Oparure Quarry: South-Western Pit – Air Quality Management Plan

Prepared for

Graymont New Zealand Limited

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Quality Control Sheet

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Limitations:

This report has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by Graymont (NZ) 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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1.0 Introduction

The South-Western Pit – Air Quality Management Plan (AQMP) has been prepared by Pattle Delamore Partners Ltd (PDP) on behalf of Graymont (NZ) Ltd (Graymont). The AQMP applies to the South-Western Pit ('SW Pit', the new pit) and associated haul road operated by Graymont.

1.1 Purpose

The primary purpose of this AQMP is to enable Graymont to comply with the following two key proposed consent conditions[1]:

71. The consent holder shall engage an independent suitably qualified and/or experienced person(s) to prepare an Air Quality Management Plan (or 'AQMP') which shall form part of the P&HMP [...]

72. The AQMP shall include, but shall not be limited to the following:

a) The measures that the Applicant shall use to:

i. Manage, mitigate and/or suppress dust emissions within the boundary of the site that have the potential to create dust impacts beyond the Site's boundary;

ii. Control discharges of dust to air from stockpiles;

iii. Limit exposed unconsolidated surfaces as much as practicable;

iv. Limit discharges of dust caused by vehicle movements;

v. Manage discharges associated with earthmoving and quarrying;

vi. Manage discharges of dust resulting from trucks being loaded / unloaded;

vii. Comply with the requirements of conditions 71, 73, 74 and 75 of this resource consent;

b) The visual and meteorological monitoring that the consent holder shall undertake to monitor the effectiveness of its air quality controls; and

c) The reporting that will be provided to the Chief Executive Officer of the WRC (or delegate) including the frequency of such reporting.

[1] Western Pit _WRC draft conditions V45. Enspire document dated 01/07/26.

The secondary purpose of the AQMP is to provide a framework for the SW Pit operations and site personnel, in particular to:

- Facilitate the avoidance, remediation, and mitigation of any adverse effects of discharges of dust generated from the extraction of material and associated activities undertaken at the site;
- Promote proactive solutions to the control of dust discharges from the site; and
- Ensure the effective and targeted use of available dust suppression water so that adverse effects of dust discharges are mitigated without exceedance of the water take limit.

1.2 Objectives

The primary objectives of the AQMP are set out by the two following proposed consent conditions:

70. *The consent holder shall ensure that the implementation of this resource consent does not result in a discharge of airborne particulate matter that causes offensive or objectional visible plumes or deposited dust beyond the boundary of the Site.*

71. *The consent holder shall engage an independent suitably qualified and experienced person(s) to prepare an Air Quality Management Plan (or 'AQMP') which shall form part of the P&HMP. The objective of the AQMP is to ensure compliance with condition 70. More particularly, it is to:*

    a. *Set out the measures and methods that are to be implemented to avoid, remedy or mitigate any adverse effects of discharges of dust generated from the extraction of material and associated crushing activities undertaken at the Site;*

    b. *Promote proactive solutions to control of dust discharges from the Site; and*

    c. *Ensure the effective and targeted use of available dust suppression water so that adverse effects of dust discharges are mitigated.*

The AQMP's dust control methods shall be effective and practical for Graymont to implement. The AQMP shall be a living document subject to continual improvement to mitigation approaches based on monitoring.

1.3 Consent Requirements for Dust Management

The following proposed consent conditions set out the high-level dust control requirements for the SW Pit.

73. *The maximum area of unconsolidated land comprising the excavation areas, backfilling areas and unvegetated rehabilitation areas shall not exceed 59.6 hectares.*

74. *If at any time, including outside normal operating hours, visible dust is blowing beyond the boundary of the Site the Consent Holder shall:*

    a. *Cease any activity that is generating the visible dust;*

    b. *Continue or start dust suppression activities including but not limited to the immediate watering of both active and inactive exposed surfaces;*

    c. *Investigate possible sources of the dust; and*

    d. *Only recommence the dust generating activity once measures are in place and operating to ensure that condition 70 is achieved.*

The methods by which these dust control measures will be implemented are detailed in Sections 4.0 to 7.0.

