

Appendices

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- Appendix 2 Internal Compliance Audit (SSD_4978) –
25 January 2017 to 31 December 2017
(16 pages)
- Appendix 3 Environmental Protection License 12007
(20 pages)
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June 2017 (6 pages)



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Appendix 1

Development Consent SSD_4978

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Development Consent

Section 89E of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning, I approve 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 ongoing environmental management of the development.



David Kitto
Executive Director
Resource Assessments and Business Systems

Sydney	10 APRIL	2015
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SCHEDULE 1		
Application Number:	SSD_4978	
Applicant:	Aus-10 Rhyolite Pty Ltd	
Consent Authority:	Minister for Planning	
Land:	Lots 1, 2 and 3 of DP 628806	
Development:	Tinda Creek Sand Project	
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DEFINITIONS

Annual Review	The review required by condition 4 of schedule 5
Applicant	Aus-10 Rhyolite Pty Ltd, or any other person or persons who rely on this consent to carry out the development that is subject to this consent
ARI	Average Recurrence Interval
BCA	Building Code of Australia
Biodiversity Offset Strategy	The biodiversity offset strategy described in the EIS, and shown conceptually in Appendix 5
CCC	Community Consultative Committee
Conditions of consent	Conditions contained in schedules 1 to 5 inclusive
Construction	The demolition of buildings or works, carrying out of works and erection of buildings covered by this consent
Council	Hawkesbury City Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning and Environment
Development	The development described in the EIS
DRE	Division of Resources and Energy within NSW Trade and Investment
EIS	Environmental Impact Statement titled <i>Proposed Expansion of the Tinda Creek Sand Quarry</i> (3 volumes), dated July 2014, as modified by the Response to Submissions titled, <i>Response to Submissions for Proposed Expansion of Tinda Creek Sand Quarry</i> dated 7 November 2014 and the letter titled <i>Response to OEHL, Department of Environment and Greater Blue Mountains World Heritage Advisory Committee on the Tinda Creek Sand Extraction Stated Significant Development Proposal</i> , dated 11 December 2014
ENM	Excavated Natural Material, as defined by <i>Protection of the Environment Operations (Waste) Regulation 2014</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence under the POEO Act
Evening	The period from 6pm to 10pm
Extension area	The area outside of the existing quarry footprint (i.e. Domains, 1,2,3,4,6 and 7, as shown conceptually in Appendices 1 and 2)
Extraction operations	Includes the removal of overburden and extraction, dredging, processing, handling, storage and transportation of extractive materials on site
Feasible	Feasible relates to engineering considerations and what is practical to build
GPS	Global Positioning System
Ha	Hectare
Incident	A set of circumstances that: <ul style="list-style-type: none"> causes or threatens to cause material harm to the environment; and/or breaches or exceeds the limits or performance measures/criteria in this consent
Land	As defined in the EP&A Act, except for where the term is used in the noise and air quality conditions in schedules 3 and 4 of this consent where it is defined to mean 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
m	Metres
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 10pm to 7am on Monday to Saturday, and 10pm to

	8am on Sundays and Public Holidays
NOW	NSW Office of Water
NSW Trade and Investment	NSW Department of Trade and Investment, Regional Infrastructure and Services
OEH	NSW Office of Environment and Heritage
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Privately-owned land	Land that is not owned by a public agency or the Applicant (or its subsidiary)
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, ensuring that it is safe, stable and non-polluting and appropriately revegetated
RMS	Roads and Maritime Services
Secretary	Secretary of the Department, or nominee
Site	All land to which the development application applies, as listed under "Land" in schedule 1 and shown in Appendices 1 and 2
Shoulder	The period between 6am to 7am on Monday to Friday and 7am to 8am on Saturday
Statement of commitments	The Applicant's commitments in Appendix 3
VENM	Virgin Excavated Natural Material, as defined by the POEO Act

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. In addition to meeting the specific performance criteria established under this consent, the Applicant shall 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 shall carry out the development generally in accordance with the:
 - (a) EIS;
 - (b) Statement of Commitments; and
 - (c) conditions of this consent.

Note: The general layout of the development is shown in Appendix 2.

3. If there is any inconsistency between the above documents, 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 shall comply with any reasonable 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;
 - (b) any reports, reviews or audits commissioned by the Department regarding compliance with this consent; or
 - (c) the implementation of any actions or measures contained in these documents.

LIMITS ON CONSENT

Extraction Operations

5. The Applicant may undertake extraction operations on the site until 31 December 2045.

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

Production Limits

6. The Applicant shall not:
 - (a) extract or process more than 300,000 tonnes of sand in any calendar year; or
 - (b) undertake extraction operations beyond 15 m below the natural ground surface.

Transportation Limits

7. The Applicant shall not:
 - (a) transport more than 300,000 tonnes of sand from the site in a calendar year; and
 - (b) dispatch more than 34 trucks per day or receive more than 34 trucks per day, averaged over a calendar month.

SURRENDER OF EXISTING DEVELOPMENT CONSENT

8. Within 6 months of the date of this consent, unless the Secretary agrees otherwise, the Applicant shall surrender the development consent (DA 0134/95) for the existing operations on the site in accordance with Section 104A of the EP&A Act.

Prior to the surrender of development consent DA 0134/95, the conditions of this consent shall prevail to the extent of any inconsistency with the conditions of that consent.

Note: This requirement does not extend to the surrender of construction and occupation certificates for existing and proposed building works under Part 4A of the EP&A Act. Surrendering of consent should not be understood as implying that works legally constructed under a valid consent can no longer be legally maintained or used.

STRUCTURAL ADEQUACY

9. The Applicant shall ensure that any 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.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.*

DEMOLITION

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

PROTECTION OF PUBLIC INFRASTRUCTURE

11. The Applicant shall:
- (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 any damage to roads caused as a result of general road usage.

OPERATION OF PLANT AND EQUIPMENT

12. The Applicant shall ensure that all plant and equipment used on site is:
- (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

UPDATING & STAGING STRATEGIES, PLANS OR PROGRAMS

13. With the approval of the Secretary, the Applicant may submit any strategies, plans or programs required by this consent on a progressive basis.

To ensure the strategies, plans or programs under the conditions of this consent are updated on a regular basis, the Applicant may at any time submit revised strategies, plans or programs to the Secretary for approval.

With the agreement of the Secretary, the Applicant may prepare any revised strategy, plan or program without undertaking consultation with all parties under the applicable condition of this consent.

Notes:

- *While any strategy, plan or program may be submitted on a progressive basis, the Applicant must ensure that the existing operations on site 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 to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

14. Until they are replaced by an equivalent strategy, plan or program approved under this consent, the Applicant shall implement the existing strategies, plans or programs for the site that have been approved under DA 0134/95.

PRODUCTION DATA

15. The Applicant shall:
- (a) provide annual quarry production data to DRE using the standard form for that purpose; and
 - (b) include a copy of this data in the Annual Review (see condition 4 of schedule 5).

DEVELOPER CONTRIBUTIONS

16. The Applicant shall pay Council road maintenance contributions consistent with Council's *Section 94 Contributions Plan*, or its latest version.

Note: If the parties are not able to agree on any aspect of the maintenance contributions, either party may refer the matter to the Secretary for resolution.

**SCHEDULE 3
ENVIRONMENTAL PERFORMANCE CONDITIONS**

IDENTIFICATION OF APPROVED LIMITS OF EXTRACTION

1. Prior to undertaking extraction operations under this consent, the Applicant shall:
 - (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.
2. While extraction operations are being carried out, the Applicant shall ensure that these boundaries are clearly marked at all times.

HOURS OF OPERATION

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

Table 1: Operating Hours

Activity	Operating Hours
Extraction operations and deliveries	7 am to 6 pm, Monday to Friday 7 am to 3 pm, Saturday No activities on Sundays or Public Holidays
Dispatch	5 am to 10 pm, Monday to Friday 6 am to 3 pm, Saturday
Construction activities	7 am to 6 pm, Monday to Friday 8 am to 1 pm, Saturday No construction to be undertaken on Sundays or Public Holidays
Maintenance activities	24 hours a day, 7 days per week, providing maintenance activities are inaudible at any privately-owned residence

NOISE

Noise Criteria

4. The Applicant shall 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)

Receiver	Day / Evening	Night	
	$L_{Aeq}(15 \text{ min})$	$L_{Aeq}(15 \text{ min})$	$L_{A1(max)}$
All receivers	35	35	45

Note: After the first review on any EPL granted for this development under Section 78 of the POEO Act, nothing in this consent prevents the EPA from imposing stricter noise limits on the extraction operations on site under the EPL.

Noise generated by the development is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy*. Appendix 6 sets out the metrological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Applicant has a written agreement with the relevant landowner/s to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.

Operating Conditions

5. The Applicant shall:
 - (a) implement all reasonable and feasible mitigation measures to minimise the construction, operational and road noise of the development;
 - (b) regularly assess noise monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the noise criteria in this consent;

- (c) minimise the noise impacts of the development during meteorological conditions under which the noise criteria in this consent do not apply (see Appendix 6); and
- (d) carry out regular noise monitoring to determine whether the development is complying with the relevant conditions of this consent, to the satisfaction of the Secretary.

Noise Management Plan

6. The Applicant shall prepare and implement a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the EPA, and be submitted to the Secretary within 6 months of the date of this consent, unless the Secretary agrees otherwise;
 - (b) describe the reasonable and feasible mitigation measures that would be implemented to ensure:
 - construction noise is minimised;
 - compliance with the relevant noise criteria and operating conditions in this consent;
 - best management practice 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;
 - (c) describe the proposed noise management system on site; and
 - (d) include a monitoring program that:
 - uses attended monitoring to evaluate the compliance of the development against the noise criteria in this consent;
 - evaluates and reports on the effectiveness of the noise management system and the best practice noise management measures; and
 - defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.

AIR QUALITY

Air Quality Criteria

7. The Applicant shall implement all reasonable and feasible avoidance and mitigation measures so that particulate matter emissions generated by the development do not exceed the criteria in Tables 3 to 5 at any residence on privately-owned land.

Table 3: Long-Term Criteria for Particulate Matter

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

Table 4: Short-Term Criteria for Particulate Matter

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

Table 5: Long-Term Criteria for Deposited Dust

Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month

Notes to Tables 3-6:

^a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).

^b Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

^c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.

^d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Secretary in consultation with EPA.

Operating Conditions

8. The Applicant shall:
- (a) implement all reasonable and feasible measures to minimise the dust emissions of the development;
 - (b) minimise surface disturbance of the site; and
 - (c) monitor and report on compliance with the relevant air quality criteria in this consent; to the satisfaction of the Secretary.

Air Quality Management Plan

9. The Applicant shall prepare and implement 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, and be submitted to the Secretary for approval within 6 months of the date of this consent, unless the Secretary agrees otherwise;
 - (b) describe the measures that would be implemented to ensure:
 - compliance with the air quality criteria and operating conditions under this consent; and
 - best practice management is being employed
 - (c) include an air quality monitoring program that:
 - evaluates and reports on:
 - the effectiveness of the air quality management measures; and
 - compliance with the air quality criteria and operating conditions; and
 - defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents.

METEOROLOGICAL MONITORING

10. For the life of the development, the Applicant shall ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline.

SOIL AND WATER

Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain the necessary water licences for the development, including in respect of the extraction and/or interception of groundwater.

Water Supply

11. The Applicant shall 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.

Operating Conditions

12. The Applicant shall:
- (a) comply with Section 120 of the POEO Act, unless an EPL authorises otherwise;
 - (b) ensure that the catchment of the water management system is not larger than 40 ha, unless the Secretary agrees otherwise;
 - (c) maintain the dredge and silt ponds to capture a 1 in 100 ARI storm event plus adequate freeboard to ensure no offsite discharge; and
 - (d) ensure that the loss of groundwater and surface water to Tinda Creek is no greater than predicted in the EIS.

Water Management Plan

13. The Applicant shall prepare and implement a Water Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared by suitably qualified person/s approved by the Secretary;
 - (b) be prepared in consultation with the EPA and NOW, and be submitted to the Secretary for approval within 6 months of the date of this consent, unless the Secretary agrees otherwise;

- (c) include a Site Water Balance that:
 - includes details of the:
 - quantity of water required to support operations;
 - sources and security of water supply, clearly differentiating between surface water and groundwater, and taking into account rainfall variability;
 - water use and management on site;
 - reporting procedures; and
 - measures to minimise clean water use on site;
- (d) include a Surface Water Management Plan, that includes:
 - detailed baseline data on surface water flows and quality in the watercourses that could be affected by the development;
 - a detailed description of the surface water management system on site, including:
 - clean water diversions;
 - erosion and sediment controls;
 - the dirty water management system; and
 - water storages;
 - performance criteria, including trigger levels for investigating any potentially adverse surface water quality impacts;
 - the measures that would be implemented to ensure compliance with the surface water performance criteria and relevant operating conditions of this consent;
 - a program to monitor and report on:
 - any surface water discharges;
 - the effectiveness of the water management system; and
 - surface water flows and quality in local watercourses;
 - a comparison of monitoring results with modelled predictions;
- (e) include a Groundwater Monitoring Program, that includes:
 - detailed baseline data on groundwater levels, yield and quality in local aquifers and privately-owned groundwater bores;
 - performance criteria for surrounding aquifers, privately-owned groundwater bores, including trigger levels for investigating any potentially adverse groundwater impacts;
 - the measures that would be implemented to ensure compliance with the groundwater performance criteria and relevant operating conditions of this consent;
 - a program to monitor and report on:
 - groundwater inflows to the quarry pit (quarterly monitoring is required, unless otherwise agreed with the Secretary);
 - the impacts of the development on surrounding aquifers, privately-owned groundwater bores and Tinda Creek; and
 - a program to validate the groundwater model for the development, and compare monitoring results with modelled predictions; and
- (f) include a Surface and Groundwater Contingency Strategy, that includes:
 - a protocol for the investigation, notification and mitigation of identified exceedances of the surface water and groundwater impact assessment criteria;
 - measures to mitigate and/or compensate potentially affected landowners of privately-owned land, including provision of alternative long-term supply of water to the affected landowner that is equivalent to the loss attributed to the development; and
 - the procedures that would be followed if any unforeseen impacts are detected during the development.

HERITAGE

Heritage Management Plan

14. The Applicant shall prepare and implement a Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with OEH, and Aboriginal stakeholders for matters relating to Aboriginal heritage values;
 - (b) be submitted to the Secretary for approval within 6 months of the date of this consent, unless the Secretary agrees otherwise;

- (c) describe the measures that would be implemented for:
- managing identified heritage objects, previously unidentified heritage objects or the discovery of any human remains on site; and
 - ensuring ongoing consultation with Aboriginal stakeholders in the conservation and management of any Aboriginal cultural heritage values on site.

LANDSCAPE AND REHABILITATION

Biodiversity Offset Strategy

15. The Applicant shall implement the biodiversity offset strategy described in the EIS, as summarised and revised in Table 6, and shown conceptually in Appendix 5, to the satisfaction of the Secretary.

Table 6: Biodiversity Offset Strategy (ha)

Area	Offset Type	Minimum Size (ha)
On-site Offset Area	Existing vegetation to be enhanced	106.6

Security of Offsets

16. Within 2 years of this consent, unless otherwise agreed with the Secretary, the Applicant shall make suitable arrangements to provide appropriate long-term security for the offset area, to the satisfaction of the Secretary.

Note: Mechanisms to provide appropriate long-term security to the land within the biodiversity offset strategy include a Biobanking Agreement, Voluntary Conservation Agreement or an alternative mechanism that provides for a similar conservation outcome. Any mechanism must remain in force in perpetuity.

Rehabilitation Objectives

17. The Applicant shall rehabilitate the site to the satisfaction of the Secretary. The final landform must:
- (a) be generally consistent with the proposed rehabilitation strategy in the EIS, and the final landform shown conceptually in Appendices 4 and 5, and
 - (b) comply with the objectives in Table 7.

Table 7: Rehabilitation Objectives

Feature	Objective
Site (as a whole)	<ul style="list-style-type: none"> • Safe, stable and non-polluting • Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of local native species and habitat, including at least 0.35 ha of Mellong Sandmass Sedgeland
Surface Infrastructure	<ul style="list-style-type: none"> • To be decommissioned and removed (unless the Secretary agrees otherwise)
Final Voids	<ul style="list-style-type: none"> • Minimise the size, depth, batter slope and the drainage catchment of the final void • Ensure that the volume of VENM and ENM detailed in the EIS is imported for rehabilitation of the site • Ensure that the surface area of the final voids is no greater than 16 ha in total • Separated from the surface water drainage system, unless the Secretary agrees otherwise
Watercourses	<ul style="list-style-type: none"> • Restore alignment and hydraulic function, as far as practical
Community	<ul style="list-style-type: none"> • Ensure public safety

Progressive Rehabilitation

18. The Applicant shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. Interim stabilisation measures must be implemented where reasonable and feasible to control erosion (both wind and water) in disturbed areas that are not active and which are not ready for final rehabilitation.

Landscape Management Plan

19. The Applicant shall prepare and implement a Landscape Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with OEH, and be submitted to the Secretary for approval within 6 months of the date of this consent, unless the Secretary agrees otherwise;
 - (b) provide details of the conceptual final landform and associated land uses for the site;
 - (c) describe how the implementation of the biodiversity offset strategy would be integrated with the overall rehabilitation of the site;
 - (d) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy and rehabilitation of the site, including triggers for any necessary remedial action;
 - (e) describe the short, medium and long term measures that would be implemented to:
 - manage remnant vegetation and habitat on site and in the offset area; and
 - ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this consent;
 - (f) include a detailed description of the measures that would be implemented over the next 3 years (to be updated for each 3 year period following initial preparation 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 biodiversity and 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;
 - ensure only appropriate activities occur within a 40 m buffer of the recorded small-flower grevillea (*Grevillea parviflora* subsp. *parviflora*), (refer Figure 2 in Appendix 5);
 - establishing vegetation screening to minimise the visual impacts of the site on surrounding receivers;
 - ensuring minimal environmental consequences for threatened species, populations and habitats;
 - collecting and propagating seed;
 - controlling weeds and feral pests;
 - controlling erosion;
 - controlling access; and
 - managing bushfire risk;
 - (g) include a Koala Management Plan prepared generally in accordance with SEPP 44, the accompanying guidelines provided in *Circular B35 - State Environmental Planning Policy 44 - Koala Habitat Protection, the NPWS Policy and Procedure Statement No. 9 - Policy for the Translocation of Threatened Fauna in NSW* and the draft koala plan of management in the EIS;
 - (h) include a program to monitor and report on the effectiveness of these measures, and progress against the performance and completion criteria;
 - (i) identify the potential risks to the successful implementation of the biodiversity offset, and include a description of the contingency measures that would be implemented to mitigate these risks; and
 - (j) include details of who would be responsible for monitoring, reviewing, and implementing the plan.

Conservation and Rehabilitation Bond

20. Within 6 months of the approval of the Landscape Management Plan, the Applicant shall lodge a Conservation and Rehabilitation Bond with the Department to ensure that the biodiversity offset strategy and rehabilitation of the site are implemented in accordance with the performance and completion criteria set out in the plan and relevant conditions of this consent. The sum of the bond shall be determined by:
- calculating the cost of implementing the biodiversity offset strategy over the next 3 years;
 - calculating the cost of rehabilitating the site, taking into account the likely surface disturbance over the next 3 years of extraction operations; and
 - employing a suitably qualified quantity surveyor or other expert to verify the calculated costs, to the satisfaction of the Secretary.

Notes:

- Alternative funding arrangements for long term management of the biodiversity offset strategy, such as provision of capital and management funding as agreed by OEH as part of a Biobanking Agreement or transfer to conservation reserve estate can be used to reduce the liability of the conservation and biodiversity bond.*
 - If capital and other expenditure required by the Landscape Management Plan is largely complete, the Secretary may waive the requirement for lodgement of a bond in respect of the remaining expenditure.*
 - If the biodiversity offset strategy and rehabilitation of the site area are completed to the satisfaction of the Secretary, then the Secretary will release the bond. If the biodiversity offset strategy and rehabilitation of the site are 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.*
21. Within 3 months of each Independent Environmental Audit (see condition 9 of schedule 5), the Applicant shall review, and if necessary revise, the sum of the Conservation and Rehabilitation Bond to the satisfaction of the Secretary. This review must consider the:
- effects of inflation;
 - likely cost of implementing the biodiversity offset strategy and rehabilitating the site (taking into account the likely surface disturbance over the next 3 years of the development); and
 - performance of the implementation of the biodiversity offset strategy and rehabilitation of the site to date.

TRANSPORT

Monitoring of Product Transport

22. The Applicant shall keep accurate records of all laden truck movements to and from the site (hourly, daily, weekly, monthly and annually) and publish these records on its website every 6 months.

Operating Conditions

23. The Applicant shall ensure that:
- all laden vehicles have appropriate signage, including a contact phone number, so they be easily identified by road users;
 - all laden vehicles entering or exiting the site have their loads covered;
 - all laden vehicles exiting the site are cleaned of sand and other material that may fall on the road, before leaving the site; and
 - no trucks queue at the entrance to the site before 6am.

Access Road and Intersection Construction

24. Within 12 months from the date of this consent, unless the Secretary agrees otherwise, the Applicant shall upgrade the site access road and its intersection with Putty Road in accordance with applicable AUSTRROADS standards, and to the satisfaction of RMS.

Transport Management Plan

25. The Applicant shall prepare and implement a Transport Management Plan for the development to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with RMS and Council, and be submitted to the Secretary for approval within 6 months of the date of this consent, unless the Secretary agrees otherwise;
 - (b) include a drivers Code of Conduct for heavy vehicle drivers; and
 - (c) describe the measures that would be put in place to ensure compliance with the drivers' code of conduct and include a program to monitor the effectiveness of the implementation of these measures.

VISUAL

26. The Applicant shall:
- (a) implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development on local residences and road users; and
 - (b) ensure that all external lighting associated with the development complies with the relevant Australian Standards, including *Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting* or its latest version, to the satisfaction of the Secretary.

BUSHFIRE MANAGEMENT

27. The Applicant shall ensure that the development is suitably equipped to respond to any fires on site; and assist the Rural Fire Service, emergency services and National Parks and Wildlife Service as much as practicable if there is a fire in the surrounding area.

WASTE

28. The Applicant shall ensure that only certified VENM and ENM is imported to the site to aid in the minimisation of final voids.
29. The Applicant shall manage on-site sewage treatment and disposal in accordance with the requirements of its EPL, and to the satisfaction of the EPA and Council.
30. The Applicant shall:
- (a) minimise the waste generated by the development;
 - (b) ensure that the waste generated by the development is appropriately stored, handled, and disposed of; and
 - (c) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.

