

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the **development** referred to in Schedule 1, subject to the conditions set out 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 on-going environmental management of the **development**.

Hon Kristina Keneally MP
Minister for Planning

Sydney

2009

SCHEDULE 1

Development Application:

06_0104

Applicant:

PF Formation

Consent Authority:

Minister for Planning

Land:

See Appendix 1

Development:

Hitchcock Road Sand Project

Green type represents November 2021 modification

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DEFINITIONS

Applicant	PF Formation, or any person carrying out any development under this consent
Annual Review	Required by condition 5 of Schedule 5 that is prepared with regard for the <i>Annual Review Guideline (2015)</i> or its latest version
BCD	Biodiversity and Conservation Sciences Directorate
Council	The Hills Shire Council
Day	The period from 7.00am to 6.00pm on Monday to Saturday, and 8.00am to 6.00pm on Sundays and Public Holidays
DAWE	Commonwealth Department of Agriculture, Water and the Environment
Department	NSW Department of Planning, Industry and Environment
Development	The development as described in the documents listed in condition 2 of Schedule 2
DPI Agriculture	Department of Primary Industries - Agriculture
DPIE Water	Water Group within the Department
DPIE Crown Lands	Crown Lands Group within the Department
EA	Environmental Assessment for the <i>Development</i> titled <i>Hitchcock Road Sand Extraction and Rehabilitation Project Environmental Assessment and Appendices</i> (3 volumes), dated November 2007, prepared by DFA Consultants, including the response to submissions and preferred project report
ENM	Excavated Natural Material, as defined in the <i>Resource Recovery Order and Exemption</i> , issued in accordance with Clauses 91 and 92 of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i>
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 issued under the <i>Protection of the Environment Operations Act 1997</i>
Evening	The period from 6.00pm to 10.00pm
Extraction Area	The land described as the extraction area in Appendix 1
Heritage NSW	Heritage NSW within the Department of Premier and Cabinet
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance
Land	Land means 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	<p>Is harm to the environment that:</p> <ul style="list-style-type: none"> • involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or • results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment) <p>This definition excludes "harm" that is authorised under either this consent or any other statutory approval</p>
MEG	Regional NSW - Mining, Exploration and Geoscience
Minister	NSW Minister for Planning and Public Spaces, or delegate
Modification Report MOD 1	Modification Report for the development titled <i>Statement of Environmental Effects for the modification of Hitchcock Road Sand Extraction and Rehabilitation Project Environmental Assessment and Appendices</i> , dated June 2020, prepared by R.W. Corkery & Co. Pty. Limited, including the Submissions Report dated September 2020, and letters dated 3 and 22 November 2021
Night	The period from 10.00pm to 7.00am on Monday to Saturday, and 10.00pm to 8.00am on Sundays and Public Holidays
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
NRAR	Natural Resources Access Regulator
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
Privately owned land	Land not owned by a public agency or the Applicant or its related companies
Preferred Project Report	The Applicant's Preferred Project Report dated September 2008, prepared by DFA Consultants, as modified in the Applicant's email to the Department of 18 November 2008
Response to Submissions	The Applicant's response to issues raised in submissions, dated March 2008, prepared by DFA Consultants, and subsequent submissions to the Department dated 27 August 2008
Resources Regulator	NSW Resources Regulator
SHTW	Sydney Hinterland Transition Woodland
Site	Land to which the <i>Development</i> Application applies
Statement of Commitments	The Applicant's commitments in Appendix 3
Strategy A, Strategy B	The alternative rehabilitation proposals described in the preferred project report

TfNSW
Vegetation Offset

Transport for NSW

The conservation and enhancement program described in the preferred project report, to occur on the land shown on the plan in Appendix 5

VENM

Virgin Excavated Natural Material, as defined in clause 50 of Schedule 1 of the *Protection of the Environment Operations Act 1997*

SCHEDULE 2 ADMINISTRATIVE

Obligation to Minimise Harm to the Environment

1. The **Applicant must** implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the **development**.

Terms of Approval

2. The **Applicant must** carry out the **development**:
 - (a) **generally in accordance with the EA and Modification Report MOD 1**;
 - (b) **generally in accordance with the preferred project report**;
 - (c) **generally in accordance with the statement of commitments**; and
 - (d) **in accordance with the conditions of this consent**.

Notes:

- *The layout of the **development** is shown in the figure in Appendix 2; and*
- *The statement of commitments is included in Appendix 3.*

3. If there is any inconsistency between the above:
 - (a) the preferred project report shall prevail over the EA;
 - (b) the conditions of **this consent** shall prevail generally, to the extent of the inconsistency.
4. The **Applicant must** comply with any reasonable requirement/s of the **Planning Secretary** arising from the Department's assessment of:
 - (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of **this consent**; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

Existing Sand Mining Consent

5. Subject to an agreement in accordance with condition 7 below, the **Applicant** may accept material extracted from Lot 2 DP 555184 and Lot 1 DP 34599 in accordance with the development consent issued by the Land and Environment Court on 14 July 1998 to be transported across the site and to the slurry plant on Lot 1 DP 570966 via the slurry pipeline and processed on Lot 198 DP 752025.

Limits on Approval

6. Extraction and processing operations may take place until 30 November **2038**.

*Note: Under **this consent**, the **Applicant** is required to rehabilitate the site and provide offsets to the satisfaction of the **Planning Secretary**. Consequently **this consent** will continue to apply in all other respects other than the right to conduct extraction and processing operations until the site has been rehabilitated and the offset provided to a satisfactory standard.*

7. The quantity of processed material produced at the site, together with material produced on Lot 2 DP 555184 and Lot 1 DP 34599 in accordance with the development consent issued by the Land and Environment Court on 14 July 1998, **must** not exceed 400,000 tonnes a year.

Prior to the commencement of any processing of extractive material (under the above consent) from activities on Lot 2 DP 555184 or Lot 1 DP 34599, the **Applicant must** demonstrate, to the satisfaction of the **Planning Secretary**, that it has reached an agreement with the owners of those Lots regarding the proportion of the extraction limit as it applies to each Lot.

- 7A. **The Applicant must not import more than 250,000 tonnes of VENM or ENM per calendar year.**

8. **The Applicant must not:**
 - (a) **receive more than 200 heavy vehicles at the site per day**;
 - (b) **dispatch more than 200 laden heavy vehicles associated with the Applicant's combined operations at Maroota and the Central Wash Plant site (Lot 198 DP 752025); and**
 - (c) **allow more than 10 heavy vehicles per day, from entering/exiting the site between 6.00am and 7.00am.**

9. The **Applicant must** not undertake any extraction within 2 metres of the established wet weather groundwater level.

*Note: The wet weather groundwater level **must** be established in accordance with condition 3 of Schedule 3.*

10. The **Applicant must** not disturb any SHTW vegetation (as shown on the plan in Appendix 5) on site without the prior written approval of the **Planning Secretary**. In seeking this approval, the **Applicant must** demonstrate, to the satisfaction of the **Planning Secretary**, that it has established at least 3.7 hectares of SHTW on the site, to a standard that meets the criteria in Appendix 6.

Note: This demonstration must include an assessment by a suitably qualified and independent ecologist.

Management Plans / Monitoring Programs

11. With the approval of the **Planning Secretary**, the **Applicant** may submit any management plan or monitoring program required by **this consent** on a progressive basis.

Demolition

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

Protection of Public Infrastructure

13. The **Applicant must**:
 - (a) repair, or pay all reasonable costs associated with repairing, any public infrastructure that is damaged by the **development**; and
 - (b) relocate, or pay all reasonable costs associated with relocating, any public infrastructure that needs to be relocated as a result of the **development**.

Operation of Plant and Equipment

14. The **Applicant must** ensure that all plant and equipment used at the site is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient condition.

Crown Land

15. The **Applicant must** not commence any development authorised by **this consent** on Crown land without the prior approval of the **DPIE Crown Lands**.

