



Mudgee Stone Company Pty Ltd

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LANDSCAPE MANAGEMENT PLAN

OBERON WHITE GRANITE QUARRY



LANDSCAPE MANAGEMENT PLAN

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Endorsement of LMP by Mudgee Stone Company Director or Delegate

Director

Date



10 August 2017

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ABBREVIATIONS

BMP	Biodiversity Management Plan
BMS	Biodiversity Monitoring Services
BOS	Biodiversity Offset Strategy
Department	NSW Department of Planning & Environment
EA	Environmental Assessment
EEC	Endangered Ecological Community
EMP	Environmental Management Plan
EMS	Environmental Management Strategy
EPL	Environment Protection Licence
LHPA	Livestock Health and Pest Authorities
LMP	Landscape Management Plan
MSC	Mudgee Stone Company
NATA	National Association of Testing Authorities, Australia
NSW EPA	NSW Environment Protection Authority
OEH	Office of Environment and Heritage NSW
PA	Planning Approval
RMP	Rehabilitation Management Plan
SEPP 44	State Environmental Planning Policy No 44 – Koala Habitat Protection
The Project	The Oberon White Granite Quarry operating under PA07_0122
WMP	Water Management Plan

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1 INTRODUCTION

1.1 Overview

Mudgee Stone Company Pty Ltd (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 six kilometres east south-east of Oberon, NSW, covering an area of approximately 40 hectares.

On 7 September 2012, the Minister for Planning approved the expansion of the Oberon White Granite Quarry, refer to Project Approval (PA) (07_0122). The Project includes expansion of the extraction area and the rate of extraction at the quarry resulting in recovery of up to five million tonnes of granite over a 30 year period transported from the site via road (refer to **Figure 1**).

MSC has an Environmental Management System (EMS) to support commitments to minimising impact on the environment and community. The EMS 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 EMS include:

- an environmental management strategy;
- specific and separate Environmental Management Plans (EMPs), including this Landscape Management Plan (LMP), and environmental monitoring programs detailed in the Water Management Plan, Noise Management Plan and Air Quality Management Plan 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.

This LMP details the management measures in two key management areas being biodiversity management and rehabilitation management as depicted below in **Figure 2**.

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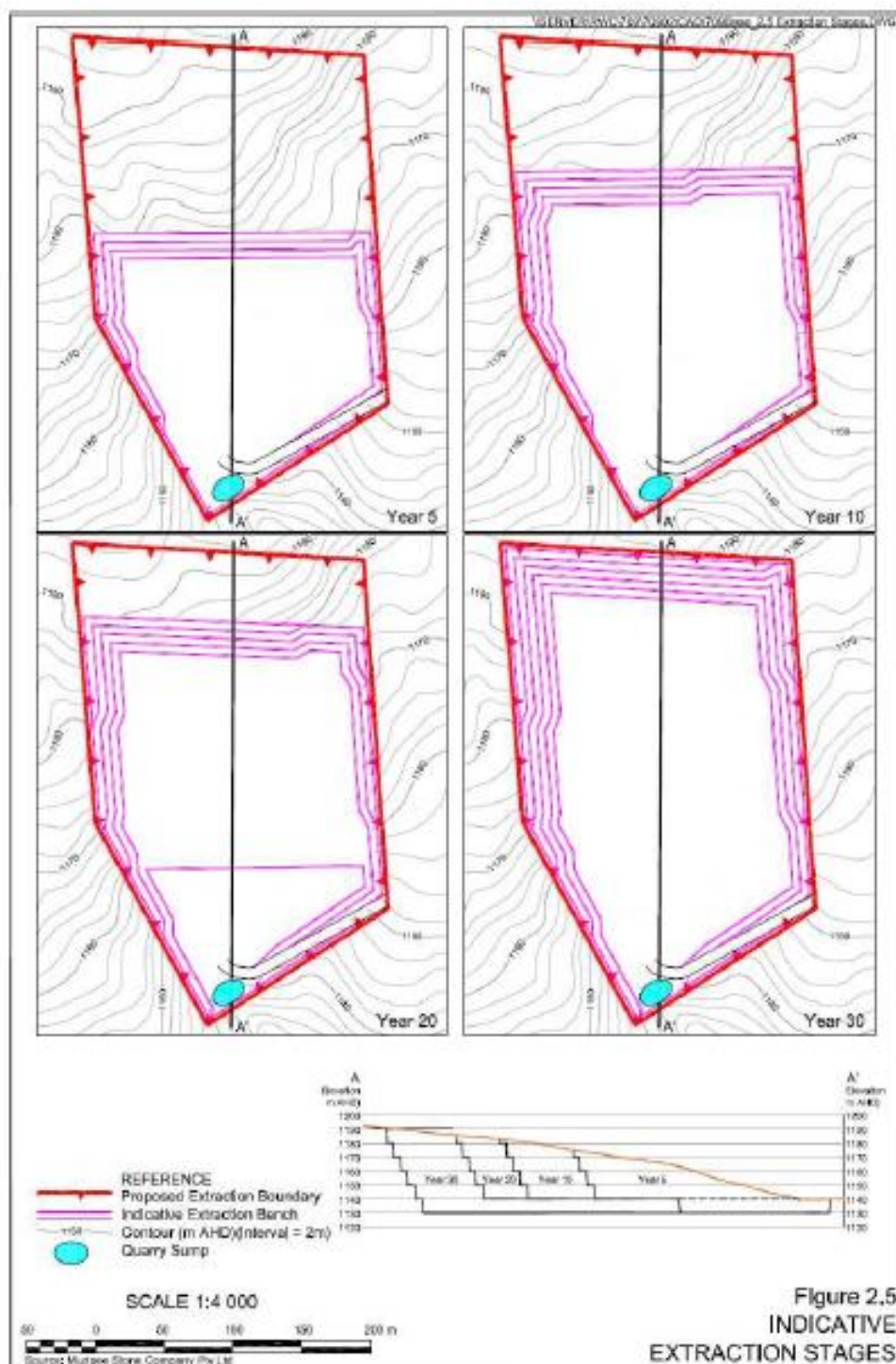


Figure 1: Indicative Extraction Stages

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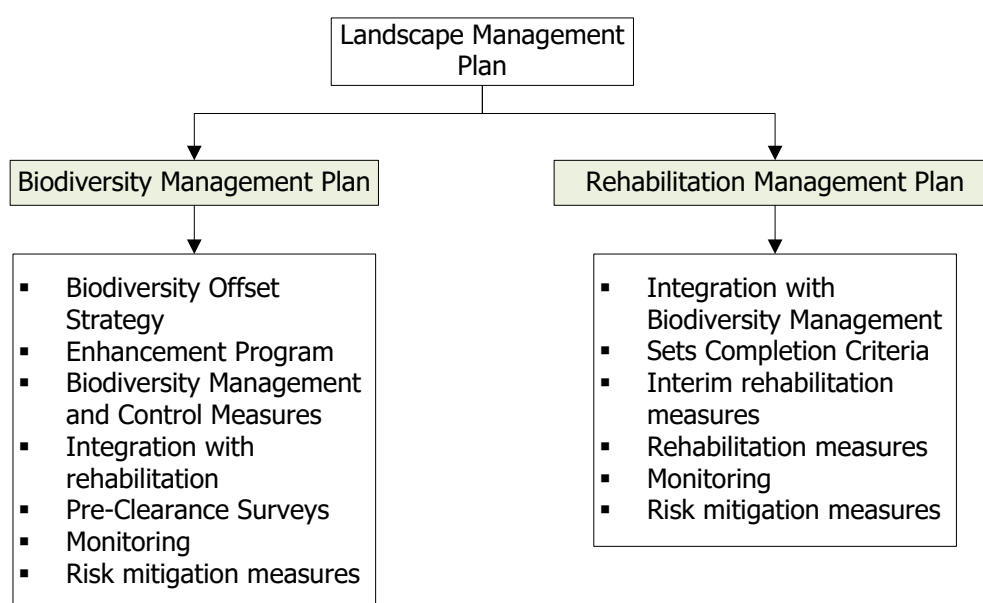


Figure 2: Overview of Landscape Management Plan

1.2 Scope

This LMP has been prepared to manage the biodiversity impacts associated with the operation of the Oberon White Granite Quarry. The scope of the plan applies to MSC operations, including MSC management, employees and contractors. The LMP implements the Biodiversity Offset Strategy (BOS) for the Project, integrating biodiversity and landscape management measures with interim rehabilitation strategies and rehabilitation for final quarry closure.

A copy of this LMP will be made available to members of the public on the MSC website: www.mudgeedolomitelime.com.au

1.3 Objectives

MSC have developed the LMP to address the conditions outlined in the PA (refer to **Appendix A**).

The objectives of the LMP are to:

- provide employees and contractors with a clear description of their responsibilities regarding landscape management issues;

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- identify procedures for implementation of landscape management measures, including the Biodiversity Management Plan (BMP) and Rehabilitation Management Plan (RMP);
- identify procedures for implementation of management measures and controls consistent with industry best management practice;
- address potential biodiversity and site stability issues arising from MSC's operations;
- implement a monitoring system to assess the effectiveness of landscape management and ensure performance criteria are being met;
- specify appropriate intervals for monitoring to evaluate, assess and report interim rehabilitation measures from disturbance during site establishment and progressive rehabilitation for operation of the quarry, as well as any enhancement campaigns in offset areas;
- record data suitable to demonstrate compliance with the conditions of PA07_0122, and provide a protocol for contingency plan implementation; and
- to provide direction to MSC staff to appropriately respond to receipt of landscape related complaints and incidents.

MSC will provide people, materials, resources and systems to properly perform requirements of the LMP. All MSC employees will be sufficiently competent, experienced and qualified to carry out the requirements, and specialist consultants will be engaged where required.

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2 STATUTORY REQUIREMENTS

This LMP including the Biodiversity Offset Areas have been developed in accordance with the Project Approval conditions with consultation also required to be undertaken with the Office of Environment and Heritage (OEH). Consultation undertaken with OEH is included in **Section 2.3**.

2.1 Legislation

Statutory requirements are contained within the PA, relevant licences and permits, and other relevant legislation. The relevant approval and licences are discussed below. The Project Approval was issued under the *Environmental Planning and Assessment Act 1979*. An Environmental Protection License (EPL 20551) for the quarry was issued under the *NSW Protection of the Environmental Operations Act 1997* in June 2015.

The following legislation may also be relevant to the implementation of the LMP:

- *Threatened Species Conservation Act 1995*;
- *Environment Protection and Biodiversity Conservation Act 1999*;
- *Rural Fires Act 1997*; and
- *Water Management Act 2000*.

2.2 Approvals and Licences

The Oberon White Granite Quarry PA stipulates the requirements related to this LMP. A table showing where the PA requirements are addressed in the document is included in **Appendix A**.

Relevant approvals and licences held by MSC are listed in **Table 1** below.

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 Environment (DPE) formerly NSW Department of Planning and Infrastructure (DP&I)

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EPL 20551	Licence – Premises Based	17 Jun 2015	NSW Environment Protection Authority (NSW EPA)
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PA (Schedule 3, Condition 44) requires the preparation and implementation of a LMP which must:

(a) prepared in consultation with OEHL by suitably qualified and experienced persons;

(b) include:

- a Biodiversity Management Plan that:
 - describes how the implementation of the biodiversity offset strategy would be integrated with the overall rehabilitation of the site;
 - describes the short, medium and long term measures that would be implemented to:
 - manage the remnant vegetation on the site; and
 - implement the biodiversity offset strategy;
 - includes detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);
 - includes a detailed description of the measures that would be implemented over the next 3 years, including the procedures that would be implemented for:
 - enhancing the quality of existing vegetation and fauna habitat
 - restoring native vegetation and fauna habitat on the biodiversity areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary)
 - maximising the salvage of resources within the approved disturbance area – including vegetative, and soil resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area;
 - collecting and propagating seed;
 - minimising the impacts on fauna on site, including undertaking pre-clearance surveys;
 - controlling weeds and feral pests; controlling erosion;
 - controlling access; and
 - bushfire management;
 - includes a seasonally- based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria; and
 - identifies the potential risks to the successful implementation of the biodiversity offset strategy, and include a description of the contingency measures that would be implemented to militate against these risks; and
- A Rehabilitation Management Plan that:
 - describes how the rehabilitation of the site would be integrated with the implementation of the biodiversity offset strategy;
 - includes detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);

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- *describe the measures that would be implemented to ensure compliance with the relevant conditions of this project approval and all aspects of rehabilitation including quarry closure, final landform and final land use;*
- *include interim rehabilitation where necessary to minimise the area exposed for dust generation;*
- *includes a program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria; and*
- *build to the maximum extent practicable on the other management plans required under this approval.*

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

Travis Peake (Umwelt Practice Leader Ecology) has been approved by DP&E to act as the suitably qualified person to prepare this LMP (refer to **Appendix D**).

2.3 Consultation

In accordance with the requirements of Condition 44 (a) of the Project Approval, this management plan has been developed in consultation with OEH. A draft copy of the LMP has been submitted to OEH for review, with any comments to be incorporated into the final draft of this LMP prior to submission to DP&E.

