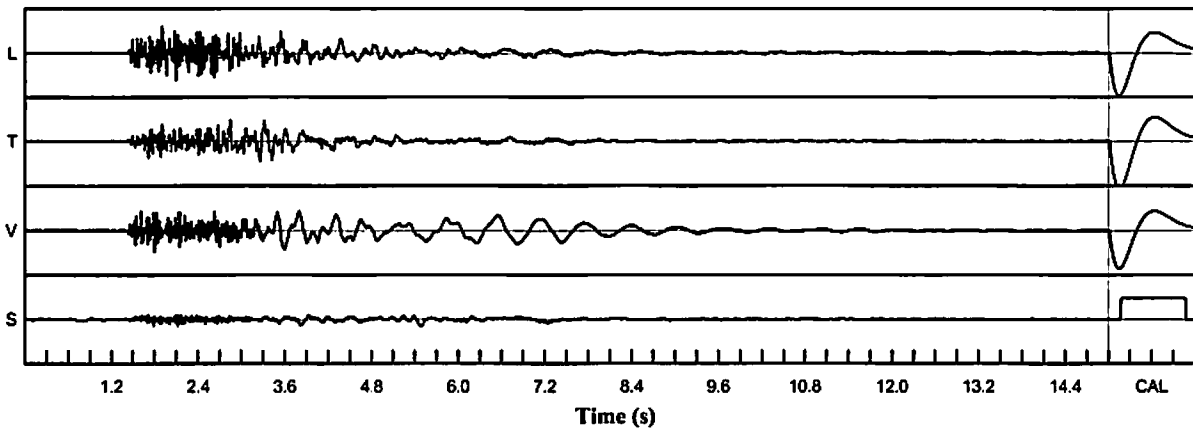
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 81



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 11/21/2017 14:36:07
Event No: 82
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

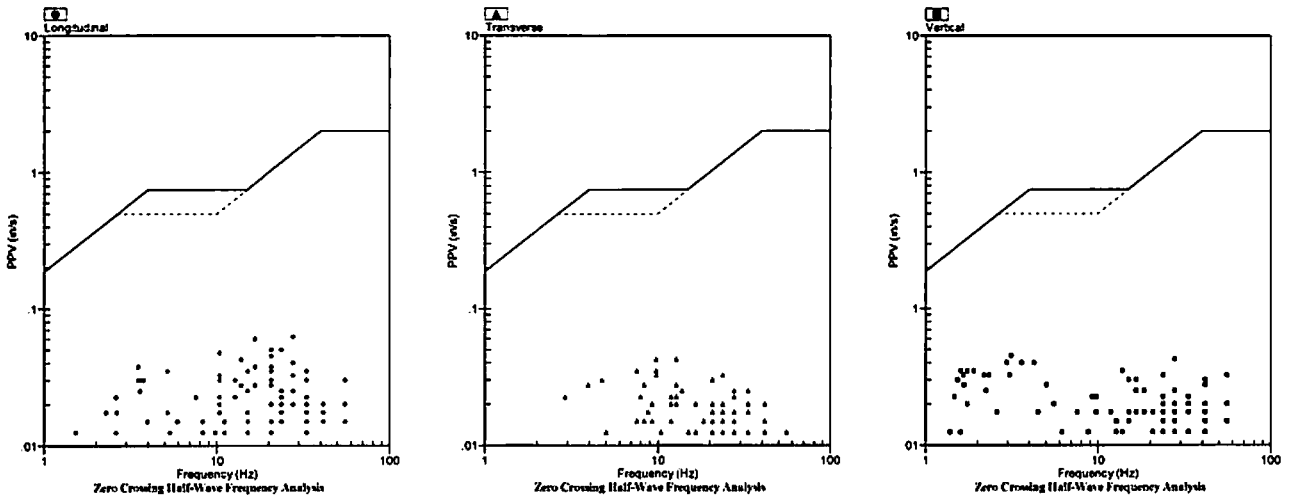
Summary Data

	L	T	V
PPV (in/s)	0.063	0.043	0.045
FREQ (Hz)	27.8	9.8	3.1
PD (.001")	1.49	1.31	3.21
PPA (g)	0.026	0.013	0.026
Peak Vector Sum:	0.073 in/s		
Peak Air Pressure:	103 db		
	0.00048 PSI @ 7.2 Hz		

Additional Info:

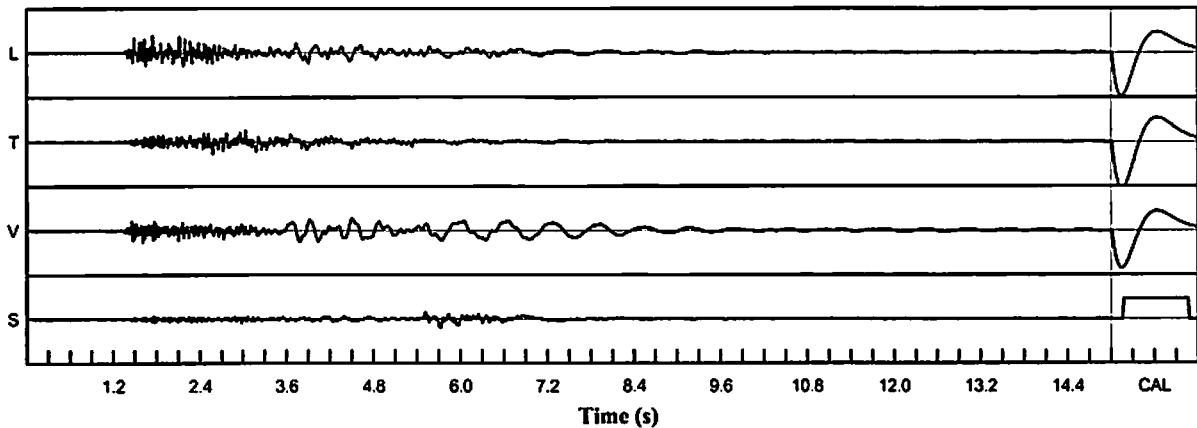
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 82



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5150 v3.67
Date: 11/22/2017 14:20:59
Event No: 83
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 5276 SW 152 Ct
Distance:
Operator: Pedro V.
Comment: In Ground.
Seismic Trigger: 0.030 in/s

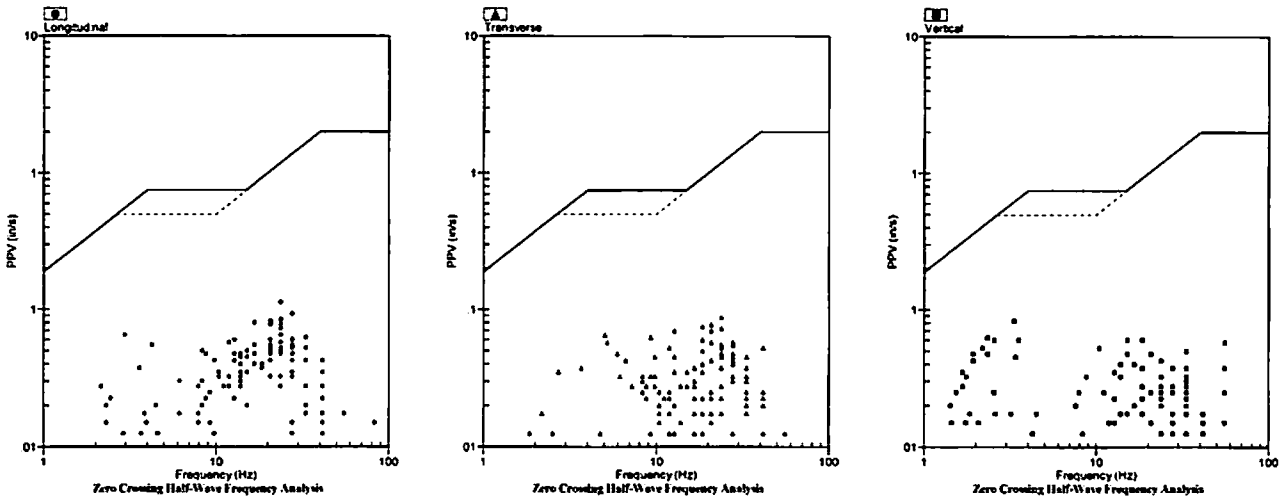
Summary Data

	L	T	V
PPV (in/s)	0.113	0.088	0.083
FREQ (Hz)	23.8	23.8	3.3
PD (.001")	2.45	1.80	3.83
PPA (g)	0.039	0.033	0.033
Peak Vector Sum:	0.125 in/s		
Peak Air Pressure:	102 db		
	0.00041 PSI @ 3.2 Hz		

