Dust Management and Monitoring Plan – Peach Island Quarry

- Prepared for

CJ Industries Limited

- March 2023

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Limitations:

This report has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by CJ Industries Limited. PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the report. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

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Document Control

Table 1: Amendment Register – Dust Management and Monitoring Plan				
Date	**Version**	**Description**	**Prepared by:**	**Reviewed/ Authorised by:**
14 July 2022	1	Original Document	AVV	JB
08 March 2023	2	Updated to incorporate the changes to mitigation, monitoring and Draft consent conditions which arose during the TDC consent hearing. The version is amended to incorporate updates from: • JB supplementary evidence • Commissioner's Questions • Revised Set of draft consent conditions	JB	AVV

Table of Contents

Table of Figures

Table of Tables

Appendices

1.0 Introduction

This Dust Management and Monitoring Plan - Peach Island Quarry (DMMP) has been prepared by Pattle Delamore Partners Ltd (PDP) on behalf of CJ Industries Limited (CJ Industries).

1.1 Purpose

The purpose of the DMMP is to provide a framework for the quarry and restoration operations and site personnel, in particular to:

- Provide the information defined in consent condition number 18;
- facilitate the avoidance, remediation, and mitigation of any adverse effects of discharges of dust generated from the operation of the Peach Island Quarry;
- promote proactive solutions to the control of dust discharges from the site; and
- present industry best practice option for dust controls.

1.2 Background Information

CJ Industries intend to undertake the extraction of gravel, stockpiling of topsoil, and reinstatement of quarried land in three stages at Peach Island Road.

An assessment of the sensitivity of the receiving environment and identification of the location of highly sensitive receptors is provided in Air Quality Assessment of Environmental Effects (AEE), dated July 2022. The location of the quarry and the location of the sensitive receptors within 500 m of the boundary of the site are shown in are in Figure A-1.

A key focus of the management plan is to avoid adverse effects at the nearest neighbouring residential dwellings and apple and kiwifruit orchards.

1.3 Description of Activity and Dust Sources

CJ Industries propose to operate a gravel quarry at 134 Peach Island in Motueka (Lot 2 DP 2357 and Lot 2 DP 432236), the area of which is shown Figure 1 below.

Figure 1: Location and boundary of the proposed gravel extraction site

Hours of operation will be limited to **7.30 am to 5 pm Monday to Friday**, with no work during weekends or on public holidays.

The extraction and handling of gravel, including truck movements to and from the site, has potential for discharges of fugitive dust and odour.