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3 BASELINE DATA

The fauna and flora conditions on site prior to quarry extension are described in the flora and fauna survey reports included within the *Environmental Assessment for the Oberon White Granite Quarry* (R.W Corkery & Co. Pty Ltd, 2010) (EA). Central West Environmental Services (CWES) also completed an initial survey in Spring 2003 and second survey in Autumn 2007.

The CWES reports were used as background data for the flora and fauna assessments undertaken as part of the EA. Flora baseline data is primarily drawn from the Gingra Ecological Surveys (2010) *Oberon White Granite Quarry Flora Assessment*. Fauna baseline data is primarily drawn from the findings of the Biodiversity Monitoring Services (2010) *Oberon White Granite Quarry Fauna Assessment*.

3.1 Flora

From a total disturbance area of 11 hectares, the Project would require clearing of 7.1 hectares of vegetation, primarily because the accessible part of the alaskite resource is in vegetated parts of the site.

Four vegetation map units were identified by Gingra (2010) to be present within and surrounding the Project site:

1. Narrow-leaved Peppermint-Mountain Gum-Ribbon Gum Grassy Woodland (4.9 hectares to be cleared)
2. Ribbon Gum Woodland (0.2 hectares to be cleared)
3. Snow Gum-Mountain Gum Grassy Woodland (2 hectares to be cleared)
4. Grassland/Improved Pasture (3.9 hectares to be cleared)

The vegetation communities are located as depicted in **Figure 4**.

Species identified within the project disturbance boundary during the flora assessments do not include any listed as threatened species under the *Threatened Species Conservation Act 1995* (TSC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Based on the online search of the Atlas of NSW Wildlife and EPBC Protected Matters Database (Gingra, 2010), four threatened flora species listed under the TSC Act and/or EPBC Act including *Calotis glandulosa*, *Eucalyptus aggregata* (Black Box), *Eucalyptus pulverulenta* (Silver-leaved Mountain Gum) and *Thesium australe* (Austral Toadflax) have previously been recorded within 10 kilometres of the Project Site. Based on

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species profile information and an assessment of the likelihood of each species occurring on the Project Site, these species were considered unlikely to occur within the Project Site (refer to **Section 4.4.4.2** of the EA).

Although endangered ecological communities (EECs) were not identified on site as part of works undertaken for the EA, PA 07_0122 (Schedule 3, Condition 40) requires a survey of the disturbance area to determine whether the Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions Community is present on-site. This EEC was identified across 5.7 ha during a survey undertaken on 13 August 2015 (refer to **Figure 3**).

The vegetation communities to be cleared as part of the Project range in quality from poor to good, depending in the level of historical disturbance. Rabbits and exotic plant species have impacted all communities, although where the tree cover exists native understorey species are dominant and/or co-dominant with exotics.

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Figure 3: Location of EEC & habitat values within the survey area

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3.1.1 Flora – Corridors

No regional wildlife corridor mapping is known to have been undertaken within the Oberon area; however, the Project site does occur within an approximately 85 hectare patch of remnant woodland vegetation. Based on review of available aerial photography, it is not expected that the Project would substantially affect the significance of the remnant vegetation patch as a local wildlife corridor and any links with the riparian corridor associated with the Duckmaloi River would be retained.

Remnant vegetation is important due to its functionality as a fauna refuge and a 'stepping stone' in highly fragmented areas. Remnant vegetation may also provide connectivity with other habitats within and surrounding the Project site, including the vegetation communities and EECs identified in **Section 3.1**.

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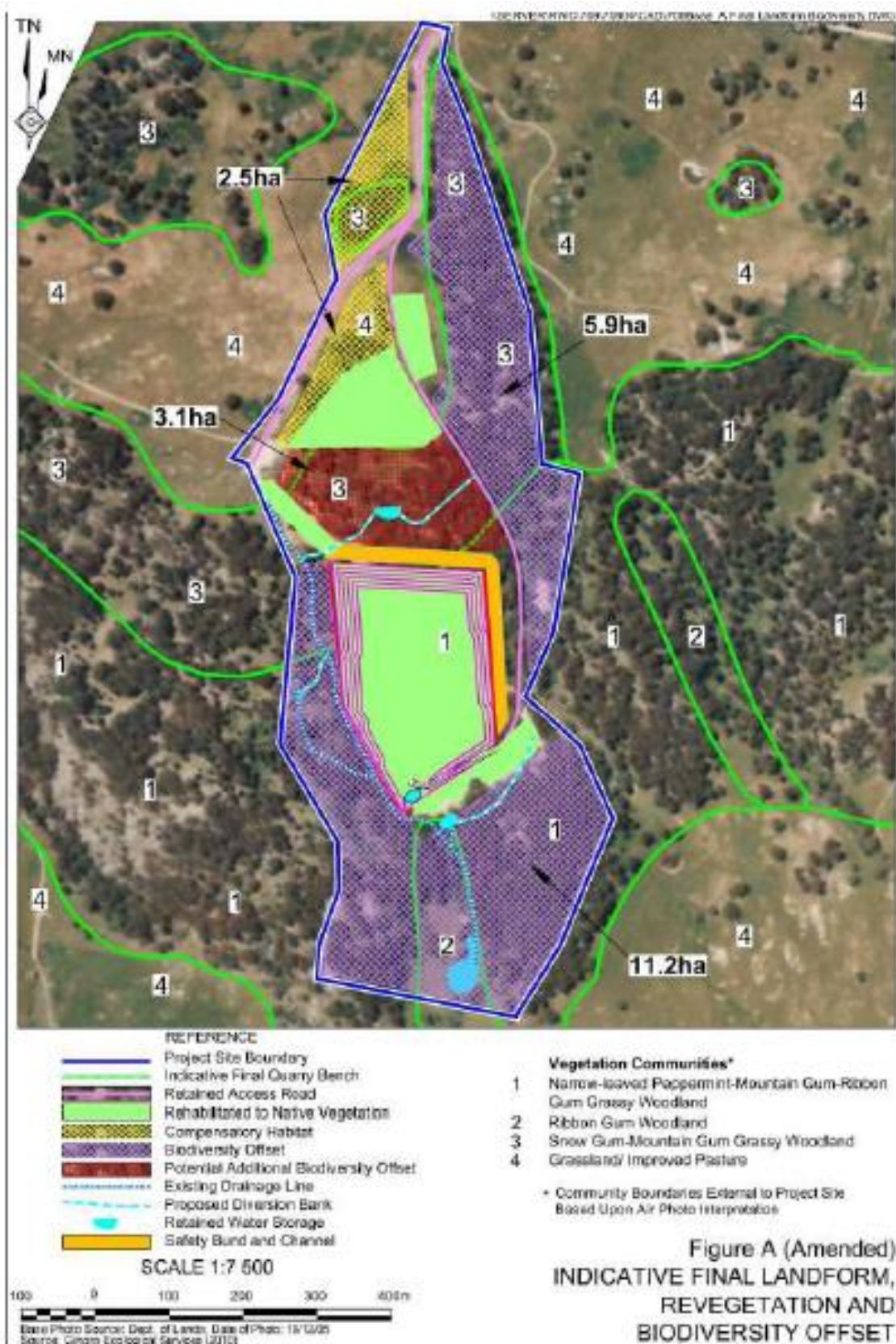


Figure 4: Vegetation Communities and Indicative Final Landform, Revegetation and Biodiversity Offsets

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3.2 Fauna

A survey conducted by CWES in 2003 identified 25 bird, 16 native mammals, three introduced mammals and six reptiles within the Project site. Of these species recorded, 2 bird species, the Flame Robin (*Petroica phoenicea*) and Scarlet Robin (*Petroica boodang*) are listed as Vulnerable under the NSW TSC Act. A full list of recorded species is provided in the EA.

A Search of the Atlas of NSW Wildlife was undertaken in 2010 by Biodiversity Monitoring Services (BMS) to determine the potential for threatened species to occur within the vicinity of the Project site. A total of three mammals, 12 birds, two amphibians and one invertebrate species which are listed under the NSW TSC Act as either Vulnerable or Endangered are known to occur within 50km of the Project site. Refer to table 4.12 of the EA for the list of threatened species.

A search of the EPBC Protected Matters Search Tool by BMS (2010) reveals that 12 migratory species, 20 threatened species and 12 Listed Marine Species are known to occur within a 50 kilometre radius surrounding the Project site. Refer to table 4.13 of the EA for the list of EPBC threatened species.

The EA assessment found that there would be no significant effects on any of the species identified as possibly being affected by the Project and referral under the EPBC Act was not required.

Refer to **Appendix C** for site identification details for the Scarlet Robin and Flame Robin.

3.2.1 Flora – Koala Habitat

The Fauna Assessment for the EA found that Potential Koala Habitat as defined by State Environment Planning Policy No 44-Koala Habitat Protection (SEPP 44) was found within the Project site. Schedule 2 of the SEPP 44 also provides a list of known Koala (*Phascolarctos cinereus*) food trees. One of the trees identified on the site, Ribbon Gum (*Eucalyptus viminalis*), exists in sufficient numbers for the site to be classified as 'Potential Koala Habitat'. However, it is not considered to be Core Koala Habitat, as the EA noted no koalas were observed no scats or scratchings were found and there was no response to Koala call playback.

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3.3 Baseline Data – Key Considerations

Based on the analysis of baseline data, the following considerations have been made:

- Any enhancement to existing vegetation should be considerate to enhancing habitat for the following threatened species that are known to occur on site:
 - Scarlet Robin; and
 - Flame Robin.
- Pre-clearance surveys should target identification of potential koala habitat and nesting sites for the Flame Robin and Scarlet Robin.
- Pre-clearance surveys should identify whether EECs are present which may have similar vegetation components as identified vegetation communities.

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4 PERFORMANCE CRITERIA

During the operation 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 LMP include:

1. Successful establishment of compensatory planting areas to be excluded from disturbance areas as described in **Section 6.2**.
2. The successful implementation of mitigation measures such as weed control, clearing controls etc as described in **Section 6.5**.
3. The successful establishment of the BOS which enhances the habitat for threatened species that are known to occur on the site. Refer to **Section 6.4** for the BOS completion criteria.
4. The progressive rehabilitation of the site with native endemic flora species in accordance with the rehabilitation objectives adopted under this LMP. Refer to **Section 7.4** for rehabilitation completion criteria.

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5 LANDSCAPE MANAGEMENT AND CONTROL MEASURES

MSC has committed to managing its operations to minimise impact on the environment. The landscape management and control measures are considered in two sub-management plans within this LMP:

Section 6 - Biodiversity Management Plan

Section 7 - Rehabilitation Management Plan.

The LMP is supported by the management measures in other managements plans under the EMS, which are applicable to both the rehabilitation and biodiversity offset components, such as the Water Management Plan (WMP).

5.1 Biodiversity Objectives

The LMP seeks an alignment of biodiversity objectives with outcomes sought through the BOS and RMP.

Category	Objectives
Biodiversity Generally	
Implemented through the Biodiversity Management Plan	Avoidance of impacts to areas of high ecological value and where avoidance cannot be achieved those impacts to be offset.
	Enhance local vegetation cover and improve potential koala habitat.
	Engage appropriate management of vegetated lands outside the impact zone and under the control of MSC.
	Improve compensatory planting areas utilising species from Snow Gum-Mountain Gum Grassy Woodland community.
Offset areas	
	Secure the local conservation of any identified threatened species habitats (including Scarlet Robin and Flame Robin habitat) and important local biodiversity. Long term security of the biodiversity offset areas is to be through an appropriate legal instrument.
	Enact appropriate measures to ensure in the event Endangered Ecological Communities are identified any impacts are appropriately offset.
	Improve offset areas through planting to enhance the habitat for threatened species that are known to occur on

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	the site (including Scarlet Robin and Flame Robin) and any other identified threatened species.
Rehabilitation areas	
Implemented through the Rehabilitation Management Plan	Safe stable landforms consistent with the surrounding environment restored through progressive rehabilitation utilising local native species. Refer to Section 7.2 which refines rehabilitation objectives for areas of disturbance.

5.2 Rehabilitation and Conservation Bond

In accordance with Schedule 3 Condition 42 of PA 07_0122, MSC will within 6 months of the approval of the LMP, lodge a Rehabilitation and Conservation Bond with DPE. The bond aims to ensure that the rehabilitation of the site and the biodiversity offset strategy are implemented in accordance with the relevant performance and completion criteria in the plan.

The sum of the bond will be determined to the satisfaction of the Secretary by a suitable qualified person whose appointment has been approved by the Secretary and provide for the full cost of rehabilitation the site and implementing the BOS.

If the rehabilitation of the site and the implementation of the biodiversity offset strategy are completed to the satisfaction of the Secretary of DPE (formerly the Director-General), in general accordance with the relevant completion criteria in the LMP, then the Secretary will release the bond.

Within three months of each Independent Environmental Audit, MSC shall review, and if necessary revise, the sum of the Rehabilitation and Conservation Bond to the satisfaction of the Secretary. This will take into consideration:

- The effects of inflation;
- The likely cost of implementing the biodiversity offset and rehabilitating the site; and
- The performance of the implementation of the biodiversity offset strategy and rehabilitation of the site to date.

