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# Dust Management Plan – Huntly Managed Fill Site

- Prepared for

Gleeson Quarries Limited

- February 2020



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## 1.0 Background

### 1.1 Introduction

This Dust Management Plan (DMP) forms part of the suite of environmental controls for a managed fill located at 300 Riverview Road, Huntly (the Site). Activities likely to give rise to offsite dust effects include earthworks associated with site establishment, materials transport, bulk materials storage and handling, and placement of clean fill and managed fill material at the site.

### 1.2 Purpose and Scope

The purpose of this DMP is to facilitate the avoidance, remediation and mitigation of any adverse effects of discharges of dust generated from the demolition and associated activities undertaken at the site, and to promote proactive solutions to the control of those discharges from the site.

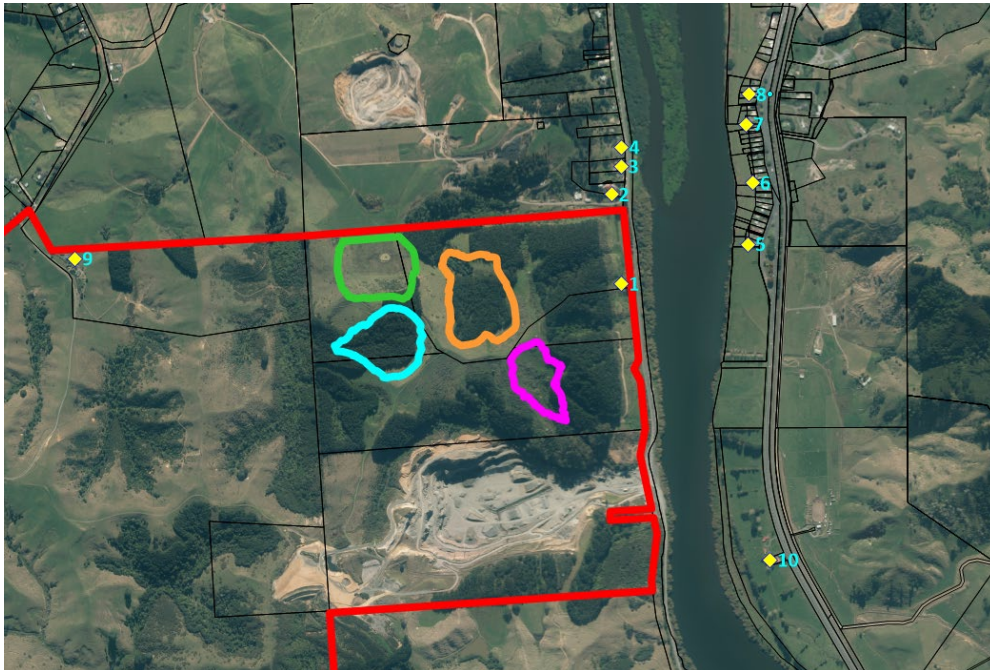
The scope of the DMP covers:

- Sources of dust that may be created during the Project;
- Dust mitigation and prevention methods;
- Monitoring methods; and,
- Methods for managing complaints regarding discharges into air and keeping records related to compliance.

The DMP will be updated, with the necessary approvals, if needed to reflect any changes associated with fill materials or the receiving environment. Any relevant revisions to the DMP will be submitted to the Waikato Regional Council (WRC) for review.

### 1.3 Sensitive Receptors

The risk of exposure of sensitive receptors to dust emissions depends on proximity to the source of the emissions and the frequency and duration of meteorological conditions likely to transport dust towards the receptors. Prevailing winds, and in particular strong winds, occur from the west. Receptors to the east are therefore, most likely to experience effects of dust emitted from the Site. Figure 1 provides a map of the fill areas relative to the nearest residences.



**Figure 1 Nearest residences location map**

The Site is located in a rural area, and as such the receiving environment has a relatively low sensitivity to dust. The nearest highly sensitive receptor is located 300 metres to the east of the nearest fill area and is not expected to be affected by dust discharges from the Project.

