



Mt Shamrock Quarry Environmental Management Plan 3 Monthly Progress Update

From 14 August 2008 – 14 October 2008

Prepared by Aaron Price for Mt Shamrock Quarry Environment Review Committee

On 11 March 2008 the *Mt Shamrock Quarry – Environmental Management Plan Version 1: 18 January 2008* (EMP) was formally enacted. This document established a framework to ensure compliance with local council, AAV, DPI, EPA and DSE requirements relating to the extension of extractive limits under Work Authority 174 (WA174). An Environment Review Committee (ERC) was formed to monitor the performance of the quarry against the EMP, the permit and WA174. The ERC consists of delegates from the relevant authorities, members of the Wurundjeri Tribe, and local residents. The ERC is chaired by an independent representative from All Possibilities Pty Ltd to ensure non-partisan administration.

This report details information on both monitoring results and management actions by the quarry in the preceding three months. This report will take the form of an exception report – that is where there is a deviance from the EMP, this will be highlighted and reasons for the deviance explained. A summary of quantifiable monitoring outcomes is also included. Figure 1.12 details all monitoring locations.

Operational Update

- The recent stripping program conducted by Maw Civil was completed and was a successful campaign. Batters and bunds left by the contractors were of a high standard and no safety or environmental incidents were recorded.
- A new access ramp has been established into the Northern pit to allow us to join the two pits together. This should dramatically improve fuel burn on our Front End Loaders due to less travel time between stockpiles.
- Production has been limited in an attempt to reduce stocks.
- Extensive work has been conducted on housekeeping improvement initiatives through the workshop and fixed plant areas. These housekeeping improvements have been reflected by less airborne dust and less quarry waste generated.
- A proposal has been put to the council to improve the visibility at the end of Mt Shamrock rd to improve safety.
- A submission has been put to council to delineate the lanes of parts of Mt Shamrock rd.
- Noise monitoring has been conducted on Mt Shamrock rd to determine the levels of noise generated from Trucks leaving the quarry.

2.1 Air Quality – Dust

Management Measure	Action	Procedure/ Reference	Responsibility	Timing
Monitoring	Continuous monitoring of PM ₁₀ after commencement of extension works, with results reviewed after 12 months.	(see s2.1.4 of EMP)	QM	All times
Monitoring	A weather monitoring station with display to be installed in the Pit Manager's Office	-	PM	Within 1 month of EMP approval
Monitoring	Records of wind speed and direction will be stored for a period of 12 months for subsequent reference in case of complaints and to assist in interpreting dust monitoring data/	-	PM	All times
Reporting	One (1) hourly average PM ₁₀ data will be provided to the Pit Manager's office from the "reactive monitoring stations"	-	PM	All times

Figure 1.1 Selected Management Actions s2.1.3

CEMEX has taken delivery of dust monitoring equipment. There are now significant delays in the installation of the hardware and support systems. This is due to CEMEX not receiving technical specifications relating to the required electrical infrastructure and IT support requirements from the supplier after repeated requests. Depositional results have indicated the dust emissions tabulated below. Where asterisks exist in the table this indicates the unit was damaged, this damage occurs primarily due to livestock and weather conditions. Fencing around the monitoring units is planned. Measures to increase the robustness of the monitoring devices to withstand extreme weather conditions are being investigated. The result of 11 g/m²/month for monitoring point A1 is being investigated through the responsible consultant.

		A1	A2	A3	A4	A5	A6	A7
Insoluble	g/m²/month	0.3	<0.1	0.8	**	**	3.5	**

Figure 1.2 – Depositional Results for month of July

		A1	A2	A3	A4	A5	A6	A7
Insoluble	g/m²/month	11	1.2	**	**	0.3	5.2	1.8
Soluble	g/m²/month	4.0	<0.1	**	**	<0.1	<0.1	<0.1

Figure 1.3 – Depositional Results for month of August

2.2 Noise

Daily noise monitoring at N7 ceased at the conclusion of near surface extraction. Frequency of noise monitoring at all locations is now fortnightly. Average noise levels for the preceding period are shown in Table 1.2. Significant decreases in the average values at N7 have been observed at the end of the near surface extraction phase of the extension activities. Moderate decreases have been observed in all other sensitive locations due to the cessation of near surface extraction.

