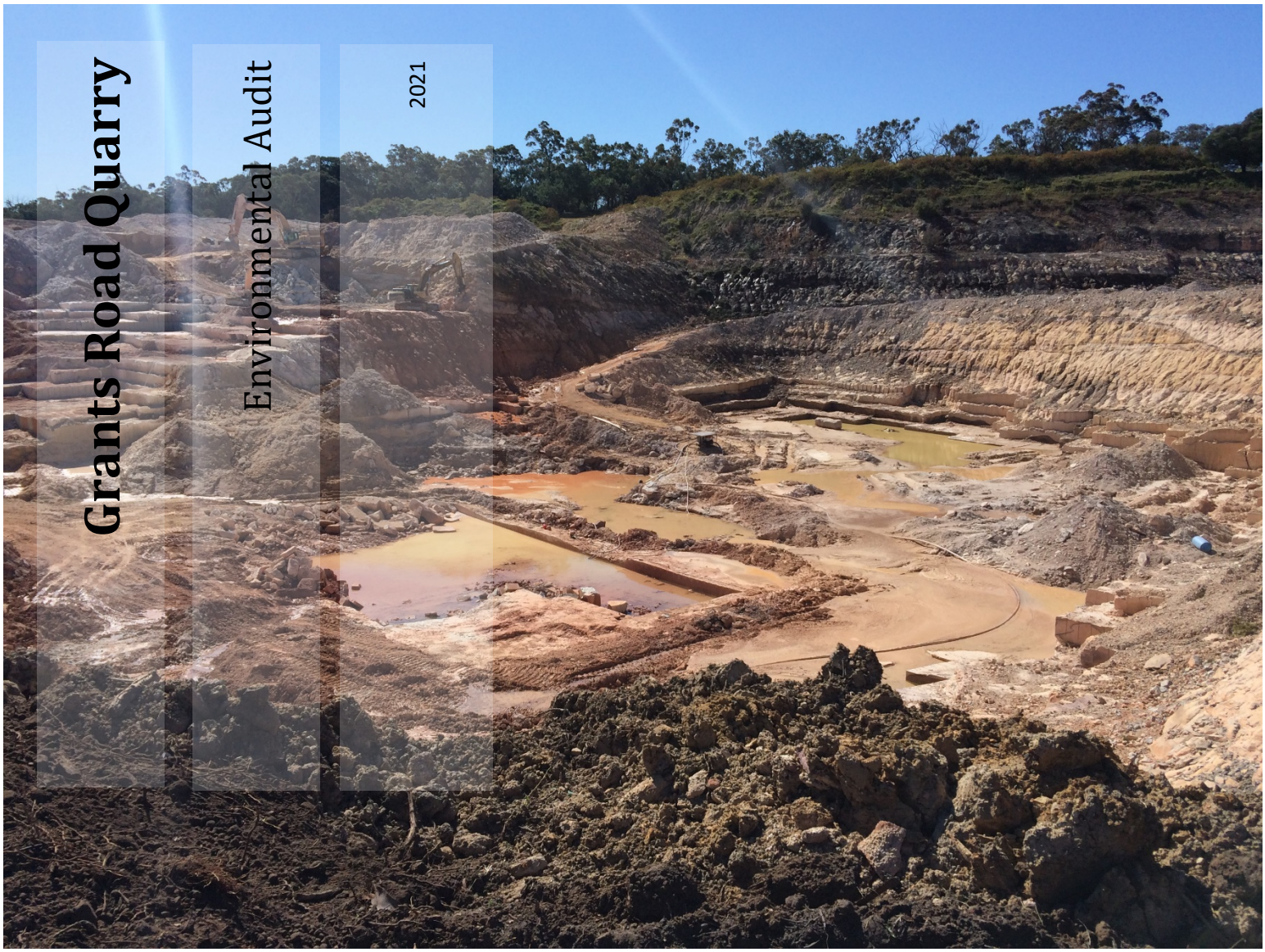
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For and on behalf of JM Environments

James McMahon

Principal Environmental Scientist
Licenced Asbestos Assessor LAA001286
Certified Environmental Practitioner CEnvP 1235
Site Contamination Specialist SC41110

JME21074 Grants Road Quarry
Environmental Audit

Revision	Details	Date	Amended By	Issued To
0	Draft	1/11/2021	JMc	LJ

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EXECUTIVE SUMMARY

Grants Road Quarry Pty Ltd (Grants Road Quarry, the audit client) commissioned JM Environments to conduct an independent environmental compliance audit (the audit) of the Grants Road Quarry Extension.

The audit was undertaken for Grants Road Quarry to fulfil its statutory obligations under Schedule 5 Item 5 of the Project Approval issued by the Department of Planning for the Grants Road Quarry Extension.

The audit was undertaken in accordance with ISO 19011:2011 Guidelines for auditing management systems and the NSW Department of Planning Independent Audit-Post Approval Requirements – June 2018.

Four hundred and two conditions (including sub clauses) were reviewed during the audit. It was assessed that seven conditions were either not triggered or not able to be assessed at the time of the audit.

It was considered that Grants Road Quarry has complied with three hundred and thirty-eight conditions and not complied with seven conditions resulting in five corrective actions/recommendations.

Based on the evidence reviewed in this audit it is considered that the quarry is not significantly impacting the surrounding environment.

It is the Auditors opinion that the operators of Grants Road Sand Quarry are carrying out the project generally in accordance with the:

- EA;
- EA (MOD 1); and
- Statement of Commitments.

The auditor recommends a review of the PM_{10} sampling frequency be undertaken by the quarry manager to achieve a higher conformance to the 6-day schedule required by the approval conditions.

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1. INTRODUCTION

Grants Road Quarry Pty Ltd (Grants Road Quarry, the audit client) commissioned JM Environments to conduct an independent environmental compliance audit (the audit) of the Grants Road Quarry Extension.

The audit was undertaken for Grants Road Quarry to fulfil its statutory obligations under Schedule 5 Item 5 of the Project Approval issued by the Department of Planning for the Grants Road Quarry Extension.

The audit was undertaken in accordance with ISO 19011:2011 Guidelines for auditing management systems and the NSW Department of Planning Independent Audit-Post Approval Requirements – June 2018.

1.1.Grants Road Quarry

The Grants Road Quarry (the quarry) has operated from September 2000. It was operating under Deferred Development Consent DA 22952/1998 (5 July 2000), issued by Gosford City Council and was amended 19 December 2006. The existing reserves of sand and sandstone under DA22952/1998 were considered to be diminishing and Grants Road Quarry proposed to extend the quarry footprint from 2 hectares to 20 hectares. Peter Andrew and Associates Pty Ltd (PAA) prepared *Grants Road Sand Quarry Extension-Environmental Assessment Project Application No 08_0099* (April 2013) (the EA). The approval was granted by the Department of Planning for the quarry extension on 25 July 2014 and the quarry has been operating under this approval from December 2015. The approval was modified on 4 May 2018. The modification primarily consisted of the Department Planning rewording the conditions to make them more robust and the names of regulatory department and offices at the time.

2. AUDIT OBJECTIVES AND SCOPE

The audit objectives were to:

- assess the environmental performance of the project, and its effects on the surrounding environment;
- assess whether the project is complying with the relevant standards, performance measures, and statutory requirements;
- review the adequacy of any strategy/plan/program required under this approval; and, if necessary;
- recommend measures or actions to improve the environmental performance of the project, and/or any strategy/plan/program required under this approval.

The audit scope was to:

- review the Environmental Assessment (EA);
- review the Statement of Commitments (SoC);
- review the Conditions of Approval CA;
- review the 2015 and 2018 Independent Environmental Audit reports;
- prepare an audit document review checklist based on the conditions of the EA, SoC and CA;

- review supplied documents;
- conduct a site visit;
- interview available Grants Road Quarry staff; and
- prepare this Audit Report.

3. THE AUDIT TEAM

The audit team consisted of:-

Lead Auditor: James McMahon PhD, BSc, Certificate of Competency in Environmental Auditing (RABQSA-AU, TL and EM). Dr McMahon was the main point of contact for the audit client during all phases of the audit. He was responsible for

- developing the auditing protocols and checklists,
- conducting audit interviews;;
- reviewing of the existing consent and associated documents including the applicable management plans that form part of the consent and/or operating requirements for the quarry;
- evaluating compliance of the current quarry and its operations with the conditions of consent and the management plans and prepare an audit report detailing the state of compliance identifying any non- compliances or outstanding uncompleted works with respect to air and water quality impacts by the quarry's operation.; and
- writing this audit report;

The auditor's appointment was endorsed by the Department of Planning. A copy of the endorsement can be found in Appendix A.

4. THE AUDIT PROCESS

4.1.Audit Schedule

Schedule 5 Item 5 of the Project Approval issued by the Department of Planning for the Grants Road Quarry Extension required by 30 June 2015 and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent must commission and pay the full cost of an Independent Environmental Audit of the project.

4.2.Audit Table

An audit table was prepared as part of the audit activities. The completed audit checklist is presented in Appendix B. The completed audit checklist includes the audit criteria, audit findings, audit log reference, compliance/non-compliance, site observations (if noted) and corrective actions (if required).

4.3.Audit Opening Meeting

An opening meeting was held at Grants Road Somersby, on 17 October 2018. The purpose of the meeting was to introduce the auditor to the auditee's representatives and observers, discuss the legal obligations of the audit process, gain acceptance the audit plan by the parties involved and discuss the date and how the site visit will be conducted.

The auditor (Dr McMahon,), the auditee representative (Steve Jones (Quarry Manager)) was present at the opening meeting.

A copy of the opening meeting agenda can be found in Appendix C.

4.4.Audit Documents

A log of the audit documents that were requested and reviewed throughout the audit process is presented in Appendix D.

4.5.Site Visit

A site visit was conducted by the auditor, the auditee's representatives a on 22 October 2021. The purpose of the site visit was to view the current site layout, make a visual assessment of audit criteria and review site documentation. A copy of selected site photographs is presented in Appendix E. Site observations are listed in the audit checklist in Appendix B.

5. PREVIOUS INDEPENDENT ENVIRONMENTAL AUDITS

5.1.2015 Independent Environmental Audit

JME undertook an Independent Environmental Audit of the quarry in 2015. The 2015 audit was undertaken when the quarry was operating under its Gosford City Council development approval. As such, many of the requirements of the current approval were not triggered.

The 2015 audit found that the quarry was not significantly impacting on the surrounding environment. In 2105, the Environmental Management Plan (and sub-plans) (the EMP) that was reviewed by JME was largely in draft form at the time of the audit, as the auditee was waiting for comments from the relevant agencies. The audit revealed some minor non-compliance against the requirements of the consent. The auditor recommends that these items are addressed after comments on the draft reports are received from the Department. However, the non-inclusion of Total Suspended Particles (TSP) and deposited dust monitoring in the AMQP is considered a significant non-conformance and should addressed in the AQMP and implemented as soon as practicable. This non-conformance has been addressed in the current version of the EMP.

5.2.2018 Independent Environmental Audit

The following strategies, plans and programs were reviewed by the auditor for adequacy.

- Environmental Plan of Management-May 2016;
    - Groundwater Management Plan;
    - Surface Water Management Plan;
    - Noise Management Plan;
    - Air Quality Management Plan;
    - Traffic Management; and
- Landscape and Rehabilitation Management Plan.

The auditor considered the above plans were adequate for purpose of monitoring the environmental performance of the quarry. However, the auditor also recognised that some additional information is required to be included in some of the plans next revision or sooner

if practical. In particular, the six-day monitoring cycle of PM10 dust not adhered to. The 2018 audit requested a review of the maintenance schedule to ensure the HVAS was operational at a more frequent level.

It was the Auditors opinion that the operators of Grants Road Sand Quarry are carrying out the project generally in accordance with the:

- EA;
- EA (MOD 1); and
- Statement of Commitments.

