

SAN RAFAEL ROCK QUARRY VIBRATION REPORT

Location: PB-7 Max. Charge Weight: 420 Date of Blast: 3-5-12
 Northing: 37° 59' 12.1 N Blast Duration: 292 ms Time of Blast: 11:31
 Easting: 122° 27' 15 W Blast Number: 1569

SEISMOGRAPH INFORMATION		UNIT #		UNIT #		UNIT #	
Seismograph Model	5562000	Mico	Mico	Mico	Mico		
Serial Number	4570	4570	4570	4570	4570		
Last Calibration Date	5-24-11	5-26-11	5-26-11	5-26-11	5-26-11		

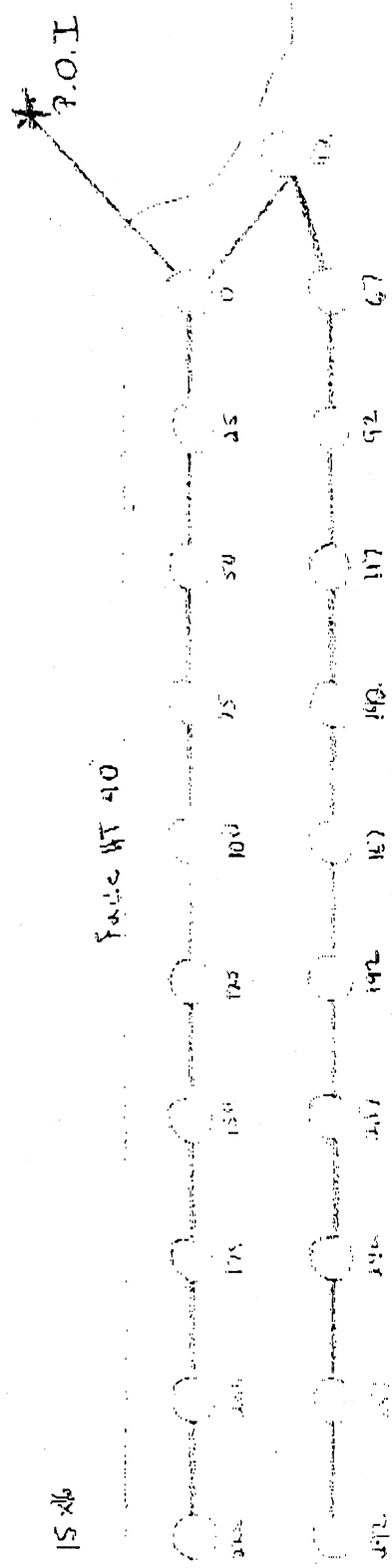
LOCATION INFORMATION		UNIT #		UNIT #		UNIT #	
Location	Peak # 2	Vertical (m/s)	Horizontal (m/s)	Vertical (m/s)	Horizontal (m/s)		
Northing	37° 59' 19.1 N	37° 59' 18.1 N	37° 59' 31.1 N	37° 59' 30.1 N	37° 59' 30.1 N		
Easting	122° 27' 22.1 W	122° 27' 53.1 W	122° 27' 30.1 W	122° 27' 30.1 W	122° 27' 16.1 W		
Distance from Blast	950	3115	2323	1745	1745		
Scaled Distance	46	151	113	87	87		

VIBRATION INFORMATION		UNIT #		UNIT #		UNIT #	
Longitudinal Peak Particle Velocity (ips)	.12		.08	.13			
Longitudinal Peak Frequency (Hz)	16.6		.14	18.5			
Transverse Peak Particle Velocity (ips)	.19		.09	.09			
Transverse Peak Frequency (Hz)	15.1		16.1	20.0			
Vertical Peak Particle Velocity (ips)	.20		.09	.09			
Vertical Peak Frequency (Hz)	22.7		15.1	31.2			
Peak Vector Sum (ips)	.21		.17	.15			
Peak Air Overpressure (db)	112		106	112			

GENERAL COMMENTS:
 Ground Gas Wet.