Dust from activities at the Site, is expected to settle within around 100 metres from the point of discharge, with the nearest receptors being at greater risk. Receptors to the east of the site boundary will be typically at greater risk of exposure to any dust due to the prevailing westerly winds.

The Site Manager will ensure that all personnel are aware of nearby sensitive receptors when carrying out activities that have the potential to generate dust.

## **2.0 Dust Generating Activities**

### **2.1 Activities and Potential Sources of Dust**

The main activities with the potential to generate dust are summarised in Table 1 below.

**Table 1: Activities with the Potential to Generate Discharges into the Air**

Activity	Location(s)	Discharge
Site establishment	Earthworks areas	Dust
Materials transport	Onsite roads	Dust
Placement of fill material	At Fill Areas	Dust
Vehicle track-out (vehicles using roads external to the site)	Vehicles will use the eastern (Riverview Road) quarry site entrance	Dust
Vehicle exhaust emissions	Throughout site	NO <sub>x</sub> , SO <sub>2</sub> , CO, CO <sub>2</sub> , PM <sub>10</sub> and PM <sub>2.5</sub>

Management of these activities is discussed in Section 5 of this DMP.

## 2.2 Factors Influencing Dust Generation

There are five primary factors which influence the potential for dust to be generated from the site.

These are:

- Wind speed across the surface. Dust emissions from exposed surfaces generally increase with increasing wind speed. However, dust pick up by winds is only significant at wind speeds above 5 m/s (11 knots or a Beaufort scale number of 3 – see Appendix A of this DMP). Above wind speeds of 10 m/s (20 knots) dust pick up increases rapidly.
- Moisture content of the material. Moisture binds particles together, preventing them from being disturbed by winds or vehicle movements.
- Vegetated surfaces are less prone to wind erosion than bare surfaces. The larger the area of exposed surfaces the more potential there will be for dust emission.
- The percentage of fine particles in the material on the surface. The smaller the particle size of material on an exposed surface the more easily the particles can be picked up and entrained in the wind.
- Disturbances such as traffic and loading and unloading of materials. Vehicles travelling over exposed surfaces tend to pulverise any surface particles. Particles are displaced from rolling wheels and the surface. Dust is also sucked into the turbulent wake created behind moving vehicles.

### 3.0 Environmental Objectives/Key Performance Indicators

This DMP has been written to ensure that the Project will be managed to comply with consent conditions related to potential discharges to air. The relevant performance criterion is to ensure that the site activities will not result in dust that is offensive or objectionable to the extent that there is an adverse effect beyond the boundary of the Site.

### 4.0 Management and Mitigation Measures

The dust prevention methods summarised in Table 2 below will be employed to manage and mitigate potential sources of dust from the Site.

Table 2: Sources of Dust and Recommended Controls to be Employed	
Source of Dust	Control
Stockpiles (including material placement and removal)	<ul style="list-style-type: none"> <li>Limit the height and slope of stockpiles to reduce wind entrainment. Stockpiles exceeding 3 m in height have a higher risk of discharging dust.</li> <li>Orientate stockpiles to maximise wind sheltering as much as possible.</li> <li>Maximise shelter from winds as far as practicable.</li> <li>Keep active stockpiles damp at all times or cover stockpiles of and fine materials prone to wind-blown dust.</li> <li>Dampen inactive stockpiles if they are producing visible dust emissions.</li> <li>Use polymer additives to assist in forming a surface crust or cover with mulch and straw.</li> </ul>
Unpaved surfaces such as roads and yards	<ul style="list-style-type: none"> <li>Limit the area of exposed surfaces as much as possible.</li> <li>Keep unpaved roads and exposed surfaces damp. Typical water requirements for most parts of New Zealand are up to 1 litre per square meter per hour.</li> <li>Cover surfaces with coarse materials where practicable.</li> <li>Compact all unconsolidated surfaces where practicable.</li> <li>Stabilise cleared areas not required for fill activities, access or for parking, if liable to cause excessive dust during windy conditions. Methods may include wetting with polymer additives to facilitate crusting, metalling, grassing, mulching or the establishment of vegetative cover.</li> </ul>
Vehicles	<ul style="list-style-type: none"> <li>Limit vehicle speeds on unsealed surfaces to 20 km/hr.</li> </ul>