Additional Info:

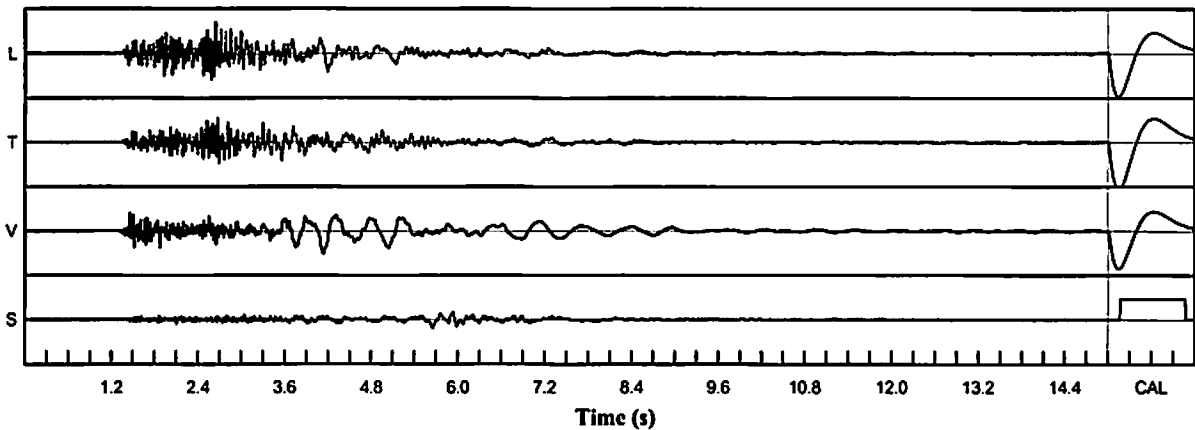
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5150 Event: 83



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/01/2017 13:38:13
Event No: 151
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

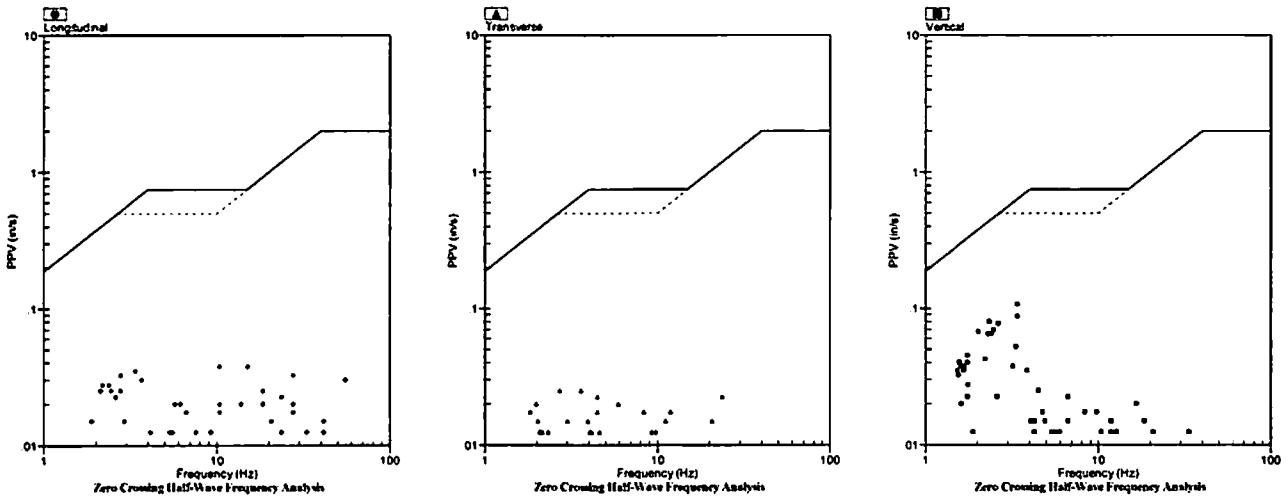
Summary Data

	L	T	V
PPV (in/s)	0.043	0.025	0.108
FREQ (Hz)	6.7	3.6	3.4
PD (.001")	1.83	1.42	5.25
PPA (g)	0.020	0.007	0.013
Peak Vector Sum:	0.110 in/s		
Peak Air Pressure:	114 db		
	0.00157 PSI @ 5.4 Hz		

Additional Info:

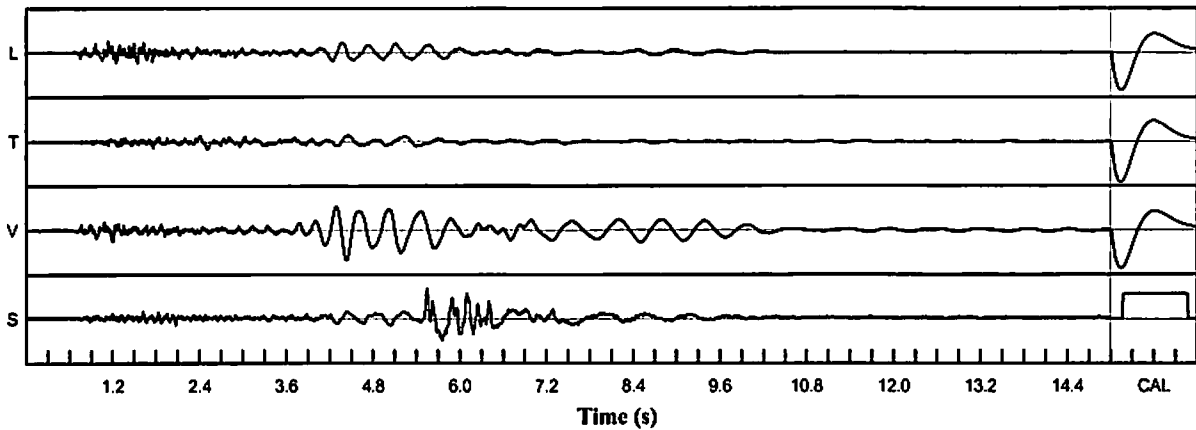
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 151



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

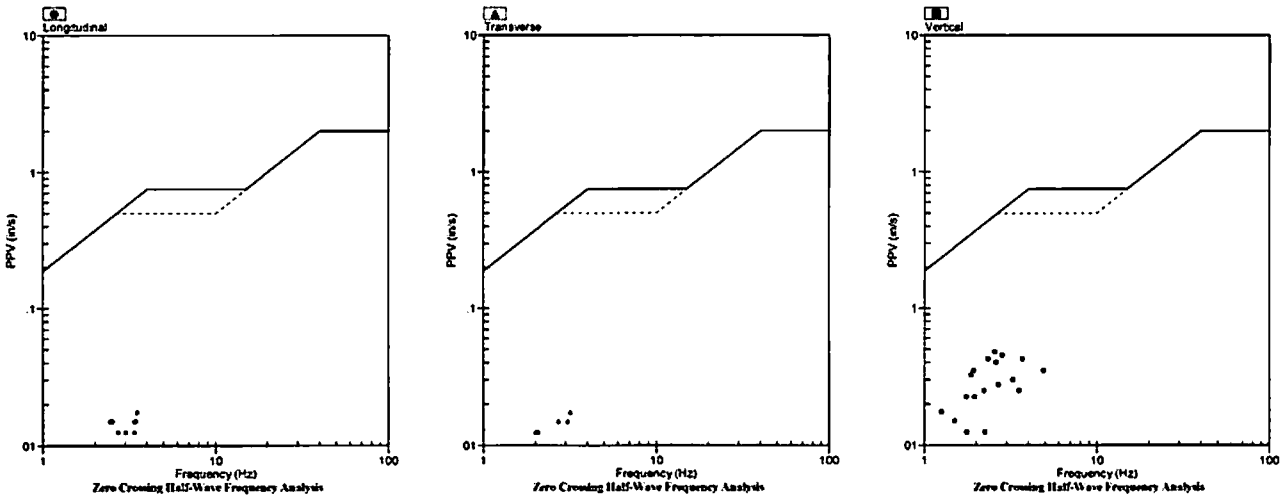
Serial No: 5148 v3.67
Date: 11/06/2017 14:23:40
Event No: 152
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

