



Mudgee Stone Company Pty Ltd

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BLAST MANAGEMENT PLAN

OBERON WHITE GRANITE QUARRY



BLAST MANAGEMENT PLAN

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Endorsement of BMP by Mudgee Stone Company Director or Delegate

Director

Date



20 December 2016

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ABBREVIATIONS

BMP	Blast Management Plan
Department	NSW Department of Planning & Environment
EA	Environmental Assessment
EMPs	Environmental Management Plans
EMStrat	Environmental Management Strategy
MSC	Mudgee Stone Company
NATA	National Association of Testing Authorities, Australia
NSW EPA	NSW Environment Protection Authority
The project	The Oberon White Granite Quarry operating under PA07_0122.

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1. INTRODUCTION

1.1 Overview

Mudgee Stone Company (hereafter MSC) is a wholly owned subsidiary of Mudgee Dolomite and Lime Pty Ltd based in Mudgee, NSW. MSC own and operate the Oberon White Granite Quarry, located approximately 6km east south-east of Oberon, NSW, covering an area of approximately 40ha.

On 7 September 2012, the Minister for Planning approved the expansion of the Oberon White Granite Quarry, Major Project 07_0122. The project includes expansion of the extraction area and the rate of extraction at the quarry resulting in recovery of up to 5 million tonnes of granite over a 30 year period, transported from the site via road.

MSC has an Environmental Management System to support commitments to minimising impact on the environment and community. The system has been prepared by MSC to establish the overarching framework for the monitoring and environmental management of activities undertaken at the Oberon White Granite Quarry in order to minimise environmental impacts, comply with legal requirements, and incorporate the principles of continuous improvement into environmental management at the site.

The components of the MSC Environmental Management System include:

- Environmental Management Strategy;
- Specific and separate Environmental Management Plans (EMPs), including this document, and Environmental Monitoring Programs which provide details on the management of environmental aspects and impacts;
- Site document control system including training records, monitoring results, site registers, environmental forms; and
- Management roles and accountabilities of key personnel.

1.2 Scope

This Blast Management Plan (hereafter BMP) has been prepared to manage operational impacts associated with Blast for the Oberon White Granite Quarry. The scope of the plan applies to MSC operations, including MSC management and employees. The BMP will also apply to contractors engaged as specialist service providers for any blast

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activities. The BMP ensures that best management practice is being employed and compliance with the relevant conditions of approval.

A copy of this Blast Management Plan will be made available to members of the public on the MSC website:

www.mudgeedolomitelime.com.au

1.3 Objectives

The purpose of the BMP is to:

- To provide relevant employees and contractors with a clear and concise description of their responsibilities, regarding blasting activities required for the Project, including;
 - Blast monitoring and evaluation;
 - Blast criteria exceedance and reporting;
 - Blast notification;
 - Mitigation of blasting impacts; and
 - Complying with blasting criteria,
- Address the relevant Conditions of the Project Approval (07_0122);
- Comply with the relevant sections of Environmental Protection Licence No. 20551 (EPL 20551);
- Address legislative requirements and guidelines relevant to the BMP.

The objectives of the BMP are to:

- Identify procedures for implementation of blast management response consistent with industry best management practice.
- Monitor blast overpressure and vibration from the blasting activities within the Project area to determine compliance with Project Approval blasting criteria and mitigate impacts to private receivers; and
- Establish protocols for evaluating and mitigating blasting impacts on privately owned residences surface infrastructure.
- Implement a monitoring system to assess the effectiveness of blast control measures.
- Minimise fume emissions from the site.
- Record data suitable to demonstrate compliance with the conditions of PA 07_0122.

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MSC will provide people, materials, resources and systems to properly perform requirements of the BMP. All MSC employees and contractors will be sufficiently competent, experienced and qualified to carry out the requirements.

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2. STATUTORY REQUIREMENTS

This BMP has been developed to comply with the requirements of relevant legislation, Project Approval conditions and relevant standards and guidelines.

2.1 Legislation

The BMP was prepared by MSC in conjunction with suitably qualified persons for approval by the Department. Additional consultation with the EPA was not sought due to response received in relation to review of other Plans for Oberon White Granite Quarry (see **Appendix B**).

All blasting activities required by the Project will be conducted in accordance with current legislative requirements, with reference to:

- (NSW) Work Health & Safety Act 2011
- (NSW) Work Health & Safety Regulation 2011
- (NSW) Explosives Act 2003
- (NSW) Explosives Regulation 2013

In addition to the relevant legislation, the key guideline/standard referred to in the preparation of this BMP include:

- AS2187.2 -2006 'Explosives – Storage and use – Use of explosives.
- Australian Explosives Industry and Safety Group Inc. (2011) '*Code of Practice Prevention and Management of Blast Generated NOx Gases in Surface Blasting*'.

2.2 Approvals and Licences

Table 1: MSC Statutory Approvals

Approval/Licence	Activity	Date	Authority
Approval 07_0122	Project approval – 'Oberon White Granite Quarry Project'	7 Sept 2012	NSW Department of Planning and Infrastructure
EPL 20551	Licence – Premises Based	17 June 2015	NSW Environment Protection Authority (NSW EPA)

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MSC have developed this Blast Management Plan (BMP) to address the conditions outlined in the Project Approval; Major Project 07_0122 (refer to **Appendix A**).

Major Project 07_0122 (Schedule 3, Condition 15) requires the preparation and implementation of a Blast Management Plan which must:

(a) be prepared in consultation with the EPA by suitably qualified and experienced person whose appointment has been approved by the Director-General;

(b) describe the measures that would be implemented to ensure:

- best management practice is being employed;*
- compliance with the relevant conditions of this approval;*

(c) include a monitoring program for evaluating and reporting on the performance of the project, including:

- compliance with the applicable criteria; and*
- minimising the fume emissions from the site.*

The Proponent shall not carry out any blasting on the site under this approval before this plan has been approved by the Director-General.

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3. BASELINE DATA

3.1 Baseline Condition of Buildings

In accordance with PA 07_0122, Schedule 3 Condition 11, if MSC receives a written request from the owner of any privately-owned land within two kilometres of the quarry pit for a property inspection to establish the baseline condition of any buildings and/ or structures on his/her land, then within two months of receiving the request MSC shall:

(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:

- establish the baseline condition of any buildings and other structures on the land; and
- identify measures that should be implemented to minimise the potential blasting impacts of the project on these buildings and/ or structures; and

(b) give the landowner a copy of the property inspection report.

Written Notification of Landholders in accordance with Schedule 4 Condition 1(a) is required to such landholders, noting their entitlement to an inspection. No such reports have been commissioned to date. Within the first 3 months of the BMP being approved, current landowners will be notified and contact list updated as required. Preferred written notification method (email/letter) will continue prior to blast events. Records of baseline conditions would be kept by MSC.