Table 2: Sources of Dust and Recommended Controls to be Employed	
Source of Dust	Control
	<ul style="list-style-type: none"> <li>• Limit load sizes to avoid spillages.</li> <li>• Cover loads of fine materials.</li> <li>• Minimise travel distances through optimising site layout and design.</li> <li>• Minimise mud and dust track out from unsealed areas by establishing stabilised entranceways at all ingress and egress points to sealed roads.</li> <li>• If necessary, provide wheel wash facilities.</li> </ul>
Earthmoving and site establishment	<ul style="list-style-type: none"> <li>• Adequate water suppression systems must be available at the site to dampen areas that are to be earthworked prior to any earthworks commencing and shall be used on the site until further earthworks are not required.</li> <li>• Limit drop heights.</li> </ul>
Miscellaneous	<ul style="list-style-type: none"> <li>• Ensure sufficient water is available on site.</li> <li>• Take account of daily forecast wind speed, wind direction and soil conditions before commencing an operation that has a high dust potential.</li> <li>• Minimise the area of surfaces covered with fine materials. Use tarps or screening as needed to cover stockpiles.</li> </ul>

## 5.0 Roles and Responsibilities

### 5.1 Site Manager and Staff

The Site Manager will have day-to-day responsibility for the implementation of the DMP and will have the following attributes and experience:

- Be experienced in the management of large sites involving earthworks;
- Be experienced in the control of dust from fill sites;
- Have a thorough knowledge and understanding of the requirements to manage the site in a manner that minimises any adverse effects on the environment and the nearby properties;
- Have a thorough knowledge and understanding of the requirements to comply with the conditions of resource consents and the implications of non-compliance;
- Be experienced in the training of personnel in the methods used to control dust from a large construction site; and,

- To ensure that all contractors and staff are properly trained and understand the requirements of the DMP.

The Site Manager will have the following responsibilities in respect of the management of dust. They shall ensure

- That the conditions of the resource consent for discharges to air are complied with at all times;
- That the dust control and mitigation measures and procedures outlined in the DMP are implemented effectively;
- There are adequate personnel and equipment on site at all times to enable the dust control;
- That the air quality monitoring programme is carried out as required, including recording of daily observations;
- That any complaints received are investigated and resolved as far as practicable; and,
- That all records are kept and are available to the relevant regulatory authorities.

All personnel working on the Project have responsibility for following the requirements of the air discharge consent conditions and the DMP and reporting to the Site Manager on these issues.

## 5.2 Staff Training

Environmental training for all staff will be undertaken as part of the site induction programme. The environmental induction will include the following information specific to this DMP:

- Information about the activities that may cause dust impacts within the site and neighbouring area;
- Consent requirements;
- Dust management procedures;
- Description of dust and meteorological monitoring for the Project; and,
- Complaints management procedures.

## 6.0 Implementation and Operation of DMP

The Site Manager will be responsible for the implementation of the DMP. This will include the following tasks:

- Identify staff and assign roles;

- Undertake staff training focusing on the objectives, responsibilities and actions defined by the DMP;
- Establish daily processes and scheduling activities;
- Implement a daily briefing meeting; and
- Regular debrief and review of Plan;

The Site Manager will also be responsible for reviewing the effectiveness of the DMP and if necessary, revise to improve management and mitigation measures to reduce any dust impacts.

## 7.0 Environmental Monitoring Programme

### 7.1 Dust Monitoring

Visual monitoring of dust will be undertaken continuously by site personnel to assess the level of dust emissions on the site and beyond its boundary. The visual monitoring will aim to:

- Identify source(s) of dust (e.g. from heavy machinery, stockpiled material, earthworks, etc.);
- Identify any areas of deposited dust resulting from the Project on surrounding roads and properties;
- Assess extent of any plumes and direction (e.g. within boundary, cross boundary, or cover a large extent);
- Identify receptors potentially impacted by the plume (e.g. properties downwind to the east);
- Assess offensiveness – high, medium or low; and,
- Assess overall impact – high, medium, or low.

