



December 10, 2008

Mr. Gary Nolan  
Granite Construction  
38000 Monroe Street  
Indio, California 92203

Subject: Geologic Observation of Quarry Blast  
Field Report from November 20, 2008  
Proposed Rosemary's Mountain Quarry  
San Diego County, California  
URS Project No. 27683002.10170

Dear Mr. Nolan:

In accordance with your request, the undersigned geologist observed a blast on November 20, 2008 within the limits of the proposed Rosemary's Quarry. The blast was part of the on-going excavation of the quarry. The purpose of our observation was to note any boulder instability and/or rockfalls resulting from blasts near the quarry entrance that might impact nearby portions of Highway SR-76.

Prior to blasting, we field checked the locations of potentially unstable boulders previously identified in our Boulder Survey Report dated December 8, 2006. These boulders appeared to have not moved in a significant way in the time frame since our previous blast observation (September 23, 2008).

The blast area on November 20 was located along the west side of the quarry near the quarry entrance from Highway SR-76 (see Photos #1 and #2, attached). The blast took place at approximately 11:30am. Boulder instability and/or rockfalls were not observed along nearby portions of Highway SR-76 at the time of the blast. No material fell from adjacent slopes onto the roadway.

Seismograph monitoring was performed by Granite Construction's blasting subcontractor. The seismograph record from the monitoring point along Highway SR-76 is attached. The monitoring point was located on the highway shoulder about 250 feet west of the quarry entrance. The maximum measured peak particle velocity was the vertical component measured at 1.25 inch/second.

URS Corporation  
1615 Murray Canyon Road  
Suite 1000  
San Diego, CA 92108  
Tel: 619.294.9400  
Fax: 619.293.7920



Mr. Gary Nolan  
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Page 2

If you have any questions concerning this field report reconnaissance, please give us a call.

Very truly yours,

URS CORPORATION

A handwritten signature in black ink, appearing to read 'David L. Schug'. The signature is written in a cursive style with a large initial 'D' and a long, sweeping tail.

David L. Schug, C.E.G. 1212  
Principal Geologist

DLS:ml



**Photograph 1**

**Date: 11-20-2008**

**Comments:**  
Blast area is the upper mid-slope bench, near proposed quarry entrance. View is west. Location of highway seismograph is on SR-76 in lower center of photo.



**Photograph 2**

**Date: 11-20-2008**

**Comments:** Photo taken shortly after the blast.

# SuperGraphics Corporation - Report

Tel: (205)592-2488 x 23

**Customer: GRANITE ROSEMARY**

**20NOV08 at 11:30:51 as Event # 8**

**Location: HWY 76 QUARRY ENTRANCE**

Graph: NS5400I/H-2438

Operator: BELL

Company: M.J.BAXTER DRILLING CO.

Calibration Date: 11MAR08

Notes:

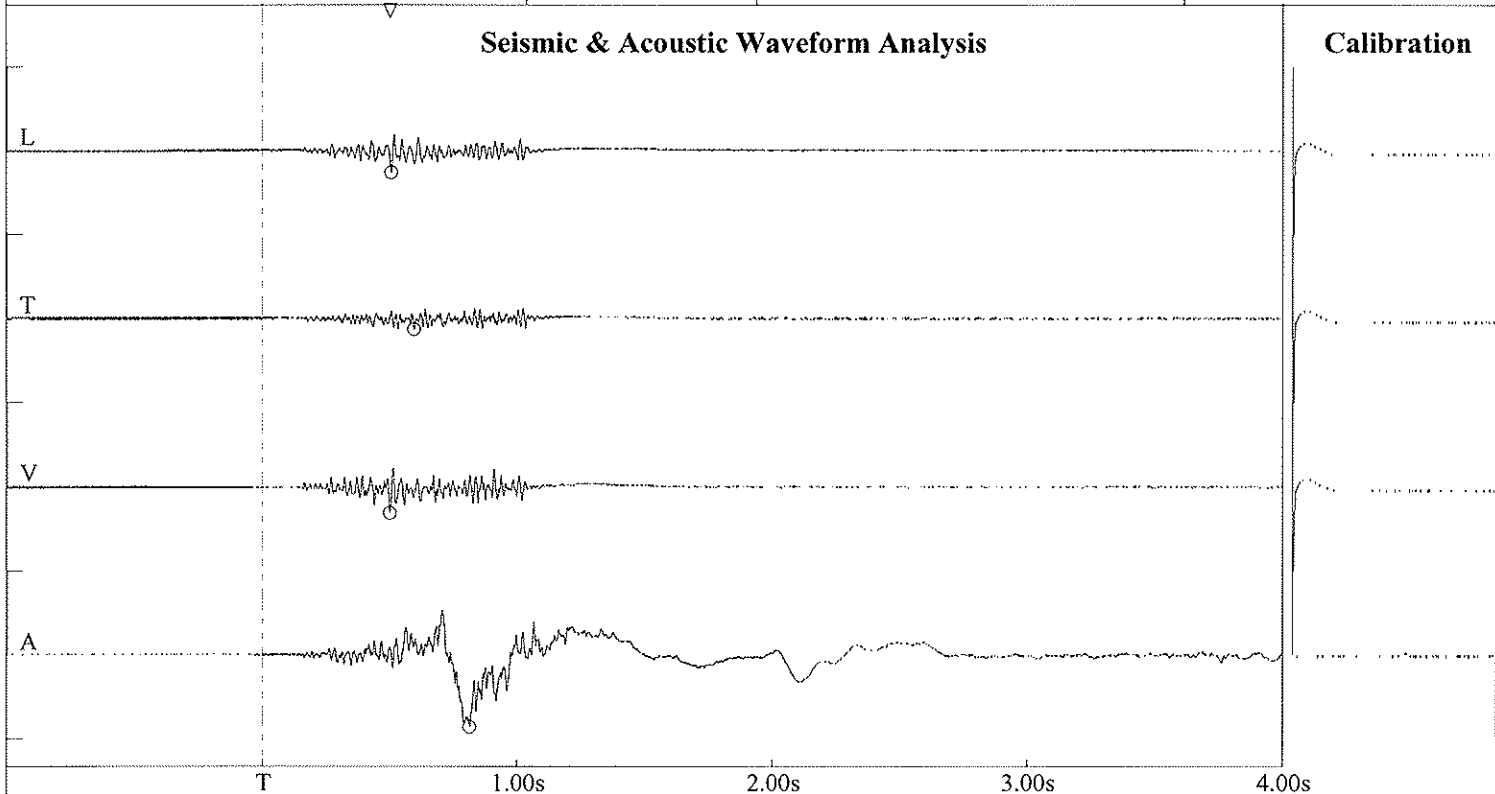
Sample Rate: 1024/sec

Record Duration: 5 sec

Amplitudes & Frequencies	Trigger >>> Peak	Scales & Triggers	Charge / Distance
○ Longitudinal: 1.05 in/s @ 31.7 Hz	504.9 ms	Acoustic Scale: .01843 psi/division	Wgt. per Delay: .0 lb
○ Transverse: 0.53 in/s @ 20.0 Hz	594.7 ms	Seismic Scale: 2.0 in/s/division	Distance: 249.00 ft
○ Vertical: 1.25 in/s @ 38.3 Hz	500.0 ms	Acoustic Trigger: 125 dBL	Scaled Distance: N/A
○ Acoustic: 132 dB / . psi @ 2.1 Hz	814.5 ms	Seismic Trigger: 0.05 in/s	
▽ Vector Sum: 0.71 in/s	501.0 ms		

## Seismic & Acoustic Waveform Analysis

## Calibration



## Particle Velocity vs. Frequency - DIN 4150-3-Table 1