1.4 Background Information

An assessment of the sensitivity of the receiving environment and identification of the location of highly sensitive receptors is provided in the PDP report: Oparure Quarry South-Western Pit - Air Quality Assessment ('AQA', 04/05/2026). The location of the proposed SW Pit, a 500 m buffer and the location of the two nearest residential dwellings are shown in Figure 1.

The SW Pit dust generating activities and the factors which determine the dust discharge rate are detailed in Section 4.0 of the AQA.

Figure 2 shows the SW Pit outline at its maximum proposed spatial extent (59.6 ha).

The Oparure Pit has a separate air discharge consent and AQMP. The SW Pit AQMP has been written aiming to ensure that all emission, mitigation and monitoring activities undertaken on site are consistent with both the Oparure Pit AQMP and the relevant conditions of consent.

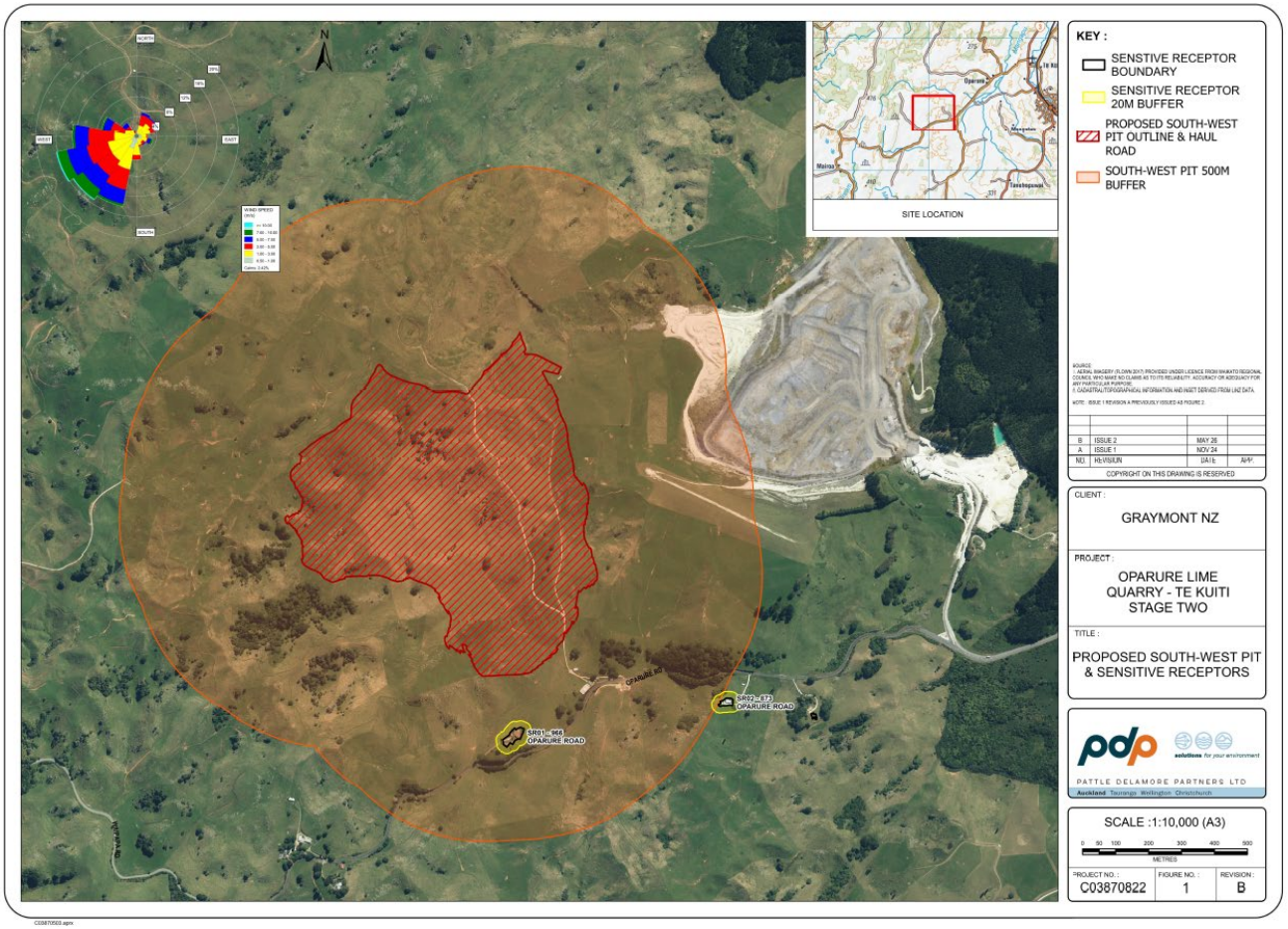


Figure 1: Extent of SW Pit, 500 m buffer and sensitive receptors in the surrounding area