In accordance with Condition 9 of Schedule 5 of PA 07_0122 one year after the commencement of development on the site under this approval, and every three years thereafter, unless the Secretary directs otherwise, the MSC shall commission and pay the full cost of an Independent Environmental Audit of the Project. MSC Directors will ensure that a copy of the audit report is submitted to the Secretary within six weeks

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of the audit, together with MSC response to any recommendations contained in the audit report.

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Biodiversity Management Plan

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6 BIODIVERSITY MANAGEMENT PLAN

6.1 Overview of Biodiversity Management

The biodiversity management measures are to be integrated with the RMP through the alignment of revegetation techniques, species selection for rehabilitation plantings, top soil management techniques and alignment of completion criteria where possible.

Biodiversity management includes the following key components:

- Implementation of the Biodiversity Offset Strategy (BOS)
- Management of remnant vegetation on the Project site, including:
 - bushfire management measures;
 - facilitate the establishment of vegetation corridors and where possible, creating links to areas of remnant vegetation surrounding the Project site;
 - implementation of the BOS;
 - weed management; and
 - access control.
- Enhancement of biodiversity areas, including:
 - compensatory plantings;
 - revegetation techniques; and
 - collecting and propagating seed.
- Operational controls to ensure vegetative and soil resources are appropriately utilised, including:
 - pre-clearance surveys (retention of selected vegetation, including mark-up during clearing);
 - topsoil management measures;
 - controlling access and machine wash down to ensure exclusion of foreign soil;
 - erosion and sedimentation control;
 - weed and pest control (control of noxious weeds and exclusion of domestic grazing animals);
 - ongoing progressive and prompt rehabilitation of disturbed areas; and
- monitoring and assessment against adopted completion criteria.

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6.2 **Biodiversity Offset Strategy**

6.2.1 **Offsets**

The Project would result in a removal of approximately 7.1 hectares of woodland communities (grasslands occurring are considered to have minimal conservation significance due to the domination of exotic species). To minimise the potential biodiversity impacts of the Project and offset the loss of vegetation, MSC proposes to implement a biodiversity offset strategy. MSC aims to 'maintain and improve' the biodiversity values of the region in the short, medium and long term.

The biodiversity offset area will comprise an area of 17.1 hectares surrounding the perimeter of the extraction site with exception to the north of the extraction site which will comprise 3.1 hectares of 'Potential Additional Biodiversity Offset'. An additional 2.5 hectares of vegetation to the north of the extraction site will be designated as enhanced compensatory planting areas that would aim to establish mid-story and canopy layers to restore the original vegetation community in this part of the site. **Figure 4** shows the indicative final landform and biodiversity offset areas.

Improvement of habitat for the two threatened species identified as known to occur onsite (the Scarlet Robin and Flame Robin) will be made through the planting of specified vegetation to create and enhance the existing habitat through the ongoing application of control measures described in **Sections 6.3** and **6.4**. The established offset area will be protected into the future through a legal covenant or similar arrangement.

In summary, the offset strategy is shown in **Figure 4** and comprises:

1. security in perpetuity of 20.2 hectares of the Project site for conservation; and
2. compensatory planting in two grassland areas totalling 2.5 hectares.

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6.3 Offset Program for the Next Three Years

The Project Approval requires a range of actions in regards to the implementation of the biodiversity offset strategy and the long term security of offsets. As part of the development of this LMP, a number of actions have been identified as being required to be addressed in accordance with the requirements of the Project Approval. Actions required to be undertaken by MSC are detailed within Conditions 37 – 41 (inclusive) of the Project Approval. MSC propose the following to address these conditions:

1. By the end of February 2017, undertake a review of the pre-clearance survey outcomes required by Condition 40 of the Project Approval (refer to **Section 3.1**) to determine if the Biodiversity Offset Strategy for the site is required to be revised. It is noted that the pre-clearance survey has been undertaken.
2. By the end of March 2017, undertake consultation with OEH and DP&E regarding the approved Biodiversity Offset Strategy for the site and the results of the pre-clearance survey required by Condition 40.
3. By the end of March 2017, determine compensatory planting completion criteria and completion criteria for offset areas required by the Project Approval.
4. Following consultation with OEH and DP&E regarding the offsets for the site, the scope of works to be undertaken in each offset area will be developed in accordance with the requirements of the Project Approval. This LMP will be updated to include these works, with timeframes for securing the offsets and lodging the Rehabilitation and Conservation Bond to be developed in consultation with the DP&E following the confirmation of whether additional offsets are required.

Baseline/monitoring transects or reference sites are established by ecologist to evaluate the success of enhancement works/ weed and pest management and the sites progress towards fulfilling long term completion criteria.

Refine completion criteria for offset areas, compensatory planting and weed and feral animal control in consultation with OEH during the progression of works.

Undertake biodiversity management measures in offset and enhancement areas, such as:

- a. fencing and access control
- b. implement bushfire management strategies
- c. pest animal control
- d. weed control

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- e. monitoring
- f. reporting

In the subsequent three year period the works will focus on continued implementation of biodiversity management measures, the commencement of enhancement works and monitoring of offset areas.

6.4 Completion Criteria - Biodiversity Offset Strategy

Completion criteria are objective target levels or values assigned to a variety of indicators, which can be measured against to demonstrate progress and ultimate success of the offset program. As such, they provide a defined end point, at which point in time the biodiversity offset strategy can be deemed successful and the rehabilitation and conservation bond can be released. Completion criteria, determined in consultation with the relevant stakeholders, will be utilised to demonstrate achievement of biodiversity objectives.

It is noted in **Section 6.3**, Compensatory Planting and Offset Area completion criteria will be determined by the end of March 2017.

The preliminary completion criteria for the offset areas are outlined in **Section 7.4.1**. The criteria have been developed considering site specific issues and objectives. The preliminary criteria will be reviewed and revised throughout the life of the quarry and used as the basis for further refinement following the commencement of procedures outlined in **Section 6.5**; consideration of the results of monitoring programs; and consideration of any stakeholder feedback. Monitoring the progress against completion criteria provides a positive feedback loop whereby, based on the results of monitoring, specific actions can be implemented to assist in the progression of rehabilitation and achievement of rehabilitation goals and objectives. The progress towards completion criteria will be monitored and reported within the Annual Review.

6.4.1 Completion Criteria for the Biodiversity Offset Areas

Completion criteria for the Biodiversity Offset Areas will be developed in further detail by the end of March 2017 however the completion criteria for offset area will include requirements for:

- fencing of the offset area;
- management of cattle;

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- installation of signage;
- Species diversity and how this will be achieved (through either passive regeneration or planting);
- weed and feral animal control; and
- identification of erosion and water quality management.

The revised LMP will also include further detail regarding the monitoring programs to be implemented to confirm whether the offset areas are progressing towards meeting the completion criteria.

6.5 Biodiversity Management Measures

MSC is committed to implementing reasonable and feasible rehabilitation and biodiversity measures. A range of short, medium and long-term management controls will be implemented throughout the life of the operation to achieve ongoing mitigation of potential impacts on remnant vegetation and habitat disturbance. These specific management controls are detailed further in this section.

In the first instance, to mitigate impacts to potential sensitive areas, where practicable, impacts on these areas will be avoided. Impacts will be avoided through the use of existing access tracks and planning of disturbance activities to avoid treed areas. However, where impacts cannot be avoided, the following sections detail the process to be implemented to manage potential impacts to identified ecological values.

Progressive rehabilitation and revegetation of the post-quarry area will be conducted over the life of the operations. The objective is to create a stable final landform within the quarry pit consisting of self-sustaining vegetation communities characteristic of the pre quarry environment.

With regard to clearance activities, vegetation clearing works will be required as a result of the continued operations at Oberon Granite White Quarry. All clearing activities will be undertaken in accordance with the procedure identified in **Section 6.5.1.1**.

6.5.1 Short-term Measures

6.5.1.1 Clearance Controls

Vegetation Clearance Protocol

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MSC has adopted a vegetation clearance protocol outlined in **Figure 5**. The protocol requires a clear delineation of land to be cleared, pre-clearance survey to be completed, pre-clearance inspections, resource recovery, weed treatment as needed, and adoption of fauna management techniques.

Vegetation to be retained will be clearly defined and marked prior to the commencement of site establishment / additional vegetation clearing to ensure that native vegetation clearing is confined only to those areas required for Project operations.

A pre-clearance inspection will be undertaken by a suitably qualified and experienced ecologist prior to vegetation clearing to determine the presence of breeding/nesting native fauna within the disturbance area. Particular attention will be paid to searches of potential Koala, Scarlet Robin and Flame Robin habitats such as hollows, fallen timber/hollow logs and coarse woody debris. If such habitat is suspected to be being used by these species (where practical) further searches/surveys will be completed to ensure this species is not resident in the area to be cleared. The survey would be undertaken by inspection of trees from the ground and by searches for other evidence of nesting, particularly by threatened bird species.

Non-habitat trees are to be cleared first, with a minimum 24 hour period to lapse prior to habitat trees being cleared to allow fauna to relocate. Wherever possible the clearing shall also be restricted to the periods between February and August to avoid the breeding season of threatened species that may potentially occur within the Project site and surrounds.

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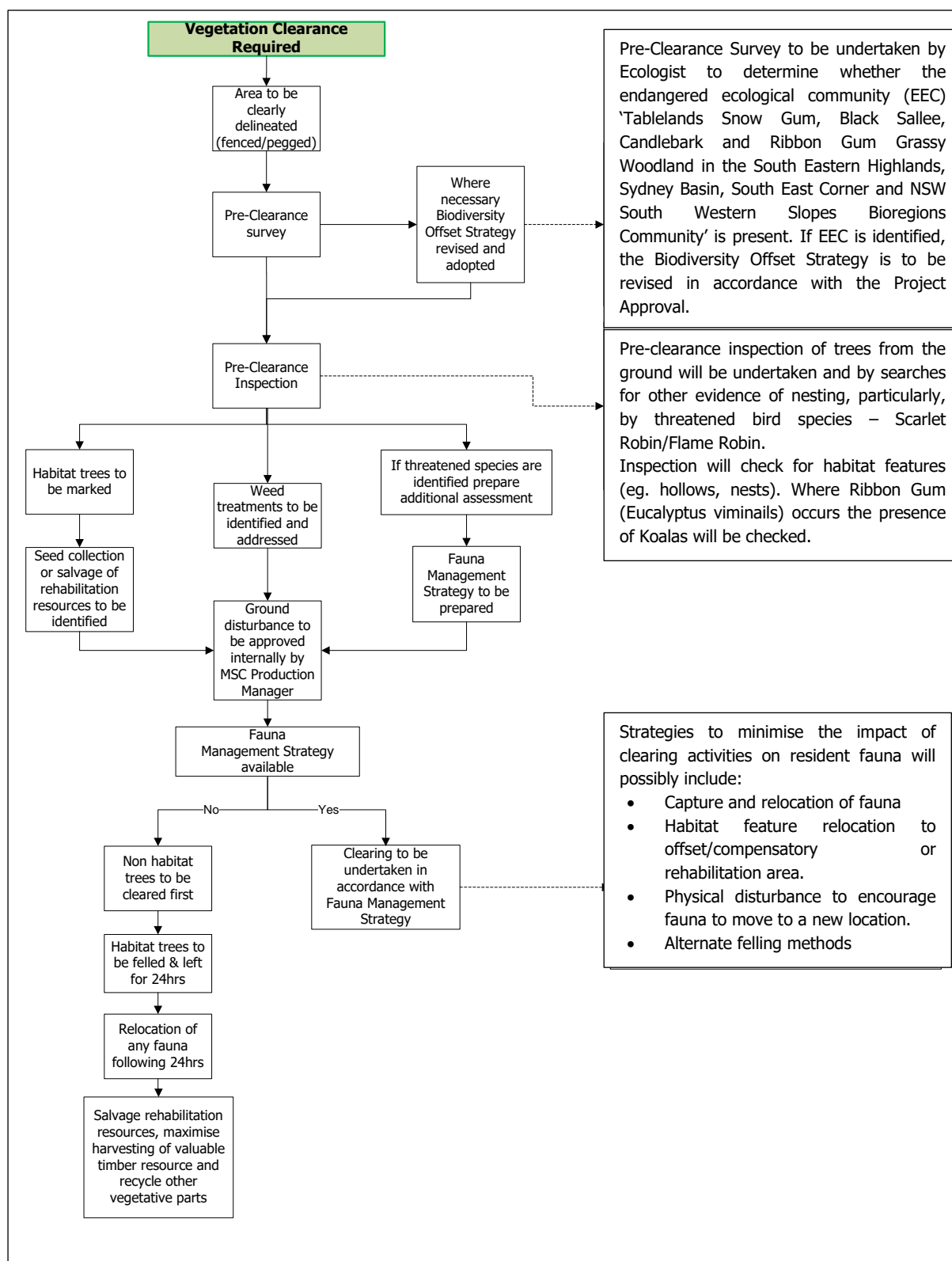


Figure 5: Vegetation Clearance Protocol

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6.5.2 Medium-term Measures

6.5.2.1 Vegetation Management

The species of native vegetation present on the Project site are shown in **Table 2**. These species are also the vegetative species which should be used to enrich the offset and compensatory planting areas. Emphasis should be placed upon the planting of Ribbon Gum in order to improve the possibility of future Koala habitat.

