

BLAST MONITORING REPORT

HM33 Hard Stone Quarry at Ta' Bellula, l/o Siggiewi

10th August 2012

Details

Date	10-08-2012
Quarry number	HM33 – Hard Stone Quarry at Ta' Bellula, Ghar Lapsi, l/o Siggiewi
Quarry operator	Polidano Bros. Ltd.
ANFO Supplier	Framegrip Ltd
Police escort	PS 1142 – P Farrugia

Location and time of blasting

Three blasts were carried out at 11:57 at approximately the points as indicated on the attached site diagram.

Summary of blasting conditions

Maximum charge per delay: 25Kg

Vibration limits: 4 mm/s (20 to 40Hz) at the nearest sensitive point within 200m

Air overpressure limit: 120dB(L)

Site Specific Permit

All holes were within quarry boundaries and within maximum depth.

Maximum charge per delay of 25Kg was not exceeded.

Weather Conditions

Humidity ^[1]	Wind ^[1]	Temperature ^[1]	Cloud Cover ^[2]
61%	7.2 km/h North	29.7 C	Clear Skies

[1] As reported by www.maltaweather.com on 10 August 2012 at 11:30 at Naxxar

[2] Our observation

Comments

All holes are at the middle shelf of the quarry.

The three blasts were organised as one group of three and detonated by means of three short-circuit exploders in very quick sequence and captured as one event by our seismograph.

Notes

Seismograph was placed in front of the nearest residential area marked as “Ta’ Skallec” (or E. Scicluna) on the way down to Ghar Lapsi Bay.

Seismograph was set to trigger at 0.50 mm/s. Seismograph used is a MiniMate+ serial number BE9488.

Readings

Blast number	1	2	3
Time	11:57		
No. of holes	16	16	10
No. of delays	16	16	10
Depth of holes (m)	10.5	10.5	10.5
Max. Charge per delay (kg)	25	25	25
Total charge (kg)	400	400	250
Dist. from seismograph (m)	360	360	360
PPV (mm/s)	1.22		
Frequency (Hz)	29.7		
Air Overpressure (dB)	109.9		
Scaled Distance (m kg ^{-1/2})	72.0	72.0	72.0

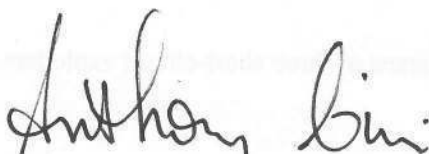
Burden is an average of 2 metres, and distance between bore-holes is an average of 2.5 metres.

Weights in kilograms are rounded-up to the nearest unit, and depth in metres is rounded to the nearest ½ unit. Displacement between holes and the seismograph is measured using the online version of MEPA’s Map Server and is accurate to the nearest 10 metres. Number of holes, their depth, burden, and the amount of ANFO used are as given by the quarry operator. Scaled distance and maximum charge per delay are calculated from the primary data. Weights are rounded-up to the nearest kilogram and the depth is rounded to the nearest ½ meter.

Observations

There was no flyrock outside quarry boundaries.

We observed no damage to the immediate surroundings of the quarry during a brief inspection after the blasting.



Anthony Cini B.Sc.

D A T A C O L L E C T I O N S H E E T

Date:	10-8-12	MIC for HM33 is 25Kg	
Quarry Name & Number:	HM33 - Ta' Bellula, I/o Siggiewi	Quarry Operator:	Polidano Bros. Ltd.
Police Escort:	No: PC 1142	Name:	PIERRE FARROGIA
Blasting carried out by:	Company: FrameGrip Ltd.	Name:	MARIO CALLEJA
Seismograph readings by:	RAFAEL MICALLEF		

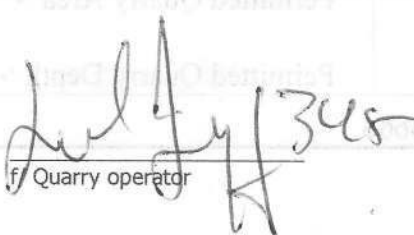
Blast	Time	Holes	Delays	Dist.		Depth		Total charge		Max. Chrg.	PPV mm/s	Freq. (Hz)	Air (dB)
				(m)	(ft)	(m)	Bags	(kg)					
1	11-57-09	16	16	360	35	10.5	16	400	25	1.22	29.7	109.9	
2	u	16	16	360	35	10.5	16	400	25	u	u	u	
3	u	10	10	360	35	10.5	10	250	25	u	u	u	
4		42		/				42	1050				
5				/									
6				/									
7				/									
8				/									
9				/									
10				/									
11				/									

