




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 is located in the village of Ardglen, approximately 6km north west of Murrurundi, in the New England Region of NSW. Buttai Gravel Limited (Daracon Quarries) operates the existing quarry and has been granted approval for an extension of this to the west.

The quarry extension will enable the extraction of 500,000t of material per annum from an area of 25ha adjoining the existing quarry.

Project Approval (PA) 06_0624 was granted for the quarry extension and it will involve the following activities.

- Overburden stripping;
- Extraction of up to 500,000t of material per annum from the quarry by drill and blast methods;
- On site processing of material involving a three stage crushing procedure;
- Transport of material by rail and by road;

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 Project Approval.

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

2. OBJECTIVES

The objectives of this Air Quality Management Plan 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 Air Quality Management Plan (Including Monitoring Program and Compliance Protocol) has been prepared to satisfy the requirements of the Project Approval 06_0624 and the Environmental Protection License (EPL #1115) associated with the Ardglen Quarry operations.

3. LEGAL AND OTHER REQUIREMENTS

Daracon Group has an obligation under the provisions of the POEO Act to protect the environment and prevent air pollution. Accordingly, it is a requirement of consent, as per the Project Approval 06_0624 and EPL #1115 that a program of environmental controls pertaining to air quality be planned, documented implemented and monitored for Ardglen Quarry.

4. RESPONSIBILITIES

As detailed in **Table 1**, it shall be the responsibility of the Quarry Manager (QM) to ensure that the requirements of this plan are implemented.

Table 1

Role	Responsibility	Authority	Accountability
Senior Manager	Ensuring the company complies with the relevant Legislation and other requirements. Assigning responsibility and authority for the establishment, implementation and maintenance of the Corporate WHS/EQ System and to enforce and review performance;	Ultimate responsibility for all site operations. Authority to address any and all matters relating to the quarry operation.	Reports to the Government Authorities and other Regulatory organisations as required.
Quarry Manager	Overall management of the site in accordance with the Project Approval.	Commence and cease operations, adjust extraction rates and plan.	Reports to the community and Government Authorities in accordance with the terms of the Project Approval.
	Oversight of all air quality monitoring on site, reporting and first point of contact for community/Authority liaison	Implement contingencies if necessary, liaise with all the community and Government Authorities.	Reports to Senior Manager.
Systems Manager	Assist the Quarry Manager with the overall management of the site in accordance with the Project Approval.	Liaise with all the community and Government Authorities as required.	Reports to the Quarry Manager

5. CONSTRAINTS

It is a requirement of the Project Approval (Schedule 3, Condition 15) that dust emissions generated by the project do not cause additional exceedances of the air quality impact assessment criteria listed in **Tables 2, 3 and 4** at any residence, on privately-owned land, or on more than 25 percent of any privately-owned land.

Table 2

Pollutant	Averaging Period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m ³
Particulate matter <10 µm (PM ₁₀)	Annual	30 µg/m ³

Table 3

Pollutant	Averaging Period	Criterion
Particulate matter <10 µm (PM ₁₀)	24 hour	50 µg/m ³

Table 4

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

6. SENSITIVE RECEPTORS / STAKEHOLDERS

Daracon has identified the sensitive receptors / stakeholders for air quality as shown in **Table 5**.

Table 5

Receptor ID	Description	Location (Australian Map Grid coordinates)
1	Residence – Lot 190, south of quarry.	56J, 289492E, 6485804N
2	Residence – Lot 226, south-east of quarry.	56J, 289938E, 6486251N
3	Residence – east of quarry.	56J, 290138E, 6486519N
4	Residence – east of quarry.	56J, 290099E, 6486676N
5	Residence – north-east of quarry.	56J, 289951E, 6486751N
6	Residence – north-east of quarry.	56J, 289697E, 6486685N
7	Residence – north-east of quarry.	56J, 289650E, 6486731N

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 Project Approval 06_0624.

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

The pollution control measures listed in **Table 6** 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 6. 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.

Table 6

Potential Pollution Source	Control Measures
Wind generated dust from exposed areas and stockpiles.	Wet suppression or chemical coating will be used on static stockpiles.
Wheel generated dust from road trucks, haul trucks and mobile equipment	The haul road is sealed to / from the wheelwash to minimise dust. Covering all loads leaving the site. The speed limit on unpaved surfaces is limited to 20km/hr. High level watering (greater than 2L/m ² .hr) 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.
Loading product to haul and road trucks	All loads leaving the site will be covered. Stockpiles kept damp via watercart or fixed sprays
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.
Other quarrying activities - Dumping of material to stockpiles by front end loaders and conveyors. Drilling and blasting of rock. Stripping of overburden.	Minimising or ceasing dust-generating activities during times of high wind speeds. Relocation of offending plant and equipment to less sensitive on-site areas. 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. Daracon shall continuously monitor the site visually 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.

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 7** have been installed to demonstrate compliance with the air quality assessment criteria listed in the Project Approval and the EPL.