Table 2: Native Vegetation Species Found on Project Site

Common Name	Scientific Name	Narrow-leaved Peppermint Mountain Gum-Ribbon Gum Grassy Woodland	Ribbon Gum Woodland	Snow Gum-Mountain Gum Grassy Woodland
Canopy Vegetation				
Narrow-leaf peppermint	<i>Eucalyptus radiata</i>	C	C	C
Ribbon gum	<i>Eucalyptus viminalis</i>	C	D	
Snow gum	<i>Eucalyptus pauciflora</i>			D
Mountain Gum	<i>Eucalyptus dalrympleana</i>	C	C	C
Shrubby Vegetation				
Blackwood	<i>Acacia melanoxylon</i>	C		C
Silver wattle	<i>Acacia dealbata</i>	P	P	P
Mountain baeckea	<i>Baeckea utilis</i>		C	
Hoary guinea flower	<i>Hibbertia obtusifolia</i>	C		
River lomatia	<i>Lomatia myricoides</i>	C	C	
Groundcover Vegetation				
Sheeps burr	<i>Acaena agnipila</i>	C	C	C
Australian bugle	<i>Ajuga australis</i>			C
woodruff	<i>Asperula conferta</i>	P	P	P
Necklace fern	<i>Asplenium flabellifolium</i>		P	
Bulbine lily	<i>Bulbine bulbosa</i>		P	
White fingers	<i>Caladenia catenata</i>	O		
-	<i>Cardamine paucijuga</i>		P	
-	<i>Cardamine lilacina</i>		P	
Rock fern	<i>Cheilanthes austrotenuifolia</i>		C	

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Common Name	Scientific Name	Narrow-leaved Peppermint Mountain Gum-Ribbon Gum Grassy Woodland	Ribbon Gum Woodland	Snow Gum-Mountain Gum Grassy Woodland
Common everlasting	<i>Chrysocephalum apiculatum</i>	P		P
Button everlasting	<i>Coronidium scorpiodes</i>		C	
Bears ear	<i>Cymbonotus lawsonianus</i>			C
-	<i>Cynoglossum suaveolans</i>	C		
Kidney weed	<i>Dichondra repens</i>	P	P	
Tiger orchid	<i>Diuris sulphurea</i>	O		O
Star cudweed	<i>Euchiton involucratus</i>	C		
-	<i>Galium cilare</i>			C
Rough bedstraw	<i>Galium gaudichaudii</i>	P		P
Native geranium	<i>Geranium solanderi</i>	P	P	P
Twining glycine	<i>Glycine clandestina</i>	P	P	P
Stinking pennywort	<i>Hydrocotyle laxiflora</i>		P	P
Little lomandra	<i>Lomandra filiformis</i>	P	P	P
Pale mat-rush	<i>Lomandra glauca</i>	P		
Spiny mat-rush	<i>Lomandra longifolia</i>	P	P	P
-	<i>Luzula flaccida</i>		P	
Wood sorrell	<i>Oxalis perennans</i>	P	P	
	<i>Plantago debilis</i>			C
Variable plantain	<i>Plantago varia</i>	P		P
Bracken fern	<i>Pteridium esculentum</i>			C
Antelope greenhood	<i>Pterostylis laxa</i>	O		O
Common buttercup	<i>Ranunculus lappaceus</i>	P	P	P
Native raspberry	<i>Rubus parvifolius</i>		P	
-	<i>Senecio prenanthoides</i>	C		
Creamy stackhousia	<i>Stackhousia monogyna</i>	C		
Prickly starwort	<i>Stellaria pungens</i>	C	C	C
Stinging nettle	<i>Urtica incisa</i>		C	
Hairy speedwell	<i>Veronica calycina</i>	C		
Native violet	<i>Viola betonicifolia</i>	C		C
Grasses				

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Common Name	Scientific Name	Narrow-leaved Peppermint Mountain Gum-Ribbon Gum Grassy Woodland	Ribbon Gum Woodland	Snow Gum-Mountain Gum Grassy Woodland
speargrass	<i>Austrostipa nodosa</i>			
Snow grass	<i>Poa sieberiana</i>	C		C
Weeping grass	<i>Microlaena stipoides</i>		C	
Kangaroo grass	<i>Themeda triandra</i>	P	P	P

D species should be dominant in its strata

C common

O orchid species unlikely to be identified in seed mixes. Will likely colonise on its own in future

P present in lower number

The planting of the above vegetation will fulfil the criteria for enhancing or creating the habitat for the Scarlet Robin and Flame Robin, who both inhabit eucalypt forests and grassy woodlands.

6.5.2.2 Revegetation Techniques

Various techniques exist for seeding and planting of offset areas and these will be investigated during the early years of vegetation enhancement with the best techniques being carried through for use in later years to assist in the rehabilitation efforts within the Project site. These techniques will reflect those of the RMP to assist integration of the BOS and RMP, therefore revegetation techniques of the BOS should be consistent with **Section 7** of this LMP. MSC will engage contractors to perform the revegetation tasks. Consideration will be given to site conditions, including soil type and condition, landform, time of year (seasons), climate, water availability, and vegetation community establishment targets.

A seeding and planting specification will be provided to any subcontractors engaged to carry out the works. Surface preparation techniques, planting techniques, fertiliser and water application rates will be developed in consultation with a rehabilitation expert. The specification will be regularly updated to include the findings from rehabilitation trials and monitoring. This will ensure successful methods with good strike rates will be developed and applied in a progressive manner.

The basic requirements for successful revegetation techniques that will be undertaken include the following:

- seed to be propagated will be sourced using clean and viable seed to ensure it is of high quality;

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- planting locations will be determined by a qualified Ecologist or Botanist to ensure seedlings are planted in suitable areas (taking into account temperature, soil moisture, soil type etc.);
- planting to be undertaken during suitable seasons to be determined by and Ecologist or Botanist;
- preparation of the seedbed (dependent on species planted); and
- in areas identified as containing feral animals, seedlings will be protected from grazing with tree guards or exclusion fencing.

A combination of direct seeding and tube stock planting (if required) will be undertaken in the offset areas based on time and cost efficiencies for specific species. MSC will engage as required specialist nurseries to undertake the propagation of the tube stock plants. Contract tube stock numbers will include contingency factors to ensure adequate numbers of species are available. The nominated species list for tube stock material will be based on the required species list for revegetation programs.

6.5.2.3 Topsoil Management Measures

In order to maintain and utilise the nutrient value of the cleared topsoil, the following measures should be implemented:

- the upper 10 centimetres to 20 centimetres of topsoil would be stripped, together with the remaining smaller vegetation and groundcover. Topsoil will be stripped from all areas of disturbance given the valuable seed, organic matter and nutrient matter present in the topsoil;
- within the extraction area, subsoil would also be stripped from approximately 20 centimetres in depth up to 100 centimetres in depth, where possible, with the aim to strip an average thickness of approximately 50 centimetres of subsoil to provide sufficient material to achieve successful rehabilitation of finalised benches.
- stripping shall cease where excessively coarse or stony material is encountered;
- during the first five years of operation until final benches are created, all topsoil and subsoil will be stockpiled within the surge stockpile area or the footprint of the extraction area;
- beyond approximately Year five, stripped topsoil and subsoil is planned to be directly transferred to finalised areas awaiting completion. Topsoil and subsoil unable to be directly placed shall be temporarily stockpiled within the footprint of the extraction area for use in the progressive and final rehabilitation of the site;
- when stockpiling is necessary, topsoil and subsoil will be stockpiled separately from each other and to heights no greater than 2 meters and 3 meters respectively. Stockpiles shall be constructed with a slope no greater than 1:2

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- (V:H) and the surface left 'rough', in a micro sense, to assist in runoff control, seed retention and germination;
- any stockpile that would be retained in excess of three months and has not naturally established a cover will be seeded using a non-persistent cover crop to reduce erosion potential and assist in the maintenance of the biological viability of the soil resource;
 - care is to be taken to ensure that driving of machinery on the topsoil and subsoil stockpiles is avoided, through separated placement and signage where necessary to maximise soil aggregation and prevent compaction;
 - direct transfer during clearing and stripping campaigns, whenever possible, of subsoil and topsoil onto finalised quarry benches in order to preserve the native seed bank and as much organic material as possible;
 - direct seeding of spread topsoil with native tree and shrub species and, if necessary, supplementary planting of tube stock; and
 - the use of lime, gypsum and/or fertiliser to improve the nutrient properties of the soil.

6.5.2.4 Seed Collection and Propagation

Seed collection and propagation activities where practical, will contribute to revegetation associated with the rehabilitation of the site disturbance areas and the improvement of biodiversity offset/enhancement areas. Collection and propagation should be undertaken by a specialist or contractor to ensure the maximum yield for the seeds collected.

Targeting seed collection from superior parent plants and adhering to best practice principles for seed collection. Parent trees in remnants within the surrounding grazing areas are isolated and may have problems of seed viability due to poor cross pollination. The seasonality of seed availability will vary from year to year and for this reason, inspections to determine seed availability of the target seed will be necessary and seed collection timing is likely to be variable and reactive to environmental conditions.

Seed collection and propagation activities will include:

- examination of trees for their provision of seed prior to clearance;
- collation of relevant information on target species from past ecological studies;
- progressive collection of native seed from the local area to augment revegetation resources;
- the use of collection methods such as the manual removal of plant cuttings and stripping of seed pods, fruiting cones or berries directly off the plant into collection bags for transfer to drying rooms;

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- seed extraction methods such as sun drying, oven-baking, light firing, high-heat drying rooms and/or water soaking;
- the storage of seed in paper and/or calico bags in temperature controlled rooms;
- the labelling of seed collection bags with the species collected, collection location, harvest date and dry weight details; and
- the maintenance of a seed inventory which will record the amount of seed collected, species type and treatment and propagation specifications.

6.5.2.5 Threatened Species Management Protocol – Fauna Management Strategies

In the event that a threatened species is identified on-site which has not previously been identified, a suitably qualified ecologist will be engaged and the following protocol implemented:

- Implement appropriate measures to ensure that ongoing work will not significantly impact on the species while appropriate ameliorative measures are investigated by the ecologist;
- A suitably qualified ecologist will undertake an investigation into the distribution and habitat utilisation of the species, and to identify appropriate amelioration measures as necessary; and
- Review and update this Landscape Management Plan to include the outcomes of the investigation and any additional mitigation measures that are required to be implemented to protect the species.

Additionally, all newly identified threatened species will be reported annually in the Annual Review.

6.5.2.6 Weed control

Weed species could inadvertently be brought into Oberon White Granite Quarry with imported materials, machinery, or stock movement, or allowed to invade naturally through removal of native vegetation.

A weed control program will be implemented to limit the spread and colonisation of noxious and environmental weeds at the Oberon White Granite Quarry, and will include:

- regular inspections of the Quarry area to clarify any potential weed infestations
- the implementation of weed management measures as required including hand removal, mechanical removal and application of approved herbicides (in accordance with the *Pesticides Act 1999*) in authorised areas when favourable conditions prevail
- control of noxious weeds in accordance with the relevant legislation

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- clean down machinery which has been working within foreign soil material to minimise the risk of introducing weeds and plant pathogens before entering the site
- monitoring and inspections of areas to assess the effectiveness of the weed control program and to understand any requirement for further work
- ongoing consultation with the relevant authorities, as required, regarding weed listings, weed occurrence and management technologies.

Chemicals to be used on site for the purposes of weed control will be evaluated by review of their Safety Data Sheet and chemical label to determine their registration for control of target species, as well as the safety and environmental requirements during their use. Chemical spraying will be undertaken in accordance with the *Pesticides Act 1999*. A summary of the weed management activities undertaken on site will be reported in the Annual Review.

6.5.2.7 Feral Animal Control

In accordance with the requirements of the Rural Lands Protection Act, 1998 a feral animal control program will be implemented as required to control the occurrence of animal pests. The feral animal control program will include the following:

- Implementation of pest control measures (e.g. the destruction of rabbit burrows, feral cat trapping and baiting of foxes and wild dogs).
- Maintenance of a clean, rubbish-free environment, particularly around administration areas in order to discourage scavenging and reduce the potential for colonisation of these areas by non-endemic fauna (e.g. rodents).
- Mandatory pest control for any declared pests (i.e. rabbits, pigs and wild dogs) known to occur on site.
- No domestic pets such as cats or dogs or grazing animals (except where required to manage fire and fuel control) will be permitted to be brought onto the site; and
- Pest control in accordance with any Pest Control Orders issued under the Rural Lands Protection Act, 1998.

In addition to the above, MSC personnel and contractors will be requested as part of the site induction process to report any observations of animal pests.

Feral animal control programs will be completed as required. These programs typically consist of feral animal baiting. The details of feral animal sightings, control actions and the effectiveness of these control strategies will be reported in the Annual Review.