Section 94 Contributions

16. The **Applicant must** pay a monthly contribution to the Council for the upgrade and maintenance of roads in accordance with Baulkham Hills Shire Council's section 94 plan in force at the date of **this consent**.

SCHEDULE 3 ENVIRONMENTAL PERFORMANCE

GENERAL EXTRACTION AND PROCESSING PROVISIONS

Identification of Boundaries

1. Within 3 months of the date of **this consent**, or as otherwise agreed by the **Planning Secretary**, the **Applicant must**:
 - (a) engage an independent registered surveyor to survey the boundaries of the approved limit of extraction and the approved ancillary work areas;
 - (b) submit a survey plan of these boundaries to the **Planning Secretary**; and
 - (c) ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff and inspecting officers to clearly identify those limits.

Note: The limit of extraction and ancillary areas is shown conceptually on the layout plans in Appendix 2, as amended/clarified by the conditions below.

General Limits of Extraction

2. Notwithstanding the layout plans in Appendix 2, the **Applicant must** not undertake extraction within:
 - (a) 30 metres of Hitchcock Road; and
 - (b) 10 metres of the property boundary of Lot 2 DP 555184, unless sand extraction has commenced on that lot, and extraction in this buffer has been agreed by the **Planning Secretary**.

Maximum Extraction Depth Map

3. The **Applicant must**:
 - (a) establish the wet weather groundwater level for the site based on all available (and at least 12 months) site specific groundwater monitoring data;
 - (b) engage a suitably qualified and experienced expert to establish the maximum extraction depths to which extraction can be undertaken on site, to comply with condition 9 of Schedule 2;
 - (c) submit a Maximum Extraction Depth Map (contour map or similar) for the **development** to the **Planning Secretary** within 3 months of the date of **this consent**; and
 - (d) comply with the extraction depths specified in the map, to the satisfaction of the **Planning Secretary**.
4. Within 3 months of the completion of the Independent Environmental Audit (see condition 6 of Schedule 5), the **Applicant must** review and update the Maximum Extraction Depth Map for the **development** to the satisfaction of the **Planning Secretary**.

NOISE

Operational Noise Assessment Criteria

5. The **Applicant must** ensure that the noise generated by the **development** does not exceed the noise impact assessment criteria in Table 1 at any residence or on more than 25 per cent of any privately-owned land.

Noise Assessment Location	Day	Night	
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	LA1 (1 minute)
R1 - Hammond	41	35	45
R2 – Hitchcock	40	35	45
R5 – Pignataro	42	35	45
R6 – Camilleri	40	35	45
R7 – Maroota Public School	36 _{(L_{Aeq}(1 Hour))}	N/A	N/A
R8 – Portelli	39	35	45
R9 – Young	39	35	45
R10 - Tornatola	39	35	45

Table 1: Noise Impact Assessment Criteria

Notes:

- To determine compliance with the L_{Aeq(15 minute)} noise limits, noise from the **development** is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the **development** is impractical, alternative means of determining

compliance may be accepted (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy **must** also be applied to the measured noise level where applicable.

- To determine compliance with the $L_{A1(1 \text{ minute})}$ limit, noise from the **development** is to be measured at 1 metre from the dwelling façade.
- The noise limits apply under meteorological conditions of:
 - wind speed up to 3m/s at 10m above ground level;
 - temperature inversion conditions of up to 3 degrees C/100m and wind speed up to 2m/s at 10m above the ground;
 where the wind velocity and temperature gradients are determined to be relevant to the **development** site in accordance with the NSW Industrial Noise Policy.
- The **Planning Secretary** may relax the noise limits in Table 1 for any property where the **Applicant** has an agreement with the relevant owner/s to generate higher noise levels, and the **Applicant** has advised the Department in writing of the terms of this agreement.
- For more information on the noise assessment locations see Appendix 4.

Cumulative Noise Criteria

6. The **Applicant must** take all reasonable and feasible measures to ensure that the noise generated by the **development** combined with the noise generated by other extractive industries does not exceed the following amenity criteria on any privately owned land, to the satisfaction of the **Planning Secretary**:
- $L_{Aeq(11 \text{ hour})}$ 50 dB(A) – Day;
 - $L_{Aeq(4 \text{ hour})}$ 45 dB(A) – Evening; and
 - $L_{Aeq(9 \text{ hour})}$ 40 dB(A) – Night.

Operating Hours

7. The **Applicant must** comply with the operating hours in Table 2.

Activity	Day	Time
Construction work	Monday - Friday	7.00am to 6.00pm
	Saturday	8.00am to 1.00pm
	Sunday and Public Holidays	None
Quarrying and Processing, (inc. overburden removal)	Monday – Saturday	7.00am to 6.00pm
	Sunday and Public Holidays	None
Product Transportation	Monday – Saturday	6.00am to 6.00pm
	Sunday and Public Holidays	None
Maintenance	Monday – Saturday	7.00am to 6.00pm
	Sunday and Public Holidays	None

Table 2: Operating Hours

Notes:

- Product transportation prior to 7.00am is restricted as per condition 8 of Schedule 2.
- Maintenance activities may be conducted outside the hours in Table 2 provided that the activities are not audible at any residence beyond the boundary of the site.
- This condition does not apply to delivery of material if that delivery is required by police or other authorities for safety reasons, and/or the operation or personnel or equipment are endangered. In such circumstances, notification is to be provided to the **EPA and the Department** and the affected residents as soon as possible, or within a reasonable period in the case of emergency.

Noise Management Plan

8. The **Applicant must** prepare and implement a Noise Management Plan for the **development** to the satisfaction of the **Planning Secretary**. This plan **must**:
- be submitted to the **Planning Secretary** within 3 months of the date of **this consent**;
 - be prepared in consultation with the **EPA**;
 - include details of how the noise performance of the **development** would be monitored, and include a noise monitoring protocol for evaluating compliance with the relevant noise limits in **this consent**; and
 - include an investigation and assessment (including modelling) of additional reasonable and feasible noise mitigation measures that would be implemented to ensure that noise emissions at all stages of the **development** comply with the noise impact assessment criteria in Table 1.

Note: The EA predicted that receiver locations R5, R6, R9 and R10 would exceed the applicable noise criteria by between 2 and 5 decibels, during worst case operations.

9. If the additional noise mitigation measures identified in condition 8(d) are not able to reduce noise levels to within 2 decibels of the impact assessment criteria in Table 1 then, upon receiving a written request from the applicable landowner, the **Applicant must** implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner.

These additional mitigation measures must be reasonable and feasible.

If within 3 months of receiving this request from the landowner, the **Applicant** and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the **Planning Secretary** for resolution.

AIR QUALITY

Impact Assessment Criteria

10. The **Applicant must** ensure that dust generated by the **development** does not cause exceedances of the criteria listed in Tables 3, 4 and 5 at any residence or on more than 25 per cent of any privately owned land.

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

Table 3: Long Term Impact Assessment Criteria for Particulate Matter

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

Table 4: Short Term Impact Assessment Criteria for Particulate Matter

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

Table 5: Long Term Impact Assessment Criteria for Deposited Dust

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS 3580.10.1-1991: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Operating Conditions

11. The **Applicant must** ensure any visible air pollution generated by the **development** is assessed regularly, and that quarrying operations are relocated, modified, and/or stopped as required to minimise air quality impacts on privately owned land.

Air Quality Monitoring

12. The **Applicant must** prepare and implement an Air Quality Monitoring Program for the **development** to the satisfaction of the **Planning Secretary**. This program **must**:
- be submitted to the **Planning Secretary** for approval within 3 months of the date of **this consent**;
 - be prepared in consultation with the **EPA**;
 - include details of how the air quality performance of the **development** would be monitored, providing for additional dust deposition monitoring in the vicinity of clusters of residences to the north and west of the site; and
 - include a protocol for evaluating compliance with the relevant air quality criteria in **this consent**.