3.2 Identified Blast Risks

Based on the environmental risk analysis undertaken for the Project, the potential Blast hazards requiring controls, include:

- Inadequate training for staff.
- Injury / damage / miss-use.
- Premature initiation. Accident.
- Unauthorised access to explosives.
- Unauthorised access to blast zone.
- Inaccurate profiling / drilling.
- Inadequate operations potential to cause misfires, premature initiation and fly rock. Slips/trips/falls. Manual handling.
- Loss of downline.
- Damage to downline

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- Inadequate tie up leading to misfire.
- Fly Rock, Damage & Injury.
- Dust/Fumes. Hazard may arise due to the generation of nitrogen oxides (NOx) within the post-blast gases. These oxides are generally regarded as products arising from imperfect decomposition of ammonium nitrate explosives during detonation.
- Excessive Ground Vibration.
- Damage to slopes/pit walls.
- Premature initiation, after firing, hit by excavation machinery. Hit by lightning.
- Inadequate machinery operating in blast zone.
- Complaints lodged regarding blast.

MSC will continue to assess and manage blast related risks to ensure that there are no exceedances of the performance criteria and risk is mitigated to an acceptable residual risk level.

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4. PERFORMANCE CRITERIA

During the life of the project, MSC will endeavour to implement best management practice to comply with statutory requirements and adopted performance criteria. Performance criteria adopted under the BMP is described in this section.

Project Approval 07_0122

Schedule 3 Condition 10 Blasting Criteria states that the Proponent shall ensure that blasting on the site does not cause exceedances of the criteria provided in **Table 2** below. However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner, and has advised the Department in writing of the terms of this agreement.

Table 2: Blasting Criteria – Project Approval 07_0122

Location	Airblast Overpressure (dB(Lin Peak))	Ground Vibration (mm/s)	Allowable Exceedance
	120	10	0%
Residence on privately-owned land	115	5	5% of total blasts over a period of 12 months

Environment Protection Licence EPL 20551

Limit conditions pertaining to blasting, are interpolated in the following table. The approval and generally the EPL permits the blasting operations only between the hours of 9.00am and 5.00pm Monday to Friday (excluding Public holidays) unless written permission is received prior from the NSW EPA.

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Table 3: Blasting Criteria – EPL 20551¹

Location	Airblast Overpressure (dB(Lin Peak))	Ground Vibration (mm/s)	
	115	5	5% of total blasts over a period of 12 months (EPL reporting period) (no error margin)
Any Sensitive location ²	120	10	At any time (no error margin)

¹ The EPL limit conditions are provided in Appendix A: Statutory Requirements.

² Includes buildings used as residence, hospital, school, child care centre, place of worship and nursing homes. Includes land within 30m of the building.

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5. BLAST MANAGEMENT AND CONTROL MEASURES

5.1 Management Measures

MSC has committed to managing its operations to minimise impact on the environment and community, including blast issues. All blasting activities will be conducted in accordance with relevant conditions of Project Approval (07_0122). Consideration will be given to the following management and mitigation measures to ensure compliance with the Project Approval conditions and to minimise the impacts from blasting activities.

MSC will engage a specialist contractor to carry out monitoring and blast procedures that require experienced personnel (currently Orica Quarry Services).

In accordance with the MSC Safety Management Plan, best practice blast management procedures will be implemented to minimise air blast overpressure, ground vibration levels, flyrock, fume, dust and odour from blasting activities. This will be achieved by implementing procedures and safe guards, taking into account the following:

- Blast Design
- Adequate stemming
- Initiation Systems
- Weather Conditions
- Wet/Dry Hole Conditions
- Flyrock

Specific controls relating to identified risks/hazards are identified below:

Planning Controls

- Review meteorological data prior to blasting, giving consideration to wind speed and direction;
- Schedule all blasts in accordance within the approved blasting times i.e. only between 9am and 5pm, Monday to Friday with no blast to occur on Weekends and public holidays;
- Update the Community Information Line;
- Contact all persons registered on the MSC Blast Notification Register;
- Adhere to a Security Plan,
- Set up exclusion zones.

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- Ensure management is equipped with a well prepared plan, and continue good communication through blast design.
- Create and implement procedures and SWMS to minimize risks.
- The Project Approval and EPL 20551 provide consistency in the blasting criteria. As such the blast monitoring proposed will record relevant details regarding blast frequency, blast event details, and monitored data including: Air blast Overpressure (dB(Lin Peak)) and Ground Vibration (mm/s) to be included within the EPL Annual Return and the Annual Review. The monitoring and review process will identify a need to adapt any operational aspects to ensure compliance for future blast planning and design.

The Blast Management Plan is supported by several procedures/sub plans included in the MSC Safety Management Plan:

- 18A Blasting Risk Assessment
- 18B SWMS Blasting
- 18C Security Plan
- 18D Volunteer Form
- 18E Procedure for Blasting
- 18F Misfire Procedure
- 18G Storm Procedure
- 18H Disposal Procedure
- 18I Theft and Fire Procedure
- 18J Explosive Storage and Handling Procedure
- 18K Drill & Blast Report

Operational Controls

- Review Blasting Checklist;
- Ensure shot firers are licensed and personnel are trained in blast/loading shot procedure. Persons with unsupervised handling of explosives shall hold a Security Clearance from WorkCover. The shotfirer shall hold a Blasting Explosives User Licence.
- Personnel are supervised at all times.
- All personnel are to wear PPE at all times.
- Personnel are trained in SWMS and Take5.
- Drill & Blast on low wind days.
- If MSC or contractors are to transport explosives, must do so under a Licence to Transport and in accordance with the current Acts and Regulations. Ensure vehicle is approved for transport and driven by licenced competent person.

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- Inform neighbours before each blast; deal with complaints as required.
- Engage an experienced and qualified contractor for blast monitoring and blast activities.

Design Controls

- Employ the following blast design considerations, including:
 - Blasting techniques;
 - Limiting blast Maximum Instantaneous Charge (MIC) below the predictive modelling limit;
 - Timing of blast (initiation sequence, timing and direction); and
 - Drilling and loading techniques.
- Reduce ground vibration and potential for damage to slopes/pit walls, through:
 - Minimise by design of stemming/burden.
 - Establish appropriate exclusion zone – (Personnel 400m, Equipment 300m).
 - Minimise by design delay timings/hole diameter.
 - Stemming design (unsure use of appropriate materials e.g.: 20mm aggregates).
 - Check ground/geology before designing the blast.
- Blast frequency will be considered within the quarry design and potential impacts.
- Blast location and design aspects:
 - MSC will not undertake blasting on site within 500 metres of any land outside the site that is not owned by MSC, unless:
 - a written agreement with the relevant landowner to allow blasting to be carried out closer to the land, has been signed and the Department has been advised in writing of the terms of this agreement; or
 - it has been demonstrated to the satisfaction of the Director-General that the blasting can be carried out closer to the land without compromising the safety of the people or livestock on the land, or damaging the buildings and/or structures on the land; and
 - MSC has updated the BMP to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the land.