Additional noise monitoring was conducted at Hein Road and other locations at similar elevations to the quarry rim during this period, the results of this study will be presented at the next ERC meeting.

	N1	N2	N3	N4	N5	N6	N7	N8
August	35.5	31.4	32.1	32	33.6	41.4	40	39.8
September	34.3	34.0	31.3	33.7	34.0	42.3	35.5	41.4
October	35.6	33.6	31.4	33.9	33.1	41.6	40.0	40.6

Figure 1.4 Average noise values by Sensitive Location and Month

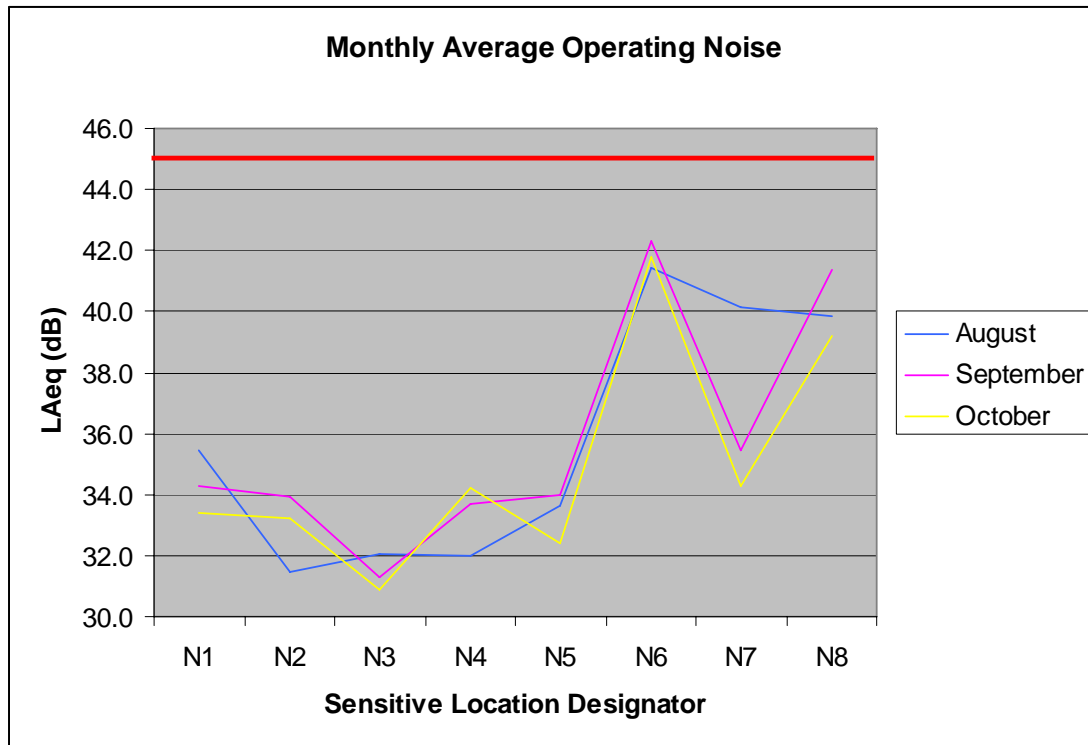


Figure 1.5: Average Monthly Noise Value by Sensitive Location
Limit is 45 dB under normal operating conditions

2.3 Blasting

All blasting operations have been carried out in accordance with the standards required. Whilst some air blast measurements obtained at AB 1 may appear to fall outside the required standards, these measurements are taken from an internal monitoring point, that at times, falls within the minimum safe distance for personnel from the area being blasted. The air blast measurements that are obtained from this monitoring point during those blasts are not indicative of the actual noise translated outside of the quarry property. Measurement instruments failed to trigger at AB1, AB2 and AB4 on the 29.09.08, this is because the activation threshold in relation to ground vibration was not met by the blast and therefore there was no results for air blast overpressure recorded. The results for ground vibration were determined as 0.01 mm/s under the activation threshold.

