

14th March 2011

The Manager – Air Quality
Auckland Council
Private Bag 92 300
Auckland 1142

Dear Sir / Madam

Re: Investigation of High Vol Trigger at Three Kings Quarry

With regard to condition 20 of the Three Kings Quarry Air Discharge permit, this is to confirm that a result greater than 80µg/m³ as a 24 hour average was recorded on the High Vol Monitor at the office site on the 2nd February 2011.

The trigger is as follows:

2nd February 2011 - 82.8 µg/m³

As required by condition 21 of the Air Discharge Permit, an investigation has been undertaken. This letter details the results and conclusions of the investigation.

Air quality monitoring at Three Kings Quarry consists of:

- Hi-volume TSP air samplers located on the quarry office and the northern boundary.
- A FH62 Beta Attenuation Monitor (BAM) located on the quarry office, run in conjunction with the quarry office Hi-vol sampler.
- A meteorological monitoring station located on the quarry office that records wind speed, wind direction and rainfall on a continuous basis;
- Video cameras that monitor the site from the north and south.
- Visual inspections of air quality carried out by site staff.
- Recording of dust suppression equipment use and malfunctions.

All relevant air quality-monitoring results collected on the day of the trigger has been summarised in Table 1 below.

Table 1: Air Quality Monitoring Results

Date	TSP Quarry Office	BAM Quarry Office 24hr average	TSP Northern Boundary	Daily Rain	Daily average wind speed	Daily average wind direction	Sprinklers	Video Monitoring
	µg/m ³	µg/m ³	µg/m ³	mm	m/sec.	degrees	On/Off	On/Off
02/02/11	82.8	24.9	66.6	0.0	3.156	246.986	On	On

Explanation for the Trigger:

- The wind direction on the 2nd of February 2011 was blowing approximately from the southwest.
- The sprinkler system was fully operational.
- The water cart was not in operation because of a breakdown.
- The crushing plant was in operation however crushing extremely damp scoria feed material.
- The TSP monitor on the northern boundary recorded 66.6 micrograms per cubic metre for the same monitoring period.

The water cart was not in operation because of a breakdown that occurred during the morning of the 2nd of February 2011. The water cart was treated as high priority by the contracting mechanics, however it was unable to be made operational until the following day.

However to minimise the effect of having no water cart available;

- Customers were asked to use only the main haul road to access the quarry pit and the secondary haul road was coned off.
- The speed limit on site was temporarily lowered.
- A wheel loader was used to manually dampen the roads with water.



No complaints to date have been received by neighbouring properties as a result of this exceedence.

If there are any further queries or comments on this investigation please do not hesitate to contact me on either 027 280 8112 or email tony.carpenter@winstoneaggregates.co.nz

Yours faithfully

Tony Carpenter
Three Kings Quarry Manager