

BLAST MONITORING REPORT

HM22 Wied Filep I/o Naxxar

6th July 2012

Details

Date	06-07-2012
Quarry number	HM22 – Victoria Lines I/o Naxxar
Quarry operator	Ballut Blocks Ltd.
ANFO Supplier	Framegrip Ltd.
Police escort	PC1127 – F Bonello

Location and Time of Blasting

Thirteen blasts were carried out between 11:32 and 11:59 at the points as approximately indicated on the attached site diagram.

Summary of Blasting Conditions

Max charge per delay: upper: 12.5Kg, lower: 25Kg

Vibration limit: <4 mm/s at the nearest residential areas. Air overpressure limit: 120dB(L).

Site Specific Permit

All holes were within quarry boundaries and within the maximum depth allowed. Maximum charge per delay was not exceeded.

Blasting is carried out according to site specifications.

Weather Conditions

The current weather conditions as reported on www.maltaweather.com on 6th July 2012 at 11:30 in Naxxar Malta is the following:- humidity: 54%, wind: 8.9 Km/h SSW, temperature: 29.7C. Cloud cover as observed by us: clear skies.

Comments

All holes are at various middle shelves of the quarry in their respective locations. Blasts numbered 12 and 13 are of varying depth because they were used to reach to prepare a new level.

The first twelve blasts were organised in six pairs, and each pair is detonated by means of two short-circuit-exploders in very quick sequence and captured as one event by our instrument.

Notes about Monitoring

Seismograph was placed at Alik, Triq il-Fortizza tal-Mosta by request of MEPA. This is closest to monitoring point M1. This was a one-off deviation from standard procedure.

Seismograph was set to trigger at 0.51 mm/s. Instrument used is MiniMate Plus, serial number BE9488.

Readings

Blast Number	1	2	3	4	5	6	7	8
Time	11:32		11:33		11:44		11:47	
No. of Holes	6	6	6	6	5	5	5	5
No. of Delays	6	6	6	6	5	5	5	5
Depth of Holes (m)	10.5	10.5	6	6	6	6	6	6
Max. Chrg. per Delay (kg)	21	25	11.5	11.5	13	13	13	13
Total Charge (kg)	125	125	69	69	63	63	63	63
Dist. from Seismo. (m)	400	400	410	410	360	360	320	320
PPV (mm/s)	0.54		<0.50		0.51		0.54	
Frequency (Hz)	14.3		N/a		14.8		14.9	
Air Overpressure (dB L)	104.2		N/a		98.8		101.1	
Scaled Dist (m kg^{-1/2})	87.3	80	120.9	120.9	99.8	99.8	88.8	88.8

Blast Number	9	10	11	12	13
Time	11:51		11:54		11:59
No. of Holes	5	6	6	6	7
No. of Delays	5	6	6	6	7
Depth of Holes (m)	6	6	6	6	8.5
Max. Chrg. per Delay (kg)	13	11.5	11.5	11.5	11
Total Charge (kg)	63	69	69	69	119
Dist. from Seismo. (m)	310	310	310	310	220
PPV (mm/s)	0.67		0.76		0.97
Frequency (Hz)	14.6		17.7		26.6
Air Overpressure (dB L)	106.5		105.5		106.0
Scaled Dist (m kg^{-1/2})	86	91.4	91.4	91.4	66.3

Burden is an average of 2 metres, and distance between 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 1/2 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 1/2 meter.

Further Comments

One resident from the areas of monitoring points M2 was present during the first few blastings. He then went back to his house to check if blasts were as strong as usual. When contacted after the blasting was over he reported to us that they were "average" except for blasts 9, 10, 11, and 12 (two events) which were just slightly stronger than average. This is to be expected because they are the ones closest to his property. The PPV we normally measure from M2 for such blasts is typically around 3mm/s.

Observations

There was no flyrock outside the quarry boundaries. No damage to the surroundings was observed after the blast.



Anthony Cini B.Sc.