METEOROLOGICAL MONITORING

13. The **Applicant must** ensure the **development** has a suitable meteorological station on the site or in the immediate vicinity that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* publication.

WATER

Water Supply

14. The **Applicant must** ensure that it has sufficient water for all stages of the **development**, and if necessary, adjust the scale of operations to match its water supply.

*Note: The **Applicant** is required to obtain necessary water licences for the **development** under the Water Act 1912 and/or Water Management Act 2000.*

Discharges

15. The **Applicant must** not discharge any water from the quarry or its associated operations except in accordance with an EPL.

Water Management and Monitoring

16. The **Applicant must** prepare and implement a Water Management Plan for the **development** to the satisfaction of the **Planning Secretary**. This plan **must**:
- (a) be submitted to the **Planning Secretary** within 3 months of the date of **this consent**;
 - (b) be prepared in consultation with **DPIE Water** and **the EPA**; and
 - (c) include a:
 - Site Water Balance;
 - Erosion and Sediment Control Plan;
 - Surface Water Monitoring Program; and
 - Groundwater Monitoring Program.
17. The Site Water Balance **must**:
- (a) include details of:
 - sources and security of water supply;
 - water use on site;
 - water management on site, including the location and capacity of water storages on site and the means of access;
 - off-site water transfers; and
 - reporting procedures; and
 - (b) investigate and describe measures to minimise water use by the **development**.
18. The Erosion and Sediment Control Plan **must**:
- (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004* (Landcom);
 - (b) identify activities that could cause soil erosion and generate sediment;
 - (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;
 - (d) describe the location, function, and capacity of erosion and sediment control structures;
 - (e) demonstrate that the design capacity of basins intended to collect storm runoff will not be compromised by storage of operational water; and
 - (f) describe what measures would be implemented to maintain (and if necessary decommission) the structures over time.
19. The Surface Water Monitoring Program **must** include:
- (a) detailed baseline data on surface water flows and quality in downstream watercourses that could be affected by the **development**;
 - (b) surface water quality and stream health assessment criteria, including trigger levels for investigating any potentially adverse surface water impacts; and
 - (c) a program to monitor:
 - surface water flows, quality, and impacts on water users;
 - stream health; and
 - channel stability.
20. The Groundwater Monitoring Program **must** include:
- (a) provision of additional monitoring bores around the periphery of the site;
 - (b) detailed baseline data on groundwater levels, flows and quality in the region, and particularly any groundwater bores, springs and seeps (including spring and seep fed dams) that may be affected by operations on site;
 - (c) groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts;
 - (d) a program to monitor:
 - groundwater levels and quality in new and existing monitoring bores;
 - the impacts of the **development** on:
 - any groundwater bores, springs and seeps (including spring and seep fed farm dams) on privately-owned land; and

- any groundwater dependent ecosystems; and
- (e) a protocol for further groundwater modelling to confirm the limits to excavation depth across the site permitted in accordance with condition 9 of Schedule 2.

LANDSCAPE MANAGEMENT

Rehabilitation

21. The **Applicant must** progressively rehabilitate the site to the satisfaction of the **Planning Secretary**, in a manner that is generally consistent with the concept final landform (Strategy A or Strategy B) in the preferred project report (as reproduced in Appendix 7).

Offset Strategy

22. The **Applicant must** implement the Offset Strategy described in the preferred project report, and summarised in Table 6 (shown conceptually on the plan in Appendix 5), to the satisfaction of the **Planning Secretary**.

Area	Minimum Size (hectares)
On-Site Revegetation Area (SHTW)	7.9
On-Site Revegetation Area (Other Woodland)	4.1
Total	12

Table 6: Offset Strategy

23. Within 3 years of the date of **this consent**, the **Applicant must** make suitable arrangements to provide appropriate long term security for the offset areas to the satisfaction of the **Planning Secretary**.

Note: The Department acknowledges that the arrangements may provide for staged or delayed implementation, in accordance with the extraction in these areas.

Landscape Management Plan

24. The **Applicant must** prepare and implement a Landscape Management Plan for the **development** to the satisfaction of the **Planning Secretary**. This plan must:
- (a) be prepared in consultation with **BCD** by suitably qualified expert/s whose appointment/s have been approved by the **Planning Secretary**;
 - (b) be submitted to the **Planning Secretary** for approval within 6 months of the date of **this consent**; and
 - (c) include a:
 - Rehabilitation and Offset Management Plan; and
 - Quarry Closure Plan.

Rehabilitation and Offset Management Plan

25. The Rehabilitation and Offset Management Plan must include:
- (a) the rehabilitation objectives for the site, vegetation offsets and landscaping;
 - (b) a description of the short, medium, and long term measures that would be implemented to:
 - rehabilitate the site;
 - implement the Offset Strategy; and
 - maintain and enhance existing site vegetation outside the disturbance area;
 - (c) detailed performance and completion criteria for the site rehabilitation and implementation of the Offset Strategy;
 - (d) a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for:
 - progressively rehabilitating disturbed areas;
 - implementing vegetation offsets;
 - protecting vegetation and soil outside the disturbance areas;
 - rehabilitating creeks and drainage lines on the site to ensure no net loss of stream length and aquatic habitat;
 - undertaking pre-clearance surveys;
 - managing impacts on fauna;
 - landscaping the site to minimise visual impacts;
 - conserving and reusing topsoil;
 - collecting and propagating seed for rehabilitation works;
 - salvaging and reusing material from the site for habitat enhancement;
 - controlling weeds and feral pests;

- controlling access; and
 - bushfire management;
- (e) a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;
- (f) a description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and
- (g) details of who would be responsible for monitoring, reviewing, and implementing the plan.

Quarry Closure Plan

26. The Quarry Closure Plan must:
- (a) include provision for certification from a qualified geotechnical engineer that the final proposed landform is stable;
 - (b) define the objectives and criteria for closure of the quarry;
 - (c) investigate options for the future use of the site, including any final void;
 - (d) describe the measures that would be implemented to minimise or manage the ongoing (post closure) environmental effects of the **development**; and
 - (e) describe how the performance of these measures would be monitored over time.

Rehabilitation and Offset Bond

27. Within 3 months of the approval of the Landscape Management Plan, the **Applicant must** lodge a rehabilitation and offset bond for the **development** with the **Planning Secretary**. The sum of the bond **must** be calculated at:
- (a) \$2.50/m² for the area of disturbance in each 3 year review period, including the offset areas; and
 - (b) \$1.00/m² for the total area of land previously disturbed by the quarry, or as otherwise directed by the **Planning Secretary**.

Notes:

- *If the rehabilitation and offsets are completed to the satisfaction of the **Planning Secretary**, the **Planning Secretary** will release the bond.*
- *If the rehabilitation and/or offsets are not completed to the satisfaction of the **Planning Secretary**, the **Planning Secretary** will call in all or part of the bond, and arrange for the satisfactory completion of the relevant works.*

ABORIGINAL HERITAGE

28. Should the **Applicant** discover material suspected of being Aboriginal relics or skeletal remains, work in that area **must** cease and the **Applicant must** advise **Heritage NSW** and proceed in accordance with **Heritage NSW** instructions.

TRAFFIC AND TRANSPORT

Materials Transport

29. The **Applicant must** transport all excavated material between the extraction site and processing plant site, including processing residues, via slurry pipelines.

*Note: When the slurry system is unusable by reason of breakdown or essential maintenance, extractive material may be transported by truck during the period of such breakdown or maintenance. The **Applicant must** ensure that such periods are as brief as possible and **must** advise the Council each day that truck transport is to be used.*

Haulage Records

30. The **Applicant must** record and maintain a log of the extraction quantities and traffic movement in and out of the site, available for inspection at the request of the **Planning Secretary** or the Council.

