

DUST MANAGEMENT PROCEDURE

This document specifies the methods and procedures to be followed at Pakenham quarry for reducing the emission of airborne dust. This procedure is to be followed by all Personnel & Contractors without exception. The Quarry Manager is responsible for the implementation & maintenance of this procedure

Site: Pakenham Quarry
Date prepared: 18.01.08
Reference Documents:
[Training Matrix](#)

1.0 Fixed Plant Airborne Dust

1.1 Actions

As the weather is a contributing factor to the release of airborne dust, the areas and amount of dust suppression applied on each day will be assessed by the Quarry Manager or his/her delegate. On making the decision, it will be up to the personnel on site to notify the Manager or his/her delegate if there is a need to make any adjustments. As well as weather, the location of material supply to the plant can affect the amount of water required. It will therefore be critical when a face change is made that the moisture of the supply is taken into consideration & adjustments made if necessary.

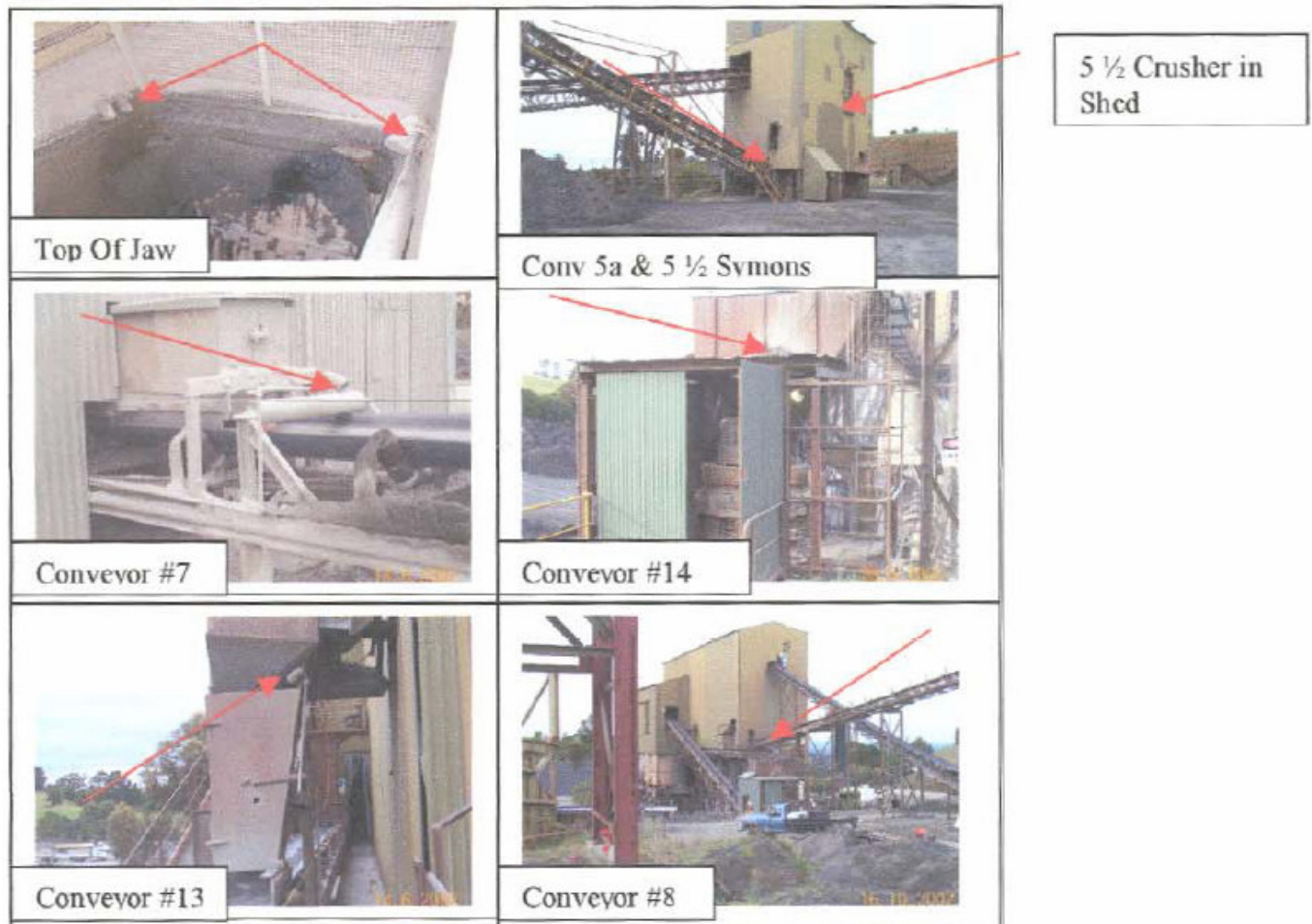
1.2 Activating Dust Control

