

# Development Consent

## Section 4.38 of the *Environmental Planning and Assessment Act 1979*

The Independent Planning Commission, as the declared consent authority under clause 8A of the *State Environmental Planning Policy (State and Regional Development) 2011* and section 4.5(a) of the *Environmental Planning and Assessment Act 1979*, approves the development application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the on-going environmental management of the development.



**Dianne Leeson (Chair)**  
Member of the Commission



**Peter Cochrane**  
Member of the Commission



**Peter Duncan AM**  
Member of the Commission

Sydney

9 May 2018

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### SCHEDULE 1

**Application Number**

SSD-6125

**Applicant**

Williamtown Sand Syndicate

**Consent Authority:**

The Independent Planning Commission NSW

**Site:**

Lot 1012 DP 814078  
Lot 11 DP 629503  
Lot 121 DP 556403  
Lot 1 DP 224587

**Development**

Cabbage Tree Road Sand Quarry

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## DEFINITIONS

Aboriginal item or object	Any item or object that provides evidence of the use of an area by Aboriginal people, as defined under the <i>National Parks and Wildlife Act 1974</i>
AHD	Australian Height Datum
Annual Review	The review required by condition 11 of Schedule 5
Applicant	Williamstown Sand Syndicate, or any other person/s who rely on this consent to carry out the development that is subject to this consent
BCA	Building Code of Australia
Biodiversity offset strategy	The conservation and enhancement strategy described in the EIS and depicted conceptually in Appendix 6
CCC	Community Consultative Committee
Conditions of consent	Conditions contained in Schedules 2 to 5 inclusive
Construction	The demolition of buildings or works, carrying out of works and erection of buildings covered by this consent
Council	Port Stephens Council
Day	The period from 7 am to 6 pm on Monday to Saturday, and 8 am to 6 pm on Sundays and Public Holidays
Department	Department of Planning and Environment
Development	The development as described in the documents listed in condition 2(a) of Schedule 2
Dol Water	Department of Industry – Crown Lands and Water Division
DRG	Division of Resources and Geosciences within the Department
EIS	Environmental Impact Statement titled <i>Proposed Sand Quarry, Cabbage Tree Road, Williamstown</i> , dated November 2015; the Applicant's response to submissions documentation dated 9 November 2016; revised Noise Assessment dated December 2016; revised Air Quality Assessment dated March 2017 and December 2017 PFAS Response Paper
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence under the POEO Act
Evening	The period from 6 pm to 10 pm
Feasible	Feasible relates to engineering considerations and what is practical to build
GPS	Global Positioning System
Incident	A set of circumstances that: <ul style="list-style-type: none"> <li>• causes or threatens to cause material harm to the environment; and/or</li> <li>• breaches or exceeds the limits or performance measures/criteria in this consent</li> </ul>
Laden trucks	Trucks transporting quarry products from the site and trucks transporting topsoil or rehabilitation materials to the site
Land	As defined in the EP&A Act, except where the term is used in the noise and air quality conditions in Schedules 3 and 4 of this consent, where it is defined as the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this consent
Material harm to the environment	Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Minister	Minister for Planning, or delegate
Mitigation	Activities associated with reducing the impacts of the development
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10 pm to 7 am on Monday to Saturday, and 10 pm to 8 am on Sundays and Public Holidays
Northern Resource Area	The land shown in Figure 2 of Appendix 1 as Sectors 3, 3A, 3B, 4, 4A, 4B, 4C, 5, 5A, 5B, 6, 6A, 6B, 7, 7A, 7B and 7C
NPI	<i>Noise Policy for Industry</i> (NSW EPA, 2017)
PFAS	Per- and poly-fluorinated alkyl substances
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Predicted maximum groundwater level	The predicted maximum groundwater level established by the Maximum Extraction Depth Report required by condition 11 of Schedule 2
Privately-owned land	Land that is not owned by a public agency or the Applicant (or its subsidiary)
Public infrastructure	Linear and other infrastructure that provides services to the general public, such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications, etc.
Quarrying operations	The extraction, processing, stockpiling and transportation of extractive materials carried out on the site and the associated removal of vegetation and topsoil
Quarry products	Includes all saleable quarry products, but excludes wastes and rehabilitation materials
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Rehabilitation	The restoration of land disturbed by the development to a good condition and for the purpose of establishing a safe, stable and non-polluting environment

RMS	Roads and Maritime Services
Secretary	Secretary of the Department, or nominee
Shoulder period	The period from 5 am to 7 am on Monday to Friday
Site	The land described in Schedule 1
Southern Resource Area	The land shown in Figure 2 of Appendix 1 as Sectors 1, 1A, 2, 8, 8A, 8B, 8C, 9A, 9B, 10A, 10B and 10C
Tomago Sandbeds Special Area	The land shown in Appendix 4

**SCHEDULE 2  
ADMINISTRATIVE CONDITIONS**

**OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT**

1. In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the development.

**TERMS OF CONSENT**

2. The Applicant must carry out the development:
  - (a) generally in accordance with the EIS; and
  - (b) in accordance with the conditions of this consent, Development Layout Plans and the Statement of Commitments.

*Notes:*

- *The Development Layout Plans are shown in Appendix 1.*
- *The Statement of Commitments is shown in Appendix 2.*

3. If there is any inconsistency between the documents listed in condition 2(a), the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.
4. The Applicant must comply with any written requirement/s of the Secretary arising from the Department's assessment of:
  - (a) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this consent (including any stages of these documents);
  - (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with this consent; and
  - (c) the implementation of any actions or measures contained in these documents.

**LIMITS ON CONSENT**

**Quarrying Operations**

5. The Applicant may carry out quarrying operations on the site until 31 December 2033.

*Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional requirements and undertakings to the satisfaction of the Secretary. Consequently, this consent will continue to apply in all respects other than the right to conduct quarrying operations until the rehabilitation of the site and those requirements and undertakings have been carried out to the standard required by the applicable conditions.*

6. The Applicant must not undertake quarrying operations within 0.7 metres of the predicted maximum groundwater level.

*Note: Construction of facilities may occur below this level in accordance with a Construction Environmental Management Plan approved by the Secretary under condition 15(d)(iii) of Schedule 3.*

7. The Applicant must not extract more than 530,000 tonnes of quarry products from the site in any calendar year.
8. The Applicant shall ensure that a minimum 20 metre buffer of undisturbed land is maintained between the extraction areas and the boundary of the site, unless a written agreement exists with a neighbouring landowner to reduce the buffer adjacent to his/her property and a copy of this agreement is provided to the Department.
9. The Applicant shall ensure that a minimum 50 metre buffer of undisturbed land is maintained between the extraction areas and any boundary of the site that is shared with Tilligerry State Conservation Area.

**Quarry Product Transport**

10. The Applicant must not transport more than 530,000 tonnes of quarry products from the site during any calendar year.

## Maximum Extraction Depth Report

11. The Applicant must commission a Maximum Extraction Depth Report for the site. This report must:
- (a) be prepared by a suitably qualified and experienced expert/s whose appointment has been endorsed by the Secretary;
  - (b) be prepared in consultation with Hunter Water and DoI Water;
  - (c) be approved by the Secretary prior to the commencement of any ground disturbing activities;
  - (d) establish the predicted maximum groundwater levels for the site based on:
    - all available HWC groundwater monitoring data;
    - all available site-specific monitoring data, including all data collected from on-site boreholes; and
    - modelling software and parameters agreed to by Hunter Water, DoI Water and the Secretary.
  - (e) provide details of how the predicted maximum groundwater level was determined, including justification for the chosen modelling software and parameters;
  - (f) establish the maximum extraction depths to which extraction can be undertaken on site, to comply with condition 6 of Schedule 2; and
  - (g) provide a Maximum Extraction Depth contour map for the project; and
  - (h) provide recommended management measures as to how compliance with the extraction depths specified in the report can be achieved, including consideration of the use of continuous GPS tracking of sand extraction machinery.

The Applicant must consider any assessment of the Report by Hunter Water and/or DoI Water and implement the findings and recommendations of the Maximum Extraction Depth Report, to the satisfaction of the Secretary.

12. The Applicant must review and update the Maximum Extraction Depth Report, in consultation with Hunter Water and DoI Water:
- (a) every two years from the date of approval of the Maximum Extraction Depth Report; and
  - (b) if any groundwater is encountered during quarrying operations or if directed by the Secretary.

## NOTIFICATION OF COMMENCEMENT

13. At least one month prior to physically commencing development permitted under this consent, the Applicant must notify the Department in writing of the date on which it will commence the development.

## STRUCTURAL ADEQUACY

14. The Applicant must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

### Notes:

- Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works; and
- Part 8 of the EP&A Regulation sets out the requirements for the certification of the development or project.

## DEMOLITION

15. The Applicant must ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

## PROTECTION OF PUBLIC INFRASTRUCTURE

16. Unless the Applicant and the applicable authority agree otherwise the Applicant must:
- (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
  - (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

*Note: This condition does not apply to damage to roads caused as a result of general road usage or otherwise addressed by contributions required by condition 21 of Schedule 2.*

## OPERATION OF PLANT AND EQUIPMENT

17. The Applicant must ensure that all the plant and equipment used at the site, or to monitor the performance of the development is:
- (a) maintained in a proper and efficient condition; and
  - (b) operated in a proper and efficient manner.

## **PRODUCTION DATA**

18. The Applicant must:
  - (a) from the commencement of quarrying operations provide calendar year annual quarry production data to DRG using the standard form for that purpose; and
  - (b) include a copy of this data in the Annual Review.

## **IDENTIFICATION OF APPROVED EXTRACTION LIMITS**

19. One month prior to commencing quarrying operations, unless otherwise agreed with the Secretary, the Applicant must:
  - (a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction within the site; and
  - (b) submit a survey plan of these boundaries with applicable GPS coordinates to the Secretary.
20. While quarrying operations are being carried out, the Applicant must ensure that these boundaries are clearly marked at all times in a manner that allows operating staff to clearly identify the approved limits of extraction.

## **CONTRIBUTIONS TO COUNCIL**

21. The Applicant must pay to Council an annual financial contribution toward provision of local infrastructure. The contribution must be determined in accordance with the Port Stephens *S.94A Development Contribution Plan*, or any subsequent relevant contributions plan adopted by Council. This contribution must be paid to Council prior to the issue of any construction certificate for the development. Any annual contributions must be paid to Council within one month of the anniversary date of this consent and reported in the Annual Review.

## **COMPLIANCE**

22. The Applicant must ensure that all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent relevant to their respective activities.

**SCHEDULE 3  
SPECIFIC ENVIRONMENTAL CONDITIONS**

**NOISE**

**Hours of Operation**

1. The Applicant must comply with the operating hours set out in Table 1.

*Table 1: Operating Hours*

<b>Activity</b>	<b>Permissible Hours</b>
Quarrying operations	<ul style="list-style-type: none"> <li>• 7 am to 5 pm Monday to Friday</li> <li>• 7 am to 4 pm Saturday</li> <li>• At no time on Sundays or public holidays</li> </ul>
Loading and dispatch of laden trucks	<ul style="list-style-type: none"> <li>• 6 am to 6 pm Monday to Friday</li> <li>• 7 am to 4 pm Saturday</li> <li>• At no time on Sundays or public holidays</li> </ul>
Maintenance	<ul style="list-style-type: none"> <li>• May be conducted at any time, provided that these activities are not audible at any privately-owned residence</li> </ul>

However, if the Applicant reaches agreement to extend the hours of transportation with all owners of privately-owned land fronting Cabbage Tree Road immediately opposite the deceleration and acceleration lanes forming part of the quarry access intersection and has advised the Department in writing of the terms of these agreements, then the Applicant may also undertake loading and dispatch of laden trucks between 5 am and 6 am Monday to Friday.

2. The following activities may be carried out outside the hours specified in Table 1:
  - (a) delivery or dispatch of materials as requested by Police or other public authorities; and
  - (b) emergency work to avoid the loss of lives, property or to prevent environmental harm.

In such circumstances, the Applicant must notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter.

**Noise Impact Assessment Criteria**

3. The Applicant must ensure that the noise generated by the development does not exceed the criteria in Table 2 at any residence on privately-owned land.

*Table 2: Noise criteria dB(A)*

<b>Receiver</b>	<b>Day</b> <i>L<sub>Aeq</sub> (15 minute)</i>	<b>Shoulder</b> <i>L<sub>Aeq</sub> (15 minute)</i>	<b>Shoulder</b> <i>L<sub>Amax</sub> (1 minute)</i>
Any residence on privately owned land	43	39	45

In this condition, 'the development' excludes road construction activities associated with the intersection of the quarry access road and Cabbage Tree Road and vegetation clearing operations within the Southern Resource Area (see condition 4 below).

Noise generated by the development is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the *NPI*. Appendix 5 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.

The criteria in Table 2 do not apply if the Applicant has an agreement with relevant landowner/s to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

**Operating Conditions**

4. The Applicant must only undertake vegetation clearing operations within the Southern Resource Area under the following circumstances:
  - (a) noise generated by the development does not exceed 47 dB(A)<sub>L<sub>Aeq</sub> (15 minute)</sub>;
  - (b) bulldozer(s) or equipment with a sound power level greater than 104 dB(A) are not permitted to be used in Sectors 9B, 10A, 10B and 10C, as shown in Figure 2 of Appendix1;
  - (c) clearing operations are limited to:
    - the Day period, Monday to Friday;



- campaigns not exceeding 5 consecutive working days; and
  - no more than four campaigns in any calendar year.
5. The Applicant must:
- (a) implement best practice management to minimise the construction, operational and road transport noise of the development;
  - (b) minimise the noise impacts of the development during meteorological conditions when the noise criteria in this consent do not apply (see Appendix 5);
  - (c) carry out noise monitoring (at least every 3 months or as otherwise determined by the Secretary) to determine whether the development is complying with the relevant conditions of this consent; and
  - (d) regularly assess noise monitoring data and modify and/or stop operations on site to ensure compliance with the relevant conditions of this consent, to the satisfaction of the Secretary.

### Noise Management Plan

6. The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the EPA;
  - (b) be submitted to the Secretary at least one month prior to commencing ground disturbing activities, unless otherwise agreed by the Secretary;
  - (c) describe the measures to be implemented to ensure:
    - compliance with the noise criteria and operating conditions in this consent;
    - best practice management is being employed; and
    - the noise impacts of the development are minimised during meteorological conditions under which the noise criteria in this consent do not apply (see Appendix 5);
  - (d) describe the proposed noise management system; and
  - (e) include a monitoring program to be implemented to measure noise generated by the development against the noise criteria in conditions 3 and 4 of this Schedule, and which evaluates and reports on the effectiveness of the noise management system on site.

The Applicant must not commence ground disturbing activities until the Noise Management Plan is approved by the Secretary.

The Applicant must implement the Noise Management Plan as approved from time to time by the Secretary.

## AIR QUALITY

### Air Quality Impact Assessment Criteria

7. The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria in Table 3 at any residence on privately-owned land.

Table 3: Air quality criteria

<b>Pollutant</b>	<b>Averaging Period</b>	<b>Criterion</b>
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	a, c 25 µg/m <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	<sup>b</sup> 50 µg/m <sup>3</sup>
Total suspended particulates (TSP)	Annual	a, c 90 µg/m <sup>3</sup>

Notes to Table 4:

*a* Cumulative impact (ie increase in concentrations due to the development plus background concentrations due to all other sources).