Seismograph Operator: Deron Lopez Signature: [Signature]

3.5.12
 PB.7
 *1569



Main 950
 V.M 3115
 S.M 2323
 M-N 1795
 37°59'12N
 122°27'15W

Depth 43
 420 lbs per
 18 stem

21 Holes
 21 = 80' E2
 21 = 50' E2
 1 = 42ms
 1 = 17ms
 92 = gram

8,700 lbs titan

Seismic Analysis Velocity Waveform Analysis

Serial Number: 7257
Firmware Version: 08-03.23
Event Date: 03/05/2012 11:31:17 (UTC -08:00)
Event number: 6
Recording Time: 5 s
Client: COUNTY OF MARIN
Operation: SAN RAFAEL ROCK QUARRY
Location: 16 MARIN BAY PARK CT.
Distance:
Operator: VIBRA-TECH GSM
Comment: William Hosken Residence
Seismic Trigger: 0.03 in/s
Sound Trigger: 76 DB

Additional Info:
 j-GEO-01252
 N37 59.524, W122 27.373

Summary Data

	L	T	V
PPV (in/s):	0.045	0.035	0.05
FREQ (HZ):	26.3	29.4	35.7
PD (.001"):	0.38	0.32	0.37
PPA (g):	0.033	0.02	0.059

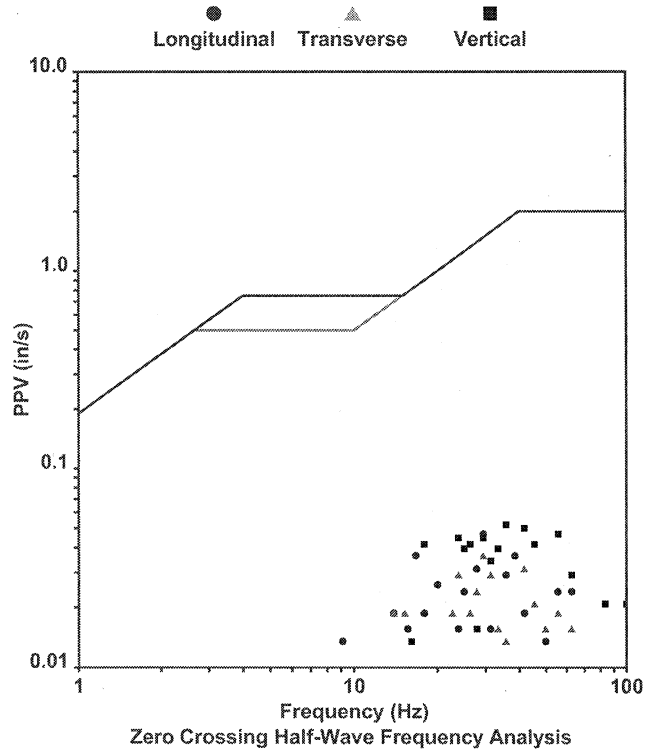
Peak Vector Sum: 0.058 in/s
Peak Air Pressure: 110 DB
 0.0009 psi @ 1.3 HZ

Shaketable Calibrated

On: 01/13/2012 (UTC -08:00)
By: Vibra-Tech, Inc.
 2700 Holloway Road - Suite 113
 Louisville, KY 40203 U.S.A.