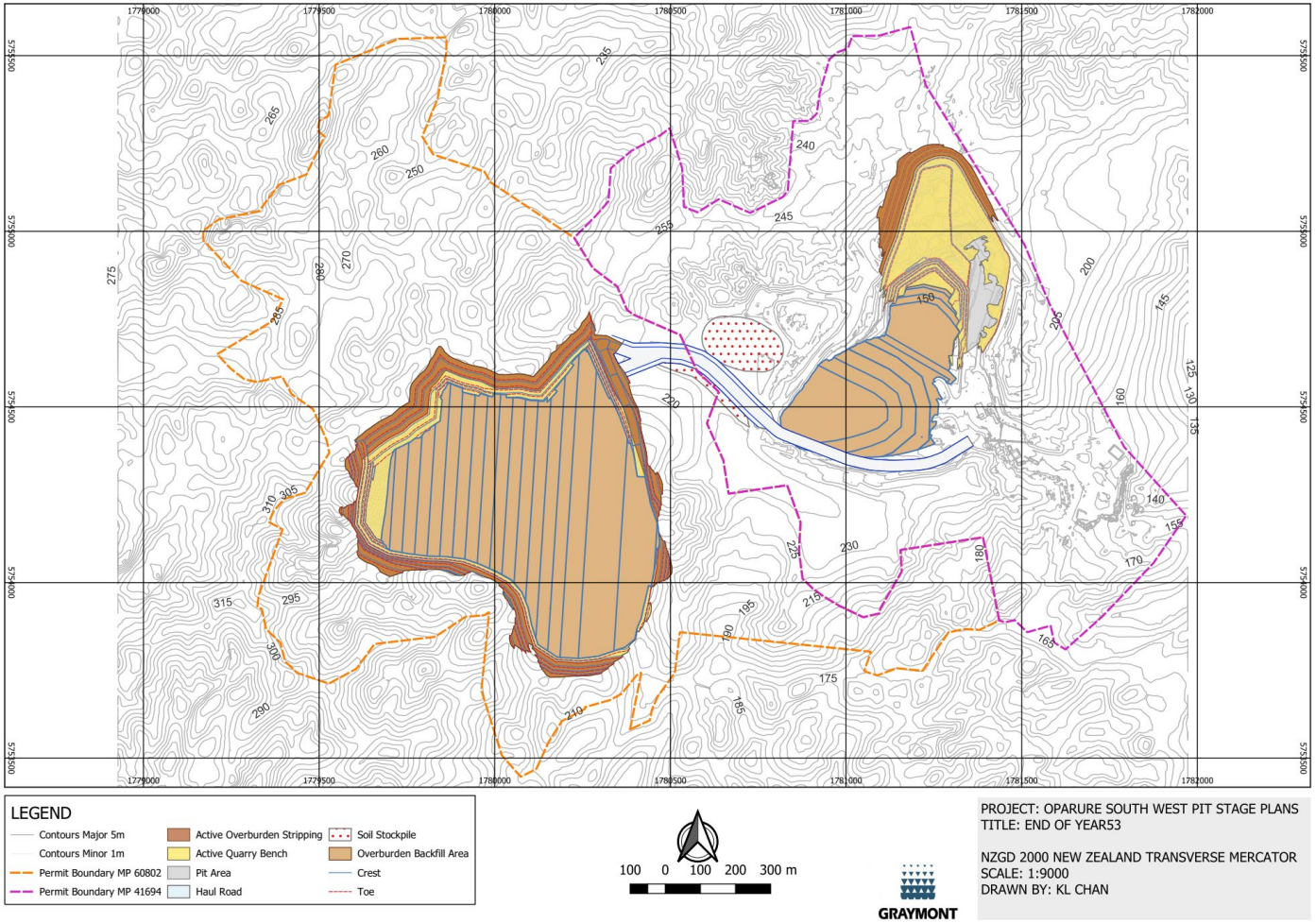


Figure 2: Plan showing the maximum SW Pit outline and haul road to Oparure Pit

2.0 Environmental Performance Indicator

The environmental performance indicator of the relevant consent is defined in proposed Condition 70.

> 70. *The consent holder shall ensure that the implementation of this resource consent does not result in a discharge of airborne particulate matter that causes offensive or objectional visible plumes or deposited dust beyond the boundary of the Site.*

3.0 Sources of Dust

Figure 3 provides a map showing the Oparure Pit and SW Pit priority areas for dust suppression water. In order of size, the key sources of dust in the SW Pit are:

- Active Haul Roads (red and blue lines);
- Processing area (light blue box);
- Product stockpile area (light green shape);
- Overburden haul road example (yellow line);
- Quarry working area (limestone extraction and loading); and
- Stockpiles (topsoil / overburden) – (red oval).

Machine generated dust will include:

- Topsoil and overburden stripping;
- Topsoil and overburden stockpiled being stored in stockpiles for reuse later or be used in rehabilitation within the previously quarried pit areas;
- Overburden being dumped in previously quarried areas for rehabilitation or stockpiled on the northern side of the SW Pit haul road;
- Benched excavation to desired pit depth;
- Dump trucks enter the SW Pit via associated haul road (from the Oparure Pit processing area);
- Limestone rock loaded at pit floor;
- Filled dump trucks deliver rock to processing area;
- Up to eight mobile machines (excavators, loaders, and trucks) including a water cart will be used on-site during site development; and,
- A maximum of 10 mobile machines (excavators, loaders, and trucks) including up to two water trucks will be used on site during operation.