Water is supplied to the Plant via a pump activated on the switch room control panel. There are then a series of solenoids to activate the various spray locations. There are also a number of manually operated spray points, which, while supplied by the same pump, are not necessarily turned on unless required.

The points where water is normally applied as a minimum are **(see Photos below)**:

- Jaw,
- 5½" Symons,
- Conveyor 5a,
- Conveyor #7,
- Conveyor #8,
- Conveyor #13 &
- Conveyor #14

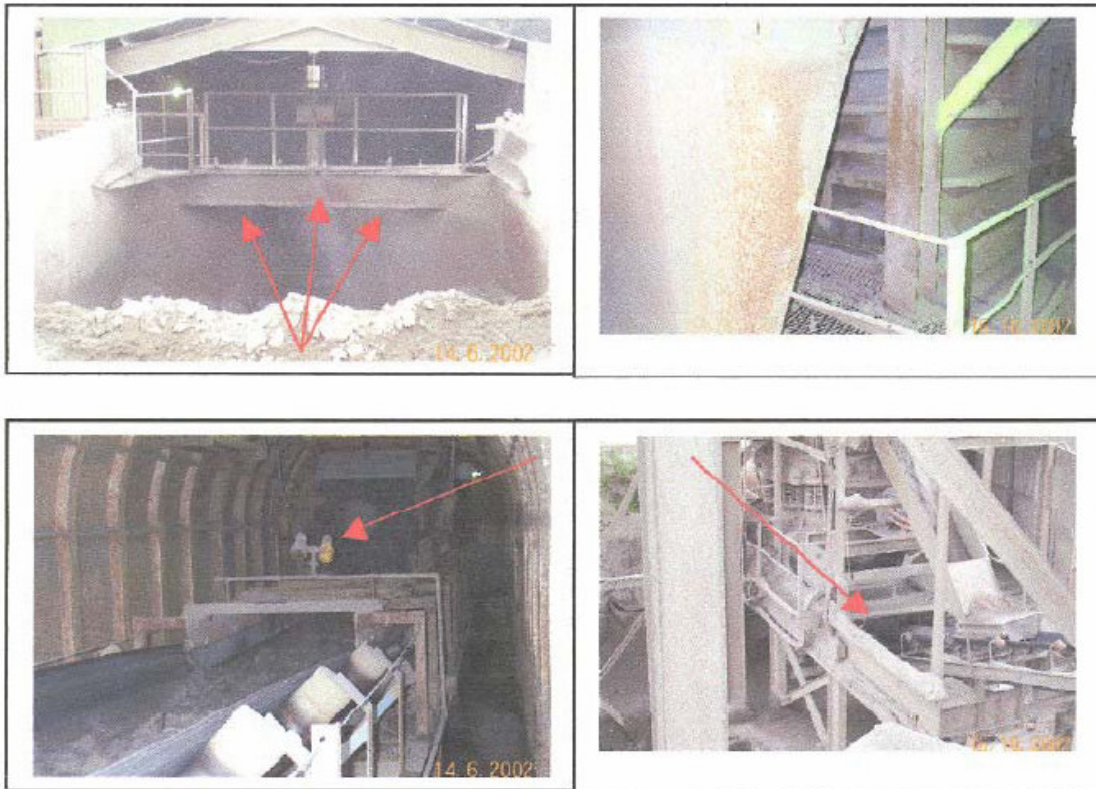
Inspect these areas daily to ensure operation. These areas should **NOT** be touched unless specifically directed by the Quarry Manager or his/her delegate. (Red arrows show spray locations)



1.3 Manually Operated Water Sprays

The amount of water on manually operated sprays can and should be adjusted to prevent airborne dust, but without over-wetting the material enough to affect the screening process. There are a number of sprays at various locations that can be applied should the standard sprays prove to be insufficient. These Sprays are located in the Primary Hopper, under the Jaw, in the Tunnel & under the Gyro.