Road Haulage

31. The **Applicant must** ensure that:
- (a) all loaded vehicles entering or leaving the site are covered; and
 - (b) all loaded vehicles leaving the site are cleaned of materials that may fall on the road, before they leave the site.

Traffic Management Plan

- 31A. The **Applicant must** prepare a **Traffic Management Plan** for the **development** to the satisfaction of the **Planning Secretary**. This plan **must**:
- (a) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the **Planning Secretary**;

- (b) be prepared in consultation with TfNSW and Council;
- (c) include details of all haulage transport routes within the Council local government area and vehicle types to be used for development-related traffic;
- (d) include details of the measures to be implemented to minimise traffic safety issues and disruption to local road users, including minimising potential for conflict with school buses;
- (e) include a Drivers' Code of Conduct that includes procedures requiring that drivers:
 - (i) adhere to posted speed limits or other required travelling speeds;
 - (ii) adhere to designated transport routes; and
 - (iii) implement safe and quiet driving practices;
- (f) describe the measures to be put in place to ensure compliance with the Drivers' Code of Conduct; and
- (g) propose measures to minimise the transmission of dust and tracking of material onto the surface of public roads from vehicles exiting the site.

The Applicant must implement the Traffic Management Plan as approved by the Planning Secretary.

VISUAL

Visual Amenity

32. The Applicant must minimise the visual impacts of the development to the satisfaction of the Planning Secretary.

Lighting Emissions

33. The Applicant must:
- (a) take all practicable measures to mitigate off-site lighting impacts from the development; and
 - (b) ensure that all external lighting associated with the development complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*, to the satisfaction of the Planning Secretary.

Advertising

34. The Applicant must not erect or display any advertising structure(s) or signs on the site without the written approval of the Planning Secretary.

Note: This does not include traffic management and safety or environmental signs.

WASTE MANAGEMENT

Waste Minimisation

35. The Applicant can import:
- (a) VENM to the site;
 - (b) ENM to the site only for the purpose of engineering fill or use in earthworks; and
 - (c) materials permitted by an EPL, where an applicable Resource Recovery Order and Exemption, issued in accordance with Clauses 91 and 92 of the *Protection of the Environment Operations (Waste) Regulation 2014* (or its latest amendment), is in place and which allows the material to be received for processing with extractive materials or application to land.

Note: No other materials classified as waste under the Protection of the Environment Operations (Waste) Regulation 2014 (or its latest amendment) are to be received or processed on the site.

- 35A. The Applicant must:
- (a) verify any VENM and ENM received has appropriate documentation demonstrating that it is VENM and ENM;
 - (b) maintain accurate records of all VENM and ENM received at the site (including the date, time, quantity received and verification documentation (refer 35A(a)));
 - (c) include a summary of these records in the Annual Review;
 - (d) minimise the amount of waste generated by the development;
 - (e) ensure that the waste generated by the development is appropriately stored, handled, and disposed of; and
 - (f) report on waste minimisation and management in the Annual Review.

EMERGENCY AND HAZARDS MANAGEMENT

Dangerous Goods

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

Safety

37. The **Applicant must** secure the **development** to ensure public safety to the satisfaction of the **Planning Secretary**.

Bushfire Management

38. 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 as much as possible if there is a fire on site.

PRODUCTION DATA

39. The **Applicant must**:
- (a) provide annual production data to the **MEG** using the standard form for that purpose; and
 - (b) include a copy of this data in the **Annual Review**.
-

SCHEDULE 4 ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. If the results of monitoring required in Schedule 3 identify that impacts generated by the **development** are greater than the relevant impact assessment criteria, then the **Applicant must** notify the **Planning Secretary** and the affected landowners and/or existing or future tenants accordingly, and provide quarterly monitoring results to each of these parties until the results show that the **development** is complying with the relevant criteria.

INDEPENDENT REVIEW

2. If a landowner of privately owned land considers that the operations of the quarry are exceeding the impact assessment criteria in Schedule 3, then he/she may ask the **Applicant** in writing for an independent review of the impacts of the **development** on his/her land.

If the **Planning Secretary** is satisfied that an independent review is warranted, the **Applicant must** within 3 months of the **Planning Secretary** advising that an independent review is warranted:

- (a) consult with the landowner to determine his/her concerns;
 - (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the **Planning Secretary**, to conduct monitoring on the land, to determine whether the **development** is complying with the relevant criteria in Schedule 3, and identify the source(s) and scale of any impact on the land, and the **development's** contribution to this impact; and
 - (c) give the **Planning Secretary** and landowner a copy of the independent review.
3. If the independent review determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the **Applicant** may discontinue the independent review with the approval of the **Planning Secretary**.
 4. If the independent review determines that the quarrying operations are not complying with the relevant criteria in Schedule 3, and that the quarry is primarily responsible for this non-compliance, then the **Applicant must**:
 - (a) implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the **development** complies with the relevant criteria; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance; or
 - (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria in Schedule 3, to the satisfaction of the **Planning Secretary**.

If the additional monitoring referred to above subsequently determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the **Applicant** may discontinue the independent review with the approval of the **Planning Secretary**.

If the **Applicant** is unable to finalise an agreement with the landowner, then the **Applicant** or landowner may refer the matter to the **Planning Secretary** for resolution.

If the matter cannot be resolved within 21 days, the **Planning Secretary must** refer the matter to an Independent Dispute Resolution Process (see Appendix 8).

5. If the landowner disputes the results of the independent review, either the **Applicant** or the landowner may refer the matter to the **Planning Secretary** for resolution.

If the matter cannot be resolved within 21 days, the **Planning Secretary must** refer the matter to an Independent Dispute Resolution Process (see Appendix 8).

SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, MONITORING, REPORTING & AUDITING

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The **Applicant must** prepare and implement an Environmental Management Strategy for the **development** to the satisfaction of the **Planning Secretary**. This strategy **must** be submitted to the **Planning Secretary** within 3 months of the date of **this consent**, and;
 - (a) provide the strategic context for environmental management of the **development**;
 - (b) identify the statutory requirements that apply to the **development**;
 - (c) describe in general how the environmental performance of the **development** would be monitored and managed;
 - (d) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the construction, operation and environmental performance of the **development**;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the life of the **development**;
 - respond to any non-compliance;
 - manage cumulative impacts; and
 - respond to emergencies; and
 - (e) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the **development**.

ENVIRONMENTAL MONITORING PROGRAM

2. The **Applicant must** prepare an Environmental Monitoring Program for the **development** to the satisfaction of the **Planning Secretary**. This program **must** be submitted to the **Planning Secretary** concurrently with the submission of the various monitoring programs and consolidate the various monitoring requirements in Schedule 3 of **this consent** into a single document.

REPORTING AND AUDITING

Incident Notification

3. The **Applicant must** notify the **Department** and any other relevant agencies immediately after it becomes aware of an incident. The notification **must** be in writing via the **Department's Major Projects Website** and identify the **development** (including the **development application number** and name) and set out the location and nature of the incident.

Non-Compliance Notification

4. Within seven days of becoming aware of a non-compliance, the **Applicant must** notify the **Department** of the non-compliance. The notification **must** be in writing via the **Department's Major Projects Website** and identify the **development** (including the **development application number** and name), set out the condition of **this consent** that the **development** is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Annual Reporting

5. Within 12 months of the date of **this consent**, and annually thereafter, the **Applicant must** submit an **Annual Review** to the **Planning Secretary**, relevant agencies and CCC. This report **must**:
 - (a) identify the standards and performance measures that apply to the **development**;
 - (b) describe the works that will be carried out in the next 12 months;
 - (c) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
 - (d) include a summary of the monitoring results for the **development** during the past year;
 - (e) include an analysis of these monitoring results against the relevant:
 - impact assessment criteria/limits;
 - monitoring results from previous years; and
 - predictions in the EA;
 - (f) identify any trends in the monitoring results over the life of the **development**;
 - (g) identify any non-compliance during the previous year; and
 - (h) describe what actions were, or are being, taken to ensure compliance.