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6.5.2.8 Erosion and sediment control

Appropriate erosion and sediment control works will be undertaken by MSC within the development area. Erosion and sediment controls will also be installed, where necessary, on rehabilitated areas.

The erosion and sediment control measures that will be implemented to minimise risks associated with potential erosion and sediment impacts will be undertaken in accordance with the Oberon White Granite Quarry Water Management Plan.

6.5.2.9 Access Restrictions

Damage by vehicles can result in the compaction of soil (which can reduce the infiltration of water into the soil and restrict root growth, and consequently reduce natural regeneration), the spread of weeds and disturbance to vegetation. In order to reduce the degree of disturbance to the rehabilitation and offset areas, these areas will be fenced and signposted to limit access to authorised personnel only.

Vehicle and machine wash/shake down will occur to prevent foreign soil material from entering the quarry with a dedicated area at the site to be established.

6.5.2.10 Bushfire Management

The objective of bushfire management is to minimise the risk of bushfires on the Oberon White Granite Quarry site and rapidly control any bushfires, in order to minimise potential impacts to people, property and the environment.

Bushfire prevention and control measures implemented on the quarry site will include:

- Maintenance of a water storage/supply for fire fighting purposes;
- The training of MSC employees and contractors in general fire awareness and response procedures;
- The provision and maintenance of on-site fire fighting equipment;
- Appropriate management of dangerous goods;
- Regular inspections of the site to assess the adequacy of the fire control measures and to identify areas requiring bushfire control measures to be implemented;
- Fuel management by means other than burning such as grazing and slashing;
- Fuel management by burning where conventional fuel management strategies are inappropriate, impracticable or not successful (undertaken in consultation with relevant authorities and with relevant permits);
- Maintenance of designated firebreaks (which can act as control lines for low-intensity fires, and assist with safer access and egress for high-intensity fires, as well as providing for a defence line for back burnings) by a combination of slashing, grading or spraying;

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- On-going consultation with the NSW Rural Fire Service; and
- In the event that bushfire management requires the clearance of vegetation (e.g. for firebreaks), the Vegetation Clearance protocol is to be adhered to.

6.5.3 Long-term Measures

6.5.3.1 Salvage of environmental resources

Where feasible, the salvage and relocation of hollow logs, small tree limbs and trunks will be undertaken to augment habitat complexity within any areas to be rehabilitated or use in habitat improvement areas (if this area has low occurrences of such habitat resources). The purpose of this will be to increase habitat complexity in these areas, to make them more habitable for native species.

Habitat features suitable for salvage will be identified and marked in the field as part of pre-clearance surveys. The procedure for salvaging and reinstating habitat features is as follows:

- salvage hollow bearing trees, small tree limbs and trunks identified as part of the pre-clearance surveys, where practical and safe to do so
- hollow bearing trees, small tree limbs and trunks can be stockpiled in unused areas, if necessary, until able to be reinstated
- identify suitable areas to reinstate hollow bearing trees, small tree limbs and trunks
- carefully reinstate hollow bearing trees, small tree limbs and trunks to identified area
- hollow logs, small tree limbs and trunks can be placed in small piles to increase habitat complexity, while others can be placed individually in post-quarrying rehabilitation areas.

Selective separation and stockpiling of topsoil from overburden to the extent practicable given the thin, rocky soils present at the site, is key resource to be preserved for site rehabilitation at the clearing stage.

Trees may be examined for their provision of seed prior to vegetation clearance (refer to **Section 6.5.2.4**).

Habitat trees are to be felled as soon as practicable after a negative survey result. Those features with potential for use in rehabilitation programs (e.g. hollow branches, logs and coarse woody debris) may be salvaged and re-used in areas deemed suitable by the attending ecologist to enhance habitat for the Scarlet Robin and Flame Robin.

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6.5.3.2 Protecting vegetation outside the disturbance footprint

Pre-clearance surveys will be undertaken prior to any vegetation being cleared during operations (refer to **Section 6.5.1.1**). The disturbance area will be demarcated for the duration of the Project to ensure that only areas within the approved maximum disturbance area are cleared.

6.5.3.3 Visual Mitigation Measures

The compensatory planting area adjacent to the site access road will provide an additional 2.5 hectares to the 17.2 hectares of biodiversity offset. The compensatory planting area will be improved through planting of mid-storey and canopy vegetation amongst the already established patches of trees and the control of weed species.

6.6 Measurement and Evaluation - Biodiversity Management

Monitoring is outlined in this section for all biodiversity areas, including offset and compensatory planting sites and where specific measures are adopted for rehabilitation areas they are described in the RMP in **Section 7.8**. The monitoring will be reported in the Annual Review.

Routine Monthly Monitoring

Visual Monitoring

Visual monitoring of revegetation will be conducted by MSC staff as part of other routine environmental activities (at least monthly) to ensure planted vegetation is establishing and to determine the need for any maintenance and/or contingency measures (such as the requirement for supplementary plantings, erosion control and weed and animal pest control). Visual assessments allow for the rapid application of remedial actions where necessary.

Annual Monitoring

A monitoring report will be prepared by an ecologist or qualified appointed person, annually for the offset and compensatory planting areas, for the flora component of the monitoring of the program.

Monitoring Site Selection

Monitoring sites will be GPS referenced and photographed. Corresponding control (or analogue) transects are to be established in equivalent plant communities within remnant vegetation which occurs outside the current mining operations area. These transects are designed to act as reference sites for the Project, monitoring the effects of environmental factors above those incurred by rehabilitation and offset areas. A

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suitable number of transects are to be established in each domain to enable statistical analysis and comparison to adopted completion criteria.

Flora Surveys

Reference sites in the undisturbed woodland will be established to develop suitable completion criteria against which rehabilitation/regeneration performance can be assessed. Sites will be monitored annually to record changes in vegetation progress through the examination of transects of the site. Transects established within offset areas to be referred to as Base transects, as they are generating the baseline data for the monitoring program. Locations of base transects are to be established using GPS referenced locations, reported in the Annual Review.

Ground Stability

Records will outline any erosion control works performed in the period for the domain and the stability of the ground at each monitoring site.

Monitoring Parameters

Examinations will take place at each relevant transect recording parameters as outlined in **Table 3**. A photograph is taken along each transect as a long term visual record of vegetation performance.

Table 3: Parameters, Methodology and Units of Measure for Annual Monitoring

Parameter	Survey Method	Units of Measure
Existing area protected	Physical inspection of perimeter and other fencing by MSC.	Metres of fencing required.
Flora species diversity	Each transect will be systematically monitored to compile a list of vascular plant species (i.e. trees, shrubs, grasses and herbs) observed. Measurements taken in a 0.25 square metre (m ²) quadrat placed at 5 m intervals along the transect.	Total number of flora species. Number and per cent of native flora species. Number and per cent of introduced flora species.
Weed Groundcover	As above.	Groundcover percentage for each quadrat.
Natural regeneration	Each transect will be systematically monitored to ascertain natural regeneration.	Number and per cent of native flora species regenerated.
Minimum canopy cover	A count will be made of the number of individuals of each tree and shrub species on each transect.	Total number of each tree species. Total number of each shrub species.

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Parameter	Survey Method	Units of Measure
Vegetation Height	The height of each tree or shrub is recorded. Trees and shrubs are counted and identified within a 3 m band along each transect and height and health assessed.	Height of woody species. The tree health rating ranges from 0 (dead) to 5 (live, healthy, well-structured woody plant).
Vegetation Progress	Photographs along each transect are taken as a visual record of long term changes in vegetation performance.	At least 1 photo of each transect.
Ground stability – Ground cover	Groundcover percentage is rated along the transect. Measurements taken in a 0.25 square metre (m2) quadrat placed at 5 m intervals along the transect.	Groundcover percentage for each quadrat.
Ground stability – Rating soil erosion	Occurrence of soil erosion is rated, estimates made at 5 m intervals along each transect.	Ratings of 0 (no erosion), 1 (erosion rills < 0.1 m), 2 (erosion rills > 0.1 m), 3 (erosion gullies > 0.2 m deep), 4 (erosion gullies > 0.3 m deep) and 5 (erosion gullies > 0.5 m deep).
Feral Fauna populations	Occurrence of evidence of feral fauna populations causing damage.	Number of instances.

Long Term Biodiversity Monitoring

Long term biodiversity monitoring is to be similarly reported, to evaluate the success of enhancement works and the sites advancement towards fulfilling long term land use objectives. The results of this monitoring will also be utilised to provide feedback as to the success of planting methodologies as well as to support justification for sign off with completion criteria.

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Rehabilitation Management Plan

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7 REHABILITATION MANAGEMENT PLAN

7.1 Overview of Rehabilitation Measures

As indicated above, the biodiversity management measures are to be integrated with the RMP through the alignment of revegetation techniques, species selection for rehabilitation plantings, top soil management techniques and alignment of completion criteria where possible.

Rehabilitation management includes the following key components:

- post-site establishment and construction phase, rehabilitation of infrastructure installation related disturbance to achieve ground stabilisation;
- progressive rehabilitation of finalised benches in the quarry area; and
- site decommissioning and final landform creation as part of final site rehabilitation.

7.2 Rehabilitation Areas Objectives

In accordance with the PA, MSC will rehabilitate the site to the satisfaction of the Secretary. The RMP aims to achieve the objectives in **Table 4**.

Table 4: Rehabilitation Objectives

Feature	Objective
Site (as a whole)	Safe, stable and non-polluting.
Surface Infrastructure	Decommissioned and removed, unless the Secretary agrees otherwise.
Benched Quarry Walls	Landscaped with native endemic flora species.
Quarry Pit Floors	Compatible with the adjacent natural landscape.
Other Land affected by the Project	Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: <ul style="list-style-type: none"> • Local native species; and • A landform consistent with the surrounding environment.

7.3 Rehabilitation Management Program for the Next Three Years

During the next three years, the primary rehabilitation activities within Oberon White Granite Quarry will involve ongoing development of quarrying areas and control of weed and feral species. The objective will be to undertake pre-disturbance activities that aim to minimise the ecological impacts of the quarrying operation as well as commence rehabilitation as soon as practical behind the quarrying activities so as to

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minimise the extent of disturbance on site. As such, the key rehabilitation and ecological management strategies to be adopted over this time include:

- installing survey pegs to mark the extent of extraction
- pre-clearance inspections ahead of the construction and quarrying operations in accordance with **Section 6.5.1.1**. Based on the outcomes of these inspections, undertake the following where required:
 - implement specific tree felling procedures as outlined in **Section 6.5.1.1**, in order to minimise the impacts to flora and fauna from the quarrying operation
 - salvage and protect the viability of the vegetation and soil resources for later use in rehabilitation, as per **Section 6.5.3.1**
- undertake soil characterisation works to assess their potential constraints to rehabilitation and the stability of the final landform (refer to **Section 7.4**)
- undertake ongoing feral animal and weed monitoring and treatment works as required (refer to **Sections 6.5.2.6** and **6.5.2.7**)
- undertake rehabilitation activities in accordance with the general requirements of **Section 6.5**
- commence with the rehabilitation monitoring program as outlined in **Section 7.8**

7.4 Completion Criteria – Site Rehabilitation

Completion criteria are objective target levels or values assigned to a variety of indicators, which can be measured against to demonstrate progress and ultimate success of the site rehabilitation program. As such, they provide a defined end point, at which point in time the site rehabilitation can be deemed successful and the rehabilitation and conservation bond can be released.

Completion criteria, determined in consultation with the relevant stakeholders, will be utilised to demonstrate achievement of biodiversity objectives.

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The preliminary rehabilitation completion criteria for the Project are outlined in **Section 7.4.1**. The criteria have been developed considering site specific issues and objectives. The preliminary criteria will be reviewed and revised throughout the life of the quarry and used as the basis for further refinement following the commencement of rehabilitation activities; consideration of the results of rehabilitation monitoring programs; and consideration of any stakeholder feedback. Monitoring rehabilitation progress against completion criteria provides a positive feedback loop whereby, based on the results of monitoring, specific actions can be implemented to assist in the progression of rehabilitation and achievement of rehabilitation goals and objectives. The progress towards completion criteria will be monitored and reported within the Annual Review.

7.4.1 Rehabilitation – Completion Criteria

Aspect	Preliminary rehabilitation and completion criteria
Decommissioning	<ul style="list-style-type: none"> All surface infrastructure will be decommissioned and removed. Services: removal of all services (power, water, communications).
Landform	<ul style="list-style-type: none"> Rehabilitated slopes are stable. No significant erosion is present that constitutes a safety hazard or compromises the capability of supporting the end land use. Stability of the final landform has been assessed by a qualified engineer to validate that it is stable and does not pose a safety risk, following completion of landform works. Contour banks are stable and there is no evidence of overtopping or significant scouring as a result of runoff. Surface layer is free of any hazardous materials.
Soil	<ul style="list-style-type: none"> Topsoil or a suitable alternative has been spread uniformly over the rehabilitation surface. Soil pH to be in the range of analogue sites. Monitoring demonstrates soil profile development in rehabilitated areas (e.g. development of organic layer, litter layer).
Water	<ul style="list-style-type: none"> Runoff water quality from the site does not pose a threat to downstream water quality.

