




Air Quality Management Plan

Project Name	Ardglen Quarry
Job No.	BAR
Client	Various
Contract No.	N/A

Document No. 1
Holder: DARACON / Client

Revision	Date	Prepared by	Reviewed by Quarry Manager	Authorised by Systems Manager	
				Name	Sign
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1. INTRODUCTION

Ardglen Quarry (the Quarry) is located on Lot 218 DP 751028, Lot 1 DP 1001734, Lot 187 DP 751028, Lot 39 DP 751028 and Lot 49 DP 751028, adjacent to the small rural community of Ardglen. Ardglen is approximately 5 kilometres (km) northwest of Murrurundi and 60 km southwest of Tamworth. The Quarry is owned and operated by Buttai Gravel Pty Ltd (trading as Daracon Quarries).

NSW Railways owned and operated the Quarry for over 100 years prior to the purchase by Daracon. In 2008 Daracon was granted approval under Part 3A of the Environmental Planning & Assessment Act 1979, to extend quarrying activities into the adjacent lot west of the existing operation, Lot 218 DP 751028. In December 2010 Daracon was granted approval for a modification to the Project Approval (Mod 1) and most recently in March 2021 approval was granted for a second modification to the Project Approval (Mod 2 - the Approval)

The Approval permits:

- the extraction and processing of up to 500,000 (tpa) of material
- transport of a combined total 500,000 tonnes/year of quarrying products from the site by road and/or rail by either:
 - transport of 250,000 (tpa) of quarrying products from the site by rail
 - transport of 500,000 (tpa) of quarrying products from the site by road
- Installation of noise management measures including barriers/bunds
- Modify the sediment basin, in pit sump and water treatment measures
- import of up to 80,000 tonnes/year for blending with quarried materials
-

The following Air Quality Management Plan (AQMP) details the measures required to mitigate the environmental effect on air quality of the above activities. It also details the air quality monitoring programs to assess and report the levels of impact, in compliance with Schedule 3 of the Approval.

This document has been prepared to satisfy the requirements of Section 3, Condition 17 of the Approval.

2. OBJECTIVES

The objectives of this AQMP are:

- To comply with all statutory requirements related to air quality management;
- To minimise air quality impacts on surrounding residents and properties;
- To maintain reasonable levels of amenity for surrounding residents;
- To keep the local community and regulators informed and to respond quickly and effectively to issues and complaints; and
- To ensure that air quality is measured according to best practice and results are presented in a timely and transparent manner to stakeholders.
- To employ best practice environmental planning methodologies;
- To construct and/or incorporate within the works appropriate environmental control measures;
- To provide guidance for relevant training to all personnel involved in environmental aspects (incl. site induction, specific environmental aspects, toolbox talks);

This AQMP (Including the 'Monitoring Program' and 'Compliance Protocol') has been prepared to satisfy the requirements of the Approval and the Environmental Protection Licence (EPL #1115) associated with the Ardglen Quarry operations.

In addition to meeting the specific performance measures and criteria in this Approval, we also commit to implementing all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this Approval.

Additionally, we commit to applying existing management strategies plans or programs until the approval of a similar plan following the determination of the Approval.

3. LEGAL AND OTHER REQUIREMENTS

Daracon Group has an obligation under the provisions of the Protection of the Environment Operations (POEO) Act 1997, to protect the environment and prevent air pollution. Accordingly, it is a requirement of consent, as per the Approval and EPL #1115 that a program of environmental controls pertaining to air quality be planned, documented implemented and monitored for Ardglan Quarry.

3.1 Project approval

Table 1 below outlines the relevant Project Approval conditions and where they have been addressed within the AQMP.