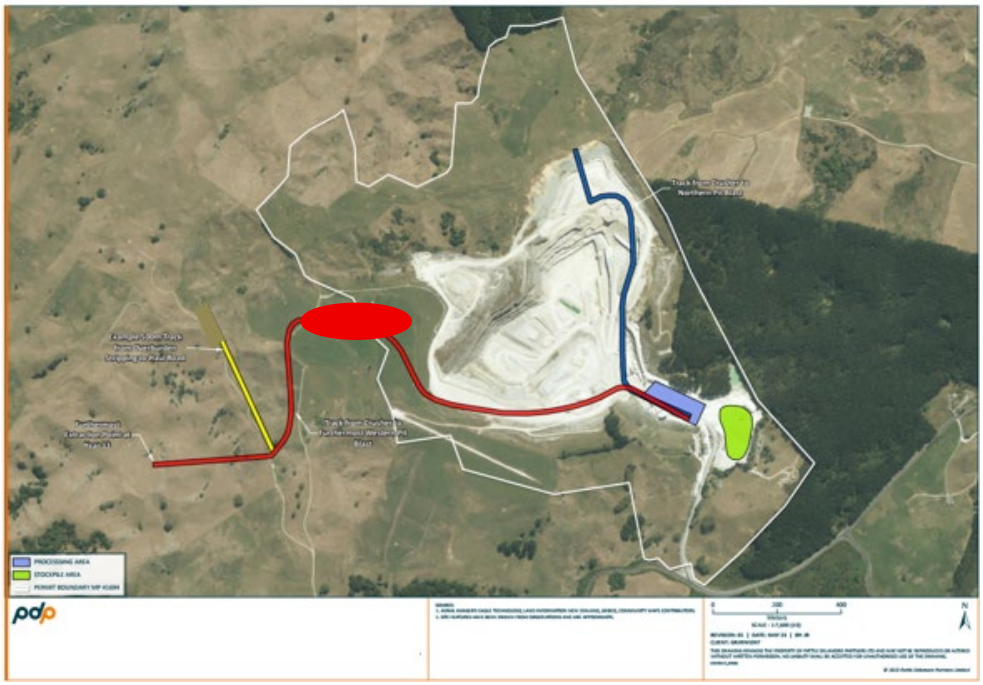


Figure 3: Oparure Pit and SW Pit priority areas for dust suppression water

4.0 Management and Mitigation Measures

4.1 Water Suppression

The primary source of water for dust suppression comes from the stormwater ponds within the Oparure Pit, for which Graymont has an existing consent (AUTH140823.01.01) to take up to 200 m^3/day for dust suppression. Graymont also holds a consent (AUTH142709.09.01) for the take of up to 100 m^3/day from a bore. Water take data from Oparure bore show that, on average, Graymont use 42 m^3/day of the 100 m^3/day consented take. This means, on average, 58 m^3/day would be available from the bore to supplement the water take from the Oparure stormwater pond, giving a total volume of water available for dust suppression to 258 m^3/day.

Further details of the water availability for dust suppression are provided at section 9.1 of the AQA. This analysis demonstrates that the site has sufficient water for dust suppression at both the existing Oparure Pit and SW Pit.

4.2 Tiered Dust Mitigation Measures

The dust mitigation measures required are defined by condition 72 of the resource consent. These mitigation measures are summarised in Table 2. Dust prevention on site will implement a two-tier approach. Tier 1 controls will be employed routinely, and Tier 2 controls will be implemented additionally in the unlikely situation that the Tier 1 controls do not prove to be fully effective based on visual monitoring results.

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

Table 1: Priority of Water Application for Dust Suppression

Water Priority	Type of Source	Proximity to Boundary	Wind Direction
1	Active Haul Roads	Any	Any
2	Processing area	Any	Towards any boundary within 250 m of source
3	Product stockpile area	Any	Towards any boundary within 250 m of source
4	Overburden haul road	Any	Any
5	Quarry working area (limestone extraction and loading)	Within 250 m of site boundary	Towards any boundary within 250 m of source
6	Stockpiles (Topsoil / overburden)	Within 250 m of site boundary	Towards any boundary within 250 m of source

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

Source of Dust	Tier 1 Controls (Routine)	Tier 2 Controls (Additional, as needed)