SCHEDULE 4
ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. As soon as practicable after obtaining monitoring results showing an exceedance of any relevant criteria in schedule 3, the Applicant shall notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the development is again complying with the relevant criteria.

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 shall:

- (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 the 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.

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

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Applicant shall prepare and implement 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 date of this consent;
 - (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 that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the development;
 - respond to any non-compliance;
 - respond to emergencies; and
 - (f) include:
 - copies of any strategies, plans and programs approved under the conditions of this consent; and
 - a clear plan depicting all the monitoring required to be carried out under the conditions of this consent.

Adaptive Management

2. The Applicant shall 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 shall, at the earliest opportunity:

- (a) take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur;
- (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and
- (c) implement remediation measures as directed by the Secretary; to the satisfaction of the Secretary.

Management Plan Requirements

3. The Applicant shall 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 would 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;

- (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.

Annual Review

4. By the end of December each year, or other timing as may be agreed by the Secretary, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must:
- (a) describe the development (including 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;
 - the monitoring results of previous years; and
 - the relevant predictions in the EIS;
 - (c) identify any non-compliance over the last 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.

Revision of Strategies, Plans and Programs

5. Within 3 months of a modification to this consent or following the submission of an:
- (a) annual review under condition 4 above;
 - (b) incident report under condition 7 below; or
 - (c) audit report under condition 9 below,
- the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.

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

Community Consultative Committee

6. The Applicant shall establish and operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. This CCC must be operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Developments* (Department of Planning, 2007, or its latest version), and be operating within 6 months of the date of this consent.

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 guideline, the Committee should comprise an independent chair and appropriate representation from the Applicant, Council and the local community.*

REPORTING

Incident Reporting

7. The Applicant shall immediately notify the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the Development, the Applicant shall notify the Secretary. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular Reporting

8. The Applicant shall 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.

INDEPENDENT ENVIRONMENTAL AUDIT

9. Within a year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
 - (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
 - (b) include consultation with the relevant agencies, Council 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 and/or Water Licence (including any assessment, plan or program required under these approvals);
 - (d) review the adequacy of any approved strategy, plan or program required under these approvals; and
 - (e) recommend measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under these approvals.

Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary.

10. Within 6 weeks of the completion of this audit, unless the Secretary agrees otherwise, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report, including a timetable for the implementation of any measures proposed to address the recommendations in the audit report. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented.

ACCESS TO INFORMATION

11. Within 6 months of the date of this consent, the Applicant shall:
 - (a) make copies of the following publicly available on its website:
 - the EIS;
 - current statutory approvals for the development;
 - 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, which is to be updated monthly;
 - minutes of CCC meetings;
 - the annual reviews of the development (for the last 5 years);
 - any independent environmental audit of the development, and the Applicant's response to the recommendations in any audit;
 - 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

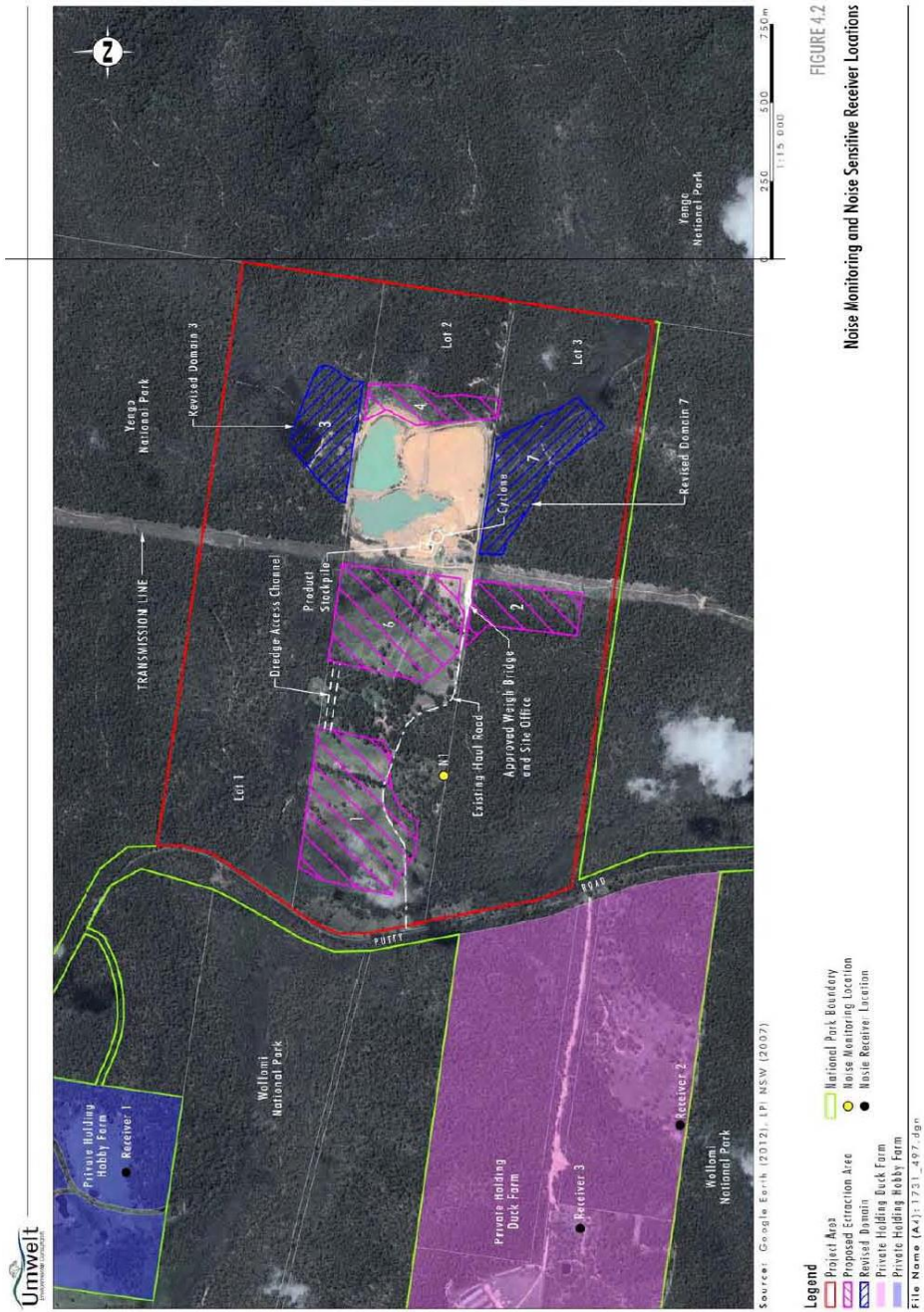


FIGURE 4-2

Noise Monitoring and Noise Sensitive Receiver Locations

Figure 1: Development Area

APPENDIX 2
DEVELOPMENT LAYOUT

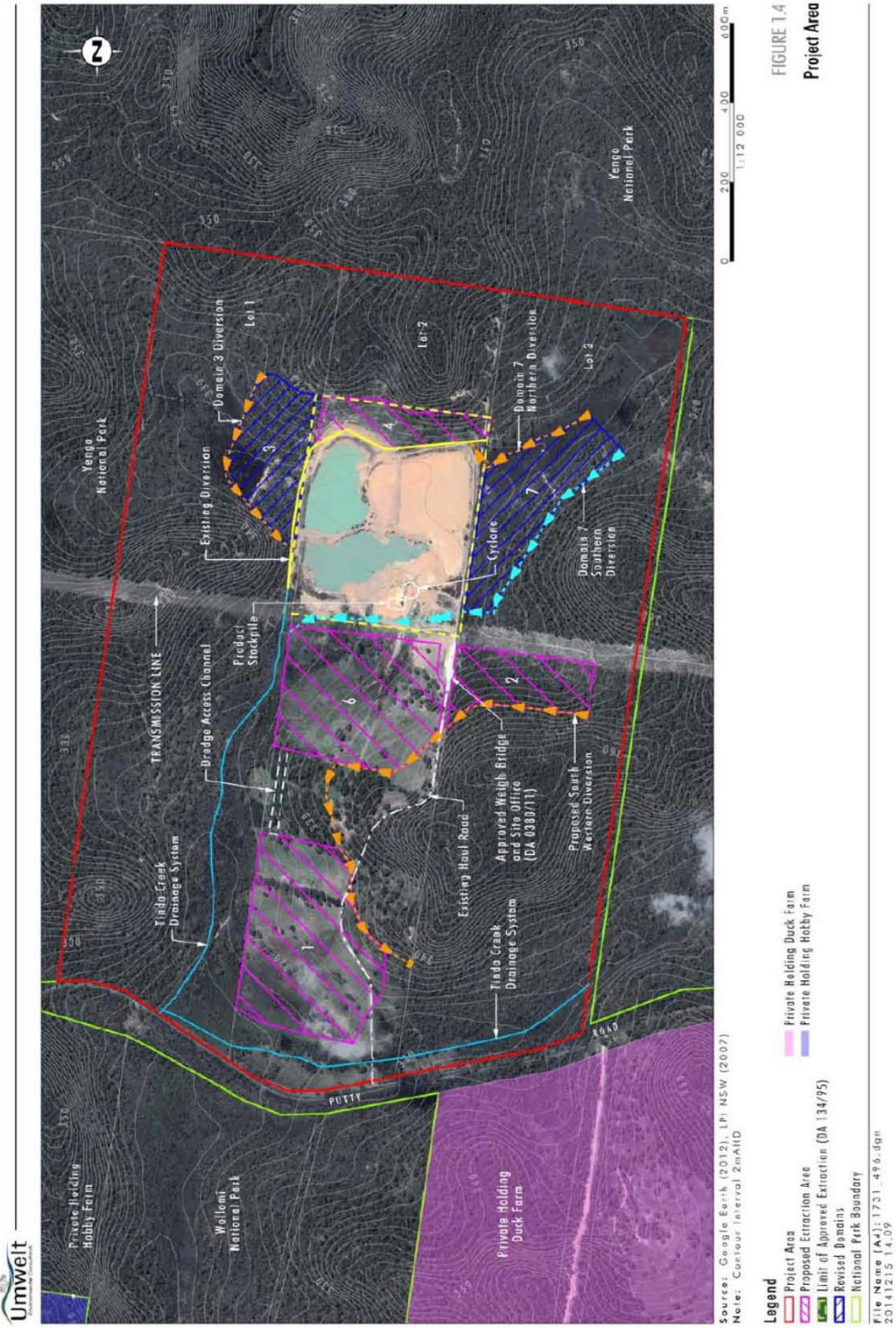


Figure 1: Development Layout

APPENDIX 3 STATEMENT OF COMMITMENTS

Environmental Impact Statement
Proposed Expansion of Tinda Creek Sand Quarry

Draft Statement of Commitments

5.0 Draft Statement of Commitments

The DGRs for the proposal (**Appendix 1**) require that the EIS include a Draft Statement of Commitments which details the measures proposed by Hy-Tec for environmental mitigation, management and monitoring.

If approval is granted under the EP&A Act for the proposal, Hy-Tec will commit to the controls detailed below.

5.1 Compliance with the EIS

5.1.1 To carry out the development for the Project generally in accordance with the Development Application and this EIS.

5.2 Life of Operation, Production and Hours of Operations

Project Life

5.2.1 The Project approval life will be for an additional 30 years from the date of commencement of operations under the Project Approval. Closure and rehabilitation activities will be undertaken in accordance with a detailed Quarry Closure Plan, at the time of closure. These works may extend beyond the 30 year operational approval period.

Production Limits

5.2.2 A maximum of 300,000 tonnes per year of sand products will be transported from the quarry.

Hours of Operation

5.2.3 Quarry operations will be undertaken between the hours of 5.00 am and 10.00 pm Monday to Friday and 5.00 am and 3.00 pm on Saturdays.

5.2.4 The following activities may occur on Sundays and public holidays:

- maintenance of fixed plant and mobile plant;
- product stockpile management;
- water cart operations for stockpile area and plant area; and
- pumping for dewatering activities.

5.3 Environmental Management, Monitoring and Reporting

Environmental Management Plan

5.3.1 Within six months of development consent, Hy-Tec will revise its existing Environmental Management Plan (EMP) as part of the implementation of the Project. The EMP will include details of all of the management and monitoring

commitments outlined in the EIS (specifically those outlined in this Statement of Commitments).

Annual Review

- 5.3.2 Hy-Tec will prepare an Annual Review of the environmental performance of the Project and will make this available to the public, Hawkesbury City Council and relevant government agencies as required.

5.4 Ecology

A range of mitigation measures are proposed to ameliorate potential adverse ecological impacts associated with the Project. These include:

- 5.4.1 Implement a robust weed management program to be documented in the revised EMP.
- 5.4.2 Conduct rehabilitation progressively over the life of the quarry. All rehabilitation works will be scheduled to commence as soon as practicable after disturbance and reformation of the landscape.
- 5.4.3 A robust tree felling procedure will be implemented at Tinda Creek Quarry to minimise the potential for impacts on native fauna species (including threatened species) as a result of the clearing of hollow-bearing trees.
- 5.4.4 Nest boxes will be established in retained vegetation in proximity to area impacted as a result of the Project to mitigate the loss of hollow-bearing trees. An assessment of the number of tree hollows lost during clearing will be made as part of the tree felling activities and nest boxes will be established to compensate for this loss, where appropriate. Suitably designed nest boxes will be established for the range of hollow-dependent species that are known to occur in the Project area.
- 5.4.5 A pre-clearance survey of the proposed disturbance areas will be undertaken prior to ground disturbance (within seven days of the planned disturbance) to ensure that no Rosenberg's Goanna burrows are present. The assessment should be undertaken by a suitably qualified and licensed ecologist. If burrows are present, the ecologist will provide advice on how to ensure that no goannas remain within the burrows during the clearing process.
- 5.4.6 A pre-clearance survey of all areas to be cleared will be undertaken (within seven days of the planned clearing time) to ensure that no termite mounds used by Rosenberg's Goannas are present. The assessment should be undertaken by a suitably qualified and licensed ecologist. If termite mounds are present, the ecologist will provide advice on how to ensure that no goanna eggs or juveniles remain within the mounds during the clearing process.
- 5.4.7 A comprehensive biodiversity offset strategy is to be implemented for the Project as described in **Appendix 7** to ensure the development maintains or improves the terrestrial and aquatic biodiversity values of the region in the medium to long-term.

5.5 Aboriginal Heritage

It is noted that archaeological subsurface investigation is not necessary within the proposed extraction domains, prior to the quarry expansion proceeding. However, a range of mitigation measures are proposed to ameliorate potential adverse archaeological impacts associated with the Project. These include:

- 5.5.1 In consultation with the registered Aboriginal parties, prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) for the proposed Project. The ACHMP will allow for management (collection) of the artefacts located in the Tinda Creek Artefact Scatter 1 site in Domain 3 (if Domain 3 is to be quarried) and to provide for future management of Aboriginal cultural heritage issues should they arise across the broader Project area. The ACHMP will form part of the revised EMP for the project.
- 5.5.2 If Domain 3 is to be quarried, the artefacts located within the Tinda Creek Artefact Scatter 1 site are collected using the methodology set out in the protocols and procedures of the approved ACHMP.
- 5.5.3 The EMP is to be updated to contain provisions to address management of the following issues, as detailed in the Aboriginal Cultural Heritage and Archaeological Assessment (**Appendix 9**):
- exposure of previously unrecorded artefactual material during ground disturbance works within the Project area;
 - exposure of human/possible human skeletal material during ground disturbance works within the Project area;
 - exposure of sandstone with evidence of Aboriginal engravings or grinding grooves; and
 - development of an Aboriginal Cultural Heritage Training Package for all Hy-Tec employees/contractors working on the Project to be provided as part of the quarry induction process.

5.6 Historic Heritage

- 5.6.1 In the unlikely event that unexpected archaeological remains or potential heritage items not identified as part of this assessment are discovered during the Project and are likely to be disturbed by the Project, all works in the immediate area should cease, the remains and potential impacts should be assessed by a qualified archaeologist or heritage consultant and, if necessary, the Heritage Branch, Department of Planning notified.

5.7 Traffic and Access

- 5.7.1 The site access will be upgraded to comply with the minor road standard access as detailed in AS2890.2.

5.8 Noise

- 5.8.1 Hy-Tec will undertake an attended noise monitoring program (as detailed in **Section 4.7.6.1**) in order to assess ongoing compliance with relevant noise impact assessment criteria over the life of the Project. Details of the Noise Management Plan will be provided in the revised EMP.
- 5.8.2 The monitoring results will be reviewed by the Hy-Tec environmental representative to assess compliance with the Noise Impact Assessment (NIA) predictions and with the relevant NIA criteria. The results will be reported in accordance with the requirements of the Project approval and EPL.

5.9 Air Quality

- 5.9.1 The existing dust control measures will continue to be implemented on site, including:
- minimisation of the total disturbed/working areas at any one time; and
 - watering of unsealed roads, working areas and stockpiles as required.

5.10 Surface Water and Groundwater

- 5.10.1 Hy-Tec will continue to undertake monitoring of groundwater bores in accordance with existing licence conditions.
- 5.10.2 All diversion drains will continue to be maintained in good condition.
- 5.10.3 The water management system will remain as a closed system.

5.11 Greenhouse Gas and Energy

- 5.11.1 Hy-Tec will continue to participate in the Energy Efficiency Opportunities (EEO) Program and undertake the following activities to improve energy use efficiency:
- develop an EEO project and communication plan;
 - evaluate energy use for the Project;
 - identify and investigate potential EEO; and
 - implement, track, communicate and report on EEO.
- 5.11.2 Hy-Tec will continue to improve on-site diesel use efficiency based on the range of measures outlined in **Section 4.11.8.1**
- 5.11.3 Hy-Tec will explore the use of lower GHG emission energy sources as soon as practical based on the range of measures outlined in **Section 4.11.8.2**.

5.12 Hazards

- 5.12.1 Hy-Tec will store all dangerous goods in accordance with dangerous goods storage requirements and relevant Australian Standards.
- 5.12.2 Hy-Tec will continue to implement the appropriate measures to reduce the risk of fire ignition and the spread of bushfire across the site in consultation with the Rural Fire Services (RFS).

5.13 Rehabilitation and Closure

- 5.13.1 The revised EMP will detail the approach to rehabilitation of the Project, including the species to be used in revegetation works.
- 5.13.2 Wherever possible, rehabilitation will be completed progressively as part of the ongoing development of the quarry.
- 5.13.3 A detailed Quarry Closure Plan will be developed approximately three years prior to cessation of quarrying activities.

APPENDIX 4
CONCEPTUAL FINAL LANDFORM

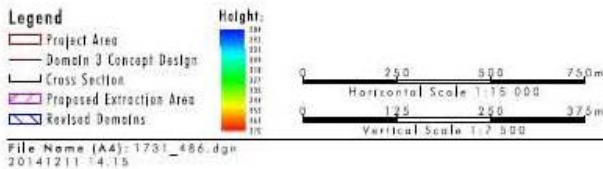
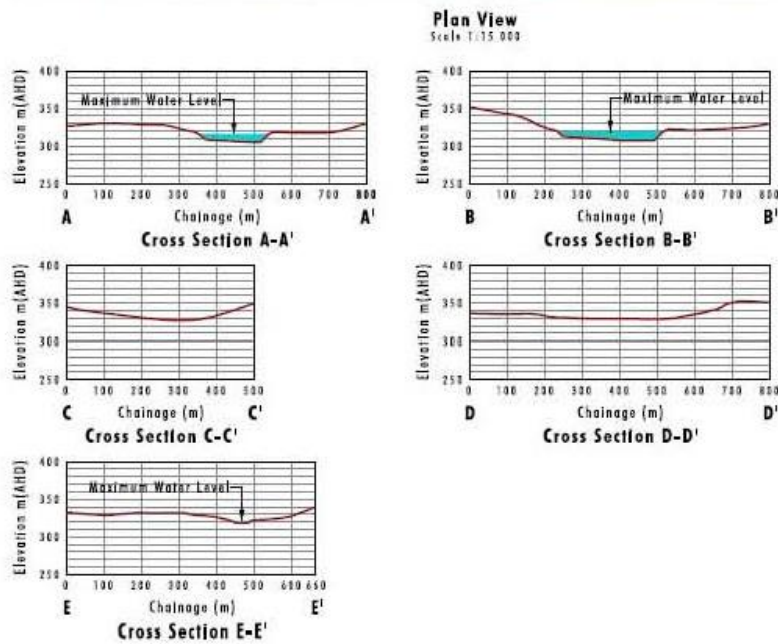
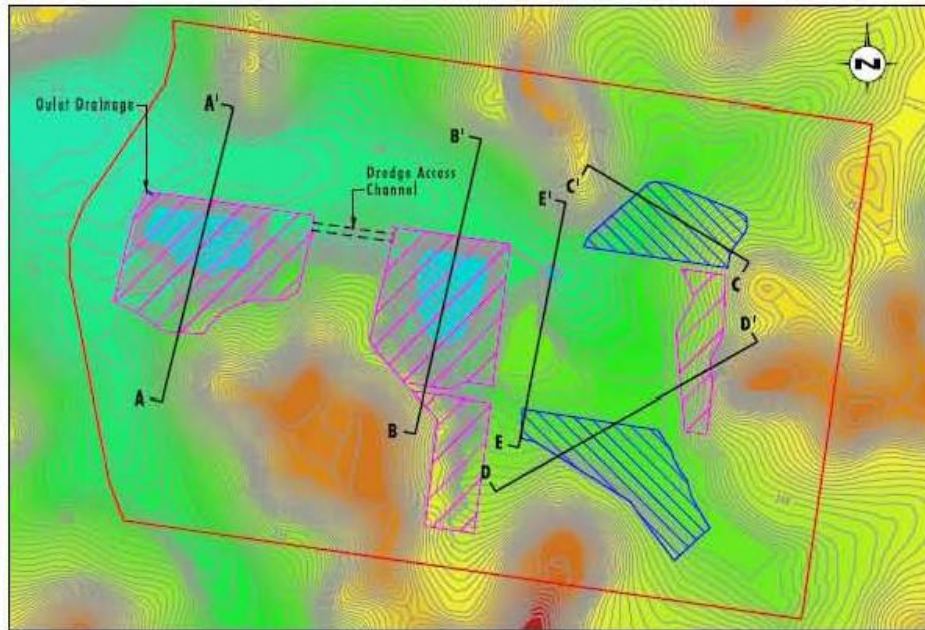