INDEPENDENT ENVIRONMENTAL AUDIT

6. Within 12 months of the date of **this consent**, and every 3 years thereafter, unless the **Planning Secretary** directs otherwise, the **Applicant must** commission and pay the full cost of an Independent Environmental Audit of the **development**. This audit **must**:

- (a) be conducted by a suitably qualified, experienced, and independent person(s) whose appointment has been approved by the **Planning Secretary**;
- (b) include consultation with the relevant agencies;
- (c) assess the environmental performance of the **development**, and its effects on the surrounding environment;
- (d) assess whether the **development** is complying with the relevant standards, performance measures and statutory requirements; and
- (e) review the adequacy of any strategy/plan/program required under **this consent**, and, if necessary, recommend measures or actions to improve the environmental performance of the **development**, and/or any strategy/plan/program required under **this consent**.

Note: The person(s) conducting the audit should have expertise in flora and fauna assessment, hydrogeology and quarry rehabilitation.

- 7. Within 6 weeks of completion of each Independent Environmental Audit, the **Applicant must** submit a copy of the audit report to the **Planning Secretary**, with a response to any of the recommendations in the audit report.
- 8. Within 3 months of submitting a copy of the audit report to the **Planning Secretary**, the **Applicant must** review and if necessary revise:
 - (a) each of the environmental management and monitoring strategies/plans/programs in Schedules 3 and 5; and
 - (b) the sum of the Vegetation Offset Bond (see Schedule 3). This review **must** consider:
 - the effects of inflation;
 - any changes to the total area of disturbance; and
 - the performance of the vegetation offsets against the completion criteria of the Rehabilitation and Vegetation Offset Management Plan,
 to the satisfaction of the **Planning Secretary**

COMMUNITY CONSULTATIVE COMMITTEE

- 9. The **Applicant must** establish a Community Consultative Committee (CCC) for the **development** to the satisfaction of the **Planning Secretary**, in general accordance with the Department's *Guideline for Establishing and Operating Community Consultative Committees for Mining Projects*.

*Note: The **Applicant** may continue the operation of the Liaison and Review Committee established under condition 6.7 of the development consent issued by the Land and Environment Court on 14 July 1998 to fulfil this condition.*

ACCESS TO INFORMATION

- 10. Within 1 month of the approval of any plan/strategy/program required under **this consent** (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or an **Annual Review** required under **this consent**, the **Applicant must**:
 - (a) provide a copy of the relevant document/s to the relevant agencies and to members of the general public upon request; and
 - (b) ensure that a copy of the relevant document/s is made publicly available on its website and at the **Applicant's** office.
- 11. During the **development**, the **Applicant must**:
 - (a) make a summary of monitoring results required under **this consent** publicly available on its website and at the site office; and
 - (b) update these results on a regular basis.

MANAGEMENT PLAN REQUIREMENTS

- 12. Management plans required under **this consent** must be prepared in accordance with relevant guidelines, and include:
 - (a) a summary of relevant background or baseline data;
 - (b) details of:
 - (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - (ii) any relevant limits or performance measures and criteria; and
 - (iii) 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) any relevant commitments or recommendations identified in the document/s listed in condition 2 of Schedule 2;
 - (d) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;

- (e) a program to monitor and report on the:
 - (i) impacts and environmental performance of the development; and
 - (ii) effectiveness of the management measures set out pursuant to condition 12(c) of Schedule 5;
- (f) 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;
- (g) a program to investigate and implement ways to improve the environmental performance of the development over time;
- (h) a protocol for managing and reporting any:
 - (i) incident, non-compliance or exceedance of the impact assessment criteria or performance criteria;
 - (ii) complaint; or
 - (iii) failure to comply with statutory requirements;
- (i) public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and
- (j) a protocol for periodic review of the plan.

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

13. The Applicant must ensure that management plans prepared for the development are consistent with the conditions of this consent and any EPL issued for the site.

REVISION OF STRATEGIES, PLANS AND PROGRAMS

14. Within three months of:
- (a) the submission of an incident report under condition 3 of Schedule 5;
 - (b) the submission of an Annual Review under condition 5 of Schedule 5;
 - (c) the submission of an Independent Environmental Audit under condition 6 of Schedule 5; or
 - (d) the approval of any modification of the conditions of this consent
- the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.
15. If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary and submitted to the Planning Secretary for approval within six weeks of the review.

Note: *This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.*

**APPENDIX 1
SCHEDULE OF LAND**

Extraction Area	<ul style="list-style-type: none">• Lots 1 & 2 DP 570966• Lots 1 & 2 DP 1063296• Lot 1 DP 1013943• Lot 2 DP 233818• Lot 1 DP 1091018• Lot 1 DP 223323
Processing Plant	<ul style="list-style-type: none">• Lots 167 & 214 DP 752039• Lot 198 DP 752025

APPENDIX 2
GENERAL LAYOUT OF DEVELOPMENT



Figure 5
EXTRACTION PLAN (STRATEGY A)

- Area already extracted and partially rehabilitated
- Area for future extraction
- Clean water dam
- Existing internal haul road
- Land included in the application



- Note: Contours at 2 metre intervals
- Tailings pond
 - Existing farm dam
 - Clean water dam
 - Sand extracted and partially rehabilitated
 - Site boundary
 - Development setback

Figure 4
EXISTING TOPOGRAPHY AND DEVELOPMENT SETBACKS

APPENDIX 3 STATEMENT OF COMMITMENTS

Noise and Vibration

- Site activities will be managed so that any necessary **activities with potential for** high noise and vibration levels occur at times of least impact.
- All site activities will be undertaken incorporating noise attenuation measures such as restricting working hours for certain works required in the proximity of sensitive receptors.
- All equipment used on site will be **properly maintained to ensure the noise emissions generated either meet or are below the sound power level detailed in the manufacturer's specification.**
- Panels and covers of silenced plant will be kept shut and plant and equipment switched off when not in use.
- All mechanical equipment will be silenced, **where reasonable and feasible**, by the best practical means using current technology, prior to use. Noise suppression devices will be fitted according to manufacturer's instructions. Noise control kits will be fitted to noisy mobile equipment and shrouds provided around stationary equipment where necessary.
- All plant and equipment will be inspected regularly to ensure that it is well maintained to minimise noise emissions.
- The noise levels at adjacent receivers will not exceed the **noise criteria specified within the development consent.**
- Compliance monitoring of noise levels will be undertaken and appropriate records of measurements kept **in accordance with the Noise Management Plan.**
- The local community will be informed of the level and duration of noise to be expected during specific activities and phases of development when necessary. Communication of concerns to the Environmental Manager will be invited.

Air Quality and Greenhouse Gas Emissions

- Ambient air quality monitoring will be conducted at identified sites.
- Dust suppression equipment will be fitted, **where required**, to all processing plant on the site. This will be regularly inspected and maintained in good working order at all times.
- Trafficable areas will be defined to prevent unnecessary vehicle movement into other parts of the site.
- All unsealed trafficable areas and working areas will be kept damp by spraying regularly with a water cart, water sprays or sprinklers to minimise dust emissions. Frequency of spraying to be determined based on weather conditions, soil erodibility and the observation of any visible dust.
- Speed controls will be applied to all unsealed areas (maximum speed of 20 km/h) and signposted accordingly.
- All semi-permanent stockpiles will be vegetated with suitable groundcover and regularly watered until the vegetation is well established.
- Work on any extraction activity producing dust will cease due to high winds if control cannot be achieved by watering or other means. Work will not resume until the wind velocity decreases and any dust generation can be controlled by normal means.
- All loaded trucks leaving the central processing plant on Lot 198 DP 752025 will have their payloads fully covered by a suitable material to prevent spillage.
- No fires will be permitted on-site without a permit.
- A mechanical road sweeping unit and water cart will be maintained for use as required to keep all roads including the intersection of the haul road and Wisemans Ferry Road free from deposited material.
- Exhausts from all vehicles and plant/equipment will be inspected to ensure that they are maintained at an acceptable level.