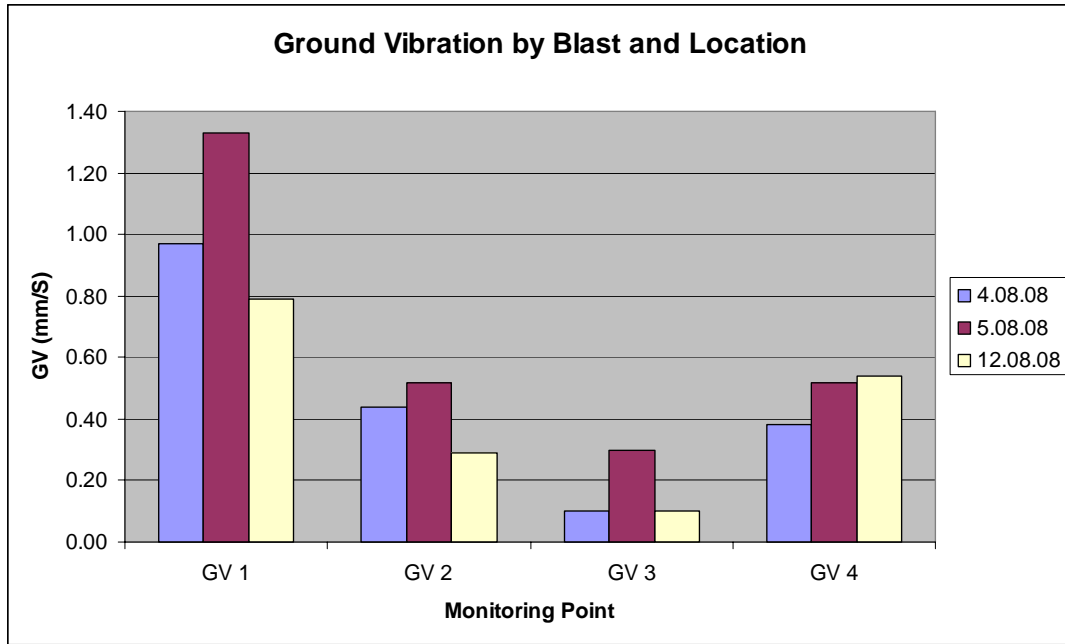


Figure 1.6: Ground Vibration by monitoring point and blast for reporting period 14 Jul to 14 Aug
Limit is 5 mm/s for 95% of blasts in a 12 month period.