Engineering Controls

- A 6m acoustic bund would be maintained along the southern boundary of the extraction area (refer to **Noise Management Plan**).

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Summary – Engineering Controls from Noise Management Plan

Trigger	Action	Responsible individual
<i>The Quarry has been operational for three (3) months.</i>	<i>The 6m acoustic bund is to be installed and maintained along the southern boundary.</i>	<i>Production Manager</i>
<i>Feasible noise mitigation measures are adopted as part of the NMP and EMStrat.</i>	<i>Acoustic shielding is to be employed and equipment maintained to reduce noise emissions.</i>	<i>Production Manager</i>

Fume Management Controls

- Fume avoidance techniques to be employed, as part of general blast management.
- Specialists experienced in blast products are to be engaged for blast events to ensure that product knowledge is up to date and supplier's/manufacture's instructions are adhered to for events.
- Minimisation of 'sleep time' (i.e. the time between loading the explosives and the firing date/initiation). MSC aims to minimize the sleep time to minimize the possibility of fume generation. This is a requirement that contracted blast specialists are to be subject to for all blasts. Consideration of weather conditions and forecast to be undertaken prior to loading is to occur to reasonably expect that the firing window has been identified and will not be delayed.
- Blast size is to be minimized (and depth responsive to any identified change in geology).
- Where moisture may be encountered, specialist contractors to follow manufacturer's recommendations on explosive product selection.
- Effective supervision is to be provided to staff and contractors by the trained/licensed contractor to ensure the blast occurs to a plan.
- Record any significant blasting activities (visual evidence of plume) for possible future examination that may assist planning for circumstances in future events.

Emergency Response – Fume exposure

Blast fumes (NO_x gases) are recognized as a potential health threat and managed accordingly. Though it is unlikely that exposure will result in an emergency situation due to the concentration of the gases in an outdoor, well ventilated surface blasting site, such as the MSC quarry, as any gases will dissipate in a short time period.

- While it is unlikely, if a plume is formed and does not dissipate and has potential to results in exposure to people the following steps are to be undertaken in accordance with AEISG Code of Practice –
 - Persons in the path of a NO_x gas plume should

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- not enter the plume
 - move away from the path of the plume
 - if indoors, close all windows and doors and stay inside
 - if in a car, stay inside and use recirculated air conditioning if possible.
- Emergency response for persons exposed to NOx gases –
 - Any person exposed to a visible plume of NOx, and/or any person experiencing sudden acute effects of coughing, shortness of breath or irritation of the mucous membranes of the eyes, nose or throat following post-blast NOx events must be examined by a medical practitioner without delay, even if no NOx smell was noticed or symptoms are mild.

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6. MEASUREMENT AND EVALUATION

6.1 Blast Monitoring System

MSC will implement a monitoring program for evaluating the performance of the project, including:

- Compliance with the applicable criteria; and
- Minimising the fume emissions from the site.

MSC, prior to the commencement of blast procedures, will ensure blast monitoring equipment is installed and calibrated by a specialist service provider. Monitoring of blasting is currently undertaken by Orica Quarry Services, and carried out using a blast vibration / overpressure monitor to demonstrate compliance.

Figure 1: Blast Monitoring Locations below depicts the locations monitoring equipment would be sited. All blasts would continue to be monitored within the southern extent of the Project Site – BMS 1 - adjacent Dam 3 (southern site location) also being in vicinity to the nearest dwelling, to demonstrate compliance with EPL conditions and project approval criteria. Additional monitoring will be undertaken at BMS 2 – near the nearest residence within Lot 10 DP864594, 251 Beattie Road, Oberon (referred to as Residence A in the EA); subject to an agreement for access for monitoring purposes being negotiated. In the interim, where compliance with criteria is demonstrated within the project site it is assumed that air blast overpressure and ground vibration criteria is achieved at sensitive locations (residences) located at greater distances from the blast site.

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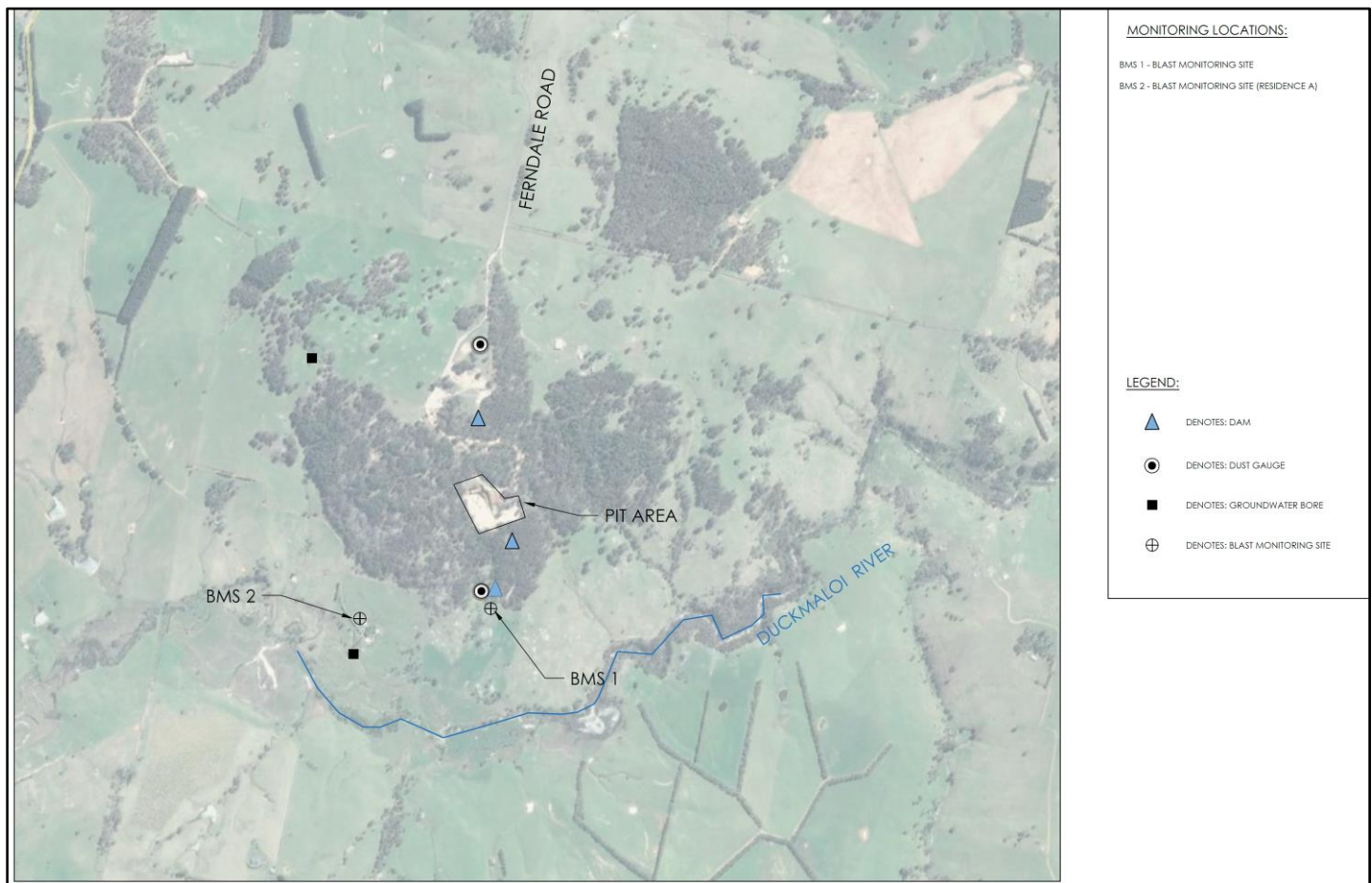