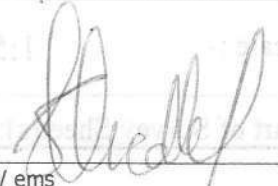
Location of Seismograph	<input checked="" type="checkbox"/> In front of nearest residential area marked as "E. Scicluna" on the way down to Ghar Lapsi Bay	<input type="checkbox"/> Garage Area of Dar Tal-Providenza (hospital)	<input type="checkbox"/> Other: _____
Burden	Distance between boreholes: <u>2.5</u> m Distance from rock face (burden): <u>2</u> m		
Notes	Any horizontal holes? <u>No</u> Any blast made up of holes of different-depth? <u>No</u> Why? <u>/</u> Any blasts grouped together and detonated using multiple (almost simultaneous) short-circuit exploders? <u>Yes</u> Why? <u>*</u> Any visitors before/during/after blast? <u>Nobody</u> (note names and organizations) Any complaints from neighbours? <u>None Reported</u> (note names, number of persons/households?) Note levels of holes: <u>(1,2,3). Middle Shuff</u> Flyrock observation: <u>None Outside</u> Any damage to quarry surroundings? <u>None Observed</u>		
Further Comments	<u>* As indicated, to reduce blast and speed up work.</u> <u>* Cloud Cover - Clear.</u>		

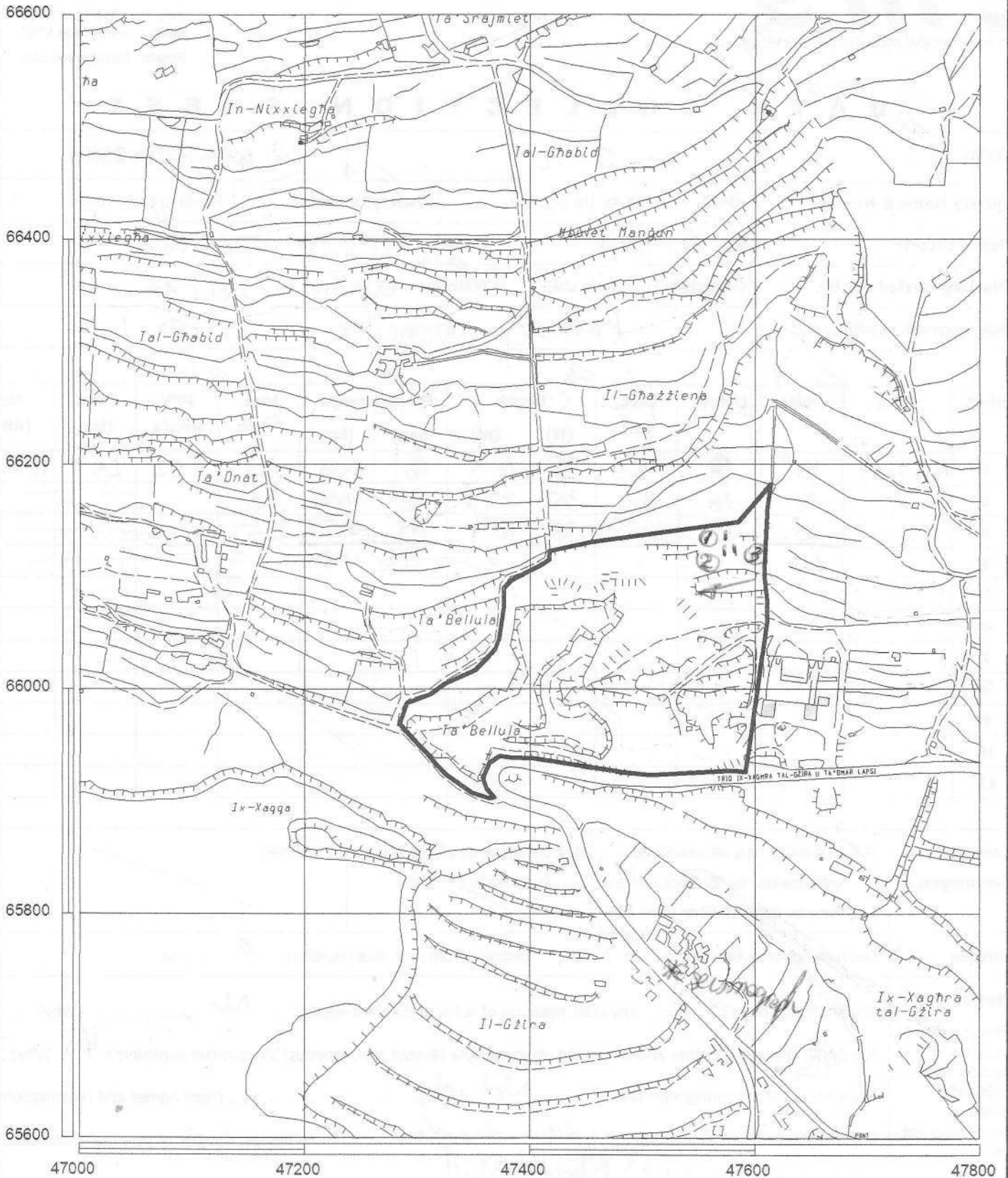
(use overleaf if more space is required)