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 7

Parameter	Frequency	Locations	Limit/Guideline
Deposited dust	Monthly.	DG-1 located at Receptor 2 (EPL point 2). DG-2 located at Receptor 5 (EPL point 3). DG-3 located at Receptor 6 (EPL point 4).	Deposition Rate Maximum total deposited dust level: 4 g/m ² .month.
Total suspended particulate (TSP) matter	24 hours every 6 days.	TSP-1 located at Receptor 2.	Concentration 90 µg/m ³ as an annual average.
Particulate matter < 10 µm (PM ₁₀)	24 hours every 6 days.	PM10-1 located at Receptor 2. PM10-2 located at Receptor 6.	Concentration 50 µg/m ³ as a 24 hour average. 30 µg/m ³ as an annual average.
Visible air pollution	Continuous. In response to any visible emissions complaint.	At the location of any reported emission.	Project Approval Schedule 3, Condition 16 The Proponent shall ensure any visible air pollution generated by the project is assessed regularly, and that quarrying operations are relocated, modified, and/or stopped as required to minimise air quality impacts on privately-owned land, to the satisfaction of the Director-General.
Meteorological station	Continuous.	Immediately adjacent to Quarry site	Project Approval Schedule 3, Condition 18 The Proponent shall ensure the project has a suitable meteorological station in the vicinity of the site that complies with the requirements in <i>Approved Methods for Sampling of Air Pollutants in New South Wales</i> guideline.
Greenhouse gases (electricity and fuel consumption)	Upon purchase of electricity or fuel.	Entire site.	Project Approval Schedule 3, Condition 46(a) The proponent shall monitor the greenhouse gas emissions generated by the project.

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

9.1 Exceedance Protocol

Pursuant to Schedule 5, Condition 3 of the Project Approval, within seven days of detecting an exceedance of the limits/performance criteria or the occurrence of an incident that causes (or may cause) harm to the environment Daracon shall notify the Department of Planning and other relevant Agencies of the exceedance/incident. This report must:

- Describe the date, time and nature of the exceedance/incident;
- Identify the cause (or likely cause) of the exceedance/incident;
- Describe what action has been taken to date;
- Describe the proposed measures to address the exceedance/incident;

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 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.

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 (Department of Planning and Environment) 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 and PM10), 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 8**.

Table 8

Report	Frequency	Recipients / Publishing	Statutory Requirement
Annual Environmental Management Report	Annually	NSW Department of Planning and Environment. Community Consultative Committee. Published on the Ardglen Quarry website.	Project Approval, Schedule 5, Condition 4.
Annual Return	Annually	EPA	EPL Condition R1.
Monthly Monitoring Reports	Monthly	Ardglen Quarry internal management.	None.
Monitoring Results Summary	Six monthly	Published on the Ardglen Quarry website.	Project Approval, Schedule 5, Condition 10.

Report	Frequency	Recipients / Publishing	Statutory Requirement
	At CCC meetings	Community Consultative Committee.	Project Approval, Schedule 5, Condition 8 and the DoP Guidelines
	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 and Environment. Affected landowners. Affected existing or future tenants.	Project Approval, Schedule 4, Condition 1.

12. APPENDIX A – EPA CORRESPONDENCE

Luke Robinson

From: Environment Line <info@environment.nsw.gov.au>
Sent: Wednesday, 26 September 2018 10:56 AM
To: Luke Robinson
Subject: RE: Ardglen Quarry - updated Noise and Air Quality Management Plans Ref: 00526076

Dear Luke,

Thanks for your correspondence. I have forwarded it to our Armidale office, as they would cover the Ardglen quarry. They will arrange for the documents to be reviewed by the appropriate officer.

Alice
Environment Line

*****Original Message *****

From: Luke Robinson <luke.robinson@daracon.com.au>
To: info@epa.nsw.gov.au
Cc:
Sent: 26/09/2018 09:53:27
Subject: Ardglen Quarry - updated Noise and Air Quality Management Plans

Good morning,

Please refer to the attached documents titled “Review of NMP AQMP_cover letter” and “Attachment A_NMP AQMP” received by Buttai Gravel Pty Ltd (Daracon Quarries) from the Department of Planning and Environment (DPE).

Within the “Attachment A_NMP AQMP” document, the DPE has requested we forward a copy of the updated Noise Management Plan and Air Quality Management Plan to the EPA for comment and include copies of any subsequent correspondence in an Appendix.

Ordinarily our local EPA contact is Adam Plant based in the Newcastle office, however we are unsure whom within the EPA is most appropriate to undertake the review requested by the DPE.

The updated Noise Management and Air Quality Management Plans are also attached to facilitate this process.

Thanks and regards,

Luke Robinson | Systems Manager – Construction Materials | DARACON GROUP
20 Kullara CI | PO Box 401, Beresfield NSW 2322, Australia

13. APPENDIX B – DUST MONITORING LOCATIONS



- Site Boundary
- Receptor Location as defined in the EA (ERM 2007)

Aerial Source: Google Earth Pro 2010

ARDGLEN QUARRY AIR QUALITY
MONITORING LOCATIONS



- Site Boundary
- Dust Deposition Gauge Location
- High Volume Sampler Location - Total Suspended Particulates
- ◆ High Volume Sampler Location - Fine Particulates (PM₁₀)

Aerial Source: Google Earth Pro 2010

ARDGLEN QUARRY AIR QUALITY
MONITORING LOCATIONS