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Aspect	Preliminary rehabilitation and completion criteria
Native Vegetation	<ul style="list-style-type: none"> Revegetation areas contain flora species assemblages characteristic of the desired native vegetation communities. Second generation tree seedlings are present or likely to be, based on monitoring in comparable older rehabilitation sites (i.e. evidence of fruiting of native species observed). More than 75 per cent of trees are healthy and growing as indicated by Long Term Monitoring. There is no significant weed infestation such that weeds do not comprise a significant proportion of species in any stratum.
Bushfire Hazard	<ul style="list-style-type: none"> Appropriate bushfire hazard controls have been implemented.
Ongoing Public Safety	<ul style="list-style-type: none"> Appropriate mechanisms are established to control access and manage public safety post-closure.
Feral fauna populations	<ul style="list-style-type: none"> There are no significant feral fauna populations causing unacceptable damage to the area. Control of feral pests undertaken in accordance with control techniques provided by the LHPA Officer.
Weed Groundcover	<ul style="list-style-type: none"> There are no significant weed infestations and weeds do not comprise a significant proportion of the species in any stratum. Outbreaks of noxious weeds are reduced from initial levels in accordance with any relevant noxious weeds management plans.

7.5 Post Site Establishment Rehabilitation

The objective of post site establishment rehabilitation measures is to provide a low maintenance, geotechnically stable, non-polluting and safe landform that corresponds with the final rehabilitation objectives. The site establishment and construction phase would result in the disturbance of a number of areas on the Project site including: areas adjacent to the internal roads, the safety bund and channel, and water management structures.

Rehabilitation during and immediately following site establishment shall include:

Areas adjacent to the internal roads

- surface drainage to be appropriately installed to prevent erosion;
- stabilisation of disturbed areas, involving a combination of a native grass seed mix and a fast-growing non-persistent cover crop;

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- native shrub and tree species will also be established, where appropriate; and
- undertake revegetation immediately following the disturbance while the soil is still loose, irrespective of the growing season

The safety bund and channel

Stabilisation earthworks to the southern batter of the bund (in support of earthworks required to install the sediment basin (Dam 2)).

Stabilisation of disturbed areas, involving:

- application of mulch (comprised of local native species where available possibly from on-site clearing unless the presence of weeds/weed seed renders this unviable) and maintained until the vegetative cover can provide adequate protection against the erosive forces; and
- establish vegetation cover using combination of a native grass seed mix. Native shrub and tree species will also be established, where appropriate.

Existing water management structures

Existing Dam 3, near the southern boundary of the Project site, requires stabilisation and rehabilitation works to be carried out during site establishment. Works to be undertaken within the inlet channel to the existing sediment retention basin (Dam 3) as follows:

- stripping of existing topsoil from the drainage line and the side batters;
- shaping of the side walls and inlet channel to the extent of existing erosion;
- re-spreading of topsoil over the area;
- sowing of the inlet channel and the side walls with an appropriate grass mix; and
- securing jute mesh and bitumen to the original extent of the erosion in the drainage line.

New water management structures

Following construction of sediment retention basins (new Dam 1 and Dam 2):

The proper construction, stabilisation and maintenance of the water management structures play a vital part in the Project site water management. Runoff water is to be of an acceptable standard at all phases of construction and post site establishment rehabilitation.

Temporary erosion and sediment control measures, such as sediment fence is to be maintained until site rehabilitation and stabilisation is achieved.

Stabilisation of exposed areas, involving:

- re-spreading of top soil as available;

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- application of mulch (as above); and
- establish vegetation cover using a combination of a native grass seed mix and a fast-growing non-persistent cover crop. Native shrub and tree species will also be established, where appropriate.

Rehabilitation success is to be monitored in areas of concentrated flow such as the diversion drains and sediment basin outlets, and additional temporary protection against erosive action may be implemented.

7.6 Progressive Rehabilitation

Progressive rehabilitation is a life of Project process that enables final land use to be supported and reduces the amount of rehabilitation required at the end of Project life. Early establishment of rehabilitation techniques supports closure of the Project and long term restoration of ecosystem functions. The objective of progressive rehabilitation measures is to minimise the exposed areas, using techniques that corresponds with the final rehabilitation objectives.

At the completion of each extraction stage MSC will take measures to progressively rehabilitate the site. Progressive rehabilitation shall include stabilisation of the areas no longer required for operational purposes.

Revegetation of the quarry disturbance area will be conducted progressively as production proceeds, with consideration of areas required for stockpiling pre-strip materials and product excesses. In cases when rehabilitation is not possible, interim strategies for dust management will be implemented including:

- cover, or otherwise protect from erosion, soil that will be in exposed for more than 20 days as well as any stockpiles that are susceptible to wind or water erosion; and
- establishment of a suitable cover crop on newly rehabilitated areas.

Progressive stabilisation of finalised benches

An important component of the rehabilitation of the Project site, is the progressive rehabilitation of finalised benches. The following techniques will be employed:

- drilling of final benches is to be undertaken to provide a slight infall back towards the face to aid in the retention of soil and water;
- subsoil and topsoil shall then be placed to a depth of approximately 0.5 metres and 0.15 metres respectively and approximately 5 metres wide prior to the final

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blast reducing the final bench to approximately 5 metres width (refer to **Figure 1**);

- whenever possible, subsoil and topsoil will be directly transferred to finalised benches during vegetation and soil stripping campaigns in order to preserve the native seed bank and as much organic material as possible; and
- the final surface of topsoil will be direct seeded with a range of endemic native tree and shrub species. If necessary, supplementary tube stock planting shall be undertaken to ensure adequate vegetation establishment and species diversity is achieved.

Progressive stabilisation of quarry floor areas:

- subsoil and topsoil will then be placed as available: and
- the final surface of topsoil will be direct seeded with a range of endemic native tree and shrub species. The site will be rehabilitated with the native vegetation to match the surrounding vegetation communities as listed in **Table 2** or similar.

Other progressive rehabilitation procedures

In the process of re-instating native vegetation communities in areas of quarry disturbance, the species and techniques will be monitored. Species may vary depending on success rates.

Progressive rehabilitation includes ongoing control of exotic species over the whole of the Project site.

Annual reporting of the progress and performance of rehabilitation and effectiveness of management measures will be included in the Annual Review. Success of progressive site rehabilitation to be signalled by progress against adopted completion criteria.

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7.7 **Site Decommissioning and Final Landform**

The final rehabilitation of the site generally includes:

- removing all infrastructure following the completion of the Project;
- landform shaping to create stable landforms;
- planting vegetation in the quarry void to match the surrounding vegetation communities; and
- implement a program to monitor rehabilitation progress and outcomes.

Removal of infrastructure

The Proponent intends to remove all buildings and structures off site at the end of the quarry life unless the buildings are of use to the subsequent land use. Any concrete footings from removed buildings shall be ripped up and removed off site for recycling. (Note: the water management structures and safety bund and channel would be retained following completion of quarrying).

Landform shaping

All internal roads not required for the subsequent land use(s) are to be cross-ripped, top-soiled and seeded. The office and amenities area will be reshaped to match surrounding landscape. Footing excavations, and pits, tanks and hardstand areas will be ripped and reshaped, removing any evidence of excavations and infrastructure removal.

Rehabilitation will include removal from site of all product stockpiles and reuse of any topsoil/subsoil following the completion of operations on shaped areas.

Site remediation works

Any areas where there have been fuel spillages etc. are to be recorded for remediation onsite or removal from site.

Final landform - Quarry void

It is intended that the final landform of the extraction area will be a large open amphitheatre with vegetated stepped sides with the sump retained as water storage.

Figure 4 presents the indicative final landform. Where possible the rehabilitation will enhance local vegetation cover and provide connectivity between isolated pockets of vegetation.

The water management structures and safety bund and channel would be retained following completion of quarrying. Site decommissioning rehabilitation works are to avoid any impact to the long term stability of these structures.

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Final rehabilitation monitoring and reporting

MSC has adopted a program for monitoring and reporting rehabilitation as described below in **Section 7.8**. Final landform and site decommissioning works will trigger the concluding works whereby any interim measures adopted as part of the rehabilitation process are to be finalised. Closing monitoring and reporting is to be performed, with success of site rehabilitation to be signalled by meeting all adopted completion criteria.

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7.8 **Measurement and Evaluation – Rehabilitation**

Monitoring is outlined in **Section 6.6** for all biodiversity areas, including rehabilitation areas. Where specific measures are adopted for rehabilitation areas they are described in this section.

Rehabilitation monitoring will be divided into rehabilitation areas to be recorded based on location, timing of works and types of rehabilitation performed.

Records during Quarry operations

During active quarrying operations, MSC will maintain records of processes that may have the potential to affect the success of rehabilitation on site. This information will provide a valuable baseline for comparison with later rehabilitation monitoring outcomes. Such records may include:

- detailed rehabilitation procedures;
- a register of contaminated sites;
- records of production wastes and other waste streams and where they are located on site;
- environmental monitoring records, including surface and groundwater quality;
- a register of topsoil and subsoil stockpiles; and
- environmental incident records.

Rehabilitation methodology records

MSC will record the details of each rehabilitation campaign so that they are available for later interpretation of rehabilitation monitoring results with the aim of continually improving rehabilitation standards on site. Amongst the key monitoring parameters to be included in the program relate to the following:

- landform design details;
- drainage design details;
- substrate characterisation;
- site preparation techniques (e.g. topsoil and source, time of sowing, etc.);
- revegetation methodologies (e.g. rate and type of fertiliser, seed viability including watering and weed management);
- weather conditions;
- photographic records; and
- initial follow-up care and maintenance works (including watering and weed management).

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Routine Monthly Monitoring

Visual Monitoring

Visual monitoring of rehabilitation areas will be performed and recorded monthly by MSC Quarry Manager, and more frequently on an informal basis for the purpose of rapid response to issues that may arise such as erosion control, weed and animal pest control as well as the requirement for supplementary plantings.

Post rehabilitation works the following evaluation will be carried out:

Annual Monitoring

A monitoring report will be prepared in comparison to baseline data by an ecologist or qualified appointed person, annually for the rehabilitation planting areas, for the flora component of the monitoring of the program. The monitoring will be reported in the Annual Review. The annual rehabilitation monitoring program will be modified whenever the completion criteria are revised.

Outcomes of the annual rehabilitation inspection are recorded and any corrective actions that are identified as part of the inspection are to be entered into the sites action database for implementation.

Weed Management

The results of annual monitoring are considered when determining the extent of maintenance works (e.g. weed management) required within each rehabilitation area.

Ground Stability

Records will outline any erosion control works performed in the period for the domain and the stability of the ground at each monitoring site.

Monitoring Parameters

Examinations will take place at each relevant transect recording parameters as outlined in **Table 3**. A photograph is taken along each transect as a long term visual record of vegetation performance.

Long Term Rehabilitation Monitoring

Long term rehabilitation monitoring is to be similarly reported, to evaluate the success of progressive rehabilitation and the sites advancement towards fulfilling long term land use objectives. The results of this monitoring will also be utilised to provide feedback as to the success of revegetation methodologies as well as to support justification for sign off with completion criteria.

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8 CONTINGENCY PLAN

Where landscape management measures have been instigated in accordance with the LMP, 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:

- soil enhancement – provision of fertilizer, lime and/or gypsum;
- additional planting with tube stock;
- watering;
- contingency measures will be at the discretion of the Production Manager after appropriate evaluation, consultation and approval where necessary from the Department; and
- management will undertake review and ensure that ongoing impacts are within acceptable limits or issues resolved as quickly as possible.

8.1 Risks to Successful Implementation to the Biodiversity Offset Plan

Risks to the successful implementation of the BMP are outlined with the proposed strategies to minimise any identified risk. The strategies are considered effective and practical in terms of implementation, delivery, establishment and monitoring.

Risk	Strategies to Minimise Risk
Environmental risks (herbivores, weather, fire) and direct effects (unauthorised tracks, ground disturbing works) to the offset areas.	This will be managed through standard operating procedures and protocols on site. This plan has been established to react, adapt and implement solutions based on monitoring results.
Delay in implementation of management of offset areas.	Offsets must be audited to ensure that the actions have been carried out, and monitored to determine that the actions are leading to positive biodiversity outcomes. This is enforced through PA07_0122 conditions.
Time lags in implementation pose ecological risks.	Feasibility of the BOS has been demonstrated. Legal commitments to the offset actions will be entered into prior to the clearing works required under the PA.

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Risk	Strategies to Minimise Risk
Offset is not enduring, open to post development exposure and deterioration of habitat value.	Offsetting should only proceed if an appropriate legal mechanism or instrument is used to secure the required actions. Options that will be implemented to the satisfaction of the Secretary may include: securing biodiversity offsets through the BioBanking System, Trust, Planning agreements, or Property Vegetation Plans as alternative methods to secure biodiversity offsets.
Financial risks (such as bankruptcy) to the implementation of the BOS.	If land is to be managed as a biodiversity offset, it should be accompanied by resources for its management. Budgeting measures are incorporated into MSC practices for offset areas. The Rehabilitation and Conservation Bond is to be revised following regular audits.

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9 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 6**.