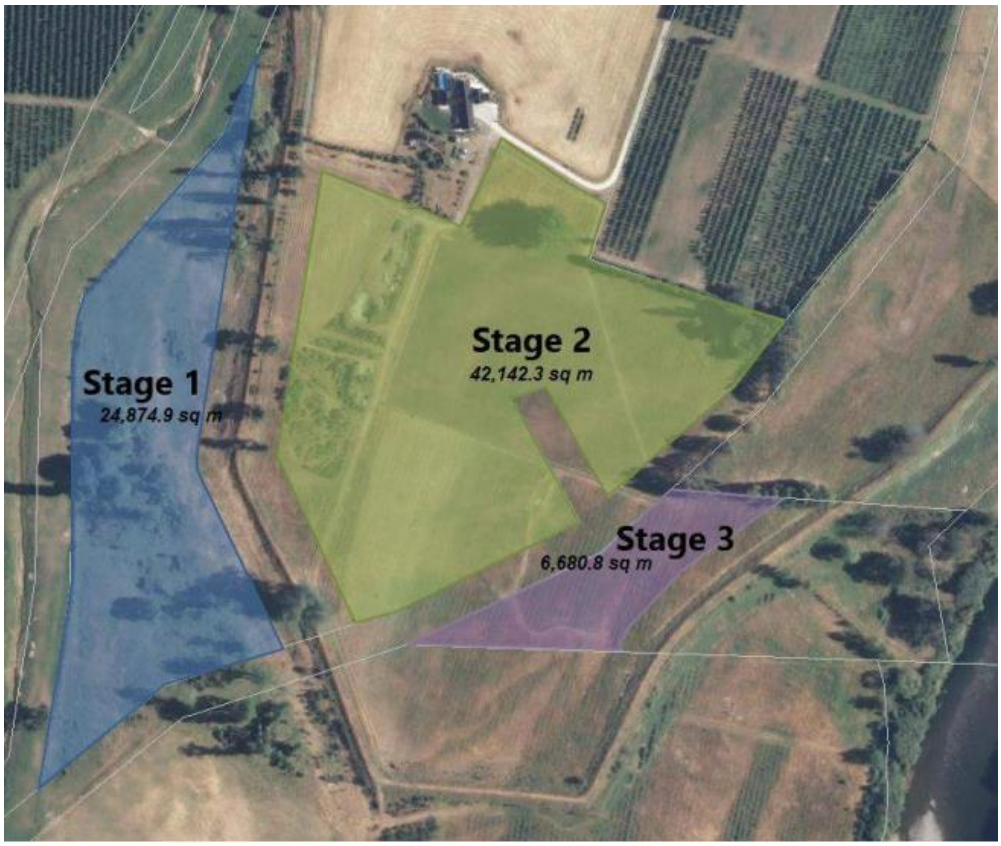


Figure 2: Staging plans for the extraction of gravel at Peach Island Quarry

No processing, crushing or screening of materials will occur on the application site.

Up to 15 truck and trailer units will enter/exit the site each day for the import of clean fill and the export of aggregate. Trucks or truck-and-trailer units will carry up to 38 tonnes of material each, with a maximum of 570 tonnes of gravel transported each day. Trucks will return with back fill material as often as possible, in order to keep traffic numbers as low as practically possible. The existing paper road and area of marginal strip that is proposed to be used as a haul road is currently in pasture and will be formed into a sealed road. An existing ROW will also be utilised to access the marginal strip and paper road. This too will be upgraded to a sealed surface. The access will be adequately maintained by CJ Industries. This means that the only unsealed roads with potential for dust generation are the internal haul roads within each of stages 1, 2 and 3.

There is an apple orchard that is located on the northern eastern boundary of the Stage 2 area. Quarrying within 100 m of this orchard boundary only occurs over the months of June to December (the wet less windy time of the year). This operational restriction will reduce the risk of dust impacting maturing fruit. CJ Industries moves between stages 2 and 3 to suit the time of the year.

1.4 Objectives

The objectives of the DMMP are to inform the quarry operations and site personnel of management and mitigation measures for quarry activities to minimise the adverse impacts of potential dust discharges on the receiving environment.

The DMMP methods are designed to be practical for CJ Industries to implement, while the document is intended to be continuously improved to adapt mitigation where needed to ensure the required outcomes.

2.0 Key Performance Indicator

The key performance indicator for this DMMP is to ensure that there shall be no noxious, dangerous, objectionable or offensive dust beyond the boundary of the site.

3.0 Consent Compliance Requirements

The environmental objective of the DMMP is to ensure that the site will be managed to comply with consent conditions related to the discharge of dust to air. The consent conditions relevant to the DMMP follow below.

48. Specific dust control measures described in the application and DMMP shall be implemented. These dust control measures shall reflect best practical option and be undertaken in accordance with the accepted best practice.

49. No works shall be carried out material shall be disturbed during periods of high wind (>7.5m/s) and where there are sensitive receptors within 250m in a

downwind direction. No excavations shall be undertaken if high wind is forecast in the period before measures can be implemented to secure the excavated area and any stockpiles from the effects of dust generation.

50. No quarrying activities shall take place within 100m of horticultural activities on neighbouring properties between the months of January and May (inclusive).

51. No soil stockpiles may be placed within 100 m of horticultural activities on neighbouring properties.

52. Only water will be used for dust suppression. The Consent Holder will not use polymer or chemical stabilization methods, including Waste Oil or Reprocessed Oil to control dust.

53. The consent holder shall undertake meteorological monitoring (i.e., wind direction, wind speed, temperature and relative humidity) on site and store this data electronically and it shall be made available to the Council's Team Leader - Monitoring & Enforcement on request. The meteorological monitoring station shall be located and established so as to be, to the extent practicable on site, consistent with AS/NZS 3580.1.1:2016.