Table 1 – Regulatory Requirements

Condition	Description	Section(s) Addressed																																		
Schedule 3 Condition 1	<p>The Applicant must comply with the hours of operation in Table 1 from the Approval.</p> <p><i>Table 1: Hours of Operation</i></p> <table border="1" data-bbox="411 969 1142 1500"> <thead> <tr> <th>Activity</th> <th>Day</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Topsoil/overburden removal/emplacement</td> <td>Monday-Saturday</td> <td>7.00am to 5.00pm</td> </tr> <tr> <td>Sunday</td> <td>None</td> </tr> <tr> <td rowspan="2">Blasting</td> <td>Monday-Friday</td> <td>10:00am to 3.00pm</td> </tr> <tr> <td>Saturdays, Sundays and Public Holidays</td> <td>None</td> </tr> <tr> <td rowspan="2">In-pit activities (including drilling, extraction, and transfer of material out of the pit)</td> <td>Monday-Saturday</td> <td>7.00am to 5:30pm</td> </tr> <tr> <td>Sundays and Public Holidays</td> <td>None</td> </tr> <tr> <td rowspan="2">Out-of-pit activities (including processing, and stockpiling)</td> <td>Monday-Saturday</td> <td>7.00am to 5:30pm</td> </tr> <tr> <td>Sundays and Public Holidays</td> <td>None</td> </tr> <tr> <td>Maintenance (if inaudible at nearby residences)</td> <td>Monday-Sunday</td> <td>Any time</td> </tr> <tr> <td rowspan="2">Truck loading and distribution</td> <td>Monday-Saturday</td> <td>6.30am to 5.30pm</td> </tr> <tr> <td>Sundays and Public Holidays</td> <td>None</td> </tr> <tr> <td>Rail loading</td> <td>Monday-Sunday</td> <td>7:00am to 10:00pm</td> </tr> </tbody> </table> <p><i>Note:</i></p> <ul style="list-style-type: none"> The Applicant may load no more than 2 trains each year outside the hours listed in Table 1 (see condition 41). The Applicant may carry out blasting operations outside the hours listed in Table 1 for safety reasons provided the Applicant has notified EPA and the local community about the proposed blast. 	Activity	Day	Time	Topsoil/overburden removal/emplacement	Monday-Saturday	7.00am to 5.00pm	Sunday	None	Blasting	Monday-Friday	10:00am to 3.00pm	Saturdays, Sundays and Public Holidays	None	In-pit activities (including drilling, extraction, and transfer of material out of the pit)	Monday-Saturday	7.00am to 5:30pm	Sundays and Public Holidays	None	Out-of-pit activities (including processing, and stockpiling)	Monday-Saturday	7.00am to 5:30pm	Sundays and Public Holidays	None	Maintenance (if inaudible at nearby residences)	Monday-Sunday	Any time	Truck loading and distribution	Monday-Saturday	6.30am to 5.30pm	Sundays and Public Holidays	None	Rail loading	Monday-Sunday	7:00am to 10:00pm	Section 8
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Impact Assessment Criteria																																				

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Schedule 3 Condition 15	<p>The Applicant must ensure that the dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 8, 9 and 10 at any residence on privately-owned land.</p> <p>Table 8 from the consent: Long term impact assessment criteria for particulate matter</p> <table border="1" data-bbox="392 618 1222 808"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>^{a, c} 90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>^{a, c} 25 µg/m³</td> </tr> <tr> <td>Particulate matter < 2.5 µm (PM_{2.5})</td> <td>Annual</td> <td>^{a, c} 8 µg/m³</td> </tr> </tbody> </table> <p>Table 9 from the consent: Short term impact assessment criterion for particulate matter</p> <table border="1" data-bbox="392 943 1222 1093"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24 hour</td> <td>^b 50 µg/m³</td> </tr> <tr> <td>Particulate matter < 2.5 µm (PM_{2.5})</td> <td>24 hour</td> <td>^b 25 µg/m³</td> </tr> </tbody> </table> <p>Table 10 from the consent: Long term impact assessment criteria for deposited dust</p> <table border="1" data-bbox="392 1227 1222 1361"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Maximum increase in deposited dust level</th> <th>Maximum total deposited dust level</th> </tr> </thead> <tbody> <tr> <td>^dDeposited dust</td> <td>Annual</td> <td>^b 2 g/m²/month</td> <td>^a 4 g/m²/month</td> </tr> </tbody> </table> <p><i>Notes:</i></p> <p>^a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).</p> <p>^b Incremental impact (i.e. incremental increase in concentrations due to the development on its own).</p> <p>^c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.</p> <p>^d Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.</p>	Pollutant	Averaging period	Criterion	Total suspended particulate (TSP) matter	Annual	^{a, c} 90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	^{a, c} 25 µg/m ³	Particulate matter < 2.5 µm (PM _{2.5})	Annual	^{a, c} 8 µg/m ³	Pollutant	Averaging period	Criterion	Particulate matter < 10 µm (PM ₁₀)	24 hour	^b 50 µg/m ³	Particulate matter < 2.5 µm (PM _{2.5})	24 hour	^b 25 µg/m ³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	^d Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month	Section 5 Section 6 Section 8
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Schedule 3 Condition 15A	The air quality criteria in Tables 8, 9 and 10 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or infrastructure to exceed the air quality criteria, and the Applicant has advised the Department in writing of the terms of this agreement.	Section 5																													

Condition	Description	Section(s) Addressed
Operating Conditions		
Schedule 3 Condition 16	The Applicant must: (a) take all reasonable steps to: (i) minimise the particulate matter (including PM ₁₀ and PM _{2.5}) emissions of the development, paying particular attention to minimising wheel-generated haul road emissions;	Section 8
	(ii) improve energy efficiency and reduce greenhouse gas emissions of the development;	Section 8
	(iii) minimise any visible off-site air pollution generated by the development; and	Section 8
	(iv) minimise the extent of potential dust generating surfaces exposed on the site at any given point in time;	Section 8
	(b) operate an air quality management system to guide the day to day planning of quarrying operations and implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent;	Section 8
	(c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note C to Tables 8 to 10 above);	Section 8
	(d) carry out regular air quality monitoring to determine whether the development is complying with the relevant conditions in this consent; and	Section 9
(e) regularly assess meteorological and air quality monitoring data and relocate, modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.	Section 8	
Monitoring		
Schedule 3 Condition 17	The Applicant must prepare an Air Quality Monitoring Program for the development in consultation with EPA and to the satisfaction of the Planning Secretary. This program must: (a) use a combination of high volume air samplers and dust deposition gauges to monitor the dust emissions from the development;	Section 9
	(b) include a protocol for demonstrating compliance with the air quality impact assessment criteria in this approval; and	Section 9
	(c) be submitted to the Planning Secretary for approval prior to within three months of the determination of MOD 2 (or other timeframe as agreed by the Planning Secretary).	Section 10.1