6. 2021 AUDIT FINDINGS

Environmental Management Plans, Strategies and the like that were deemed adequate in previous audits are not included in this audit. Where this is the case, it is noted in the audit checklist.

6.1.Consultation With Relevant Agencies

An email request for information regarding the Quarry's conformance with Environmental Protection Licence 1174 was sent to the NSW EPA. The auditor also spoke with a NSW EPA representative, David Bell, 29 October 2021. The Quarry's performance under EPL 1174 was discussed. Mr Bell mentioned that the irregularity in the number of high-volume air monitoring events would constitute a non-compliance.

However, a review of the NSW EPA's online POEO register (https://app.epa.nsw.gov.au/prpoeoapp/) was undertaken on 29 October 2021. Annual Returns had been submitted to the NSW for 2020, 2019 and 2018. The review found:

- No non-compliances with EPL requirements were registered;
- No notices were registered;
- No audits were requested; and
- No pollution studies and reduction programs were requested.

A copy of the search is included in the Audit Log.

6.2.Non-Conformances From Previous Audits

A review of non-conformances from previous audits was undertaken

Table 7.1 Previous Corrective Action and Recommendation Summary

Type of Condition	Condition	Corrective Action	2021 Audit Finding
Administration /Statement of Commitments	Schedule 2 13a,13b and SOC 10	Maintenance logs required to be used to document upkeep of plant and equipment.	The auditor sighted the maintenance logs of the quarry's plant and equipment and are satisfactory.

Type of Condition	Condition	Corrective Action	2021 Audit Finding
Reporting & Auditing	Schedule 5, 9	2021 Audit to be submitted by June 30.	The Department has granted an extension due to Covid19 restrictions
	Schedule 5, 9c	EPL11240 to be updated to allow for 250,00tonnes/annum extraction.	EPL11240 was updated to allow 100,000 tonnes -500,000 tonnes to be extracted each year.
	Schedule 5, 9c	Groundwater field parameters to be recorded and stabilised prior to sampling.	Not reported in annual reports. The auditor recognises that the groundwater monitoring is undertaken by an experienced hydrogeologist.
Groundwater	Schedule 5, 9c	Update Section 4.4.3 Proposed Water Quality Monitoring Plan to adequately describe how to collect the sample from a well. The Groundwater Management Plan does not describe how to purge the well prior to sampling in order to gain representative groundwater samples from the monitoring wells. The auditor considers these items need to be described if the monitoring wells are not being sampled by a suitably qualified consultant.	The plan was not updated. The auditor recognises that the groundwater monitoring is undertaken by an experienced hydrogeologist.
	SOC 7	Provide annual groundwater results for review by a Senior Hydrogeologist (NOW).	The NSW Office of Water has not committed to this undertaking and as such compliance cannot be enforced.
Air	Schedule 3, 11f	Six-day monitoring cycle of PM_{10} dust not adhered to. Review maintenance schedule to ensure the HVAS is operational at a more frequent level.	2020 25 of sixty possible monitoring events completed; 2019 46 of sixty possible events completed; 2018 49 of sixty possible monitoring events completed.
	Schedule 3, 11c and 12 b dot point 3	Update AMQP to include protocols for adverse meteorological conditions and extraordinary events.	Plan not updated

Type of Condition	Condition	Corrective Action	2021 Audit Finding
	SOC 11	Carry out campaign monitoring for respirable crystalline silica as soon as practicable.	Respirable crystalline silica monitoring commenced 2018. 2018 <0.0123 mg/m^3 2019 0.0114 mg/m^3 2020 <0.004mg/m^3 -0.017mg/m^3

6.3.Surface and Water Groundwater Management

Based on the information supplied in the 2018-2020 water quality monitoring reports undertaken by Larry Cook Consulting Pty Ltd, the quarry is not impacting the surrounding groundwater and surface water quality. The quarry has the appropriate groundwater licences for the aquifers intercepted by the quarry.

6.4.Air Quality Management

The information supplied in the 2018-2020 air quality and meteorological reporting undertaken by ERM Australia Pacific Pty Ltd (ERM) was reviewed. The ERM reports state each year "there are no instances of non-compliance recorded". However, the frequency of PM_{10} monitoring events steadily declined from 2018 (49 of 60 possible monitoring events completed, 81%) to 2020 (25 of 60 possible monitoring events completed, 42%). No reasons were supplied by ERM for the missed events in 2018 and 2019. ERM reported "issues with the electric connection to the high-volume air sampler" in 2020. These missed events should be listed as non-conformances when reporting the to the EPA with the EPL1124 Annual Returns.

6.5.Flora and Fauna

Based on the information supplied in the 2018-2020 flora and fauna monitoring reports undertaken by Conacher Consulting Pty Ltd:

- The quarry is not impacting the surrounding groundwater dependent ecosystems.
- The Somersby Mintbush population is recovering following the 2015 hazard reduction burning operations of the NPWS.
- Progressive rehabilitation of the quarry has not been triggered.

6.6.Noise

Based on the information supplied in the 2018-2020 environmental noise audit reports undertaken by Atkin Acoustics Pty Ltd, the Quarry is complying with the noise conditions and that the noise from the quarry is remaining steady.

6.7.Environmental Performance of the Project

An Audit summary is presented in Table 7.2. Four hundred and two conditions (including sub clauses) were reviewed during the audit. It was assessed that seven conditions were either not triggered or not able to be assessed at the time of the audit.

It was considered that Grants Road Quarry has complied with three hundred and thirty-eight conditions and not complied with seven conditions resulting in five corrective actions/recommendations.

Table 7.2 Audit Summary Table

Type of Condition	Number of Conditions	Conditions complied with	Conditions not complied with	Conditions not triggered/ assessed	Corrective Actions
Administrative	22	14	0	8	0
Noise and Vibration	13	13	0	0	0
Air Quality	17	13	4	0	2
Biodiversity	17	14	0	3	0
Soil and Water Quality	26	19	3	7	1
Meteorological Monitoring	1	1	0	0	0
Transport	19	19	0	0	0
Landscape	34	26	0	8	0
Visual Impact	4	3	0	1	0
Heritage	11	11	0	0	0
Waste Management	5	5	0	0	0
Dangerous Goods	1	1	0	0	0
Bushfire	2	2	0	0	0
Notification of Landowners	2	0	0	2	0
Independent review	5	0	0	5	0
Environmental Management	122	118	0	4	0
Reporting & Auditing	9	8	1	0	1
Access to Information	10	10	0	0	0
Statement of Commitments	72	51	2	19	1
Noise Compliance Assessment	10	10	0	0	0

A summary of the corrective actions is presented in Table 7.3

Table 7.3 Corrective Action and Recommendation Summary

Type of Condition	Condition	Corrective Action/Recommendations
Environmental Management	Schedule5, 5	**Corrective Action:** Report missed PM_{10} air monitoring events as a non-compliance in the Annual Return for EPL 1124.
Groundwater	Schedule 5, 9c	**Recommendation:** Update Section 4.4.3 Proposed Water Quality Monitoring to adequately describe how to collect the sample from a well.

Type of Condition	Condition	Corrective Action/Recommendations
		The Groundwater Management Plan does not describe how to purge the well prior to sampling in order to gain representative groundwater samples from the monitoring wells. The auditor considers these items need to be described if the monitoring wells are not being sampled by a suitably qualified consultant.
	SOC 7	**Recommendation:** Provide annual groundwater results for review by a Senior Hydrogeologist (NOW).
Air	Schedule 3, 11f	**Corrective Action:** Six-day monitoring cycle of PM_{10} dust not adhered to. Review maintenance schedule to ensure the HVAS is operational at a more frequent level.
	Schedule 3, 11c and 12 b dot point 3	**Corrective Action:** Update AMQP to include protocols for adverse meteorological conditions and extraordinary events.

7. CONCLUSION

Based on the evidence reviewed in this audit it is considered that the quarry is not significantly impacting the surrounding environment.

It is the Auditors opinion that the operators of Grants Road Sand Quarry are carrying out the project generally in accordance with the:

- EA;
- EA (MOD 1); and
- Statement of Commitments.

The auditor recommends a review of the PM_{10} sampling frequency be undertaken by the quarry manager in order to achieve a higher conformance to the 6 day schedule required by the approval conditions.

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Appendix A

Grants Road Sand Quarry
270 Grants Road
Somersby NSW 2250

Our ref: MP09_0099-PA-3

29 April 2021

Attention: Vanessa Colclough, Director

Email: vanessa.c@paadesign.com.au

Dear Ms Colclough

Grants Road Quarry - IEA- audit team approval (MP08_0099)
2021 IEA- audit team approval

I refer to your request (MP08_0099-PA-3) for the Secretary's approval of suitably qualified persons to undertake the 2021 Independent Environmental Audit (**IEA**) for the Grants Road Quarry as required under Schedule 5, Condition 9 of MP08_0099 (**Consent**)

In accordance with Schedule 5, Condition 9 of the Consent, the Secretary has agreed to the appointment of Mr James McMahon, Principal Environmental Scientist, JM Environments as the lead auditor to undertake the 2021 IEA.

Please ensure this correspondence is appended to the Independent Audit Report.

The Independent Audit must be prepared, undertaken and finalised in accordance with Schedule 5, Condition 9 of the Consent. The Department also recommends consideration be given to the *Independent Audit Post Approval Requirements* (Department 2018) to the extent that it does not contradict Schedule D, Condition D7 of the Consent. Failure to meet these requirements will require revision and resubmission.

The Department reserves the right to request an alternate auditor or audit team for future audits.

Notwithstanding the agreement for the above listed audit team for this Project, each respective project approval or consent requires a request for the agreement to the auditor or audit team be submitted to the Department, for consideration of the Secretary. Each request is reviewed and depending on the complexity of future projects, the suitability of a proposed auditor or audit team will be considered.

If you wish to discuss the matter further, please contact Alfarid Hussain on 02 9274 6456.

Yours sincerely

Julia Pope
Team Leader Compliance Metro
As nominee of the Planning Secretary

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Appendix B

Schedule	Condition number	Category	Sub Category	Condition	Audit doc number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
2	1	OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT		In addition to meeting the specific performance criteria established under this approval, the Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.		this audit	Complies	
2	2	TERMS OF APPROVAL		The Proponent shall carry out the project generally in accordance with the: (a) EA; (b) Statement of Commitments; and (c) conditions of this approval.		this audit	Complies	
2	3	TERMS OF APPROVAL		If there is any inconsistency between the above documents, the more recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.		this audit	noted	
2	4	TERMS OF APPROVAL		The Proponent 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 approval; (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with this approval; and (c) the implementation of any actions or measures contained in these documents.			noted	
2	5	LAPSING OF APPROVAL		If the project has not been physically commenced within 5 years of the date of this approval, then this project approval shall lapse.			noted	
	6	LIMITS ON APPROVAL	Quarrying Operations	The Proponent may carry out quarrying operations on the site until 30 June 2044			noted	
	7	LIMITS ON APPROVAL	Production Limit	The Proponent shall not extract process and transport more than 250,000 tonnes of quarry products from the site in any calendar year.		Tonnage reports for financial years ending 2019, 2020 and 2021		
	8	SURRENDER OF EXISTING DEVELOPMENT CONSENT		By the end of December 2015, or as otherwise agreed by the Secretary, the Proponent shall surrender all existing development consents that it holds for the site in accordance with Section 104A of the EP&A Act			2018 Audit: Non Compliant Surrended 2 June 2017	
	9	SURRENDER OF EXISTING DEVELOPMENT CONSENT		Prior to the surrender of this development consent, the conditions of this approval shall prevail to the extent of any inconsistency with the conditions of that consent.			Noted	
	10	STRUCTURAL ADEQUACY		The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.		Any new buildings?	No new buildings	
	10	Notes		the Proponent is required to obtain construction and occupation certificates for the proposed building works;		Any new buildings?	No new buildings	
	11	DEMOLITION		The Proponent shall ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.		Any recent demolitions?	No recent builing demolitions	
	12a	PROTECTION OF PUBLIC INFRASTRUCTURE		repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and	1	Copy of MYOB payments to Council for road upkeep	MYOB payments to Council were sighted by the auditor	
	12b	PROTECTION OF PUBLIC INFRASTRUCTURE		relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project.			2018 Audit found Telephone cabling replaced 10-15 years ago	
	13a	OPERATION OF PLANT AND EQUIPMENT		all the plant and equipment used at the site is: maintained in a proper and efficient condition; and	2	Copies of maintenance logs for all equipment	Sighted by the auditor	