Staff will visually monitor to identify dust events. The site manager shall undertake a site walkover and dust monitoring at least once per day, in the early afternoon, to assess the overall effectiveness of the DMP and assess compliance with the requirements of the resource consent conditions.

Site observations will be recorded in a daily log form, an example of which is provided as Appendix B. The daily log forms will be kept for at least 5 years.

Recording relevant inspection results, as well as the conditions of external and internal factors on the log forms, will help to assess if control measures are effective and to define appropriate corrective or preventive actions in case any adverse effects occur.

## 7.2 Meteorological Monitoring

Monitoring of weather forecasts will be undertaken daily and used to inform the need for additional mitigation measures (e.g. in the event that strong winds are forecast).

Before the daily briefing meeting, the Site Manager will obtain the weather forecast for the day and identify whether there is a risk of high windspeeds (>5 m/s) occurring. If high wind speeds are forecast the Site Manager will highlight this to other onsite staff and instruct if any additional dust mitigation is to be implemented for that day.

The forecast occurrence of high windspeeds shall be noted in the daily log along with any outcomes from the daily briefing meeting.

## 7.3 Frequency of Monitoring

Table 3 outlines the frequency of the activities undertaken as part of the monitoring programme that is to be implemented. The implementation of this programme will be the responsibility of the Site Manager, in conjunction with site personnel.

Table 3: Monitoring Programme Activities and Frequency	
Monitoring Activities	Frequency
Check weather forecasts for strong winds and rainfall to plan appropriate activities and dust management response (7-day forecasts also available on <a href="http://www.metvw.com">www.metvw.com</a> and <a href="http://www.metservice.com">www.metservice.com</a> ).	Daily and as conditions change
Inspect watering systems (sprays and water carts) to ensure equipment is maintained and functioning to effectively dampen exposed areas.	Weekly
Inspect dust generating activities (as listed in section 4) to ensure dust emissions are effectively controlled.	Constantly
Dust monitoring early afternoon site walkover.	Daily
Inspect site access and egress points to ensure dust is being contained to within the Site.	Daily
Daily log form for visual monitoring of dust	Daily or when dust events occur.

## 7.4 Reporting of Monitoring Programme

The following information will be recorded electronically in a daily log or equivalent system (an example of the type of detail that may comprise the daily log is provided in Appendix B of this DMP):

- Results of the daily site inspections of visible dust emissions;
- Likely source(s) of any observations of dust;
- General weather conditions during the day (i.e., windy, calm, warm, rain etc.);
- The frequency of water sprinkling/spraying system use;
- Dust control equipment malfunctions and any remedial action(s) taken; and,
- Records of any complaints or other community feedback regarding the fill activities.

The log forms will be collated and stored on site and be made available to WRC staff upon request.

## 8.0 DMP Review

The DMP will be reviewed and updated, with the necessary approval, throughout the course of the Project to reflect changes in dust management techniques, staging of fill areas, or the receiving environment. Approval from the WRC will be required for any relevant revisions of a material nature for the DMP. The review will take into consideration:

- Any significant changes to dust management activities or methods;
- Key changes to roles and responsibilities within the Project;
- Changes in industry best practise standards or recommended dust controls;
- Results of inspection and maintenance programmes, logs of incidents, corrective actions, internal or external assessments; and,
- The outcome of investigations into discharges of dust/odour/air pollutants.

Reasons for making changes to the DMP will be documented. A copy of the original DMP document and subsequent versions will be kept for the Project records and marked as obsolete. Each new/updated version of the DMP documentation will be issued with a version number and date.

## 9.0 Complaints

It is important to ensure that any complaints are recorded and promptly investigated to identify and resolve the cause of the complaint. Requirements and procedures for complaints are detailed below.

The Site Manager has the responsibility to respond to and follow up all complaints regarding dust, and to ensure that suitable trained personnel are available to respond to complaints at all times.