Figure 1: Blast Monitoring Locations

Blast monitoring locations will be reviewed and where necessary modified over the life of the quarry as a result of progressive monitoring results, changes to operation (progression of stages) and changes to land ownership/neighbouring residential development. (If required, potentially affected residences may be further investigated and monitored as part of specific property investigations (*ref. Schedule 3 Condition 12*)).

As part of the ongoing assessment of MSC blast criteria, monitoring is to be carried out to identify potential non-compliances. Monitoring is to evaluate the compliance with the blast limits as detailed within **Section 4** of this BMP. Blast monitoring, calibration and the maintenance of monitoring equipment will be carried out as part of the supply agreement between MSC and the blast monitoring specialist service provider.

All non-compliance results from the attended blast monitoring will be utilised for further investigations, to confirm whether there is an ongoing non-compliance issue. All blasts

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would be monitored and the blast design optimised as required to minimise any identified adverse impacts.

The results of the noise monitoring program will be regularly reviewed by the Production Manager and reported to the Directors prior to being posted on the MSC web site in conjunction with the blast monitoring. Non-compliances will be handled and reported in accordance with **Section 10** of this BMP.

6.1.1 Meteorological Monitoring

A suitable meteorological station has been installed within the MSC property, which complies with the requirements in the *Approved Methods for Sampling Air Pollutants in New South Wales* guideline. The station is representative of site conditions, providing a Full Meteorological compliment consisting of:

- Wind speed at 10m;
- Wind direction at 10m;
- Standard deviation of wind direction (sigma-theta) at 10m;
- Temperature at 2m;
- Relative humidity at 2m;
- Solar radiation at 2m;
- Temperature difference between 2m and 10m; and
- Rainfall (gauge at ground-level).

6.2 Blast Records

Data relevant to the BMP will be kept in the databases established under the EMStrat. The records within the Blast monitoring system include:

- Meteorological condition records;
- Blast records:
 - Duration of any blast gas event (plume) and time to disperse;
 - Airblast Overpressure (bd(Lin Peak));
 - Ground Vibration (mm/s);
 - Incidents Register;
 - Complaints Register; and
 - Statutory Requirements register.

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MSC will keep accurate records of the data collected by the meteorological station and the blast vibration / overpressure monitor provided in specialist contractor monitoring reports. All blast records are required to be included in the Annual Review and posted on the web site.

Results of monitoring will be kept in the records of MSC for at least 4 years after collection. Records will be available to any authorised officer of the NSW EPA when requested.

The following is recorded for each record

- Date(s) of record collection
- Time(s) of record collection
- Location that recording was collected from; and
- Name of person who has collected the record.

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7. CONTINGENCY PLAN

Where blast mitigation measures have been instigated in accordance with the BMP, and unauthorised impact is considered likely, contingency measures will be implemented:

- As soon as practicable for direct impacts; and
- After appropriate evaluation, consultation, planning and design for indirect impacts.

Measures include:

- Blasting will cease or quarry operations will be modified until issues can be determined and managed.
- In the case of Blast incidents and emergencies the Production Manager will discuss management actions in consultation with NSW EPA as appropriate.
- Management will undertake review and ensure that ongoing impacts are within acceptable limits or issues resolved as quickly as possible.

Exceedances of statutory limits will be notified and reported to the Department likewise as an incident that has caused or threatens to cause material harm to the environment.

7.1 Property Investigations

In accordance with the Project Approval Schedule 3 Condition 11, if the owner of any privately-owned land claims that buildings and/ or structures on his/ her land have been damaged as a result of blasting on the site, then within two months of receiving this claim MSC will:

- (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and
- (b) give the landowner a copy of the property investigation report.

If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then MSC shall repair the damage to the satisfaction of the Director-General.

If there is a dispute over the selection of the suitably qualified, experienced and independent person, or MSC or the landowner disagrees with the findings of the independent property investigation, either party may refer the matter to the Director-General for resolution.

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8. INCIDENT RESPONSE PROTOCOL

All Incidents must be reported to the Production Manager immediately. Every person is responsible for reporting accidents and near miss incidents, without delay after the occurrence. Incidents will be responded to in accordance with the Incident Response Communication Protocol outlined in **Figure 2**.

The Production Manager will assess the incident and where deemed necessary will stop all operations of the quarry immediately until a full investigation of the incident is carried out and the safety of all employees and environmental factors on site are determined.

The people listed in the table below are authorised to manage the response to any incident. The particulars are 24 hour contact details.

Table 4: Details for People Responsible for Incident Management

Position	Individual	Phone Number
General Manager	Robert Murdoch	0438 722 389
Quarry Production Manager	John O'Heir	0467 171 416

In the event of an exceedance of any relevant blast criteria adopted as performance criteria under this BMP, the provisions of the Pollution Incident Response Management Plan (PIRMP) should be referred to and determine any notification or reporting obligations.