(Red arrows show spray locations)



1.4 Other Controls

Dust emissions from conveyors and during materials handling are to be further minimised by:

- Regularly cleaning up spillages;
- Minimising drop heights; and
- Appropriate design of hopper load systems to ensure a good fit with trucks, and use of appropriate enclosures for hoppers.

2.0 Roads & Stockpiles

2.1 Actions

Road traffic, plant, machinery operation, and weather conditions, in isolation and combined, contribute to the release of airborne dust. The water cart is put into operation **7 days a week** whenever conditions may result in the excessive release of airborne dust from roads or stockpiles within the quarry operation.

Dust control additives may be added to the water to enhance soil stabilisation and reduce water use.

2.2 Wetting of Roads

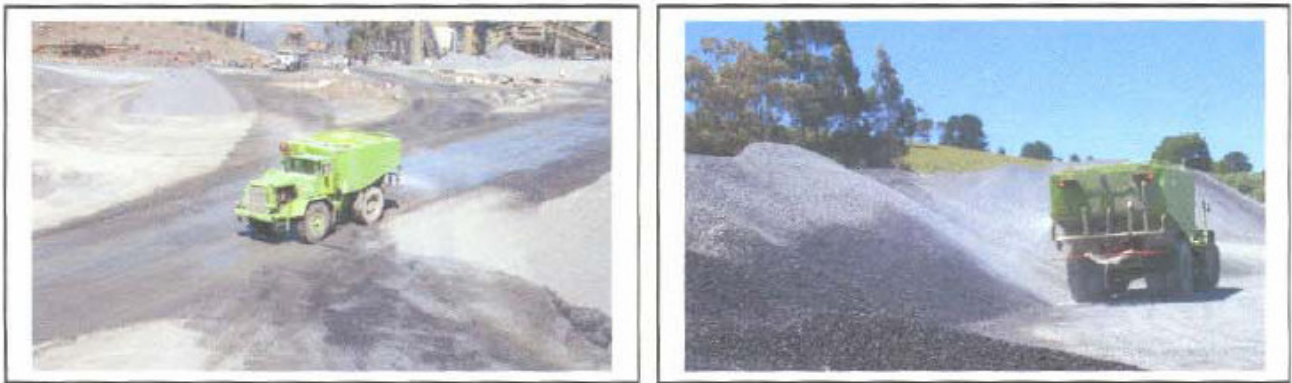
All internal roads used by internal & external traffic shall be treated by the Water Cart with enough water so as not to allow any dust to become airborne. The water cart may also be directed to wet the entrance road at the Quarry Gate.

2.3 Spraying Stockpiles

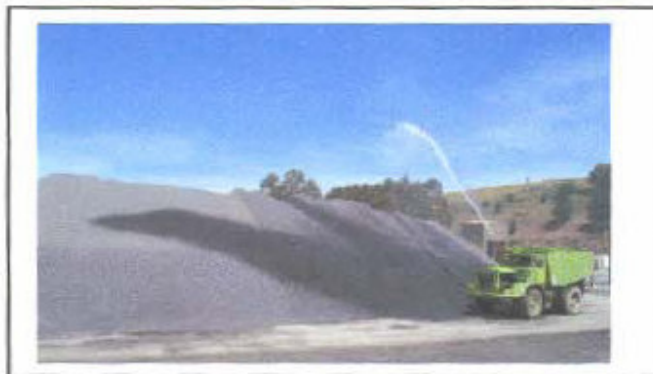
Daily visual inspections of stockpiles will show reveal which need immediate watering. The main stockpiles being Dust, 20 & 40 B Grade. Other stockpiles, such as 20mm and 10/14mm, need regular watering to aid in dust suppression and the visual safety loading of road trucks.