USBM Safe Blasting Levels

SSN: 7257 Event: 6

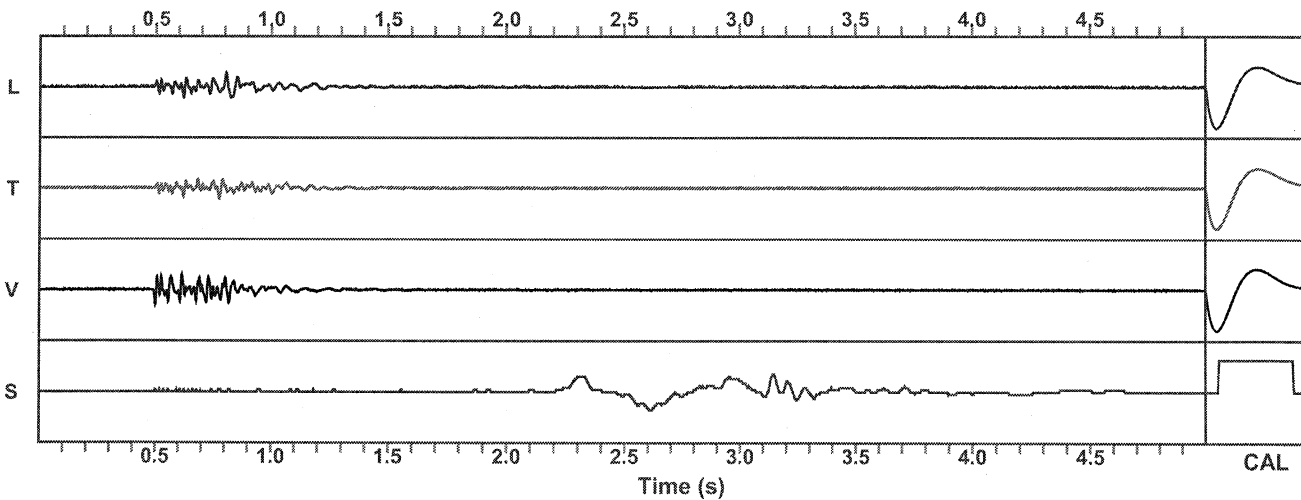


Waveform Graph Scale

Time Scale: 0.1 s
Seismic Scale: +/- 0.16 in/s
Sound Scale: +/- 0.0023 psi

Velocity Waveform

SSN: 7257 Event: 6



Seismic Analysis Velocity Waveform Analysis

Serial Number: 7179
Firmware Version: 08-03.23
Event Date: 03/05/2012 11:31:16 (UTC -08:00)
Event number: 6
Recording Time: 5 s
Client: COUNTY OF MARIN
Operation: SAN RAFAEL ROCK QUARRY
Location: ON QUARRY PROPERTY
Distance:
Operator: VIBRA-TECH GSM
Comment:
Seismic Trigger: 0.03 in/s
Sound Trigger: 76 DB

Additional Info:
 j-GEO-01253
 N37 59.481, W122 27.256

Summary Data

	L	T	V
PPV (in/s):	0.06	0.045	0.07
FREQ (HZ):	31.3	21.7	38.5
PD (.001"):	0.46	0.33	0.48
PPA (g):	0.052	0.033	0.059

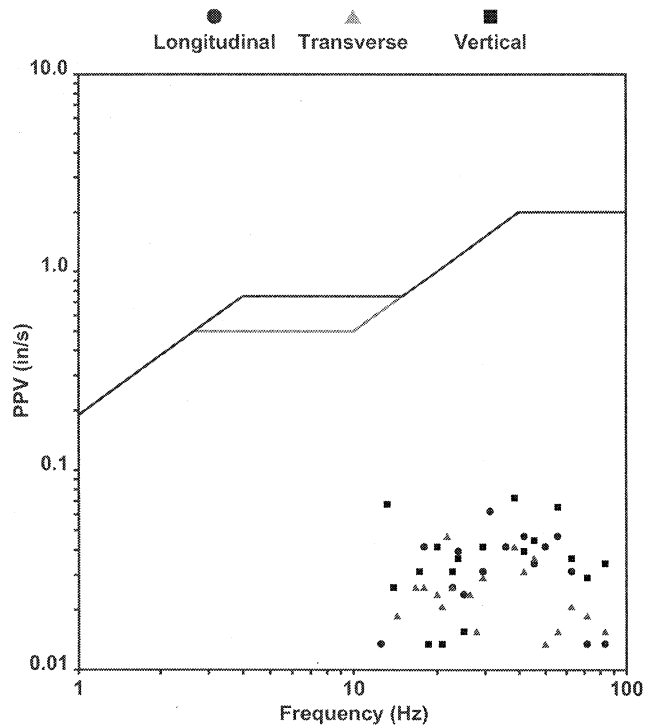
Peak Vector Sum: 0.08 in/s
Peak Air Pressure: 109 DB
 0.0008 psi @ 1.4 HZ

Shaketable Calibrated

On: 01/13/2012 (UTC -08:00)
By: Vibra-Tech, Inc.
 2700 Holloway Road - Suite 113
 Louisville, KY 40203 U.S.A.