FIGURE 3
Conceptual Final Landform
Cross-sections

Figure 1: Conceptual Final Landform

APPENDIX 5
BIODIVERSITY OFFSETS AND THREATENED FLORA

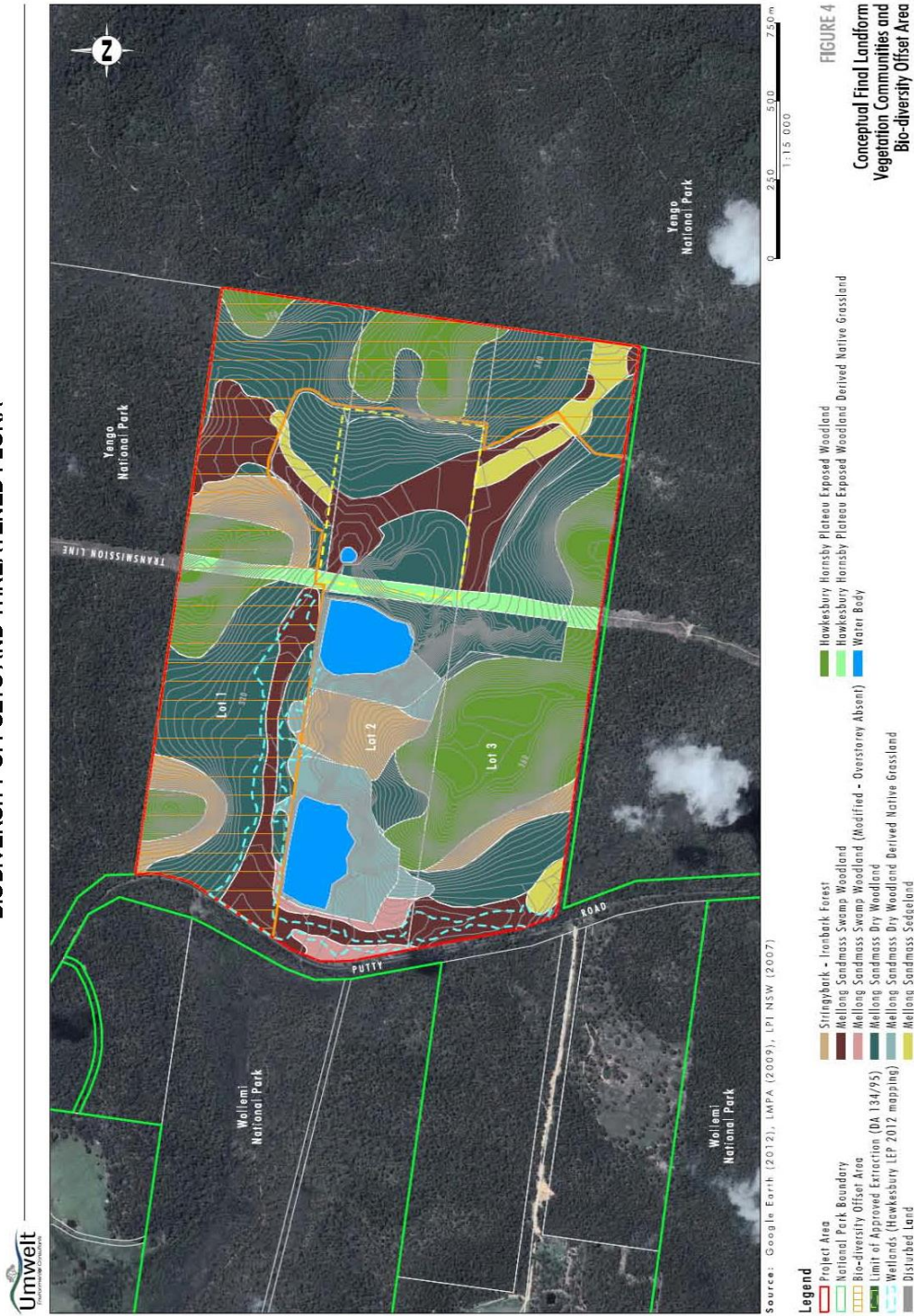


Figure 1 : Biodiversity Offsets



Figure 2: Location of *Grevillea parviflora* subsp. *parviflora*

APPENDIX 6 NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in Table 2 of Schedule 3 are to apply under all meteorological conditions except wind speeds greater than 3 m/s at 10 m above ground level.

Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station on or in the vicinity of the site.

Compliance Monitoring

3. Unless directed otherwise by the Secretary, annual attended monitoring is to be used to evaluate compliance with the relevant conditions of consent.

Note: The Secretary may direct that the frequency of attended monitoring increase or decrease at any time during the life of the development.

4. Unless otherwise agreed with the Secretary, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (as amended from time to time), in particular the requirements relating to:
 - (a) monitoring locations for the collection of representative noise data;
 - (b) meteorological conditions during which collection of noise data is not appropriate;
 - (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
 - (d) modifications to noise data collected including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

Appendix 2

Internal Compliance Audit (SSD_4978) - 25 January 2017 to 31 December 2017

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**Table A7-1
Internal Compliance Audit of Relevant Conditions of Development Consent SSD_4978 for Tinda
Creek Sand Project from 25 January 2017 to 31 December 2017**

Page 1 of 14

Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*
SCHEDULE 2: ADMINISTRATION CONDITIONS				
Obligation to Minimise Harm to the Environment				
1.	In addition to meeting the specific performance criteria established under this consent, the Applicant shall 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.	Y	All management measures were implemented successfully and there was no identified material harm to the environment during the reporting period.	O
TERMS OF CONSENT				
2.	The Applicant shall carry out the development generally in accordance with the: (a) EIS; (b) Statement of Commitments; and (c) conditions of this consent.	N	The operation was carried out generally in accordance with these documents during the reporting period.	O/D
3.	If there is any inconsistency between the above documents, 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.	Noted		
4.	The Applicant shall comply with any reasonable 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; (b) any reports, reviews or audits commissioned by the Department regarding compliance with this consent; or (c) the implementation of any actions or measures contained in these documents.	Y	Hy-Tec has complied with all requests from DPE during the reporting period (see Section 10 of the Annual Review 2017 for more details).	D
LIMITS ON CONSENT				
Extraction Operations				
5.	The Applicant may undertake extraction operations on the site until 31 December 2045.	Noted		
Production Limits				
6.	The Applicant shall not: (a) extract or process more than 300,000 tonnes of sand in any calendar year; or (b) undertake extraction operations beyond 15 m below the natural ground surface.	Y	Approximately 183 714 tonnes of sand were extracted and processed and depth restrictions were not exceeded during the reporting period.	D
Yes = Complied with during 2017 No = Not complied with during 2017 ND = Not Determined NYA = Not Yet Applicable HNC = Historical Non-Compliance ANC = Administrative Non-Compliance * = Basis for assessment of compliance D = Documentation/Discussion O = Observation during audit Yes# / No# = Complied / not complied with and compliance no longer required to be assessed				



Table A7-1 (Cont'd)
Internal Compliance Audit of Relevant Conditions of Development Consent SSD_4978 for Tinda Creek Sand Project from 25 January 2017 to 31 December 2017

Page 2 of 14

Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*
SCHEDULE 2: ADMINISTRATION CONDITIONS (Cont'd)				
Transportation Limits				
7.	The Applicant shall not: (a) transport more than 300,000 tonnes of sand from the site in a calendar year; and (b) dispatch more than 34 trucks per day or receive more than 34 trucks per day, averaged over a calendar month.	Y	Product despatch was limited to 190 642 tonnes and truck level limits were not exceeded during the reporting period.	D
SURRENDER OF EXISTING DEVELOPMENT CONSENT				
8.	Within 6 months of the date of this consent, unless the Secretary agrees otherwise, the Applicant shall surrender the development consent (DA 0134/95) for the existing operations on the site in accordance with Section 104A of the EP&A Act. Prior to the surrender of development consent DA 0134/95, the conditions of this consent shall prevail to the extent of any inconsistency with the conditions of that consent.	Y	DA 1034/95 was surrendered on 10 December 2015.	D
STRUCTURAL ADEQUACY				
9.	The Applicant shall ensure that any 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.	Noted	No new buildings and structures were constructed during the reporting period.	O
DEMOLITION				
10.	The Applicant shall ensure that all demolition work on site is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.	Noted	No demolition occurred during the reporting period.	O
PROTECTION OF PUBLIC INFRASTRUCTURE				
11.	The Applicant shall: (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. <i>Note: This condition does not apply to any damage to roads caused as a result of general road usage.</i>	Noted	There was no damage or necessary relocation of public infrastructure during the reporting period.	O
OPERATION OF PLANT AND EQUIPMENT				
12.	The Applicant shall ensure that all plant and equipment used on site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Y	All equipment was maintained and operated in an acceptable manner during the reporting period.	D
Yes = Complied with during 2017 No = Not complied with during 2017 ND = Not Determined NYA = Not Yet Applicable HNC = Historical Non-Compliance ANC = Administrative Non-Compliance * = Basis for assessment of compliance D = Documentation/Discussion O = Observation Yes# / No# = Complied / not complied with and compliance no longer required to be assessed				

Table A7-1 (Cont'd)
Internal Compliance Audit of Relevant Conditions of Development Consent SSD_4978 for Tinda Creek Sand Project from 25 January 2017 to 31 December 2017

Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*
SCHEDULE 2: ADMINISTRATION CONDITIONS (Cont'd)				
UPDATING & STAGING STRATEGIES, PLANS OR PROGRAMS				
13.	With the approval of the Secretary, the Applicant may submit any strategies, plans or programs required by this consent on a progressive basis. To ensure the strategies, plans or programs under the conditions of this consent are updated on a regular basis, the Applicant may at any time submit revised strategies, plans or programs to the Secretary for approval. With the agreement of the Secretary, the Applicant may prepare any revised strategy, plan or program without undertaking consultation with all parties under the applicable condition of this consent.	Noted	Not required during the reporting period.	D
14.	Until they are replaced by an equivalent strategy, plan or program approved under this consent, the Applicant shall implement the existing strategies, plans or programs for the site that have been approved under DA 0134/95.	Noted	All management strategies, plans and programs have been updated except the Water Management Plan.	D
PRODUCTION DATA				
15.	The Applicant shall: (a) provide annual quarry production data to DRE using the standard form for that purpose; and (b) include a copy of this data in the Annual Review (see condition 4 of schedule 5).	Y	See Appendix 7 .	
DEVELOPER CONTRIBUTIONS				
16.	The Applicant shall pay Council road maintenance contributions consistent with Council's Section 94 Contributions Plan, or its latest version.	Y	Road maintenance contributions are paid monthly.	D
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS				
IDENTIFICATION OF APPROVED LIMITS OF EXTRACTION				
1.	Prior to undertaking extraction operations under this consent, the Applicant shall: (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.	Y	All relevant boundaries have been surveyed and marked to comply with this condition.	
2.	While extraction operations are being carried out, the Applicant shall ensure that these boundaries are clearly marked at all times.	Noted	All boundaries were clearly marked during the reporting period.	
Yes = Complied with during 2017 No = Not complied with during 2017 ND = Not Determined NYA = Not Yet Applicable HNC = Historical Non-Compliance ANC = Administrative Non-Compliance * = Basis for assessment of compliance D = Documentation/Discussion O = Observation Yes# / No# = Complied / not complied with and compliance no longer required to be assessed				



Table A7-1 (Cont'd)
Internal Compliance Audit of Relevant Conditions of Development Consent SSD_4978 for Tinda Creek Sand Project from 25 January 2017 to 31 December 2017

Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*											
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)															
HOURS OF OPERATION															
3.	<p>The Applicant shall comply with the operating hours set out in Table 1.</p> <p>Table 1: Operation Hours</p> <table border="1"> <thead> <tr> <th>Activity</th> <th>Operating Hours</th> </tr> </thead> <tbody> <tr> <td>Extraction operations and deliveries</td> <td>7 am to 6 pm, Monday to Friday 7 am to 3 pm, Saturday No activities on Sundays or Public Holidays</td> </tr> <tr> <td>Dispatch</td> <td>5 am to 10 pm, Monday to Friday 6 am to 3 pm, Saturday</td> </tr> <tr> <td>Construction activities</td> <td>7 am to 6 pm, Monday to Friday 8 am to 1 pm, Saturday No construction to be undertaken on Sundays or Public Holidays</td> </tr> <tr> <td>Maintenance activities</td> <td>24 hours a day, 7 days per week, providing maintenance activities are inaudible at any privately-owned residence</td> </tr> </tbody> </table>	Activity	Operating Hours	Extraction operations and deliveries	7 am to 6 pm, Monday to Friday 7 am to 3 pm, Saturday No activities on Sundays or Public Holidays	Dispatch	5 am to 10 pm, Monday to Friday 6 am to 3 pm, Saturday	Construction activities	7 am to 6 pm, Monday to Friday 8 am to 1 pm, Saturday No construction to be undertaken on Sundays or Public Holidays	Maintenance activities	24 hours a day, 7 days per week, providing maintenance activities are inaudible at any privately-owned residence	Y	Hy-Tec complied with all approved operating hours during the reporting period.	D	
Activity	Operating Hours														
Extraction operations and deliveries	7 am to 6 pm, Monday to Friday 7 am to 3 pm, Saturday No activities on Sundays or Public Holidays														
Dispatch	5 am to 10 pm, Monday to Friday 6 am to 3 pm, Saturday														
Construction activities	7 am to 6 pm, Monday to Friday 8 am to 1 pm, Saturday No construction to be undertaken on Sundays or Public Holidays														
Maintenance activities	24 hours a day, 7 days per week, providing maintenance activities are inaudible at any privately-owned residence														
NOISE															
Noise Criteria															
4.	<p>The Applicant shall ensure that the noise generated by the development does not exceed the criteria in Table 2 at any residence on privately-owned land.</p> <p>Table 2: Noise criteria dB(A)</p> <table border="1"> <thead> <tr> <th rowspan="2">Receiver</th> <th>Day/Evening</th> <th colspan="2">Night</th> </tr> <tr> <th>L_{Aeq}(15 min)</th> <th>L_{Aeq}(15 min)</th> <th>L_{A1}(max)</th> </tr> </thead> <tbody> <tr> <td>All receivers</td> <td>35</td> <td>35</td> <td>45</td> </tr> </tbody> </table>	Receiver	Day/Evening	Night		L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{A1} (max)	All receivers	35	35	45	Y	Noise monitoring undertaken during the reporting period demonstrates that Hy-Tec complied with this criteria. There were no noise complaints during the reporting period.	D
Receiver	Day/Evening		Night												
	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{A1} (max)												
All receivers	35	35	45												
Operating Conditions															
5.	<p>The Applicant shall:</p> <p>(a) implement all reasonable and feasible mitigation measures to minimise the construction, operational and road noise of the development;</p> <p>(b) regularly assess noise monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the noise criteria in this consent;</p> <p>(c) minimise the noise impacts of the development during meteorological conditions under which the noise criteria in this consent do not apply (see Appendix 6); and</p> <p>(d) carry out regular noise monitoring to determine whether the development is complying with the relevant conditions of this consent,</p> <p>to the satisfaction of the Secretary.</p>	Y	See previous response. Hy-Tec has not been required to modify operations due to noise-related concerns during the reporting period.												
<p>Yes = Complied with during 2017 No = Not complied with during 2017 ND = Not Determined</p> <p>NYA = Not Yet Applicable HNC = Historical Non-Compliance ANC = Administrative Non-Compliance</p> <p>* = Basis for assessment of compliance D = Documentation/Discussion O = Observation</p> <p align="center">Yes# / No# = Complied / not complied with and compliance no longer required to be assessed</p>															

Table A7-1 (Cont'd)
Internal Compliance Audit of Relevant Conditions of Development Consent SSD_4978 for Tinda Creek Sand Project from 25 January 2017 to 31 December 2017

Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*																							
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)																											
NOISE (Cont'd)																											
Noise Management Plan																											
6.	The Applicant shall prepare and implement a Noise Management Plan for the development to the satisfaction of the Secretary.	Y	A Noise Management Plan has been approved by the Secretary and is implemented at the Quarry. The Noise Management Plan is available from the Hy-Tec website.																								
AIR QUALITY																											
Air Quality Criteria																											
7.	The Applicant shall implement all reasonable and feasible avoidance and mitigation measures so that particulate matter emissions generated by the development do not exceed the criteria in Tables 3 to 5 at any residence on privately-owned land. Table 3: Long-Term Criteria for Particulate Matter <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>^d Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulates (TSP)</td> <td align="center">Annual</td> <td align="center">^a 90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10µm (PM₁₀)</td> <td align="center">Annual</td> <td align="center">^a 30 µg/m³</td> </tr> </tbody> </table> Table 4: Short-Term Criteria for Particulate Matter <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>^d Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10µm (PM₁₀)</td> <td align="center">24 hour</td> <td align="center">^a 50 µg/m³</td> </tr> </tbody> </table> Table 5: Long-Term Criteria for Deposited Dust <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Maximum increase in deposited dust level</th> <th>Maximum total deposited dust level</th> </tr> </thead> <tbody> <tr> <td>^c Deposited dust</td> <td align="center">Annual</td> <td align="center">^b 2g/m²/month</td> <td align="center">^a 4g/m²/month</td> </tr> </tbody> </table>	Pollutant	Averaging period	^d Criterion	Total suspended particulates (TSP)	Annual	^a 90 µg/m ³	Particulate matter < 10µm (PM ₁₀)	Annual	^a 30 µg/m ³	Pollutant	Averaging period	^d Criterion	Particulate matter < 10µm (PM ₁₀)	24 hour	^a 50 µg/m ³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	^c Deposited dust	Annual	^b 2g/m ² /month	^a 4g/m ² /month	Y	Dust monitoring undertaken during the reporting period indicates that the operation complied with the criteria in this condition. Some elevated deposited dust monitoring results were recorded. Additional analysis of these results indicated that the elevated results were caused by insect and other organic matter.	D
Pollutant	Averaging period	^d Criterion																									
Total suspended particulates (TSP)	Annual	^a 90 µg/m ³																									
Particulate matter < 10µm (PM ₁₀)	Annual	^a 30 µg/m ³																									
Pollutant	Averaging period	^d Criterion																									
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^c Deposited dust	Annual	^b 2g/m ² /month	^a 4g/m ² /month																								
Operating Conditions																											
8.	The Applicant shall: (a) implement all reasonable and feasible measures to minimise the dust emissions of the development; (b) minimise surface disturbance of the site; and (c) monitor and report on compliance with the relevant air quality criteria in this consent; to the satisfaction of the Secretary.	Y	Dust impacts were effectively managed during the reporting period.	D																							
Air Quality Management Plan																											
9.	The Applicant shall prepare and implement an Air Quality Management Plan for the development to the satisfaction of the Secretary.	Y	An Air Quality Management Plan has been approved by the Secretary and is implemented at the Quarry. The Air Quality Management Plan is available from the Hy-Tec website																								
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Internal Compliance Audit of Relevant Conditions of Development Consent SSD_4978 for Tinda Creek Sand Project from 25 January 2017 to 31 December 2017

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Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
METEOROLOGICAL MONITORING				
10.	For the life of the development, the Applicant shall ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline.	Partial	A meteorological station was installed in July 2016.	D
SOIL AND WATER				
Water Supply				
11.	The Applicant shall 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.	Noted	Water use during the reporting period was within the licence limits for extraction. It was not necessary to modify operations due to water availability restrictions.	D
Operating Conditions				
12.	The Applicant shall: (a) comply with Section 120 of the POEO Act, unless an EPL authorises otherwise; (b) ensure that the catchment of the water management system is not larger than 40 ha, unless the Secretary agrees otherwise; (c) maintain the dredge and silt ponds to capture a 1 in 100 ARI storm event plus adequate freeboard to ensure no offsite discharge; and (d) ensure that the loss of groundwater and surface water to Tinda Creek is no greater than predicted in the EIS.	Y	Hy-Tec contends that his conditions was satisfied during the reporting period. The total catchment area was calculated to be 32ha and therefore less than the approved extent.	D
Water Management Plan				
13.	The Applicant shall prepare and implement a Water Management Plan for the development to the satisfaction of the Secretary. This plan must:	Y	Hy-Tec is in the process of addressing comments from Crown Lands and Water to finalise an updated Water Management Plan. The existing approved Water Management Plan has been implemented during the reporting period in accordance with Condition 14 of Schedule 2.	
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Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*						
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)										
HERITAGE										
Heritage Management Plan										
14.	The Applicant shall prepare and implement a Heritage Management Plan for the development to the satisfaction of the Secretary.	Y	A Heritage Management Plan has been approved by the Secretary and is implemented at the Quarry. The Heritage Management Plan is available from the Hy-Tec website							
LANDSCAPE AND REHABILITATION										
Biodiversity Offset Strategy										
15.	The Applicant shall implement the biodiversity offset strategy described in the EIS, as summarised and revised in Table 6, and shown conceptually in Appendix 5, to the satisfaction of the Secretary. Table 6: Biodiversity Offset Strategy (ha)	NYA	Hy-Tec has been in discussions with NPWS and DPE regularly regarding the actions necessary to implement the biodiversity offset strategy.							
	<table border="1"> <thead> <tr> <th>Area</th> <th>Offset Type</th> <th>Minimum Size (ha)</th> </tr> </thead> <tbody> <tr> <td>On-site Offset Area</td> <td>Existing vegetation to be enhanced</td> <td align="center">106.6</td> </tr> </tbody> </table>	Area	Offset Type	Minimum Size (ha)	On-site Offset Area	Existing vegetation to be enhanced	106.6			
Area	Offset Type	Minimum Size (ha)								
On-site Offset Area	Existing vegetation to be enhanced	106.6								
Security of Offsets										
16.	Within 2 years of this consent, unless otherwise agreed with the Secretary, the Applicant shall make suitable arrangements to provide appropriate long-term security for the offset area, to the satisfaction of the Secretary.	NYA	Hy-Tec is currently planning to secure the offset area under an 88B Instrument under the Conveyancing Act 1919. It is intended that the land will be secured by 30 June 2018. This deadline has been agreed with the Secretary.							
Rehabilitation Objectives										
17.	The Applicant shall rehabilitate the site to the satisfaction of the Secretary. The final landform must: (a) be generally consistent with the proposed rehabilitation strategy in the EIS, and the final landform shown conceptually in Appendices 4 and 5. and	Y	Progressive rehabilitation is consistent with the EIS. The final landform is yet to be developed.	O						
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Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
17. (Cont'd)	(b) comply with the objectives in Table 7.	Y	Operations and progressive rehabilitation complied with these objectives during the reporting period.	O
	Table 7: Rehabilitation Objectives			
	Feature	Objective		
	Site (as a whole)	<ul style="list-style-type: none"> Safe, stable and non-polluting Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of local native species and habitat, including at least 0.35 ha of Mellong Sandmass Sedgeland 		
	Surface Infrastructure	<ul style="list-style-type: none"> To be decommissioned and removed (unless the Secretary agrees otherwise) 		
	Final Voids	<ul style="list-style-type: none"> Minimise the size, depth, batter slope and the drainage catchment of the final void Ensure that the volume of VENM and ENM detailed in the EIS is imported for rehabilitation of the site Ensure that the surface area of the final voids is no greater than 16 ha in total Separated from the surface water drainage system, unless the Secretary agrees otherwise 		
Watercourses	<ul style="list-style-type: none"> Restore alignment and hydraulic function, as far as practical 			
Community	<ul style="list-style-type: none"> Ensure public safety 			
Progressive Rehabilitation				
18.	The Applicant shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. Interim stabilisation measures must be implemented where reasonable and feasible to control erosion (both wind and water) in disturbed areas that are not active and which are not ready for final rehabilitation.	Y	Rehabilitation continued in Domain 4 during the reporting period with this landform progressively being stabilised prior to revegetation.	O
Landscape Management Plan				
19.	The Applicant shall prepare and implement a Landscape Management Plan for the development to the satisfaction of the Secretary.	Y	<p>A Landscape Management Plan has been approved by the Secretary and is being implemented at the Quarry.</p> <p>The Landscape Management Plan is available from the Hy-Tec website</p>	D
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Internal Compliance Audit of Relevant Conditions of Development Consent SSD_4978 for Tinda Creek Sand Project from 25 January 2017 to 31 December 2017

Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
Conservation and Rehabilitation Bond				
20.	<p>Within 6 months of the approval of the Landscape Management Plan, the Applicant shall lodge a Conservation and Rehabilitation Bond with the Department to ensure that the biodiversity offset strategy and rehabilitation of the site are implemented in accordance with the performance and completion criteria set out in the plan and relevant conditions of this consent. The sum of the bond shall be determined by:</p> <p>(a) calculating the cost of implementing the biodiversity offset strategy over the next 3 years;</p> <p>(b) calculating the cost of rehabilitating the site, taking into account the likely surface disturbance over the next 3 years of extraction operations; and</p> <p>(c) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs, to the satisfaction of the Secretary.</p>	Y	A conservation and rehabilitation bond was lodged with DPE on 11 December 2017.	D
	<p>Within 3 months of each Independent Environmental Audit (see condition 9 of schedule 5), the Applicant shall review, and if necessary revise, the sum of the Conservation and Rehabilitation Bond to the satisfaction of the Secretary.</p>	NYA		
TRANSPORT				
Monitoring of Product Transport				
22.	<p>The Applicant shall keep accurate records of all laden truck movements to and from the site (hourly, daily, weekly, monthly and annually) and publish these records on its website every 6 months.</p>	Y	See Section 4.2.2 of the Annual Review. Truck movement records are also available from the Hy-Tec website.	D
Operating Conditions				
23.	<p>The Applicant shall ensure that:</p> <p>(a) all laden vehicles have appropriate signage, including a contact phone number, so they be easily identified by road users;</p> <p>(b) all laden vehicles entering or exiting the site have their loads covered;</p> <p>(c) all laden vehicles exiting the site are cleaned of sand and other material that may fall on the road, before leaving the site; and</p> <p>(d) no trucks queue at the entrance to the site before 6am.</p>	Y	All laden vehicles complied with these requirements during the reporting period.	D
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Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*
SCHEDULE 3: ENVIRONMENTAL PERFORMANCE CONDITIONS (Cont'd)				
Access Road and Intersection Construction				
24.	Within 12 months from the date of this consent, unless the Secretary agrees otherwise, the Applicant shall upgrade the site access road and its intersection with Putty Road in accordance with applicable AUSTRROADS standards, and to the satisfaction of RMS.	Y	Intersection upgrade completed in November 2015.	D
Transport Management Plan				
25.	The Applicant shall prepare and implement a Transport Management Plan for the development to the satisfaction of the Secretary.	Y	A Transport Management Plan has been approved by the Secretary and is implemented at the Quarry. The Transport Management Plan is available from the Hy-Tec website	D
VISUAL				
26.	The Applicant shall: (a) implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the development on local residences and road users; and (b) ensure that all external lighting associated with the development complies with the relevant Australian Standards.... to the satisfaction of the Secretary.	Y	Visual amenity was managed effectively during the reporting period. No complaints were received during the reporting period regarding visual impacts.	
BUSHFIRE MANAGEMENT				
27.	The Applicant shall ensure that the development is suitably equipped to respond to any fires on site; and assist the Rural Fire Service, emergency services and National Parks and Wildlife Service as much as practicable if there is a fire in the surrounding area.	Y	Firefighting equipment is readily available at the Quarry.	D
WASTE				
28.	The Applicant shall ensure that only certified VENM and ENM is imported to the site to aid in the minimisation of final voids.	Y	No material was imported during the reporting period.	D
29.	The Applicant shall manage on-site sewage treatment and disposal in accordance with the requirements of its EPL, and to the satisfaction of the EPA and Council.	Y	There were no compliance issues with regards to sewerage management during the reporting period.	D
30.	The Applicant shall: (a) minimise the waste generated by the development; (b) ensure that the waste generated by the development is appropriately stored, handled, and disposed of; and (c) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.	HNC	Historically stored waste located on the premises was identified as part of site visit by DPE representatives in June 2017. The items were disposed of in September 2017, and the area is being revegetated, in liaison with the DPE and EPA.	D
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Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*
SCHEDULE 4: ADDITIONAL PROCEDURES				
NOTIFICATION OF LANDOWNERS				
1.	As soon as practicable after obtaining monitoring results showing an exceedance of any relevant criteria in schedule 3, the Applicant shall notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the development is again complying with the relevant criteria.	Y	Hy-Tec did not receive monitoring results that indicated impacts at a nearby residence.	D
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 shall:	NYA	No requests for an independent review of impacts of the Quarry were received during the reporting period.	
SCHEDULE 5: ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING				
ENVIRONMENTAL MANAGEMENT				
Environmental Management Strategy				
1.	The Applicant shall prepare and implement an Environmental Management Strategy for the development to the satisfaction of the Secretary.	N	An Environmental Management Strategy has been approved by the Secretary and is implemented at the Quarry. The Environmental Management Strategy Plan is available from the Hy-Tec website. During a site inspection in June 2017, DPE noted that the clean water diversion drain had not been constructed and maintained in accordance with the approved conditions.	D
Adaptive Management				
2.	The Applicant shall 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 shall, at the earliest opportunity: (a) take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur;	Y	Hy-Tec has addressed the non-compliance issues raised during a site inspection by DPE officers in June 2017, to the satisfaction of the Secretary.	
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SCHEDULE 5: ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING (Cont'd)				
ENVIRONMENTAL MANAGEMENT (Cont'd)				
Adaptive Management (Cont'd)				
2. (Cont'd)	(b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and (c) implement remediation measures as directed by the Secretary; to the satisfaction of the Secretary.			
Management Plan Requirements				
3.	The Applicant shall 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: <ul style="list-style-type: none"> • 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 would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: <ul style="list-style-type: none"> • 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; (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: <ul style="list-style-type: none"> • 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.	Y	All management plans and strategies have been approved by the Secretary.	D
Yes = Complied with during 2017 NYA = Not Yet Applicable * = Basis for assessment of compliance		No = Not complied with during 2017 HNC = Historical Non-Compliance D = Documentation/Discussion		ND = Not Determined ANC = Administrative Non-Compliance O = Observation
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SCHEDULE 5: ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING (Cont'd)				
ENVIRONMENTAL MANAGEMENT (Cont'd)				
Annual Review				
4.	By the end of December each year, or other timing as may be agreed by the Secretary, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary.	Y	This document.	D
Revision of Strategies, Plans and Programs				
5.	<p>Within 3 months of a modification to this consent or following the submission of an:</p> <p>(a) annual review under condition 4 above;</p> <p>(b) incident report under condition 7 below; or</p> <p>(c) audit report under condition 9 below,</p> <p>the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.</i></p>	Y	All Management plans were submitted to DPE on 5 May 2017.	D
Community Consultative Committee				
6.	The Applicant shall establish and operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. This CCC must be operated in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Developments (Department of Planning, 2007, or its latest version), and be operating within 6 months of the date of this consent.	Y	CCC Meetings were held on 8 May 2017 and 16 October 2017.	D
REPORTING				
Incident Reporting				
7.	The Applicant shall immediately notify the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the Development, the Applicant shall notify the Secretary. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Y	There were no incidents that threatened or caused material harm to the environment that required notification to DPE during the reporting period.	
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Condition No.	Paraphrased Requirement	Compliance	Comment	Basis*
SCHEDULE 5: ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING (Cont'd)				
REPORTING (Cont'd)				
Regular Reporting				
8.	The Applicant shall 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.	Y	All relevant documents and monitoring results are available from the Hy-Tec website.	O
INDEPENDENT ENVIRONMENTAL AUDIT				
9.	Within a year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development.	Y	An IEA was undertaken by James Hart of AQUAS on 24 January 2017.	D
10.	Within 6 weeks of the completion of this audit, unless the Secretary agrees otherwise, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report, including a timetable for the implementation of any measures proposed to address the recommendations in the audit report. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented.	ANC	The IEA report was submitted to DPE on 15 May 2018. On 27 October 2017, the DPE sent correspondence about late submission of Hy-Tec's response to the IEA. A response to the issues raised in the audit was provided by Hy-Tec on 8 November 2017.	D
11.	Within 6 months of the date of this consent, the Applicant shall: (a) make copies of the following publicly available on its website: <ul style="list-style-type: none"> • the EIS; • current statutory approvals for the development; • 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, which is to be updated monthly; • minutes of CCC meetings; • the annual reviews of the development (for the last 5 years); • any independent environmental audit of the development, and the Applicant's response to the recommendations in any audit; • any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.	ANC	All relevant documents and monitoring results are available from the Hy-Tec website. During the reporting period a community member complained directly to the DPE that their previous complaints had not been included in the complaints register. DPE considered this was a non-compliance with this condition. Although Hy-Tec did not agree with this position, the complaints register was updated to address the requests of DPE. An administrative non-compliance is noted.	D
<p>Yes = Complied with during 2017 No = Not complied with during 2017 ND = Not Determined</p> <p>NYA = Not Yet Applicable HNC = Historical Non-Compliance ANC = Administrative Non-Compliance</p> <p>* = Basis for assessment of compliance D = Documentation/Discussion O = Observation</p> <p align="center">Yes# / No# = Complied / not complied with and compliance no longer required to be assessed</p>				

Appendix 3

Environmental Protection License 12007

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Section 55 Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 12007



<u>Licence Details</u>	
Number:	12007
Anniversary Date:	12-May

<u>Licensee</u>
AUS - 10 RHYOLITE PTY LIMITED
PO BOX 2155
ADELAIDE SA 5001

<u>Premises</u>
TINDA CREEK QUARRY
6102 PUTTY ROAD
MELLONG NSW 2756

<u>Scheduled Activity</u>
Extractive activities

<u>Fee Based Activity</u>	<u>Scale</u>
Water-based extractive activity	> 100000-500000 m3 annual extractive capacity

<u>Region</u>
Metropolitan - Sydney Industry
Level 13, 10 Valentine Ave
PARRAMATTA NSW 2150
Phone: (02) 9995 5000
Fax: (02) 9995 6900
PO Box 668 PARRAMATTA
NSW 2124

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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Environment Protection Licence

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The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

AUS - 10 RHYOLITE PTY LIMITED
PO BOX 2155
ADELAIDE SA 5001

subject to the conditions which follow.

Section 55 Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 12007



1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Extractive activities	Water-based extractive activity	> 100000 - 500000 m3 annual extractive capacity

Note: *The activity scale above refers to the amount extracted per annum.*

A1.2 Notwithstanding condition A1.1, the scale of the water-based extractive activity authorised under this licence must not exceed more than 300,000 tonnes of sand extracted or processed in any calendar year, being the amount equivalent to the annual extraction limit approved by the development consent granted under the *Environmental Planning and Assessment Act 1979* for the premises specified in A2.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
TINDA CREEK QUARRY
6102 PUTTY ROAD
MELLONG
NSW 2756
LOT 1 DP 628806, LOT 2 DP 628806, LOT 3 DP 628806
AS DEPICTED IN THE MAP OF THE APPROVED PROJECT AREA FOR SSD 4978 IN CONDITION A2.2

A2.2 The premises location is shown on the map below.

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A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

A3.2 Works and activities must be carried out in accordance with the Development Consent for State Significant Development 4978 approved by the Department of Planning and Environment on 10 April 2015.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

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Noise

EPA identification no.	Type of monitoring point	Location description
1	Noise monitoring	The boundary of "Receiver 1" as detailed in Figure 6.1 of the document titled "Tinda Creek Sand Quarry Noise Management Plan Final October 2015", submitted to the EPA on 18 November 2015

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

L2.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L2.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.

L3 Noise limits

L3.1 Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2.

POINT 1

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
All hours	LAeq (15 minute)	-	35
Night	Lmax OR LA1,1min	-	45

L3.2 For the purposes of the table under Condition L3.1 "Night" has the same meaning as in the NSW

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Industrial Noise Policy (EPA, 2000).

L4 Hours of operation

- L4.1 Unless permitted by another condition of this licence, activities at the premises must:
- only be undertaken between 7:00 am and 6:00 pm Monday to Friday;
 - only be undertaken between 7:00 am and 3:00 pm Saturday; and
 - not be undertaken on Sundays or public holidays.
- L4.2 In addition to the limitations imposed by Condition L4.1, construction activities must not be undertaken:
- between 7:00 am and 8:00 am Saturdays; and
 - between 1:00 pm and 3:00 pm Saturdays.
- L4.3 In addition to the hours of operation specified in Condition L4.1, dispatch activities may be undertaken:
- between 5:00 am and 10:00 pm Monday to Friday; and
 - between 6:00 am and 3:00 pm Saturdays.
- L4.4 Maintenance activities may be undertaken at any time if those activities are inaudible at all residential premises.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.
This includes:
- the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- must be maintained in a proper and efficient condition; and
 - must be operated in a proper and efficient manner.

O3 Dust

- O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.
- O3.2 The licensee must ensure that all laden vehicles exiting the site have their loads covered.

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5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- a) in a legible form, or in a form that can readily be reduced to a legible form;
- b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- a) the date(s) on which the sample was taken;
- b) the time(s) at which the sample was collected;
- c) the point at which the sample was taken; and
- d) the name of the person who collected the sample.

M2 Environmental monitoring

M2.1

- a) The licensee must undertake monthly inspections of the surface water management system at the premises.
- b) The monthly inspections must:
 - (i) be undertaken immediately upstream and downstream of the quarry disturbance area;
 - (ii) include visual inspection of litter, oil and grease and sediment levels within the surface water system, including diversion channels;
 - (iii) include visual inspection of the physical integrity of the surface water management system, including any signs of erosion; and
 - (iv) include visual inspection of the water level and flow in Tinda Creek.

M3 Recording of pollution complaints

M3.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M3.2 The record must include details of the following:

- a) the date and time of the complaint;
- b) the method by which the complaint was made;
- c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- d) the nature of the complaint;
- e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- f) if no action was taken by the licensee, the reasons why no action was taken.

M3.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

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M3.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M4 Telephone complaints line

M4.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M4.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M4.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M5 Noise monitoring

M5.1 To assess compliance with the noise limits specified within this licence, the licensee must undertake operator attended noise monitoring at each specified noise monitoring point in accordance with the table below.

POINT 1

Assessment period	Minimum frequency in a reporting period	Minimum duration within assessment period	Minimum number of assessment period
All hours when in use	Yearly	1 hour	1 operation day

M5.2 The licensee must undertake noise monitoring as directed by an authorised officer of the EPA.

M5.3 All noise monitoring required by this licence must be undertaken in accordance with Australian Standard AS 2659.1 - 1998: Guide to the use of sound measuring equipment - Portable sound level meters, or any revisions of that standard that may be made by Standards Australia, and the compliance monitoring guidance provided in the NSW Industrial Noise Policy.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,

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4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.
- R1.3 Where this licence is transferred from the licensee to a new licensee:
- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
 - b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.
- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
 - b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.
- R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect EPA or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').
- R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.
- R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
- a) the licence holder; or
 - b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R2 Notification of environmental harm

- R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.
- R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening

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material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

- R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
- a) where this licence applies to premises, an event has occurred at the premises; or
 - b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.
- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
- a) the cause, time and duration of the event;
 - b) the type, volume and concentration of every pollutant discharged as a result of the event;
 - c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
 - d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
 - e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
 - f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
 - g) any other relevant matters.
- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

Noise monitoring results

- R4.1 a) The licensee must submit the results of any noise monitoring undertaken in accordance with the requirements of Condition M5.1 or Condition M5.2 to the EPA within three weeks of the noise monitoring being undertaken.
- b) The noise monitoring results submitted to the EPA must include:
- (i) a map of each noise monitoring location in relation to the noise source, including relevant distances;
 - (ii) an analysis of the noise monitoring results;
 - (iii) any detected exceedance of the noise limits specified in Condition L4.1;
 - (iv) details of any remedial action taken or proposed to be taken in relation to any exceedance of the noise limits specified in Condition L4.1;

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- (v) details of the prevailing meteorological conditions during the period when the noise monitoring was undertaken; and
- (vi) confirmation that noise monitoring was/was not undertaken in accordance with Condition M5.3.

Surface Water Management System reporting

- R4.2 In accordance with section 5.3 of the approved Water Management Plan for the premises, the licensee must notify the EPA when surface water triggers are exceeded and provide a written report to the EPA.
- R4.3 The report to the EPA must include:
 - a) the results of surface water management system inspections required in condition M2.1 for the month related to the exceedance, including photographs; and
 - b) appropriate mitigation and contingency measures to be implemented within one month of the exceedance being detected.
- R4.4 The report must be submitted to the EPA within one month of surface water triggers being detected and be directed to the Manager, Sydney Industry Section by email to metro.regulation@epa.nsw.gov.au

7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Ross Carter

Environment Protection Authority

(By Delegation)

Date of this edition: 11-May-2005

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End Notes

1	Licence varied by notice 1048725, issued on 14-Jun-2005, which came into effect on 09-Jul-2005.
2	Licence varied by notice 1068195, issued on 05-Jul-2007, which came into effect on 05-Jul-2007.
3	Licence varied by notice 1075699, issued on 16-Jul-2007, which came into effect on 16-Jul-2007.
4	Licence varied by repair to Annual Return Archive, issued on 18-Jul-2007, which came into effect on 18-Jul-2007.
5	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
6	Licence transferred through application 146114, approved on 26-Jul-2010, which came into effect on 26-Jul-2010.
7	Licence varied by notice 1122474, issued on 07-Dec-2010, which came into effect on 07-Dec-2010.
8	Licence varied by notice 1530546 issued on 12-May-2015
9	Licence varied by notice 1533429 issued on 18-Dec-2015
10	Licence varied by notice 1548214 issued on 03-Mar-2017

Appendix 4

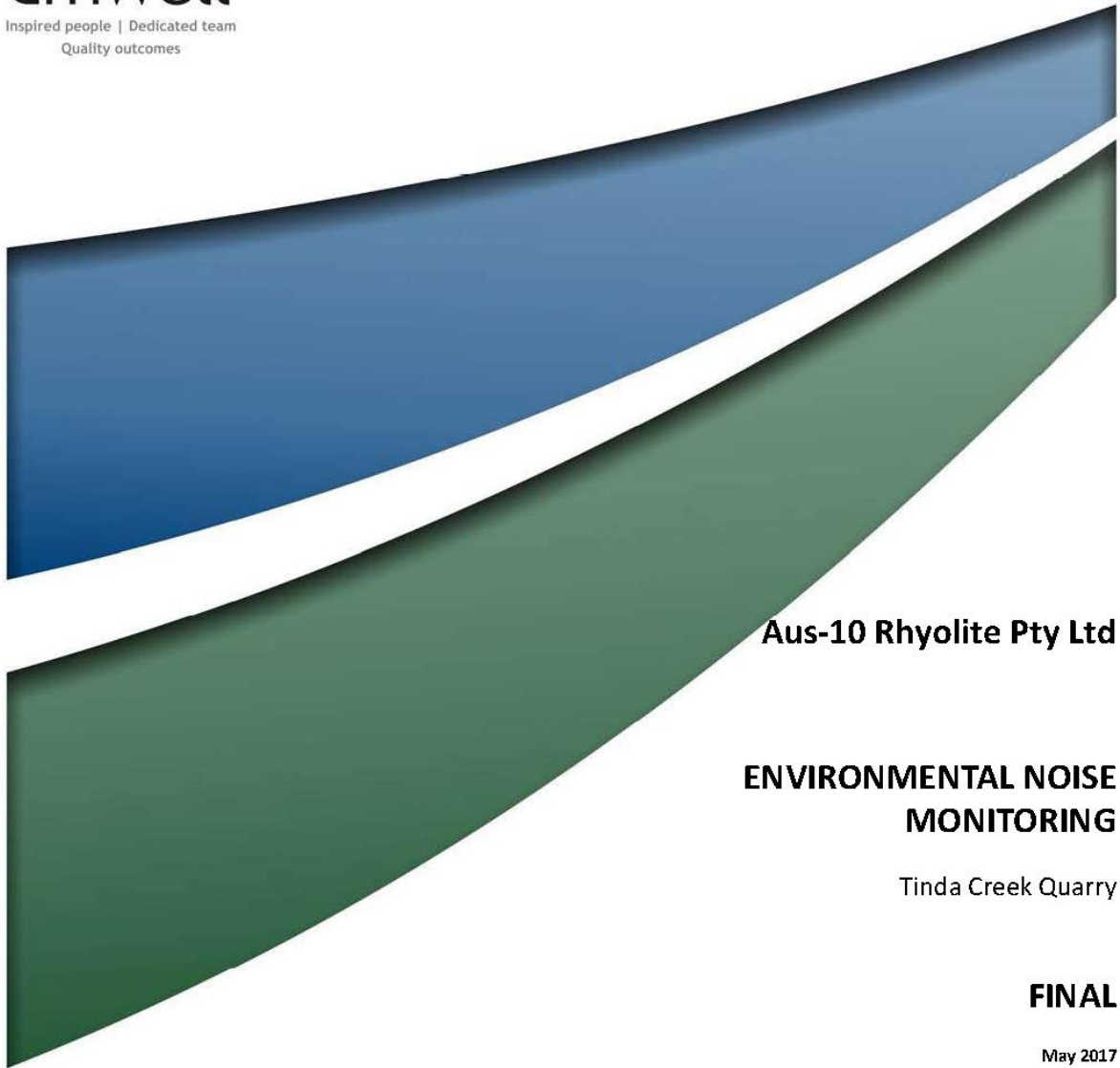
Noise Monitoring Reports

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Aus-10 Rhyolite Pty Ltd

**ENVIRONMENTAL NOISE
MONITORING**

Tinda Creek Quarry

FINAL

May 2017

Aus-10 Rhyolite Pty Ltd

ENVIRONMENTAL NOISE MONITORING

Tinda Creek Quarry

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Aus-10 Rhyolite Pty Ltd

Project Director: Tim Crosdale
Project Manager: Anthony van der Horst
Report No. 1731/R40/FINAL
Date: May 2017



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1.0 Introduction

1.1 Background

Aus-10 Rhyolite Pty Ltd, trading as Hy-Tec Concrete and Aggregates (Hy-Tec) operates Tinda Creek Quarry, a sand quarry located approximately 67 kilometres north of Windsor along Putty Road, NSW (refer to **Figure 1.1**). Quarrying activities have been undertaken at Tinda Creek Quarry for approximately 30 years with the quarry currently producing up to 125,000 tonnes of product per year. Hy-Tec has recently been granted approval by the NSW Department of Planning and Environment (DP&E) under development consent SSD_4978 to increase production levels from Tinda Creek Quarry from approximately 125,000 tonnes per annum (tpa) up to 300,000 tpa by increasing the area subject to sand extraction to include additional identified resource domains (the Project). The duration of the Project is expected to be approximately 30 years.