Schedule	Condition number	Category	Sub Category	Condition	Audit doc number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
	13b	OPERATION OF PLANT AND EQUIPMENT		all the plant and equipment used at the site is operated in a proper and efficient manner.	3	Copies of equipment prestart checklists	Sighted by the auditor	
	14	UPDATING AND STAGING OF STRATEGIES, PLANS OR PROGRAMS		the Proponent may at any time submit revised strategies, plans or programs for the approval of the Secretary		Any revised strategies, plans or programs	No revised strategies, plans or programs	
	15a	PRODUCTION DATA		provide annual quarry production data to DRE using the standard form for that purpose	4	Annual production DRE forms for financial years ending 2019,2020,2021. Evidence they were sent	Sighted by the auditor	
	15b	PRODUCTION DATA		may prepare a revision of or a stage of a strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this approval.			No revised strategies, plans or programs	
	15c	PRODUCTION DATA		report this data in the Annual Review (see condition 4 of Schedule 5).			See condition 4 of Schedule 5	
	16a	IDENTIFICATION OF APPROVED EXTRACTION LIMITS		By 30 September 2014 engage a registered surveyor to mark out the boundaries of the approved limits of extraction within the entire site;		Provide survey plan of placed pegs and view the pegs at the site visit	Plan provided in the 2015. Pegs either sighted or covered with acoustic mounds in the 2018 audit.	
	16b	IDENTIFICATION OF APPROVED EXTRACTION LIMITS		By 30 September 2014 submit a survey plan of these boundaries with applicable GPS coordinates to the Secretary			Survey plan was provided	
	17	IDENTIFICATION OF APPROVED EXTRACTION LIMITS		While quarrying operations are being carried out, the Proponent shall ensure that these boundaries are clearly marked at all times in a manner that allows operating staff to clearly identify the approved limits of extraction	Photograph 5	view the pegs at the site visit	Plan provided in the 2015. Pegs either sighted or covered with acoustic mounds	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	Note	SOIL AND WATER	Note	the proponent is required to obtain the necessary water licences for the project, including in respect of the extraction and/or interception of groundwater	5	Reviewed WAL on Oiffice of Water website. Relevant WALs are for the appropriate groundwater source.	The following licences have been obtained: WAL17474 WAL17440 WAL36455 WAL WAL37745 and WAL37746	
3	1	SOIL AND WATER	Water Supply	ensure that it has sufficient water for all stages of the project,		Site visit. Sufficient water for operations supplied by rainfall and groundwater seepage and stored in quarry voids	Complies	
3	2 paragraph 1	SOIL AND WATER	Compensatory Water Supply	provide a compensatory water supply to any owner of a privately-owned groundwater bore where monitoring indicates that the project is causing (or contributing to, in conjunction with another quarry project) a reduction in pumping yield of more than 10%, or a 2 metre decline in the water table, in consultation with NOW, and to the satisfaction of the Secretary			Not triggered	
3	2 paragraph 2	SOIL AND WATER	Compensatory Water Supply	The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply must be provided (at least on an interim basis) within 24 hours of the loss being identified.			Not triggered	
3	2 paragraph 3	SOIL AND WATER	Compensatory Water Supply	If the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.			noted	
3	2 paragraph 4	SOIL AND WATER	Compensatory Water Supply	If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Secretary.			noted	
3	3	SOIL AND WATER	Pollution of Waters	Unless an EPL authorises otherwise, the Proponent shall comply with section 120 of the POEO Act during the carrying out of the project			noted	
3	4	SOIL AND WATER	Water Management Plan	prepare and implement a Water Management Plan for the project		Verfied in previous audit	Complies	
3	4a	SOIL AND WATER	Water Management Plan	be prepared by suitably qualified person(s), approved by the Secretary		Verfied in previous audit	Complies	
3	4b	SOIL AND WATER	Water Management Plan	be prepared in consultation with NOW, and be submitted to the Secretary for approval by the end of November 2014;		Verfied in previous audit	Complies	
3	4c (i) dot point 1	SOIL AND WATER	Water Management Plan	include a: (i) Site Water Balance that includes: • details of: o sources and security of water supply; o water use and management on site; o any off-site water transfers; o reporting procedures		Verfied in previous audit	Site water balance not presented. Though required aspects are adressed in sections of the WMP.	
3	4c (i) dot point 2	SOIL AND WATER	Water Management Plan	Site Water Balance that includes: measures that would be implemented to minimise clean water use on site		Verfied in previous audit	Complies	
3	4c (ii) dot point 1	SOIL AND WATER	Water Management Plan	Surface Water Management Plan that includes detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the project;		Verfied in previous audit	Surface water quality reported. Surface water flows neither estimated nor measured.	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	4c (ii) dot point 2	SOIL AND WATER	Water Management Plan	SW Plan includes a detailed description of the water management system on site, including the: o clean water diversion system; o erosion and sediment controls; o dirty water management system; and o water storages;	Photograph 6	Verfied in previous audit Pollution Control Dam under construction. 21/10/2021	Clean water diversions are mentioned but not decsribed what and where they are. No erosion measures are included in the plan. Sediment control is adequately adressed. Dirty water management is adequately addressed. Pollution Control Dam under construction.	
3	4c (ii) dot point 3	SOIL AND WATER	Water Management Plan	a program to monitor and report on surface water flows and quality in water bodies that could potentially be affected by the project;		Verfied in previous audit	Complies	
3	4c (ii) dot point 3	SOIL AND WATER	Water Management Plan	SW Plan includes a comparison of monitoring results with modelled predictions			To soon to make comparison	
3	4c (iii) dot point 1	SOIL AND WATER	Water Management Plan	Groundwater Management Plan includes detailed baseline data on groundwater levels, yield and quality in local sandstone aquifers, privately-owned groundwater bores and in areas of high priority GDEs that could be affected by the project		Verfied in previous audit	Complies	
3	4c (iii) dot point 2	SOIL AND WATER	Water Management Plan	GW Plan includes groundwater impact assessment criteria for local sandstone aquifers, privately-owned bores and high priority GDEs;		Verfied in previous audit	Complies	
3	4c (iii) dot point 3	SOIL AND WATER	Water Management Plan	GW Plan includes a program to monitor and report on: o groundwater inflows to the quarrying operations; o the impacts of the project on: - local sandstone aquifers; - privately-owned groundwater bores; and - high priority GDEs, including provision for continuous groundwater monitoring		Verfied in previous audit	Complies	
3	4c (iii) dot point 4	SOIL AND WATER	Water Management Plan	GWMP includes a program to validate the groundwater model for the project, and comparison of monitoring results with modelled predictions		Verfied in previous audit	Complies	
3	4c (iii) dot point 5	SOIL AND WATER	Water Management Plan	GW Plan includes a protocol, developed in consultation with Central Coast Sands Quarry, to appropriately apportion responsibility for any potential impacts to privately-owned groundwater bores and/or high priority GDEs that may be affected cumulatively by the project and operations at Central Coast Sands Quarry		Verfied in previous audit	Complies	
3	4c (iii) dot point 6	SOIL AND WATER	Water Management Plan	GWMP includes an investigation of opportunities to maintain ecosystem function in high priority GDEs to the west and northwest of the project through facilitating run-on of clean surface waters;		Verfied in previous audit	Not included in the GWMP	
3	4c (iv)	SOIL AND WATER	Water Management Plan	a Surface and Ground Water Contingency Strategy		Verfied in previous audit	Not included in the GWMP	
3	4c (iv) dot point 1	SOIL AND WATER	Water Management Plan	SW&GW Contingency strategy includes a protocol for the investigation, notification and mitigation of identified exceedances of the surface water and groundwater impact assessment criteria;		Verfied in previous audit	Although a SW&GWCP is not speficially included, the auditor considers these items are adequately addressed in the SWMP and GWMP	
3	4c (iv) dot point 2	SOIL AND WATER	Water Management Plan	SW&GW Contingency strategy includes 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 project		Verfied in previous audit	Although a SW&GWCP is not speficially included, the auditor considers these items are adequately addressed in the SWMP and GWMP	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	4c (iv) dot point 3	SOIL AND WATER	Water Management Plan	SW&GW Contingency strategy includes the procedures that would be followed if any unforeseen impacts are detected during the project.		Verfied in previous audit	Complies	
3	5	NOISE	Hours of Operation	The Proponent shall only conduct construction activities and quarrying operations on the site: (a) between 7.00 am and 6.00 pm, Monday to Friday; (b) between 7.00 am and 1.00 pm, Saturday; and (c) at no time on Sunday or public holidays		Verfied in previous audit	Complies	
3	6	NOISE	Hours of Operation	The following activities may be carried out on the site outside the hours specified in condition 5: (a) delivery or dispatch of materials as requested by Police or other authorities; and (b) emergency work to avoid the loss of lives, property and/or to prevent environmental harm. In such circumstances the Proponent shall notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter		Verfied in previous audit	Complies	
3	7	NOISE	Noise Impact Assessment Criteria7	the construction and operational noise generated by the project does not exceed the criteria in Table 1 at any residence on privately-owned land ($L_{Aeq(15min)}$dB(A) 40. Table 1 do not apply if the Proponent has an agreement with the relevant landowner to exceed the noise criteria, and the Proponent has advised the Department in writing of the terms of the agreement.	6 2020 Annual Environmental Management Report	Noise mointoring results for 2018, 2019, 2020 and 2021	Complies	
3	8a	NOISE	Operating Conditions	implement best management practice to minimise the construction, operational and road noise of the project.			NMP addressses management practices Truck Drivers Code of Conduct address road noise	
3	8b	NOISE	Operating Conditions	regularly assess noise monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the noise criteria in this approval;		Review noise results	Noise monitoring is scheduled anually,	
3	8c	NOISE	Operating Conditions	maintain the effectiveness of noise suppression equipment on plant and equipment on site;		Noise complaints	No Noise Complaints	
3	8d	NOISE	Operating Conditions	minimise the noise impacts of the project during meteorological conditions under which the noise limits in this approval do not apply (see Appendix 2);		Review Annual Noise Monitoring Reports	Complies	
3	8e	NOISE	Operating Conditions	carry out regular noise monitoring to determine whether the project is complying with the relevant conditions of this approval,		Review Annual Noise Monitoring Reports	Complies	
3	9	NOISE	Noise Management Plan	prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary.		Verfied in previous audit	Complies	
3	9a	NOISE	Noise Management Plan	NM Plan must be prepared in consultation with the EPA, and submitted to the Secretary for approval by the end of November 2014		Verfied in previous audit	Prepared in consultation with the EPA (who declined to comment). Sumitted March 2015 with no comment from Department of Planning.	
3	9b	NOISE	Noise Management Plan	NM Plan must describe the measures that would be implemented to ensure: • compliance with the relevant conditions of this approval; • best management practice is being employed; and • the noise impacts of the project are minimised during meteorological conditions under which the noise criteria in this approval do not apply;		Verfied in previous audit	Complies	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	9c	NOISE	Noise Management Plan	NM Plan must describe the proposed noise management system		Verfied in previous audit	Although not specifically named the "Noise Management System" the auditor assumes that the seven dot points on pages 3 and 4 of the NMP satisfies this condition	
3	9d	NOISE	Noise Management Plan	NM Plan must include a monitoring program that: • uses attended monitoring to evaluate the compliance of the project against the noise criteria in this approval; • 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 at the project, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.		Verfied in previous audit	Complies	
3	10	AIR QUALITY		The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 2, 3, 4 and 5 at any residence on privately-owned land.			noted	
3	11a	AIR QUALITY	Operating Conditions	implement best practice management to minimise the dust emissions of the project;		Verfied in previous audit	Section 5 of AQMP list 'best practice' mitigation and management measures. During the site visit the auditor noted that: The unsealed roads were watered. A wheel wash with a sealed road to the front gate were present. Signage and the Driver Code of Conduct provide instruction to have loads covered. Stockpiles were watered or were crusted over. Driver Code of Conduct limits on site speed to 20km/h. Limited area of disturbed land and progressive rehabilitation of completed areas.	
3	11b	AIR QUALITY	Operating Conditions	regularly assess air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this approval;		Review air qulity resuts	Not triggered	
3	11c	AIR QUALITY	Operating Conditions	minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see note d under Table 5);		AQMP has not been updated	AQMP does not have protocols for adverse meteorological conditions and extraordinary events.	
3	11d	AIR QUALITY	Operating Conditions	implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site; and		Check servicing records	Systems are in place to montoring the servicing of vehicles snd were not up to date at the time of the site visit.	
3	11e	AIR QUALITY	Operating Conditions	minimise the area of surface disturbance and maximise progressive rehabilitation of the site; and			Limited area of disturbed land was observed during site visit.	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	11f	AIR QUALITY	Operating Conditions	carry out regular air quality monitoring to determine whether the project is complying with the relevant conditions of this approval.	6	PM10 Air monitoring becoming irregular. However,The reuslts obtained suggests compliance the relevant conditions. Non-compliances are alligned with natural events outside of the quarry such as bushfires.	HVAS PM10 system is proving less reliable.	
3	12	AIR QUALITY	Air Quality Management Plan	prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must			AMQP submitted in March 2015.	
3	12a	AIR QUALITY	Air Quality Management Plan	be prepared in consultation with the EPA and submitted to the Secretary for approval by the end of November 2014;		Verfied in previous audit	Update prepared in consulation with EPA and approved by DoP	
3	12b dot point 1	AIR QUALITY	Air Quality Management Plan	describe the measures that would be implemented to ensure: • compliance with the relevant conditions of this approval;		Verfied in previous audit	Section 8.1 of AMQP provides guidance on compliance.	
3	12b dot point 2	AIR QUALITY	Air Quality Management Plan	• best practice management is being employed; and		Verfied in previous audit	Section 5 of AQMP list 'best practice' mitigation and management measures. During the site visit the auditor noted that: The unsealed roads were watered. A wheel wash with a sealed road to the front gate were present. Signage and the Driver Code of Conduct provide instruction to have loads covered. Stockpiles were watered or were crusted over. Driver Code of Conduct limits on site speed to 20km/h. Limited area of disturbed land and progressive rehabilitation of completed areas.	
3	12 b doit point 3	AIR QUALITY	Air Quality Management Plan	• the air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events;		Update AMQP to include protocols for adverse meteorological conditions and extraordinary events	AQMP does not have protocols for adverse meteorological conditions and extraordinary events. It describes how to assess monitoring data if there are impacts from adverse weather event but not how to minimise them.	
3	12c	AIR QUALITY	Air Quality Management Plan	describe the proposed air quality management system; and		Verfied in previous audit	AQMP Section 8 contains an adequate air quality management system except for the omission of protocols for adverse meteorological conditions and extraordinary events	
3	12d dot point 1	AIR QUALITY	Air Quality Management Plan	(d) include an air quality monitoring program that: • is capable of evaluating the performance of the project;		Verfied in previous audit	AQMP has been updated and includes a protocol to install a secondary unit should complanits be registered.	
3	12d dot point 2	AIR QUALITY	Air Quality Management Plan	• includes a protocol for determining any exceedances of the relevant conditions of approval;		Verfied in previous audit	Complies	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	12d dot point 3	AIR QUALITY	Air Quality Management Plan	• effectively supports the air quality management system; and		Verfied in previous audit	Complies	
3	12d dot point 4	AIR QUALITY	Air Quality Management Plan	• evaluates and reports on the adequacy of the air quality management system.		Verfied in previous audit	Complies	
3	13	METEOROLOGICAL MONITORING		For the life of the project, the Proponent 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		site visit	Complies	
3	14a dot point 1	TRANSPORT	Monitoring of Product Transport	keep accurate records of the: • amount of quarry products transported from the site (per calendar month and year); and		review website	Complies	
3	14a dot point 2	TRANSPORT	Monitoring of Product Transport	• number of laden vehicle movements from the site (per hour, day, week, calendar month and year); and		review website	Complies	
3	14b	TRANSPORT	Monitoring of Product Transport	publish these records on its website biannually		review website	Complies	
3	15a	TRANSPORT	Operating Conditions	all project-related heavy vehicles enter and exit the site in a forward direction;		Site visit	Complies	
3	15b	TRANSPORT	Operating Conditions	all laden vehicles entering or leaving the site have their loads covered; and		Site visit	Complies	
3	15c	TRANSPORT	Operating Conditions	all laden vehicles leaving the site are cleaned of sand and other material that may fall on the road, before leaving the site.		Site visit	Complies	
3	16	TRANSPORT	Grants Road Maintenance	prepare a road condition assessment and road maintenance contributions study of Grants Road		Verfied in previous audit	Complies	
3	16a	TRANSPORT	Grants Road Maintenance	The study must: be undertaken by a suitably qualified, experienced and independent person(s) endorsed by the Secretary;		Verfied in previous audit	Complies, however Secreatry endorsement was not provided	no further action
3	16b	TRANSPORT	Grants Road Maintenance	be undertaken in consultation with Council;		Verfied in previous audit	Complies	
3	16c	TRANSPORT	Grants Road Maintenance	be submitted to the Secretary for approval by the end of March 2015;		Verfied in previous audit	Complies however it was submiited to DoP July 2015. Secretary Approval dated 15/7/15	
3	16d	TRANSPORT	Grants Road Maintenance	be co-funded by the Proponent and the operator of the Central Coast Sands Quarry on a basis which is proportionate to the maximum number of tonnes of quarry product expected to be dispatched from each quarry over the life of their major project approvals, and the length of Grants Road affected by laden vehicles from each quarry;		Verfied in previous audit	Complies	
3	16e	TRANSPORT	Grants Road Maintenance	(e) assess current road condition of the length of Grants Road affected by laden vehicles from each quarry, and future road maintenance requirements for this length of road over the life of the major project approvals for both quarries;		Verfied in previous audit	Complies	
3	16f	TRANSPORT	Grants Road Maintenance	(f) give consideration to the usage of Grants Road by laden vehicles from each quarry over the past five years and the predicted usage of Grants Road by laden vehicles from each quarry over the life of their major project approvals, including any importation of VENM; and		Verfied in previous audit	Complies	
3	16g	TRANSPORT	Grants Road Maintenance	(g) recommend per tonne/per kilometre road maintenance contributions for the project for the haulage of quarry products and VENM on Grants Road.		Verfied in previous audit	Complies	
3	17	TRANSPORT	Grants Road Maintenance	The Proponent shall pay contributions to Council for the maintenance of Grants Road, in accordance with the study required under condition 16,	1	MYOB/financial record of payments	Complies	
3	18	TRANSPORT	Traffic Management Plan	prepare and implement a Traffic Management Plan for the project		Verfied in previous audit	Complies	
3	18a	TRANSPORT	Traffic Management Plan	This plan must: be submitted to the Secretary for approval by the end of November 2014;		Verfied in previous audit	Complies	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	18b	TRANSPORT	Traffic Management Plan	include a drivers' code of conduct to minimise the impacts of project-related trucks on local residences and road users; and		Verfied in previous audit	Complies	
3	18c	TRANSPORT	Traffic Management Plan	describe the measures that would be put in place to ensure compliance with the drivers' code of conduct.		Verfied in previous audit	Complies	
3	19	BIODIVERSITY	Biodiversity Performance Measures	The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 6	6	Review Flora and Fauna Surveys for 2018, 2019 and 2020	Not trigered	
3	20a	BIODIVERSITY	Offsets	If the Proponent exceeds the performance measures in Table 6 and the Secretary determines that: it is not reasonable or feasible to remediate the impact or environmental consequence; or	6	Review Flora and Fauna Surveys for 2018, 2019 and 2020	Not trigered	
3	20b	BIODIVERSITY	Offsets	remediation measures implemented by the Proponent have failed to satisfactorily remediate the impact or environmental consequence;	6	Review Flora and Fauna Surveys for 2018, 2019 and 2020	Not trigered	
3	20	BIODIVERSITY	Offsets	then the Proponent shall provide a suitable offset to compensate for the impact or environmental consequence, to the satisfaction of the Secretary.	6	Review Flora and Fauna Surveys for 2018, 2019 and 2020	Not trigered	
3	21	BIODIVERSITY	Groundwater Dependent Ecosystem Monitoring and Management Program	The Proponent shall undertake additional studies on the high priority GDEs located within 1 kilometre of extraction operations under the approval and potentially impacted by the project. The studies shall be undertaken in consultation with NOW and include:		Verfied in previous audit	Study undertaken and reported in the EMP	
3	21a	BIODIVERSITY	Groundwater Dependent Ecosystem Monitoring and Management Program	(a) a description of the nature and extent of groundwater reliance for each GDE;		Verfied in previous audit	Study undertaken and reported in the EMP	Larry Cook
3	21b	BIODIVERSITY	Groundwater Dependent Ecosystem Monitoring and Management Program	(b) long-term monitoring of the condition of the GDEs;	6	GDE monitoring reports for 2018, 2019, 2020 and 2021	Complies	
3	21c	BIODIVERSITY	Groundwater Dependent Ecosystem Monitoring and Management Program	(c) performance indicators for project-related environmental consequences on GDEs and trigger levels to initiate mitigation/response measures; and		Verfied in previous audit	Included in EMP	
3	21d	BIODIVERSITY	Groundwater Dependent Ecosystem Monitoring and Management Program	(d) mitigation/response measures to ensure minor environmental consequences on the GDEs,		Verfied in previous audit	Included in EMP	
3	21	BIODIVERSITY	Groundwater Dependent Ecosystem Monitoring and Management Program	to the satisfaction of the Secretary.		Verfied in previous audit	EMP approved by Department of Planning	
3	22	BIODIVERSITY	Somersby Mintbush Monitoring and Management Program	The Proponent shall prepare and implement, in consultation with OEH and Council, a Somersby Mintbush (Prostanthera junonis) Monitoring Program within the vicinity of the site. This program must include:		Verfied in previous audit	Included in EMP	
3	22a	BIODIVERSITY	Somersby Mintbush Monitoring and Management Program	a baseline assessment of the extent and condition of the Somersby Mintbush populations before commencement of quarrying operations under the approval;		Verfied in previous audit	Included in EMP	Phil Conacher surveyin
3	22b	BIODIVERSITY	Somersby Mintbush Monitoring and Management Program	long-term monitoring of these populations;	6	Flora monitoring reports for 2018, 2019, 2020 and 2021	Complies	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	22c	BIODIVERSITY	Somersby Mintbush Monitoring and Management Program	establishment of performance indicators for project-related environmental consequences on Somersby Mintbush and trigger levels to initiate mitigation/response measures;		Verfied in previous audit	Included in EMP	
3	22d	BIODIVERSITY	Somersby Mintbush Monitoring and Management Program	mitigation/response measures to ensure negligible environmental consequences on the Somersby Mintbush, to the satisfaction of the Secretary.		Verfied in previous audit	EMP approved by Department of Planning	
3	23	BIODIVERSITY	Biodiversity Offset Strategy	The Proponent shall implement the biodiversity offset strategy described in the EA, as summarised and revised in Table 7, and shown conceptually in Appendix 3, to the satisfaction of the Secretary.		Verfied in previous audit	Nest boxes ordered	
3	24	BIODIVERSITY	Long Term Security of Offset	The Proponent shall make suitable arrangements to provide appropriate long-term security for the offset areas prior to the commencement of extraction operations under this approval unless otherwise agreed by the Secretary, to the satisfaction of the Secretary.		Verfied in previous audit	Environmental bond has been paid.	Nest boxes ordered
3	25	LANDSCAPE	Rehabilitation Objectives	The Proponent shall rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be generally consistent with the rehabilitation strategy in the EA, and comply with the objectives in Table 8.		Rehab triggered yet?	Not triggered	
3	26	LANDSCAPE	Progressive Rehabilitation	The Proponent shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.		Rehab triggered yet?	Not triggered	
3	27	LANDSCAPE	Landscape and Rehabilitation Management Plan	The Proponent shall prepare and implement a Landscape and Rehabilitation Management Plan for the site, including the offset area, to the satisfaction of the Secretary. This plan must:		Verfied in previous audit	Landscape and Rehabilitation Management Plan was pepared in Nov 2015 and loaded onto the GRSQ website.	
3	27a	LANDSCAPE	Landscape and Rehabilitation Management Plan	(a) be prepared by suitably qualified person(s) whose appointment has been approved by the Secretary;		Verfied in previous audit	Complies	
3	27b	LANDSCAPE	Landscape and Rehabilitation Management Plan	(b) be prepared in consultation with OEH, DRE and Council, and submitted to the Secretary for approval by the end of July 2015;		Verfied in previous audit	Complies however it was submiited to DoP November 2015. Secretary Approval dated 11/12/15	
3	27c	LANDSCAPE	Landscape and Rehabilitation Management Plan	(c) describe how the implementation of the biodiversity offset strategy would be integrated with the overall rehabilitation of the site;		Verfied in previous audit	Complies	
3	27d dot point 1	LANDSCAPE	Landscape and Rehabilitation Management Plan	(d) describe the short, medium, and long term measures that would be implemented to: • manage the remnant vegetation and habitat on the site and in the offset areas;		Verfied in previous audit	Complies	
3	27d dot point 2	LANDSCAPE	Landscape and Rehabilitation Management Plan	• implement the biodiversity offset strategy; and		Verfied in previous audit	Complies	
3	27d dot point 3	LANDSCAPE	Landscape and Rehabilitation Management Plan	• ensure compliance with the rehabilitation objectives and the progressive rehabilitation obligations in this approval;		Verfied in previous audit	Complies	
3	27e	LANDSCAPE	Landscape and Rehabilitation Management Plan	(e) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy and the rehabilitation of the site, including triggers for any necessary remedial action;		Verfied in previous audit	Complies	