4.0 Sources of Dust

The Site's key dust sources are as follows:

- Development and remediation of the site;
- Excavation of gravel;
- Site access road
- Internal haul roads and other unsealed surfaces;
- Disturbing stockpiles; and
- Stockpiling.

5.0 Management and Mitigation Measures

5.1 Water Suppression

As a benchmark for dust suppression the Ministry for the Environment Good practice guide on assessing and managing dust recommends a water application rate 1 mm/hour (or 1 litre/m^2) per hour. Using 1 mm per hour over 3,000 m^2 requires 3 m^3 of water per hour. Over a 10-hour working day the total volume of water required could be 30 m^3. However, it is unlikely that dust suppression would be required over a full day.

CJ Industries must ensure that 30 m^3 of water is available daily for potential dust suppression purposes. Water for dust suppression will be sourced from water permit RM171337. . This consent provides for 8.33 L/s and 2625 cubic metres per week from an on-site bore. Restrictions can be implemented by Council during times of low river levels, in this circumstance water will be trucked in from an external provider. In circumstances where the sprinkler system cannot be extended to all appropriate areas, CJ Industries must ensure there is one 15 m^3 dust suppression cart on site which can provide water for dust suppression. Both systems can be refilled from the site's water supply, the site provides access to ample water for typical and for high demand dust suppression.

Fixed sprinklers, mobile k-line sprinkler system, water truck with cannon may be used along unsealed internal haul roads and active quarry areas in addition to a water cart. This equipment is only required if sprinklers and cannons are not able to service the unconsolidated surface areas. All mitigation installed must be designed to ensure 1 mm water per hour over 3,000 m^2 can be achieved by the quarry operations on dry days at any stage.

5.2 Tiered Mitigation Measures

Dust prevention on site uses a two-tiered approach. Tier 1 controls are employed routinely, and Tier 2 controls are implemented additionally in the unlikely situation that the Tier 1 controls do not prove to be fully effective. These control measures are summarised in Table 2.

Application of water for dust suppression as described in the Tier 1 and Tier 2 controls must be prioritised as shown in Table 2.

Table 2: Sources of Dust and Tiered Controls to be Employed		
Source of Dust	**Tier 1 Controls (Routine, must be employed)**	**Tier 2 Controls (Additional, as needed)**
Unpaved surfaces such as internal haul roads roads	• Limit the area of exposed surfaces as much as practical. • Cover surfaces with coarse materials where practicable. • Compact all unconsolidated surfaces where practicable. • Trafficked unsealed surfaces will be watered on a regular basis using a k-line sprinkler, water cannon or water cart system. • An onsite speed limit of 15 km/hr will be enforced.	• Increase water application rate to ensure that in-use unpaved roads are kept damp.
Sealed site access road	• Sweeping of the sealed road is undertaken when visual observations show this is required.	• Washing the surface of the road using the water cart.
Vehicles	• Limit load sizes and ensure even loading to avoid spillages. • As far as practical minimise travel distances and/or maximise buffer distances between site access roads and site boundary through appropriate site layout and design. • Deep sided trucks (dump trucks) are used for transport within the site to reduce spill • As above, an onsite speed limit of 15 km/hr will be enforced. • The main haul road into the site is sealed to prevent dust. • Any spills of soil from vehicles are swept up and washed down on the same day as the spill.	• Limit vehicle speeds on unsealed surfaces to 10 km/hr when traveling within 250 m of the site boundary or when vehicle generated dust plumes approach the boundary of the site. • A wheel wash can be installed if sweeping is not effective to prevent tracking of material offsite. • Dry soil material in trucks will be covered or wetted.