*b* Incremental impact (ie increase in concentrations due to the development alone, with zero allowable exceedances of the criteria over the life of the development).

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

*d* "Reasonable and feasible avoidance measures" includes, but is not limited to, the operational requirements in conditions 8 and 9 to develop and implement an air quality management system that ensures operational responses to the risks of exceedance of the criteria.

## Operating Conditions

8. The Applicant must:
- (a) implement best practice management to minimise the dust emissions of the development;
  - (b) regularly assess meteorological and air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this consent;
  - (c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note c under Table 3);
  - (d) monitor and report on compliance with the relevant air quality conditions in this consent; and
  - (e) minimise the area of surface disturbance and undertake progressive rehabilitation of the site, to the satisfaction of the Secretary.

## Air Quality Management Plan

9. The Applicant must prepare an Air Quality Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the EPA;
  - (b) be submitted to the Secretary for approval prior to commencing ground disturbing activities on the site, unless otherwise agree by the Secretary;
  - (c) describe the measures to be implemented to ensure:
    - compliance with the air quality criteria and operating conditions of this consent;
    - best practice management is being employed; and
    - the air quality impacts of the development are minimised during adverse meteorological conditions and extraordinary events;
  - (d) describe the proposed air quality management system;
  - (e) include an air quality monitoring program that:
    - is capable of evaluating the performance of the development;
    - includes at least two real-time particulate monitors;
    - includes risk-based monitoring to demonstrate compliance with the criteria in Table 3;
    - includes a Trigger Action Response Plan (TARP), including appropriate trigger levels, and a protocol to be implemented when trigger levels are exceeded;
    - includes a protocol for determining any exceedances of the relevant conditions of consent;
    - effectively supports the air quality management system; and
    - evaluates and reports on the adequacy of the air quality management system.

The Applicant must not commence ground disturbing activities until the Air Quality Management Plan is approved by the Secretary.

The Applicant must implement the Air Quality Management Plan as approved from time to time by the Secretary.

## Meteorological Monitoring

10. For the life of the development, the Applicant must ensure that it has access to data from a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* guideline.

## Greenhouse Gas Emissions

11. The Applicant must implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site.

## SOIL AND WATER

### Water Supply

12. The Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations under the consent to match its available water supply, to the satisfaction of the Secretary.
13. The Applicant must not utilise, or otherwise interfere with, groundwater on the site, unless unavoidably associated with the construction and use of groundwater monitoring bores and the construction of quarry-related infrastructure.

### Water Discharges

14. The Applicant must comply with the discharge limits in any EPL, or with section 120 of the POEO Act.

## Soil and Water Management Plan

15. The Applicant must prepare a Soil and Water Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared by suitably qualified and experienced person/s approved by the Secretary;
  - (b) be prepared in consultation with the EPA, Hunter Water and DoI Water;
  - (c) be submitted to the Secretary for approval prior to commencing ground disturbing activities on the site, unless otherwise agreed by the Secretary; and
  - (d) include a:
    - (i) Site Water Balance that includes:
      - details of:
        - sources and security of water supply;
        - water use and management on site;
        - any off-site water transfers; and
        - reporting procedures; and
      - measures to be implemented to minimise clean water use on site;
    - (ii) Surface Water Management Plan, that includes:
      - a program for obtaining baseline data on surface water flows and quality in water bodies that could potentially be affected by the development;
      - a detailed description of the surface water management system on site including the:
        - clean water diversion system;
        - erosion and sediment controls;
        - dirty water management system; and
        - water storages; and
      - a program to monitor and report on:
        - any surface water discharges;
        - the effectiveness of the water management system,
        - the quality of water discharged from the site to the environment;
        - surface water flows and quality in water bodies that could potentially be affected by the development;
    - (iii) Groundwater Management Plan that includes:
      - a monitoring program to manage potential impacts, if any, on groundwater and any associated surface water source near the proposed extraction area that includes:
        - identification of methodologies for determining threshold water quality criteria;
        - regular testing of groundwater bores for the presence of PFAS;
        - contingency measures in the event of a breach of thresholds; and
        - a program to regularly report on monitoring; and
      - a Construction Environmental Management Plan to manage any interaction with groundwater encountered during provision of services to the site (such as water supply pipelines) and construction of quarry-related facilities (such as weighbridges, offices and workshop buildings). This Plan must include sampling of any groundwater encountered during such activities and testing for the presence of PFAS and include contingency protocols should any groundwater be found to contain PFAS.

The Applicant must not commence ground disturbing activities until the Soil and Water Management Plan is approved by the Secretary.

The Applicant must implement the Soil and Water Management Plan as approved from time to time by the Secretary.

## Tomago Sandbeds Special Area

16. The Applicant must operate the development so that it has a neutral or beneficial effect on the water quality of the Tomago Sandbeds Special Area.
17. The Applicant must not construct quarry infrastructure within the Tomago Sandbeds Special Area.
18. The Applicant must establish and use an on-site sewage pump-out system, incorporating a holding tank, located outside of the Tomago Sandbeds Special Area.
19. The Applicant must not store liquids other than water within the Tomago Sandbeds Special Area. Any liquids (other than water) kept on the site must be stored within a bunded and roofed area constructed in accordance with the relevant Australian Standards.
20. The Applicant must construct and use a fully bunded and undercover re-fuelling facility located outside of the Tomago Sandbeds Special Area for all mobile equipment re-fuelling operations, with the exception of tracked equipment. Re-fuelling of any tracked equipment within the Tomago Sandbeds Special Area must

be conducted within a fully bunded and lined hardstand that is capable of holding both the tracked equipment and the fuel truck.

21. The Applicant must ensure that, outside of the operating hours during which quarrying operations are permitted, all fuel-powered equipment is removed from the Tomago Sandbeds Special Area to a secure storage, except for equipment being used in vegetation clearing operations, which may be stored within a fully-bunded and lined hardstand area outside of operating hours.

*Note: Operating hours for quarrying operations are shown in Table 1.*

## **TRANSPORT**

### **Operating Conditions**

22. The Applicant must:
- ensure that all laden trucks entering or exiting the site have their loads covered;
  - ensure that all laden trucks exiting the site are cleaned before leaving the site of material that may fall from vehicles; and
  - use its best endeavours to ensure that appropriate signage is displayed on all trucks used to transport product from the development so they can be easily identified by road users.
23. The Applicant must ensure that:
- speed limits of 40 km/hour for vehicles entering the site on sealed roads; 60 km/hr for vehicles exiting the site; and 20 km/hour for vehicles using all other roads and areas on site are applied and enforced;
  - trucks slowing to use the intersection of the quarry access road and Cabbage Tree Road do not use engine or compression braking systems;
  - laden truck movements exiting the site do not exceed 6 per hour during the period from 6 am to 7 am, Monday to Friday;
  - laden truck movements exiting the site do not exceed 10 per hour during the period from 7 am to 5 pm, Monday to Friday; and
  - laden truck movements exiting the site do not exceed 10 per hour during the period from 7 am to 4 pm, Saturdays.

If agreement is reached with adjoining residents under condition 1 of this Schedule for dispatch of laden vehicles between 5 am and 6 am, Monday to Friday, then laden truck movements exiting the site during that hour are also subject to paragraph (c) of this condition.

*Note: In this condition, "per hour" means within any period of 60 minutes following the change of hour.*

### **Traffic Management Plan**

24. The Applicant must prepare a Traffic Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be prepared in consultation with the RMS and Council;
  - be submitted to the Secretary for approval prior to commencing quarrying operations, unless otherwise agreed by the Secretary;
  - describe the processes in place for the control of truck movements entering and exiting the site;
  - describe measures to ensure that trucks do not park on the verge of Cabbage Tree Road prior to the opening time of the quarry, including the use of security guards at least twice per week for at least six months from the commencement of trucking operations;
  - include a Drivers' Code of Conduct that details the safe and quiet driving practices that must be used by drivers travelling to and from the quarry;
  - include a compliance monitoring program for the requirements of the Drivers' Code of Conduct of condition 25 of this Schedule; and
  - propose measures to minimise the transmission of dust and tracking of material onto the surface of public roads from vehicles leaving the quarry.

The Applicant must not commence quarrying operations until the Traffic Management Plan is approved by the Secretary.

The Applicant must implement the Traffic Management Plan as approved from time to time by the Secretary.

### **Drivers' Code of Conduct**

25. The Applicant must prepare a Drivers' Code of Conduct applicable to drivers of all development-related vehicles, including all trucks that haul sand from the site. This Code of Conduct must:
- be prepared in consultation with Council and RMS and be submitted to the Secretary for approval;
  - address the requirements of conditions 22 and 23 of this schedule;

- (c) describe the measures that would be implemented to ensure that drivers of all development-related vehicles, including sand haulage trucks:
- comply with this Drivers' Code of Conduct;
  - are made aware of potential safety issues both on site and on the public road haulage routes;
  - are made aware of the requirement to pre-book loading slots for trucks arriving prior to 7am;
  - are informed of when heavy traffic volumes are likely to be encountered on Cabbage Tree Road, including the AM and PM peaks;
  - are informed of usual school bus travel times on Tomago Road and Cabbage Tree Road as well as the location of all bus stops on these roads;
  - are made aware of potential interactions with general traffic on Cabbage Tree Road whilst merging from the acceleration lane of the quarry access intersection;
  - are informed that Masonite, Williamtown and Old Punt Roads are not to be used for the haulage of sand, except for deliveries to properties in the immediate vicinity of those roads;
  - are provided with contact details in case of emergencies or accidents;
  - are provided with details of potential environmental hazards, such as potential for fauna (eg Koalas) to cross the quarry access road, particularly at dawn and dusk;
  - are provided with a detailed protocol that sets out what drivers are required to do to arrange for the care of injured fauna and that they must immediately report all fauna strikes on the site to the Applicant;
  - provided with updates on local road conditions;
  - minimise truck noise impacts at residences on Cabbage Tree Road; and
  - minimise travel to the site prior to commencing product loading operations;

The Applicant must implement the Drivers' Code of Conduct as approved from time to time by the Secretary.

#### **Vehicle Monitoring**

26. The Applicant must, by the use of its weighbridge, make, and retain for 12 months, records of the time of arrival, time of dispatch, weight of load and vehicle identification for each laden truck dispatched from the site. The Applicant must publish a summary of these records on its website each month.

These records must be made available to the Department on request.

27. The Applicant must install and operate video cameras adjacent to the weighbridge to monitor the time and direction of travel of vehicles as they enter and leave the quarry, to the satisfaction of the Secretary. These cameras must be located in fixed positions with a field of view that excludes land not owned by the Applicant. Recordings from these cameras must be securely stored for at least 30 days and made available to the Department on request.
28. The Applicant must provide a report in each Annual Review which includes details of all fauna injured or killed by development-related vehicles, time and date of any such fauna strike, species involved, action taken following the strike and any consequent measures put in place to prevent or minimise a recurrence.

#### **Intersection Treatment**

29. Prior to commencing quarrying operations, the Applicant must:
- (a) prepare, in consultation with any affected landowners, a Road Construction Management Plan for construction of the intersection of the quarry access road with Cabbage Tree Road. This Plan must consider noise, vibration, dust and property access impacts of the construction works and set out ways to avoid, minimise or offset impacts or provide respite for affected residents from extended periods of construction activities; to the satisfaction of the Secretary; and
  - (b) construct the intersection of the quarry access road and Cabbage Tree Road as a left in, left out only intersection, in accordance with Austroads Guidelines, Australian Standards and RMS Technical Directions and to the satisfaction of RMS.

The Applicant must not commence to construct the intersection until the Road Construction Management Plan is approved by the Secretary.

The Applicant must implement the Road Construction Management Plan as approved from time to time by the Secretary.

30. Prior to the use of the quarry access road intersection with Cabbage Tree Road prior to 7 am, the Applicant must provide street lighting adjacent to the intersection to the satisfaction of RMS.

## HERITAGE

31. If footings and/or other physical evidence are discovered of a World War II radar station reputed to have been located on the site, then the Applicant must undertake, using a qualified archaeologist or heritage specialist endorsed by the Secretary, an assessment of the significance of the item in conjunction with a photographic archival recording of the item and/or other evidence relevant to its use. A report documenting these findings must be prepared and submitted within six months of the identification of the find for the information of the Secretary, the Heritage Council of NSW and the relevant local historical society.

### Aboriginal Heritage Management Plan

32. The Applicant must prepare an Aboriginal Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;
  - be prepared in consultation with OEH and Registered Aboriginal Parties and be submitted to the Secretary for approval prior to commencing ground disturbing activities on the site, unless the Secretary agrees otherwise; and
  - include a description of the measures that would be implemented to:
    - protect, monitor and manage known sites of archaeological significance;
    - salvage and manage all identified Aboriginal sites within the quarry's disturbance area, including surface collection of AHIMS site #38-4-1381;
    - monitor vegetation clearing operations to identify any previously unknown Aboriginal sites;
    - regularly monitor screened oversize material from the sand processing plant for Aboriginal objects or relics;
    - manage any new Aboriginal sites, objects or relics that are discovered;
    - implement an Aboriginal cultural heritage awareness and induction program for all persons working on the site, not including drivers of sand haulage trucks;
    - store Aboriginal heritage items that are salvaged on the site; and
    - ensure ongoing consultation and involvement of the Registered Aboriginal Parties in the conservation and management of Aboriginal cultural heritage on the site.

The Applicant must not commence ground disturbing activities until the Aboriginal Heritage Management Plan is approved by the Secretary.

The Applicant must implement the Aboriginal Heritage Management Plan as approved from time to time by the Secretary.

33. If any item or object of Aboriginal heritage significance is identified on site, the Applicant must ensure that:
- all work in the immediate vicinity of the suspected Aboriginal item or object ceases immediately;
  - a 10 m buffer area around the suspected item or object is cordoned off; and
  - the OEH is contacted immediately.

Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974*.

## BIODIVERSITY AND REHABILITATION

### Biodiversity Offset Strategy

34. The Applicant must implement the Biodiversity Offset Strategy as shown in Appendix 6 and described in the EIS, and acquire and retire biodiversity credits (within the meaning of the *Biodiversity Conservation Act 2016*) as set out in Tables 4 and 5 in accordance with the *NSW Biodiversity Offsets Policy for Major Projects*, to the satisfaction of the Secretary and OEH.

The Applicant must identify the source of these biodiversity credits prior to commencing quarrying operations and retire these credits within 12 months of commencing quarrying operations, unless otherwise agreed with the Secretary.