Condition	Description	Section(s) Addressed
Schedule 3 Condition 17A	The Applicant must implement the Air Quality Monitoring Program as approved by the Planning Secretary.	Section 9
Meteorological Monitoring		
Schedule 3 Condition 18	The Applicant must ensure the development has a suitable meteorological station in the vicinity of the site that:	Section 9
	(a) complies with the requirements in the <i>Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales</i> (DEC, 2007); and	
	(b) is capable of measuring meteorological conditions in accordance with the <i>NSW Industrial Noise Policy</i> (EPA, 2000), unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.	Section 9
Statement of Commitments – Air Quality		
12	In addition to the dust mitigation measures currently employed, the proponent will implement the following measures to ensure particulate matter emissions are minimised: <ul style="list-style-type: none"> • Revegetation of exposed surfaces where possible; • Sealing the haul road; • Limiting the speed limit on unpaved surfaces to 15km/hr; • High level watering of unpaved surfaces (greater than 2L/m²/hr); • Covering all loads leaving the site; • Building a wheel wash at the end of the unpaved section of the haul road(after the weighbridge); and • Wet suppression or chemical coating of static stockpiles. 	Section 8
13	The proponent will prepare and implement an air quality monitoring program for the project. The program will include: <ul style="list-style-type: none"> • A series of dust deposition gauges operated in accordance with the Australian/New Zealand Standard AS/NZS 3580.10.1:2003: and • A series of high volume or low volume air samplers to monitor levels of PM10, operated in accordance with Australian/New Zealand AS/NZS 3580.9.6:2003 and AS/NZS 3580.9.6:2003. 	Section 9

4. RESPONSIBILITIES

As detailed in **Table 2**, it shall be the responsibility of the Quarry Manager (QM) to ensure that the requirements of this plan are implemented.

Table 2 - Responsibilities

Role	Responsibility
Daracon Divisional Manager – Construction Materials	Provide sufficient resources for the implementation of this plan.
Daracon Quarries Manager	<ul style="list-style-type: none"> Oversee the implementation of this plan. Have working knowledge of this plan. Coordinate the implementation of air quality management measures and strategies in accordance with this plan. Be aware of the environmental legislative requirements associated with the quarry and take measures to ensure compliance. Ensure employees are competent through training and awareness programs.
Environmental Officer / Systems Manager	<ul style="list-style-type: none"> Coordinate the review of this plan in accordance with the requirements of the Approval. Coordinate the air quality monitoring program described in this plan. Evaluate and report monitoring results as required by the Consent and Environment Protection Licence (EPL). Coordinate air quality related incident investigations and reporting as required by legislation. Initiate investigations of complaints as received from the public or government agency. Provide primary contact for complaints and supply follow-up information to any complainant. Prepare a report to government agencies or neighbours following incidents/ non-compliances.
All employees and contractors	<ul style="list-style-type: none"> Comply with all requirements in this plan. Report all potential environmental incidents to the Environmental Officer/Quarry Manager immediately. Operate in a manner that minimises risks of incidents to themselves, fellow workers or the surrounding environment. Follow any instructions provided by the Quarry Manager.

5. AIR QUALITY CRITERIA

It is a requirement of the Project Approval (Schedule 3, Condition 15) that dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria listed in **Tables 3, 4 and 5** at any residence on privately-owned land..

Table 3 – Long Term Air Quality Criteria

Pollutant	Averaging Period	Criterion
Total suspended particulate (TSP) matter	Annual	^{a, c} 90 µg/m ³

Pollutant	Averaging Period	Criterion
Particulate matter <10 µm (PM ₁₀)	Annual	a, c 25 µg/m ³
Particulate matter < 2.5 µm (PM _{2.5})	Annual	a, c 8 µg/m ³

Table 4 – Short Term Air Quality Criteria

Pollutant	Averaging Period	Criterion
Particulate matter <10 µm (PM ₁₀)	24 hour	^b 50 µg/m ³
Particulate matter <2.5 µm (PM _{2.5})	24 hour	^b 25 µg/m ³

Table 5 – Depositional Dust Criteria

Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	^b 2 g/m ² .month	^a 4 g/m ² .month

Notes to Tables 3,4 and 5:

^a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).

^b Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

^c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.

^d Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.

The air quality criteria in Tables 3, 4 and 5 do not apply where an agreement is in place with the owners of the relevant residence or infrastructure to exceed the air quality criteria, and the Department of Planning, Industry & Environment (DPIE) has been advised of the terms in writing (Schedule 3, Condition 15A).