Table 2: Sources of Dust and Tiered Controls to be Employed

Source of Dust	Tier 1 Controls (Routine, must be employed)	Tier 2 Controls (Additional, as needed)
Disturbing materials	• Good practice machine operation will be implemented including minimizing drop heights and wetting dusty materials. • For the purposes of site preparation, gravel extraction gravel export off site or site remediation, the loading on to or removal of material from stockpiles or other activities which may disturb materials must only be undertaken during low dust risk wind conditions (one hour average windspeed below7.5 m/s). • Disturbing materials to allow backfilling of the quarry for the purposes of maintaining a gravel separation between the surface and ground water during times of rising groundwater may be undertaken when windspeeds are above 7.5 m/s • No materials may be disturbed when wind speeds are above 7.5 m/s and there is a sensitive receptor located within 250 m in the downwind direction. • Quarrying in Stage 2 within 100 m of the apple orchard boundary may only occur over the months of June to December. • A 3 m high bund to provide a dust screen between the quarry and the orchard located on the northern boundary of Stage 2. Where practical the bund will be built so that it is backed by existing mature trees.	• Adequate water suppression systems must be available at the site to dampen areas that are to be worked prior to any earthworks or material disturbance commencing and shall be used on the site until further earthworks or material disturbance in that area are not required.
Stockpiles (including	• Locate stockpiles as far away as practicable from identified sensitive receptors.	• Further limit the height and slope of stockpiles to reduce wind entrainment.

Table 2: Sources of Dust and Tiered Controls to be Employed		
Source of Dust	**Tier 1 Controls (Routine, must be employed)**	**Tier 2 Controls (Additional, as needed)**
placement and removal)	• Orientate stockpiles to maximise wind sheltering as much as possible. • Maintain the height of gravel stockpiles to a practical maximum of 4 m. • Maintain the height of unvegetated topsoil stockpiles to a practical maximum of 3 m. • Load and remove stockpiled material from site as soon as practical. • Stockpiles in the Stage 2 area must not be constructed with 100 m of the apple orchard boundary.	• Vegetation of long-term stockpiles. • Dampen stockpiles if they are producing visible dust emissions.
Soil removal and replacement	• Areas are incrementally backfilled at regular intervals and re-grassed with suitable grass species as soon as practicable to limit potential for dust generation from exposed surfaces.	• Addition of nutrients (fertiliser) to increase fertility and promote and maintain even revegetation. • Soil moisture management via irrigation to promote and maintain even revegetation.
Miscellaneous	• Plan site layout so that mobile machinery and dust causing activities are located away from receptors as far as is practicable. • Ensure sufficient water is available on site. • Take account of daily forecast wind speed, wind direction and soil conditions before commencing an operation that has a high dust potential. • All site machinery must be regularly maintained to ensure optimal operation.	• Targeted watering on areas identified as high-risk for dust discharge as a result of visual inspections.

Table 2: Sources of Dust and Tiered Controls to be Employed		
Source of Dust	**Tier 1 Controls (Routine, must be employed)**	**Tier 2 Controls (Additional, as needed)**
	• Targeted watering on areas within 250 m of sensitive receptors during high dust risk conditions (see Table 3).	

6.0 Roles and Responsibilities

6.1 Site Manager and Staff

The Site Manager has the day-to-day responsibility for implementing the DMMP. The Site Manager has the responsibility to ensure that:

- the conditions of all relevant resource consents are complied with at all times;
- the dust control and mitigation measures and procedures outlined in the DMMP are implemented effectively;
- there are adequate personnel and equipment on site at all times to implement the dust control;
- the meteorological and dust monitoring programmes are carried out as required, including recording of daily observations;
- any complaints received are investigated and resolved as far as practicable; and
- 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 DMMP and reporting to the Site Manager on these issues.

6.2 Staff Training

Successful dust management depends on appropriate actions by site personnel in day-to-day operations of the site. 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 DMMP:

- Information about the activities that may cause dust discharges within the site with the potential to impact neighbouring areas;
- Consent requirements;
- Dust mitigation procedures;
- Description of dust and meteorological monitoring for the site; and
- Complaints management procedures.

Staff training records will be maintained on site. The records will include:

- Who was trained;
- When the person was trained; and

- General description of training content and whether follow up/refresher courses are required at a later date.

7.0 Implementation and Operation of DMMP

The Site Manager is responsible for implementing the DMMP including to:

- Identify key staff responsible for dust management and assign roles;
- Undertake staff training focusing on the objectives, responsibilities and actions defined by the DMMP;
- Establish daily processes and scheduling activities;
- Implement a daily briefing meeting; and
- Undertake regular debriefs and reviews of the DMMP.