Table 4: Biodiversity credits to be retired from the 131 ha offset area on the development site

<b>Credit type</b>	<b>Number of Credits</b>
<b>Ecosystem Credits</b>	
HU851	311
HU860	273

HU917	80
HU938	388
HU948	115
HU965	22
Total On-site Ecosystem Credits	<b>1,189</b>
<b>Species Credits</b>	
<i>Camfield's Stringybark</i> (Eucalyptus camfieldii)	11,651
<i>Earp's Gum</i> (Eucalyptus parramattensis subsp. Decadens)	4,501
<i>Small-flowered Grevillea</i> (Grevillia parviflora Parviflora)	724
Eastern Osprey	717
Koala	744
Wallum Froglet	606

Table 5: Biodiversity credits to be retired from off-site offset area

<b>Credit type</b>	<b>Number of Credits</b>
<b>Ecosystem Credits</b>	
Preferably <i>HU860</i> , and including other ecosystem credits generated by the application of variation criterion (f) for mitigated net loss (Tier 3) under the Interim Policy	A minimum of 687 ecosystem credits. All the ecosystem credits concurrently available in securing 306 Koala species credits, up to 1,018 ecosystem credits
<b>Species Credits</b>	
Koala	306

### Rehabilitation Objectives

35. The Applicant must rehabilitate the site to the satisfaction of the Secretary. Rehabilitation must be generally consistent with the rehabilitation strategy in the EIS and the conceptual rehabilitation plan shown in Appendix 3 and must comply with the objectives in Table 6.

Table 6: Rehabilitation Objectives

<b>Feature</b>	<b>Objective</b>
All areas of the site affected by the development	<ul style="list-style-type: none"> <li>• Safe</li> <li>• Hydraulically and geotechnically stable</li> <li>• Non-polluting</li> <li>• Fit for the intended post-mining land use(s)</li> <li>• Final landform integrated with surrounding natural landforms as far as is reasonable and feasible</li> <li>• Minimise visual impacts when viewed from surrounding land</li> <li>• Facilitate regional movement of Koalas and their occupation of the site</li> </ul>
Surface Infrastructure	<ul style="list-style-type: none"> <li>• Decommissioned and removed, unless otherwise agreed by the Secretary</li> </ul>
Quarry extraction area	<ul style="list-style-type: none"> <li>• Landform rehabilitated to 1.0 metres above the predicted maximum groundwater level</li> <li>• Landscaped and vegetated using native tree and understorey species</li> <li>• Tree species to include Koala feed species</li> </ul>

Final Void	<ul style="list-style-type: none"> <li>No final void permitted</li> </ul>
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### Progressive Rehabilitation

36. The Applicant must 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 stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.

*Note: It is accepted that parts of the site that are progressively rehabilitated may be subject to future re-disturbance.*

### Biodiversity and Rehabilitation Management Plan

37. The Applicant must prepare a Biodiversity and Rehabilitation Management Plan for the development to the satisfaction of the Secretary. This plan must:
- be prepared by a suitably qualified expert;
  - be prepared in consultation with OEH and Council;
  - be submitted to the Secretary for approval prior to commencing quarrying operations, unless the Secretary agrees otherwise;
  - provide details of the conceptual final landform and associated land uses for the site;
  - describe how the implementation of the on-site Biodiversity Offset Strategy will be integrated with the overall rehabilitation of the site;
  - include detailed performance and completion criteria for evaluating the performance of the progressive and final rehabilitation of the site, including triggers for any necessary remedial action;
  - describe the short, medium and long-term measures to be implemented to:
    - manage remnant vegetation and habitat on site, including within the on-site Biodiversity Offset Strategy area; and
    - ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this consent;
  - include a detailed description of the measures described in paragraph (g) to be implemented over the next 3 years (to be later updated for each 3-year period following initial approval of the plan) including the procedures to be implemented for:
    - maximising the salvage of environmental resources within the approved disturbance area, including tree hollows, vegetative and soil resources, for beneficial reuse in the enhancement of the offset area or site rehabilitation;
    - restoring and enhancing the quality of native vegetation and fauna habitat in the rehabilitation areas through assisted natural regeneration, targeted vegetation establishment and the introduction of fauna habitat features;
    - protecting vegetation and fauna habitat outside the approved disturbance area on-site;
    - minimising the impacts on native fauna, including undertaking pre-clearance surveys;
    - minimising the potential for Koalas to come into contact with development-related vehicles on the site and on public roads;
    - establishing and/or retaining vegetation screening to minimise the visual impacts of the site on surrounding receivers;
    - minimising impacts on threatened species, populations and their habitats, particularly Koalas;
    - providing relevant biosecurity control measures, including measures to prevent and/or control the establishment or spread of Myrtle Rust, Root Rot Fungus and Chytrid Fungus on the site;
    - collecting and propagating native seed;
    - controlling weeds and feral pests;
    - controlling erosion; and
    - managing bushfire risk;
  - include a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria; and
  - include details of who is responsible for monitoring, reviewing, and implementing the plan.

The Applicant must not commence quarrying operations until the Biodiversity and Rehabilitation Management Plan is approved by the Secretary.

The Applicant must implement the Biodiversity and Rehabilitation Management Plan as approved from time to time by the Secretary.



## Biodiversity and Rehabilitation Bond

38. Within 6 months of the approval of the Biodiversity and Rehabilitation Management Plan, the Applicant must lodge a Biodiversity and Rehabilitation Bond with the Department to ensure that the measures contained in the Biodiversity and Rehabilitation Management Plan are implemented in accordance with the performance and completion criteria set out in the plan and the relevant conditions of this consent. The sum of the bond must be determined by:
- (a) calculating the cost of implementing the measures contained in the Biodiversity and Rehabilitation Management Plan;
  - (b) calculating the cost of rehabilitating all disturbed areas of the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and
  - (c) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs, to the satisfaction of the Secretary.

### Notes:

- *If capital and other expenditure required by the Biodiversity and Rehabilitation Management Plan is largely complete, the Secretary may waive the requirement for lodgement of a bond in respect of the remaining expenditure.*
- *If the rehabilitation of the site area is completed (or partially completed) to the satisfaction of the Secretary, then the Secretary will release the bond (or relevant part of the bond). If the rehabilitation of the site is not completed to the satisfaction of the Secretary, then the Secretary will call in all or part of the bond, and arrange for the completion of the relevant works.*

39. Within 3 months of each Independent Environmental Audit (see condition 12 of Schedule 5), the Applicant must review, and if necessary revise, the sum of the Biodiversity and Rehabilitation Bond to the satisfaction of the Secretary. This review must consider the:
- (a) effects of inflation;
  - (b) likely cost of implementing the measures contained in the Biodiversity and Rehabilitation Management Plan and rehabilitating all disturbed areas of the site (taking into account the likely surface disturbance over the next 3 years of the development); and
  - (c) performance in implementing the rehabilitation of the site to date.

## PROPERTY INSPECTIONS

40. If the Applicant receives a written request from the owner of any privately-owned building or structure located within 300 metres of quarrying operations or the Cabbage Tree Road intersection works (whether those operations or works are proposed or existing) for an inspection to establish the baseline condition of the building or structure, then within 2 months of receiving this request the Applicant shall:
- (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to:
    - establish the baseline condition of the building or structure; and
    - identify the measures that should be implemented to minimise the potential impacts of the development on the building or structure; and
  - (b) give the landowner a copy of the property inspection report.

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

41. If any owner of privately-owned land claims that a building or structure on their land has been damaged as a result of the development, then within 2 months of receiving this claim in writing from the landowner, the Applicant shall:
- (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to investigate the claim; and
  - (b) give the landowner a copy of the property investigation report.

If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant must repair the damage to the satisfaction of the Secretary.

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

## **VISUAL**

42. The Applicant must implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development to the satisfaction of the Secretary. These measures must include maintaining:
- (a) a 20 metre vegetated buffer along the southern boundary of the site adjacent to Cabbage Tree Road; and
  - (b) existing vegetation for the initial 75 metres length of the access road, from its intersection with Cabbage Tree Road, to the satisfaction of the Secretary.

## **WASTE**

43. The Applicant must:
- (a) manage on-site sewage treatment and disposal in accordance with the requirements of its EPL, and to the satisfaction of the EPA and Council;
  - (b) minimise the waste generated by the development;
  - (c) ensure that the waste generated by the development is appropriately stored, handled, and disposed of; and
  - (d) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.
44. Except as expressly permitted in an EPL, the Applicant must not receive waste at the site for storage, treatment, processing, reprocessing or disposal.

## **DANGEROUS GOODS**

45. The Applicant must ensure that the storage, handling, and transport of dangerous goods is done in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the *Dangerous Goods Code*.

## **RADIATION SURVEY**

46. The Applicant must ensure that an effective radiation survey is conducted by a suitably qualified and experienced expert, approved by the Secretary, for each area of the site following vegetation clearing and prior to commencing any other ground disturbing activities.
47. The Applicant must ensure that the location and extent of any monazite concentrates discovered by radiation surveys are reported to the Secretary, together with the proposed measures for managing these concentrates.

## **REVIEW OF PFAS EXPOSURE PATHWAYS**

48. In conjunction with preparation of each Annual Review, unless otherwise agreed with the Secretary, the Applicant shall engage a suitably qualified and experienced independent expert, approved by the Secretary, to review the currently available information on exposure pathways for PFAS contamination originating from the Williamstown RAAF Base, as may be applicable to local residents and the development. This report must assess whether or not quarrying operations are increasing the risk of PFAS exposure for local residents and/or the environment, to the satisfaction of the Secretary.

The Applicant must ensure that the Review of PFAS Exposure Pathways reports are placed on its website and are available to the CCC and any interested person on request.

## **BUSHFIRE**

49. The Applicant must:
- (a) ensure that the development is suitably equipped to respond to any fires on site; and
  - (b) assist the Rural Fire Service and emergency services to the extent practicable if there is a fire in the vicinity of the site.

**SCHEDULE 4  
ADDITIONAL PROCEDURES**

**NOTIFICATION OF LANDOWNERS**

1. As soon as practicable, and no longer than 7 days, after obtaining monitoring results showing:
  - (a) an exceedance of any criteria in Schedule 3, the Applicant must notify the affected landowners in writing of the exceedance, and provide regular monitoring results, at least every 3 months, to each affected landowner until the development is again complying with the relevant criteria; and
  - (b) an exceedance of any air quality criteria in Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and current tenants of the land (including the tenants of land which is not privately-owned).

**INDEPENDENT REVIEW**

2. If an owner of privately-owned land considers the development to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.

If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant must:

- (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:
  - consult with the landowner to determine his/her concerns;
  - conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3; and
  - if the development is not complying with these criteria, then identify measures that could be implemented to ensure compliance with the relevant criteria; and
- (b) give the Secretary and landowner a copy of the independent review; and
- (c) comply with any written requests made by the Secretary to implement any findings of the review.

**SCHEDULE 5  
ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING**

**ENVIRONMENTAL MANAGEMENT**

**Environmental Management Strategy**

1. If the Secretary requires, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:
  - (a) be submitted to the Secretary for approval within 6 months of the Secretary requiring preparation of the strategy by notice to the Applicant;
  - (b) provide the strategic framework for environmental management of the development;
  - (c) identify the statutory approvals that apply to the development;
  - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;
  - (e) describe the procedures to be implemented to:
    - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
    - receive, record, handle and respond to complaints;
    - resolve any disputes that may arise during the course of the development;
    - respond to any non-compliance;
    - respond to emergencies; and
  - (f) include:
    - references to any strategies, plans and programs approved under the conditions of this consent; and
    - a clear plan depicting all the monitoring to be carried out under the conditions of this consent.

The Applicant must implement any Environmental Management Strategy as approved from time to time by the Secretary.

**Evidence of Consultation**

2. Where consultation with any public authority is required by the conditions of this consent, the Applicant must:
  - (a) consult with the relevant public authority prior to submitting the required document to the Secretary for approval;
  - (b) submit evidence of this consultation as part of the relevant document;
  - (c) describe how matters raised by the authority have been addressed and any matters not resolved; and
  - (d) include details of any outstanding issues raised by the authority and an explanation of disagreement between any public authority and the Applicant.

**Management Plan Requirements**

3. The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:
  - (a) detailed baseline data;
  - (b) a description of:
    - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
    - any relevant limits or performance measures/criteria; and
    - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;
  - (c) a description of the measures that to be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
  - (d) a program to monitor and report on the:
    - impacts and environmental performance of the development; and
    - effectiveness of any management measures (see (c) above);
  - (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
  - (f) a program to investigate and implement ways to improve the environmental performance of the development over time;
  - (g) a protocol for managing and reporting any:
    - incidents;
    - complaints;
    - non-compliances with statutory requirements; and
    - exceedances of the impact assessment criteria and/or performance criteria; and

- (h) a protocol for periodic review of the plan.

*Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.*

### **Revision of Strategies, Plans & Programs**

4. Within 3 months of the submission of an:
- (a) incident report under condition 9 below;
  - (b) Annual Review under condition 11 below;
  - (c) audit report under condition 12 below; and
  - (d) any modifications to this consent,
- the Applicant must review the strategies, plans and programs required under this consent, to the satisfaction of the Secretary. The applicant must notify the Department in writing of any such review being undertaken. Where this review leads to revisions in any such document, then within 6 weeks of the review the revised document must be submitted for the approval of the Secretary.

*Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the development.*

### **Updating and Staging of Strategies, Plans or Programs**

5. To ensure that strategies, plans or programs required under this consent are updated on a regular basis, and that they incorporate any appropriate additional measures to improve the environmental performance of the development, the Applicant may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis.

The Secretary may approve a revised strategy, plan or program required under this consent, or the staged submission of any of these documents, at any time. With the agreement of the Secretary, the Applicant may prepare the revised or staged strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this consent.

While any strategy, plan or program may be submitted on a staged basis, the applicant will need to ensure that the operations associated with the development are covered by suitable strategies, plans or programs at all times.

If the submission of any strategy, plan or program is to be staged; then the relevant strategy, plan or program must clearly describe the specific stage/s of the development to which the strategy, plan or program applies; the relationship of this stage/s to any future stages; and the trigger for updating the strategy, plan or program

### **Adaptive Management**

6. The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.

Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must as soon as becoming aware of any exceedance:

- (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;
  - (b) consider all reasonable and feasible options for remediation (where relevant)
  - (c) within 14 days of the exceedance occurring, submit a report to the Secretary describing these remediation options and any preferred remediation measures or other course of action; and
  - (d) implement remediation measures as directed by the Secretary;
- to the satisfaction of the Secretary.

### **COMMUNITY CONSULTATIVE COMMITTEE**

7. The Applicant must establish and operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. The CCC must be operated in general accordance with the Department's *Community Consultative Committee Guidelines, November 2016* (or later version).

*Notes:*

- *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.*

- *In accordance with the guidelines, the Committee should comprise an independent chair and appropriate representation from the Applicant, Council, Hunter Water, Williamstown and Surrounds Residents Action Group and the local community.*

## **REPORTING**

### **Incident Reporting**

8. The Applicant must immediately notify the Secretary (using the contact name, email address and phone number provided by the Department from time to time) and any other relevant agencies of any incident.
9. Within 7 days of the date of the incident, the Applicant must provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested. This report must include the time and date of the incident, details of the incident, measures implemented to prevent re-occurrence and must identify and non-compliance with this consent.