	L	T	V
PPV (in/s)	0.018	0.018	0.048
FREQ (Hz)	3.5	3.2	2.6
PD (.001")	0.80	0.87	3.23
PPA (g)	0.007	0.007	0.007
Peak Vector Sum:	0.048 in/s		
Peak Air Pressure:	109 db		
	0.00100 PSI @ 2.0 Hz		

Additional Info:

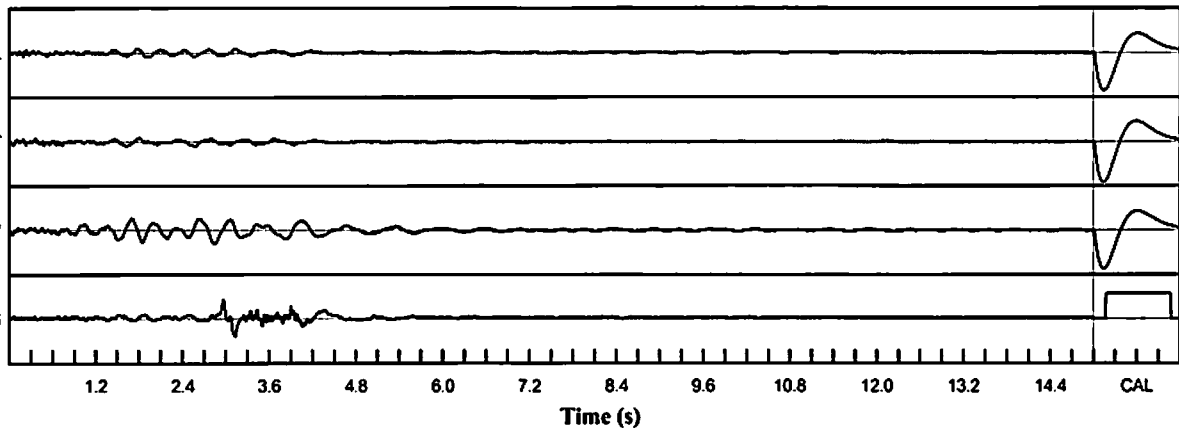
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 152



Velocity Waveform Graph Scale
Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/07/2017 12:38:20
Event No: 153
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

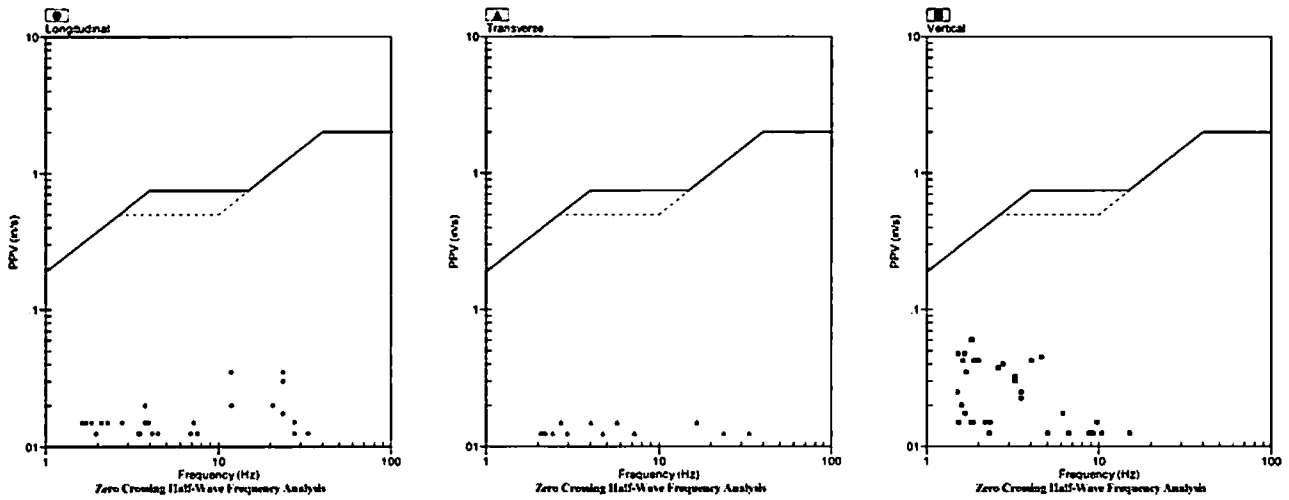
Summary Data

	L	T	V
PPV (in/s)	0.035	0.015	0.060
FREQ (Hz)	11.9	27.8	1.9
PD (.001")	1.21	0.95	5.29
PPA (g)	0.020	0.007	0.020
Peak Vector Sum:	0.060 in/s		
Peak Air Pressure:	117 db		
	0.00206 PSI @ 3.3 Hz		

Additional Info:

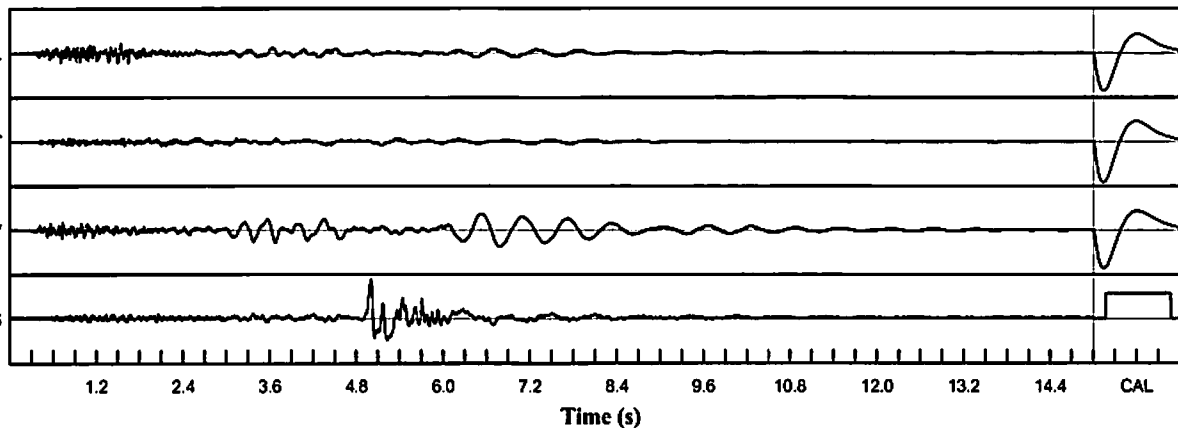
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 153



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/08/2017 12:53:17
Event No: 154
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

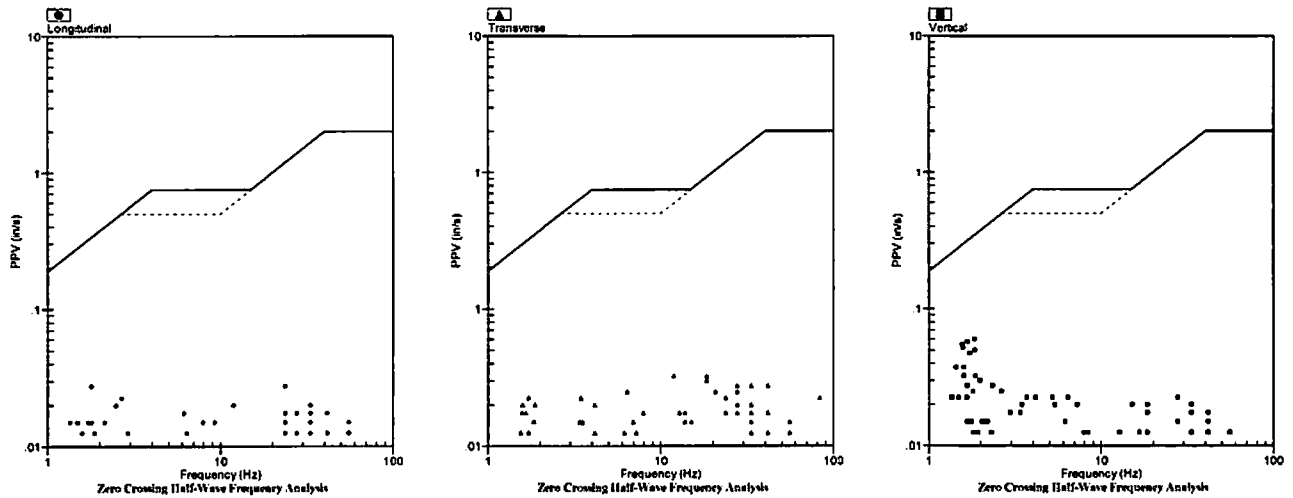
Summary Data

	L	T	V
PPV (in/s)	0.028	0.050	0.060
FREQ (Hz)	23.8	23.8	1.9
PD (.001")	2.16	2.05	5.57
PPA (g)	0.013	0.026	0.013
Peak Vector Sum:	0.063 in/s		
Peak Air Pressure:	111 db		
	0.00121 PSI @ 2.2 Hz		