The Site Manager is responsible for reviewing the effectiveness of the DMMP and if necessary, revising it to improve management and mitigation measures to reduce any dust impacts.

8.0 Environmental Monitoring Programme

8.1 Dust Monitoring

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

- Identity source(s) of dust (e.g. from heavy machinery, stockpiles, earthworks or material disturbance, etc.);
- Identify any areas of deposited dust from the site on surrounding roads and properties;
- Assess the extent and direction of any dust plumes (e.g. within boundary, cross-boundary, or covering a large extent);
- Identify receptors potentially impacted by the plume (e.g. properties downwind to the northeast);
- Assess offensiveness as high, medium, or low; and
- Assess overall impact as high, medium, or low.

All staff are required to continuously visually monitor activities to identify dust events. The Site Manager or delegate undertakes a site walkover and visual dust monitoring at least once per day, in the early afternoon, to assess the overall effectiveness of the DMMP and assess compliance with the requirements of the resource consent conditions.

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

Recording relevant inspection results, as well as the conditions of external and internal factors on the log forms, must be used to help assess if control measures are effective and to define appropriate corrective or preventative actions in the event that adverse effects occur.

Should CJ Industries receive four validated dust complaints from surrounding neighbours or council (validated meaning the quarry activities are the confirmed source of dust) within any 12-month period, this DMMP must be revised to incorporate real time dust monitoring. Specific issues to be considered in the updated DMMP include:

- Type of monitor;
- Location of monitor;
- Dust mitigation trigger alerts;
- Responses to dust trigger mitigation alerts; and
- Reporting of dust monitoring data.

8.2 Meteorological Monitoring

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

Before the daily briefing meeting, the Site Manager must obtain the weather forecast for the day and identify whether high dust risk conditions (see Table 3) may occur. If high dust risk conditions are forecast, the Site Manager will highlight this to other on-site staff and instruct whether any additional dust mitigation is to be implemented for that day.

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

A meteorological station that will measure wind direction, wind speed, temperature and relative humidity must be set up on site. The location of the meteorological station must be, as far as practical, consistent with the AS/NZS 3580.1.1:2016.

The meteorological station will provide real time data to the site staff. This information will be used to assist with the dust management of the site. The meteorological system must be set up to send email and SMS text alerts to site staff. An alert will be sent when 1-hour average windspeeds exceed 5 m/s which must prompt site staff to carefully monitor dust sources and implement

additional mitigation measures if required. An alert will be sent when 1-hour average windspeeds exceed 7.5 m/s, which must prompt site staff to stop work on dust generating activities.

The meteorological data will be archived and be available for reviewing and responding to any dust and odour complaints received by the site staff.

Table 3 shows a summary of the meteorological conditions contributing to different dust risk levels, the associated notifications, and required responses.

Table 3: Dust Risk Levels, Meteorological Conditions and Responses

Dust Risk Level	Wind Speed	Wind Direction (blowing from)	Notification	Response
Low	< 5 m/s	All directions	-	-
Medium	5 – 7.5 m/s		Text & email	Prepare for mitigation actions, visual inspection of dust discharges and implement water application for dust suppression if required
High	≥ 7.5 m/s		Text & email	Operators to visually identify potentially sensitive receptors within 250 m in downwind direction and to use Tier 1 & Tier 2 dust mitigation measures as appropriate.

Through use of real-time meteorological data to target dust suppression, combined with the two-tier approach to dust prevention detailed in Section 5.2, dust suppression water application will be carefully targeted. This approach will ensure that the objective of mitigating adverse effects of dust discharges without exceedance of the water take limit can be achieved.

Meteorological data will be logged and archived and will be used in the complaints response procedure (see Section 10.2).

8.3 Frequency of Monitoring

Table 4 outlines the frequency of the activities undertaken as part of the monitoring programme.