### **Regular Reporting**

10. The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.

### **Annual Review**

11. By the end of March each year, or other timing as may be agreed by the Secretary, the Applicant must submit a review to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must:
  - (a) describe the development (including any progressive rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
  - (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the:
    - relevant statutory requirements, limits or performance measures/criteria;
    - requirements of any plan or program required under this consent;
    - monitoring results of previous years; and
    - relevant predictions in the documents listed in condition 2(a) of Schedule 2;
  - (c) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;
  - (d) identify any trends in the monitoring data over the life of the development;
  - (e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
  - (f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.

The Applicant must ensure that copies of the Annual Review are submitted to Council and are available to the Community Consultative Committee (see condition 7 above) and any interested person upon request.

### **INDEPENDENT ENVIRONMENTAL AUDIT**

12. Within a year of commencing quarrying operations, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission, commence and pay the full cost of an Independent Environmental Audit of the development. This audit must:
  - (a) be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
  - (b) include consultation with the relevant agencies and the CCC;
  - (c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL or necessary water licences for the development (including any assessment, strategy, plan or program required under these approvals);
  - (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals;
  - (e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any assessment, strategy, plan or program required under the abovementioned approvals; and
  - (f) be conducted and reported to the satisfaction of the Secretary.
13. Within 12 weeks of commencing this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation

of these recommendations as required. The Applicant must implement these recommendations, to the satisfaction of the Secretary.

#### **ACCESS TO INFORMATION**

14. Within 6 months of the date of this consent, until the completion of all works, including rehabilitation and remediation the Applicant must:
- (a) make the following information publicly available on its website:
    - the documents listed in condition 2(a) of Schedule 2;
    - current statutory approvals for the development;
    - all approved strategies, plans and programs required under the conditions of this consent;
    - a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;
    - a complaints register, updated monthly;
    - all Annual Reviews for the development;
    - the Review of PFAS Exposure Pathways reports;
    - independent environmental audits as described in condition 12 above, and the Applicant's responses to the recommendations in any audit; and
    - any other matter required by the Secretary; and
  - (b) keep this information up-to-date,  
to the satisfaction of the Secretary.

**APPENDIX 1  
DEVELOPMENT AREA AND LAYOUT**



Image Source: Google Earth (2014)  
Data Source: Williamtown Sand Syndicate (2015), LPI (2009)

**Legend**  
 Project Area

**FIGURE 1.1**

*Figure 1 – Location of the proposed Cabbage Tree Road Sand Quarry*



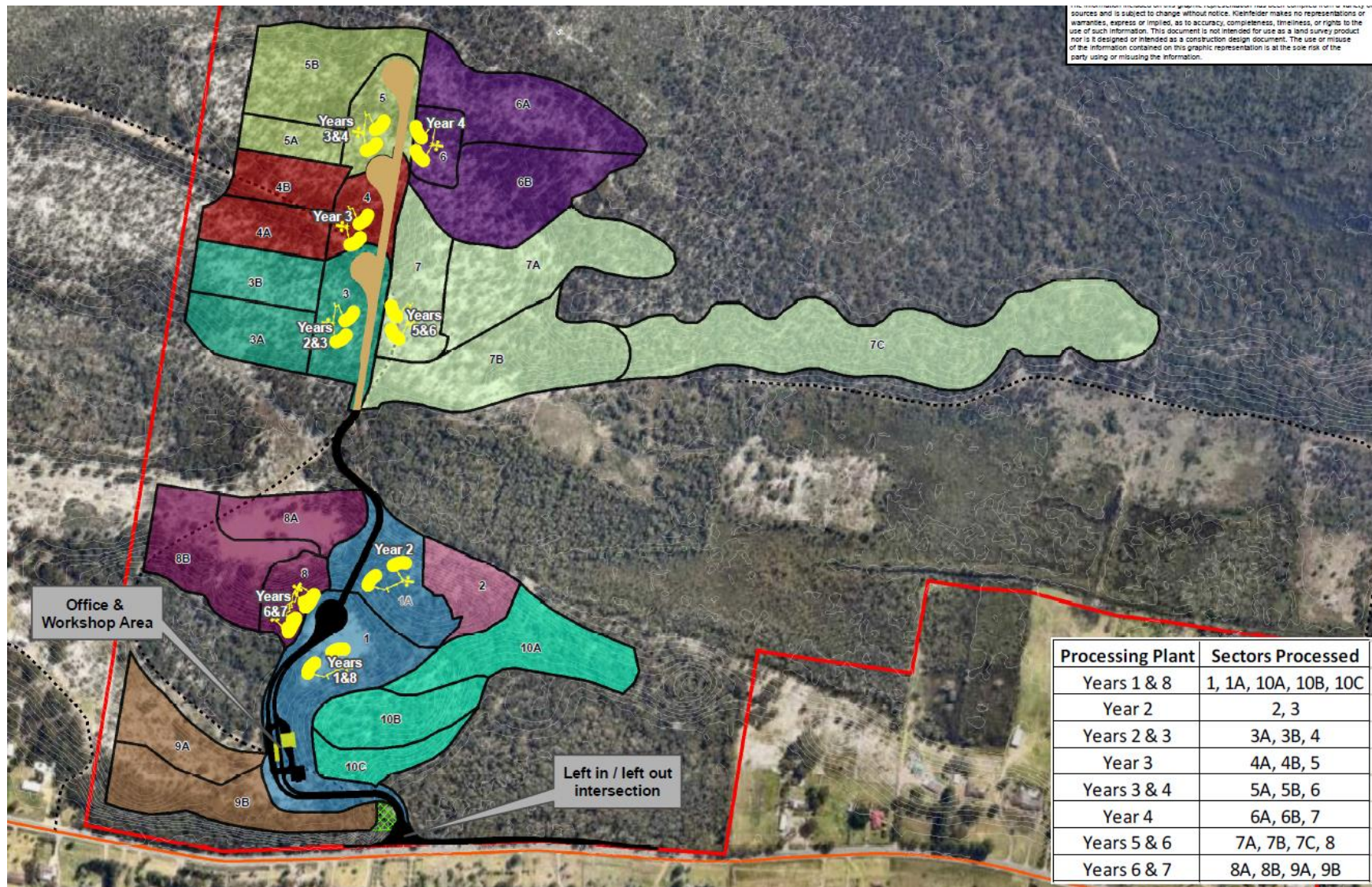


Figure 2 – Proposed site layout and sequence of sand extraction

**APPENDIX 2  
STATEMENT OF COMMITMENTS**

**8. REVISED DRAFT STATEMENT OF COMMITMENTS**

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**8.1 INTRODUCTION**

WSS intend to construct and operate the Williamtown Sand Quarry in an environmentally responsible manner.

Within this Response to Submissions and the EIS, descriptions of avoidance and mining impacts have been described, together with mitigation measures to lessen the impact of the project on the community and environment.

To ensure that the Project operates with environmental safeguards in place during its life cycle, WSS is committed to the implementation of a comprehensive Environmental Management Plan and the commitments detailed in this document.

**8.2 OPERATING LIMITS, TIMES AND CRITERIA**

**Table 1: Operating limits, times and criteria.**

Aspect	Key Aspects of the Project
<b>Project Life</b>	Approval is sought to operate the quarry for a period of up to 15 years.
<b>Production rate</b>	Up to 530,000 tonnes per annum.
<b>Operating Hours</b>	<p><b>Construction:</b></p> <ul style="list-style-type: none"> <li>• 7 am to 6 pm Monday to Friday.</li> <li>• 8 am to 1 pm Saturday.</li> <li>• No construction on Sunday or public holidays.</li> </ul> <p><b>Operations:</b></p> <ul style="list-style-type: none"> <li>• Sand extraction and processing: <ul style="list-style-type: none"> <li>○ 7 am to 5 pm Monday to Friday.</li> <li>○ 7 am to 4 pm Saturday.</li> </ul> </li> <li>• Loading and haulage: <ul style="list-style-type: none"> <li>○ 5 am to 6 pm Monday to Friday.</li> <li>○ 7 am to 4 pm Saturday.</li> </ul> </li> <li>• No operations on Sunday or public holidays.</li> </ul>
<b>Traffic</b>	<ul style="list-style-type: none"> <li>• Up to 6 laden trucks per hour (12 trips per hour) during the hours of 5 am to 7 am.</li> <li>• Up to a maximum of 10 laden trucks per hour (20 trips per hour) during hours of 7 am to 6 pm on weekdays and 7am to 4pm Saturday (i.e. all haulage hours excluding the morning peak).</li> <li>• Up to 6 vehicles of employees would be expected to arrive from 5 am to 7 am and leave between 5 pm and 7 pm.</li> </ul>
<b>Noise and Air Quality Criteria</b>	<ul style="list-style-type: none"> <li>• As per Project Approval.</li> </ul>

### 8.3 MANAGEMENT AND OFFSET MEASURES

**Table 2** provides a summary of the identified mitigation and management measures proposed to be implemented to minimise the impacts of the Project on the receiving community and environment. These measures shall apply, unless superseded or made redundant by an approved management plan or the Conditions of Approval.

**Table 2: Proposed management and offset measures**

Item	Action	Trigger/ Timing
<b>8.3.1 General Management Measures</b>		
a)	Williamtown Sand Syndicate Pty Ltd will prepare an Annual Environmental Management Report (AEMR) stating the environmental performance of the project to be distributed to stakeholders.	Annually
b)	Staff, contractor and visitor inductions will include where relevant an overview of management measures and responsibilities and will include: <ul style="list-style-type: none"> <li>• EMP requirements.</li> <li>• Environmental sensitivities.</li> <li>• Hazard and risk management.</li> <li>• Designated site access.</li> <li>• Waste management.</li> <li>• Spill response and management.</li> <li>• Heritage management and heritage finds protocol.</li> <li>• Weed and pathogen control.</li> <li>• Bushfire prevention.</li> <li>• Emergency response.</li> <li>• Incident reporting (environmental and safety).</li> <li>• Driver code of conduct.</li> </ul>	Ongoing
c)	The effectiveness of the induction and training program will be monitored and improvements implemented where identified.	Ongoing
<b>8.3.2 Community Relations</b>		
a)	Establishment of a community consultative committee (CCC) to facilitate meetings with representatives of the local community.	Ongoing
b)	Document CCC meeting agendas, issues raised, action items and close-out.	Ongoing
c)	A dedicated information contact phone number will be established prior to the commencement of construction and maintained throughout the life of the project.	Ongoing
d)	Feedback, enquiries and complaints received will be recorded in a consultation register that will be established prior to the commencement of construction and maintained throughout the life of the project.	Ongoing
e)	Complaints recorded in the consultation register will include details of complainant, WSS response and commitments to follow-up by whom and when will be detailed.	Ongoing
f)	Consultation with immediate neighbours via an annual site open day.	Annually
g)	Community information newsletters providing awareness of: <ul style="list-style-type: none"> <li>• Project progress.</li> <li>• Operating hours, contact information and details of how to provide feedback.</li> <li>• Ways in which further information can be sought.</li> <li>• Details of breaches of any development approval and licence conditions and WSS response and corrective actions.</li> </ul>	Six-monthly
h)	Website to include:	Ongoing

Item	Action	Trigger/ Timing
	<ul style="list-style-type: none"> <li>• Contact numbers.</li> <li>• Copies of community newsletters.</li> <li>• Details of annual open days.</li> <li>• Copies of minutes from Community Consultative Committee.</li> <li>• Copies of approvals.</li> <li>• Copies of licences.</li> </ul>	
<b>8.3.3 Access, Fencing, Gates and Signage</b>		
a)	Redundant access tracks to be removed when no longer required for bushfire control, rehabilitation maintenance, resource access or haulage.	As required
b)	<p>The main access gate adjacent to Cabbage Tree Road, and any other installed gates that provide access to surrounding lands will be locked when the quarry is not operating.</p> <p>A key will be provided to PSC, Hunter Water, NPWS, and the RFS.</p>	Daily
c)	<ul style="list-style-type: none"> <li>• Construct a Koala exclusion fence on the Subject Land boundary adjoining Cabbage Tree Road for Lot 1 DP 224587 to limit movement of Koalas from the site onto Cabbage Tree Road.</li> <li>• Construct a Koala exclusion fence from the site entry to the weighbridge.</li> <li>• The exclusion fence is to be installed with regard to the design specifications outlined in the <i>Koala Sensitive Design Guideline</i> (DEHP 2012).</li> <li>• One-way fauna gate installed along the fence for circumstances where fauna is trapped on the road side of the fence. Total of four gates; two along Cabbage Tree Road (one on either side of the site entrance) and two along the internal access road (one on either side of the road).</li> </ul>	During construction
d)	A ticketing system will be connected between the boom gate and exit weigh bridge. The boom gate will be configured to only operate within the quarry operating hours and will be linked to peak permissible quarry traffic generation rates. Video surveillance will also be erected at the weighbridge for security and ticket cross checks.	Ongoing
e)	Construct a security fence around the office and workshop compound, including security measures to manage and limit unlawful activity.	During construction
f)	Progressively delineate the perimeter of the active resource area that will prevent incidental access into Offset Lands and not impede the movement of, or be a danger to, native fauna (e.g., rope barricade, or equivalent).	During construction
g)	Remove or repair old internal fences.	Year 2
h)	<p>Install signage at main entrance on Cabbage Tree Road to advise of the following:</p> <ul style="list-style-type: none"> <li>• Development name and description.</li> <li>• Contact number for general and emergency enquiries.</li> <li>• Site safety requirements (e.g., PPE, evacuation routes and muster points).</li> </ul>	At commencement of construction
i)	Install fauna signage at main entrance and either side of corridor reminding drivers of the presence of wildlife and to adhere to site speed limits.	At commencement of construction
j)	Install signage on perimeter of Project Area on adjoining access roads advising the presence of the offset area.	
k)	Install signage on perimeter of site adjoining access roads advising the presence of the operational quarry.	
l)	Install speed limit signage on quarry access roads.	
<b>8.3.4 Traffic</b>		
a)	Traffic control plans prepared by an accredited person are to be approved by the RMS prior to implementation by an accredited person for the construction of the quarry intersection.	Prior to construction