Additional Info:

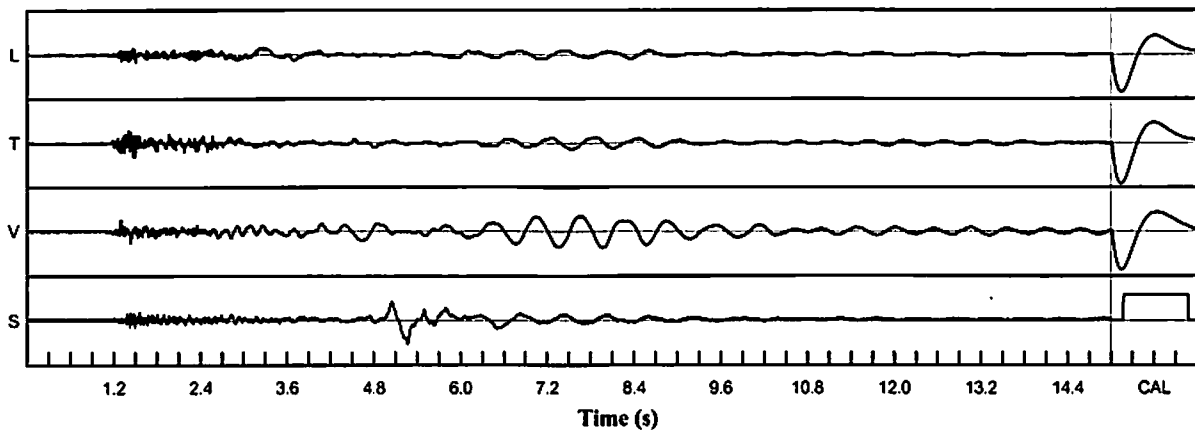
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
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 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 154



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/09/2017 12:38:44
Event No: 155
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

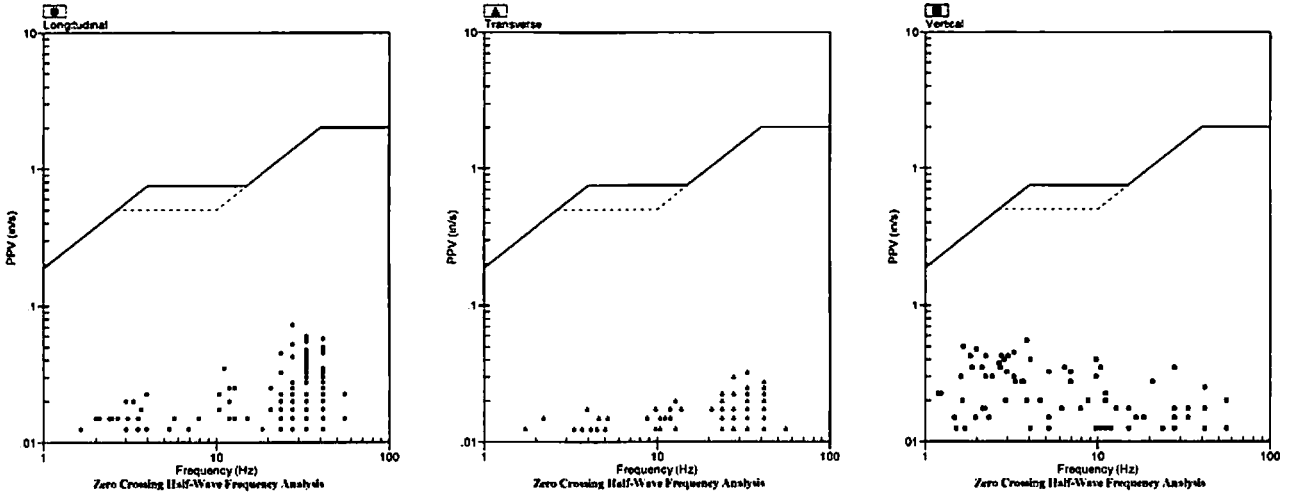
Summary Data

	L	T	V
PPV (in/s)	0.073	0.033	0.055
FREQ (Hz)	27.8	33.3	3.9
PD (.001")	1.16	1.05	4.34
PPA (g)	0.039	0.020	0.020
Peak Vector Sum:	0.075 in/s		
Peak Air Pressure:	111 db		
	0.00117 PSI @ 10.4 Hz		

Additional Info:

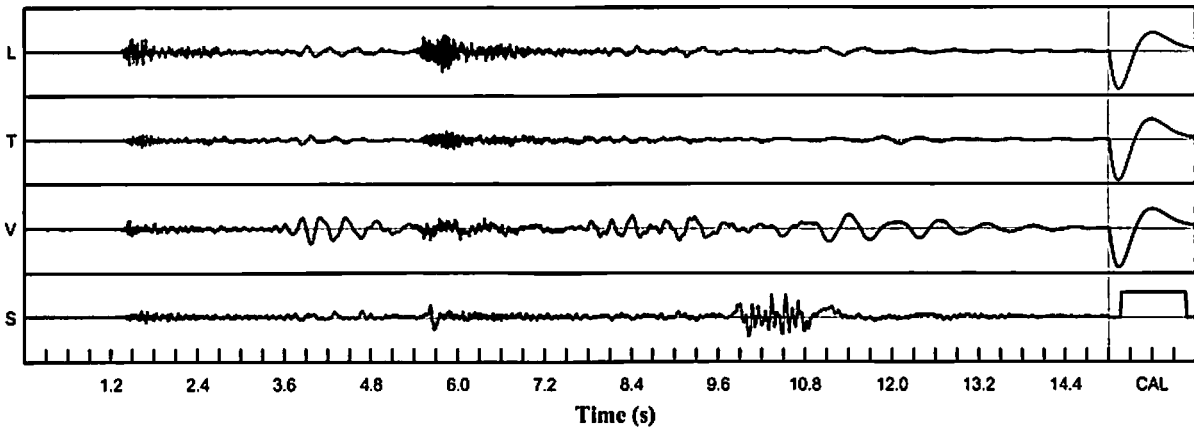
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
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 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 155



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

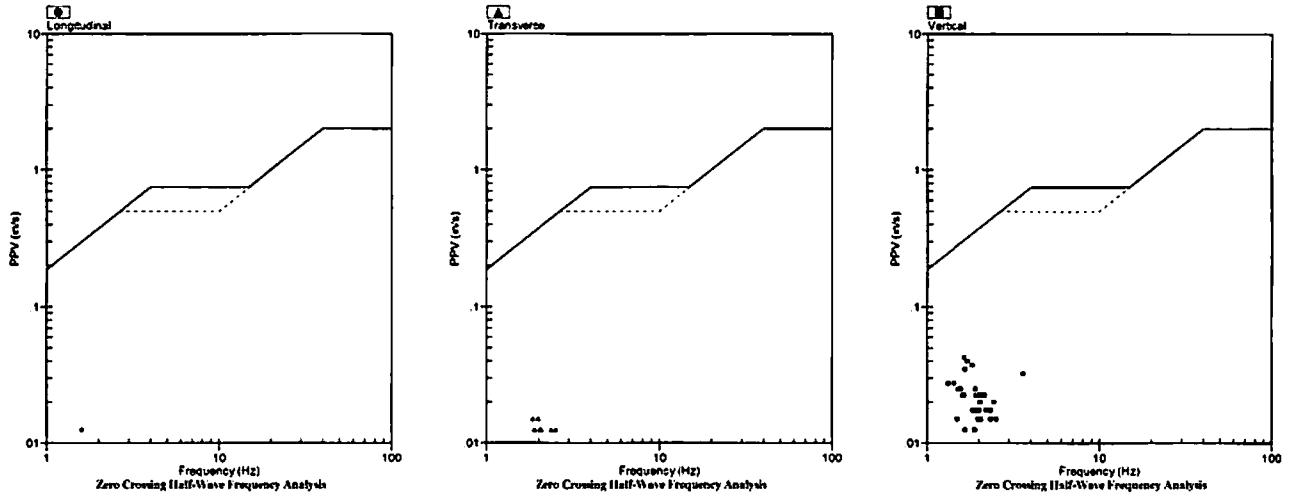
Serial No: 5148 v3.67
Date: 11/13/2017 14:23:43
Event No: 156
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