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3	27f dot point 1	LANDSCAPE	Landscape and Rehabilitation Management Plan	(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: • enhancing the quality of remnant vegetation and fauna habitat;		Verfied in previous audit	Complies	
3	27f dot point 2	LANDSCAPE	Landscape and Rehabilitation Management Plan	• landscaping the site and along public roads to minimise visual and lighting impacts;		Verfied in previous audit	Complies	
3	27f dot point 3	LANDSCAPE	Landscape and Rehabilitation Management Plan	• restoring native endemic vegetation and fauna habitat;		Verfied in previous audit	Complies	
3	27f dot point 4	LANDSCAPE	Landscape and Rehabilitation Management Plan	• maximising the salvage of environmental resources within the approved disturbance area – including tree hollows, vegetative and soil resources – for beneficial reuse;		Verfied in previous audit	Complies	
3	27f dot point 5	LANDSCAPE	Landscape and Rehabilitation Management Plan	• ensuring minimal environmental consequences for threatened species, populations and habitats;		Verfied in previous audit	Complies	
3	27f dot point 6	LANDSCAPE	Landscape and Rehabilitation Management Plan	• minimising the impacts on native fauna, including undertaking pre-clearance surveys;		Verfied in previous audit	Complies	
3	27f dot point 7	LANDSCAPE	Landscape and Rehabilitation Management Plan	• controlling weeds and feral pests;		Verfied in previous audit	Complies	
3	27f dot point 8	LANDSCAPE	Landscape and Rehabilitation Management Plan	• controlling erosion;		Verfied in previous audit	Complies	
3	27f dot point 9	LANDSCAPE	Landscape and Rehabilitation Management Plan	• controlling access; and		Verfied in previous audit	Complies	
3	27f dot point 10	LANDSCAPE	Landscape and Rehabilitation Management Plan	• bushfire management;		Verfied in previous audit	Complies	
3	27g	LANDSCAPE	Landscape and Rehabilitation Management Plan	(g) include a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;		Verfied in previous audit	Complies	
3	27h	LANDSCAPE	Landscape and Rehabilitation Management Plan	(h) identify the potential risks to the implementation of the biodiversity offset strategy and rehabilitation of the site, and include a description of the contingency measures that would be implemented to mitigate these risks; and		Verfied in previous audit	Complies	
3	27i	LANDSCAPE	Landscape and Rehabilitation Management Plan	(i) include details of who would be responsible for monitoring, reviewing and implementing the plan.		Verfied in previous audit	Complies	
3	28	LANDSCAPE	Conservation and Rehabilitation Bond	The Proponent shall lodge a Conservation and Rehabilitation Bond with the Department within 6 months of the approval of the Landscape and Rehabilitation Management Plan, 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. The sum of the bond shall be determined by:		Verfied in previous audit	Complies	
3	28a	LANDSCAPE	Conservation and Rehabilitation Bond	(a) calculating the cost of implementing the biodiversity offset strategy over the next 3 years;		Verfied in previous audit	Complies	
3	28b	LANDSCAPE	Conservation and Rehabilitation Bond	(b) calculating the cost of rehabilitating disturbed areas of the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and		Verfied in previous audit	Complies	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	28c	LANDSCAPE	Conservation and Rehabilitation Bond	(c) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs, to the satisfaction of the Secretary.		Verfied in previous audit	Complies	
3	28 Note	LANDSCAPE	Conservation and Rehabilitation Bond	• 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.		Verfied in previous audit	Complies	
3	28 Note	LANDSCAPE	Conservation and Rehabilitation Bond	• If capital and other expenditure required by the Landscape and Rehabilitation Management Plan is largely complete, the Secretary may waive the requirement for the lodgement of a bond in respect of the remaining expenditure.			Noted	
3	28 Note	LANDSCAPE	Conservation and Rehabilitation Bond	• If the rehabilitation of the site area is completed to the satisfaction of the Secretary, then the Secretary will release the bond. If the rehabilitation of the site is not completed to the satisfaction of the Secretary, then the Secretary will call in all or part of the bond, and arrange for the completion of the relevant works.			Noted	
3	29	LANDSCAPE	Conservation and Rehabilitation Bond	Within 3 months of each Independent Environmental Audit (see condition 9 of Schedule 5), the Proponent shall review, and if necessary revise, the sum of the Conservation and Rehabilitation Bond to the satisfaction of the Secretary. This review must:		Revision of bond?	Not triggered	
3	29a	LANDSCAPE	Conservation and Rehabilitation Bond	consider the performance of the implementation of the rehabilitation of the site to date;		Revision of bond?	Not triggered	
3	29b	LANDSCAPE	Conservation and Rehabilitation Bond	consider the effects of inflation; and		Revision of bond?	Not triggered	
3	29c	LANDSCAPE	Conservation and Rehabilitation Bond	calculate the cost of rehabilitating the disturbed areas of the site (taking into account the likely surface disturbance over the next 3 years of quarrying operations.		Revision of bond?	Not triggered	
3	30	HERITAGE	Heritage Management Plan	The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must:		Verfied in previous audit	Complies	
3	30a	HERITAGE	Heritage Management Plan	(a) be prepared by suitably qualified person(s) whose appointment has been approved by the Secretary;		Verfied in previous audit	Complies	
3	30b	HERITAGE	Heritage Management Plan	(b) be prepared in consultation with OEH and local Aboriginal stakeholders;		Verfied in previous audit	Complies	
3	30c	HERITAGE	Heritage Management Plan	(c) be submitted to the Secretary for approval by the end of November 2014;		Verfied in previous audit	Complies	
3	30d dot point 1	HERITAGE	Heritage Management Plan	(d) include a description of the measures that would be implemented for:		Verfied in previous audit	Complies	
3	30d dot point 2	HERITAGE	Heritage Management Plan	• protecting, monitoring and managing Aboriginal sites within the site, including the biodiversity offset strategy;		Verfied in previous audit	Complies	
3	30d dot point 3	HERITAGE	Heritage Management Plan	• maintaining and managing reasonable access for Aboriginal stakeholders to cultural heritage items on site and in the biodiversity offset areas;		Verfied in previous audit	Complies	
3	30d dot point 4	HERITAGE	Heritage Management Plan	• managing the discovery of any human remains or previously unidentified Aboriginal objects on site, including (in the case of human remains) stop work provisions and notification protocols;		Verfied in previous audit	Complies	
3	30d dot point 5	HERITAGE	Heritage Management Plan	• ongoing consultation with the local Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on-site and in the biodiversity offset areas;		Verfied in previous audit	Complies	
3	30d dot point 6	HERITAGE	Heritage Management Plan	• ensuring any workers on site receive suitable heritage inductions prior to carrying out any activities which may disturb Aboriginal sites, and that suitable records are kept of these inductions; and		Verfied in previous audit	Complies	
3	30d dot point 7	HERITAGE	Heritage Management Plan	• the long term management of the Aboriginal cultural heritage values of the site post extraction operations and rehabilitation of the site.		Verfied in previous audit	Complies	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
3	30	VISUAL		The Proponent shall implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the project to the satisfaction of the Secretary.		site visit	No lighting on site	
3	31a	VISUAL		The Proponent shall: (a) vegetate any earthen perimeter bund at the project within 3 months of establishing the bund, using appropriate flora species to minimise the visual and off-site sedimentation impacts of the project; and	Photograph 1	site visit	Complies	
3	31b	VISUAL		(b) maintain this vegetation in a good condition throughout the remainder of the project, to the satisfaction of the Secretary.		site visit	Complies	
3	32a	WASTE MANAGEMENT		The Proponent shall: (a) minimise and monitor the waste generated by the project;		site visit	Complies	
3	32b	WASTE MANAGEMENT		(b) ensure that the waste generated by the project is appropriately stored, handled and disposed of;		site visit	Complies	
3	32c	WASTE MANAGEMENT		(c) manage on-site sewage treatment and disposal in accordance with the requirements of Council; and		site visit	Complies	
3	32d	WASTE MANAGEMENT		(d) report on waste management and minimisation in the Annual Review,			Not triggered/not applicable	
3	33	WASTE MANAGEMENT		Prior to importing any VENM to the site, the Proponent must obtain a 'resource recovery exemption' under the POEO Act and provide evidence of this approval to the Department.		Any imported soils? VENM/ENM Certificates	Complies	
	34	DANGEROUS GOODS		The Proponent shall ensure that the storage, handling, and transport of dangerous goods are done in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code.		Verfied in previous audit	Diesel stored in double skinned bunded tank. Appropriate spill kits are located nearby and are fully stocked .	
3	35a	BUSHFIRE		The Proponent shall: (a) ensure that the project is suitably equipped to respond to any fires on site; and		site visit	Fire extinguishers are avaliable nearby the diesel storage	
3	35b	BUSHFIRE		(b) assist the Rural Fire Service and emergency services as much as possible if there is a fire in the vicinity of the site.		site visit	Owners are members of the RFS	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Verfication Method	Compliance/Non Compliance	Corrective Actions/Recommendations
4	1a	NOTIFICATION OF LANDOWNERS		As soon as practicable after obtaining monitoring results showing: (a) an exceedance of any relevant criteria in Schedule 3, the Proponent shall notify the affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with the relevant criteria; and		Monitoring Data	Not Triggered	
4	1b	NOTIFICATION OF LANDOWNERS		(b) an exceedance of any relevant air quality criteria in Schedule 3, the Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and current tenants of the land (including the tenants of land which is not privately-owned.		Monitoring Data	Not Triggered	
4	2	INDEPENDENT REVIEW		If an owner of privately-owned land considers the project 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 project on his/her land.		Monitoring Data	Not Triggered	
4	2a dot point 1	INDEPENDENT REVIEW		If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Proponent 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;		Monitoring Data	Not Triggered	
4	2a dot point 2	INDEPENDENT REVIEW		• conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 3; and		Monitoring Data	Not Triggered	
4	2a dot point 3	INDEPENDENT REVIEW		• if the project is not complying with these criteria, then identify measures that could be implemented to ensure compliance with the relevant criteria; and		Monitoring Data	Not Triggered	
4	2b	INDEPENDENT REVIEW		(b) give the Secretary and landowner a copy of the independent review.		Monitoring Data	Not Triggered	