Item	Action	Trigger/ Timing
b)	<p>The quarry intersection and associated acceleration and deceleration lanes will have the following signage installed (subject to approval by RMS).</p> <ul style="list-style-type: none"> <li>• “No Stopping zones”.</li> <li>• Digital signage stating if quarry is opened or closed to avoid truck entry and idling at entry if gate is closed.</li> <li>• Quarry approach and need to limit air breaking.</li> <li>• Speed limit signage for 40 km/h entering site before intersection.</li> <li>• Sign-on gate: in the event of arriving prior to gate being open turn off vehicle immediately.</li> </ul>	Installed during construction and updated as necessary
c)	<p>Speed limit signage within the site as follows:</p> <ul style="list-style-type: none"> <li>• Outgoing traffic at 60 km/h between outgoing weighbridge and Cabbage Tree Road.</li> <li>• Incoming traffic at 40 km/h between Cabbage Tree Road and the incoming weighbridge.</li> <li>• 20km/h from the weighbridge to the processing plant / stockpiles.</li> </ul>	Installed on completion of construction
d)	<p>WSS will implement a Driver Code of Conduct signed by all drivers during their site induction and will allow WSS to strictly enforce the access requirements and penalise non complying drivers, the Driver Code of Conduct will include but is no limited to the following:</p> <ul style="list-style-type: none"> <li>• Quarry operating times.</li> <li>• Proposed digital signs prior to deceleration lane stating status of quarry being open or close subject to RMS approval. This will mitigate early arrivals to the quarry.</li> <li>• No stopping signage for extent of site for deceleration lane to deter early arrivals.</li> <li>• Pre booking of high demand slots between 0500 and 0700 which are anticipated to be limited, these slots are likely to be pre-booked. Any unexpected truck turning up on site will have to wait on-site prior to exiting the site in the allocated slots.</li> <li>• Quarry approach and need to limit air breaking.</li> <li>• Respect our neighbours internal signage on exit of quarry.</li> <li>• Sign-on gate: in the event of arriving prior to gate being open turn off vehicle immediately.</li> <li>• UHF radio contact to quarry manager for enquiries prior approach to the quarry.</li> </ul>	Ongoing
e)	<p>Peak traffic generation limits from the site are as follows:</p> <ul style="list-style-type: none"> <li>• 6 laden trucks per hour (12 trips per hour) during the hours of 5 am to 7 am.</li> <li>• 10 laden trucks per hour (20 trips per hour) during hours of 7 am to 6 pm.</li> <li>• No haulage on Sundays or Public Holidays.</li> </ul>	Ongoing
f)	<p>Incoming trucks will be weighed on entry to the site via a weigh bridge at the site office complex and again on leaving the site where product weight and tickets will be generated and recorded for each load.</p>	Ongoing
g)	<p>Boom gate on outgoing weigh bridge linked to peak haulage rates. CCTV system to be installed on outgoing weigh bridge to provide compliance assessment of haulage numbers.</p>	Ongoing
<b>8.3.5 Weed Control</b>		
a)	<p><b><u>Vehicles and access tracks</u></b></p> <ul style="list-style-type: none"> <li>• All machinery used on the site will be cleaned of all soil and organic matter prior to entering the Project Area. Road registered haulage vehicles will be required to remain on the formed access roads.</li> </ul>	Ongoing

Item	Action	Trigger/ Timing
	<ul style="list-style-type: none"> <li>Vehicle access to the rehabilitation will be restricted to authorised personnel.</li> <li>Once access tracks are no longer required they will be revegetated to minimise their potential as weed vectors.</li> </ul>	
b)	<p><b><u>Weed-infested topsoil handling</u></b></p> <p>Pre-clearing surveys:</p> <ul style="list-style-type: none"> <li>Pre-clearance survey to record approximate cover and abundance of environmental weeds within each area to be cleared.</li> <li>Where infestations of environmental weeds occur they will be mapped and pegged as a “weed area” prior to clearing to allow for separate stockpiling and re-spreading. For practicality purposes during clearing and topsoil stripping, weed infestations greater than 100 m<sup>2</sup> (i.e. 10 m x 10 m) will be delineated and pegged.</li> </ul>	Prior to clearing of each sector
	<ul style="list-style-type: none"> <li>Topsoil containing environmental weeds (as delineated in pre-clearance) will stockpiled separately and will not be blended or stockpiled with “clean” (weed-free) topsoil.</li> <li>Topsoil stockpiles containing environmental weeds will be respread within a mapped “weed area” similar to its pre-disturbance location to avoid weed spread across the site.</li> <li>Weed containing topsoil will not be transported between the Southern and Northern Resource areas.</li> <li>The extent of respread topsoil with environmental weeds will be delineated and recorded.</li> </ul>	When clearing, stockpiling and respreading topsoil.
c)	<p><b><u>Inspections</u></b></p> <p>During monitoring of the rehabilitation, annual monitoring will be conducted to identify any weeds, including non-local native species within the site. Inspections will include the outer perimeter of the current disturbance (i.e. interface with conservation areas) and the verges of internal access roads.</p>	During monitoring of each sector
d)	<p><b><u>Weed control</u></b></p> <p>Weed management will be conducted by a suitably qualified contractor with a focus on the recommendations made as a result of rehabilitation monitoring and inspections.</p> <p>Control of weeds will predominantly be through manual removal to limit the use of chemicals. Chemical controls will only be utilised where there are significant outbreaks.</p>	When required, as identified during monitoring events
<b>8.3.6 Vertebrate Pest Control</b>		
a)	All putrescible waste bins to be securely covered and removed from the site on a weekly basis to remove potential food source for vermin.	Ongoing
b)	<p>Undertake monitoring for presence of pests through one of the following methods:</p> <ul style="list-style-type: none"> <li>Conducting searches and spotlighting, and mapping evidence of pest species across Project Area (e.g. rabbit warrens, pig scratching, evidence of wild dogs).</li> <li>Installing remote motion sensing camera traps at a minimum of five locations across the Project Area for a two-week period.</li> </ul> <p>The presence of domestic or wild cats and dogs within the central wildlife corridor (consistent with PSC lease conditions) should be included within the program.</p>	Annually
c)	Recording of incidental observations for evidence of pests and where suspected to be domestic and (if considered safe to do so) are to be captured and reported to PSC and returned to the owner if known or animal shelter if unknown.	Opportunistically
d)	Where detected during monitoring, implement a pest control program to reduce vertebrate pest numbers where there is potential for impacts on native wildlife and	Within three months of an

Item	Action	Trigger/ Timing
	rehabilitation. The program is to have regard for the presence of domestic animals and return these to the owners where captured. The vertebrate pest control program is to be conducted: <ul style="list-style-type: none"> <li>• In consultation with the LLS and adjoining landholders.</li> <li>• In accordance with Humane Pest Animal Control: Codes of Practice (DPI 2014).</li> <li>• By suitably qualified and experienced personnel.</li> <li>• Other control methods such as shooting or trapping can also be used if deemed necessary or appropriate with advice from OEH or the LLS. Given the proximity of residential properties baiting programs may not be appropriate.</li> </ul>	observation with potential for impacts.
<b>8.3.7 Erosion, Sediment Control and Soil Management</b>		
a)	A construction environmental management plan (CEMP) including erosion and sedimentation controls will be prepared and implemented for all construction activities proposed.	Prior to commencement of Project construction
b)	Erosion and sediment control plans (ESCP) to be prepared and implemented with all internal road construction activities.	Prior to internal road construction
c)	Vegetation and soil excavated during the initial block construction will be stockpiled (vegetation and then topsoil) within an area adjacent to the processing plant. The initial area of cleared vegetation and topsoil will be used to supplement other extraction areas over the life of the project that are deficient in organic matter.	During construction/Ongoing
d)	During excavation of each new extraction zone, vegetation and topsoil cleared will be laid over the previous extracted zone to encourage regrowth and rehabilitation.	Ongoing
e)	Install erosion and sediment controls on-site as required in accordance with the Erosion and Sediment Control Regional Policy (PSC, 2002b) and the Code of Practice for Managing Urban Stormwater – Soils and Construction (Landcom, 2004).	At commencement of project
f)	Maintain erosion and sediment controls as required and consistent with the Code of Practice for Managing Urban Stormwater – Soils and Construction (Landcom, 2004).	Monthly / post major rainfall inspections.
g)	Maintain a bund at the downslope side of each of the extraction areas to contain any sediment and runoff that may be generated from disturbed areas on site.	During extraction of block.
h)	Maintain a low level bund around the silty loam stockpile to limit potential for offsite transport and spread.	During establishment of processing areas
i)	Final landform batters with edge of Project Boundary not to exceed 4H (horizontal) to 1V (vertical), 4H:1V.	During rehabilitation
j)	Disturbance of potentially contaminated soils or potential hazardous building materials or pipe (e.g. fibre cement containing asbestos) must be reported to the quarry manager immediately and no further disturbance of area to continue. Quarry manager to determine need for formal classification.	As required
k)	Erosion and sediment controls will be monitored to ensure performance is maintained.	Monthly and after significant rainfall
l)	The post extraction landform must be surveyed on completion of the primary site rehabilitation works and the results presented in the form of plans to demonstrate	Ongoing

Item	Action	Trigger/ Timing
	compliance with the extraction limit of 1 m above highest predicted groundwater level.	
<b>8.3.8 Water Management</b>		
a)	Water management controls will be revised and updated on determination of the project to ensure management measures proposed adequately reflect the requirements of the Conditions of Consent. The revised controls will be prepared in consultation with the NSW EPA, NSW Water and Hunter Water for approval by NSW DPE.	Prior to commencement of operations
b)	Water for potable use and dust suppression will be drawn from Hunter Water's reticulated water supply at Cabbage Tree Road. No groundwater will be extracted or utilised.	Ongoing
c)	Surface water will be contained onsite through incorporation of bunds around the perimeter of the resource area. Most of the bunds will be created as a result of the extraction process being topographically lower than the adjacent surfaces. The bund will also be incorporated into the access road through a trafficable mound that ensures all surface water within the resource area must percolate vertically into the groundwater.	Ongoing
d)	Rainwater will be captured from the workshop and office roofed area and reused for dust suppression.	Ongoing
e)	All impervious areas will be shaped such that water sheds to infiltration areas constructed in areas adjoining rehabilitated areas.	Ongoing
f)	WSS will consult with DPI Water with regards to the locations of and construction of proposed groundwater monitoring points, installation of loggers and selection of sampling points.	Prior to construction
g)	WSS will install groundwater monitoring wells, so that monitoring can be performed immediately up and down gradient of the main extraction areas after destruction of existing bores.	As required if monitoring bore removed
h)	Data loggers will be installed in monitoring wells to continuously monitor and provide additional data for input to the groundwater model.	Prior to construction
i)	Trigger levels for monitoring will be developed in consultation with DPI Water to ensure the groundwater table is not intersected.	Prior to construction
j)	Management protocols for PFAS for sub-water table disturbance during construction.	Prior to construction
k)	WSS will update the groundwater model every two years from commencement of quarry activities to determine maximum predicted groundwater level along with updated topography showing the progress of the quarry.	Every 2 years
l)	The quarry floor height will be reviewed every two against the revised groundwater model (refer to Rehabilitation section for establishing the adopted level), unless trigger levels determine a review is required.	Every 2 years
m)	No equipment maintenance will occur within Tomago Sandbeds Special Area.	Ongoing
<b>8.3.9 Hydrocarbon Controls</b>		
a)	If obvious signs of contamination such as discoloured or odorous soils are encountered during site set-up and extraction, work will stop in the vicinity of the area and, if safe to do so, samples will be taken for analysis	Ongoing
b)	A fully bunded and undercover hardstand for fuel, hydrocarbon and chemical storage will be constructed outside of the Tomago Sandbeds Special Area.	Ongoing
c)	Personnel to be trained in spill containment and response procedures.	Ongoing



Item	Action	Trigger/ Timing
d)	Hazardous material stored onsite will be kept to the minimum practicable amount.	Ongoing
e)	Spill response kits will be kept and maintained onsite.	Ongoing
f)	<p>Processing plant area (moved around the site based on resource area) installed on site will include:</p> <ul style="list-style-type: none"> <li>• A bunded parking area for the overnight parking of the bull dozer.</li> <li>• If power via electrical mains supply is unavailable, diesel generators will be required. If used, diesel generators will: <ul style="list-style-type: none"> <li>○ Be located within a bunded area.</li> <li>○ Include an internal double skinned and self bunded diesel storage tank.</li> <li>○ Be refuelled as required within the bunded refill area.</li> <li>○ Be returned to the Office and Workshop Compound on conclusion of operations each Saturday. This is proposed in the context of reducing the risk of vandalism over the weekend, and limiting risks (e.g. electrical and diesel) associated with the daily transport of the generator to and from processing plant area.</li> </ul> </li> </ul>	Ongoing
g)	<p>Mobile equipment installed on site will:</p> <ul style="list-style-type: none"> <li>• Be refuelled at a lined and bunded refuelling area.</li> <li>• Include spill control kits.</li> <li>• Operators trained in the use and maintenance of spill control kits.</li> <li>• Return of all mobile equipment at end of each day to Office and Workshop Compound (excluding the bull dozer).</li> </ul>	Ongoing
h)	Electric screen and air separator installed on site will include bunding under the electric screen and air separator plant to capture hydraulic leaks.	Ongoing
i)	Refuelling of equipment will be undertaken over a bunded concrete pad by a registered contractor. No fuel or diesel will be stored on site contained in plant and equipment. Oils and grease will be stored in a bunded area.	Ongoing
j)	<p>Mobile plant used in the extraction process will be refuelled outside of the Tomago Sandbeds Special Area, including:</p> <ul style="list-style-type: none"> <li>• Pneumatic tyred loaders (2x full time)</li> <li>• Dump Trucks (campaign usage as required for extraction area 7C).</li> <li>• Sales truck (Daily).</li> </ul> <p>Trailer mounted diesel generator to power processing plant interim or back up in the event electricity is not available.</p>	Ongoing
k)	<p>All diesel powered pneumatic tyred mobile plant will be removed from the Tomago Sandbeds Special Area at the end of each day's operation, including:</p> <ul style="list-style-type: none"> <li>• Loaders x 2 (daily)</li> <li>• Dump trucks (campaign usage as required for extraction area 7C).</li> <li>• Sales trucks (daily)</li> <li>• Trailer mounted diesel generator (where used)</li> </ul> <p>This plant will be stored within fenced area with CCTV and back to base security at the Office and Worksop area located outside the Special Area.</p>	Ongoing
l)	When plant and equipment is not operating, pressure will be removed from hydraulic lines and hydraulic fluid returned to the tank. The tank will be bunded to 110% of capacity.	Ongoing
m)	<p>The tracked plant will be refuelled on a fully bunded and lined hardstand. The following plant that are permitted to be refuelled on the fully bunded and lined hardstand area within the Tomago Sandbeds Special area include:</p> <ul style="list-style-type: none"> <li>• 1 x Dozer (Maximum of 3 campaigns of 2 weeks each, 42 days per year).</li> <li>• 1x Excavator (Maximum of 3 campaigns of 2 weeks each, 42 days per year).</li> </ul>	Ongoing