- All vehicles will be regularly serviced to ensure that exhaust emissions comply with the regulations. Appropriate service records will be maintained.
- Any opportunities to minimise machinery use and ensure that all equipment used on the site is energy efficient will be identified.

Access and Traffic

- If the sand slurry plant and transport system is unusable due to breakdown or during maintenance periods, trucks will be used for the transport of extractive material on a temporary basis. This will cease once the system is operating satisfactorily.
- The number of laden vehicle movements will not exceed a combined total of two hundred per day via the intersection of the haulage road and Wisemans Ferry Road. This is the total of laden vehicle movements allowed for PF Formation's combined extractive industry operations in Baulkham Hills Shire.
- Operations involving the transportation of material on the site will only be undertaken between 07.00 and 18.00 hours, Monday to Saturday, except a maximum of 10 laden vehicles will be allowed to enter and leave the site between 06.00 and 07.00 hours, Monday to Saturday only. Vehicles will not be allowed to arrive at the site prior to 05.45 hours on any day.

Erosion and Sediment Control

- Soil and Water Management Plan will be reviewed and revised, if required.
- Temporary erosion and sedimentation control structures such as detention basins and catch drains will be constructed as appropriate to collect runoff from cleared land including extraction areas and access roads.
- Silt traps and erosion control fencing will be erected as appropriate along extraction area boundaries and drainage lines.
- Sediment basins with a minimum storage capacity of 400 m³ per hectare of catchment will be constructed. Spillway capacity and stability will be designed as follows:
 - life of less than 5 years, adopt the 20 year tc event;
 - life between 5 and 10 years, adopt the 50 year tc event; and
 - life greater than 10 years, adopt the 100 year tc event.
- Stormwater control measures will be assessed and routine inspections conducted to ensure that compliance with best practice guidelines and relevant legislation is achieved.
- Locations for topsoil and material stockpiles will be selected on level ground and away from drainage lines. Diversion drains and sediment filter fences will be installed up slope as appropriate.
- Training will be provided to operational personnel on the importance of erosion control measures and drivers informed of the damage that can be caused to the environment by heavy vehicles.
- Areas of exposed land will be kept to a minimum compatible with operational requirements.
- **Rehabilitation and revegetation will commence as soon as practicable to minimise risk of erosion and sedimentation.**
- Erosion and sediment controls will be monitored regularly and **as soon as practicable** following a **significant** rainfall event (**>25mm/day**). Monitoring will take place initially on a weekly basis, then monthly once operating correctly. Sediment will be cleared when the traps have collected 60% of the capacity of the basin or where sediment build-up is less than 300 mm below the spillway crest. Sediment will be removed to a location where further pollution to downslope lands and waterways will not occur.
- **Monitoring and maintenance of erosion and sediment control structures will be undertaken in accordance with the Water Management Plan.**
- Stored stormwater will be reused for dust control and the watering of site vegetation.
- Soil stockpiles will be seeded where these are to remain unused for a period in excess of four weeks (**if vegetation has not yet established from the natural seedbank**). The area will be watered until the vegetation is well established.

Water Management

- Maximum depth of extraction will be restricted to not less than two metres above the wet weather high groundwater level.
- The groundwater will not be breached or contaminated. In the event that either should occur, operations will cease in the affected area and the Department of [Planning, Industry and Environment - Water](#) consulted to determine the basis on which extraction may recommence.
- Retention basins will be designed to accommodate the 100-year tc event. The minimum basin capacities are:
 - Northern catchment 10,000 m³
 - Southern catchment 38,000 m³

The volume of these basins can be varied depending on the extent of the area exposed for extraction within each catchment.

- All retention basins will be regularly inspected and their effectiveness [reported as part of the Annual Review Process](#).
- [Groundwater monitoring will be undertaken in accordance with the Water Management Plan](#).

Flora and Fauna

- All areas which are not to be disturbed will be clearly marked.
- Topsoil will be separated and stored or use in rehabilitation works.
- An area of not less than 12 hectares will be identified, and indicated on the site survey. This will be identified as a revegetation area and access controlled.
- Seed will be collected from the existing woodland communities (Sydney Hinterland Transition Woodland), stored under controlled conditions, made available for future broadcasting and a suitable proportion propagated to provide tubestock for revegetation [of areas being revegetated to woodland](#).
- Stored topsoil and that derived from suitable areas adjacent to the woodland communities will be spread over the defined [woodland](#) revegetation area and seed broadcast over the site to augment the soil-borne native seed bank. Tube stock suitably protected against animal predation will also be used in appropriate locations.
- Access to bushland will be restricted to minimise the potential for damage. These areas will be marked and signs erected to ensure that this prohibition is made clear. The boundary of the site will be fenced to prevent external access.

Rehabilitation

- The Rehabilitation Plan will be reviewed and amended as necessary to reflect changing operational conditions. This will include a revised phasing plan and implementation programme.
- Setbacks to all roads and adjacent properties will be defined taking account of existing trees and other features. Programmes of mound construction and screen planting will be undertaken as required in the Rehabilitation Plan. All plant material used will reflect the species mix existing in the area.
- A staged seeding and planting programme will be undertaken as areas become available following completion of extraction and capping of sediment basins. This will be aimed at producing a dense plantation on the steeper slopes derived from the flora resources already established. The aim is to replicate as far as possible the mix and density of planting which is currently present.
- All suitable plant material will be used on the site as a seed and planting medium. Topsoil will be stored in appropriately marked low stockpiles for reuse in locations as close as possible to their source. Care will be taken to ensure that this does not become contaminated with the seeds of exotic species and weeds.
- The site will be rehabilitated in stages leaving areas exposed for as short a time as possible. This will be undertaken in conformity with the approved Rehabilitation Plan with maximum final batter grades of 4(H):1(V) on north and west facing slopes and 3(H):1(V) on those facing south and east. Final slopes will be as gentle as possible depending on the availability of fill material.
- All soil stockpiles and exposed areas will be seeded with an appropriate vegetation cover where no activity is to take place for more than four weeks [\(if vegetation has not yet established from the natural seedbank\)](#).

- Revegetation of the site will be undertaken **in accordance with the Landscape Management Plan** on the following basis:
 - as far as possible re-establish the Sydney Hinterland Transitional Woodland using seed and mulch collected from the area ;
 - rehabilitate other areas to native species with a light sowing of cereal and allowing natural regeneration;
 - rehabilitate the soil to achieve a full profile;
 - lime, fertilise and sow areas where improved grass cover is required; and
 - suitably turf surfaces expected to experience high surface flows leaving the site.
- A maintenance programme aimed at promoting and protecting the growth of the rehabilitated areas will be established.

Social Impact Management

- Material concerning activities at the site will be prepared and published on the company's website which will allow the community and others to be informed about current news on the site.
- **A Community Consultative Committee** will be established to discuss issues in relation to sand extraction on the site.
- A Complaints Register will be established incorporating date and time, type of communication, contact details of the complainant, nature of the complaint and response taken.

Heritage

- All work will cease in the area if an archaeological or heritage item is identified during extraction operations and the National Parks and Wildlife Service, the Deerubbin Aboriginal Land Council or the Heritage Office consulted to determine any appropriate course of action prior to recommencement of the work.
- Any additional survey work required for submittal of application to destroy artefact scatters located in the later stages of the development will be undertaken. Reasonable requirements of the National Parks and Wildlife Service (DECC), the Deerubbin Aboriginal Land Council and the Heritage Office arising out of any additional studies will be implemented.