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Compliance/Non Compliance	Corrective Actions/Recommendations			
5	1	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. The strategy must:	Verfied in previous audit	Complies				
5	1a	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	(a) be submitted to the Secretary for approval by the end of November 2014;	Verfied in previous audit	Complies				
5	1b	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	(b) provide the strategic framework for environmental management of the project;	Verfied in previous audit	Complies				
5	1c	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	(c) identify the statutory approvals that apply to the project;	Verfied in previous audit	Complies				
5	1d	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;	Verfied in previous audit	Complies				
5	1e dot point 1	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	(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 project;	Verfied in previous audit	Complies				
5	1e dot point 2	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	• receive, record, handle, and respond to complaints;	Verfied in previous audit	Complies				
5	1e dot point 3	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	• resolve any disputes that may arise during the course of the project;	Verfied in previous audit	Complies				
5	1e dot point 4	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	• respond to any non-compliance;	Verfied in previous audit	Complies				
5	1e dot point 5	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	• respond to emergencies; and	Verfied in previous audit	Complies				
5	1f dot point 1	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	(f) include: • copies of any strategies, plans and programs approved under the conditions of this approval; and	Verfied in previous audit	Complies				
5	1f dot point 2	ENVIRONMENTAL MANAGEMENT	Environmental Management Strategy	• a clear plan depicting all the monitoring to be carried out under the conditions of this approval	Verfied in previous audit	Complies				
5	2	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	2. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:	Verfied in previous audit	Noise	Water	Air	Traffic	Biodiversity
5	2a	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	(a) detailed baseline data;	Verfied in previous audit	Complies	Complies	Complies	N/A	Complies
5	2b dot point 1	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	(b) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions);	Verfied in previous audit	Complies	Complies	Complies	Complies	Complies
5	2b dot point 2	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	• any relevant limits or performance measures/criteria;	Verfied in previous audit	Complies	Complies	Complies	N/A	Complies
5	2b dot point 3	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	• the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;	Verfied in previous audit	Complies	Complies	Complies	Complies	Complies
5	2c	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	Verfied in previous audit	Complies	Complies	Complies	Complies	Complies
5	2d dot point 1	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	(d) a program to monitor and report on the: • impacts and environmental performance of the project;	Verfied in previous audit	Complies	Complies	Complies	Complies	Complies
5	2d dot point 2	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	• effectiveness of any management measures (see c above);	Verfied in previous audit	Complies	Complies	Complies	Complies	Complies
5	2e	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	(e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Verfied in previous audit	Complies	Complies	Complies	N/A	Complies
5	2f	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	(f) a program to investigate and implement ways to improve the environmental performance of the project over time;	Verfied in previous audit	Complies	Complies	Complies	N/A	Complies
5	2g dot point 1	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	(g) a protocol for managing and reporting any: • incidents;	Verfied in previous audit	Complies	Complies	Complies	Complies	Complies
5	2g dot point 2	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	• complaints;	Verfied in previous audit	Complies	Complies	Complies	N/A	Complies