Item	Action	Trigger/ Timing
n)	Any hydrocarbon spills on site will include the following response: <ul style="list-style-type: none"> <li>• Immediate deployment of spill control kits.</li> <li>• Notifications of relevant stakeholders (e.g. EPA and HWC) consistent with the Pollution Incident Response Management Plan (PIRMP) for any spills estimated to be greater than 30 L.</li> <li>• Recovery of all contaminated sands or gravels regardless of size for collection and offsite disposal at a licenced waste facility.</li> </ul>	Following Spill
o)	Appropriate maintenance schedules for plant and equipment must be followed to detect and repair leaks.	Ongoing
<b>8.3.10 Greenhouse Gas and Energy</b>		
a)	<ul style="list-style-type: none"> <li>• Record diesel and electricity by the operations.</li> <li>• Review of opportunities to improve energy efficiency.</li> </ul>	Ongoing
b)	On site diesel efficiency will continue to improve based upon the following measures: <ul style="list-style-type: none"> <li>• Scheduling activities so that equipment and vehicle operation is optimised.</li> <li>• The quarry fleet will continue to be replaced by more efficient equipment over the life of the project, where replaced. Fuel use efficiency will be an important factor in selecting quarry fleet.</li> <li>• Resource recovery will be optimised within the constraints of the Project.</li> <li>• Machines will be working to their upper design performance. Optimising machine performance is key performance indicator for operators.</li> <li>• Fleet will be serviced and maintained to OEM specifications.</li> </ul>	Ongoing
<b>8.3.11 Waste</b>		
a)	Application to Port Stephens Council for installation of effluent management system.	During construction (prior to construction of abluitions and effluent management system).
b)	All wastes generated by Cabbage Tree Road Quarry will be managed by the way of Council collection services or via appropriately licensed waste contractors.	Ongoing
c)	The on-site pumping system must be located and constructed in accordance with Port Stephens Councils <i>Development Assessment Framework</i> for on-site sewerage.	During Construction
d)	No onsite disposal of waste will occur.	Ongoing
e)	Scrap metal will be deposited into a dedicated receptacle for periodic collection and recycling.	Ongoing
f)	Diesel fuel will be stored within self-bunded above ground tank and all refuelling will be undertaken on a bunded and covered hardstand area.	Ongoing
g)	During excavation any foreign materials encountered will signal an immediate stop work in the proximate area until the nature of the object/s can be determined. In the case of uncovered potential asbestos sheeting or pipe laboratory testing may be required to determine if asbestos fibres are present in the surrounding sand.	Ongoing
h)	Where excavation is to occur below the quarry floor, an excavation specific spoil and water management procedure is to be developed to manage PFAS contaminated soil and groundwater and/or acid sulphate soils.	As required

Item	Action	Trigger/ Timing
i)	All waste oil will be collected and stored in containers within a covered and bunded area, and will be removed from the site by an appropriately licensed contractor with all relevant waste tracking documentation completed.	Ongoing
j)	All oil filters will be separately stored in containers with a covered bunded area, and will be removed from the site by an appropriately licensed contractor with all relevant waste tracking documentation completed.	Ongoing
k)	Silt will be periodically removed from the various silt control structures and used in progressive rehabilitation of the site	Ongoing
l)	All office paper and general waste originating from the office, amenities building and packaging from routine equipment and vehicle maintenance consumables will be placed in appropriate containers for collection by council or a licensed contractor for disposal/ recycling at an appropriate waste management facility.	Ongoing
m)	Wastewater from the amenities, workshop and laboratory will be collected in a pump-out system and transported off-site by a licensed contractor.	Ongoing
n)	All waste tyres will be removed by the supplier of replacement tyres.	Ongoing
<b>8.3.12 Air Quality</b>		
a)	Air Quality controls and management measures will be revised and updated on determination of the project to ensure management measures proposed adequately reflect the requirements of the Conditions of Consent. The revised controls will be prepared in consultation with the NSW EPA for approval by NSW DPE.	Prior to commencement of operations
b)	Bitumen seal access road through to the boundary for the southern boundary of the northern resource area.	During Construction
c)	Utilise water carts or a sprinkler system for dust suppression of exposed areas and haul roads.	Ongoing
d)	Water sprays will be incorporated into transfer points where higher levels of moisture are acceptable, such as conveyer transfers to product and reject stockpiles.	Ongoing
e)	Install a suitable continuous air quality monitoring network.	Ongoing
f)	WSS will install a meteorological station to allow quarry personnel to access instantaneous wind speed and direction data and also generate site specific meteorological data records.	Ongoing
g)	<p>Quarry operations will be subject to a staged shutdown of equipment based on rolling 24 hour average PM<sub>10</sub> concentrations, PM<sub>10</sub> concentration spikes and adverse background air quality and meteorological conditions. Indicative completion criteria are set out below, it important to note that these triggers will be adapted and refined as the project progresses based on actual monitoring data. The proposed draft triggers include:</p> <p>Where the wind is directed toward surrounding residences, that is the weather station indicates winds are blowing from the quadrants west (270 degrees), through North (0 degrees) to East (90 degrees) the quarry should review dust controls (e.g. stockpile sprays and need for dust suppression on trafficked areas). In addition, based on the real-time air quality monitoring network, the following controls should be implemented:</p> <ol style="list-style-type: none"> <li>1. No topsoil stripping or dozer push to occur where: <ol style="list-style-type: none"> <li>a) Wind is directed toward surrounding residences; AND</li> <li>b) Rolling PM<sub>10</sub> 24-hour average exceeds 35 µg/m<sup>3</sup> OR</li> <li>c) Rolling PM<sub>10</sub> 1-hour average exceeds 50 µg/m<sup>3</sup>.</li> </ol> </li> </ol>	Continuous

Item	Action	Trigger/ Timing
	2. If levels continue to increase after two hours, suspend sand extraction and processing (loading trucks only) where: <ol style="list-style-type: none"> <li>Wind is directed toward surrounding residences; AND</li> <li>Rolling PM<sub>10</sub> 24 hour average exceeds 42.5 µg/m<sup>3</sup> OR</li> <li>Rolling PM<sub>10</sub> 1-hour average exceeds 50 µg/m<sup>3</sup>.</li> </ol> 3. If levels continue to increase after two hours, suspend loading trucks (no machinery operating) where: <ol style="list-style-type: none"> <li>Wind is directed toward surrounding residences; AND</li> <li>Rolling PM<sub>10</sub> 24 hour average exceeds 45 µg/m<sup>3</sup>. OR</li> <li>Rolling PM<sub>10</sub> 1-hour average exceeds 50 µg/m<sup>3</sup>.</li> </ol>	
h)	In the event the Trigger Response Framework fails to maintain levels below criteria, monitoring results are to be assessed for compliance using the following protocol: <ol style="list-style-type: none"> <li>Results above 24 hour average PM<sub>10</sub> criteria of 50 µg/m<sup>3</sup>.</li> <li>Is wind direction in the preceding three hours toward receptors and the monitoring location? If <b>No</b>, unlikely to be due to project, suspend extraction activities until levels drop below 48 µg/m<sup>3</sup>. Sales can continue. If <b>Yes</b> continue to Step 3.</li> <li>Are regional levels also elevated as per the OEH monitoring network?</li> <li>Does the quarry monitoring network show upstream and downstream air quality levels are above criteria? If <b>Yes</b>, unlikely to be due to project, suspend extraction activities until levels drop below 48 µg/m<sup>3</sup>. If <b>No</b> continue to Step 5.</li> <li>Exceedance directly related to activities onsite. Non-compliance has occurred.</li> <li>Review activities onsite and develop actions to mitigate future non-compliance.</li> </ol>	When exceedance of air quality criteria measured. DPE notified within 24 hours where non-compliance identified.
i)	If noncompliance is demonstrated, additional monitoring will be undertaken within one week following implementation of additional mitigation controls.	Following non-compliance.
<b>8.3.13 Noise</b>		
a)	Noise controls will be revised and updated on determination of the project to ensure management measures proposed adequately reflect the requirements of the Conditions of Consent.  The revised controls will be prepared in consultation with the NSW EPA for approval by NSW DPE.	Prior to commencement of operations
b)	The following noise management measures will be employed during construction activities: <ul style="list-style-type: none"> <li>The proponent will inform potentially noise affected residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.</li> <li>All feasible and reasonable work practices will be implemented where possible to meet the noise affected level.</li> <li>Construction personnel will be made aware of the requirement to minimise noise, and to implement best practice operating techniques to minimise noise.</li> <li>Consideration should be given to operating low noise emission plant where possible.</li> </ul>	During Construction
c)	Operational noise mitigation measures will include: <ul style="list-style-type: none"> <li>Areas 8, 9 and 10 will be extracted last to retain the natural sound attenuation of the sand dunes for as long as possible.</li> </ul>	Ongoing

Item	Action	Trigger/ Timing
	<ul style="list-style-type: none"> <li>• Extraction orientation will, where feasible, maintain the sand face between the operating plant and the nearest dwelling.</li> <li>• Use of a dozer for operational material push up will be restricted to areas within the northern resource area and only used in the southern resource area where monitoring determines noise criteria will not be exceeded at dwellings.</li> <li>• All dozers operating within the southern resource area will be restricted to first gear in reverse to minimise associated track noise.</li> <li>• All equipment frequently used onsite will be fitted with a BBS-Tek “backalarm” broadband reversing alarms or similar.</li> <li>• All plant is to be positioned on each pad with regard to minimising the potential for offsite noise at the surrounding dwellings.</li> <li>• Diesel generators used for backup power will be positioned such that the exhaust is generally directed to the north.</li> </ul>	
d)	<p>The following noise monitoring is recommended for the construction phase of the project:</p> <ul style="list-style-type: none"> <li>• Attended noise monitoring at the potentially most affected residences at commencement, or during the highest noise emitting period, of each construction activity.</li> <li>• If noncompliance is demonstrated, additional monitoring will be undertaken within one week following implementation of additional mitigation controls.</li> <li>• Vibration monitoring at the potentially most affected residences at commencement, or during the highest vibration emitting period, of Cabbage Tree Road intersection construction activity.</li> </ul>	During estimated 12 week construction phase.
e)	Detailed dilapidation reporting will also be undertaken at all properties within a 300 m radius of quarrying activities and/or intersection works where access is provided to undertake the reporting prior to the commencement of any works. Each property owner will be provided a copy of the dilapidation report for their property.	Prior to commencement of any work within a 300 m radius of private dwelling
f)	<p>The following monitoring is recommended for the operational phase of the Project:</p> <ul style="list-style-type: none"> <li>• Attended noise monitoring at the potentially most affected residences at commencement, or during the highest noise emitting period, of each phase of the Project. These phases should include: <ul style="list-style-type: none"> <li>○ Clearing and stripping in Areas 1, 3, 7, 8, 9, 10.</li> <li>○ Extraction and processing works in Areas 1, 8, 9, 10.</li> </ul> </li> <li>• Periodic attended monitoring with a frequency of one day per quarter unless targeted monitoring is already scheduled in that quarter.</li> </ul>	Quarterly, unless targeted monitoring scheduled.
g)	<p>Attended monitoring results are to be assessed for compliance using the following protocol:</p> <ul style="list-style-type: none"> <li>• Results above intrusiveness criteria.</li> <li>• Do standard weather conditions apply (as per INP)?</li> <li>• If non-standard weather conditions apply, undertake follow-up monitoring.</li> <li>• Are the results considered to be directly related to activities onsite or are they from an unrelated source?</li> <li>• If related to activities onsite and standard weather conditions apply a non-compliance has occurred.</li> </ul>	When exceedance of noise criteria identified.
h)	If noncompliance is demonstrated, additional monitoring will be undertaken within one week following implementation of additional mitigation controls.	Following non-compliance.
i)	Where noise monitoring or complaints suggest the project is unable to achieve these noise goals the proponent will undertake the following sequence of investigations and controls:	Complaints and non-compliance.

Item	Action	Trigger/ Timing
	<ul style="list-style-type: none"> <li>● Review the details of the noise level exceedances, the weather, operational activities at the time and the nature of the noise exceedance.</li> <li>● If due to failure or equipment or to follow operational procedures, undertake corrective actions to prevent recurrence.</li> <li>● If exceedance not as a result of failure, review and refine procedures.</li> <li>● If operational practices cannot be improved, consult with the residents of impacted dwellings to discuss potential mitigation measures, this may include: <ul style="list-style-type: none"> <li>○ Double glazing of windows or similar improvements to dwellings.</li> <li>○ Erection of a noise barrier (on resident's property or near source).</li> <li>○ Provide compensation to allow receptor to seek relief from noise emissions.</li> </ul> </li> </ul>	
j)	Attended noise monitoring at representative dwellings will be carried out during normal operations and the results compared with the predicted model results. The model may be recalibrated to allow noise levels for the remaining scenarios to be more accurately predicted.	Prior to commencement of Sector 8.
<b>8.3.14 Aboriginal Heritage</b>		
a)	An Aboriginal Cultural Heritage Management Plan (ACHMP) will be developed in consultation with the relevant Aboriginal stakeholders and OEH prior to the commencement of the Project. The ACHMP will address the following matters: <ul style="list-style-type: none"> <li>● A protocol for managing any archaeological material exposed during the course of operations.</li> <li>● Recommendations for the ongoing management of the study area.</li> </ul>	Prior to commencement of project
b)	All staff and contractors will undergo site induction incorporating Aboriginal cultural awareness and be made aware of statutory legislation protecting sites and places of significance.	Ongoing
c)	Management of any artefacts will be undertaken in consultation with Aboriginal stakeholder groups in accordance with the ACHMP.	Ongoing
<b>8.3.15 Historical Heritage</b>		
a)	Footings associated with the former World War II radar station will be subject to photographic archival recording of footings and survey of its location prior to disturbance by a qualified archaeologist.	Prior to disturbance of footings – expected within Sector 1A or 2.
b)	Should unexpected heritage items be discovered during the Project and are likely to be disturbed by the Project, all works in the immediate area will cease and a qualified archaeologist or heritage consultant will provide an assessment and, if necessary, the Heritage Branch, Department of Planning will be notified.	On disturbance of unexpected heritage item.
<b>8.3.16 Visual Amenity</b>		
a)	All structures with the potential to be visible from off site will be finished in non-reflective natural tones which blend with natural vegetation.	During construction
b)	Any required lighting will be directed downwards in accordance with relevant Australian Standards (AS 4282- Control of Obtrusive Effects of Outdoor Lighting).	During construction
c)	Maintain a 20 m vegetated buffer along the southern boundary of the operation between the resource area and Cabbage Tree Road.	During removal of Sector 9
d)	Exclude resource extraction, thus maintaining a vegetated screen, for the first 75m of the access road from Cabbage Tree Road, as shown by Response to Submissions Figure 3.	During construction

Item	Action	Trigger/ Timing
e)	Areas of disturbance are kept to the minimum practicable at any one point.	Ongoing
f)	Undertake rehabilitation of disturbed areas as soon as practicable.	Ongoing
<b>8.3.17 Bushfire and Hazard</b>		
a)	Consultation with the Rural Fire Service on fire management controls.	Prior to construction
b)	Review bushfire danger ratings and when total fire bans are in place prior to undertaking clearing activities or other hot works onsite. Postpone activity where feasible or increase preparedness through having a fire tanker on standby.	Prior to undertaking clearing activities.
c)	All mobile machinery and fixed plant to include on-board fire extinguishers.	At all times.
d)	Maintain a 40 m asset protection zone (APZ) around the office and workshop area.	At all times.
e)	Maintain access roads and mapping of tracks consistent with their required purpose.	At all times.
f)	All dangerous goods will be stored in accordance with dangerous goods storage requirements and relevant Australian Standards.	Ongoing
g)	Procedures for refuelling and servicing of all plant and equipment will be undertaken in a manner to prevent spills and protect drinking water catchment from potential contamination. These procedures will be detailed in the EMS to be prepared for the site operations.	Ongoing
<b>8.3.18 Ecology and Rehabilitation Management</b>		
a)	<p><b>Seed Collection</b></p> <ul style="list-style-type: none"> <li>Seed will be collected by appropriately qualified contractor in advance of clearing activities for species determined likely to require direct seeding or propagation, and determined to be required for direct seeding and propagation based on monitoring results.</li> </ul>	Annually, during appropriate season for target species
b)	<ul style="list-style-type: none"> <li>Seed will be stored under appropriate conditions.</li> </ul>	At all times
c)	<p><b>Pre-clearing surveys</b></p> <ul style="list-style-type: none"> <li>Confirmation of resource boundaries and extent of clearing.</li> <li>Habitat trees (containing hollows or nests) within the clearing area will be clearly marked using flagging tape or spray paint. Habitat trees are to be felled using the procedure outlined in Rehabilitation Plan.</li> <li>Habitat trees (containing hollows or nests) within 3 m of the resource boundary will be marked for avoidance, including the delineation of the tree drip line to limit compaction and excavation that may affect the tree.</li> <li>Areas of noxious weeds or environmental weeds will be marked to avoid mixing of weed containing soil with weed-free topsoil (refer to 8.3.5 Weed Control).</li> <li>The following surveys will be conducted within the area proposed for removal within a one day period: <ul style="list-style-type: none"> <li>Nocturnal surveys will be conducted the night before clearing, and diurnal surveys will be conducted the morning of clearing, prior to commencement; and</li> <li>The procedure for when a Koala is identified within the clearing area is outlined below.</li> <li>All clearing will be supervised by a suitable qualified ecologist.</li> </ul> </li> <li>Any occupied trees will be clearly marked and will be left during clearing and managed according to the habitat tree removal protocol. Where a Koala is identified in a tree, the procedure outlined below will be followed.</li> </ul>	Prior to clearing each sector