The development consent (SSD 4978) allows for continued operations of the Tinda Creek Quarry across a broader area which will enable the extraction of additional sand resources (refer to **Figure 1.2**).

1.2 Scope

This Noise Monitoring report has been prepared by Umwelt (Australia) Pty Limited (Umwelt), on behalf of Hy-Tec. The noise monitoring and reporting requirements for operations at Tinda Quarry are outlined in the development consent SSD_4978 and the Environment Protection Licence (EPL) 12007.

This report presents the results of attended noise monitoring undertaken in March 2017 to address both the requirements of the DP&E and the Environment Protection Authority (EPA).

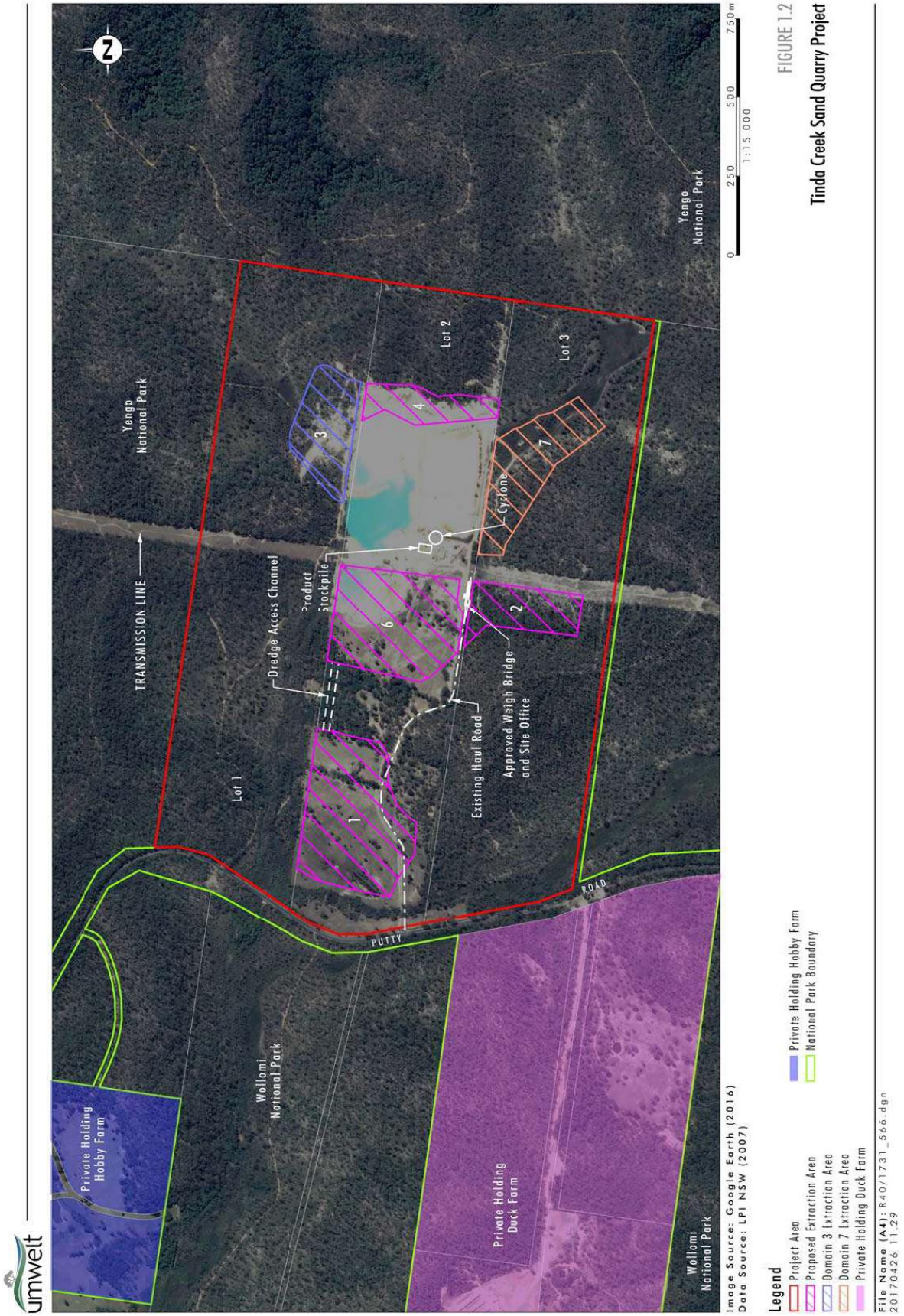
This Noise Monitoring Report has been prepared in accordance with the *NSW Industrial Noise Policy (INP)* (Environment Protection Authority (EPA), 2000) and the *Application Notes – NSW Industrial Noise Policy* (EPA, 2012).

A glossary of terms and abbreviations used in this report is provided in **Appendix 1**.



Legend
Project Area

FIGURE 1.1
Locality Map





2.0 Assessment Criteria

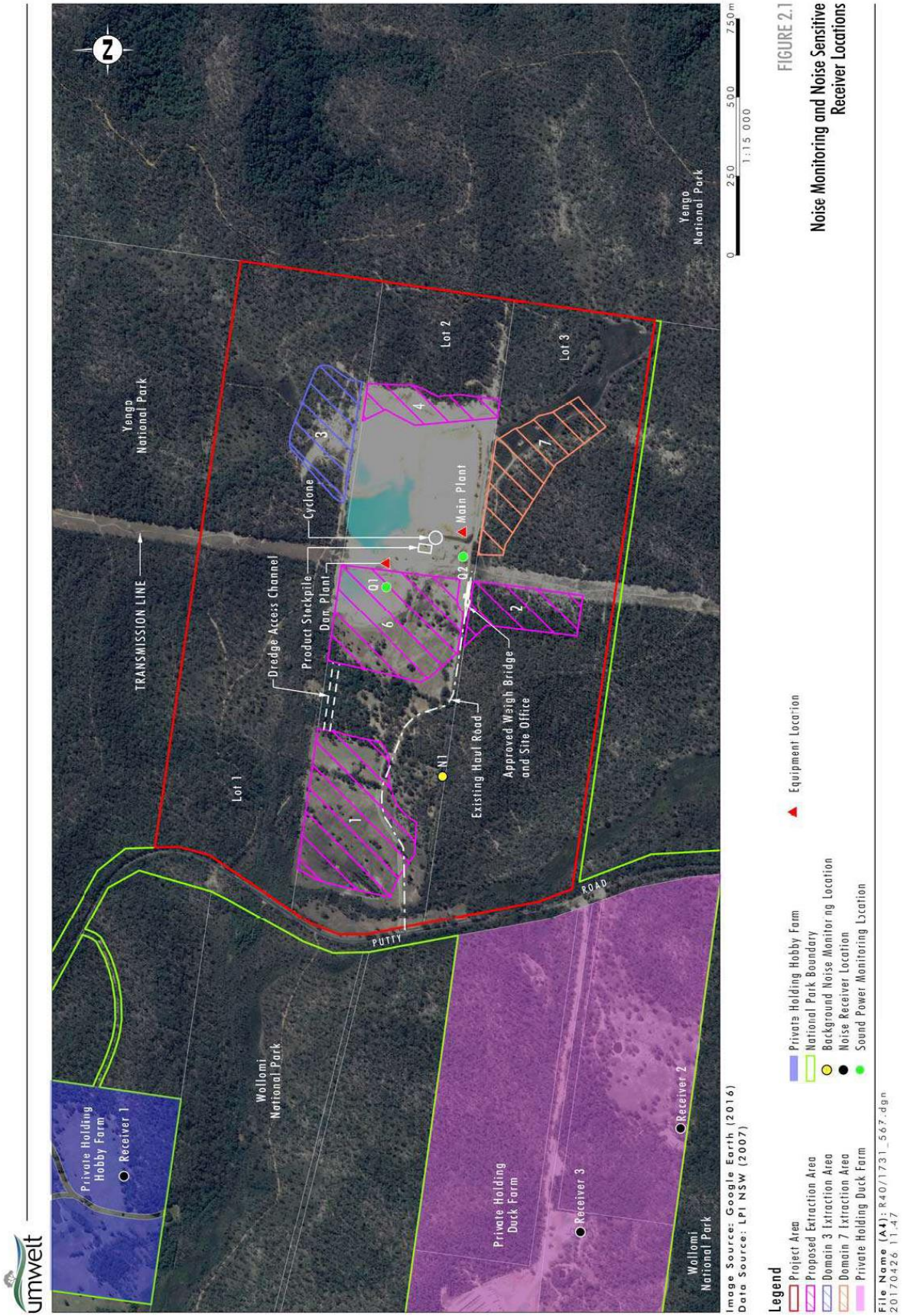
The noise criteria for Tinda Creek Quarry, as outlined in the development approval SSD_4978 and EPL 12007, are presented in **Table 2.1.**

Noise monitoring and noise sensitive receiver locations are show on **Figure 2.1.**

Table 2.1 Noise Criteria, dB(A)

Receiver	Day/Evening	Night	
	LAeq, 15 min	LAeq, 15 min	LA1, 1 min
All receivers (DP&E)/ Monitoring Point 1 (EPA)	35	35	45

Note: Day time is defined as 7:00 am to 6:00 pm Monday to Saturday and 8:00 am to 6:00 pm Sundays and Public Holidays, evening is 6:00 pm to 10:00 pm and night time is 10:00 pm to 7:00 am Monday to Saturday and 10:00 pm to 8:00 am Sundays and Public Holidays (EPA, 2000).





3.0 Assessment Methodology

3.1 Compliance Assessment

Attended noise surveys are used to quantify and describe the acoustic environment around a site. Typically the results are compared with the noise criteria defined in the relevant project approvals to assess compliance. Attended monitoring is often considered the preferred method for determining compliance with prescribed limits because it allows for an accurate assessment of the contribution, if any, from an industrial noise source to measured ambient noise levels.

The methodology usually involves the following activities:

- attended noise monitoring surveys to measure the ambient noise levels in the surrounding region and to assess the sand extraction operation's contribution to measured noise levels
- comparison of the attended noise monitoring results with the relevant noise impact assessment criteria to assess compliance of the sand extraction operations with the relevant project approval and EPL criteria.

To assess compliance with the noise limits specified within EPL 12007 attended noise monitoring is required to be undertaken at Receiver 1 on a yearly basis, for a minimum duration of 1 hour within the assessment period. The location of Receiver R1 is shown in **Figure 2.1**.

3.2 Revised DP&E Methodology

Following an email from DP&E dated 20 January 2017 (refer to **Appendix 2**) and subsequent discussions with DP&E in January 2017, it was agreed that monitoring at the nearest residential receiver (Receiver 1) to Tinda Creek Quarry had previously been problematic due to the location of Putty Road between the quarry operations and the residence. The road is a source of traffic noise and, combined with noise generated by wind in the surrounding trees, has generally masked any noise generated by the quarry.

As an alternative, DP&E recommended that noise monitoring is carried out at two locations close to the quarry, where the quarry is the dominant noise source, for two 15-minute periods at each site. Using this data the expected contribution of quarry noise to the noise environment at each of the residential receivers can then be calculated. During this monitoring DP&E has stipulated that the quarry should be operating under a worst-case noise scenario in terms of the number of items of equipment generating noise (such as the number of haul trucks in use) and under calm meteorological conditions. The location of each piece of quarry equipment at the time of monitoring is also to be recorded and reported.

Therefore, attended monitoring in addition to that described in **Section 3.1** above is required to be undertaken at two quarry locations, for a minimum of two separate 15-minute periods within the assessment period.

Should the results of this monitoring be low, then DP&E would only require this process to be repeated for each stage of the quarry that brings the operations closer to residences or if the production rate (and therefore the use of noise generating equipment) were to be increased from that initially measured.

The locations of the noise monitoring points within the quarry (Q1 and Q2) and approximate locations of respective equipment (Dam Plant and Main Plant) are shown in **Figure 2.1**.



4.0 Monitoring Program

4.1 Attended Monitoring

Attended noise measurements were undertaken on 27 March 2017 between 9:11 am and 10:17 am with a Larson Davis Model 831 Class 1 Sound Level Meter, Serial Number 0004379. During the attended noise surveys, the noise meter was calibrated using a Pulsar Model 106 Acoustic Calibrator, Serial Number 57364. The noise monitor was run using three measurement profiles (Z- (linear), C- and A- weighting) and recorded A-weighted 1/3 octave noise levels at 1 second intervals over a 15 minute measurement period. Meteorological data was collected during each of the attended monitoring periods using a Kestrel 4500 weather monitor, Serial Number 658027, positioned within 5 metres and at a corresponding height to the noise monitoring microphone.

Attended noise monitoring was conducted in accordance with the *Industrial Noise Policy (INP)* (EPA, 2000), *Application Notes – NSW Industrial Noise Policy* (EPA, 2012) and Australian Standard *AS1055-1989, 'Acoustics – Description and Measurement of Environmental Noise, Part 1 General Procedures'*.

4.2 Assessable Meteorological Conditions

In accordance with the methodology outlined in Section 3.4 of the INP (EPA, 2000), if any of the data in a 15 minute period was affected by the following meteorological conditions, noise monitoring for compliance with the criteria provided in **Table 2.1** would not apply:

- Affected by rain or hail; or
- Wind speeds in excess of 5 m/s at microphone height; or
- Wind speeds greater than 3 m/s measured at 10 metres above ground level; or
- Temperature inversion conditions greater than 3°C/100 metres.

4.3 Monitoring Results

The monitoring results shown in **Figure A3-1** to **Figure A3-4** in **Appendix 3** and **Table 4.1** to



Table 4.2 include:

- the recorded overall A-weighted noise levels at 1 second intervals over a 15 minute measurement period
- the results of a 1000 Hz low pass filter at 1 second intervals over the 15 minute measurement period
- an assessment of the maximum LA1,1minute noise level recorded over the 15 minute measurement period for night period measurements
- the LAeq,15minute and LA90,15minute noise levels for the 15 minute measurement period.

Comments regarding the noise sources contributing to the ambient noise levels are also presented on Figure A3-1 to Figure A3-4.

Table 4.1 Summary of Attended Noise Monitoring at Receiver R1 – 27 March 2017, dB(A)

Monitoring period	Measure	Measured noise level	Estimated contribution from Tinda Creek Quarry	Meteorological conditions
Day (9:11 am – 9:26 am)	LA90, 15 min	26.6	-	20°C, 88% RH, calm wind conditions, 2 octa cloud cover
	LAeq, 15 min	40.7	Barely Audible, not measurable.	
	LA1, 1 min	68.5	-	
Day (9:27 am – 9:42 am)	LA90, 15 min	27.4	-	22°C, 83% RH, calm wind to SSE gusts at 0.7 m/s, 2 octa cloud cover
	LAeq, 15 min	38.6	Not Audible	
	LA1, 1 min	64.6	-	
Day (9:45 am – 10:00 am)	LA90, 15 min	30.1	-	22°C, 80% RH, wind NNE to E at 0.0 to 0.5 m/s, gusting to 1.2 m/s, 2 octa cloud cover
	LAeq, 15 min	40.7	Barely Audible, not measurable.	
	LA1, 1 min	58.0	-	
Day (10:02 am – 10:17 am)	LA90, 15 min	28.1	-	21°C, 79% RH, wind SSE to WNW at 0.5 to 0.9 m/s, gusting to 1.3 m/s, 1 octa cloud cover
	LAeq, 15 min	40.6	Barely Audible, not measurable.	
	LA1, 1 min	59.4	-	



Table 4.2 Summary of Attended Noise Monitoring at Quarry – 27 March 2017, dB(A)

Location	Monitoring period	Measured sound power level dB(A)	Meteorological conditions	Operating conditions
Q1 (Dam Plant)	11:33 am – 11:43 am ¹	112	Calm meteorological conditions; No rain	<ul style="list-style-type: none"> • Caterpillar D8R Dozer. Dam earthworks, repeatedly working back (including broadband reverse alarm) and forth • Floating Dredge. Continuous operation of the diesel dredge.
Q2 (Main Plant)	11:56 am – 12:04 am ²	110	Calm meteorological conditions; No rain	<ul style="list-style-type: none"> • Diesel generator (continuous)/sand washer • Hyundai 320 Excavator • HL770-9 Front End Loader • Volvo BM A35 articulated dump truck

Note 1, 2: Noise monitoring was carried out at the two separate locations close to the quarry, where the quarry is the dominant noise source, for 10 minutes and 8 minutes respectively. Although not the 15-minute period requested at each site by the DP&E, the measurement durations were limited to 8 to 10 minutes to provide a measurement of maximum operational usage of noise generating equipment, thereby providing worst case noise emissions..





5.0 Assessment

5.1 Attended Noise Monitoring Compliance Assessment

During the attended noise monitoring program, the ambient noise levels at noise monitoring location NM1 were recorded with particular attention paid to the contribution of the quarry. Throughout the noise monitoring program, the quarry was found to either be inaudible at the monitoring location, or when audible, was not loud enough for a determination to be made on its contribution to the noise environment. Based on the monitoring data the contribution of the quarry was likely to be much less than 20 dB(A) at the time of monitoring which is below the SSD_4978 and EPL 12007 criteria of LAeq, 15minute 35 dB(A).

5.2 Revised DP&E Methodology – Quarry Noise Contribution

The combined sound power level (SWL) of the measured quarry operation on 27 March 2017 (refer to **Table 4.2**) is 114 dB(A). It is noted that the measured combined sound power level on the 27 March 2017 is consistent within the normal margins of error with the modelling undertaken as part of the Environmental Impact Statement in support of SSD_4978.

A basic distance attenuation calculation over 2 km would provide an attenuation of 74 dB. This would provide an estimation of quarry noise impacts at the nearest receivers of 40 dB(A) which is above the noise criteria for the site of LAeq, 15minute 35 dB(A). However, the topography surrounding the quarry provides significant shielding to the three closest receivers as shown in **Figures 5.1 to 5.3**.

Using the information from the cross sectional data shown in **Figures 5.1 to 5.3**, and the barrier attenuation calculation methodology from Section K p. 228-1 in the *Environmental Noise Control Manual* (EPA, 1993), it can be conservatively assumed that a barrier attenuation of at least 18 dB could also be applied in addition to the distance attenuation. The estimation of noise impacts from the quarry to the nearest receivers is shown in **Table 5.1**. The estimated quarry noise impacts at Receiver 1 are consistent with the attended noise monitoring compliance assessment and indicate that the assumptions involved in the calculation process are likely to be conservative and that the quarry is operating well within the relevant noise criteria.

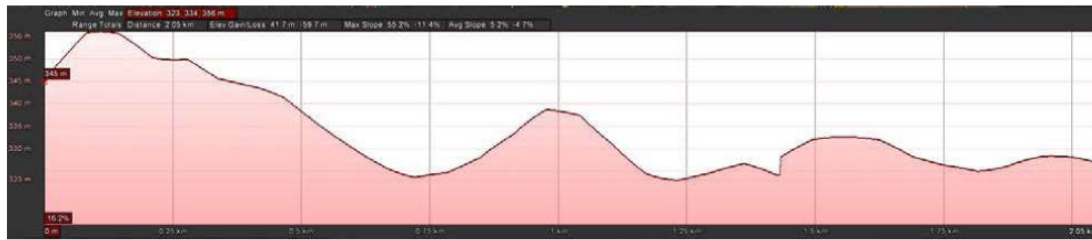
Table 5.1 Estimation of Quarry Noise Impacts

Receiver	Quarry Combined Measured SWL, dB(A)	Approximate Distance Quarry to Receiver, m	Distance Attenuation, dB	Attenuation Due to Terrain induced Barrier Effects ¹ , dB	Estimated Quarry Noise Impacts at Receiver, dB(A)
1	114	2050	74	18	22
2	114	2210	75	18	21
3	114	2030	74	18	22

Calculated Attenuation using methodology from Section 228-1 of the *Environmental Noise Control Manual* (EPA, 1993)



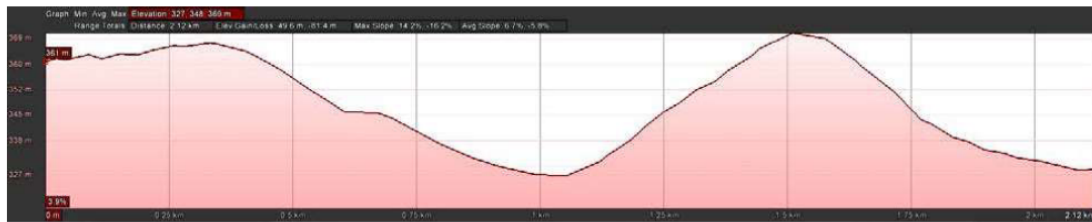
Figure 5.1 Receiver 1 to Quarry Cross Section



Source: Google Earth

Note: Figure is orientated from the left – west/receiver to the right – east/quarry.

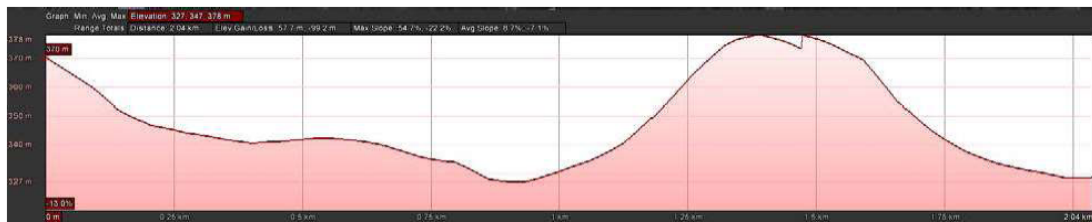
Figure 5.2 Receiver 2 to Quarry Cross Section



Source: Google Earth

Note: Figure is orientated from the left – west/receiver to the right – east/quarry.