	L	T	V
PPV (in/s)	0.023	0.015	0.043
FREQ (Hz)	1.8	1.9	1.7
PD (.001")	1.77	1.14	3.76
PPA (g)	0.007	0.007	0.007
Peak Vector Sum:	0.043 in/s		
Peak Air Pressure:	107 db		
	0.00068 PSI @ 3.8 Hz		

Additional Info:

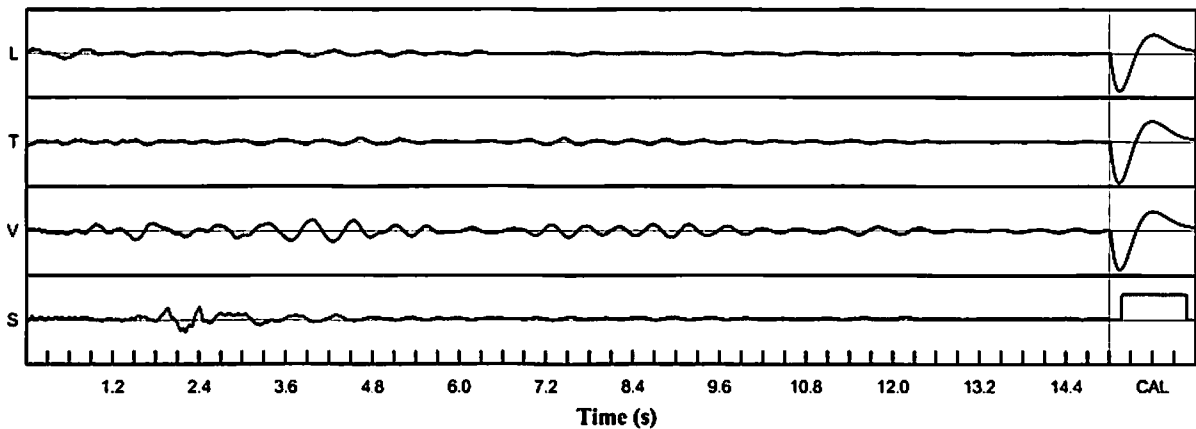
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 156



Velocity Waveform Graph Scale
Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/14/2017 12:08:49
Event No: 157
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

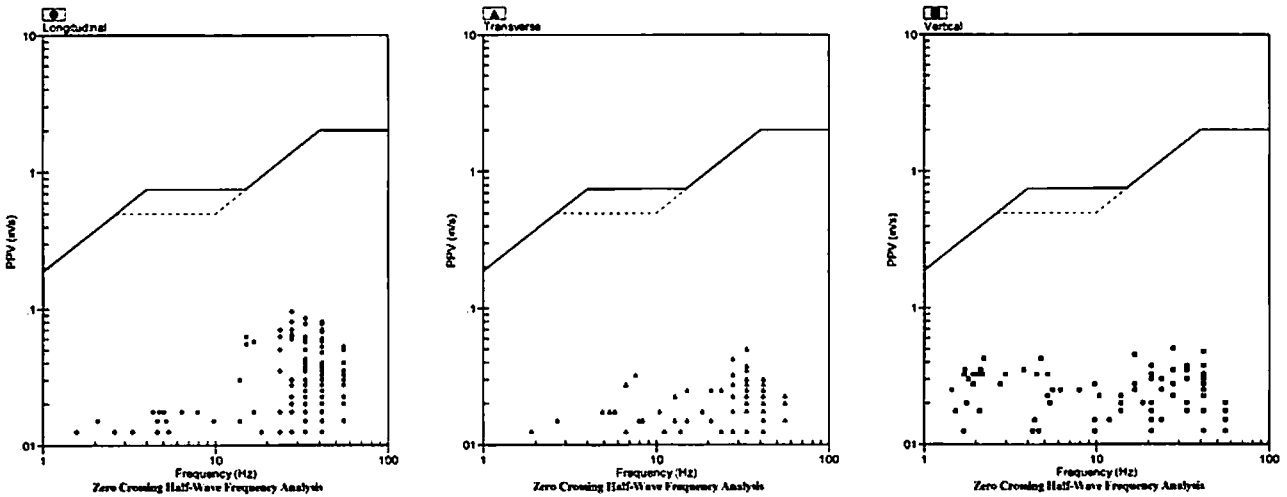
Summary Data

	L	T	V
PPV (in/s)	0.095	0.050	0.050
FREQ (Hz)	27.8	33.3	27.8
PD (.001")	0.82	1.05	2.63
PPA (g)	0.052	0.026	0.026
Peak Vector Sum:	0.098 in/s		
Peak Air Pressure:	107 db		
	0.00068 PSI @ 33.3 Hz		

Additional Info:

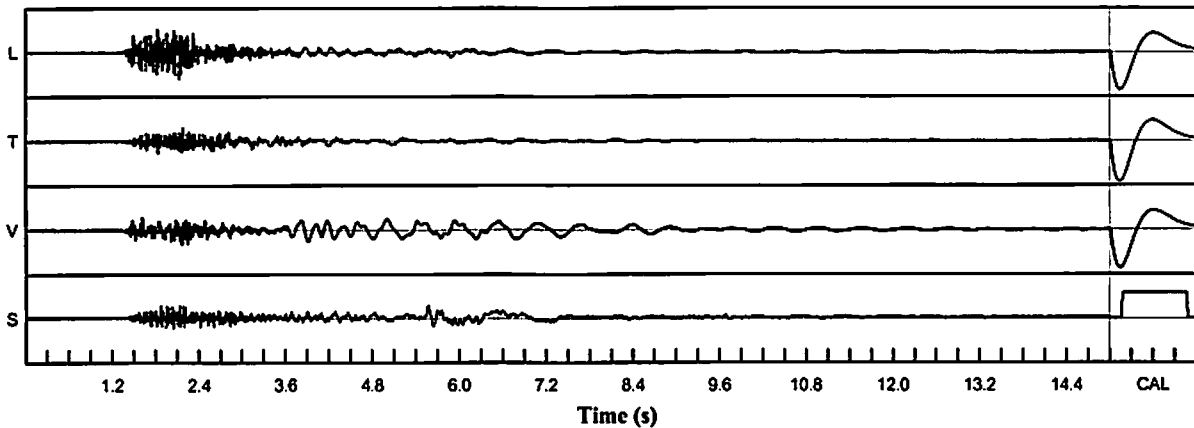
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 157



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/15/2017 15:38:49
Event No: 158
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance: .
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

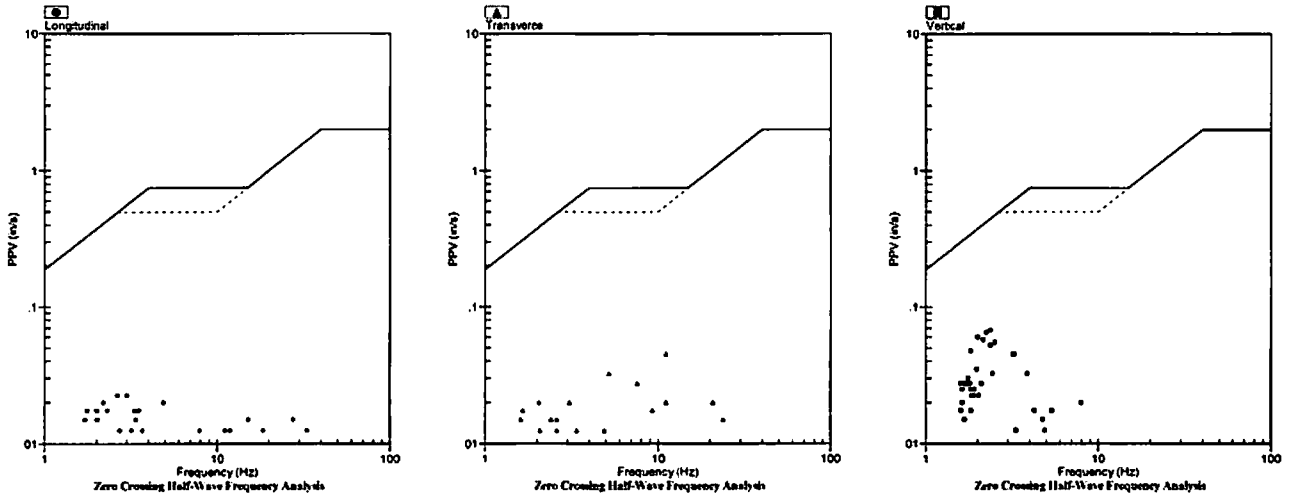
Summary Data

	L	T	V
PPV (in/s)	0.038	0.045	0.068
FREQ (Hz)	11.9	6.0	2.4
PD (.001")	1.28	1.62	4.89
PPA (g)	0.026	0.013	0.013
Peak Vector Sum:	0.068 in/s		
Peak Air Pressure:	112 db		
	0.00132 PSI @ 3.2 Hz		