Item	Action	Trigger/ Timing
d)	<p><b><u>Koala Management Protocol</u></b></p> <p>The following procedure will be used if a Koala is identified as occupying a tree within the proposed clearing area. The aim of this capture and relocation procedure is to ensure that no Koalas are harmed during the vegetation clearing activities within the extraction area:</p> <ul style="list-style-type: none"> <li>• The individual will be captured prior to the commencement of clearing.</li> <li>• The individual will be given a veterinary check for any disease or illness and a monitoring device will be attached (remote tracker).</li> <li>• Any Koalas captured will be relocated into an area of retained vegetation adjacent to where it was originally located.</li> <li>• All individuals will be monitored for a three-month period post relocation.</li> <li>• Where any Koalas are identified and captured for re-location, the following will be reported on: <ul style="list-style-type: none"> <li>○ Location identified within the disturbance area, and location of relocation;</li> <li>○ Movement of the Koala will be mapped for the three-month period;</li> <li>○ Any instances where the Koala enters areas proposed for future clearing will be identified, and the need for further monitoring/action determined. If there is the potential for the individual to occur within areas of future vegetation clearing, a plan to ensure the individual is not impacted will be developed; and</li> <li>○ The health of the individual will be checked at the end of the three-month period and any impacts (i.e. dog attacks, vehicle strikes, bushfire impacts, or disease) will be identified.</li> </ul> </li> </ul>	During clearing, if a Koala is identified
e)	<p><b><u>Vegetation Clearing</u></b></p> <ul style="list-style-type: none"> <li>• A fully qualified, experienced and licenced ecologist will supervise clearing and encourage movement of any displaced animals into adjoining vegetation.</li> </ul>	During clearing
f)	<ul style="list-style-type: none"> <li>• Clearing will be undertaken predominantly by bulldozer and may be conducted in conjunction with topsoil removal.</li> <li>• Vegetation should be cleared in a way that maintains habitat linkages and allows fauna living in or near the clearing site to move safely from the site to adjacent areas: <ul style="list-style-type: none"> <li>○ Clearing should occur towards connecting vegetation.</li> <li>○ The direction of clearing should also ensure that fauna are directed away from Cabbage Tree Road and the quarry spine road.</li> <li>○ Sequential clearing should not create an 'island' of habitat that is isolated from adjoining habitat by roads or cleared and disturbed areas.</li> </ul> </li> <li>• Habitat trees will be left to stand for a period of two nights (also refer to Koala Protocol).</li> <li>• Habitat trees will be left to stand for a period of two nights (also refer to Koala Protocol and Habitat Tree Removal) and "soft-felled" under supervision of a suitably experienced fauna ecologist.</li> <li>• No clearing should occur during the early evening or at night (when fauna species are most likely to be on the move and are more vulnerable to injury).</li> <li>• Plants that are suitable for brush matting (and may be vulnerable to dropping seed during clearing) will be cut ahead of the quarry face and stockpiled on weed-matting or similar to ensure seed is not "lost" during clearing and can then be spread over topsoiled areas.</li> <li>• Large organic debris, and where possible, other vegetation cleared from the operational area will be stockpiled and spread on rehabilitated areas immediately after re-distribution of topsoil.</li> </ul>	During clearing



Item	Action	Trigger/ Timing
	<ul style="list-style-type: none"> <li>Vegetation stockpiling should maintain a minimum 10 m cleared asset protection zone around the stockpile to minimise fire risk in adjoining vegetation.</li> </ul>	
g)	<p><b><u>Fauna Displacement Protocol</u></b></p> <p>Displacement of fauna may occur as part of the clearing process. All clearing will be supervised by a suitable qualified, experienced and licenced ecologist, the following protocol should be followed in case of an injured animal:</p> <ul style="list-style-type: none"> <li>If possible any fauna fleeing the clearing area should be captured and relocated or directed to a safe area outside the extraction zone during the tree removal process.</li> <li>All fauna are to be handled in such a way as to prevent injury to the animal or the handler.</li> <li>Once the animal is safely handled it should be relocated or caged in a hessian bag or box and released at an appropriate time of day.</li> <li>Any microbats or other nocturnal species captured during the tree removal process should be held in cotton or hessian bags and released at dusk on the same day as capture if possible.</li> <li>If any animal is injured during the construction process, a veterinarian should be contacted immediately for professional advice on the best course of action.</li> <li>If any native animal is injured during other operational/ construction processes while an ecologist, environmental representative or animal handler is not present, they must be contacted immediately.</li> </ul>	During clearing
h)	<p><b><u>Habitat Tree Removal</u></b></p> <p>Habitat trees will be removed according to the following protocol:</p> <ul style="list-style-type: none"> <li>Hollow bearing trees will be left standing for two nights after the surrounding vegetation has been cleared to encourage any native fauna species utilising the habitat hollows to self-relocate. The actual felling of any habitat trees will be attended by a suitably experienced fauna ecologist in order to ensure the safety of any fauna found to be in the hollows.</li> <li>On all occasions, trees having potential habitat hollows will be 'soft felled' by an experienced machine operator. The recommended soft felling procedure is as follows: <ul style="list-style-type: none"> <li>The hollow-bearing tree is given several moderate nudges with an excavator to give a warning to any occupying native fauna.</li> <li>The hollow-bearing tree is then surveyed and native fauna given an opportunity to self-relocate before the tree is actually felled.</li> <li>The hollow-bearing tree is soft felled with the rate of the tree's fall controlled by the machinery operator to minimise impact.</li> <li>All hollows will be inspected for fauna and if any are found, the animal should be relocated at an appropriate time of day (i.e. dusk for nocturnal species). If the animal is injured, it will be taken to a local veterinarian.</li> <li>Suitable medium and large hollows should be cut from the tree at least one metre beyond the deepest point of the hollow and then stored in a dry safe place in size related categories for replacement in rehabilitated areas.</li> </ul> </li> <li>The number and size of hollows within each habitat tree will be recorded after each habitat is felled. This information will inform the nest box installation works that will occur post extraction.</li> </ul>	During clearing of habitat trees
i)	<p><b><u>Topsoil Stripping and Placement</u></b></p> <p>Areas of 'weed contaminated' topsoil:</p> <ul style="list-style-type: none"> <li>Refer to Weed Control (Section 8.3.5).</li> </ul>	Before and during topsoil removal and respreading of topsoil.

Item	Action	Trigger/ Timing
j)	<p>Areas of 'clean' topsoil:</p> <ul style="list-style-type: none"> <li>Topsoil is to be transferred and respread directly over the previously quarried area as soon as it is mined out and no longer required for access (exhausted area).</li> <li>Once an area is exhausted and becomes available for rehabilitation the floor of the quarried area will be ripped, if it is hard and impenetrable, prior to redistribution of topsoil.</li> <li>Direct topsoil transfer from an area ahead of the mining face, to the recently exhausted area, will be utilised to facilitate the natural regeneration of plant species and limit the degradation of soil microbes.</li> </ul>	During topsoil removal and redistribution
k)	<ul style="list-style-type: none"> <li>Strip topsoil to 100 mm minimum depth (having regard to final landform floor levels of the quarried area needing to meet the required 1 m above groundwater).</li> </ul>	During topsoil removal and redistribution
l)	<ul style="list-style-type: none"> <li>Where topsoil is stripped at more than 150 mm thickness, topsoil to be stripped in two paths and re-laid in correct order.</li> </ul>	
m)	<ul style="list-style-type: none"> <li>Avoiding stockpiling topsoil enabling direct transfer to rehabilitation areas where feasible.</li> </ul>	
n)	<ul style="list-style-type: none"> <li>Minimising stripping depths to avoid seed burial, and taking two strips where possible ensuring respreading is sequential.</li> </ul>	
o)	<ul style="list-style-type: none"> <li>If a hard or indurated layer is present on the floor of the quarried area, the floor will be ripped prior to topsoil respreading.</li> </ul>	Prior to topsoil placement
p)	<ul style="list-style-type: none"> <li>Respread topsoil to a minimum thickness of 100 mm, noting the need to achieve a final land form of 1 m above groundwater).</li> </ul>	During topsoil placement
q)	<p><b><u>Operational Levels and Final Landform</u></b></p> <ul style="list-style-type: none"> <li>Quarry floor levels to be established on weekly basis.</li> </ul>	Weekly
r)	<ul style="list-style-type: none"> <li>Quarry floor levels to be reviewed on completion of quarrying to confirm required topsoil strip depth.</li> </ul>	On completion of sector
s)	<ul style="list-style-type: none"> <li>Independent registered surveyor to undertake audit</li> </ul>	3 months
t)	<ul style="list-style-type: none"> <li>Operational floor of quarry to be no less than 0.7 m above highest predicted groundwater level. Level relative to thickness of topsoil removal, i.e. if topsoil stripping is less than 0.3 m than the operational floor level must be increased accordingly such that replacement of topsoil achieves final landform requirement of 1 m above highest predicted groundwater level.</li> </ul>	At all times
u)	<ul style="list-style-type: none"> <li>Final landform, including topsoil to be not less than 1 m above highest predicted groundwater level.</li> </ul>	Upon completion of final landform shaping
v)	<p><b><u>Nest Box Installations</u></b></p> <ul style="list-style-type: none"> <li>Hollows will be replaced with nest boxes at a ratio of 1:1 within the rehabilitation area.</li> <li>Nest box design will be selected to replace the natural size of removed hollows. The number and type of nest boxes to be installed will be determined for surveys of hollow-bearing trees felled during clearing.</li> <li>Nest boxes will be installed on wooden poles at an approximate height of 3 m within the rehabilitation area.</li> </ul>	As required
w)	<p><b><u>Placement of woody debris and brush matting</u></b></p> <ul style="list-style-type: none"> <li>Where possible individual plant species (especially <i>Leptospermum</i>, <i>Melaleuca</i> and <i>Eucalyptus</i> species) will be harvested when they are bearing mature seed rather than immediately prior to clearing. Bradysporous (seed retaining) species are best harvested and spread in autumn whereas</li> </ul>	Annually in autumn and late spring.

Item	Action	Trigger/ Timing
	<p>geosporous (seed shedding) species are best harvested immediately prior to annual seed release in late spring.</p> <ul style="list-style-type: none"> <li>Experienced and qualified contractors to coordinate seed collection.</li> </ul>	
x)	<ul style="list-style-type: none"> <li>Distribution of all stockpiled vegetation will occur following the respreading of topsoil up to a maximum of 20% ground cover by woody debris (greater than 10 cm diameter). The re-laid vegetation will comprise branches and timber of all sizes including leaves and stems of shrubs and grasses.</li> <li>The placement of large timber should have regard to its orientation for the purpose of the capture of wind-blown sand and delay of runoff. Generally, this means an orientation along the north-east to south-west vectors, perpendicular to dominant onshore and off-shore winds.</li> </ul>	During placement of woody debris and brush matting.
y)	<p><b><u>Direct Seeding</u></b></p> <ul style="list-style-type: none"> <li>Common pioneer species (i.e. <i>Acacia</i> species and <i>Actinotus helianthi</i>) and others will usually regenerate from topsoil or brush matting and direct seeding is not required. Where monitoring shows a deficiency in a particular species they will be introduced through direct seeding.</li> </ul>	Where monitoring shows failure of species to regenerate by topsoil or brush matting.
z)	<ul style="list-style-type: none"> <li>Locally sourced seed will be used, and will be sown in the soil rather than broadcast. Harvesting of mature seed and direct sowing into re-topsoiled areas at the most appropriate time of year (usually autumn or spring) will be undertaken for species that typically do not readily regenerate from the soil seedbank, such as <i>Eucalyptus</i>, <i>Angophora</i>, <i>Banksia</i> and <i>Xanthorrhoea</i>.</li> </ul>	Annually in autumn and late spring as required.
aa)	<p><b><u>Propagation and Replanting</u></b></p> <p>The focus of propagation is to:</p> <ul style="list-style-type: none"> <li>Introduce to the rehabilitation the dominant structural species that have difficulty establishing from topsoil, brush matting, or direct seeding or recalcitrant species.</li> <li>Provide advanced species that are desired for establishment in strategic locations or densities to achieve the revegetation objectives.</li> <li>Propagation will be undertaken by a local wholesale nursery.</li> </ul>	Where monitoring shows failure of species to regenerate by direct seeding or other means.
bb)	<ul style="list-style-type: none"> <li>Where targeted species do not regenerate through the topsoil seedbank or direct seeding, tubestock will be planted within the rehabilitation. Planted tubestock will be watered to ensure for initial establishment.</li> </ul>	In autumn (for optimum success), as required
cc)	<p><b><u>Transplanting</u></b></p> <ul style="list-style-type: none"> <li>Transplanting of will be used as a method of revegetation for certain species.</li> <li>The plants will be excavated with a front-end loader (or similar) retaining as much soil around the roots as possible</li> <li>The plant will then be moved to a prepared hole, water in where possible.</li> <li>For mature <i>Xanthorrhoea</i> species (Grass Trees), these will be burnt (where weather and conditions permit). Burning the shirt of dead leaves and some of the lower green leaves is important to stimulate new growth and flowering.</li> </ul>	As required, during rehabilitation
dd)	<p><b><u>Species Composition and Structure</u></b></p> <ul style="list-style-type: none"> <li>Rehabilitation will aim to achieve the species composition and structure of the following communities: <ul style="list-style-type: none"> <li>Smooth-barked Apple – Blackbutt Forest and Coastal Sand Wallum Woodland-Heath.</li> <li>Canopy species of the adjoining Swamp Mahogany – Paperbark Swamp Forest will supplement rehabilitation in areas where this community adjoins the rehabilitation area.</li> </ul> </li> </ul>	When undertaking rehabilitation