6. SENSITIVE RECEPTORS

Daracon has identified the sensitive receptors for air quality as shown in **Table 6** and presented in Appendix B.

Table 6 – Sensitive Receptors

Receptor ID	Description
1	Residence –south of quarry.
2	Residence – eastof quarry.
4	Residence – north east of quarry.
5	Residence – north-east of quarry.
6	Residence – north-east of quarry.
7	Residence – north-east of quarry.
8	Residence – north-east of quarry.
9	Residence – north-east of quarry.
10	Residence – north of quarry.
11	Residence – north of quarry.

Receptor ID	Description
12	Residence – north of quarry.
13	Residence – north west of quarry.
14	Residence – north of quarry.
15	Residence – north-east of quarry.
16	Residence – north-east of quarry.
17	Residence –east of quarry.

Daracon will undertake regular community consultation (via the Community Consultation Committee) prior to and during the operation of the Quarry in accordance with Schedule 5 Condition 8 of the Approval.

7. ACTIVITIES WHICH MAY IMPACT AIR QUALITY

During operation, there is the potential for dust to be generated from multiple sources;

- Stripping of overburden;
- Drilling and blasting of rock;
- Loading product to haul and road trucks;
- Loading product to rail carriages;
- Dumping of product at the crushing facility;
- Crushing and screening;
- Dumping of material to stockpiles by front end loaders and conveyors;
- Wheel generated dust from road trucks, haul trucks and mobile equipment;
- Wind generated dust from exposed areas and stockpiles;
- Loading sales trucks;

8. MITIGATION MEASURES

In accordance with Schedule 3, Condition 16 of the Approval, Daracon will,

(a) take all reasonable steps to:

- (i) minimise the particulate matter (including PM₁₀ and PM_{2.5}) emissions of the development, paying particular attention to minimising wheel-generated haul road emissions;
- (ii) improve energy efficiency and reduce greenhouse gas emissions of the development;
- (iii) minimise any visible off-site air pollution generated by the development; and
- (iv) minimise the extent of potential dust generating surfaces exposed on the site at any given point in time;

(b) operate an air quality management system to guide the day to day planning of quarrying operations and implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent;

(c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note C to Tables 2 to 4 above);

(d) carry out regular air quality monitoring to determine whether the development is complying with the relevant conditions in this consent; and

(e) regularly assess meteorological and air quality monitoring data and relocate, modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.

Specifically, the air quality management measures listed in **Table 7** have been adopted to minimise the impacts of particulate (dust) emissions from Ardglen Quarry. The aim of these procedures is to minimise dust from the sources listed previously in Section 7. During periods of excessive background dust from off-site sources, or in the case where mitigation measures are unable to reduce air pollution to an acceptable level, the Quarry Manager will ensure that pollution-generating activities are stopped until air pollution levels are acceptable.

We commit to implementing and complying with the work hours listed in Table 1 of the Approval.

We also commit to ensuring that the dust emissions generated by the development do not cause additional exceedances of the air quality impact assessment criteria shown in the Approval.

Table 7 – Mitigation Measures

Potential Pollution Source	Control Measures
Wind generated dust from exposed areas and stockpiles.	Wet suppression or chemical coating will be used on static stockpiles. Minimising the size and number of dust generating exposed areas and stockpiles at any time.
Wheel generated dust from road trucks, haul trucks and mobile equipment	The haul road is sealed to / from the wheel wash to minimise dust. Covering all loads leaving the site. The speed limit on unpaved surfaces is limited to 20km/hr. Maintaining vehicle speeds at a level where visible dust is restricted to below half the wheel height. High level watering will be done on unpaved surfaces. This will be achieved through the use of a water cart. A wheel wash will be built at the end of the unpaved section of the haul road for vehicles leaving the unpaved road. Dust generating activity from road trucks, haul trucks and mobile equipment will be limited to the approved hours of operation.
Loading product to haul and road trucks	All loads leaving the site will be covered. Stockpiles will be kept damp via watercart or fixed sprays. Dust generating activity from road trucks, haul trucks and mobile equipment will be limited to the approved hours of operation.
Fixed materials handling activities: Crushing and screening. Dumping of product at the crushing facility. Loading product to rail carriages.	Minimising dust-generating activities during times of high wind speeds. Reduction of the intensity/rate of activities in response to excessive dust generation. In response to frequent, intense air pollution generation from plant or machinery, engineering modifications will be investigated for the offending device. Dust generating activity from crushing, screening, stockpiling and rail loading will be limited to the approved hours of operation.