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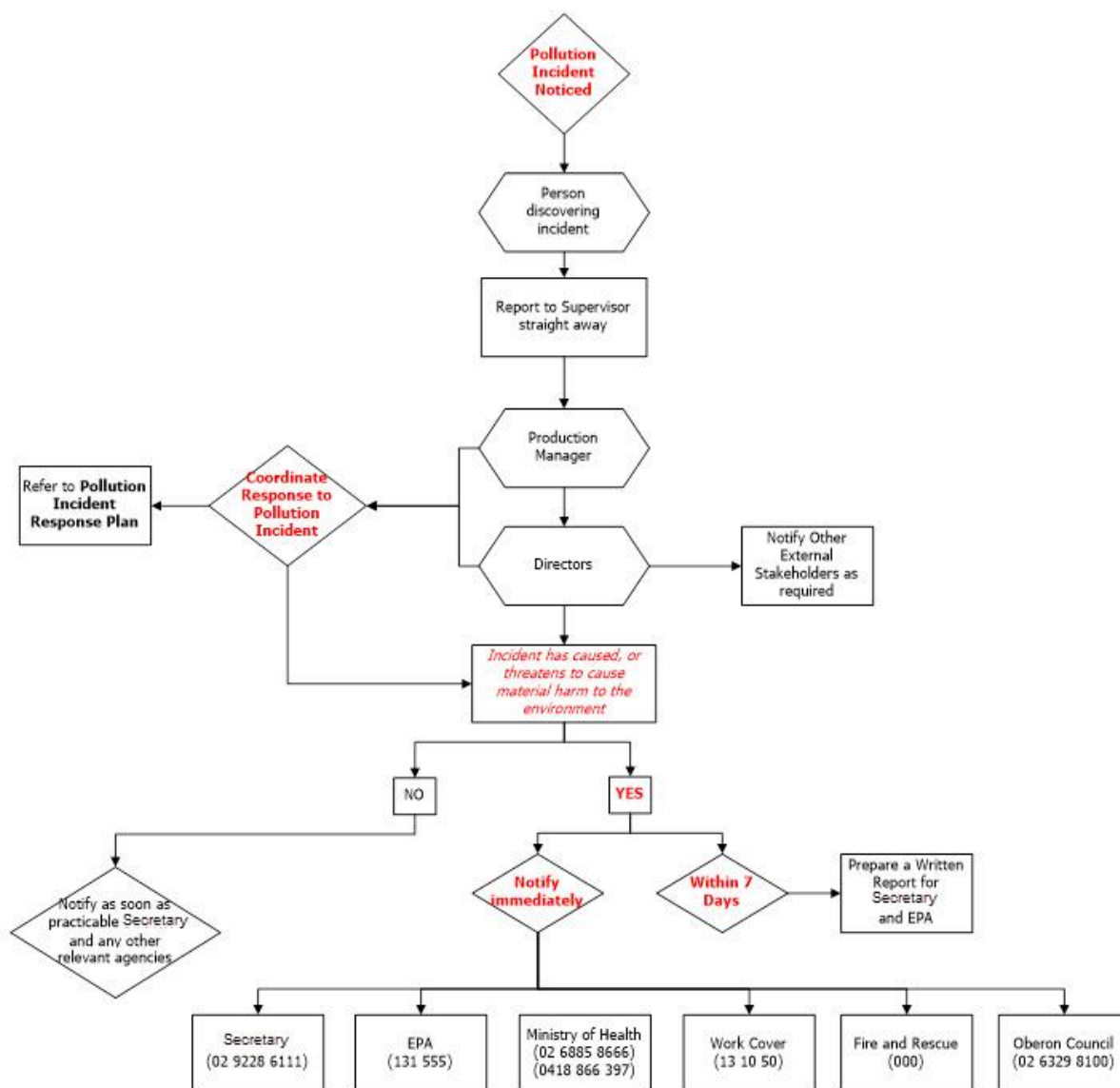


Figure 2: Incident Response Communication Protocol

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9. COMPLAINTS RESPONSE

The MSC community complaints response process outlined in the EMStrat details how to receive, respond to, and record any community complaints. Where possible a proactive approach will be taken to engage the community in discussing proposed activities that may affect them. Any complaints received will be recorded and responded to in a professional and timely manner by the Production Manager, Director or delegate.

The Community Complaints recording requires information including:

- The nature of the complaint;
- Method of the complaint;
- Monitoring results, meteorological data, at the time of the complaint;
- Site investigation outcomes;
- Site activity and activity changes; and
- Any necessary actions assigned.

MSC has a phone number advertised in the local media, displayed at the site entry and available at www.mudgeestone.com.au for the community to report complaints.

Complaints will be recorded and reported to the Production Manager, Directors or appropriate delegate who will respond to all complaints received and attend to required action items. Complaints details will be retained in a register on site. Records of complaints will be kept on site for at least 4 years.

An overview of the community complaint management process is detailed within **Figure 3**.

Every effort will be made to ensure that concerns are addressed in a manner that facilitates a mutually acceptable outcome for both the complainant and MSC. If required, the Independent Dispute Resolution Process will be entered into. This process is illustrated in the Environmental Management Strategy (EMStrat).

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MSC_ENV_PLN 003	002	20 Dec 2016	20 Dec 2017	MSC	R Murdoch