Additional Info:

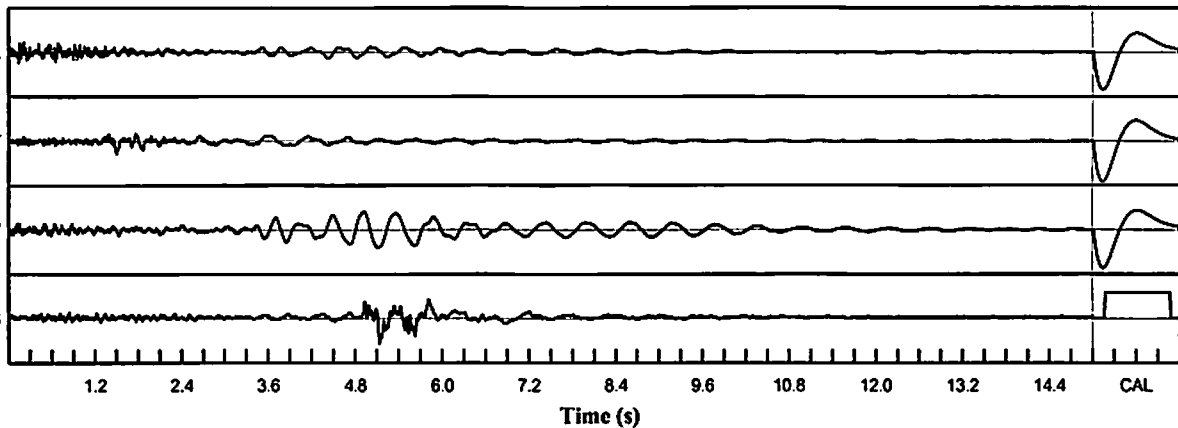
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 158



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

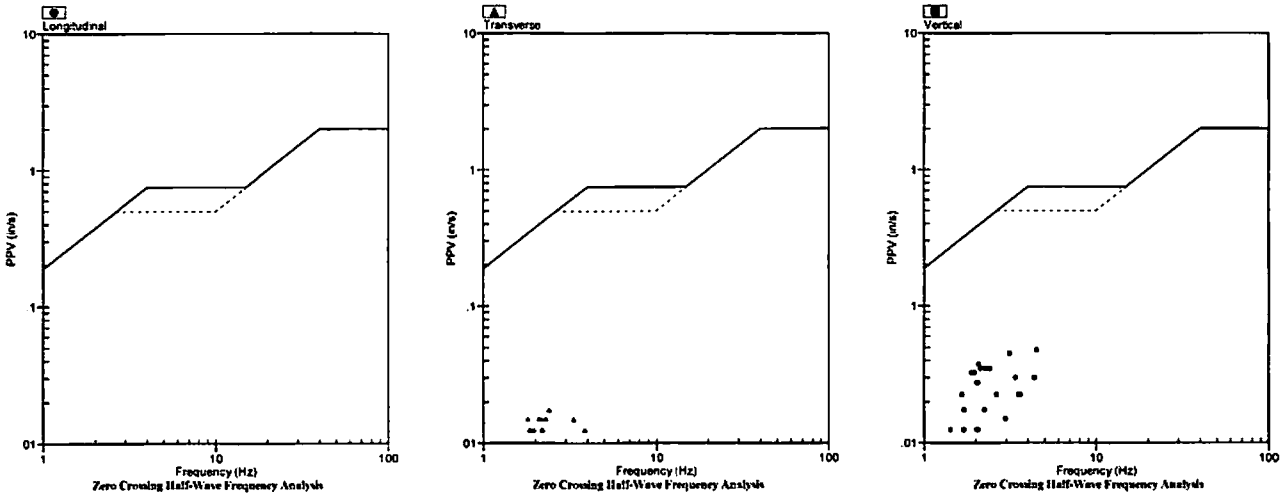
Serial No: 5148 v3.67
Date: 11/16/2017 12:41:23
Event No: 159
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

	L	T	V
PPV (in/s)	0.015	0.018	0.048
FREQ (Hz)	2.4	2.4	3.1
PD (.001")	0.88	1.17	2.85
PPA (g)	0.007	0.007	0.007
Peak Vector Sum:	0.048 in/s		
Peak Air Pressure:	101 db		
	0.00046 PSI @ 1.1 Hz		

Additional Info:

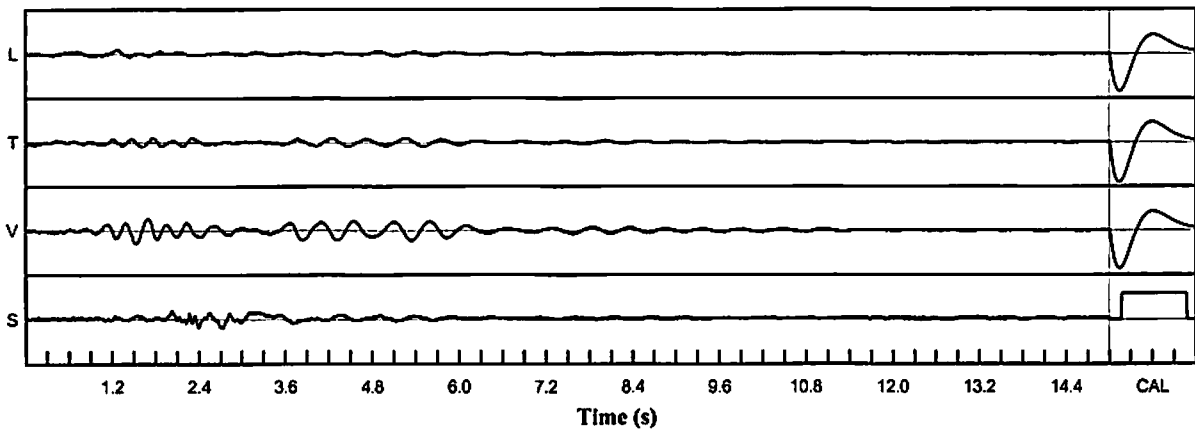
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 159



Velocity Waveform Graph Scale
Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/17/2017 12:39:21
Event No: 160
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