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 **Table 5** below are authorised to manage the response to any incident. The particulars are 24 hour contact details.

Table 5: Details for People Responsible for Incident Management

Position	Person	Phone Number
General Manager/Director	Robert Murdoch	0438 722 389
Production Manager	John O'Heir	0467 171 416

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

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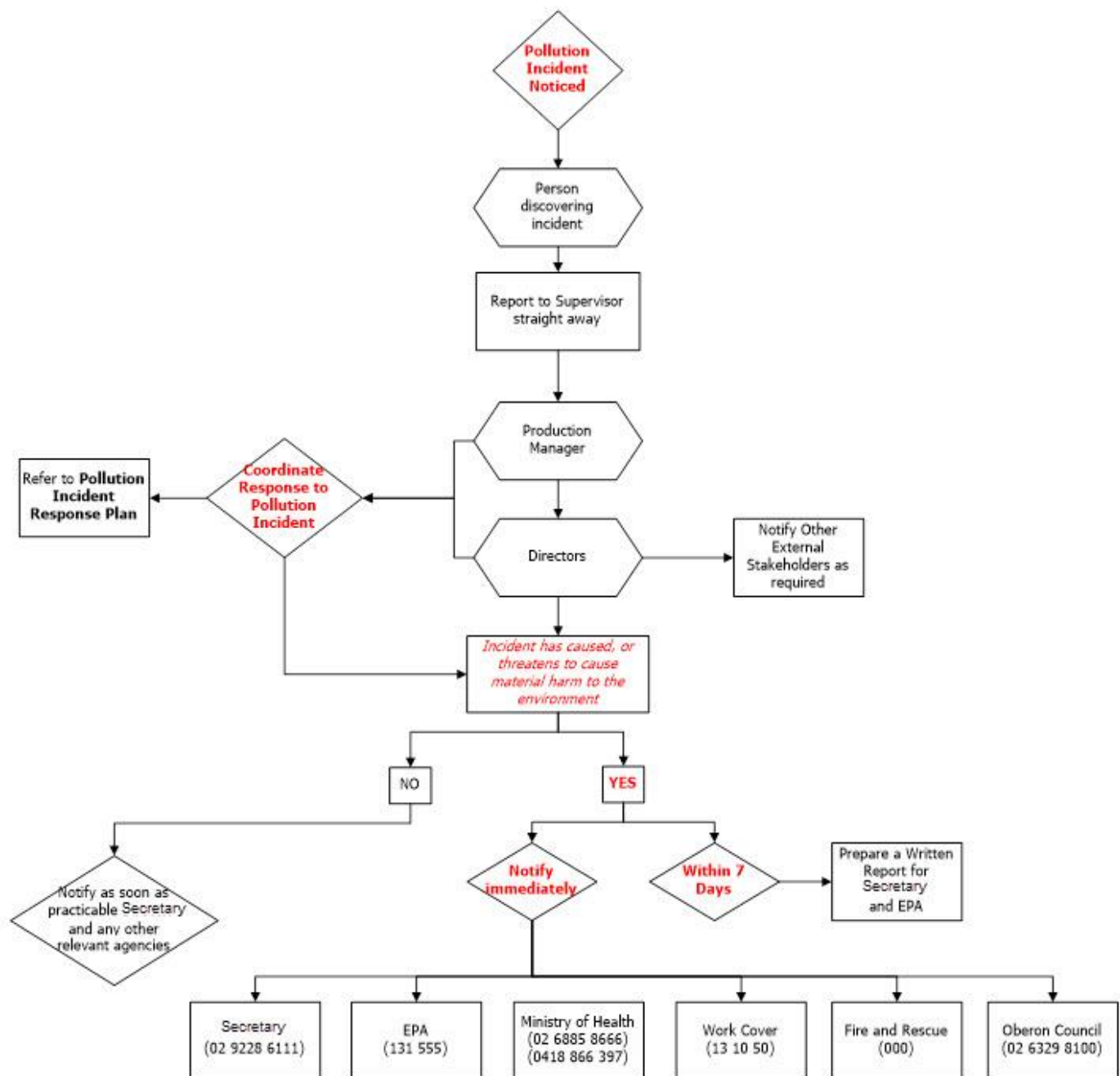


Figure 6: Incident Response Communication Protocol

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10 COMPLAINTS RESPONSE

The MSC community complaints response process outlined in this EMS 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.

Mudgee Stone has a phone number advertised in the local media, displayed at the site entry and available at <http://www.mudgeedolomiteline.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 7**.

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 EMS.

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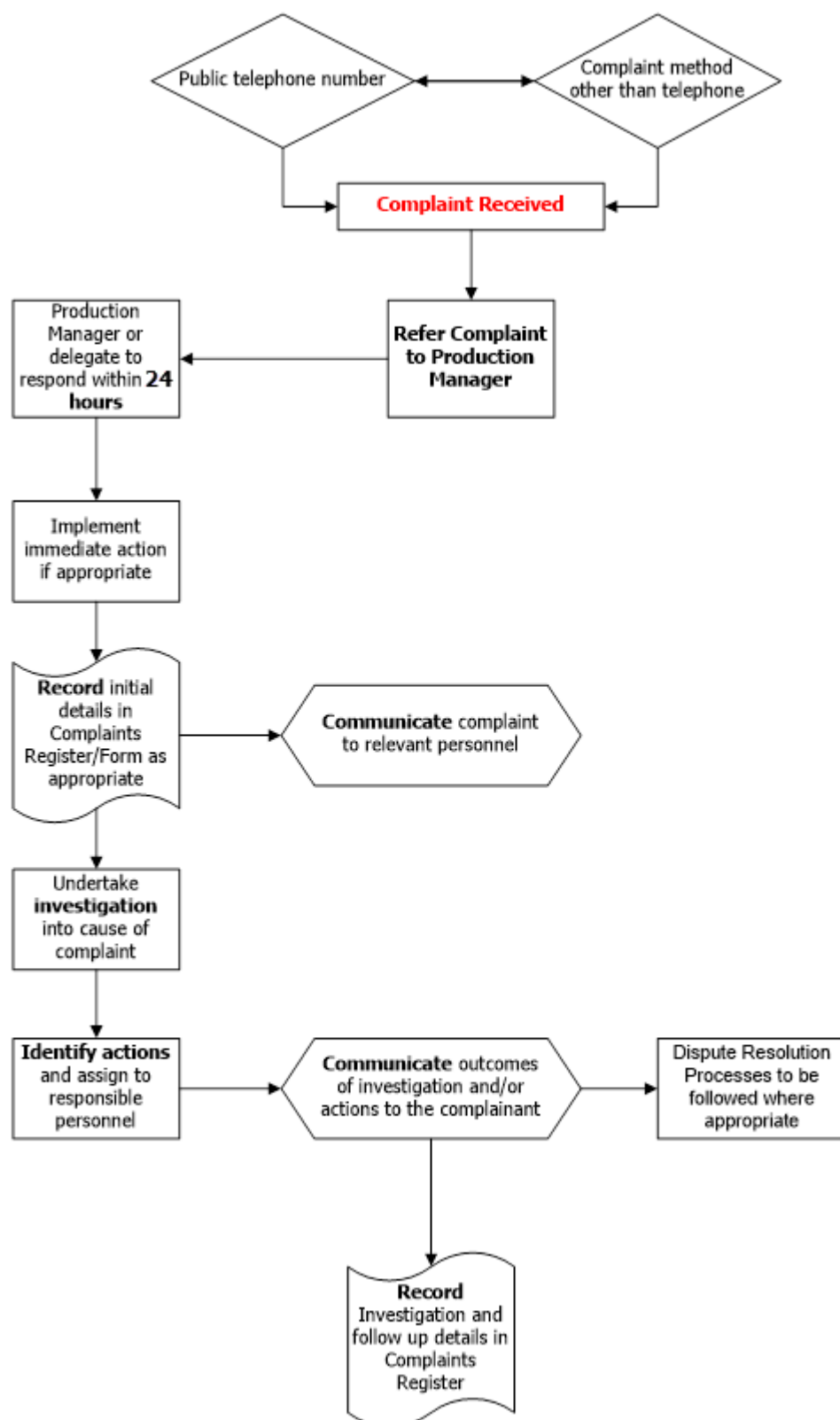


Figure 7: Community Complaints Response Process

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11 NON-COMPLIANCE, CORRECTIVE ACTION AND PREVENTATIVE ACTION

Any actual or potential non-compliance against environmental criteria shall be investigated initially by the Production Manager. Environmental incidents will be recorded on the Incident Form. Corrective actions and relevant reporting will be implemented, if necessary, according to the EMS 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 8** 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 EMS. Externally, in accordance with the requirements of PA, 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 will be prepared.

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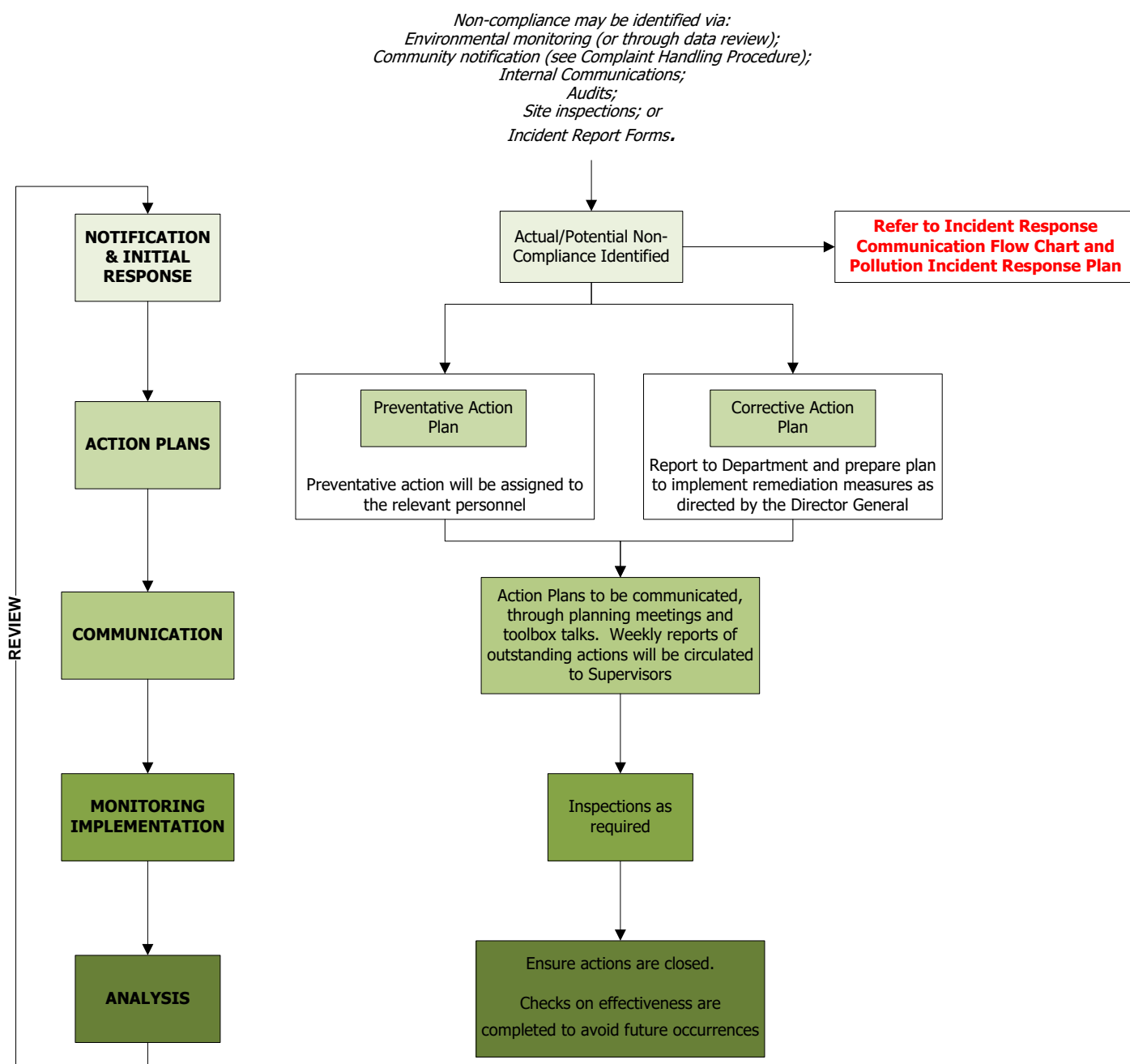


Figure 8: Protocol for managing non-compliance with statutory requirements, and exceedances of the assessment criteria and/or performance criteria

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12 REVIEW

MSC will review the LMP to ensure it is appropriate and is being implemented effectively. 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 OEH and the Department representative for his/her record.

The planned target dates (or frequencies) at which the LMP 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;
- following an independent environmental audit which recommends changes to the management plan; and
- 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, a review will be undertaken regarding the environmental performance of the Project who's content adheres to the criteria given in Condition 4 of Schedule 5 of this Project Approval and, if necessary, within three months of submission revise the strategies, plans, and programs required under this approval.

MSC will maintain records of any review.