Actions to be taken as soon as possible, following the receipt of a complaint, by the Site Manager include:

- Undertake a site inspection. Note all dust-producing activities taking place and the mitigation methods being used. If the complaint was related to an event in the recent past, where possible, note any dust-producing activities taking place at that time.
- Initiate any remedial action necessary, which may include a stop work period.
- Note the time and date of the complaint/s and (unless the complainant refuses to provide them) the identity and contact details of the complainant. Ask the complainant to describe the discharge:
  - Is it constant or intermittent?
  - How long has it been going on for?
  - Is it worse at any time of day?
  - Does it come from an identifiable source?
- Wind direction and strength and weather conditions are to be recorded.
- Note if the complaint has been referred to the WRC.
- As soon as possible (within 1 hour, where practicable), visit the area from where the complaint originated to ascertain if dust is still a problem.
- If it becomes apparent that there may be a source of dust other than the managed fill causing the complaint, it is important to verify this? Photograph the source and emissions.
- As soon as possible after initial investigations have been completed, contact the complainant to explain any problems found and remedial actions taken. Initiate a damage assessment if required.
- If necessary, update any relevant procedures to prevent any recurrence of problems and record any remedial action taken.

Follow-up actions:

- Fill out the appropriate complaint form, attached as Appendix C to this DMP.
- Advise the Site Manager and the WRC within 24 hours that a complaint has been received, what the findings of the investigation were, and any remedial action taken.
- Advise site personnel as soon as is practicable that a complaint has been received, what the findings of the investigation were, and any remedial action taken.

## 10.0 Emergency Contacts

Internal contacts for the site in the event of an emergency of other problems are provided in Table 4 and Table 5 below.

Table 4: Internal Environmental Emergency Contact Details				
Role	Name	Organisation	Phone	Email
Site Manager	TBC	Gleeson	TBC	TBC
After hours contact	TBC	TBC	TBC	TBC

Table 5: External Environmental Emergency Contact Details				
Role	Name	Organisation	Phone	Email
Consents Compliance Team	TBC	Waikato Regional Council	TBC	TBC

## 11.0 References

Institute of Air Quality Management, IAQM Guidance on the assessment of mineral dust impacts for planning, 2016. Ministry for the Environment (2016). *Good Practice Guide for Assessing and Managing Dust*, 2016, available at [www.mfe.govt.nz](http://www.mfe.govt.nz).

Pattle Delamore Partners Ltd, *Air Quality Assessment of Effects – Huntly Quarry Managed Fill Site*, September 2019.

## Appendix A: Beaufort Wind Scale

Table A-1: Beaufort Wind Scale			
Beaufort Scale	Wind Speed (m/s)	Description	Observations
0	0-0.2	Calm	Calm. Smoke rises vertically.
1	0.3-1.5	Light Air	Wind motion visible in smoke.
2	1.6-3.3	Light Breeze	Wind felt on exposed skin. Leaves rustle.
3	3.4-5.4	Gentle Breeze	Leaves and smaller twigs in constant motion.
4	5.5-7.9	Moderate Breeze	Dust and loose paper raised. Small branches begin to move.
5	8-10.7	Fresh Breeze	Branches of a moderate size move. Small trees begin to sway.
6	10.8-13.8	Strong Breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult. Empty plastic garbage cans tip over.
7	13.9-17.1	Near Gale	Whole trees in motion. Effort needed to walk against the wind. Swaying of skyscrapers may be felt, especially on upper floors.
8	17.2-20.7	Gale	Twigs broken from trees. Cars veer on road.
9	20.8-24.4	Severe Gale	Larger branches break off trees, some small trees blow over. Demolition/temporary signs and barricades blow over. Damage to circus tents and canopies.
10	24.5-28.4	Storm	Trees broken off or uprooted, saplings bent and deformed, poorly attached asphalt shingles or shingles in poor condition peel off roofs.
11	28.5-32.6	Violent Storm	Widespread vegetation damage. More damages to most roofing surfaces, asphalt tiles that have curled up and/or fractured due to age may break away completely.
12	32.7-36.9	Hurricane	Considerable and widespread damage to vegetation, a few windows broken, structural damage to mobile homes and poorly constructed sheds and barns. Debris may be hurled about.