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Compliance/Non Compliance	Corrective Actions/Recommendations			
5	2g dot point 3	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	• non-compliances with statutory requirements; and	Verfied in previous audit	Complies	Complies	Complies	N/A	Complies
5	2g dot point 4	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	• exceedances of the impact assessment criteria and/or performance criteria; and	Verfied in previous audit	Complies	Complies	Complies	N/A	Complies
5	2h	ENVIRONMENTAL MANAGEMENT	Management Plan Requirements	(h) a protocol for periodic review of the plan.	Verfied in previous audit	Complies	Complies	Complies	N/A	Complies
5	3	ENVIRONMENTAL MANAGEMENT	Adaptive Management	The Proponent must assess and manage project-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 approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation		Not Triggered				
5	3a	ENVIRONMENTAL MANAGEMENT	Adaptive Management	Where any exceedance of these criteria and/or performance measures has occurred, the Proponent must, at the earliest opportunity: (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;		Not Triggered				
5	3b	ENVIRONMENTAL MANAGEMENT	Adaptive Management	(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		Not Triggered				
5	3c	ENVIRONMENTAL MANAGEMENT	Adaptive Management	(c) implement remediation measures as directed by the Secretary,		Not Triggered				
5	4	ENVIRONMENTAL MANAGEMENT	Annual Review	By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:	6	Complies				
5	4a	ENVIRONMENTAL MANAGEMENT	Annual Review	(a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year;	6	Complies				
5	4b dot point 1	ENVIRONMENTAL MANAGEMENT	Annual Review	(b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the: • relevant statutory requirements, limits or performance measures/criteria;	6	Complies				
5	4b dot point 2	ENVIRONMENTAL MANAGEMENT	Annual Review	• requirements of any plan or program required under this approval;	6	Complies				
5	4b dot point 3	ENVIRONMENTAL MANAGEMENT	Annual Review	• monitoring results of previous years; and	6	Complies				
5	4b dot point 4	ENVIRONMENTAL MANAGEMENT	Annual Review	• relevant predictions in the EA;	6	Complies				
5	4c	ENVIRONMENTAL MANAGEMENT	Annual Review	(c) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;	6	PM_{10} monitoring frequency non-compliances were not reported	Report PM_{10} monitoring frequency non-compliances in EPL1124 Annual Returns			
5	4d	ENVIRONMENTAL MANAGEMENT	Annual Review	(d) identify any trends in the monitoring data over the life of the project;	6	Complies				
5	4e	ENVIRONMENTAL MANAGEMENT	Annual Review	(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and	6	Complies				
5	4f	ENVIRONMENTAL MANAGEMENT	Annual Review	(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the project.	6	Complies				
5	5a	ENVIRONMENTAL MANAGEMENT	Revision of Strategies, Plans and Programs	Within 3 months of the submission of an: (a) annual review under condition 4 above;	6	Not Triggered				
5	5b	ENVIRONMENTAL MANAGEMENT	Revision of Strategies, Plans and Programs	(b) incident report under condition 7 below;	6	Not Triggered				
5	5c	ENVIRONMENTAL MANAGEMENT	Revision of Strategies, Plans and Programs	(c) audit report under condition 9 below; or	6	Non-Complinace. See below				

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Compliance/Non Compliance	Corrective Actions/Recommendations			
5	5d	ENVIRONMENTAL MANAGEMENT	Revision of Strategies, Plans and Programs	(d) any modification to the conditions of this approval,	6	Not Triggered				
5	5	ENVIRONMENTAL MANAGEMENT	Revision of Strategies, Plans and Programs	the Proponent shall review the strategies, plans and programs required under this approval, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Secretary.	site visit	Revisions of the AQMP and WQMP were requested in the previous audit.				
5	6	ENVIRONMENTAL MANAGEMENT	Community Consultative Committee	If directed by the Secretary, the Proponent shall establish and operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Secretary. Any such CCC must be operated in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007, or its latest version).	Noted on the website	Not Triggered				
5	7	REPORTING	Incident Reporting	The Proponent shall immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Recorded incidents/	Not Triggered				
5	8	Incident Reporting	Incident Reporting	The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.	Review website	complies				
5	9	AUDITING	Independent Environmental Audit	By 30 June 2015 and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:	This audit	complies				
5	9a	AUDITING	Independent Environmental Audit	(a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;	This audit	complies				
5	9b	AUDITING	Independent Environmental Audit	(b) include consultation with the relevant agencies;	This audit	complies				
5	9c	AUDITING	Independent Environmental Audit	(c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or necessary water licences for the project (including any assessment, strategy, plan or program required under these approvals);	This audit	Non-Complinace. Reporting of PM10				
5	9d	AUDITING	Independent Environmental Audit	(d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and	This audit	complies				
5	9e	AUDITING	Independent Environmental Audit	(e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, strategy, plan or program required under the abovementioned approvals.	This audit	complies				
5	10	AUDITING	Independent Environmental Audit	Within 6 weeks of completion of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	This audit	complies				
5	11a dot point 1	ACCESS TO INFORMATION		By the end of November 2014, the Proponent shall: (a) make copies of the following publicly available on its website:	This audit	complies				
5	11a dot point 2	ACCESS TO INFORMATION		• the documents referred to in condition 2 of Schedule 2;	This audit	complies				
5	11a dot point 3	ACCESS TO INFORMATION		• all current statutory approvals for the project;	This audit	complies				
5	11a dot point 4	ACCESS TO INFORMATION		• all approved strategies, plans and programs required under the conditions of this approval;	This audit	complies				
5	11a dot point 5	ACCESS TO INFORMATION		• a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs;	This audit	complies				

Schedule	Condition number	Category	Sub Category	Condition	Audit Log Document Number	Compliance/Non Compliance	Corrective Actions/Recommendations			
5	11a dot point 6	ACCESS TO INFORMATION		• a complaints register, updated monthly;	This audit	complies				
5	11a dot point 7	ACCESS TO INFORMATION		• the annual reviews of the project;	This audit	complies				
5	11a dot point 8	ACCESS TO INFORMATION		• any independent environmental audit, and the Proponent's response to the recommendations in any audit;	This audit	complies				
5	11a dot point 9	ACCESS TO INFORMATION		• minutes of CCC meetings;	This audit	complies				
5	11a dot point 10	ACCESS TO INFORMATION		• any other matter required by the Secretary; and	This audit	complies				
5	11b			(b) keep this information up to date,	This audit	complies				
5	11			to the satisfaction of the Secretary.	This audit	complies				

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
1	General Arrangements	The development shall be carried out in accordance with the Environmental Assessment (April 2013) prepared by Peter Andrews + Associates Pty Ltd and this Addendum Report. This Addendum Report will override the Environmental Assessment where there is an inconsistency.	Ongoing	See Schedule 3 comments	
2	Staging	Staging of the development will be in accordance with the staging of works set out in the Environmental Assessment (April 2013).	Ongoing	Complies	
3	Statutory Requirements	Obtain and maintain all relevant approvals and licences.	As required and continuous	Complies	
		Comply with all conditional requirements in all approvals and licences.	As required	Complies	
4	Hours of Operation	7.00am to 6.00pm Monday to Friday 7.00am to 1.00pm Saturday	Ongoing	Complies	
5	Reporting Requirements	Undertake monitoring for the key areas as identified below.	As required	Complies	
		Incorporate relevant data/monitoring information in the Annual Reports.	Annually	Complies	
		Incorporate the management measures into the Environmental Management Plan. The development is to operate at all times within the terms and conditions of the Environmental Management Plan.	Prior to commencement and subject to five yearly reviews	Non-Compliance. Air Quality Monitoring	
		Update procedures manual for the operation of the quarry with regards to the quarry expansion including the following and ensure all staff are aware of procedures.	Prior to commencement of the operations	No Updates required	
		• Operation of plant and equipment		No Updates required	
		• Environmental monitoring		No Updates required	
		• Restrictions imposed on quarrying		No Updates required	
		• Vegetation removal		No Updates required	
		• Sedimentation and erosion		No Updates required	
		• Transportation		No Updates required	
		Provision of the annual production data to the Department of Trade and Investment	Annually	Complies	
6	Soils and Land capability	Locate areas for acoustic earth mounds.	Prior to topsoil stripping operations	Complies	
		Maintain topsoil for rehabilitation and minimise soil loss through erosion.	Ongoing	Complies	
		Vegetate all mounds with Kikuyu grass	As required	Complies	
		Implement downslope sedimentation controls as required	Until the surface of the mounds are vegetated	Complies	
7	Groundwater	Undertake automatic water level measurements in water level data logger in monitoring bores	Initially 4-hourly samples. Assess data after 12 months and depending on the results, decrease frequency to 8-hourly samples	Complies	
		Undertake groundwater sampling in representative monitoring bores	Initially 3 monthly. Assess data after 12 months and depending on the results, decrease frequency to 6 monthly samples	Complies	