Potential Pollution Source	Control Measures
<p>Other quarrying activities -</p> <p>Dumping of material to stockpiles by front end loaders and conveyors.</p> <p>Drilling and blasting of rock.</p> <p>Stripping of overburden.</p>	<p>Daracon shall continuously monitor meteorological data and forecasts to allow for proactive management of weather conditions.</p> <p>Management responses will include minimising or ceasing dust-generating activities during times of high wind speeds.</p> <p>Relocation of offending plant and equipment to less sensitive on-site areas.</p> <p>Reduction of the intensity/rate of activities in response to excessive dust generation.</p> <p>In response to frequent, intense air pollution generation from plant or machinery, engineering modifications will be investigated for the offending device.</p> <p>Daracon shall continuously monitor the site visually during operational hours to ensure any visible air pollution generated by the project is assessed and quarrying operations are relocated, modified, and/or stopped as required to minimise air quality impacts.</p> <p>Dust generating activity from stockpiling and material handling, and blast and overburden stripping will be limited to the approved hours of operation.</p>
<p>Vehicles and power generation producing greenhouse gases</p>	<p>Daracon shall continue to monitor energy use from the project and seek and implement appropriate efficiencies where practical opportunities allow. Such efficiencies maybe identified through reduced fuel and electricity usage wherever possible.</p>

Dust mitigation methods will regularly be reviewed for adequacy, with alterations made as necessary to minimise the impacts of particulate (dust) emissions from Ardglan Quarry.

9. AIR MONITORING



The air quality monitoring actions listed in **Table 8** will be installed to demonstrate compliance with the air quality assessment criteria listed in the Project Approval and the EPL. Monitoring results will be assessed against performance criteria as soon as practicable after receipt of the results.


In combination with a review of any feedback received from the community or regulatory authorities during the monitoring period, all air quality results will be carefully reviewed against the Approval criteria and reported via the Daracon website to demonstrate compliance with the air quality impact assessment criteria.

We also commit to implementing the Air Quality Monitoring Program (AQMP), as approved by the Planning Secretary within 3 months of approval of the AQMP.

Additionally, the Quarry Manager or delegate will keep a record of changing wind and dust conditions on the *Environmental Inspection Report IM-REP-0503-001* and the actions undertaken to control the conditions. These inspections shall be recorded at least weekly and during working hours.

Table 8 – Air Quality Monitoring Program

Parameter	Frequency	Locations	Limit/Guideline
Deposited dust	Monthly.	DG-1 located at Receptor 17 (EPL point 2). DG-2 located at Receptor 7 (EPL point 3). DG-3 located at Receptor 11 (EPL point 4).	Deposition Rate Maximum increase in deposited dust level: 2 g/m ² .month. Maximum total deposited dust level: 4 g/m ² .month.
Dust deposition is measured via a passive funnel and bottle arrangement as shown here			
Total suspended particulate (TSP) matter	24 hours every 6 days.	TSP-1 located at Receptor 17.	Concentration 90 µg/m ³ as an annual average.
TSP is measured via a high volume air sampler arrangement as shown here			

Parameter	Frequency	Locations	Limit/Guideline
Particulate matter < 10 µm (PM ₁₀)	24 hours every 6 days.	PM10-1 located at Receptor 17. PM10-2 located at Receptor 11.	Concentration 50 µg/m ³ as a 24 hour average. 25 µg/m ³ as an annual average.
PM10 is measured via a high volume air sampler arrangement as shown here			
Particulate matter < 2.5 µm (PM _{2.5}) Note: Monitoring to commence within 3 months of approval of this plan.	24 hours every 6 days.	PM2.5-1 located at Receptor 11.	Concentration 25 µg/m ³ as a 24 hour average. 8 µg/m ³ as an annual average.
PM2.5 is proposed to be measured using a PQ200 Sampler as described here	<p align="center">PQ200 Sampler - PM2.5 w/ VSCC</p> <p>The PQ200 FRM Sampler uses BGI pioneering technology to meet and exceed the requirements for ambient particulate sampling dictated by the U.S Environmental Protection Agency (EPA). This includes the design of reliable PM10, PM2.5 and PM1 Inlets, volumetric sample flow rate control, data logging and software for report and data processing. The PQ200 configured for PM2.5 sampling includes a BGI Very Sharp Cut Cyclone (VSCC "TM") and PM10 louvered inlet head as well as the following stand-out features;</p> <ul style="list-style-type: none"> -EPA PM2.5 Reference Method sampler (Designation No. RFPS-0498-116) -EPA PM Coarse approved sampler (Designation No. RFPS-1208-173) -Only designated reference sampler capable of a 24-hour run using internal battery. Internal battery provides power during AC power outages meaning you never have sample interruptions. -Ordered by EPA as the PEP Audit Reference Method - Automatic, multi-point flow calibration using the deltaCal calibrator 		

Parameter	Frequency	Locations	Limit/Guideline
Meteorological station	Continuous.	Immediately adjacent to Quarry site	<p>Project Approval Schedule 3, Condition 18</p> <p>The Applicant must ensure the development has a suitable meteorological station in the vicinity of the site that:</p> <p>(a) complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); and</p> <p>(b) is capable of measuring meteorological conditions in accordance with the NSW Industrial Noise Policy (EPA, 2000),</p> <p>unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.</p> <p>We will ensure that the meteorological station complies with the requirement in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales and in accordance with the NW Industrial Noise Policy.</p>

Refer to **Appendix B** of this plan for the dust monitoring locations.