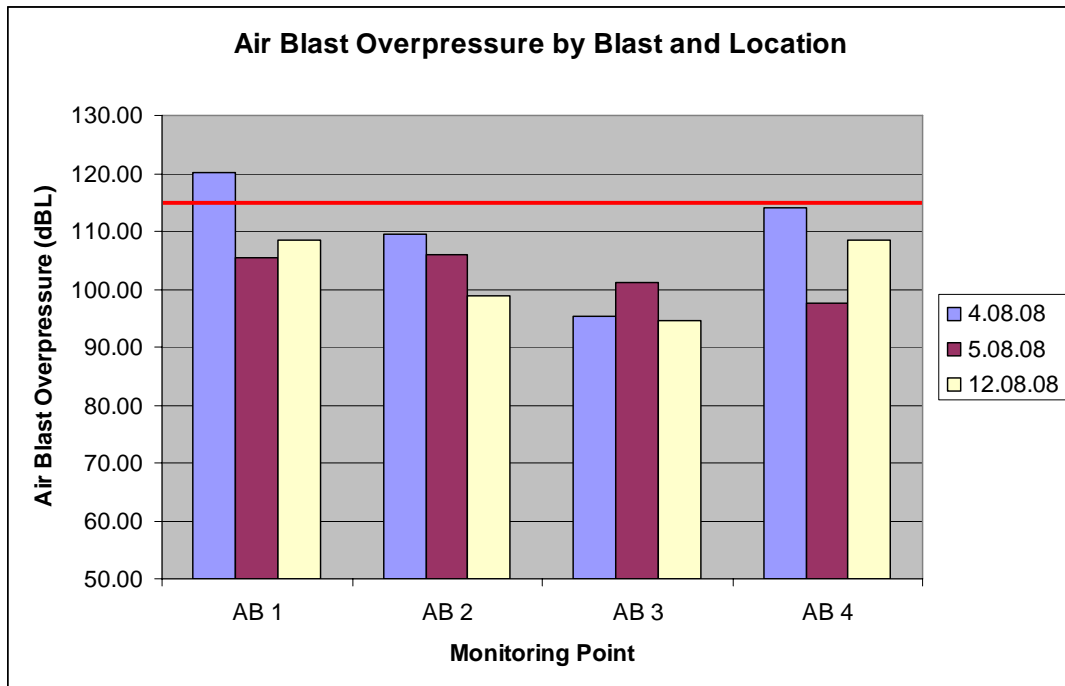


Figure 1.7: Air Blast Overpressure by monitoring point and blast for reporting period 14 Jul to 14 Aug
Limit is 115 dB(L) for 95% of blasts in a 12 month period.

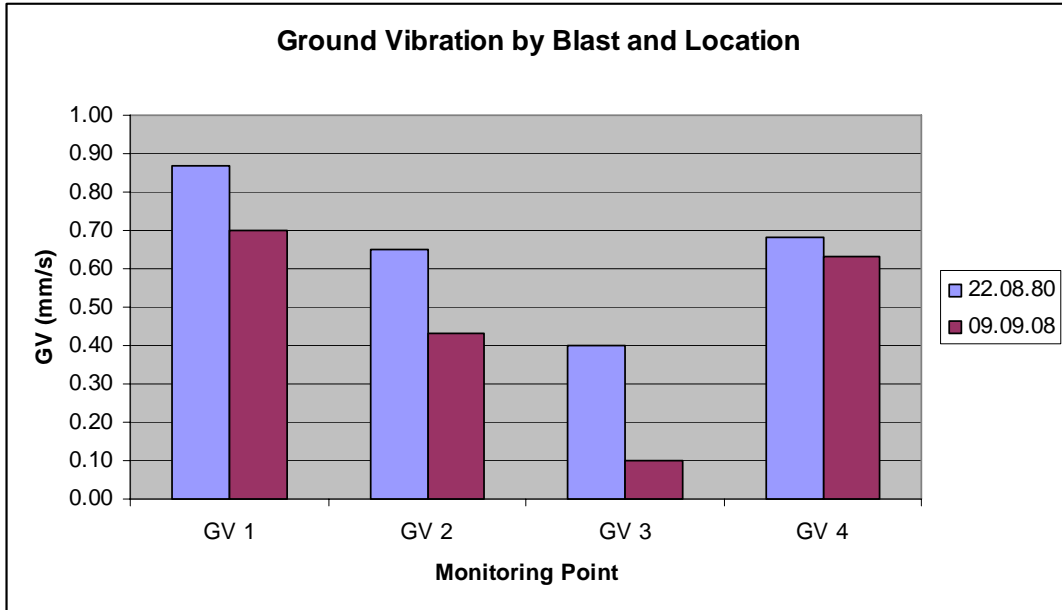


Figure 1.8: Ground Vibration by monitoring location and blast for reporting period 14 Aug – 14 Sep
Limit is 5 mm/s for 95% of blasts in a 12 month period.