Figure 5.3 Receiver 3 to Quarry Cross Section



Source: Google Earth

Note: Figure is orientated from the left – west/receiver to the right – east/quarry.





6.0 Conclusion

The results of the attended noise monitoring program (refer to **Table 4.1**) on 27 March 2017 indicate that the quarry was complying with the day time noise assessment criteria of SSD_4978 and EPL 12007 at location NM1 under the meteorological conditions at the time of monitoring.

The results of the Revised DP&E Compliance Methodology calculations indicate that the quarry has a low risk of exceeding the noise assessment criteria of SSD_4978 and EPL 12007 at the nearest residential receivers based on:

- shielding from quarry noise provided by the surrounding topographical relief
- distance from the quarry noise sources to the residential receivers.

The results of the Revised DP&E Compliance Methodology indicate that the calculated quarry noise contribution is low compared to the relevant criteria. In accordance with the email from DP&E dated 20 January 2017 (refer to **Appendix 2**), Hy-Tec proposes to undertake noise monitoring at Tinda Creek Quarry under the following circumstances:

- annually in accordance with EPL 12007 requirements
- in response to a community noise complaint
- after production commences on a stage of the quarry that brings the operations closer to the nearest residential receivers
- if the production rate (i.e. use of noise generating equipment) were to be increased from that measured in this or subsequent reports.



7.0 References

NSW Environment Protection Authority 1993. *Environmental Noise Control Manual*.

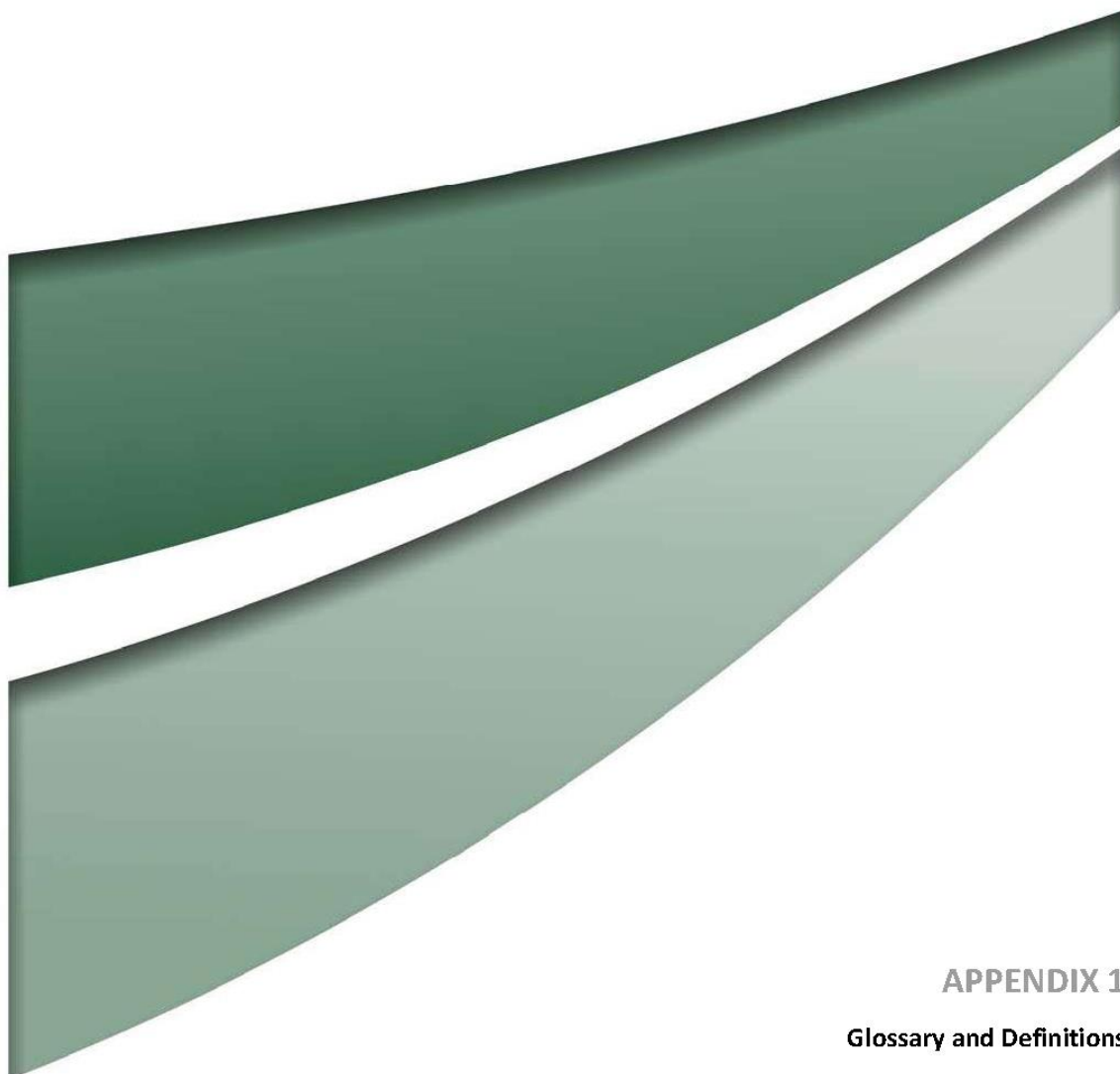
NSW Environment Protection Authority 2000. *New South Wales Industrial Noise Policy*.

NSW Environment Protection Authority 2012. *Application Notes – NSW Industrial Noise Policy*

Standards Australia 1989. *Australian Standard AS1055-1989 Acoustics – Description and Measurement of Environmental Noise, Part 1 General Procedures*.

Umwelt (Australia) Pty Limited 2013. *Environmental Impact Statement for Aus-10 Rhyolite Pty Ltd – Proposed Expansion of Tinda Creek Sand Quarry*.





APPENDIX 1
Glossary and Definitions



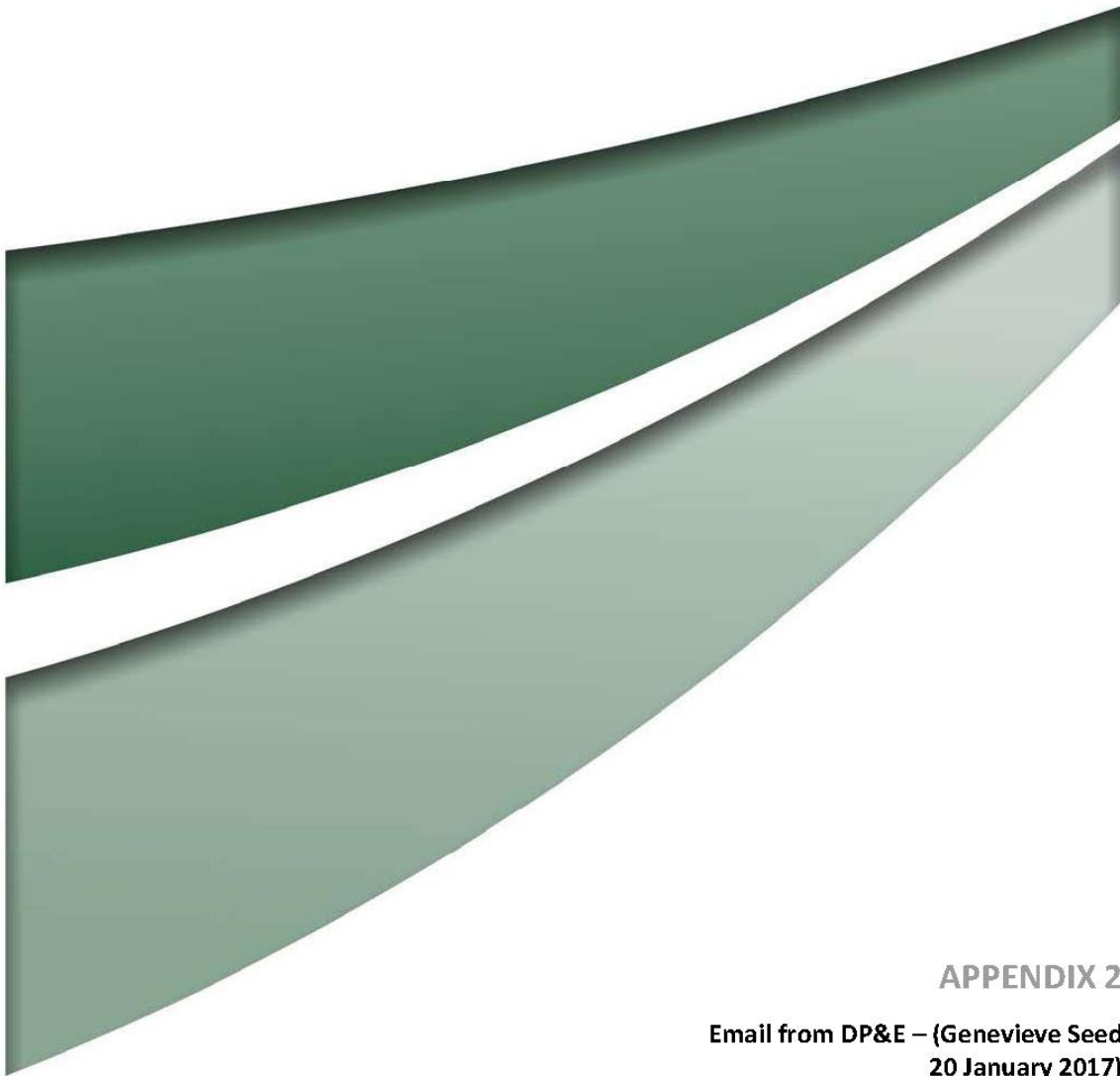
Appendix 1 – Glossary and Definitions – Acoustics

1/3 Octave	Single octave bands divided into three parts.
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment background level – A single-figure background noise level representing each assessment period – day, evening and night (that is, three assessment background levels are determined for each 24 hour period of the monitoring period). It is determined by taking the lowest 10th percentile of the L90 level for each assessment period.
Ambient Noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dB(A), dBA	Decibels A-weighted.
dB(L), dB(Lin)	Decibels Linear or decibels Z-weighted.
Decibel (dB)	The units of sound level and noise exposure measurement where a step of 10 dB is a ten-fold increase in intensity or sound energy and actually sounds a little more than twice as loud.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second – one oscillation per second equals 1 hertz.
LA10	The percentile sound pressure level exceeded for 10 per cent of the measurement period with 'A' frequency weighting calculated by statistical analysis. Typically used to assess the impact of an existing operation on a receiver area and is referred to as the cumulative noise levels at the receiver attributable to the noise source.
LA90	Background Noise Level. The percentile sound pressure level exceeded for 90 per cent of the measurement period with 'A' frequency weighting calculated by statistical analysis.
L _{Amax}	The maximum of the sound pressure levels recorded over an interval of one second.
LA1,1minute	The measure of the short duration high-level noises that cause sleep arousal. The noise level is measured as the percentile sound pressure level that is exceeded one per cent of measurement period with 'A' frequency weighting calculated by statistical analysis during a measurement time interval of one minute.





LAeq,t	Equivalent continuous sound pressure level – The value of the sound pressure level of a continuous steady noise that, a measurement interval of time (t), has the same mean square sound pressure as the sound under consideration whose level varies with time. Usually measured in dB with 'A' weighting.
LAn	Percentile level – A measure of the fluctuation of the sound pressure level which is exceeded 'n' per cent of the observation time.
RBL	Rating background level – The overall single figure background level representing each assessment period over the whole monitoring period determined by taking the median of the ABLs found for each assessment period.
SPL (dBA)	Noise: Sound pressure level – The basic measure of noise loudness. The level of the root-mean-square sound pressure in decibels given by: $\text{SPL} = 10 \cdot \log_{10} (p/p_0)^2$ where p is the rms sound pressure in pascals and p ₀ is the sound reference pressure at 20 µPa. decibels.
SWL	Sound power level – a measure of the energy emitted from a source as sound and is given by: $\text{SWL} = 10 \cdot \log_{10} (W/W_0)$ where W is the sound power in watts and W ₀ is the sound reference power at 10-12 watts.



APPENDIX 2

**Email from DP&E – (Genevieve Seed
20 January 2017)**

From: genevieve.seed@planning.nsw.gov.au
To: [Peter Jamieson](#)
Cc: Colin.Phillips@planning.nsw.gov.au
Subject: Tinda Creek Management Plans
Date: Friday, 20 January 2017 1:20:12 PM

Hi Peter

I left a message with your officer just before but I thought I would send you an email either way.

I have had discussions with Colin Phillips and our noise expert Jeff Parnell regarding the proposed Tinda Creek MP variations. The Department's position is outlined below.

Noise Monitoring Requirements

In respect of attended noise monitoring, it was agreed that monitoring at the nearest residential receiver is difficult. Putty Road lies between the quarry operations and the residential receivers. It is a source of traffic noise. In addition, it seems that the attended monitoring was picking up a lot of noise from wind in the trees. Such monitoring is not going to help us much in working out how much noise the quarry is making and how much of that noise would reach the residences. It is likely to be low, but what we want is a measurement of the actual noise impact of the quarry.

This can be achieved by conducting noise monitoring at location(s) that are close to the quarry where the quarry noise is dominant. The expected quarry noise contribution at the residential receivers can then be calculated.

The Noise MP should set out the location(s) where the noise will be measured, that the quarry should be operating under the worst-case conditions in terms of the use of numbers of items of equipment generating noise (such as the number of haul trucks in use). The measurements should be undertaken when the winds are calm and we don't encounter the wind in the trees type of interference with getting noise values from the quarry.

Monitoring at one site should be enough, as the residences are in the same general direction, but two sites would be a nice check and shouldn't cost much more as the consultant would be on site. I suggest two sites each monitored for 15 minutes and then repeated. The location of each piece of quarry equipment should be recorded and reported.

The calculated quarry noise contribution for each of the residential receivers should then be calculated.

If these values are low, then the Department would only require this process to be repeated for each stage of the quarry that either brings the operations closer to residences OR if the production rate (ie use of noise generating equipment) were to be increased from that initially measured.

In addition attended noise monitoring should be retained for use in the investigation of any received noise complaints

Landscape and Water MP Amendments

Considering the background of the Tinda Creek proposal and that we can expect close scrutiny of all our work on this project, there is a need for very clear information on the reasons for our decisions. As such, we require all comments that have been raised by the Department to be addressed in the revised management plans.

Submission of Management Plans

The Department accepts an extension of the time to submit all management plans by 3 February 2017, with the exception of the Noise Management Plan which is to be submitted by 24 February 2017, to allow time to conduct the initial round of attended noise monitoring.

I am happy to discuss any of the matters above.

Kind regards,


Gen

Genevieve Seed

Planning Officer
Resource Assessments
Level 22, 320 Pitt Street | GPO Box 39 | Sydney NSW 2001
T 02 9274 6489



Subscribe to our [newsletter](#)

We've moved  You can find us at our new office
Level 22, 320 Pitt St, Sydney, 2000

From: Colin Phillips
Sent: Friday, 20 January 2017 12:14 PM
To: Gen Seed <genevieve.seed@planning.nsw.gov.au>
Subject: Tinda Creek Noise

Gen,

I had a very fruitful discussion with Jeff Parnell this morning and discussed the background of the Tinda Creek proposal and that we can expect close scrutiny of all our work on this project. In particular there is a need for very clear information on the reasons for our decisions.

In respect of attended noise monitoring, Jeff and I agree that monitoring at the nearest residential receiver is difficult. The Putty Road lies between the quarry operations and the residential receivers. It is a source of traffic noise. In addition, it seems that the attended monitoring was picking up a lot of noise from wind in the trees. Such monitoring is not going to

help us much in working out how much noise the quarry is making and how much of that noise would reach the residences. It is likely to be low, but what we want is a measurement of the actual noise impact of the quarry.

This can be achieved by conducting noise monitoring at location(s) that are close to the quarry where the quarry noise is dominant. The expected quarry noise contribution at the residential receivers can then be calculated using mathematical formulas. (sometimes referred to as a point calculation).

The Noise MP should set out the location(s) where the noise will be measured, that the quarry should be operating under the worst-case conditions in terms of the use of numbers of items of equipment generating noise (such as the number of haul trucks in use). The measurements should be undertaken when the winds are calm and we don't encounter the wind in the trees type of interference with getting noise values from the quarry.

I think one monitoring site should be enough, as the residences are in the same general direction, but two sites would be a nice check and shouldn't cost much more as the consultant would be on site. I suggest two sites each monitored for 15 minutes and then repeated. The location of each piece of quarry equipment should be recorded and reported.

The calculated quarry noise contribution for each of the residential receivers should then be calculated.

If these values are low, then the Department would only require this process to be repeated for each stage of the quarry that either brings the operations closer to residences OR if the production rate (ie use of noise generating equipment) were to be increased from that initially measured.

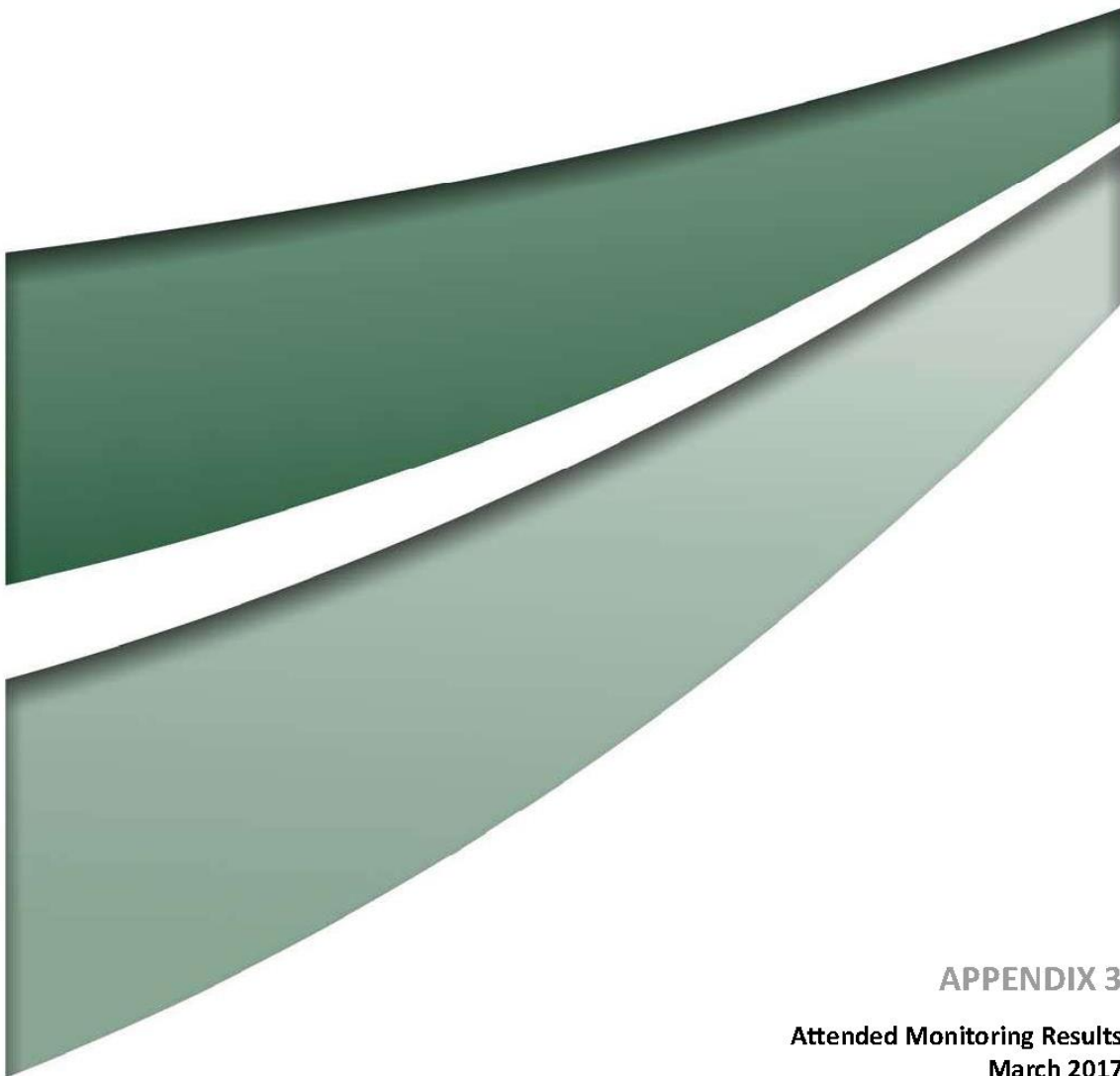
In addition attended noise monitoring should be retained for use in the investigation of any received noise complaints.

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Planning Services, Resources Assessments
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mail.



APPENDIX 3

**Attended Monitoring Results
March 2017**



Appendix 3 – Attended Monitoring Results

Autumn – March 2017

The results of the attended noise monitoring session are presented graphically as run charts in **Figure A3-1** to **Figure A3-4**.

Day Period Compliance Assessment

During the day period attended noise monitoring, the results indicated that under the meteorological conditions at the time of monitoring, Tinda Creek Quarry was complying with the LAeq, 15minute noise impact assessment criteria at R1 (based on the monitoring results from R1).

The estimated quarry noise contributions measured during the day period at R1 comply with the site's Environment Protection Licence LAeq, 15 minute criterion of 35 dB(A). It is considered that Tinda Creek Quarry was operating within its licensing and development consent requirements at the time of monitoring.



Day Monitoring Results for R1 – 6255 Putty Road, Mellong

Date and Time: 27 March 2017, 09:11 to 09:26

Observations:

The ambient noise environment at the monitoring location consisted of dominant contributions from the near continuous bird calls and intermittent road traffic noise from Putty Road. Other noise contributions resulted from insect noise.

The LAeq, 15 minute noise contribution from the Quarry resulted from only a few seconds of barely audible low-frequency (< 160 Hz) noise and was negligible.