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
		Undertake automatic rainfall measurements in tipping bucket rain gauge data logger on site	Continuous logging at every 0.2mm tip with time/date stamps.	Complies	
		Preparation of the Groundwater Management Plan, which incorporates the development of a water level and water quality monitoring program and the development of a set of trigger levels and mitigation measures if adverse impacts occur on the environmental and/or neighbouring water users.	Within 6 months of the project approval	Complies	
		Provide a complete set of results of the production and monitoring program including a review and assessment of the statistical analysis to the Senior Hydrogeologist NOW and the quarry owner.	Annually	Send Annual Water Quality Monitoring Report to the Senior Hydrogeologist NOW for review	
		Communicate with any landowner if there is a scientifically and independently demonstrated significant impact on any neighbouring water users surrounding the site.	As required	Not yet triggered	
8	Surface Water	Preparation of an Environmental Management Plan for the quarry extension based on a continuation of the current environmental management and mitigation measures for the quarry expansion as outlined in the current EMP.	Prior to the commencement of the quarry operations	Complies	
		Construct earth bunds and surface water diversion banks and drains around the perimeter of the entire quarry pit void. Bunds and/or diversion drains will require ongoing minor realignments as the quarry pit develops and advances especially through zone 'C'. Bunds can be designed as 'multi-purpose' to provide additional public 'Highwall' safety in addition to surface water flow management.	Prior to the commencement of the quarry operations and ongoing	Complies	
		Relocate the chicken farming operations storage shed that is currently located on the south west drainage path to the south of the site and bund the storage site to contain runoff while chicken farming is ongoing at the site.	Prior to the commencement of the quarry operations and ongoing	Chicken faming has ceased	

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
		Construct 'out of pit' containment infrastructure in the south-eastern most section of the property boundary adjacent to Zone E to capture and passively treat contaminated surface water runoff whilst simultaneously providing additional water security. Infrastructure to consist of: 1. One 10 Megalitres (ML) Pollution Control Dam (PC Dam) to receive nitrogen rich runoff from Zones F&G where the existing chicken and machinery sheds are located. This dam will gravity flow via a spillway into a shallow polishing pond. Control structures such as rock 'rip rap' or similar will be required to control water runoff velocity prior to entering the PC Dam. 2. Broad shallow polishing pond/s will receive any water spilled or transferred from PC Dam and provide passive treatment through suitable wetland plant species. 3. Pipeline and pumps for transfer of water each way between the in-pit decant pond and out of pit PC Dam. 4. A floating siphon in the PC Dam to maintain a 5 ML operating level. Ensure PC Dam and pond are located outside of the water pipeline easement and located generally as shown on the plans. Access to the ponds will be along the southern boundary	Prior to the commencement of the quarry operations and ongoing	10 Mega litre dam was underconstruction at the time of the site vsist.	
		Continue monitoring of surface water at locations W1 and W4	Monitor until stage 2 of the quarry commences.	Complies	
		After construction of the control pond and polishing pond, it is proposed that the quality of the treated quarry discharge released to the south west waterway is monitored at the future surface water quality monitoring location S1 shown in Appendix 2 of this report. Initially, the control pond and polishing dam will be used mainly to treat runoff from the chicken farming operations, the existing dwelling and a small area of pasture, and will only be used to treat water captured within the quarry during large rainfall events until the commencement of stage 2 of the quarry. As the quarry extends to the maximum quarry footprint in stage 2, pumping out of the quarry may occur as regularly as weekly.	Monthly water monitoring	Complies	

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
		Undertake water quality monitoring by a grab sample taken during discharge downstream of the control pond and polishing pond at location S1 on a monthly Monthly water monitoring basis. The parameters will be monitored and compared against the proposed discharge limits as follows: • Suspended solids 40mg/L • Oil and grease – 5 and/or none visible • pH – 6.0-8.0		Complies	
9	Biodiversity and Environmental Management	Identify the boundaries of the quarry.	Prior to clearing of vegetation	Complies	
		Preparation of a detailed Biodiversity Offset Management and Habitat Rehabilitation Plan for areas to be retained as biodiversity offsets within the site.	Prior to the clearing of vegetation	Complies	
		Biodiversity offsetting will be undertaken to compensate for unavoidable impacts to biodiversity within the site including the removal of 1.5 hectares of Cleared Land with Remnant Trees vegetation and the loss of 18 hollow bearing trees. The areas within the site proposed for biodiversity offsetting are located in the north- eastern section of the site and along the western section of the site. The offsetting strategy proposed will result in the improvement and maintenance of biodiversity values on the site for the medium to long term. A total of 7.1 hectares of land will be retained and managed as a biodiversity offset to compensate for the loss of 1.5 hectares of Cleared Land with Remnant Trees vegetation. Offset areas will be protected in perpetuity and subject to a 10 year rehabilitation and maintenance period. The areas proposed for retention comprise the following: • 0.85 hectares of Disturbed Scribbly Gum Woodland; • 3.5 hectares of Cleared Land with Remnant Trees Vegetation; and • 2.75 hectares of Cleared Land. The areas proposed for offsetting will be subject to protective fencing to exclude livestock and local populations of feral Rusa Deer, intensive replanting of endemic tree and	The first 10 years of Stage 2	Ongoing	

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
		All hollow-bearing trees to be removed are to be inspected and sectionally dismantled by an arborist, under the supervision and direction of an ecologist. Where possible, escaped fauna is to be caught by the consulting ecologist and transported to a suitable release area. If juvenile or injured fauna are encountered they are to be captured and transported to a wildlife carer or a veterinary surgeon as required. In the case where the arborist declares a tree or stag unsafe to climb, machine removal with a rotating grab or similar will be required.		Complies	
10	Noise	engines, or localised plant specific shielding*) to achieve the following noise reductions: • Dozer 4db; • Trencor 3dB; • McCloskey 3dB; and • Sandwash Plant 8dB for air cooled 6 cylinder engine* (Smaller 4 cylinder engine is now operating with a purpose designed enclosure and exhaust resulting in an 8dB reduction and does not require further attenuation). All reversing alarms replaced with level varying or broadband "quacker" type alarms.	Prior to the use of the plant equipment.	Complies	
		Plant and equipment to be maintained to ensure acoustic performance is not de- rated and complies with the recommended limits outlined in the Noise Impact Assessment (NIA) and incorporating the specified noise controls.	Throughout the life of the quarry.	Complies	
		A Site Operational Management Plan (SOMP) be developed to ensure that the dozer, Trencor and McCloskey do not operate simultaneously.	Throughout the life of the quarry.	Trencvor removed from site. SOMP not required	
		Provision of an earth mounds 3-4 metres high along the southern and south- eastern quarry boundaries as shown on Figure 14 of the Environmental Assessment before commencing Precincts E, F and G.	Prior to quarrying of stage 2.	Complies	

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
		The SOMP to document procedures to maximise site shielding and minimise number of plant and equipment on exposed locations, particularly on the eastern and southern portions of the quarry (areas B, C, F and G). That is, where practical and feasible only one (1) item of plant would operate at an exposed level (<8m below ground level) at any one time and extraction to proceed against a working face where practical.	During quarrying of the stage 2.	Complies	
		A site weather station will be installed and continually monitor ambient weather conditions including wind speed and direction at a height of ten (10) metres above ground level. The current weather conditions would be utilised to manage day to day quarry operations, and the SOMP incorporate strict protocols including: • Cease operations within Precinct F and G during north-north-west or west wind conditions up to 3m/s with respect to the operation of the dozer, Trencor and McCloskey in exposed locations (<8m below ground level); and • Utilise periods of high winds >5m/s (particularly east and south-east winds) and/or rain with elevated background noise levels to extract material within exposed locations (Areas B, F and G).	During quarrying of the relevant precincts.	Complies	

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
		A Complaints Management Procedure (CMP) be prepared to deal with any noise complaints as follows and include: • Site contact telephone number during business hours to lodge complaints or seek additional information (and message service for out of hours). If phone unattended it should divert to mobile phone of site quarry manager; • Log to record compliant including time of alleged noise issue, duration, description of noise, prevailing weather conditions and complainants contact details; • Complaints to be responded to in a timely manner. Where the noise is currently occurring, Quarry Manager shall investigate and determine noise source is noise is likely to be exceeding Approval Noise Limits. If exceedance is occurring, operations to be amended or ceased; • Audits at sensitive receiver locations to identify noise contributions, compliance and determine if additional procedures or controls to minimise noise from the site are required; • A record of noise investigations to be maintained on site and complainants informed of outcomes of investigations and actions implemented following any noise complaints; and • All site plant including trucks to be regularly	Prior to the commencement of the quarry extensions.	Complies	

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
		Undertake an Annual Noise monitoring program that incorporates: • Site attended noise measurements at the three (3) reference locations and record aural observations, statistical noise levels (LA90, LAeq), weather conditions and quarry operations. Typically measurement considering of two (2) 15 minute measurement periods at each receiver; • Attended nearfield or midfield measurements to confirm operating noise levels and determine sound power levels of individual plant and equipment for comparison with source noise data utilised in the EIS Noise Impact Assessment; • Assessment of noise audit measurement results against Conditions of Consent and any pending Licence to determine compliance; • Provide recommendations for ameliorative or management measures for Quarry operator where noise exceedances are identified; • Preparation of Annual Noise Monitoring Report for submission to Consent Authority and/or EPA	Annually	Complies	
11	Air Quality	Preparation of an air quality management plan incorporating PM10 monitoring at the most affected off-site sensitive location.	Annually	Complies	
		Minimise dust impacts at sensitive residences through the following onsite management procedures. These procedures to meet the KPIs outlined in this report and be reviewed. • Water of unsealed roads; • Use of wheel-wash and operation of sealed road from wheel-wash to the front gate; • Covering of loads during hauling; • Water of stockpiles when necessary; • Limiting vehicle speed onsite; and • Limiting the area of disturbed land and progressive rehabilitation of completed areas.	Annually	Complies	
		Carry out campaign monitoring for respirable crystalline silica. The monitoring would assess the exposure of quarry workers to respirable crystalline silica (in accordance with Australian Standard (AS 2985-2009) - Workplace atmospheres - Method for sampling and gravimetric determination of respirable dust.	First year of the quarry extension (on a day of maximum throughput). Monitoring to be repeated quarterly in the first year and if more than two consecutive results demonstrate low risk, monitoring would be discontinued.	Some campaign monitoring has been undertaken and the resulst indicate that the respirable crystalline silica concentration was lower than SafeWork NSW workplace exposure standards. Monitoring was not repeated quarterly in the first year of the quarry expansion.	