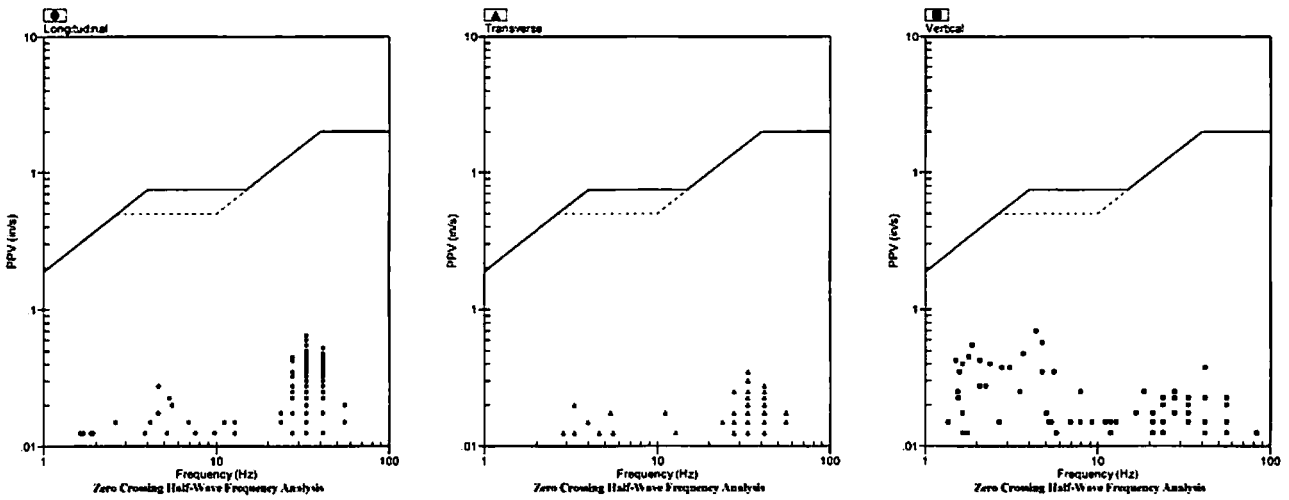
Summary Data

	L	T	V
PPV (in/s)	0.065	0.035	0.070
FREQ (Hz)	33.3	33.3	4.4
PD (.001")	1.13	0.77	4.49
PPA (g)	0.039	0.020	0.020
Peak Vector Sum:	0.073 in/s		
Peak Air Pressure:	108 db		
	0.00082 PSI @ 6.7 Hz		

Additional Info:

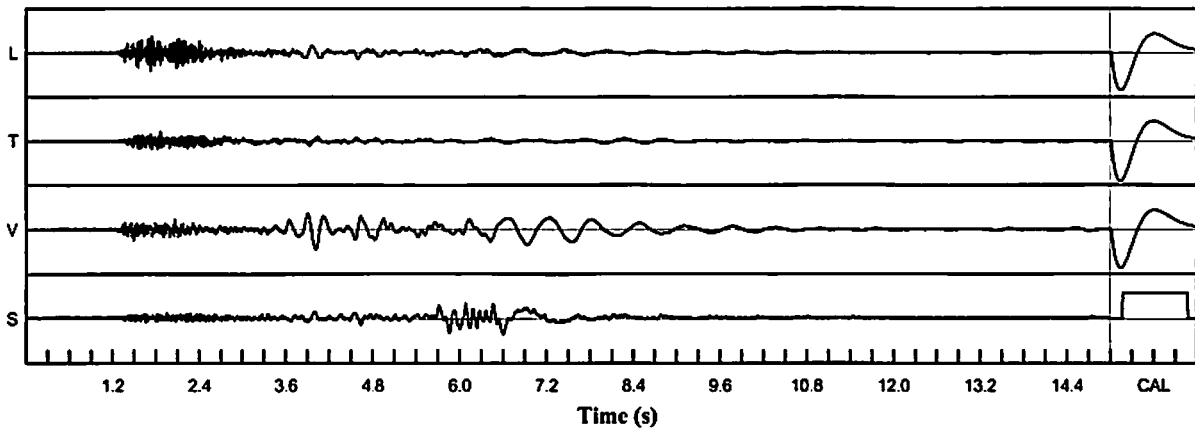
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 160



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/20/2017 15:08:56
Event No: 161
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

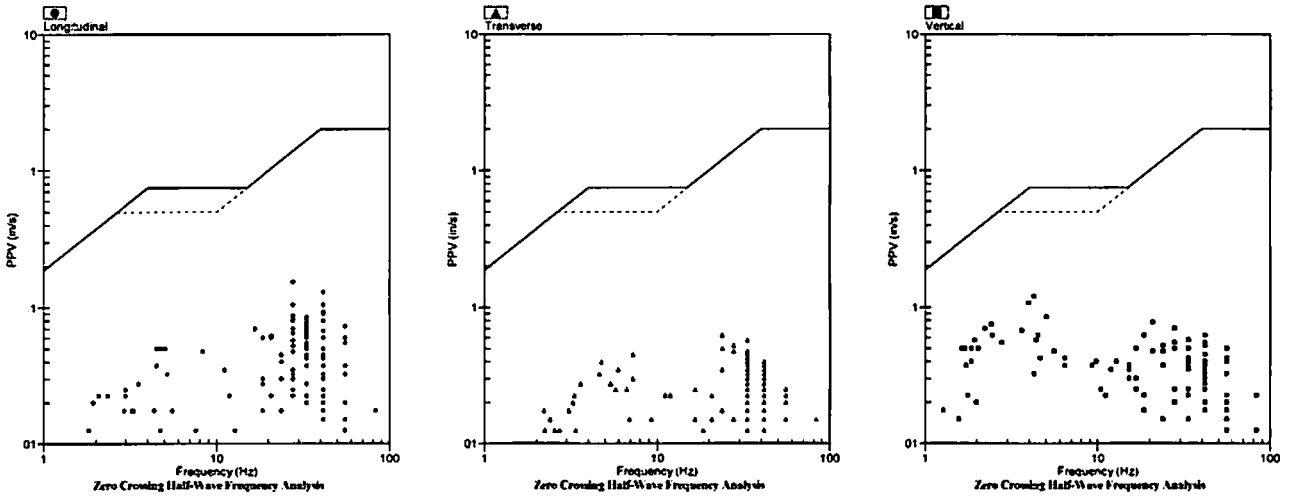
Summary Data

	L	T	V
PPV (in/s)	0.155	0.063	0.120
FREQ (Hz)	27.8	23.8	4.3
PD (.001")	1.67	1.43	4.95
PPA (g)	0.085	0.026	0.046
Peak Vector Sum:	0.160 in/s		
Peak Air Pressure:	114 db		
	0.00157 PSI @ 6.2 Hz		

Additional Info:

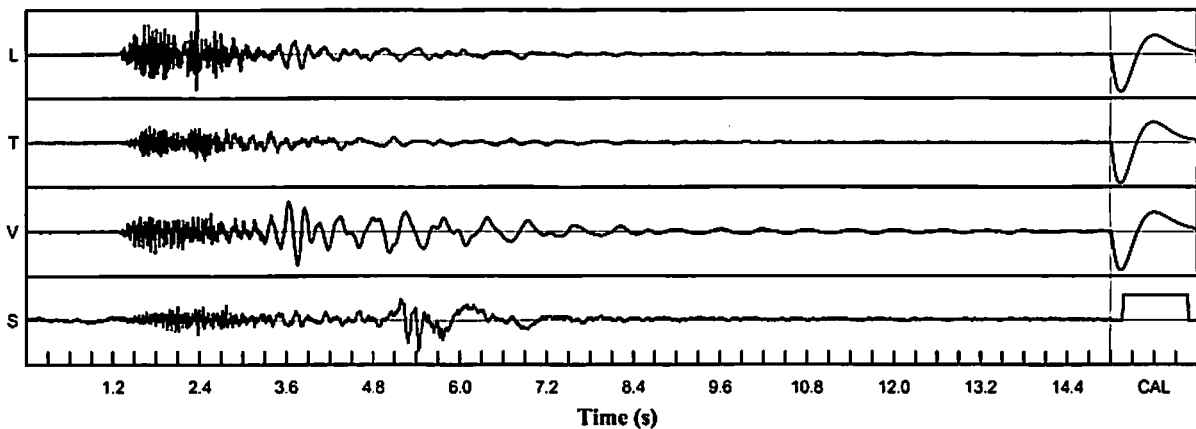
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 161



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/21/2017 14:39:14
Event No: 162
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