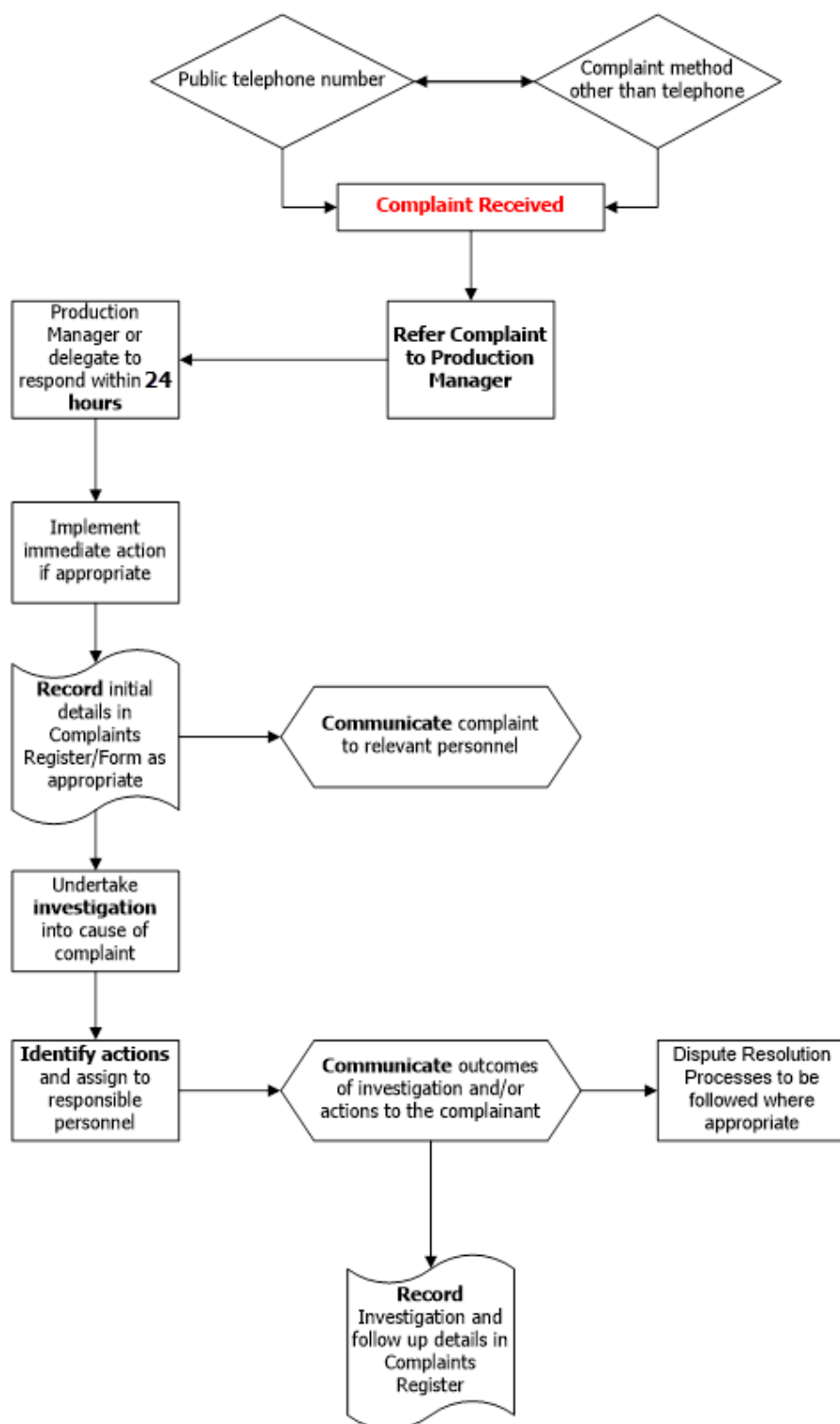


Figure 3: Community Complaints Response Process

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10. NONCOMPLIANCE, CORRECTIVE ACTION AND PREVENTATIVE ACTION

Any actual or potential non-compliance against environmental criteria will be investigated initially by the Production Manager. Environmental incidents will then be recorded on the Incident Form. Corrective actions and relevant reporting will be implemented, if necessary, according to the EMStrat and the process below.

Monthly inspections, along with the review of environmental monitoring results, and any incidents and/or community complaints, will determine any trends and need for preventative action or identify compliance issues and be reported to the Directors on a monthly basis. Refer to **Figure 4** the protocol for managing any non-compliance with statutory requirements, and exceedances of the assessment criteria and/or performance criteria.

Internal reporting will occur in accordance with the provisions within the EMStrat. Externally, in accordance with the requirements of Project Approval 07_0122, at the earliest opportunity of detecting an exceedance of the limits/performance criteria, MSC shall notify the Department and other relevant agencies of the exceedance/incident.

MSC will take all reasonable and feasible measures to ensure that the exceedances do not recur. A report to the Department considering reasonable and feasible options and preferred remediation measures or other course of action would be prepared.

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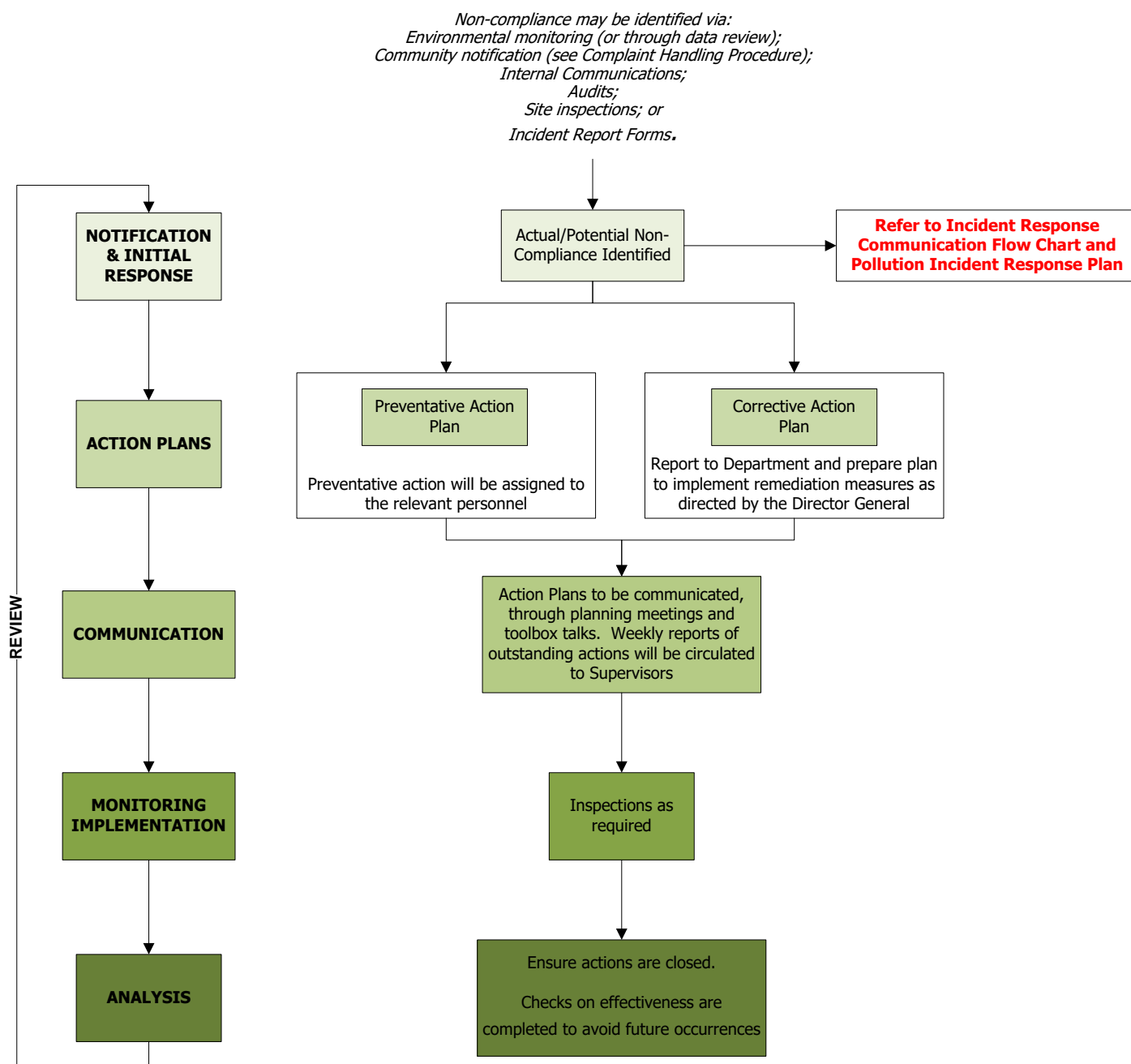


Figure 4: Protocol for managing non-compliance with statutory requirements, and exceedances of the assessment criteria and/or performance criteria

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11. REVIEW

MSC will review the BMP to ensure it is appropriate and is being implemented effectively to ensure best management practices are being employed. Changes may arise from a change of scope, incident management or from opportunities for improvement.