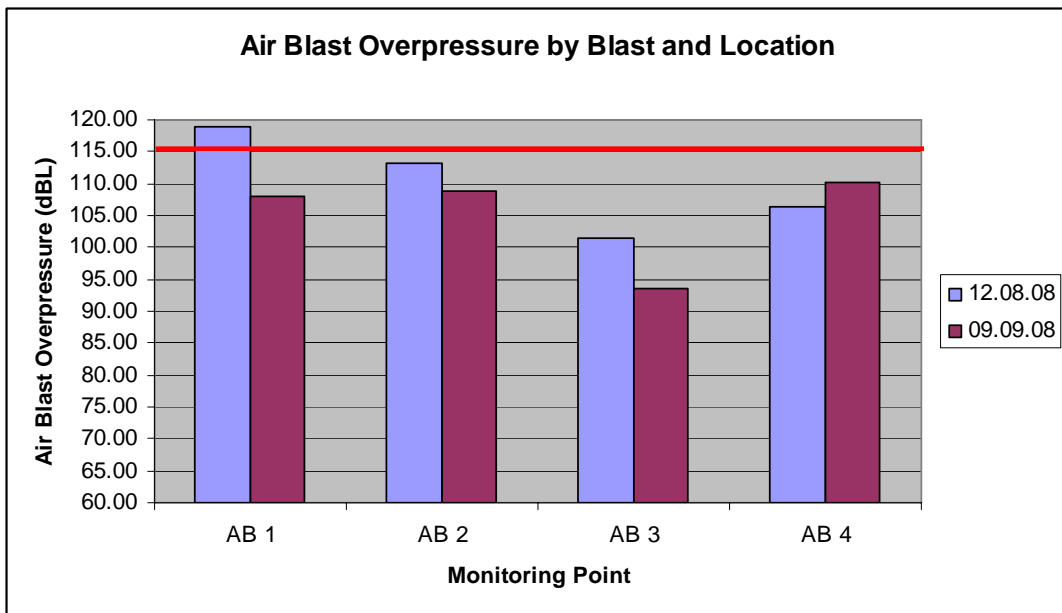


Figure 1.9: Air Blast Overpressure by monitoring location and blast for reporting period 14 Aug – 14 Sep
Limit is 115 dBL for 95% of blasts in a 12 month period.

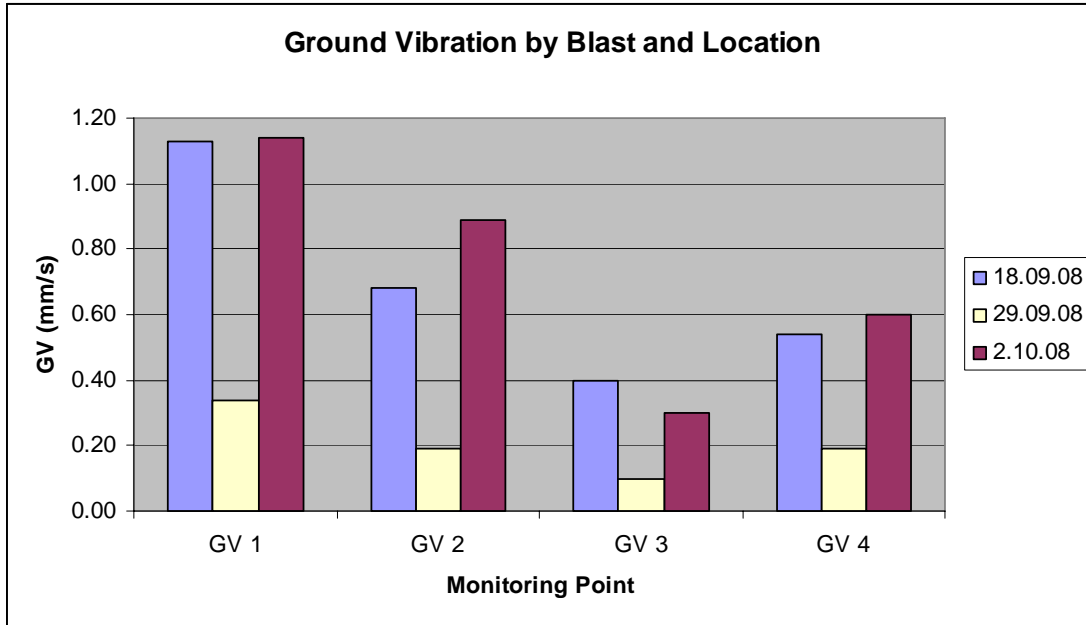


Figure 1.10: Ground Vibration by monitoring location and blast for reporting period 14 Sep – 14 Oct
Limit is 5 mm/s for 95% of blasts in 12 month period.