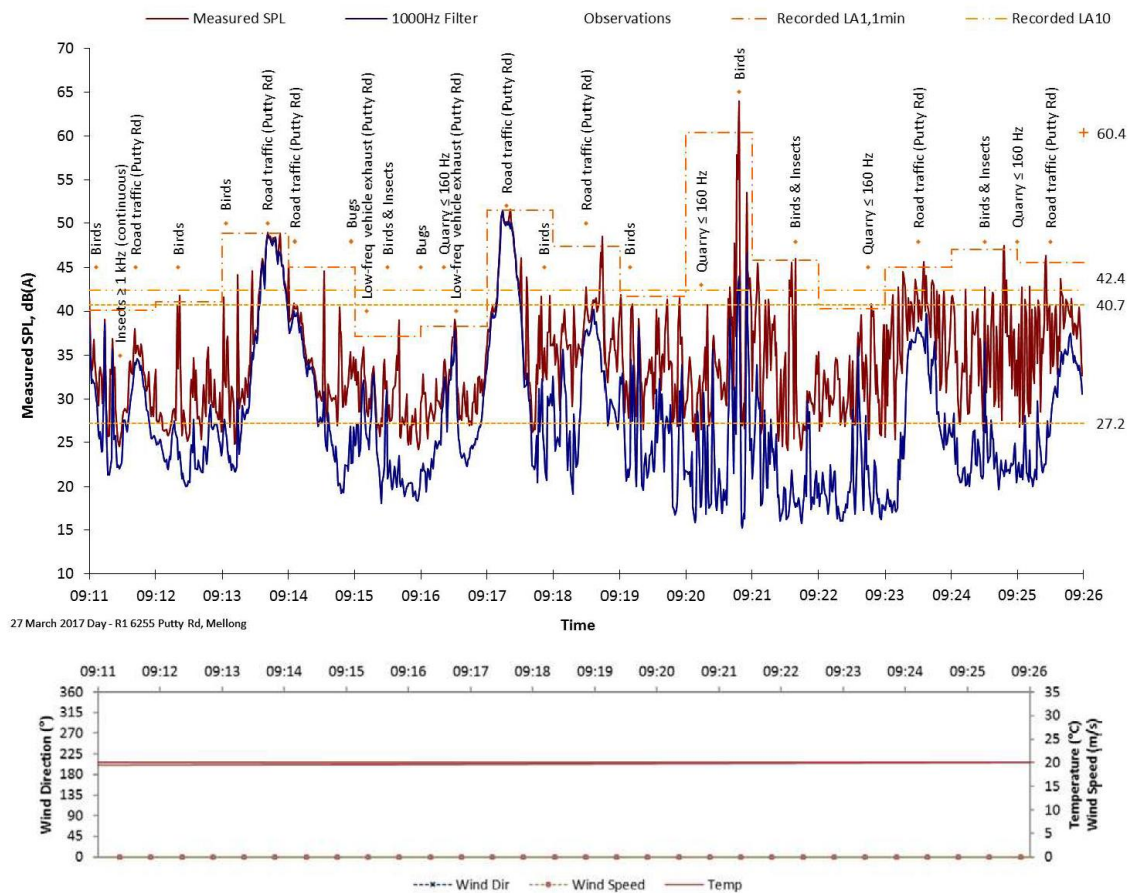


Figure A3-1

Day run chart for R1, 27 March 2017, 09:11 to 09:26





Day Monitoring Results for R1 – 6255 Putty Road, Mellong

Date and Time: 27 March 2017, 09:27 to 09:42

Operator Comments:

The ambient noise environment at the monitoring location consisted of dominant contributions from the near continuous bird calls and intermittent road traffic noise from Putty Road. Other noise contributions resulted from insect noise.

The LAeq, 15 minute noise contribution from the Quarry resulted from only a few seconds of barely audible low-frequency (< 160 Hz) noise and was negligible.

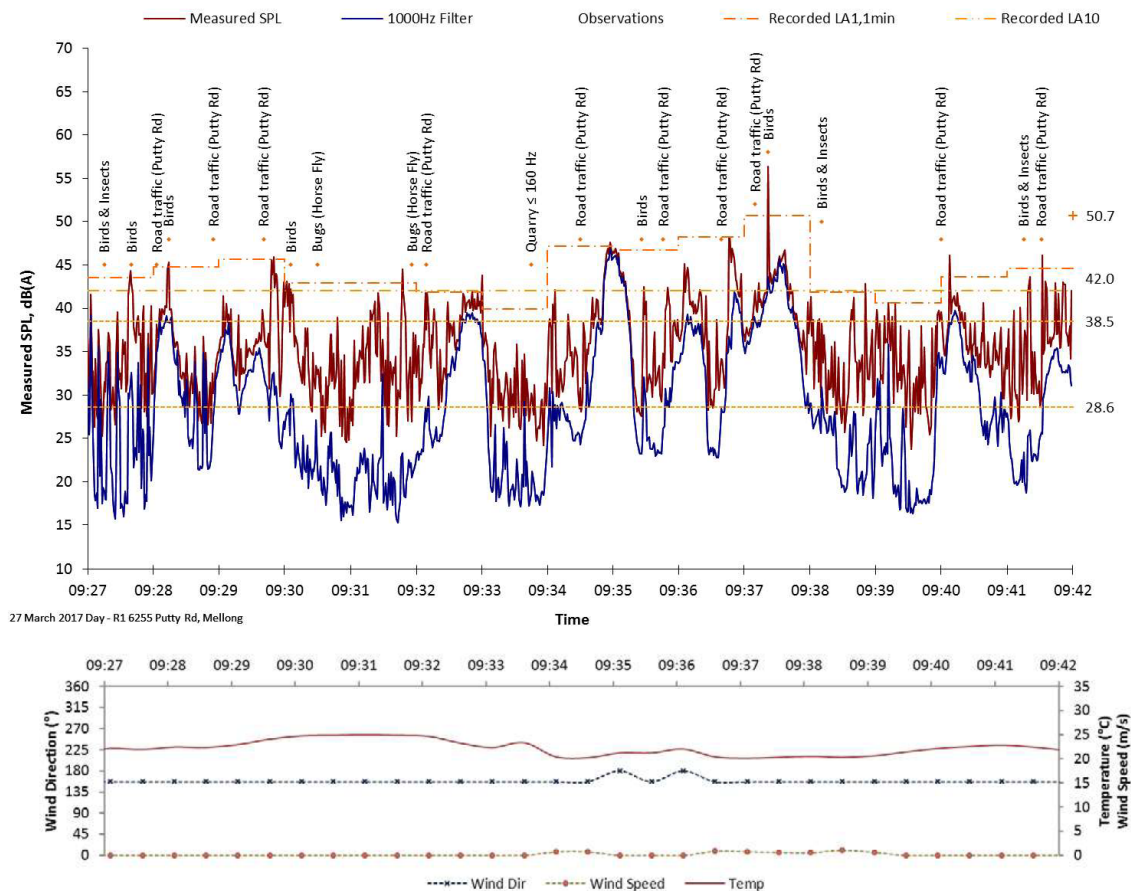


Figure A3-2

Night run chart for R1, 27 March 2017, 09:27 to 09:42





Day Monitoring Results for R1 – 6255 Putty Road, Mellong

Date and Time: 27 March 2017, 09:45 to 10:00

Operator Comments:

The ambient noise environment at the monitoring location consisted of dominant contributions from the near continuous bird calls and intermittent road traffic noise from Putty Road. Other noise contributions resulted from insect noise.

The LAeq, 15 minute noise contribution from the Quarry was inaudible and not measurable.

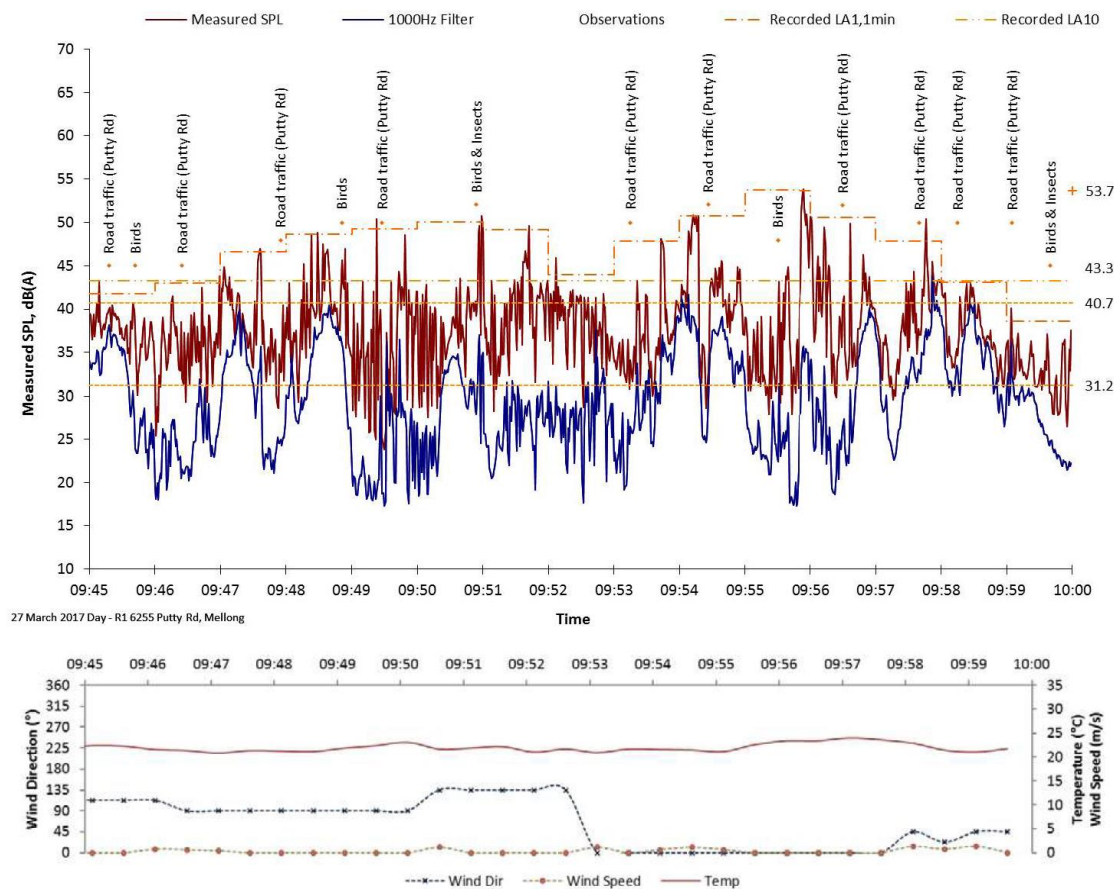


Figure A3-3

Day run chart for R1, March 2017, 09:45 to 10:00





Day Monitoring Results for R1 – 6255 Putty Road, Mellong

Date and Time: 27 March 2017, 10:02 to 10:17

Operator Comments:

The ambient noise environment at the monitoring location consisted of dominant contributions from the near continuous bird calls, and aircraft flyover and intermittent road traffic noise from Putty Road. Other noise contributions resulted from insect noise.

The LAeq, 15 minute noise contribution from the Quarry resulted from only a few seconds of barely audible low-frequency (< 160 Hz) noise and was negligible.

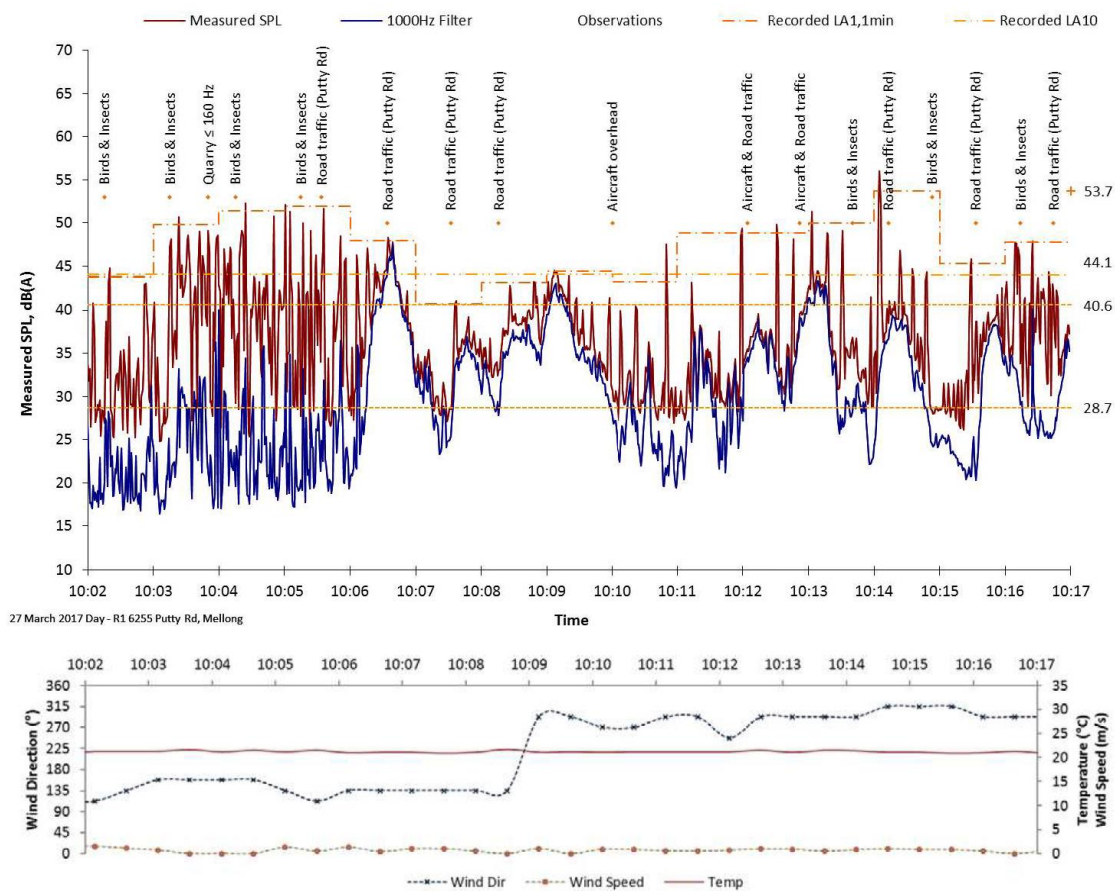


Figure A3-4

Night run chart for R1, 27 March 2017, 10:02 to 10:17





Newcastle

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Teralba NSW 2284

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50 York Street
Sydney NSW 2000

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Brisbane

Level 11
500 Queen Street
Brisbane QLD 4000

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Appendix 5

Minutes of Tinda Creek Quarry Community Consultative Committee

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**TINDA CREEK SAND PROJECT
COMMUNITY CONSULTATIVE COMMITTEE
MINUTES OF MEETING HELD MONDAY 8TH MAY 2017
ON SITE AT MELLONG**

	NAME	ORGANISATION
PRESENT	Lisa Andrews (LA)	Independent Chairperson
	John Pine (JP)	Community Representative
	Ray Campbell (RC)	Community Representative
	David Cilento (DC)	Hy-Tec
	Darryl Thiedeke (DT)	Hy-Tec
	Lee Attard (LA)	Hy-Tec
	Ray Bygraves (RB)	Hy-Tec
	Brigitte Lewis (BL)	Community Representative
APOLOGIES	Bruce Mansell (BM)	Community Representative
	Kathleen Withers	Compliance Officer (DP&E)

The CCC Meeting was opened at 9.04am

WELCOME	The chair welcomed all present and thanked them for their attendance. It was explained that the invited guest; Kathleen Withers, Compliance Officer with the Department Planning & Environment was a late apology.	
DECLARATION OF INTEREST	LA declared that she is approved by the Department of Planning and Environment to chair the meeting and engaged by Hy-Tec. The attendance sheet was distributed for signing.	No changes to members declarations
CONFIRMATION OF PREVIOUS MINUTES	The draft minutes of the previous meeting held on 10 th October 2016 were confirmed. LA advised that this process has changed with the release of the new Community Consultative Committee Guidelines for State Significant Developments. LA advised that she would provide a briefing in General Business.	Moved: JP Secoded: RC
BUSINESS ARISING	The action item from 9/5/16 remains outstanding, however, arrangements are being made to finalise.	RB to liaise with RFS on access arrangements to the site, including induction of some RFS members
CORRESPONDENCE	<ul style="list-style-type: none"> • 17/11/16 – Email to CCC members with the draft minutes from the 10-10-16 meeting • 17/11/16 – Letter to Ray Campbell with the same information • 24/4/17 – Email to CCC members with the Meeting Notice & Agenda for this meeting • 24/4/17 – Letter to Ray Campbell with this information • 25/4/17 – Email from BL regarding the action item from previous meeting (induction of RFS members) • 25/4/17 Email response to BL on this matter • 7/5/17 – Email reminder to CCC members 	Moved: LA Secoded: BL

	<ul style="list-style-type: none"> 8/5/17 – Email from Kathleen Withers (DP&E) with an apology for this meeting. 	
<p>REPORT</p>	<ul style="list-style-type: none"> DT provided his report – questions were asked and answered throughout the presentation: <ul style="list-style-type: none"> Business as usual Management Plans are currently with the department for final review. Increase in production – 150,000t-200,000t – Maximum limit of the quarry being 300,000t per annum New dredge will boost capacity Recapping the first silt pond underway Rehabilitation delayed due to rain Tree Planting Program occurring Double washing system to be installed to help remove clay from the final product Industry requesting a less fatty product as the cleaner the sand, the less cement needs to be added Greater market for cleaner sand Some requirements for fatty sand (ie pool manufacture/lining) Bores not yet finished – waiting for area to dry out to enable equipment to access the site. 	<p>RC stated that there doesn't seem to have been an increase in truck movements, considering the increase in production.</p>
<p>GENERAL BUSINESS</p>	<ul style="list-style-type: none"> LA provided a briefing on the new Community Consultative Committee Guidelines for State Significant Developments (November 2016) and also distributed the Code of Conduct and Pecuniary/Non-Pecuniary Interest forms for completion. The briefing provided a summary of the more significant changes: <ul style="list-style-type: none"> The guidelines cover all SSD projects (mining, wind farms, solar, extractive industries, infrastructure, etc) The committees can now be set up early in the assessment process Improved governance; Code of Conduct & Pecuniary/Non-Pecuniary Interest Forms A pool of Independent Chairs will be recruited by DPE Review of the guidelines every 5 years. Increase in community membership – now up to 7. Chair's to provide an annual report to DP&E for publishing on the website Change to draft minutes and finalising of minutes Observers – chair's consult with CCC. RC suggested that all trucks have logos and phone numbers on them so they can be identified. Advised this is part of the Tinda Creek Code of Conduct (which all drivers have been required to sign) and compliance auditing. 	

<p>GENERAL BUSINESS (continued)</p>	<ul style="list-style-type: none"> • RC questioned – given the large amount of truck movements from Tinda Creek Quarry and the road levy they pay to Council; what influence does HY-Tech have with RMS on where the contributions are spent. DT advised that they had no influence over budget spending and programmed maintenance works in the area. • RB advised that contractors are used to maintain road sides (whipper snipping, mowing, etc) • BL raised concern with some of the dangerous trees located on the road reserve. • BL stated that works appeared to be carried out where not needed and other sections of road remain untouched. • BL asked that the driver who called in the motor vehicle accident and stayed with the driver and family prior to emergency services attending, be thanked for his efforts. <p>Motion by RC: That CCC write to RMS (copy to Hawkesbury Council) asking how it determines what money is spent and how the program is prepared. Also include a request to remove the double lines 3km on the northern side of Colo Heights Station – southbound to Windsor, as it has the ability to be an overtaking area.</p>	
<p>NEXT MEETING</p>	<p>The next meeting of the CCC will take place on <u>Monday 16th October 2017</u> commencing at 9am (on site).</p>	

Meeting closed at 9.56am with LA thanking all CCC members for their attendance.

ACTION ITEMS

ITEM	ISSUE	RESPONSIBILITY
1	LA to write to RMS (copy to Hawkesbury Council) regarding road levy and disbursement of funding for maintenance & upgrading of roads in the area.	LA



**TINDA CREEK SAND PROJECT
COMMUNITY CONSULTATIVE COMMITTEE
MINUTES OF MEETING HELD MONDAY 16TH OCTOBER 2017
ON SITE AT MELLONG**

	NAME	ORGANISATION
PRESENT	Lisa Andrews (LA)	Independent Chairperson
	John Pine (JP)	Community Representative
	Ray Campbell (RC)	Community Representative
	David Cilento (DC)	Hy-Tec
	Darryl Thiedeke (DT)	Hy-Tec
	Lee Attard (LAT)	Hy-Tec
	Michael Walton (MW)	Hy-Tec
	Carolyn Fisher (CF)	ABL (Observer)
	Bruce Mansell (BM)	Community Representative
	Elizabeth Williamson (EW)	DPE – Compliance Officer (Invited Guest)
	Chris Schultz (CS)	DPE – Senior Compliance Officer (Invited Guest)
APOLOGIES	Ray Bygraves (RB)	Hy-Tec
	Brigitte Lewis (BL)	Community Representative

The CCC Meeting was opened at 9.06am

WELCOME	The chair welcomed all present and thanked them for their attendance. Elizabeth Williamson and Chris Schultz, Compliance Officers with the Department Planning & Environment were introduced.	CS explained the roles of himself & EW with DPE.
DECLARATION OF INTEREST	LA declared that she is approved by the Department of Planning and Environment to chair the meeting and engaged by Hy-Tec. The attendance sheet was distributed for signing.	No changes to members declarations
BUSINESS ARISING	In accordance with the guidelines, the minutes from the previous meeting were finalised on 23/5/17. Action Item: LA to write to RMS (copy to Hawkesbury Council regarding road levy and disbursement of funding for maintenance & upgrading of roads in the area.	Complete. No response to date.
CORRESPONDENCE	<ul style="list-style-type: none"> • 15/5/17 – Email to CCC members with the draft minutes from the 8-5-17 meeting • 15/5/17 – Letter to Ray Campbell with the same information • 23/5/17 – Email to CCC members with the finalised minutes from the 8/5/17 meeting • 23/5/17 – Letter to RMS (copy to HSC) as per action item • 15/6/17 – Letter to Neville Diamond enclosing hard copies of the minutes of this CCC as well as contact details for members • 30/9/17 - Email to CCC members with the Meeting Notice & Agenda for this meeting • 30/9/17 – Letter to Ray Campbell with this information 	Moved: LA Seconded: JP

	<ul style="list-style-type: none"> • 5/10/17 – Email from Elizabeth Williamson Compliance Officer with DPE asking to attend this meeting with her colleague Chris Shultz • 5/10/17 – Email from chair advising that they were welcome to attend • 9/10/17 – Email from Neville Diamond enclosing complaints for consideration by CCC • 9/10/17 – Email to Neville Diamond acknowledging complaints and advising they would be tabled at this meeting. I note that John Pine also acknowledged the email. I'll move this item to the Project Update Section for Hy-Tec's response. • 12/10/17 – Email from John Pine stating that he may be late today due to a hay delivery. 	
<p>REPORT/PROJECT UPDATE</p>	<ul style="list-style-type: none"> • LA commenced with the correspondence from Mr Diamond, stating that she had read through the documentation attached to the emails and noted that these letters were addressed to the DPE in May 2017 and were a matter for their response. However; the question posed in the email would be asked of the company "Why has Tinda Creek stopped flowing"? The chair asked DT to respond. • DT stated that anecdotally it was difficult to determine the length of time and location that was being referred to, however, was of the opinion that Tinda Creek has never "always flowed" in the region of the quarry location as there is no actual creek and it is overland flow in this area, so requires significant rainfall to generate overland water flow. Of course the flow is dependent on the weather/rain events. Discussions with long term local residents indicate that there has never been a constant flow in the creek. • RC commented that the creeks are sub-terrarium and dry up. A good example is when you look at the rivers, which show sand bars; water flows underneath, etc. • DT explained overland flow and it was suggested that a topography map showing the water courses in and around the property be shown at the next meeting. • DT advised that Hy-Tec have been working with DPE over the last period, following some concerns. One small breach in the water system was detected and penalty notices were issued. Adjustments have been made to prevent any further non-compliance. • Explanation on the changes to the diversion channel. The bund wall in extraction pit 2 will extend further and will act as a diversion drain. • Two water systems are now operating. • Hy-Tec are to submit plans to EPA • The audit is continuing. • DC described the current works; rehabilitation, clearing of vegetation, water flows, etc. The trees will be mulched and trunks will be placed at the rear of the site for habitat. 	<p>Happy to investigate further if specific GPS location and information on where it is not flowing is provided.</p> <p>Topography map to be presented at the next meeting</p>

	<ul style="list-style-type: none"> Truck movements are continuing as usual and production is currently operating at roughly half of approved limit. Sand is being double washed; a second tub and pumps are now in place. 	
PRESENTATION BY DPE	<ul style="list-style-type: none"> A presentation was provided by CS, which detailed the role of the compliance section. It was explained that members of the public may contact the department direct if they have any concerns, however, it was recommended that any amenity issues, noise, dust, traffic safety, etc should be reported initially to the company so that mitigation can occur. 	1300 number to be provided by EW.
GENERAL BUSINESS	<ul style="list-style-type: none"> JP raised concern with the redeployment of Ray Bygraves, stating that Ray was a figure head of the company with a strong standing in the local community. It was stated that there is a new Progress Association being established in the area. 	
NEXT MEETING	<p>The schedule for 2018 was discussed. It was agreed that the meetings be held along the same timetable as 2017, being: <u>Monday 14th May 2018; and</u> <u>Monday 15th October 2018</u> commencing at 9am (on site).</p>	

Meeting closed at 10.20am with LA thanking all CCC members, Chris Shultz and Elizabeth Williamson for their attendance.