The Plan will then be updated to reflect any changes which have occurred. The revised document and the input which led to the revisions will be reviewed by MSC directors, approved by him/her and then forwarded to Oberon Council and NSW EPA, & Department representative for his/her record.

The planned target dates (or frequencies) at which the BMP will be subject to formal review and the personnel who will participate in the review are identified below:

This plan will be reviewed:

- Every three (3) years and / or;
- When triggered by any event, incident or finding(s) that identifies improvement in the controls that effectively manage the identified hazards;
- Within 3 months of any changes to project approval or licence conditions relating to pollution incidents and after an annual review;
- Following an independent environmental audit which recommends changes to the management plan;
- If there is a relevant change in technology or legislation.

At the conclusion of each calendar year after the commencement of development on the site under project approval 07_0122, a review will be undertaken regarding the environmental performance of the project adhering to the criteria in Condition 4 of Schedule 5 of this project approval and, if necessary, within three months of submission of the Review revise the strategies, plans, and programs required under this approval.

The Directors, Production Manager and Quarry Supervisors and consultant specialists may take part in the review of the BMP. MSC will maintain records of any review and document version will be noted on the Plan.

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12. TABLE OF RESPONSIBILITIES

Table 5: Responsibilities

Position	Task	Timing
Directors	Provide adequate resources to implement the BMP.	During budget planning.
Production Manager	Engage specialist service provider to undertake monitoring of blast events.	As required
	Ensure that the Blast results are within the limits set in the project proposal.	As required
	Consult with surrounding residents/landholders in order to notify of blast events and monitor blast impacts on their properties.	As required
	Co-ordinate the monitoring and review tabulated results for reporting.	Monthly.
	Implementing contingency measures and incident protocol when, if ever, necessary.	As required.
	Implementing all design, planning and engineering controls.	On going.
	In the event of adverse weather conditions direct staff to post-pone, modify and/or stop events to minimise Blast impacts.	As required.
Quarry Supervisor	Brief all operators on operational and planning controls in Section 5 .	During training.
	Ensure the exclusion zones are adhered to at all times during blast events.	At all times.
Operators	Abide by the best management practices outlined in management measures.	At all times.
All Employees	Report and record incidents.	As required.

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13. References

Atkins Acoustics (2003) *Noise and Blast Impact Assessment White Granite Quarry Oberon*.

RW Corkery and Co Pty Limited (Nov 2010) *Environmental Assessment for the Oberon White Granite Quarry*, unpublished report prepared on behalf of Mudgee Stone Company Pty Ltd.

Spectrum Acoustics (2010) *Oberon White Granite Quarry Noise and Vibration Assessment* (Part 4 of the Specialist Consultant Studies Compendium of the EA).

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APPENDIX A

TABLE OF STATUTORY REQUIREMENTS

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Condition	Action	Section Addressed												
Schedule 3 Condition 3	<p>NOISE Hours of Operation The Proponent shall comply with the restrictions in Table 2. These restrictions do not apply to activities that are inaudible at residential receivers.</p> <p><i>Table 2 – Hours of operation</i></p> <table><tr><th>Activity</th><th>Permissible Hours</th></tr><tr><td><ul style="list-style-type: none">• Site establishment• Construction activities• Blasting and small charge popping• Dozer operations</td><td><ul style="list-style-type: none">• 9am to 5pm Monday to Friday (except public holidays).</td></tr><tr><td>Vegetation clearing campaigns</td><td><ul style="list-style-type: none">• 9am to 5pm Monday to Friday (except public holidays), for up to 2 weeks per annum.</td></tr><tr><td>Drilling</td><td><ul style="list-style-type: none">• 8am to 5pm Monday to Friday (except public holidays).</td></tr><tr><td>Rock hammering</td><td><ul style="list-style-type: none">• 10am to 12pm Monday to Friday; and• At no time on Saturday, Sunday or public holidays.</td></tr><tr><td><ul style="list-style-type: none">• Processing;• Heavy vehicle transportation (arrival at or departure from the site)</td><td><ul style="list-style-type: none">• 7am to 6pm Monday to Friday (except public holidays);• 8am to 6pm Saturday; and• At no time on Sunday or public holidays.</td></tr></table>	Activity	Permissible Hours	<ul style="list-style-type: none">• Site establishment• Construction activities• Blasting and small charge popping• Dozer operations	<ul style="list-style-type: none">• 9am to 5pm Monday to Friday (except public holidays).	Vegetation clearing campaigns	<ul style="list-style-type: none">• 9am to 5pm Monday to Friday (except public holidays), for up to 2 weeks per annum.	Drilling	<ul style="list-style-type: none">• 8am to 5pm Monday to Friday (except public holidays).	Rock hammering	<ul style="list-style-type: none">• 10am to 12pm Monday to Friday; and• At no time on Saturday, Sunday or public holidays.	<ul style="list-style-type: none">• Processing;• Heavy vehicle transportation (arrival at or departure from the site)	<ul style="list-style-type: none">• 7am to 6pm Monday to Friday (except public holidays);• 8am to 6pm Saturday; and• At no time on Sunday or public holidays.	Section 5.1
Activity	Permissible Hours													
<ul style="list-style-type: none">• Site establishment• Construction activities• Blasting and small charge popping• Dozer operations	<ul style="list-style-type: none">• 9am to 5pm Monday to Friday (except public holidays).													
Vegetation clearing campaigns	<ul style="list-style-type: none">• 9am to 5pm Monday to Friday (except public holidays), for up to 2 weeks per annum.													
Drilling	<ul style="list-style-type: none">• 8am to 5pm Monday to Friday (except public holidays).													
Rock hammering	<ul style="list-style-type: none">• 10am to 12pm Monday to Friday; and• At no time on Saturday, Sunday or public holidays.													
<ul style="list-style-type: none">• Processing;• Heavy vehicle transportation (arrival at or departure from the site)	<ul style="list-style-type: none">• 7am to 6pm Monday to Friday (except public holidays);• 8am to 6pm Saturday; and• At no time on Sunday or public holidays.													
Schedule 3 Condition 10	<p>The Proponent shall ensure that blasting on the site does not cause exceedances of the criteria in Table 4. However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner, and has advised the Department in writing of the terms of this agreement.</p> <p><i>Table 4 - Blasting criteria</i></p> <table><tr><th>Location</th><th>Airblast Overpressure (dB(Lin Peak))</th><th>Ground Vibration (mm/s)</th><th>Allowable Exceedance</th></tr><tr><td rowspan="2">Residence on privately-owned land</td><td>120</td><td>10</td><td>0%</td></tr><tr><td>115</td><td>5</td><td>5% of total blasts over a period of 12 months</td></tr></table>	Location	Airblast Overpressure (dB(Lin Peak))	Ground Vibration (mm/s)	Allowable Exceedance	Residence on privately-owned land	120	10	0%	115	5	5% of total blasts over a period of 12 months	Section 4	
Location	Airblast Overpressure (dB(Lin Peak))	Ground Vibration (mm/s)	Allowable Exceedance											
Residence on privately-owned land	120	10	0%											
	115	5	5% of total blasts over a period of 12 months											