9.1 Non-compliance and Incident Protocol

Pursuant to Schedule 5, Condition 3A of the Approval, within seven days of becoming aware of an exceedance of the limits/performance criteria (a non-compliance), Daracon shall notify DPIE in writing (compliance@planning.nsw.gov.au) and any other relevant Agencies. Reporting the non-compliance shall be the responsibility of the Quarry Manager unless delegated at the assigned at the time of detection.

Furthermore, Daracon will notify the DPIE in writing (compliance@planning.nsw.gov.au) and any other relevant Agency immediately after it becomes aware of an incident as defined by the Approval. An incident notification shall include (at a minimum) the identity of the development and set out the location and nature of the incident.

A non-compliance notification shall (at a minimum):

- Identify the development (including development application number and name);
- Set out the condition of this consent that the development is non-compliant with;
- Indicate why it does not comply and the reasons for the non-compliance (if known); and
- What actions have been, and will be undertaken to address the non-compliance.

In addition to the above notifications issued to the DPIE and other relevant agencies, as per Schedule 4, Conditions 1 and 1A of the Approval, in the event of a non-compliance where impacts to air quality exceed assessment criteria Daracon shall notify affected landowners and/or existing or future tenants (including tenants of quarry owned properties) and provide quarterly monitoring results until the results show that the development is complying the relevant criteria. The period between detection and notification shall be no longer than seven days. Affected tenants and landowners shall also be provided with a copy of the NSW Health (2017) fact sheet “Mine dust and You”.

Additionally, and following an exceedance of the dust monitoring criteria, all relevant mitigation methods will be reviewed for adequacy, with alterations made as necessary to reduce or eliminate the impacts of particulate (dust) emissions from Ardglan Quarry.

10. REVIEW AND IMPROVEMENT

10.1 Inspection and Review

The Quarry Supervisor or delegate shall monitor performance of the air quality control facilities to confirm the effectiveness of methods, equipment and controls. Results shall be recorded and opportunities for improvement recommended to the Quarry Manager.

As per the Project approval, the updated AQMP including the Air Quality Monitoring Program (Section 9) will be submitted to the Planning Secretary for approval within 3 months of project determination. Daracon Quarries notified DPIE on 11 June 2021 of intentions to submit the plans on or before 31 July 2021 and have subsequently reviewed and updated the document in response to DPIE comments.

The AQMP and associated documentation shall be formally reviewed by the Quarry Manager at minimum twelve (12) monthly intervals. Any alterations to the AQMP shall be recorded according to the document control procedure.

Additionally, any revisions to the AQMP will require the approval of the Secretary (DPIE) before being implemented.

10.2 Internal Audit

Conformance audits will be carried out on the relevant processes and subcontractors in accordance with the master audit schedule. Auditors shall be suitably qualified and independent of the processes being assessed.

11. RECORDS AND REPORTING

The results of the dust deposition, ambient particulate concentration (TSP, PM₁₀ and PM_{2.5}), meteorological and greenhouse gas monitoring detailed in the Air Quality Monitoring Program (see Section 8) will be stored electronically in a central location for routine assessment.

Monitoring results will be compared to the assessment criteria and guidelines detailed in Section 4 on at least a monthly basis. Monthly monitoring reports will also identify and comment on any exceedances and/or trends in monitoring results. Monthly monitoring results will be reported internally to the Senior Manager and used as a basis for external reporting.

Any exceedances of assessment criteria or non-compliance with any statutory requirement will be treated as an environmental incident and handled according to the incident management procedure as detailed within the Environmental Management Strategy.

Air Quality monitoring results will be routinely reported as detailed in **Table 9**.

Table 9 – Air Quality Monitoring Reporting

Report	Frequency	Recipients / Publishing	Statutory Requirement
Annual Environmental Management Report	By the end of March Annually	NSW Department of Planning, Infrastructure and Environment. Community Consultative Committee. Published on the Daracon Ardglan Quarry website.	Project Approval, Schedule 5, Condition 4.
Annual Return	Annually	EPA	EPL Condition R1.
Monthly Monitoring Reports	Monthly	Ardglan Quarry Website	POEO Act/EPL

Report	Frequency	Recipients / Publishing	Statutory Requirement
Monitoring Results Summary	Six monthly	Published on the Ardglan Quarry website.	Project Approval, Schedule 5, Condition 9.
	At CCC meetings	Community Consultative Committee.	Project Approval, Schedule 5, Condition 7.
	Quarterly	Following exceedance of any assessment criteria, the following recipients will receive quarterly monitoring results until results show that the Quarry is complying with all criteria: NSW Department of Planning, Infrastructure and Environment. Affected landowners. Affected existing or future tenants.	Project Approval, Schedule 4, Condition 1.