## Appendix B: Daily Log Form

### Daily Dust Inspection Log

Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Inspection by: \_\_\_\_\_  
 Current weather conditions (e.g. sunny, cloudy, rainy): \_\_\_\_\_  
 Wind speed and direction (e.g. light, moderate, strong): \_\_\_\_\_  
 Weather forecast for next 24 hours (e.g. rainy, windy): \_\_\_\_\_  
 Area(s) inspected: \_\_\_\_\_

Scope of Inspection	Circle Relevant Item	Comments
Is there visible dust from site work activities, stockpiles, earthworks areas or haul roads?	Y N N/A	
Are unsealed surfaces dry and need spraying with water cart?	Y N N/A	
Are any exposed earthworks visibly dry and need water spray?	Y N N/A	
Stockpiles covered/stabilised where needed?	Y N N/A	
Are there any signs of dust going off site as a result of site activities? [Inspect land adjacent to the site exits and adjoining roads for the presence of dust deposits.]	Y N N/A	
If wind speeds are strong or forecast to be strong (over 5 m/s) are additional inspection and mitigation measures being put in place? (e.g. increase water application, restrictions on dusty activities)	Y N N/A	
Are watering systems (e.g. water carts, wheel wash) operating effectively to minimise dust?	Y N N/A	
Are trucks carrying loose (uncovered) material entering or leaving the site?	Y N N/A	

## Appendix C: Complaints Records

## DUST COMPLAINT & ASSESSMENT FORM

### PART A: Complaint Details

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Complaint Received By: \_\_\_\_\_  
 Name: \_\_\_\_\_ Address: \_\_\_\_\_  
 Contact phone numbers: \_\_\_\_\_ Possible source: \_\_\_\_\_  
 Anonymous: Y/N \_\_\_\_\_ Is dust occurring now? \_\_\_\_\_  
 Complaint details (include impacts/effects experienced by complainant): \_\_\_\_\_

### PART B: Complainant Location Assessment

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Assessors Name: \_\_\_\_\_  
 Person spoken to at complaint location: \_\_\_\_\_ Reason for investigation: COMPLAINT/PROACTIVE  
 Complaint details (include impacts/effects experienced by complainant): \_\_\_\_\_

**INITIAL IMPRESSIONS:**

Time of the initial impression: \_\_\_\_\_ Type of dust: \_\_\_\_\_  
 Any visible dust deposits: Y/N \_\_\_\_\_ Plume width (if known): \_\_\_\_\_

**VISIBLE DUST DEPOSITS**  
 Describe approximate quantities and extent \_\_\_\_\_  
 When was surface last cleaned? \_\_\_\_\_ Frequency of cleaning: \_\_\_\_\_

Describe the appearance of the deposits:

Colour	_____	Any odour	_____
Shape	_____	Water soluble	_____
Size	_____	Other	_____
Crystalline or powdery	_____		_____
Hard, soft	_____		_____

**Weather Data (see over)**

Wind direction:
Wind velocity:
Cloud cover:
Temperature:
Rainfall in past 24 hrs:

Photos Taken: Y/N \_\_\_\_\_ Samples taken Y/N \_\_\_\_\_  
 Diagram/description of where photos were taken. \_\_\_\_\_

Diagram/description of where samples were taken: \_\_\_\_\_

Sample collection: Use a small paintbrush (clean) to sweep samples of the dust onto a sheet of paper and then into a clean plastic bag. At least half a teaspoonful will be required for analysis. Lesser amounts may be collected on strips of clear cello tape, which should then be stuck onto sheets of clear plastic to preserve the samples. Label all samples and record date, time, location, etc on a separate sheet of paper if required.