Unpaved surfaces such as haul roads	⁘ Limit the area of exposed surfaces as much as practical. ⁘ Cover surfaces with coarse materials where practicable. ⁘ Compact all unconsolidated surfaces where practicable. ⁘ Keep active unpaved roads and exposed surfaces within 250 m of the site boundary damp when dust plumes from these sources approach the boundary of the site.	⁘ Increase water application rate to ensure that unpaved surfaces are kept damp, with reference to where visual dust is observed and the prioritisation outlined at Table 1 to focus on key dust risk sources. ⁘ Use polymer additives or chemical stabilisation to assist in forming a surface crust on haul roads.
Vehicles	⁘ As far as practical minimise travel distances and/or maximise buffer distances between haul roads and site boundary through appropriate site layout and design.	⁘ Any vehicles travelling on unsealed surfaces within 250 metres of an external cadastral boundary shall not exceed 20 kilometres per hour.
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 should be regularly maintained to ensure optimal operation. ⁘ Targeted watering on areas within 250 m of sensitive receptors during high dust risk conditions (see Table 3).	⁘ 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)**	**Tier 2 Controls (Additional, as needed)**
	⁘ Reducing or ceasing the operation of the mobile crusher plant when it is being operated within 250 m of the site boundary during high-risk dust conditions. ⁘ The maximum area of unconsolidated land comprising of the excavation areas, backfilling areas and unvegetated rehabilitation areas shall not exceed 61 hectares.	
Stockpiles (including placement and removal)	⁘ Locate stockpiles as far away as practicable from identified sensitive receptors. ⁘ Orientate stockpiles to maximise wind sheltering as much as possible. ⁘ Maintain the height of stockpiles to a practical minimum.	⁘ Use polymer additives or chemical stabilisation to assist in forming a surface crust on stockpiles. Any substances used for dust suppression will be permitted activities under the relevant Waikato Regional Plan and therefore not require a variation of any of the site's consents. ⁘ Limit the height and slope of stockpiles to reduce wind entrainment. ⁘ Vegetation of long-term stockpiles. ⁘ Dampen stockpiles if they are producing visible dust emissions.