Item	Action	Trigger/ Timing
	<ul style="list-style-type: none"> <li>The composition of the rehabilitation will aim to meet the performance and ultimately the completion criteria specified in the Rehabilitation Plan.</li> </ul>	
ee)	<ul style="list-style-type: none"> <li>Landscaping Areas will include species composition and structure that will aim to establish native ground cover and shrub species that are consistent with requirements for fuel loads within Asset Protection Zones (e.g. maintained, minimal wood debris, discontinuous patches of the shrub layer, no canopy species within 10 m of building and where present do not have connected canopy with adjoining vegetation).</li> </ul>	For landscaped areas
ff)	<p><b>Rehabilitation Monitoring</b></p> <ul style="list-style-type: none"> <li>Six monthly (bi-annual) monitoring of rehabilitation for the first three years and monitoring at years four, five and eight post-rehabilitation will be assessed against the performance criteria. The Eight year (or final) monitoring event will also be compared against the completion criteria, and where met will not require further monitoring.</li> </ul>	As specified.
<b>8.3.19 Decommissioning and Closure</b>		
a)	Prepare a final quarry closure plan to establish a safe, stable and non-polluting final landform.	3 years prior to closure of quarry
b)	Satisfy land owner lease conditions for relinquishment of bond.	During decommission and rehabilitation.
c)	<p>Decommissioning will include:</p> <ul style="list-style-type: none"> <li>Removal of all plant and equipment (e.g. all fuel infrastructure, weigh bridges, site office and the workshop structure).</li> <li>Consultation with land owner to agree on residual infrastructure to be left onsite. Expected residual infrastructure / works includes: <ul style="list-style-type: none"> <li>Intersection and bitumen access road.</li> <li>Building pads.</li> <li>Electrical line work from Cabbage Tree Road to Office and Workshop area.</li> <li>Water mains pipe work though to Office and Workshop area.</li> <li>Building pads.</li> <li>A 40 m wide asset protection zone (with inner and outer protection areas) around office and workshop compound.</li> </ul> </li> </ul>	During decommissioning
d)	Meet rehabilitation completion criteria, or at a minimum establish that the rehabilitated lands are on trajectory to meet the completion criteria without additional input.	During decommissioning
<b>8.3.20 Offsets</b>		
a)	Sufficient biodiversity offsets will be secured to satisfaction of OEH and DPE prior to the commencement of construction.	Prior to commencement

### APPENDIX 3 CONCEPTUAL REHABILITATION PLAN

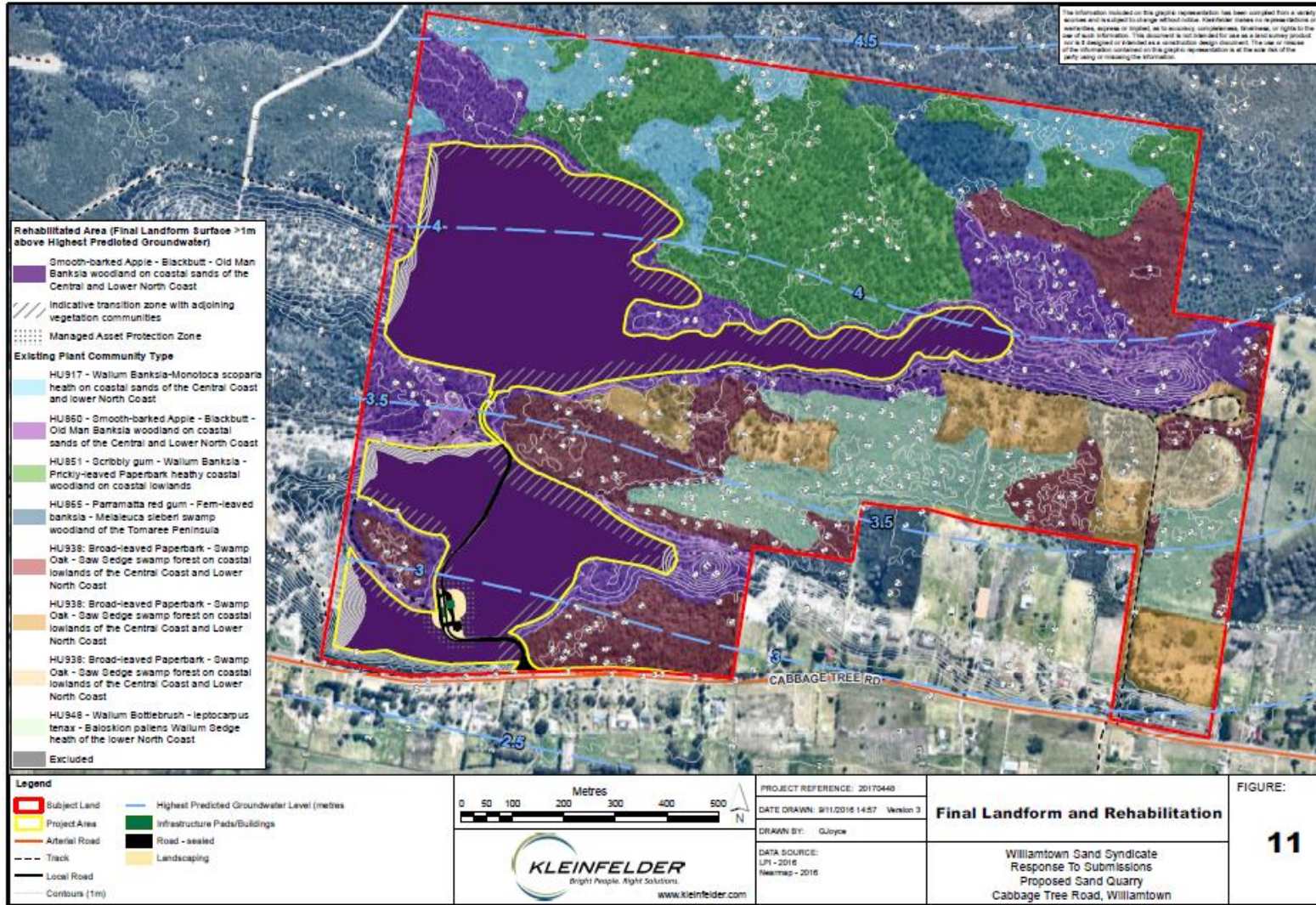
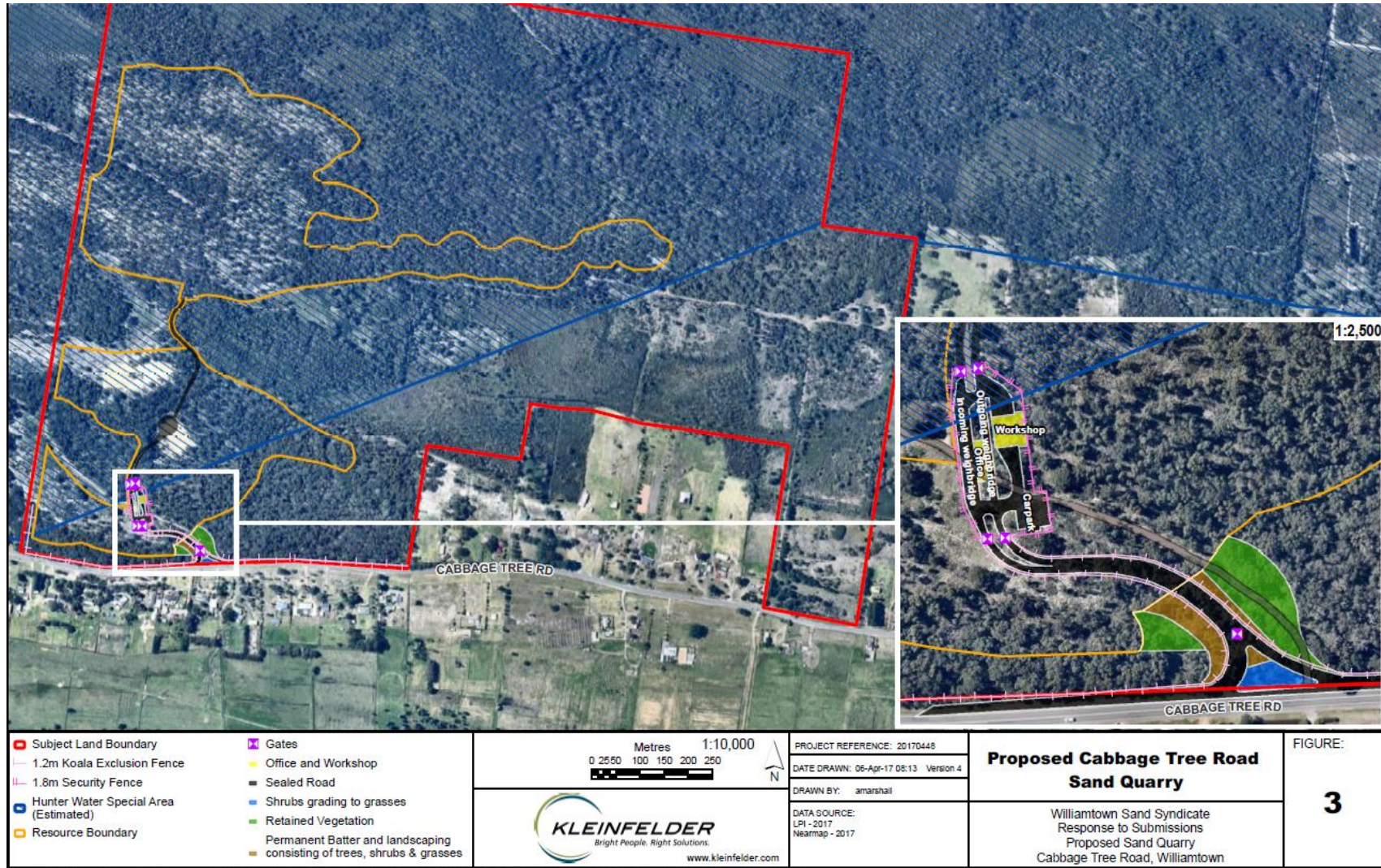


Figure 3: Conceptual rehabilitation plan

**APPENDIX 4  
HUNTER WATER'S SPECIAL AREA**



*Figure 4: Hunter Water's Special Area (shown in blue)*

## **APPENDIX 5 NOISE COMPLIANCE ASSESSMENT**

### **Applicable Meteorological Conditions**

1. The noise criteria in Table 2 are to apply under all meteorological conditions except the following:
  - a) wind speeds greater than 3 m/s at 10 m above ground level; or
  - b) temperature inversion conditions between 1.5°C and 3°C/100 m and wind speed greater than 2 m/s at 10 m above ground level; or
  - c) temperature inversion conditions greater than 3°C/100 m.

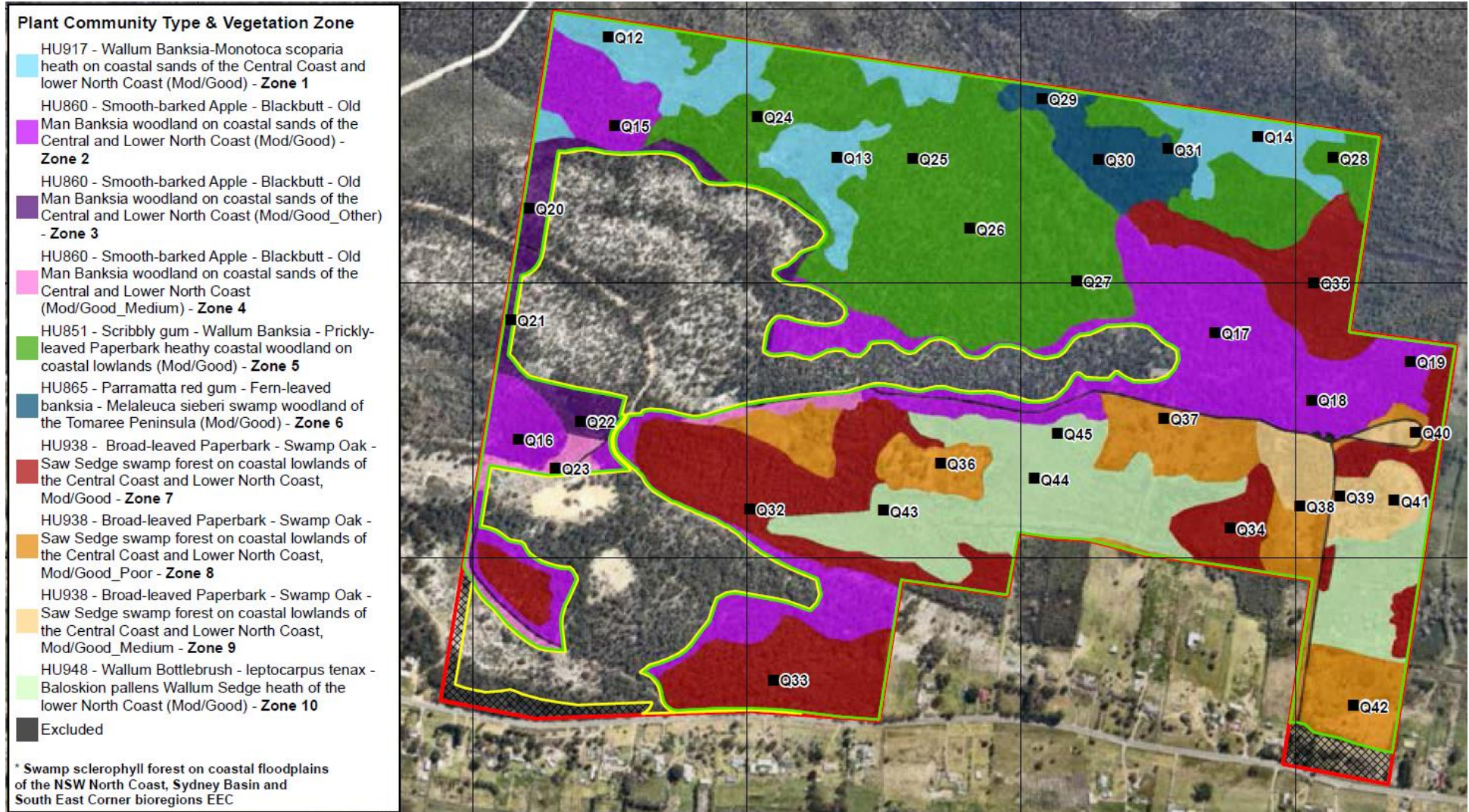
### **Determination of Meteorological Conditions**

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions must be that recorded by the meteorological station required under condition 10 of Schedule 3.

### **Compliance Monitoring**

3. A noise compliance assessment must be undertaken within two months of commencement of quarrying operations. The assessment must be conducted by a suitably qualified and experienced acoustical practitioner and must assess compliance with noise criteria presented above. A report must be provided to the EPA within 1 month of the assessment.
4. Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the NPI (as amended from time to time), in particular the requirements relating to:
  - a) monitoring locations for the collection of representative noise data;
  - b) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment;
  - c) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration; and
  - d) the use of an appropriate modifying factor for low frequency noise to be applied during compliance testing at any individual residence if low frequency noise is present (in accordance with the NPI) and before comparison with the specified noise levels in the consent.

**APPENDIX 6  
BIODIVERSITY OFFSET STRATEGY**



*Figure 5: Location of on-site Biodiversity Offset area*