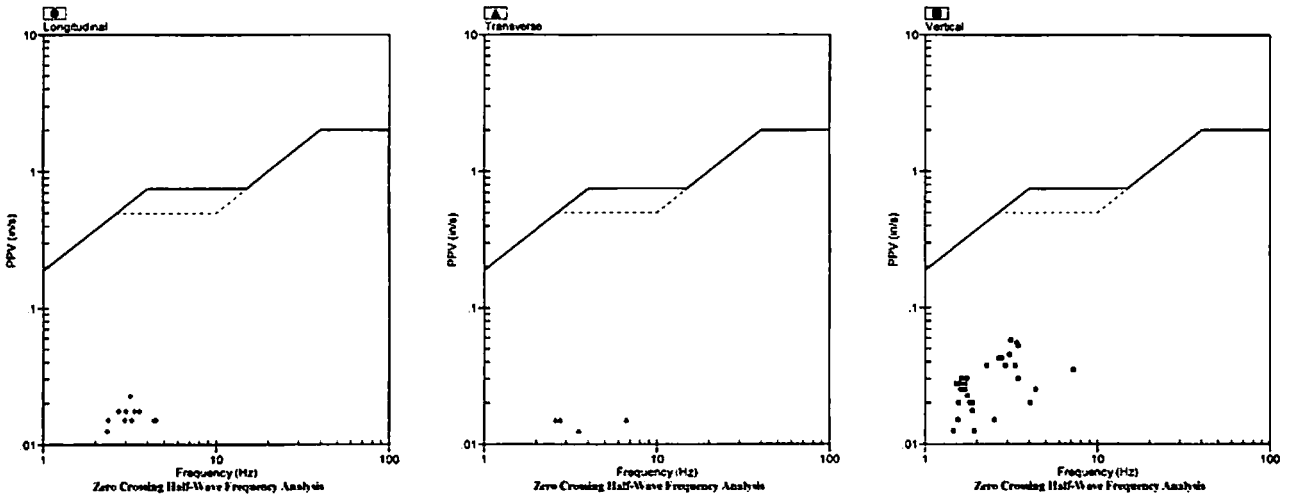
Summary Data

	L	T	V
PPV (in/s)	0.023	0.018	0.058
FREQ (Hz)	3.2	4.8	3.1
PD (.001")	1.02	0.88	2.83
PPA (g)	0.007	0.007	0.007
Peak Vector Sum:	0.058 in/s		
Peak Air Pressure:	113 db		
	0.00150 PSI @ 3.7 Hz		

Additional Info:

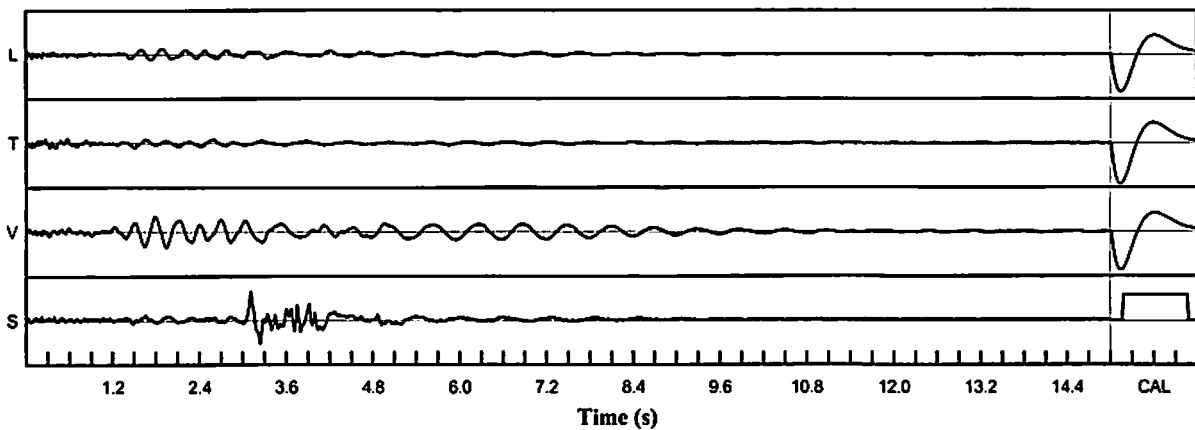
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 162



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI

Seismic Analysis

USBM/Velocity Waveform Report

Serial No: 5148 v3.67
Date: 11/22/2017 14:24:03
Event No: 163
Record Time: 15.0 s
Client: City of Miramar
Operation: White Rock Quarries
Location: 17040 SW 53 Ct
Distance:
Operator: Pedro V.
Comment: In Ground
Seismic Trigger: 0.030 in/s

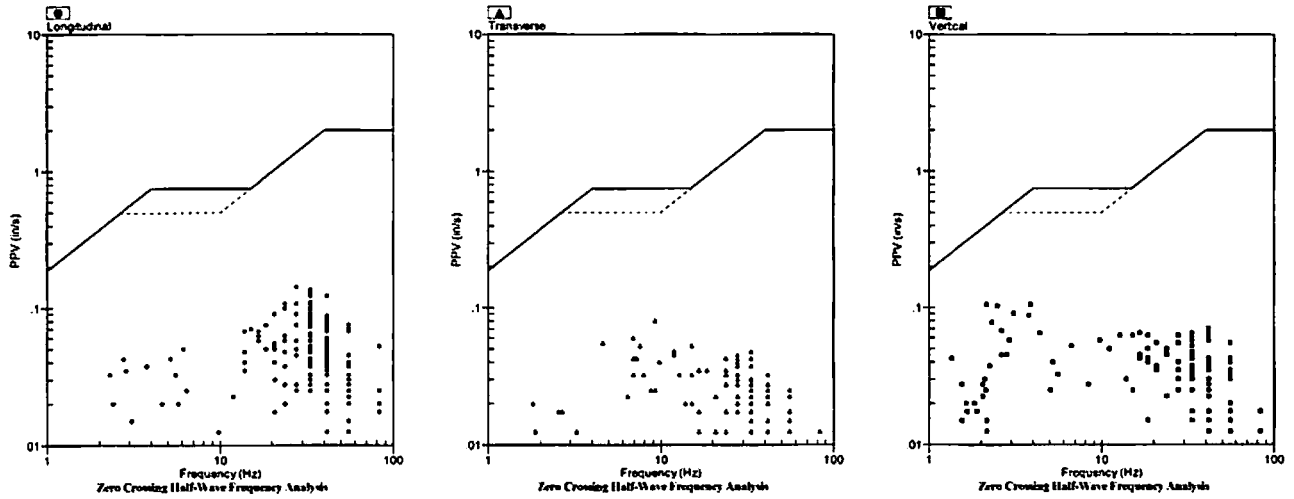
Summary Data

	L	T	V
PPV (in/s)	0.143	0.080	0.105
FREQ (Hz)	27.8	9.3	3.9
PD (.001")	2.17	1.87	7.34
PPA (g)	0.078	0.026	0.052
Peak Vector Sum:	0.143 in/s		
Peak Air Pressure:	111 db		
	0.00125 PSI @ 4.3 Hz		

Additional Info:

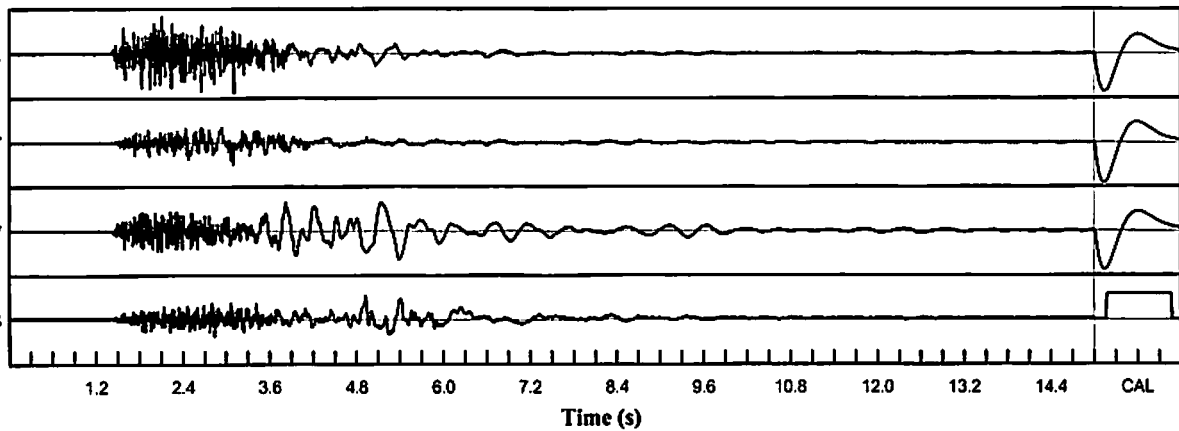
Shaketable Calibrated: 03/21/2017
By: GeoSonics Inc.
 359 Northgate Drive
 Warrendale, PA 15086 U.S.A.
 TEL: 724.934.2900 FAX: 724.934.2999

USBM Safe Blasting Levels



Velocity Waveform

SN: 5148 Event: 163



Velocity Waveform Graph Scale

Time Scale: 0.300 s
Seismic Scale: +/- 0.160 in/s
Sound Scale: +/- 0.0023 PSI