Additionally, all air quality management matters will be reviewed and included in the Annual Environmental Management Report (AEMR) due at the end of March the following year, such as:

- A description of the development including any additional mitigation measures employed;
- A comprehensive review of all monitoring results for the reporting period including an analysis of trends. These will be measured against the specific requirements set out in (i) – (iv) of Condition 4 Schedule 5 (b) of the Approval;
- Analysis and commentary on all incident notifications, non-compliance notifications, compliance reports and independent audits. This will include details of actions taken to rectify and avoid reoccurrence;
- Commentary on the effectiveness of controls implemented. This will evaluate and report on the effectiveness of the air quality management systems and compliance with the performance measures, criteria and operating conditions of the Approval;
- Review and commentary on any discrepancies identified between predicted and actual impacts;
- Describe what measures will be implemented over the next calendar year to improve the environmental performance of the development if required.

12. APPENDIX A – EPA CORRESPONDENCE

DOC21/657814-2
5 August 2021

Industry Assessments
Planning and Assessment Division
Department of Planning, Industry and Environment
Locked Bag 5022
PARRAMATTA NSW 2124
Email: @planning.nsw.gov.au

EPA Submission on Request for Advice on Air Quality Management Plan

Thank you for your request from Public Authority Consultation (PAE-24878139) for the Environment Protection Authority (EPA)'s advice on the Air Quality Management Plan for Ardglen Quarry (MP06_0264-PA-14).

The EPA does not provide advice on or endorsement of any management plans developed for planning assessments.

Accordingly, the EPA will not be providing comment further to this request.

Please contact myself on (02) 6773 7000 or by email to armidale@epa.nsw.gov.au if you wish to discuss this matter further.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Lindsay Fulloon'.