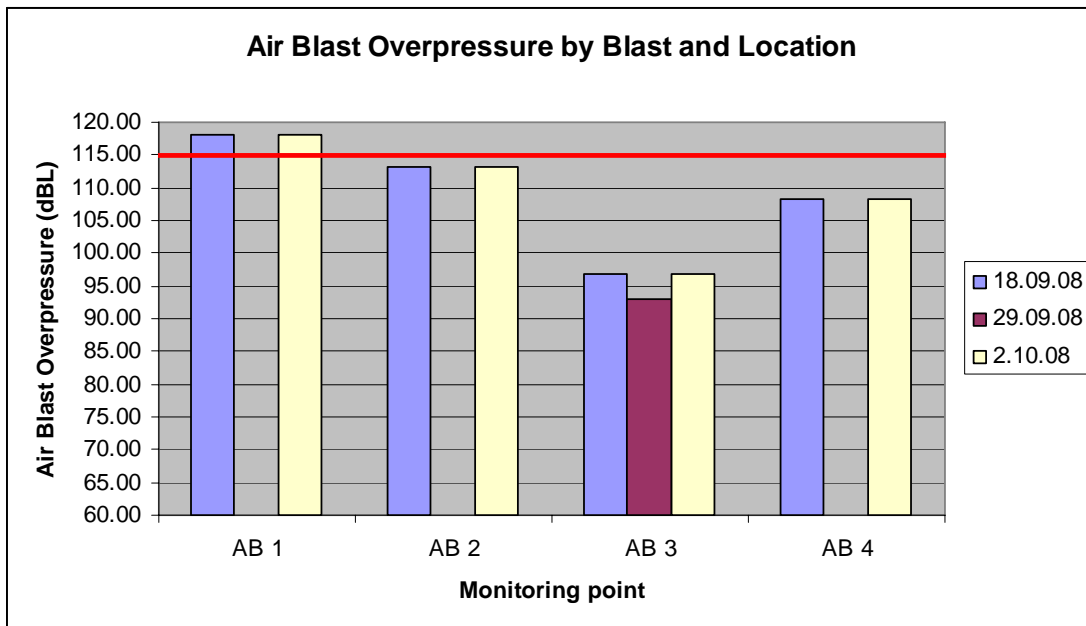


Figure 1.11: Air Blast Overpressure by monitoring location and blast for reporting period 14 Sep – 14 Oct
Limit is 115 dB for 95% of blasts in a 12 month period.

2.4 Surface Water, Drainage and Groundwater

Ground water measurements are due later this month and will therefore be included in the next monthly reporting period.

A surface water testing regime has been implemented with the frequency of monitoring weekly. Results of monitoring are tabulated below.

Date	TDS (mg/L)	pH	Turbidity (NTU)
16.08.08	560	8.22	2.4
29.08.08	543	8.30	3.5
03.09.08	513	8.45	4.5
16.09.08	542	8.76	3.3
22.09.08	527	8.56	7.5
29.08.08	533	8.61	3.4
08.10.08	559	8.68	2.6
13.10.08	542	8.71	2.8

Figure 1.12 – Water sampling results

The following limits apply to water discharged from site.

TDS (mg/L)	pH	Turbidity (NTU)
650	6.5 – 9.0	30

Figure 1.13 – Discharge Limits

Limited discharge events have occurred during this period, primarily due to heavy rainfall and pump failure. All steps are taken to avoid discharge events.

Figure 1.12 – Monitoring Locations



LEGEND:

- ▲ A = Air monitoring location (▲ signifies high volume compliance monitoring station at A2, A5, A6)
(Note: Background PM₁₀ monitoring also at address to be determined)
- N = Noise Monitoring location
- V = Blast Vibration and Noise Overpressure location
- ◆ W = Surface Water Sampling Point
- MB = Groundwater monitoring bores
- S = Weather Station