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Condition	Action	Section Addressed
Schedule 3 Condition 11	<p>Property Inspections</p> <p>If the Proponent receives a written request from the owner of any privately-owned land within two kilometres of the quarry pit for a property inspection to establish the baseline condition of any buildings and/ or structures on his/her land, then within two months of receiving the request the Proponent shall:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:</p> <ul style="list-style-type: none"> • establish the baseline condition of any buildings and other structures on the land; and • identify measures that should be implemented to minimise the potential blasting impacts of the project on these buildings and/ or structures; and <p>(b) give the landowner a copy of the property inspection report.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Proponent or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Director-General for resolution.</p>	Section 3.1
Schedule 3 Condition 12	<p>Property Investigations</p> <p>If the owner of any privately-owned land claims that buildings and/ or structures on his/ her land have been damaged as a result of blasting on the site, then within two months of receiving this claim the Proponent shall:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and</p> <p>(b) give the landowner a copy of the property investigation report.</p> <p>If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damage to the satisfaction of the Director-General.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Proponent or the landowner disagrees with the findings of the independent property investigation, either party may refer the matter to the Director-General for resolution.</p>	Section 7.1
Schedule 3 Condition 13	<p>Operating Conditions</p> <p>During operation of the project, the Proponent shall:</p> <p>(a) implement best management practice to:</p> <ul style="list-style-type: none"> • protect the safety of people and livestock in the surrounding area; • protect public or private infrastructure/ property in the surrounding area from any damage; • minimise the dust and fume emissions from any blasting; and • comply with the blasting criteria in condition 10 of schedule 3; and <p>(b) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site, to the satisfaction of the Director-General.</p>	Section 5; Section This BMP
Schedule 3 Condition 14	The Proponent shall not undertake blasting on site within 500 metres of any land outside the site that is not owned by the Proponent, unless:	Section 5.1

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Condition	Action	Section Addressed
	<p>(a) the Proponent has a written agreement with the relevant landowner to allow blasting to be carried out closer to the land, and the Proponent has advised the Department in writing of the terms of this agreement, or</p> <p>(b) the Proponent has:</p> <ul style="list-style-type: none"> demonstrated to the satisfaction of the Director-General that the blasting can be carried out closer to the land without compromising the safety of the people or livestock on the land, or damaging the buildings and/or structures on the land; and updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the land. 	
Schedule 3 Condition 15	<p>Blast Management Plan</p> <p>The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Director-General. This plan must:</p> <p>(a) be prepared in consultation with the EPA by suitably qualified and experienced person whose appointment has been approved by the Director-General;</p> <p>(b) describe the measures that would be implemented to ensure:</p> <ul style="list-style-type: none"> best management practice is being employed; compliance with the relevant conditions of this approval; <p>(c) include a monitoring program for evaluating and reporting on the performance of the project, including:</p> <ul style="list-style-type: none"> compliance with the applicable criteria; and minimising the fume emissions from the site. <p>The Proponent shall not carry out any blasting on the site under this approval before this plan has been approved by the Director-General.</p>	This BMP Appendix A
Schedule 4 Condition 1	<p>NOTIFICATION OF LANDOWNERS</p> <p>Prior to carrying out any development on the site under this approval, the Proponent shall notify in writing the owner/s of:</p> <p>(a) any privately-owned land within two kilometres of the approved blasting on site that they are entitled to request an inspection to establish the baseline condition of any buildings or structures on their land;</p> <p>(b) residences 'O', 'P', 'Q', 'V' and 'W' marked on the figure in Appendix 2 and the residence on the land marked '6' on the figure in Appendix 2 (that was approved prior to the date of this approval), that they have the right to request visual mitigation measures (such as landscaping treatments or vegetation screens) on their land at any stage of the project; and</p> <p>(c) residence on the Breed land that they have the right to ask for additional noise mitigation measures to be installed at their residence at any stage of the project.</p>	Section 3.1; Section 5

Environment Protection Licence EPL20551 Limit Conditions L5 Blasting

L.5.1	The overpressure level from blasting operations at the premises must not exceed 115 dB (Lin Peak) for more than five percent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	Section 4 Table 3
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L5.2	The overpressure level from blasting operations at the premises must not exceed 120 dB (Lin Peak) at any noise sensitive location at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	Section 4 Table 3
L5.3	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec for more than five percent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	Section 4 Table 3
L5.4	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10 mm/sec at any noise sensitive location at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded. Note: "Noise Sensitive Locations" include buildings used as a residence, hospital, school, child care centre, place of public worship and nursing homes. A noise sensitive location includes the land within 30 metres of the building.	Section 4 Table 3
L5.5	Blasting operations at the premises may only take place between 9:00am and 5:00pm Monday to Friday (excluding public holidays). (Where compelling safety reasons exist, the Authority may permit a blast to occur outside the abovementioned hours. Prior written (or facsimile) notification of any such blast must be made to the Authority).	Section 5.1

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APPENDIX B

COPIES OF CORRESPONDENCE

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Your reference :
Our reference : EF13/4935; DOC13/41414
Contact : Mr Andrew Helms; (02) 6332 7604

Ms Emma Yule
Environmental Scientist
Minespex Pty Limited
PO Box 604
MUDGEES NSW 2850

8 August 2013

Dear Ms Yule

I refer to the draft noise, air and landscape management plans (the Plans) for the Oberon White Granite Quarry received by the Environment Protection Authority (EPA) on 2 August 2013.

Thank you for forwarding the Plans for our records. The EPA encourages the development of Environmental Management Plans/Programs to ensure that proponents have determined how they will meet their statutory obligations and environmental objectives as specified by any Project/Development Approval and/or the conditions of an environment protection licence. However, the EPA does not review these plans/programs (unless in circumstances deemed necessary) as the role of the EPA is to set conditions/criteria for environmental protection and management, not to be directly involved in the development of strategies to comply with such conditions/criteria.

In this instance, the EPA will not be reviewing or endorsing the Plans.

As a management tool, such plans should assist Mudgee Stone Company Pty Limited in meeting their commitment to statutory compliance and wider environmental management and where appropriate should be integrated with other operational or management plans. The EPA recommends that such plans be audited to an industry standard or certified to the ISO 14001 standard (if applicable) as part of any overall environmental management system.

Should you have any further enquiries in relation to this matter please contact Mr Andrew Helms at the EPA's Central West Office (Bathurst) by telephoning (02) 6332 7604.

Yours sincerely

DARRYL CLIFT
Head Central West Unit
Environment Protection Authority

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