Visual Amenity

- Peripheral bunds will be constructed within the established setbacks where necessary to screen extraction activities. These will be a minimum of three metres high with slopes ranging from 3(H):1(V) to 6(H):1(V) depending on the location using overburden stripped from the site.
- Screen planting works will be undertaken in the peripheral areas to an agreed specification using mulch to allow for native plant regeneration. This species mix will be reinforced using appropriate plantings at specified intervals.
- A tree planting programme will be undertaken within the ten metre buffer zones and in other defined parts of the site to establish a dense plantation using an appropriate mix of species reflecting that of the existing community.
- The final rehabilitated landform will be established in conformity with the **Landscape Management Plan**.
- All temporary fencing will be removed when no longer required.
- Vegetation in areas suitable for agricultural/horticultural uses will be re-established.
- All site infrastructure including the slurry plant and its associated pipelines will be removed. Those areas affected by the plant will be restored and rehabilitated.
- All waste materials will be removed and disposed of in an appropriate manner.

Waste Management

- Waste handling areas will be clearly delineated.
- Specific areas for the collection of materials for reuse and recycling will be defined and clearly labelled.
- Cleared vegetation will be used within the landscape programme.
- All topsoil will be stored in stockpiles for later use in site rehabilitation.

- Bins or skips will be provided or the collection and storage of recyclable material and waste. General construction waste will be stored in a skip located at the workshop on Lot 198 DP752025. Waste food will be removed and stored in a vermin proof bin for collection by a waste contractor. Paper waste generated from site offices, plastics and glass will be collected separately for recycling.
- Hazardous wastes (including empty drums, rags, soil contaminated with oil) will be separated from nonhazardous wastes and managed in accordance with the relevant legislation.
- Liquid wastes (chemicals, oils and greases) will be temporarily stored in an appropriately bunded area and disposed of via a licensed contractor. Wash down water will be directed to an appropriate settlement basin if quality is acceptable.
- All documentation relating to waste removal and disposal will be retained on file at the site. This documentation will include docketts for the removal and disposal of waste at a licensed facility.
- Waste material will be progressively separated and stockpiled in designated areas for collection. Adequately secure waste disposal areas to prevent access by wildlife.
- All licences for waste contractors will be reviewed to ensure appropriate licences are held.
- Any materials and waste remaining on the site following completion of extraction operations will be recycled or sent for disposal. This will be either recycled or disposed of in an appropriate manner.

Emergency Response

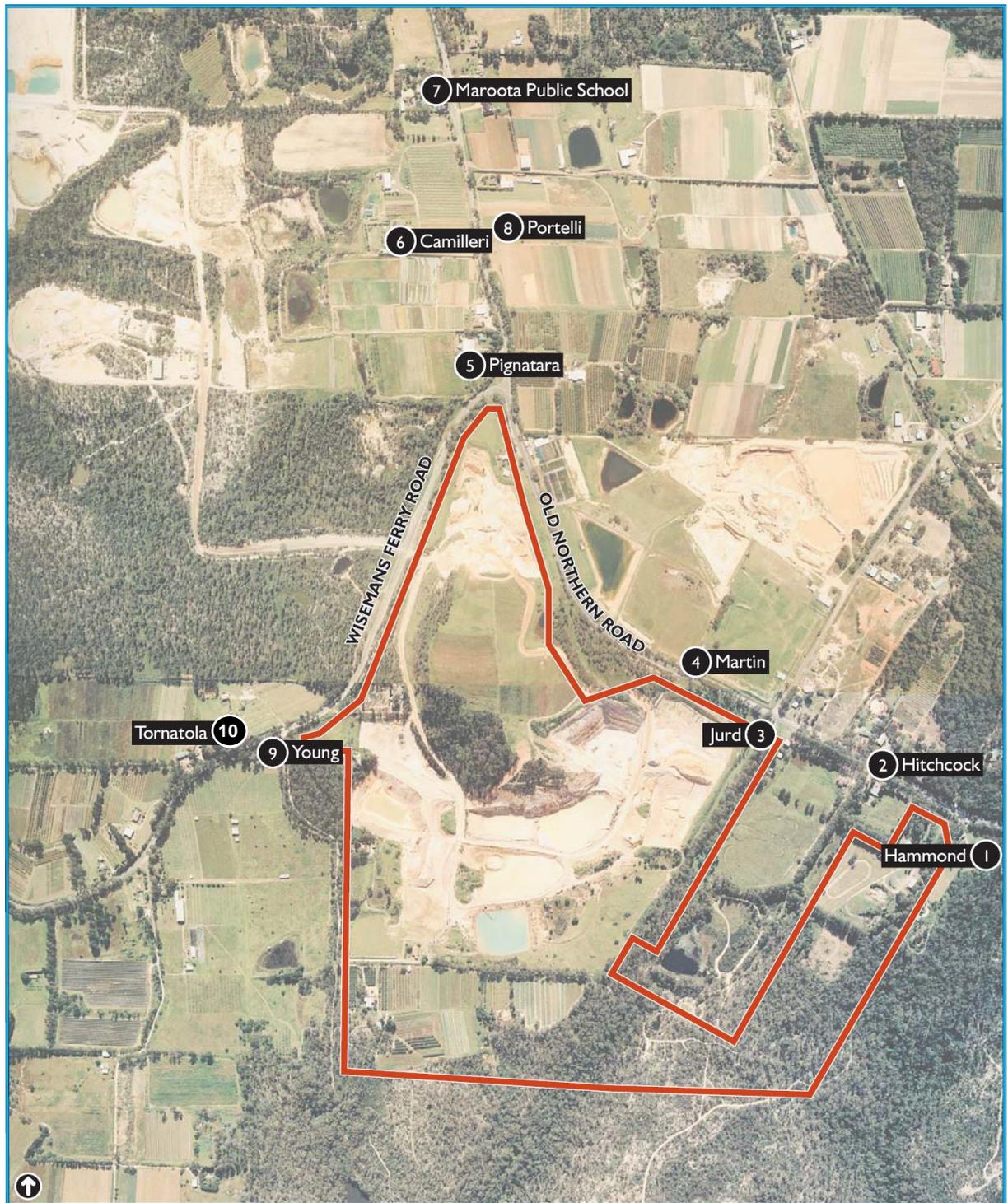
- All personnel on site during operations will be trained in appropriate procedures including site induction, materials handling and response procedures.
- Emergency response procedures will be developed and put in place. Appropriate individuals will be appointed as emergency services liaison officers.
- An emergency response table listing contact details of all relevant parties required in an environmental emergency will be prepared.
- A Register of Environmentally Hazardous Materials to be stored and used on site will be established.
- Appropriate safety and spill response equipment will be made available on site.
- All materials to be used and stored on site will be clearly labelled in accordance with relevant work health safety requirements.
- Emergency response procedures will be reviewed and, if required, updated bi-annually.
- Appropriate safety and response equipment will be available at all times.

Hazard, Risk and Safety

- All hazardous, dangerous and flammable materials will be used, stored and recorded in accordance with the relevant workplace health and safety requirements and regulations.
- Safety Data Sheets for all hazardous materials stored on site will be obtained.
- Appropriate storage and secondary containment facilities for all hazardous materials stored on site will be provided. All bunded areas will be designed to contain at least 110% of the volume of materials stored within the area.
- Contents of all above ground storage areas will be clearly labelled.
- All hazardous and dangerous goods storage areas will be secured and appropriate signage displayed. All incompatible material will be segregated.
- All personnel will be trained in the handling and safety procedures required for the hazardous materials stored and used on site.
- An Emergency Response Plan will be developed and put in place.

- A mobile spill control kit containing appropriate absorbent materials, neutralising chemicals and other spill containment equipment will be provided.
- Any spills beyond the bunded area will be cleaned up immediately and the contaminated material disposed of in an appropriate manner.
- The relevant authorities will be contacted in the event of a leak or spill and any instructions followed. Any contamination will be remediated to the satisfaction of the regulatory authorities.
- Any spills or hazardous wastes that cannot be recycled will be collected and disposal by a licensed waste contractor arranged. All records of waste removal on site will be retained.