The loader operators will indicate if a stockpile has enough or needs more water.

Reversing the Water Cart onto stockpiles **is not allowed**.



For stockpiles you cannot back onto, use Water Cannon.



Dust emissions from stockpiles will also be mitigated where required by:

- Covered storage of fine material;
- Limiting the height and slope of the stockpiles;
- Limiting drop heights from conveyors; and
- Use of wind breaks.

3.0 Dust Extractors

Dust extraction filters are fitted to the tertiary crusher building. The filter bags on these units are regularly checked (and replaced as required) every 6 months as part of the site's preventative maintenance schedule.

4.0 Equipment, Vehicles & Plant

4.1 Vehicle Use

All drivers of vehicle or plant are to obey the on-site speed limit of **20kph**. Vehicle movements must only occur in the defined areas and along defined routes. These are clearly marked on the site plan located at the site gatehouse, and shown in the Figure below. Travel distances have been minimised through appropriate site and route layout and design.



All vehicles transporting loads from the site are to be covered and enclosed with tarpaulins or enclosed blinds. Loading and load sizes are to be managed to avoid spillages. A wheel wash facility is installed near the gatehouse and is to be used by all trucks leaving the site. Directions for use are clearly shown on the sign at the entrance to the facility.

4.2 Maintenance

All plant, vehicles and equipment on the site is regularly maintained and serviced in accordance with the site's preventative maintenance schedule.

5.0 Condition Monitoring & Response

5.1 Proactive Management

A weather monitoring station with display is installed in the quarry manager's office. Records of wind speed and direction are obtained on a daily basis, and stored for a period of 12 months for subsequent reference in the case of complaints, and to assist in interpreting dust monitoring data.

Weather forecast information (eg. 4-day synoptic charts, 2-day forecasts) is regularly obtained from the Bureau of Meteorology website <http://www.bom.gov.au/weather/vic/>. This information is used to assist in predicting the likely occurrence of conditions conducive to dust generation at the site.

Dust emissions, and potential dust generating activities and areas, are to be monitored visually on a **daily basis** during quarrying activities. If necessary, activities with potential to generate dust shall be modified or curtailed by the Quarry Manager or his/her delegate until conditions abate or pro-active measures are taken to reduce dust emissions to acceptable levels (eg. surface watering).

5.2 Reactive Management

Dust is monitored continuously by fixed station monitoring equipment located at a number of sensitive locations outside the quarry property boundary. Dust levels (in micrograms per cubic metre - $\mu\text{g}/\text{m}^3$) are recorded and displayed in real-time readout (as one hour averages) in the Pit Manager's office.

Dust generating activities are to be controlled by watering or other means when the one hour average level being monitored at one or more sensitive locations exceeds **50% of the ground level concentration design criterion (point source) of $80 \mu\text{g}/\text{m}^3$** .

Dust generating activities are to be curtailed (under direction of the Quarry Manager or his/her delegate) where the one hour average level being monitored at one or more sensitive locations exceeds **100% of the ground level concentration design criterion (point source) of $80 \mu\text{g}/\text{m}^3$** and recommenced only when corrective actions have resulted in achievement of the 50% trigger level, or wind conditions are such that this level is achieved.

Curtailed dust generating activities will involve the following hierarchy of controls:

- Identifying the specific dust generating activity(ies) likely to be causing the exceedence;
- Immediate checking of controls applying to those activities to confirm that they are being fully activated;
- Implement additional measures if available, eg. further wetting, covering/enclosing problem areas, reducing the level of activity causing dust generation such as during high wind conditions;
- Isolation (eg. using physical barriers, work directions) of identified problem areas;
- Cessation of selected activities based on the severity of their impact.

6.0 Non-conformance

All non-conformances with this procedure, and incidents are to be recorded and managed in accordance with [SHE Guideline 5.1 – Incident Reporting, Recording & Investigation](#).