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

Source of Dust	Tier 1 Controls (Routine)	Tier 2 Controls (Additional, as needed)
Earthmoving	⁘ Reducing earthworks when working area is within 250 m of the site boundary during high-risk dust conditions. ⁘ Minimise drop heights.	⁘ Adequate water suppression systems must be available at the site to dampen areas that are to be worked prior to any earthwork commencing and shall be used on the site until further earthworks in that area are not required. ⁘ Ceasing earthworks when working area is within 250 m of the site boundary during high-risk dust conditions.
Quarry working area (limestone extraction and loading)	⁘ Reducing extraction and loading when the quarry working area is within 250 m of the site boundary during high-risk dust conditions. ⁘ Minimise drop heights.	⁘ Adequate water suppression systems must be available at the site to dampen quarry working areas if Tier 1 controls are not effective. ⁘ Ceasing extraction and loading when the quarry working area is within 250 m of the site boundary during high-risk dust conditions.
Loading and unloading Trucks	⁘ Limit load sizes and ensure even loading to avoid spillages. ⁘ Minimise drop heights. ⁘ Reducing loading rates when the truck loading is within 250 m of the site boundary during high-risk dust conditions.	⁘ Dampen surface of loads in truck and trailer units ⁘ Ceasing loading when the truck loading is within 250 m of the site boundary during high-risk dust conditions.

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

- That the conditions of all relevant resource consents are complied with at all times;
- That the dust control and mitigation measures and procedures outlined in the AQMP are implemented effectively;
- That there are adequate personnel and equipment on site at all times to enable the prescribed dust control;
- That the meteorological and dust monitoring programmes are 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 at the site have responsibility for following the requirements of the AQMP and reporting to the Site Manager on these issues.

5.2 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 AQMP:

- 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.

6.0 Implementation and Operation of AQMP

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

- Identify staff and assign roles;
- Undertake staff training focusing on the objectives, responsibilities and actions defined by the AQMP; and
- Ensure that all activities undertaken on site are consistent with both the AQMP and the relevant conditions of consent.

The Site Manager will also be responsible for reviewing the effectiveness of the AQMP and if necessary, revising 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 by staff as appointed by the Site Manager to assess the level of dust emissions on the site and beyond its boundary. The visual monitoring will:

- Identify source(s) of dust (e.g. from heavy machinery, stockpiles, earthworks, etc.);
- Identify any areas of deposited dust from the site on surrounding roads and properties;
- Assess 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 – high, medium, or low; and
- Assess overall impact – high, medium, or low.

Staff will continuously visually monitor to identify dust events and report these to the Site Manager.

Staff will conduct a daily observation of dust conditions as part of SW Pit inspections, recording the findings in a daily log.

The Site Manager or delegate shall undertake a detailed site walkover and visual dust monitoring at least once per month, in the early afternoon, to assess the overall effectiveness of the AQMP and assess compliance with the requirements of the resource consent conditions.

Site observations will be recorded in a log form, an example of which is provided as Appendix B. The daily log forms will be kept for at not less than 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 preventative actions in case any adverse effects occur.

7.2 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).

Daily site safety toolbox meeting will include a discussion on dust control. The weather forecast can be reviewed and discussed aiming to identify high dust risk conditions (see Table 3). If high dust risk conditions are forecast, appropriate controls will be discussed with staff.