Table 4: 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 available on www.metvuw.com and www.metservice.com).	Daily and as conditions change
Visual 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
Inspect watering systems (water cannon, sprinklers, water carts and any other spray system) to ensure equipment is maintained and functioning to effectively dampen exposed areas.	Weekly
Inspect dust generating activities (as listed in Section 1.3) to ensure dust emissions are effectively controlled.	Ongoing
Monitor dust generating activities and water application rate.	In winds over 7.5 m/s blowing all directions.

8.4 Reporting of Monitoring Programme

The following information must be recorded 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 DMMP):

- Results of the daily site inspections of visible dust emissions;
- Likely source(s) of any observed dust;
- General weather conditions during the day (i.e., windy, calm, warm, rain etc.);
- The frequency of use of the sprinkler system, water cannon and any water carts (if needed);
- Dust control equipment malfunctions and any remedial action(s) taken;
- Any unusual on-site activities; and

- Records of any complaints or other community feedback regarding the waste transfer and processing activities.

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

9.0 DMMP Review

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

- Any significant changes to dust management activities or methods;
- Key changes to roles and responsibilities;
- Changes in industry best practice option for 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 DMMP will be documented and version tracking will be recorded in the 'Document Control' register at the start of this report. A copy of the original DMMP document and subsequent versions will be kept for the project records and marked as obsolete. Each new/updated version of the DMMP documentation will be issued with a version number and date.

10.0 Complaints

10.1 Receipt Procedure

CJ Industries acknowledges the importance of ensuring 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 is responsible for response to and follow up all complaints regarding dust or any other air quality matters, and to ensure that suitable trained personnel are available to respond to complaints at all times.

Following the receipt of a complaint the Site Manager must, as soon as is possible, respond as follows:

- Undertake a site inspection. Note all dust-producing activities taking place and the mitigation methods being used, take photographs for reference as appropriate. If the complaint was related to an event in the

recent past, where possible, note any dust-producing activities taking place at that time and review on site weather records and daily log;

- Initiate any remedial action necessary, which may include a stop wo.rk 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?
- Review meteorological data from the on-site station;
- Note if the complaint has been referred to the TDC;
- 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 quarry activities causing the complaint, it is important to verify this, for example, photograph the source and emissions and/or make notes;
- As soon as possible after initial investigations have been completed, contact the complainant to explain any problems found and remedial actions taken; and
- If necessary, update any relevant procedures to prevent any recurrence of problems and record any remedial action taken.

10.2 Response Procedure

Following the receipt of the complaint, the following actions will be undertaken:

- Fill out the appropriate complaint form, attached as Appendix C to this DMMP;
- 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; and
- Call or visit the complainant to update them on the actions taken and to check that the issue has been resolved.

11.0 Emergency Contacts

Internal contacts for the site in the event of an emergency of other problems are provided in Table 5 and Table 6 below.

Table 5: Internal Environmental Emergency Contact Details			
Role	**Name**	**Organisation**	**Phone**
Site Manager	TBC	CJ Industries	TBC
Environmental and Consents Officer	TBC	CJ Industries	TBC
After Hours Contact	TBC	TBC	TBC

Table 6: External Environmental Emergency Contact Details				
Role	**Name**	**Organisation**	**Phone**	**Email**
Consents Compliance Team	TBC	Tasman District Council	TBC	TBC

12.0 Annual Report

CJ Industries must prepare an annual monitoring report for the period of 1 July to 30 June and provide to the TDC on request. The annual monitoring report shall include but not be limited to:

1. A record of any maintenance of the meteorological monitoring system undertaken over the proceeding 12-month period.
2. The annual complaints record and any investigation, remediation or additional monitoring undertaken as a result of the complaint.

Appendix A: 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 material disturbance areas or site access roads?	Y N N/A	
Are unsealed surfaces dry and need spraying with water?	Y N N/A	
Are any exposed earthworks or or material disturbance areas 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. sprinklers, 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	
How frequently has water sprinkling/spraying been used today (i.e.		