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13 TABLE OF RESPONSIBILITIES

Table 6: Responsibilities

Position	Task	Timing
Directors	Provide adequate resources to implement the LMP.	During budget planning
	Finalise the specific completion criteria for offset and rehabilitation areas.	Within 5 years of approval
	Ensure all requirements for the Conservation and Rehabilitation bond are met.	Within 6 months of approval of the LMP
	Ensure that all requirements for the Independent Environmental Audit are met.	Once in the first year and every three years after
Production Manager	Implementation of all management measures, controls and protocols.	When necessary
	Ensure that appropriate specialists are involved in relevant processes (ecologist for environmental assessment and agronomist to assess top soil etc.)	When necessary
	Education of employees about weed threats within the area to ensure recognition of infestations are noticed	During site induction
	Ensure that clearing controls are followed.	At all times
	Direct necessary monitoring and if necessary direct, in consultation with qualified persons, remedial action	As required
All employees	Report any instance of weed or feral animal infestation	When noticed

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14 REFERENCES

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Eco Logical Australia, 2015, Pre-clearing survey – Oberon Quarry.

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APPENDIX A

TABLE OF STATUTORY REQUIREMENTS

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Condition	Requirement	Section Addressed														
Section 3, Condition 37	The Proponent shall implement the biodiversity offset strategy for the project to the satisfaction of the Director-General. This strategy must include the 3.1 hectares of land shown in Appendix 2 as 'Potential Additional Biodiversity Offset'.	6.2.1														
Section 3, Condition 38	<p>The proponent shall ensure that the biodiversity offset strategy includes measures to create and/or enhance the habitat for threatened species that are known to occur on the site.</p> <p>Note: threatened species that are known to occur on the site are Scarlet Robin and Flame Robin.</p>	5.1 6.2.1 6.4.1 6.5.1.1 6.5.2.1														
Section 3, Condition 39	By the end of December 2013, the Proponent shall make suitable arrangements to provide appropriate long-term security for the offset area in the biodiversity offset strategy to the satisfaction of the Director-General.	6.3														
Section 3, Condition 40	Prior to the carrying out of any development under this approval, the Proponent shall: Commission a suitably qualified and experienced ecologist to carry out a further survey of the disturbance area to determine whether the following endangered ecological communities are present: <i>Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South East Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions</i> ; Provide a copy of the survey report to OEH and the Department	3.1 6.5.1.1														
Section 3, Condition 41	If the pre-clearance survey above, determines that the endangered ecological communities are present in the approved disturbance area, then the Proponent shall revise the biodiversity offset strategy to the satisfaction of the Director-General. The revised strategy must be prepared in consultation with OEH and provide a suitable offset for the clearing of the endangered ecological community. Following approval of the revised strategy, the Proponent shall implement the revised strategy to the satisfaction of the Director-General.	6.5.1.1 Figure 3														
Section 3, Condition 42	<p>The Proponent shall rehabilitate the site to the satisfaction of the Director-General. This rehabilitation must be generally consistent with the proposed rehabilitation strategy in the EA, and comply with the objectives in Table 4.</p> <table><tr><th colspan="2">Table 4: Rehabilitation Objectives</th></tr><tr><th>Feature</th><th>Objective</th></tr><tr><td>Site (as a whole)</td><td>Safe, stable and non-polluting</td></tr><tr><td>Surface infrastructure</td><td>Decommissioned and removed, unless the Director-General agrees otherwise</td></tr><tr><td>Benched Quarry Walls</td><td>Landscaped with native endemic flora species</td></tr><tr><td>Quarry Pit Floors</td><td>Compatible with the adjacent natural landscape</td></tr><tr><td>Other Land affected by the project</td><td>Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: Local native species; and A landform consistent with the surrounding environment</td></tr></table>	Table 4: Rehabilitation Objectives		Feature	Objective	Site (as a whole)	Safe, stable and non-polluting	Surface infrastructure	Decommissioned and removed, unless the Director-General agrees otherwise	Benched Quarry Walls	Landscaped with native endemic flora species	Quarry Pit Floors	Compatible with the adjacent natural landscape	Other Land affected by the project	Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: Local native species; and A landform consistent with the surrounding environment	7.2 7.3
Table 4: Rehabilitation Objectives																
Feature	Objective															
Site (as a whole)	Safe, stable and non-polluting															
Surface infrastructure	Decommissioned and removed, unless the Director-General agrees otherwise															
Benched Quarry Walls	Landscaped with native endemic flora species															
Quarry Pit Floors	Compatible with the adjacent natural landscape															
Other Land affected by the project	Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: Local native species; and A landform consistent with the surrounding environment															
Section 3, Condition 43	The Proponent shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot yet be permanently rehabilitated.	7.6														

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Condition	Requirement	Section Addressed
Section 3, Condition 44	The Proponent shall prepare and implement a Landscape Management Plan for the project to the satisfaction of the Director-General. This Plan must: Be prepared in consultation with OEH by suitably qualified and experienced persons;	2.2
	Include: A Biodiversity Management Plan that: Describes how the implementation of the biodiversity offset strategy would be integrated with the overall rehabilitation of the site;	6.1 6.2.1 6.4 6.5.2.2
	Describes the short, medium and long term measures that would be implemented to: Manage the remnant vegetation on the site; and	6.5
	Implement the biodiversity offset strategy;	6.2
	Includes detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy , and triggering remedial action (if necessary);	6.4
	Includes a detailed description of the measures that would be implemented over the next 3 years, including the procedures that would be implemented for: Enhancing the quality of existing vegetation and fauna habitat	6.3
	Restoring native vegetation and fauna habitat on the biodiversity areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary)	6.5.2.2
	Maximising the salvage of resources within the approved disturbance area – including vegetative, and soil resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area;	6.5.3.1
	Collecting and propagating seed;	6.5.2.4
	Minimising the impacts on fauna on site, including undertaking pre-clearance surveys;	6.5.1.1
	Controlling weeds and feral pests; controlling erosion;	6.5.2.6 6.5.2.7 6.5.2.8
	Controlling access; and	6.5.2.9
	Bushfire management;	6.5.2.10
	Includes a seasonally- based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria; and	6.6
	Identifies the potential risks to the successful implementation of the biodiversity offset strategy, and include a description of the contingency measures that would be implemented to militate against these risks.	8
	A Rehabilitation Management Plan that: Describes how the rehabilitation of the site would be integrated with the implementation of the biodiversity offset strategy;	7.1 6.5.2

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Condition	Requirement	Section Addressed
	Includes detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);	4 7.4 7.4.1
	Describe the measures that would be implemented to ensure compliance with the relevant conditions of this project approval and all aspects of rehabilitation including quarry closure, final landform and final land use;	7.6 7.7
	Include interim rehabilitation where necessary to minimise the area exposed for dust generation;	7.6
	Includes a program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria; and	7.8
	Build to the maximum extent practicable on the other management plans required under this approval.	5
	The Proponent shall not carry out any development on the site under this approval before this plan has been approved by the Director-General	2.2
Section 3, Condition 45	<p>Within 6 months of the approval of the Landscape Management Plan, the Proponent shall lodge a Rehabilitation and Conservation bond with the Department to ensure that the rehabilitation of the site and the biodiversity offset strategy are implemented in accordance with the relevant performance and completion criteria in the plan.</p> <p>The sum of the bond shall be determined to the satisfaction of the Director-General by suitably qualified persons whose appointment has been approved of by the Director-General, provide for the full cost of rehabilitating the site and implementing the biodiversity offset strategy.</p> <p>If the rehabilitation of the site and the implementation of the biodiversity offset strategy are completed to the satisfaction of the Director-general, in general accordance with the relevant completion criteria in the Landscape Management Plan, then the Director-General will release the bond.</p> <p>If the rehabilitation of the site and the implementation of the biodiversity offset strategy are not completed to the satisfaction of the Director-General, the Director-General will call in all or part of the bond, and arrange for the satisfactory completion of the relevant works.</p>	5.2
Section 3, Condition 46	<p>Within 3 months of each Independent Environmental Audit (see condition 9 of schedule 5), the Proponent shall review, and if necessary revise, the sum of the Rehabilitation and Conservation Bond to the satisfaction of the Director-General. This review must consider:</p> <ul style="list-style-type: none"> The effects of inflation; The likely cost of implementing the biodiversity offset and rehabilitating the site; and The performance of the implementation of the biodiversity offset strategy and rehabilitation of the site to date. 	5.2
Section 5, Condition 9	<p>One year after the commencement of development on the site under this approval, and every three years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. The audit must:</p> <ul style="list-style-type: none"> Be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General; Include consultation with the relevant agencies; 	5.2

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Condition	Requirement	Section Addressed
	Assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals); Review the adequacy of strategies , plans or programs required under the abovementioned approvals; and Recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, plant or program required under the abovementioned approvals.	
Section 5, Condition 10	Within six weeks of completion of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.	5.2

Statement of Commitments

Desired Outcome	Action Number	Action	Timing	Section Addressed
6. Flora				
Minimisation of short and long-term impacts on flora within the Project Site.	6.1	Clearly define and mark vegetation to be retained to ensure that native vegetation clearing is confined only to those areas required for Project operations.	Prior to the commencement of site establishment/additional vegetation clearing.	6.5.1.1
	6.2	Control noxious weeds on the Project Site.	Ongoing.	6.5.2.6
	6.3	Clean down machinery which has been working within foreign soil material to minimise the risk of introducing weeds and plant pathogens.	Before being brought to site.	6.5.2.6
	6.4	Exclude domestic grazing animals from the Project Site (except where required to manage fire and fuel control).	Ongoing.	6.5.2.7 and 6.1
	6.5	Establish the biodiversity offset of in consultation with the Office of Environment and Heritage.	Within agreed timeframe.	2
	6.6	Establish and maintain two compensatory planting areas totalling approximately 2.5ha.	During site establishment and ongoing during operations.	6.2.1
	6.7	Prepare a Flora and Fauna / Biodiversity Management Plan.	Prior to additional vegetation clearing.	This document.
7. Fauna				

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Desired Outcome	Action Number	Action	Timing	Section Addressed
Minimisation of impacts on fauna within the Project Site.	7.1	Undertake a pre-clearance inspection prior to each vegetation clearing campaign to determine the presence of breeding/nesting native fauna within the disturbance area. The survey would be undertaken by inspection of trees from the ground and by searches for other evidence of nesting, particularly by threatened bird species.	Prior to vegetation clearing.	6.5.1.1
	7.2	Restrict clearing to between February and August when possible to avoid the breeding season of threatened species that may potentially occur within the Project Site and surroundings.	During vegetation clearing.	6.5.1.1
	7.3	Set aside small tree limbs and trunks for use in habitat improvement and rehabilitation.	During vegetation clearing.	6.5.3.1

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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 Mudgees 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

A handwritten signature in blue ink, appearing to read 'Darryl Clift'.

DARRYL CLIFT
Head Central West Unit
Environment Protection Authority

PO Box 1388 Bathurst NSW 2795
Level 2, 203 – 209 Russell Street Bathurst NSW 2795
Tel: (02) 6332 7600 Fax: (02) 6332 7630
ABN 30 841 387 271
www.epa.nsw.gov.au

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APPENDIX C

Identification details for Known 'Vulnerable' Bird Species

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The Scarlet Robin

The recorded Scarlet Robin is listed as a Vulnerable species under the TSC Act. This section provides details to assist MSC recognise the species and avoid undue impacts.

NSW Scientific Committee provides details:

Identification:

The Scarlet Robin *Petroica boodang* is a small (13 cm) songbird.



FEMALE Scarlet Robin

The female is brown with a large white forehead spot, dull brick-red breast, and white flashes in the wings and tail.



MALE Scarlet Robin

The male is identified by black upperparts and chin, red breast, white lower belly, a large white forehead spot, and white flashes in the wings and tail.

Habitat:

Abundant logs and coarse woody debris are important structural components of its habitat. In autumn and winter it migrates to more open habitats such as grassy open woodland or paddocks with scattered trees. It forages from low perches, feeding on invertebrates taken from the ground, tree trunks, logs and other coarse woody debris. The Scarlet Robin builds an open cup nest of plant fibres and cobwebs, sited in the fork of tree (often a dead branch in a live tree, or in a dead tree or shrub) which is usually more than 2 m above the ground.

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The Flame Robin

The recorded Flame Robin is listed as a Vulnerable species under the TSC Act. This section provides details to assist MSC recognise the species and avoid undue impacts.

NSW Scientific Committee provides details:

Identification:

The Flame Robin *Petroica phoenicea* Gould 1837 is a small (14 cm) songbird.



FEMALE Flame Robin

The female is brown with white flashes in the wings and tail.



MALE Flame Robin

The male is identified with dark grey upperparts, orange-red underparts from chin to belly, a small white forehead spot, and white flashes in the wings and tail.

Habitat:

The Flame Robin forages from low perches, feeding on invertebrates taken from the ground, tree trunks, logs and other coarse woody debris. The robin builds an open cup nest of plant fibres and cobweb, which is often near the ground in a sheltered niche, ledge or shallow cavity in a tree, stump or bank.

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APPENDIX D

APPROVAL OF SUITABLY QUALIFIED PERSON TO PREPARE THE LMP

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