APPENDIX 4 NOISE ASSESSMENT LOCATIONS



Scale
 0 ————— 500 Metres

- Hitchcock Road site boundary
- 9 Monitoring locations

Figure 4.7
NOISE MONITORING AND ASSESSMENT LOCATIONS

**APPENDIX 5
VEGETATION OFFSET PLAN**

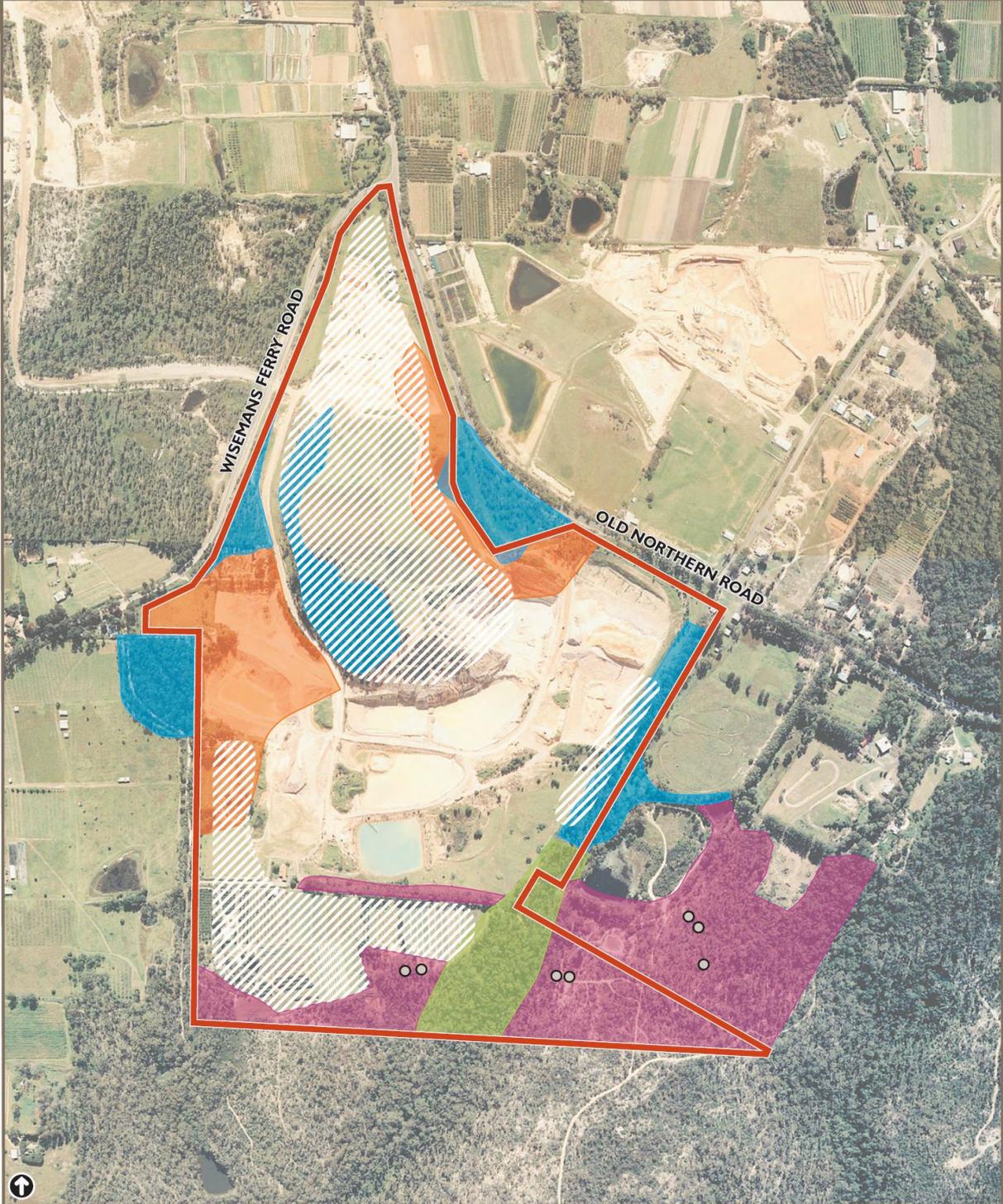


Figure 8

AREAS TO BE CLEARED AND NEW PLANTINGS (STRATEGY A)

Scale
0 500 Metres

- Hitchcock Road site
- Areas for new plantings
- Tetratheca glandulosa*
- Sydney Sandstone Gully Forest
- Sydney Sandstone Ridgetop Woodland
- Sydney Hinterland Transition Woodland
- Area to be cleared

Note: Sydney Hinterland Transition Woodland shown at time of photograph (2005)
Parts of this area can be cleared under the current consent

APPENDIX 6 CRITERIA TO MONITOR SUCCESS OF REVEGETATION



Methodology to assess success of revegetation
within Hitchcock Road site

Table 3-1 Criteria to monitor success of revegetation

Category	Criteria	Target			Existing condition of vegetation to be removed
		5 years	10 years	15 years	
Native species	Native species diversity (average number per 400m ² quadrat)	20	35	40	46
	Average number of characteristic species for the site occurring within 400m ²	15	20	27	34.5 (+/- 1.5)
	Native species cover (% of vegetation cover in 400m ² quadrat)	>50	>85	>95	99
Weeds	Weed abundance (% of vegetation cover in 400m ² quadrat)	<50	<15	<5	<1
	Invasive or Noxious weed species (e.g. Lantana, Blackberry, exotic vines)	Controlled	Controlled	Controlled	Restricted
Vegetation structure	Vegetation structure	Canopy, shrublayer and groundcover species present. However, structure limited, generally consisting of low canopy and ground cover.	Canopy, shrublayer and groundcover species present. Structure beginning to develop.	Well structured and includes canopy, mid- storey and ground cover units	Well structured and includes canopy, mid- storey and ground cover units
Canopy ^a	Average canopy height (m)	4	8	12	12-16
	Native canopy cover (minimum % cover) [modified braun blanquet scale] ^b	5 [3]	5 [3]	5 [3]	5 [3]
Shrub layer ^a	Native shrub cover (minimum % cover) [modified braun blanquet scale] ^b	10 [3]	15 [3]	25 [4]	32.5 (+/-7.5) [4]
	Average shrub layer height (m)	0.5	1	1	1.25
Ground cover	Native ground cover (minimum % cover) [modified braun blanquet scale] ^b	5 [3]	10 [3]	10 [3]	15 (+/-5) [3]

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Category	Criteria	Target			Existing condition of vegetation to be removed
		5 years	10 years	15 years	
Ecosystem function	Habitat values	Vegetation structure beginning to develop.	Woodland birds recorded. Habitat structure beginning to develop, including groundcover such as leaf litter and fallen timber.	Woodland birds recorded. Habitat structure beginning to develop, including groundcover such as leaf litter and fallen timber.	Provides minimal habitat for fauna, however, many woodland birds present. Well structured habitat, includes moderate levels of leaf litter and fallen timber.
	Natural regeneration indicating dispersal of seed into site and/or presence of soil seed bank	Yes	Yes	Yes	Yes

Notes: a) cover of canopy species and shrubs may be higher initially due to successional changes with dense growth potentially occurring initially particularly due to the presence of colonising species. Natural thinning is expected as colonising species senesce and canopy species mature, however, some thinning of vegetation may be required after 10 years if too dense.

b) Modified braun blanquet scale:

1. <5%- rare or few individuals
2. <5% common
3. 5-25%
4. 25-50%
5. 50-75%
6. 75-100%

APPENDIX 7 FINAL LANDFORM PLANS





Figure 10
FINAL LANDFORM1 (STRATEGY B)

Note: Contours at 2 metre intervals
 ■ Detention basin ■ Site boundary
 ■ Existing farm dam

APPENDIX 8
INDEPENDENT DISPUTE RESOLUTION PROCESS