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

BLASTING SESSION DETAILS

Quarry Name & Number:	HM22 – Wied Filep, I/o Naxxar	Quarry Operator:	Ballut Blocks Services Ltd.
Date:	6-7-12	MIC for HM22 is 25Kg	
Quarry personnel charging:	DAVID MUSCAT.		
Police Escort:	No: PC 1127 Name: FRANKIE BONELLO.		
ANFO suppliers:	Company: FRAME GRIP LTD.	Chief on site: MARIO CALLEJA.	
Seismograph readings by:	RAPHAEL NICALEF		

BLAST DETAILS

Blast No.	Time	Holes	Delays	Dist. (m)	Depth		Total charge		Max. Chrg.	PPV mm/s	Freq. (Hz)	Air (dB)
					(ft)	(m)	Bags	(kg)				
1	11-32-49	6	6		35	10.5	5	125	21	0.54	14.3	104.2
2		6	6		35	10.5	5	125	25			
3	11-33-55	6	6		20	6	2 ³ / ₄	68 ³ / ₄	11.5	NA	NA	NA
4		6	6		20	6	2 ³ / ₄	68 ³ / ₄	11.5			
5	11-44-42	5	5		20	6	2 ¹ / ₂	62 ¹ / ₂	13	0.51	14.8	98.8
6		5	5		20	6	2 ¹ / ₂	62 ¹ / ₂	13			
7	11-47-27	5	5		20	6	2 ¹ / ₂	62 ¹ / ₂	13	0.54	14.9	101.0
8		5	5		20	6	2 ¹ / ₂	62 ¹ / ₂	13			
9	11-51-09	5	5		20	6	2 ¹ / ₂	62 ¹ / ₂	13	0.67	14.6	106.5
10		6	6		20	6	2 ³ / ₄	68 ³ / ₄	11.5			
11	11-54-12	6	6		20	6	2 ³ / ₄	68 ³ / ₄	11.5	0.76	17.7	105.5
12		6	6		20	6	2 ³ / ₄	68 ³ / ₄	11.5			
13	11-59-34	7	7		28	8.5	4 ³ / ₄	118 ³ / ₄	11.0	0.97	26.6	106.0
14		74					41	1025				
15												

BLAST CHARACTERISTICS

Burden	Distance between boreholes: 2.5 m	Distance from rock face (burden): 2 m
Levels of holes: (top/mid/low shelves)	(1-13) Middle Shelf, blasts 12+13 to new level.	
Any horizontal holes?	No [if yes, which? why?]	
Any blast has holes of varying depths?	Yes, building new level. [if yes, which? Why?]	
Any grouping of blasts?	Yes, as indicated, to reduce blast and speed up work. [if yes, which? Why?]	
Notes		

[expand on any of the above]

WEATHER CONDITIONS

Weather conditions observation:	<input checked="" type="checkbox"/> % cloud cover	[High / Low] Cloud	Rain: [<input checked="" type="checkbox"/> / light / medium / heavy] showers
	Wind [<input checked="" type="checkbox"/> calm / light breeze / strong wind]	Approx. direction: [N / S / E / W]	