USBM Safe Blasting Levels

SSN: 7179 Event: 6



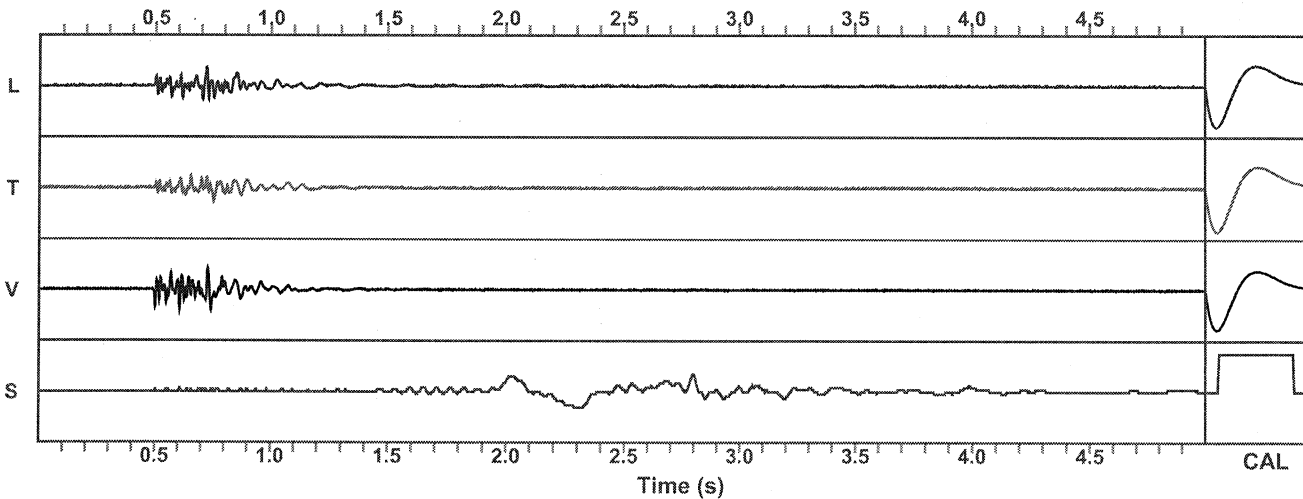
Zero Crossing Half-Wave Frequency Analysis

Waveform Graph Scale

Time Scale: 0.1 s
Seismic Scale: +/- 0.16 in/s
Sound Scale: +/- 0.0023 psi

Velocity Waveform

SSN: 7179 Event: 6



GeoSonics Inc. Seismic Analysis

Stop Event Report

Serial No: 7334 v3.23
Client: COUNTY OF MARIN
Operation: SAN RAFAEL ROCK QUARRY
Location: 114 SAN MARINO DRIVE
Distance:
Operator: VIBRA-TECH GSM
Comment: Veronique Raskin Res.

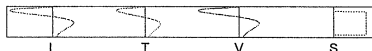
Begin Date: 03/05/2012 06:33:56 (UTC-8)
End Date: 03/05/2012 12:14:58 (UTC-8)
Events over Trigger: 0 (5-4)
Record Time: 5.0 s
Seismic Trigger: 0.030 in/s
Sound Trigger: N/A
Battery Level: 8.9

Additional Info:

j-GEO-01254
N37 59.395, W122 27.700

Shaketable Calibrated: 01/16/2012
By: Vibra-Tech, Inc.
2700 Holloway Road - Suite 113
Louisville, KY 40299 U.S.A.
TEL: 502.240.9900 FAX: 502.240.9902

Dynamic Calibration Graph:



Cal Test Results:

Longitudinal: Pass
Transverse: Pass
Vertical: Pass
Sound: Pass

The seismograph at 114 San Marino Drive (S/N 7334) did not trigger during the shot on March 5, 2012 at approximately 11:31 indicating the ground vibrations produced were below the ground trigger level of 0.030 in/sec.