The forecast occurrence of high dust risk conditions shall be noted in the daily log along with any outcomes from the daily briefing meeting. If the dust risk forecast is high this shall be communicated to the staff at the daily staff toolbox meeting. The frequency of the dust risk forecast being high will increase in spring, be relatively high in summer, decrease in autumn and be relatively low in winter.

The site has its own meteorological station which measures wind speed, wind direction, and rainfall. The meteorological site telemeters data in real time and has an inbuilt alert system which sends text and email messages to the key staff members. The alert system will be set up to provide warnings when medium and high-risk dust conditions occur to enable additional dust mitigation measures to be put in place as required. 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	305 – 44° [1]	-	-
Medium	5 – 7.5 m/s		Text & email	In the vicinity of 966 Oparure Rd: The supervisor or leading hand will 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	In the vicinity of 966 Oparure Rd: Active mitigation to ensure no adverse effects using Tier 1 & Tier 2 dust mitigation measures
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 in downwind direction and to use Tier 1 & Tier 2 dust mitigation measures as appropriate

Notes:

1. *Direction specified as impact are for winds blowing towards the residence at 966 Oparure Road – the only sensitive receptor identified within 250 m of the site boundary.*

Through use of real-time meteorological data to target dust suppression combined with the two-tier approach to dust prevention detailed in Section 4.2, 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 shall be logged and archived and can be used in the complaints response procedure (see Section 9.0).

7.3 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 also available on www.metvuw.com and www.metservice.com).	Daily and as conditions change
Visual dust monitoring: ⁘ Continuously by all staff during the working day ⁘ Daily observation of dust conditions as part of SW Pit inspections ⁘ Monthly spot check by site manager.	Continuously and logged inspections conducted daily over the months October to March and twice a week over the months April to September.
Inspect site access and egress points to ensure dust is being contained to within the site.	Daily
Log form for visual monitoring of dust.	Daily over the months October to March. Twice a week over the months April to September.
Inspect watering systems (water carts and any other spray system) to ensure equipment is maintained and functioning to effectively dampen exposed areas.	Weekly

Table 4: Monitoring Programme Activities and Frequency	
Monitoring Activities	**Frequency**
Inspect dust generating activities (as listed in Table 2) to ensure dust emissions are effectively controlled.	Ongoing
Monitor dust generating activities and water application rate.	In winds over 5 m/s blowing towards the direction of 966 Oparure Road i.e. winds blowing from the northwest to the northeast.

7.4 Reporting of Monitoring Programme

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

- 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 use of the water cart;
- Dust control equipment malfunctions and any remedial action(s) taken;
- Any unusual on-site activities;
- Note any resource consent conditions that have not been complied with;
- Note any dust control and mitigation measures and procedures that have not been implemented effectively;
- Suggest what additional personnel and equipment are needed on site times to enable the prescribed dust control; and,
- Records of any complaints or other community feedback regarding the pit activities.

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

8.0 AQMP Review

The AQMP will be reviewed and updated, with the necessary certification from the WRC, throughout the course of the project to reflect changes in dust management techniques, staging of fill areas, or changes to the receiving environment. Once an amended version of this AQMP has been certified it will be implemented, and the superseded version will be removed from site.

9.0 Complaints

The receipt, response and reporting procedure for all complaints about site impacts including dust is defined by proposed conditions 83 and 84 of the consent.

83. *The consent holder shall maintain a 'Complaints Register' for the activities that are conducted in accordance with this resource consent. The Complaints Register shall specify:*

    a. *The date and time of the complaint;*

    b. *The name and contact details of the complainant (if they are provided to the consent holder);*

    c. *A description of the complaint, including the nature of the complaint, the duration of the event giving rise to the complaint, and the location from which the complaint arose (if available);*

    d. *The cause or likely cause of the event and any factors that influenced its severity;*

    e. *The nature and timing of any measures implemented by the consent holder to avoid, remedy or mitigate any adverse effects;*

    f. *The steps to be taken in future to prevent recurrence of similar events; and*

    g. *Any feedback provided to the complainant.*

84. *The consent holder shall provide a copy of the complete complaints register to the Chief Executive Officer of the WRC (or delegate) within five working days of receiving a request to do so from the WRC.*

10.0 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	Email
Site Manager	TBC	Graymont NZ Ltd	TBC	TBC
After Hours Contact	TBC	TBC	TBC	TBC

Table 6: 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). (2016). *Guidance on the assessment of mineral dust impacts for planning.*

Ministry for the Environment. (2016). *Good Practice Guide for Assessing and Managing Dust*. Available at www.mfe.govt.nz.