Scope of Inspection	Circle Relevant Item	Comments
number of sprinklers, cannons, time, area watered)		
Note and dust control equipment malfunctions (and remedial actions taken as appropriate)		
Any unusual on-site activities today?		
Complaints received / community feedback		

Appendix B: 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:

Type of dust

Time of the intial impression:

Any visible dust deposits: Y/N

Plume width (if known):

VISIBLE DUST DEPOSITS

Describe approximate quantites 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 colected on strips of clear cellotape, 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:

- [ ] I did not find any dust
- [ ] I did find dust and consider it would not be objectionable at any location for any duration or frequency
- [ ] I did find dust and consider it would be objectionable if it became continuous
- [ ] I did find dust and consider it would be objectionable if it occurred on a regular or frequent basis
- [ ] I did detect dust and consider it to be objectionable even in periods of short duration.

FINAL CHECKLIST

- [ ] Upwind assessment completed. Record details below. If not, detail reason: _____
- [ ] Aerial photo/sketch showing location of assessment and upwind assessment attached
- [ ] 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

Site 1:

Wind direction: Wind strength: Wind stability: GPS Loc:
Visible dust: Desciption of dust
Comment:

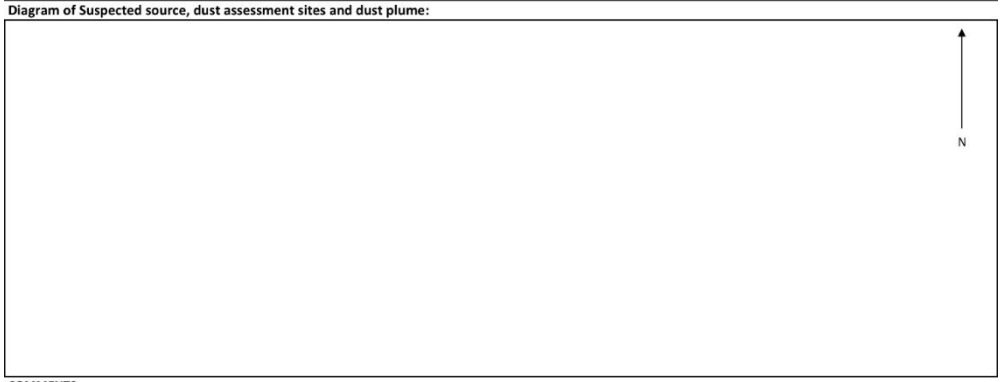
Site 2:

Wind direction: Wind strength: Wind stability: GPS Loc:
Visible dust: Desciption of dust:
Comment:

Site 3:

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:

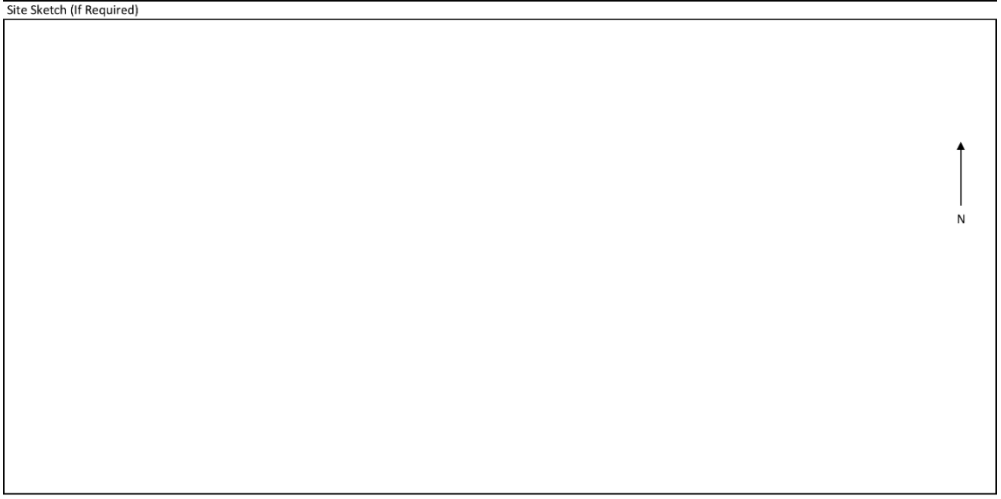
Staff contact phone number:
Current site operations:

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 meterological data, especially temperature from websites such as 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.