LINDSAY FULLOON
Manager Regulatory Operations, Regional West

13. APPENDIX B – DUST MONITORING LOCATIONS AND RECEPTORS

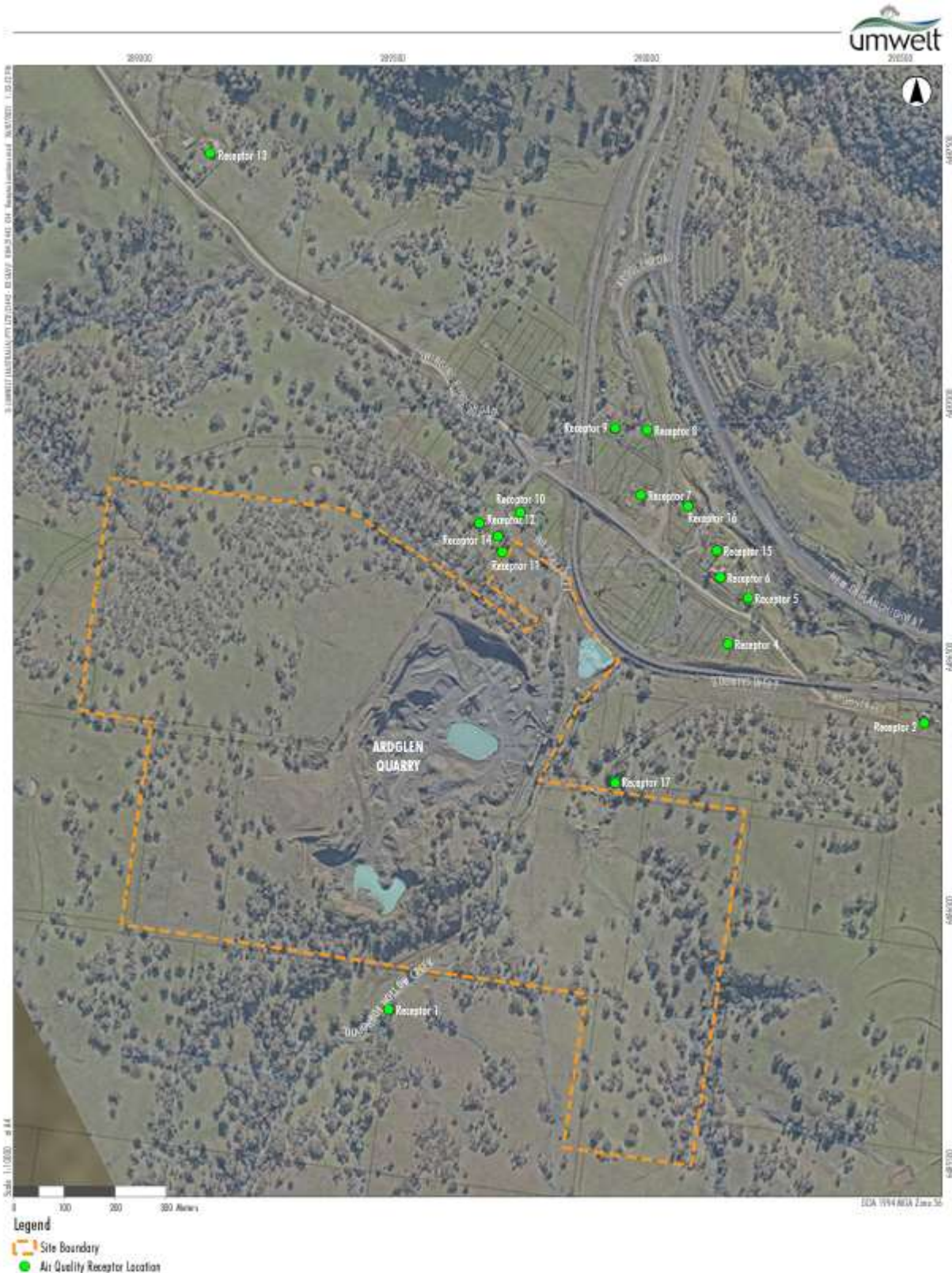
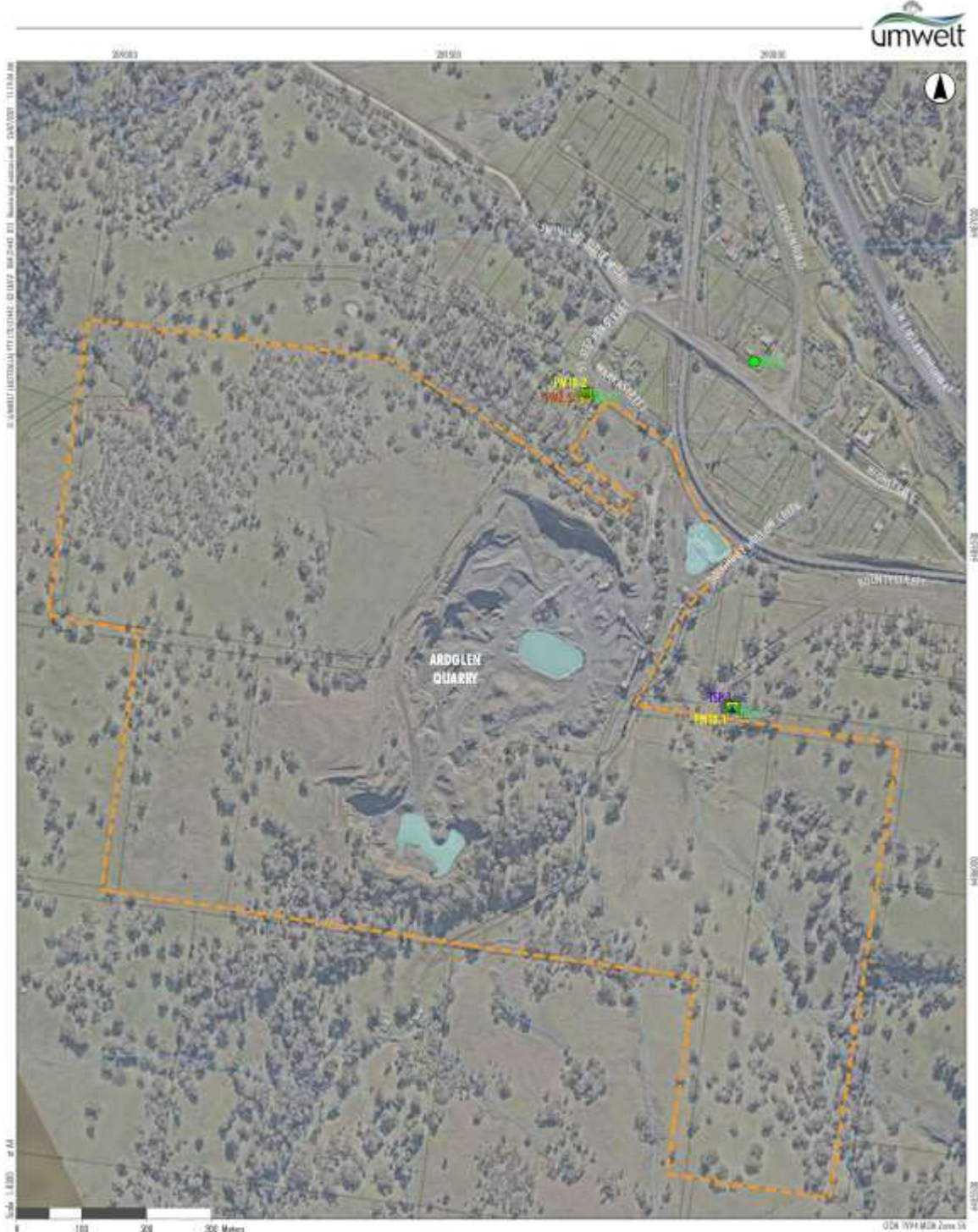


FIGURE 1.1

Air Quality Receptor Locations



- Legend**
- Site Boundary
 - High Volume Sampler Location – Fine Particulates
 - Dust Deposition Gauge Location
 - ▲ Low Volume Air Sampler Location
 - High Volume Sampler Location – Total Suspended Particulates

FIGURE 1.2
Air Quality Monitoring Locations