**Based on your assessment on this occasion, which of the following applies:**

<input type="checkbox"/>	I did not find any dust
<input type="checkbox"/>	I did find dust and consider it would not be objectionable at any location for any duration or frequency
<input type="checkbox"/>	I did find dust and consider it would be objectionable if it became continuous
<input type="checkbox"/>	I did find dust and consider it would be objectionable if it occurred on a regular or frequent basis
<input type="checkbox"/>	I did detect dust and consider it to be objectionable even in periods of short duration.

**FINAL CHECKLIST**

<input type="checkbox"/>	Upwind assessment completed. Record details below. If not, detail reason: _____
<input type="checkbox"/>	Aerial photo/sketch showing location of assessment and upwind assessment attached
<input type="checkbox"/>	Are there potential witness statements to obtain YES/NO

**REMARKS**

### PART C: Off-site dust and 360° assessment

Assess the dust upwind of the suspected source and if possible conduct a 360° sweep around the source assessing the odour at different points

**OTHER POTENTIAL SOURCES** **Time:** \_\_\_\_\_

Check for road works, ploughing, construction activities, burn-offs, unsealed roads, unsealed sites

<b>Site 1:</b>			
Wind direction:	Wind strength:	Wind stability:	GPS Loc:
Visible dust:		Description of dust	
Comment:			
<b>Site 2:</b>			
Wind direction:	Wind strength:	Wind stability:	GPS Loc:
Visible dust:		Description of dust:	
Comment:			
<b>Site 3:</b>			
Wind direction:	Wind strength:	Wind stability:	GPS Loc:
Visible dust:		Description of dust:	
Comment:			

**Diagram of Suspected source, dust assessment sites and dust plume:**

**COMMENTS**

### PART D: Source On-site Investigation

If source of dust identified, visit site, identify yourself and show warrant. Explain the findings of your investigation to staff.

Date:	Time:	Source Identified:
Staff spoken to::		Position:
Staff contact phone number:		
Current site operations:		
Reason/explanation given for dust		
Other Comments		

Monitoring results/samples/other records

Site Sketch (If Required)



SIGNED BY ASSESSOR \_\_\_\_\_

DATE: \_\_\_\_\_

### PART E: Dust Reference Sheet

**Definitions**

**Objectionable** The term objectionable is the term used in consent conditions and is an ingredient of any subsequent enforcement action. It is a subjective term and is open to interpretation. There is guidance from case law which defines objectionable as: unpleasant or offensive or repugnant; open to objection or undesirable or disapproved of; noxious or dangerous. A test will be applied by the court that the term objectionable will be as it applies to "the minds of a significant cross section of reasonable people in the community". The assessor must bear this test in mind when completing their assessment.

**Frequency** How often an individual is exposed to dust nuisance events

**Intensity** As indicated by dust quantity/concentration and the degree of nuisance

**Duration** The length of the particular dust event

**Character** How objectionable the dust is, having regard to the nature of the dust

**Land Beaufort Wind Scale**

B. No.	Description	How to Recognise
0	Calm	Smoke rises straight up
1	Light Air	Smoke drifts
2	Light Breeze	Wind felt on face; leaves rustle
3	Gentle Breeze	Flags flap; twigs move all the time
4	Moderate Breeze	Papers blow; small branches move
5	Fresh Breeze	Small trees sway
6	Strong Breeze	Large branches move, wind whistles
7	Near Gale	Whole trees sway

**Measuring Temperature**

Use descriptions below or obtain local meteorological data, especially temperature from websites such as [www.metservice.govt.nz](http://www.metservice.govt.nz)

Cold
Cool
Mild
Warm
Hot

**Measuring Cloud Cover**

Okta No.	Description
0	Clear Sky
1	Sunny
2	Mostly sunny
3	
4	Half the sky is covered in cloud
5	
6	Mostly cloudy
7	Considerable cloudiness
8	Overcast
F	Fog / Mist

During the day the sun is always shining, so the amount of sunshine reaching the ground depends on the amount and duration of any cloud cover. The amount of cloud cover is usually given in units called oktas. Each okta represents one eighth of the sky covered by cloud.