OTHER

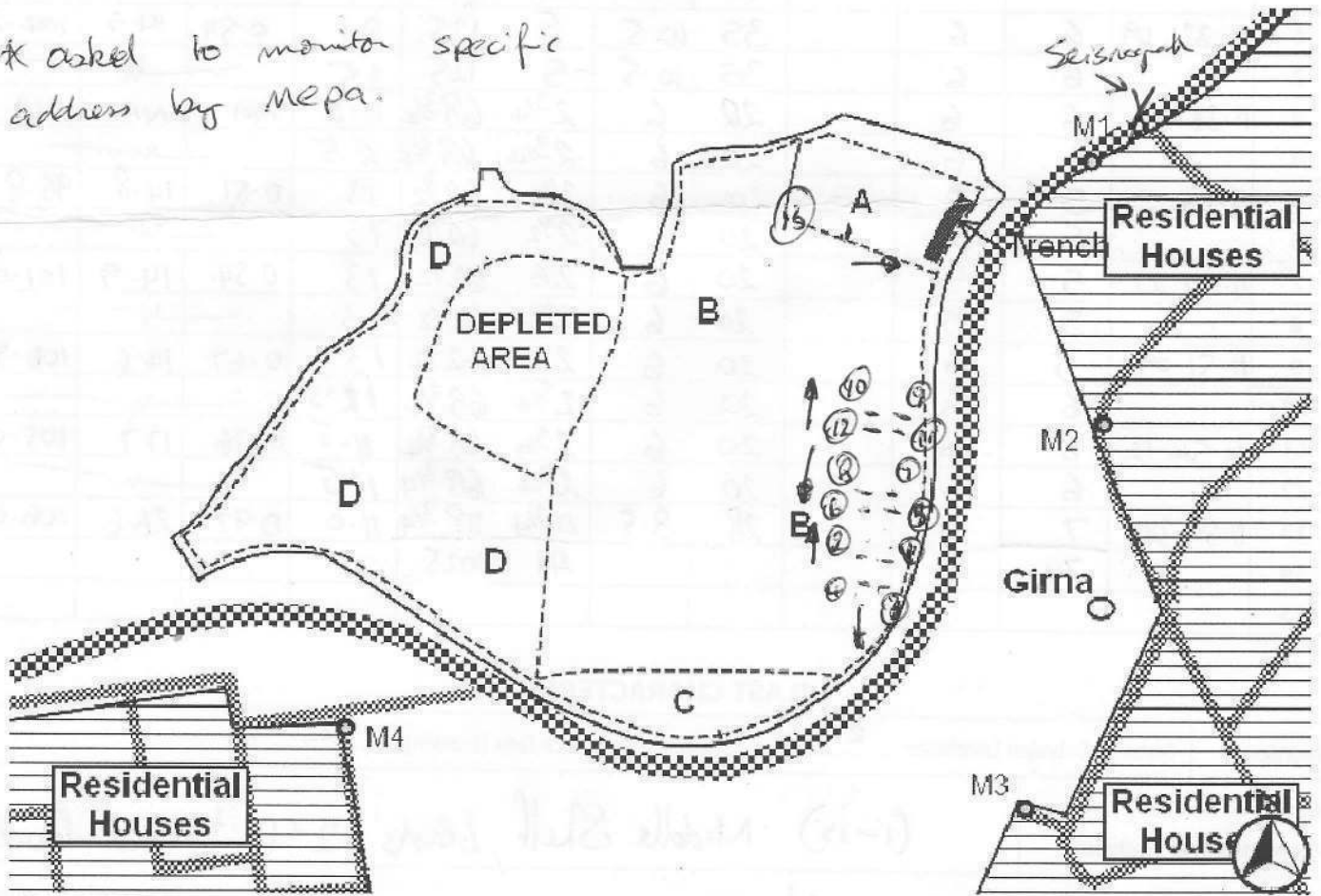
Any visitors before/during/after blasts?	Yes - Resident from P. Brydon St.	[if yes, who? Why?]
Any complaints from neighbours?	No.	[names/organizations]

MONITORING DETAILS

Location of Seismograph	<input checked="" type="checkbox"/> M1: Front of Villa Nordani, Triq id-Difiza Civili	<input type="checkbox"/> M2: Corner of Triq Brydone
	<input type="checkbox"/> M3: Front of No. 7, Melitta hse, Triq Sir Arturo Mercieca	<input type="checkbox"/> M4: Triq l-Imsaqfin

Indicate location of blasts on the diagram below after having observed their location in relation to the quarry boundaries. Number them in the order that they will be detonated. Indicate the location of the instrument at any of the four points indicated as M1, M2, M3, or M4.

* asked to monitor specific address by mepa.



Observations after blast:

[Flyrock/damage to surroundings]

Signatures – By signing here you are agreeing with the information given by you above. Please check the information again before signing.

[Signature]
Police escort

[Signature]
Quality operator

[Signature]
Blast monitoring agent