Signatures


Police escort


f/ Quarry operator


f/ ems



Malta Environment & Planning Authority

Hardstone (LC) Quarry Site Plan

St. Francis Ravelin
Floriana

PO Box 200, Valletta
Tel:240976 Fax:224846



Quarry No. :-

HM 33

Location :- Ta' Bellula, Siggiewi

10-8-12

Scale :- 1:5000

Permitted Quarry Area :- 53851.47 sqm

[Handwritten signature]

Permitted Quarry Depth :- 40 m amsl

Part of Survey Sheet(s): 4665 4666

Date :- 6/5/03

Date/Time Vert at 11:57:09 August 10, 2012
Trigger Source Geo: 0.510 mm/s
 Mic: 118 dB(L)
Range Geo :31.7 mm/s
Record Time 2.0 sec at 4096 sps

Serial Number BE9488 V 8.01-8.0 MiniMate Plus
Battery Level 5.7 Volts (Battery Low)
Calibration September 9, 2011 by Datum Monitoring
File Name K488EEP5.790

Notes
 Location: Quarry Blasting
 Client:
 User Name: ems
 General:

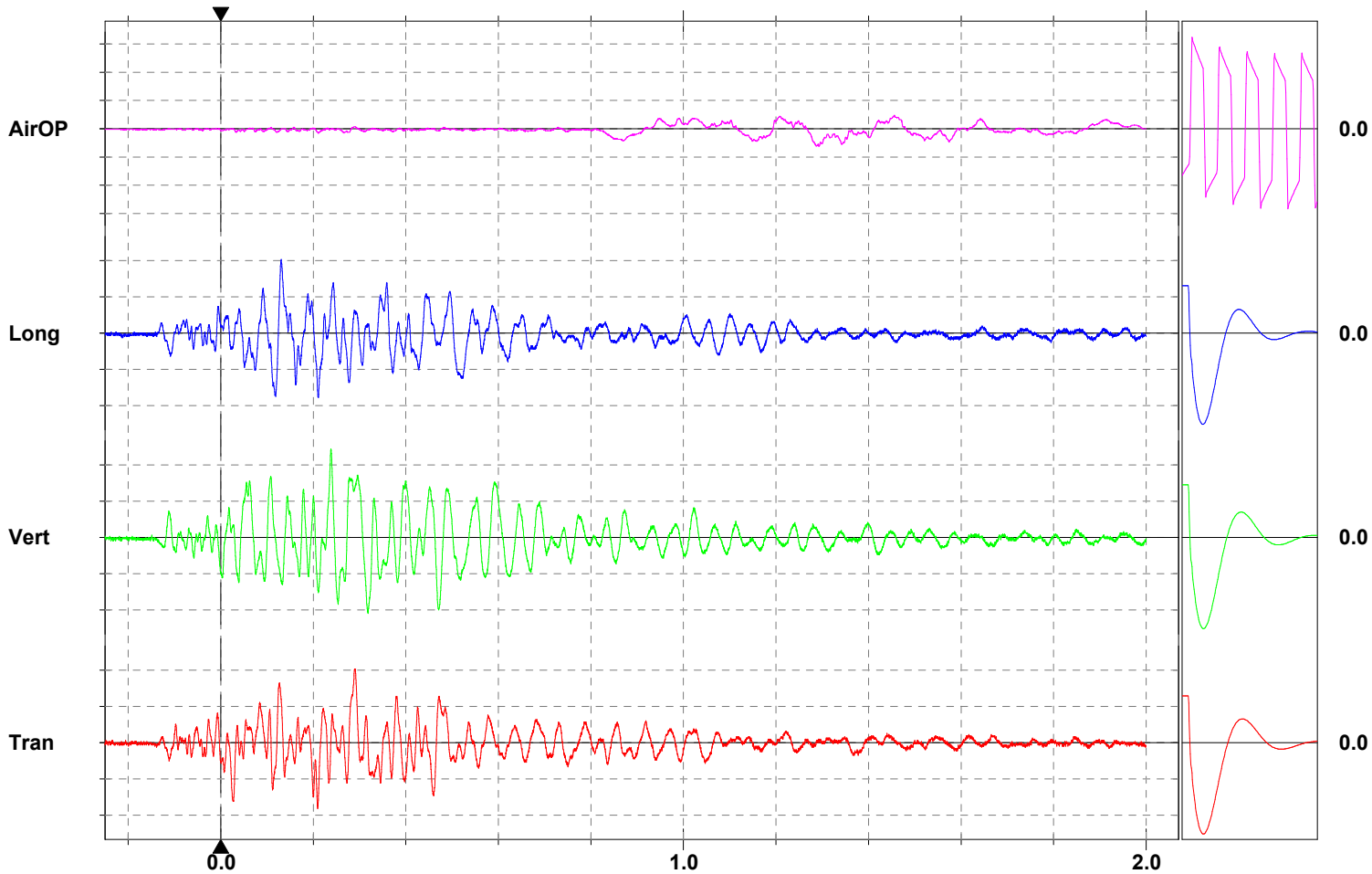
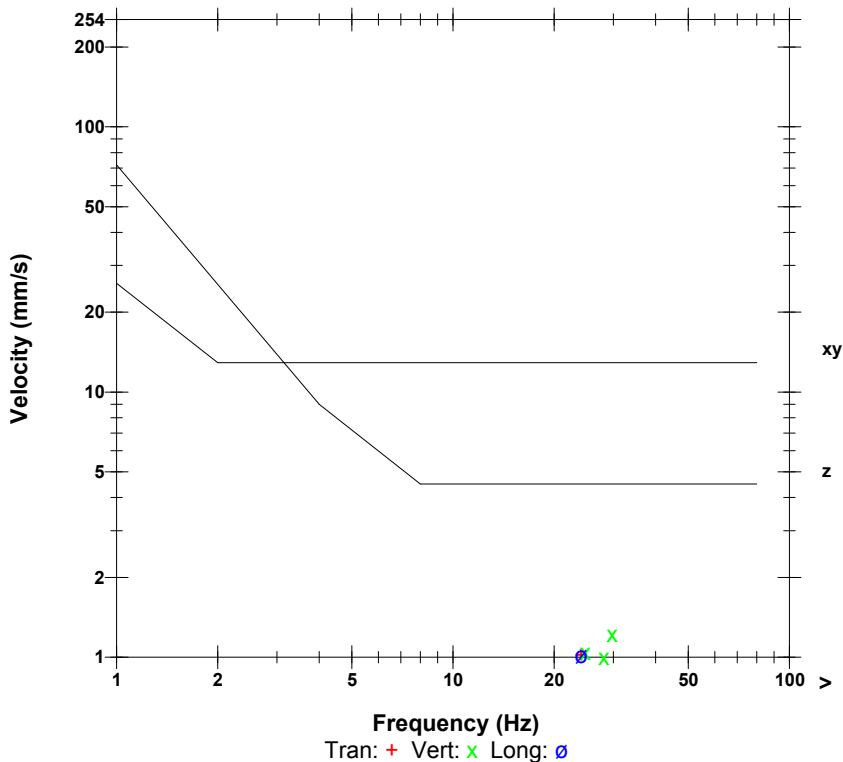
Post Event Notes

Microphone Linear Weighting
PSPL 109.9 dB(L) 6.25 pa.(L) at 1.287 sec
ZC Freq 3.5 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 511 mv)

	Tran	Vert	Long	
PPV	1.02	1.22	1.02	mm/s
ZC Freq	24.1	29.7	24.1	Hz
Time (Rel. to Trig)	0.289	0.238	0.131	sec
Peak Acceleration	0.0398	0.0398	0.0331	g
Peak Displacement	0.00632	0.0111	0.00664	mm
Sensorcheck	Passed	Passed	Passed	
Frequency	7.3	7.4	7.6	Hz
Overswing Ratio	3.9	3.6	3.9	

Peak Vector Sum 1.45 mm/s at 0.210 sec

BS 6472:1992 CURVE 32



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 0.500 mm/s/div Mic: 10.00 pa.(L)/div
Trigger =

Sensorcheck