ACTION ITEMS

ITEM	ISSUE	RESPONSIBILITY
1	Topography map to show water courses	DT
2	Presentation by DPE to be included	EW/LA
3	1300 number to be provided to CCC members	EW/LA

Appendix 6

Ecological Monitoring Report

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Niche Environment and Heritage
PO Box 2443 North Parramatta NSW 1750
T 02 9630 5658 F 02 4017 0071
E info@niche-eh.com ABN 191 37 111 721
Excellence in your environment

mstanton@niche-eh.com

5 July 2017

Darryl Thiedeke
Adelaide Brighton Ltd
Darryl.Thiedeke@adbri.com.au

Dear Darryl

Re: Establishment of permanent monitoring plots for *Grevillea parviflora* at Tinda Creek offset area

On 20th March 2018 Niche performed a survey and established a series of permanent monitoring plots for *Grevillea parviflora* subsp. *parviflora* (Small-flowered Grevillea) on the offset area adjacent to the Tinda Creek sand quarry, Putty Road, Mellong, NSW.

As a guideline for this survey Niche used three conditions set-out in section 7.2.5 of the May 2017 management plan for the site:

- stem counts in permanent plots
- photo monitoring to assist in recording observable changes over time
- habitat quality and evidence or not of adverse impacts

The minimum suggested number of plots was exceeded in this study (nine plots as opposed to “two of the four transects/plots”). The time of year made it more difficult to rapidly recognise plants, including the *Grevillea*. It is recommended that future surveys are undertaken during the species known flowering period (July to December).

While this is the baseline data for monitoring, *Grevillea parviflora* was observed to remain common through the offset area with a median measured density of 1800 stems per hectare.

I have included the methods and results of the survey in the following attached document.

Yours sincerely

A handwritten signature in black ink that reads "Matthew Stanton".

Matthew Stanton
Niche Environment and Heritage



Scope of the survey for *Grevillea parviflora* subsp. *parviflora*

The following statement has guided the establishment of the permanent monitoring plots. “The goal of the monitoring is to ensure that the expansion of quarry activities does not have an adverse effect on the habitat of *Grevillea parviflora* and that the habitat for the species is maintained or improved over the life of the operation”.

Because the surveys were done out of flowering season, the numbers recorded may be expected to be an under estimate.

Methods

Plot establishment.

The two areas mapped as containing *Grevillea parviflora* (Umwelt 2017) measure approximately 5.4 hectares for the southern group and approximately 4.4 hectares for the northern group although this depends on how one defines the area. It was decided that a sampling ratio of around 1:100 would be appropriate. Nine 10x10 metre plots were randomly located in the two areas, five in the southern area and four plots in the northern area. Plot location conditions were that there was to be a minimum distance of 50 metres between plot centres and that there must be a confirmed presence of *Grevillea parviflora* within sight of the plot (even if there were none within the plot).

10x10 metre plots were chosen as these will form a component of general flora surveys for other monitoring requirements. The established plots may become part of the future flora survey plots.

Each plot was aligned to the UTM grid. The corner co-ordinates are given in Table 1 and plot locations shown in Figure 1. All plots contained at least one tree trunk and these were marked with paint to aid relocating the plots. Each corner of the plot was marked with a painted marker.

Grevillea counts

Grevilleas were counted by individual stem except where the stems were clearly radiating from the same base, i.e. where stems were issuing from within a few centimetres of each other at ground height. To minimise trampling, counting was first performed around the perimeter of the plot, then transiting a smaller square within the plot about three metres inside the boundary. This method was varied depending on the density and height of vegetation within the plot which sometimes meant that individual stems were obscured until the observer was almost on top of them. Approximately 10 to 15 minutes was taken for each search by a single observer. This time may be able to be reduced for spring searches where the Grevilleas are flowering.

Plot photographs

A photograph was taken from the north-east corner of each plot looking directly towards the south west corner. The camera was located at 1.5 m high with the top edge of the photograph keeping some sky present but the camera angled down by about 10°. The images were in a 3:4 ratio in landscape orientation with a 64° field of view (broadly equivalent to a 28 mm lens on a 35mm camera). Photographs should be representative enough of the site to allow for an assessment of reasons for dramatic changes in the grevillea count.



Table 1: Corner point co-ordinates for Grevillea parviflora stem count plots

Point Name	Zone (GDA)	Easting	Northing
Gp01ne	56H	286483	6327773
Gp01nw	56H	286473	6327773
Gp01se	56H	286483	6327763
Gp01sw	56H	286473	6327763
Gp02ne	56H	286491	6327702
Gp02nw	56H	286481	6327702
Gp02se	56H	286491	6327692
Gp02sw	56H	286481	6327692
Gp03ne	56H	286594	6327597
Gp03nw	56H	286584	6327597
Gp03se	56H	286594	6327587
Gp03sw	56H	286584	6327587
Gp04ne	56H	286591	6327545
Gp04nw	56H	286581	6327545
Gp04se	56H	286591	6327535
Gp04sw	56H	286581	6327535
Gp05ne	56H	286696	6327526
Gp05nw	56H	286686	6327526
Gp05se	56H	286696	6327516
Gp05sw	56H	286686	6327516
Gp06ne	56H	286687	6328520
Gp06nw	56H	286677	6328520
Gp06se	56H	286687	6328510
Gp06sw	56H	286677	6328510
Gp07ne	56H	286733	6328462
Gp07nw	56H	286723	6328462
Gp07se	56H	286733	6328452
Gp07sw	56H	286723	6328452
Gp08ne	56H	286745	6328561
Gp08nw	56H	286735	6328561
Gp08se	56H	286745	6328551
Gp08sw	56H	286735	6328551
Gp09ne	56H	286784	6328238
Gp09nw	56H	286774	6328238
Gp09se	56H	286784	6328228
Gp09sw	56H	286774	6328228
Photo point ()	56H	286474	6327780

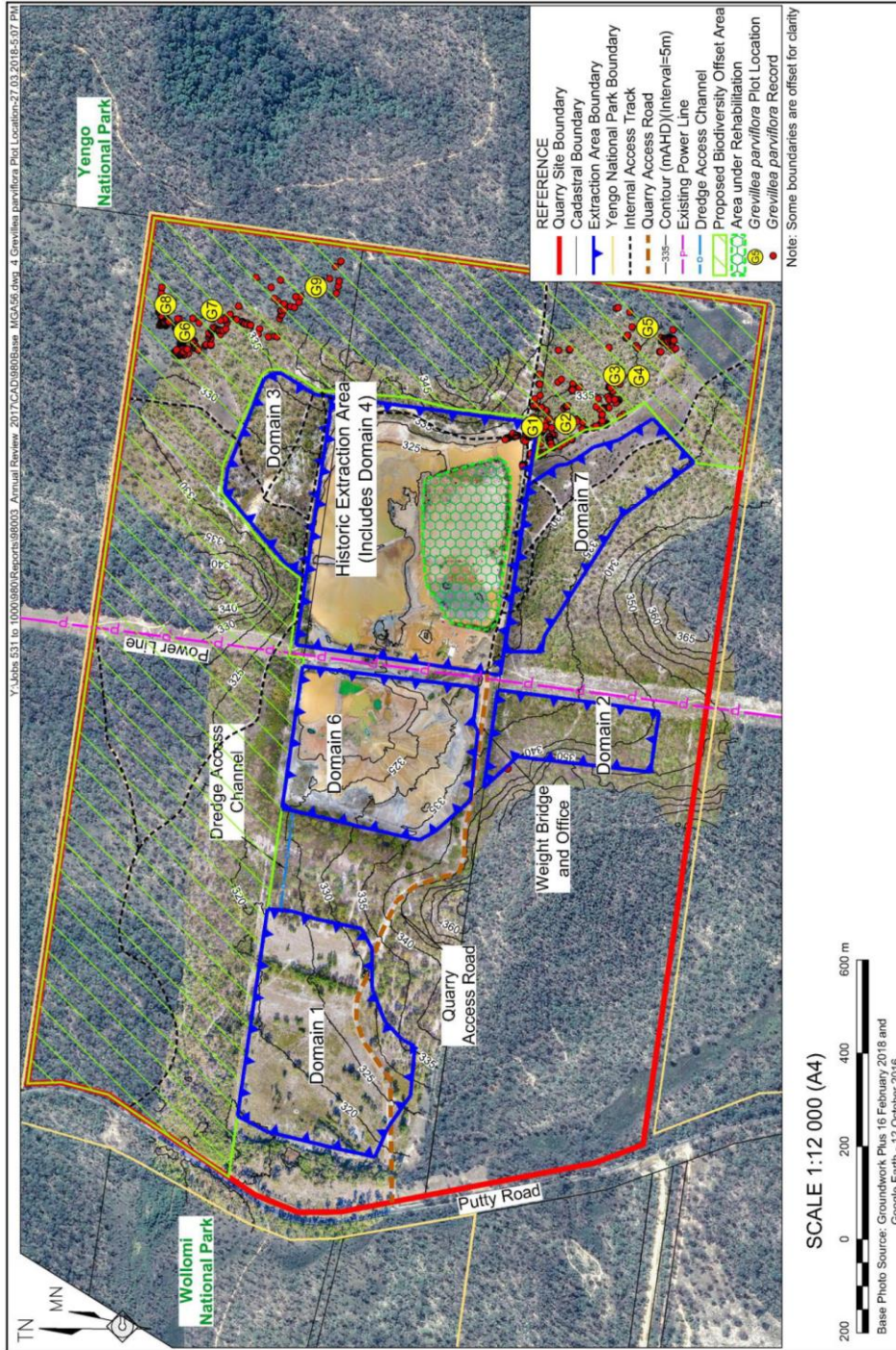


Figure 1: Map of Tinda Creek operations areas including the *Grevillea parviflora* records and permanent monitoring plots.

Area search

A walk was undertaken around the approximate boundary of the two population areas searching for additional and continued occurrences of *Grevillea parviflora*. Plants that were clearly additional to those already mapped were recorded.

Results

Plot stem counts

Table 2 presents the stem counts in each of the nine plots. Each plot had some stems of *Grevillea parviflora*. The plots with the highest density were all in the southern group of plots. There were a total of 212 stems counted which represents approximately a quarter of all the previous records. This gives an average density of 2356 stems/ha. There was a median density of 1800 stems/ha. Based on the plot with the lowest stem count, we might expect that there are a minimum of 1800 *Grevillea parviflora* stems on the site. It is not clear if earlier records (2011/2012) were made on all stems or larger groups of stems representing a single plant.



Plate 1: Small specimens of *Grevillea parviflora* without flowers and standing less than 300 mm high. Easily overlooked.

Table 2: *Grevillea parviflora* stem counts for nine 10x10 m plots at Tinda Creek offset area

Group	Name	<i>Grevillea parviflora</i> count	Notes
South	Gp01	18	Significant numbers of <i>Grevillea parviflora</i> to south of plot. Substantial tree regeneration on the NW side of the plot
South	Gp02	51	More <i>Grevillea parviflora</i> to the south.
South	Gp03	33	Heath reverting to forest
South	Gp04	47	Larger shrubs dominate plot
South	Gp05	20	<i>Grevillea parviflora</i> evenly spread around plot
North	Gp06	16	Sedge heath
North	Gp07	11	Dense <i>Angophora bakeri</i> regeneration
North	Gp08	14	<i>Grevillea parviflora</i> mostly very small
North	Gp09	2	Diverse (floristic and structural) heath

Plot photo monitoring

The plot photos are presented below. As with the permanent plot stem counts, these will become valuable in following years of monitoring.



Gp01



Gp02



Gp03



20 March 2018

Gp04



20 March 2018

Gp05



Gp06



Gp07



Gp08



Gp09

Area search observations

The general area search did not reveal any additional stands of *Grevillea parviflora* more than 15 m (the approximate reliability of non-differential GPS) from already mapped plants although there were substantial numbers of plants encountered, particularly in woodland more than in open “swamp” environments. There seemed to be a notable absence of *Grevillea parviflora* immediately adjacent to tracks or other disturbance. However, they were present after about one meter into undisturbed vegetation. Some of the densest areas of *Grevillea parviflora* stems were in areas that appeared to have been old tracks, now revegetated with a range of sedges and small heath plants including the grevillea.

Judging from imagery available through Google Earth, there has been no recent disturbance of the *Grevillea parviflora* habitat in the offset area, since the current management plan was implemented.

An additional photo point was established at the edge of the approved disturbance area (about 7 metres north of plot 1) with photos taken looking south-east (Plate 2) and south west (Plate 3).



Plate 2: Additional photo point looking south-east



Plate 3: Additional photo point looking south-west

Because the photo point is at the edge of the disturbance, any continuing encroachment of the pit into the *Grevillea parviflora* habitat will be relatively obvious

Appendix 7

Return for Extractive Industries – June 2017

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Planning &
Environment
Resources & Geoscience

Form S 1

RETURN FOR EXTRACTIVE MATERIALS: YEAR ENDED 30 JUNE 2017

Quote RIMS ID in all correspondence

Quarry Id: Rims ID: 401060
Operators Name: HY-TEC QUARRY
Address: 6102 SINGLETON RD
COLO HEIGHTS
NSW 2756

Email: raymond.bygraves@hy-tec.com.au

Quarry Name: TINDA CREEK QUARRY
Quarry Location: 6102 PUTTY RD, MELLONG

Inquiries please telephone:
(02) 4931 6435
Completed or Nil Returns
Fax - (02) 4931 6776
Email -
mineral.royalty@industry.nsw.gov.au
Postal Address (see address below)

Please amend name, postal
address and location of mine or
quarry if incorrect or incomplete

The return should be completed and forwarded to the **STATISTICAL OFFICER, ROYALTY & ADVISORY SERVICES, NSW PLANNING & ENVIRONMENT, PO BOX 344 HUNTER REGION MAIL CENTRE NSW 2310** on or before **31 October 2017**. If completion of the return is unavoidably delayed, an application for extension of time should be requested **before** the due date. If no work was done during the year, a **NIL** return must be forwarded.

The return should relate to the **above quarrying establishment**, and should cover the operations of quarrying and treatment (such as crushing, screening, washing etc.) carried out at or near the quarry. A return is required even if the operations are solely of a developmental nature, and whether the area being worked is held under a mining title or otherwise.

Zane West, Royalties and Advisory Services Manager

Please complete the following information to assist in identifying the location of the Quarry

Typical Geology Friable Sandstone / Lacustrine

Nearest Town to Quarry Wilberforce

Local Council Name Hawkesbury

Deposited Plan and Lot Number/s of Quarry Lt 2, DP628806

Email Address of Operator darryl.thiedeke@hy-tec.com.au

Name of Owner or Licensee as above

Postal Address of Licensee P.O Box 6770, Silverwater, NSW, 1811

Licence/Lease Number/s (if any)

From Mineral Resources NSW (Industry & Investment NSW) N/A

From Department of Lands or other Department N/A

If any output was obtained from land NOT held under licence from the above Departments, state the Name/s and Address/es of the Owners of the land N/A

- To the best of my knowledge, the particulars which have been entered in this return are correct and no blank spaces have been left where figures should have been inserted.

SIGNATURE of PROPRIETOR or MANAGER  DATE 31.10.2017

PERSON to be contacted if queries arise regarding this return Darryl Thiedeke

NAME (Block letters) Darryl Thiedeke Telephone 0296472866

SALES During 2016-2017

Production information may be published in aggregated form for statistical reporting. However, production data for individual operations is kept strictly confidential.

Product	Description	Quantity Tonnes
Virgin Materials		
• Crushed Coarse Aggregates		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand	Washed Sand	172,820.13
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
Recycled Materials		
• Crushed Coarse Aggregates		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand		
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
• River Gravel		
Over 30mm		
5mm to 30mm		
Under 5mm		
• Construction Sand	Excluding Industrial	
• Industrial Sand		
Foundry, Moulding		
Glass		
Other (Specify)		
• Dimension Stone	Building, Ornamental, Monumental	
Quarried in Blocks		
Quarried in Slabs		
• Decorative Aggregate	Including Terrazzo	
• Loam	Soil for Topdressing, Garden soil, Horticultural purposes)	
• TOTAL SITE PRODUCTION		
• Gross Value (\$) of all Sales	\$4.3Mill	
• Type of Material	Fine Sand	
• Number of Full-Time Equivalent (FTE) Employees	Employees: 5	Contractors: 1



Form S 1

RETURN FOR EXTRACTIVE MATERIALS: YEAR ENDED 30 JUNE 2017

Quote RIMS ID in all correspondence
Quarry Id: 5966 Rims ID: 400054

Operators Name: AUS-10 RHYOLITE PTY LTD and HY-TEC INDUSTRIES
Address: PO Box 6770
SILVERWATER
NSW 1811

Email: daniel.reed@hy-tec.com.au

Quarry Name: TINDA PARK QUARRY
Quarry Location: 6102 SINGLETON RD

Inquiries please telephone:
(02) 4931 6435
Completed or Nil Returns
Fax - (02) 4931 6776
Email -
mineral.royalty@industry.nsw.gov.au
Postal Address (see address below)

Please amend name, postal address and location of mine or quarry if incorrect or incomplete

The return should be completed and forwarded to the **STATISTICAL OFFICER, ROYALTY & ADVISORY SERVICES, NSW PLANNING & ENVIRONMENT, PO BOX 344 HUNTER REGION MAIL CENTRE NSW 2310 on or before 31 October 2017.** If completion of the return is unavoidably delayed, an application for extension of time should be requested **before** the due date. If no work was done during the year, a **NIL** return must be forwarded.

The return should relate to the **above quarrying establishment**, and should cover the operations of quarrying and treatment (such as crushing, screening, washing etc.) carried out at or near the quarry. A return is required even if the operations are solely of a developmental nature, and whether the area being worked is held under a mining title or otherwise.

Zane West, Royalties and Advisory Services Manager

Please complete the following information to assist in identifying the location of the Quarry

Typical Geology _____
Nearest Town to Quarry _____ **PLEASE SEE**
Local Council Name _____ **RETURN FOR RIMS I.D 401060**
Deposited Plan and Lot Number/s of Quarry _____ **AS THERE IS ONLY ONE QUARRY**
Email Address of Operator _____ **BEING KNOWN AS TINDA CREEK**
Name of Owner or Licensee _____ **QUARRY.**
Postal Address of Licensee _____ **REGARDS**
Licence/Lease Number/s (if any) _____
From Mineral Resources NSW (Industry & Investment NSW) *[Signature]* **30.10.2017**
From Department of Lands or other Department **DARRYL THIEDEKE**

If any output was obtained from land NOT held under licence from the above Departments, state the Name/s and Address/es of the Owners of the land _____

- To the best of my knowledge, the particulars which have been entered in this return are correct and no blank spaces have been left where figures should have been inserted.
- SIGNATURE** of PROPRIETOR or MANAGER _____ **DATE** _____
- PERSON** to be contacted if queries arise regarding this return _____
- NAME** (Block letters) _____ **Telephone** 02 96472866

SALES During 2016-2017

Production information may be published in aggregated form for statistical reporting. However, production data for individual operations is kept strictly confidential.

Product	Description	Quantity Tonnes
Virgin Materials		
• Crushed Coarse Aggregates		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand		
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
Recycled Materials		
• Crushed Coarse Aggregates		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand		
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
• River Gravel		
Over 30mm		
5mm to 30mm		
Under 5mm		
• Construction Sand	Excluding Industrial	
• Industrial Sand		
Foundry, Moulding		
Glass		
Other (Specify)		
• Dimension Stone	Building, Ornamental, Monumental	
Quarried in Blocks		
Quarried in Slabs		
• Decorative Aggregate	Including Terrazzo	
• Loam	Soil for Topdressing, Garden soil, Horticultural purposes)	
• TOTAL SITE PRODUCTION		
• Gross Value (\$) of all Sales		
• Type of Material		
• Number of Full-Time Equivalent	Employees:	Contractors
(FTE) Employees		

Please Note: A return for clay based products can be obtained by contacting the inquiry number.