Pattle Delamore Partners Ltd. (04/05/2026), *Oparure Quarry South-Western Pit - Air Quality Assessment.* PDP Report Reference C038700004..

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: Example Log Form

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: _____

Dust Inspection and Assessment Checks		
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	
How frequently has water sprinkling/spraying been used today (i.e. number of water carts, time, area watered)		

Dust Inspection and Assessment Checks		
Scope of Inspection	**Circle Relevant Item**	**Comments**
Note any dust control equipment malfunctions (and remedial actions taken as appropriate)		
Any unusual on-site activities today?		
Complaints received / community feedback		

Appendix C: Example 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:

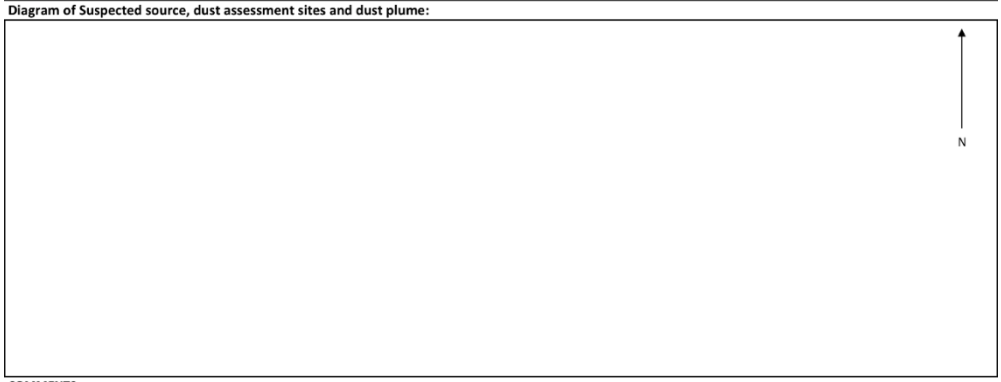
Site 3:

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:

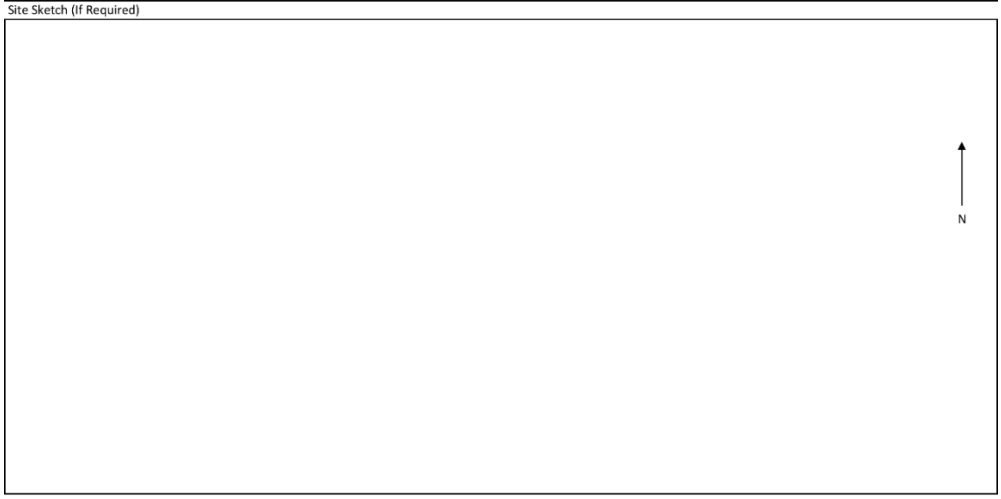
Current site operations:

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.