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
		Incorporate greenhouse gas reduction measures for the operation of the project including: • Opportunities to increase energy efficiency will be continuously reviewed including opportunities to minimise haul distances for quarry material, ensuring trucks are fully loaded to maximise productivity and efficiency, reducing trips by coordinating delivery and removal of materials. • Consideration of the use of alternative fuels where economically and practically feasible. • Regular maintenance of diesel powered equipment to ensure operation at peak efficiency. • Consideration of energy efficiency for all electrical equipment, appliances, lighting and hot water system.	Throughout the life of the quarry	noted	
12	Roadworks and Traffic Management	All vehicles leaving the site with loads of extracted material are to be sufficiently covered to prevent windblown dust.	Ongoing	Compliies	
13	Heritage	Grants Rd RE1 and RE2 sites are to be preserved.	Continuous	Complies	
		Incorporate a ten (10) metre buffer on the southern, eastern and western boundary of the anthropomorphic figure (Grants Rd RE1).	For the life of the quarry	Complies	
		The bund wall for the quarry extension in the area of Grants Rd RE1 to be constructed of block wall rather than earth in between the engraving and the boundary.	Prior to the quarrying of Precinct C	Complies	
		The engraving (Grants Rd RE1) is incorporated into the monitoring programme currently in place for the adjacent Howes Aboriginal Reserve.	Five yearly	Complies	
		A protective fence is constructed 8 metres around each side of the Grants Rd RE 1 site to prevent inadvertent damage. The fence should incorporate appropriate signage to ensure the access within the fenced zone is limited to maintenance activities such as grass cutting.	Prior to the quarrying of Precinct C	Complies	
		Traffic is to be directed around the small mundoe at the Grants Rd RE 2 site to ensure minimal disturbance.	Continuous	Complies	
		An additional monitoring site visit be undertaken to review the recommendations effectiveness to protect the site.	12 months after the project approval	Complies	
		The quarry operator to develop and implement an Aboriginal Cultural Heritage Induction Program for all personnel associated with the quarry operations. A register is to be kept off staff/contractors that have been inducted.	Prior to the commencement of the quarry extensions	Complies	

	Subject	Commitments	Timing	Complies/Non Compliance	Response Comments
		Should any materials suspected of being of Aboriginal occupation origin be located during the quarry operations that work cease in that location immediately and that the Office of Environment & Heritage be contacted immediately.	For the life of the quarry	noted	
14	Visual Impact	noting that the current conditions of consent requires the use of Kikuyu grass for the stabilisation of stockpiles.	For the life of the quarry	Complies	
		Maintain grass covered mounds.	For the life of the quarry	Complies	
		Maintain the site.	For the life of the quarry	Complies	
		Keep the site clean and tidy where possible.	Continuous	Complies	
		Progressively revegetate all areas where quarrying is completed.	Upon completion of quarrying in a precinct	not yet triggered	
15	Bushfire Protection	Provision of an on-site mobile water pump and tank, with firefighting hose connections to be located on site.	For the life of the quarry	Complies	
		Management of the site to provide a defendable space to the bushfire hazard. These areas are to be regularly inspected and maintained by the landowners.	For the life of the quarry	Complies	
		Ensure all general waste / garbage is removed by a licensed waste collection contractor at least on a weekly basis.	Continuous	Complies	
		Preparation of a waste management plan for the demolition of any structures.	Prior to demolition.	not yet triggered	
	Mine Rehabilitation	Ensure completed areas of the quarry are revegetated to reduce sedimentation and erosion and dust emissions and visual impact.	As required	not yet triggered	
		Preparation of a quarry rehabilitation plan to identify staging for rehabilitation.	Within five years of commencement of the quarry extension	not yet triggered	
		A detailed decommissioning plan will be prepared as part of the review of the Environmental Management Plan.	Towards the end of the life of the Quarry (two years prior)	not yet triggered	
		A five year monitoring program to be implemented upon completion of the rehabilitation.	Five years after the rehabilitation.	not yet triggered	

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37 Tooke St
COOKS HILL NSW 2300
ABN 67 166 341 288

Appendix C

JM Environments
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ABN 67 166 341 288

Independent Environmental Audit Grants Road Quarry

This audit was commissioned by Grants Road Pty Limited to fulfil its statutory obligations under Schedule 5 Item 9 of the Project Approval issued by the Department of Planning for the Grants Road Quarry Extension.

"By 30 June 2015 and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:

(a) be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been endorsed by the Director-General;

(b) include consultation with the relevant agencies;

(c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or necessary water licences for the project (including any assessment, strategy, plan or program required under these approvals);

(d) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,

(e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy/plan/program required under this approval."

Legal Requirements

Protection of the Environment Operations Act 1997 Chapter 6 Clause 177 Offences

(1) False or misleading information to auditor: A person who provides information to an environmental auditor in connection with a mandatory environmental audit, knowing the information to be false or misleading in a material respect, is guilty of an offence.

(2) Information not provided to auditor: The holder of a licence who fails to provide information to an environmental auditor in connection with a mandatory environmental audit being carried out in relation to the licence, knowing the information to be materially relevant to the audit, is guilty of an offence.

(3) False or misleading information in audit report: An environmental auditor who includes information in an audit report produced to the appropriate regulatory

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authority in connection with a mandatory environmental audit, knowing the information to be false or misleading in a material respect, is guilty of an offence.

(4) Information not included in audit report: An environmental auditor who fails to provide information in an audit report produced to the appropriate regulatory authority in connection with a mandatory environmental audit, knowing the information to be materially relevant to the audit, is guilty of an offence.

(5) Retention of audit documentation: The holder of a licence who:

(a) fails to retain any written documentation required to be prepared by the holder in connection with a mandatory environmental audit for a period of at least 5 years after the audit report concerned was produced to the appropriate regulatory authority (or such other period as is prescribed by the regulations), or

(b) fails to produce during that period any such documentation to the appropriate regulatory authority on request, is guilty of an offence.

Maximum penalty:

• in the case of a corporation-$250,000 and, in the case of a continuing offence, a further penalty of $120,000 for each day the offence continues, or

• in the case of an individual-$120,000 and, in the case of a continuing offence, a further penalty of $60,000 for each day the offence continues.

Audit Programme

A draft audit programme has been prepared. A list of documents has been requested from Grants Road. These will be reviewed by the auditor. The audit programme may be altered by the audit team during the course of the audit dependent on the findings at the time.

The audit will be conducted at Grants Road Quarry on 22 October 2021. The audit will consist of viewing documents and records that are mentioned in the audit program, interviews with Grants Road staff that are familiar with the business/environmental systems and a site tour. You are encouraged to provide other lines of evidence to demonstrate compliance if the requested lines of evidence cannot be produced on the day. If existing lines of evidence cannot be produced on the day you will be given five additional working days to produce them.

Following the site visit a closing meeting will be held between Grants Road Quarry staff and the auditor. At the meeting, a preliminary audit result will be presented and follow up activities to the audit will be discussed.

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Appendix D

Central Coast Council

Tax Invoice

ABN: 73 149 644 003
PO Box 20, Wyong, NSW 2259
DX 7306, Wyong
Phone: 1300 463 954
Fax: (02) 4351 2098
Email: ask@centralcoast.nsw.gov.au
Website: centralcoast.nsw.gov.au
Telephone Payments: 1800 226 651

Received & paid 12/8/21

Grants Road Sand Pty Ltd
270 Grants Rd
SOMERSBY NSW 2250

Account No:	**0420479 - 8**
Invoice No:	**349233**
Invoice Amount:	**$8,988.47**
Invoice Date:	**05-Aug-2021**
Due Date:	**30 days from Invoice Date**

Description	Qty	Unit Price	Cost	GST	Total
2021 Annual Contribution to Road Maintenance in accordance with Major Project Approval 08-00099				817.13	8,988.47

Total GST:	**$817.13**	**Total Amount Payable:**	**$8,988.47**

Payment Options:

Online
centralcoast.nsw.gov.au
Mastercard or Visa

BPay
BPAY Biller Code: 24885 Ref: 04204798
Telephone & Internet Banking – BPAY®
Contact your bank or financial institution to make this payment from your cheque, savings, debit, credit card or transaction account. More info: www.bpay.com.au

Telephone
Mastercard or Visa.
Call 1800 22 66 51

In Person
Pay at Council Offices:
Located at Lake Haven, The Entrance, Tuggerah, Wyong, Gosford, Erina or Woy Woy.

Payment Details (please attach this remittance slip to your cheque payment, made payable to Central Coast Council, and post to PO Box 20 Wyong NSW 2259)

Account Name:	**Grants Road Sand Pty Ltd**
Account No:	**0420479 - 8**
Invoice No:	**349233**
Invoice Date:	**05-Aug-2021**
Amount:	**$8,988.47**

PM 4 (2000 HOUR INTERVAL)

PM Checklist

● 1 ● 0 ● 29 ● 3

Inspection Number	7096520	Serial Number	BZY02524
Make	CATERPILLAR	Model	336EL
Customer Name	grants rd sands	Customer Email	info@grantsrdsand.com.au
Equipment Family	EXCAVATORS	Completed On	10/20/2021 5:31:17 PM
Asset ID	336E	Inspector	Joshua Iffland
SMU	8211 Hours	Work Order	NG31531
Location	SOMERSBY QUARRY	PDF Generated On	10/20/2021
Coordinates	0, 0, 0		
Technician			

General Info & Comments	*NORMAL*
● General info/Comments	
PM 4 (2000 HOUR INTERVAL)	*N/A*
● 1.1 REPLACE WITH NEW FUMES DISPOSAL FILTER	*NORMAL*
● 1.2 REPLACE WITH NEW SECONDARY FUEL FILTER	*NORMAL*
● 1.3 REPLACE WITH NEW WATER SEPARATOR ELEMENT	*NORMAL*
● 1.4 CLEAN FUEL TANK STRAINER	*NORMAL*
● 1.5 REPLACE WITH NEW FUEL TANK CAP(S)	*NORMAL*
● 1.6 REPLACE WITH NEW ENGINE OIL & FILTER FAST FILL	*NORMAL*
● 1.7 TAKE & ANALYZE SOS SAMPLE FROM ENGINE OIL	*NORMAL*
● 1.8 TAKE & ANALYZE SOS SAMPLE FROM ENGINE COOLANT LEVEL 2	*ACTION*
● 1.9 INSPECT SERPENTINE BELT	
Comments: BELTS NEED CHANGING NEW BELTS HAVE BEEN ORDERED	*NORMAL*
● 1.10 CLEAN BATTERY	*N/A*
● 1.11 CHECK BATTERY FLUID LEVEL	*NORMAL*
● 1.12 CLEAN REFRIGERANT CONDENSER	*NORMAL*
● 1.13 TAKE & ANALYZE SOS SAMPLE FROM FINAL DRIVE	*NORMAL*
● 1.14 DRAIN / REFILL FINAL DRIVE OIL	*NORMAL*
● 1.15 CHECK FINAL DRIVE FLUID LEVEL	*NORMAL*
● 1.16 TAKE & ANALYZE SOS SAMPLE FROM HYDRAULIC SYSTEM	*NORMAL*
● 1.17 CHECK HYDRAULIC PUMP COUPLING FLUID LEVEL	
Comments: FLUID CHANGED	*NORMAL*
● 1.18 REPLACE WITH NEW HYDRAULIC OIL FILTER ELEMENT	*NORMAL*
● 1.19 REPLACE WITH NEW HYDRAULIC OIL FILTER PILOT	*NORMAL*
● 1.20 REPLACE WITH NEW HYDRAULIC OIL FILTER RETURN	*NORMAL*
● 1.21 REPLACE WITH NEW CASE DRAIN OIL FILTER	*NORMAL*
● 1.22 TAKE & ANALYZE SOS SAMPLE FROM SWING DRIVE	*NORMAL*
● 1.23 DRAIN / REFILL SWING DRIVE OIL	*NORMAL*
● 1.24 CHECK SWING DRIVE FLUID LEVEL	*NORMAL*
● 1.25 LUBRICATE BOOM LINKAGE	*NORMAL*
● 1.26 LUBRICATE STICK LINKAGE	*NORMAL*
● 1.27 LUBRICATE SWING GEAR/BEARING BEARING	*NORMAL*
● 1.28 LUBRICATE SWING GEAR/BEARING GEAR	*NORMAL*
● 1.29 TIGHTEN/TORQUE BATTERY BOX/SUPPORT	*NORMAL*

GRANTS RD SAND — **Mine Safety Management Plan**

9.5 EXCAVATOR PRESTART CHECKLIST

EXCAVATOR TYPE			
	✓ = OK	x = Fault	n/a – not applicable

Date:	21/9/21	22.9.21	23.9.21	24.9.21	27.9.21	28.9.21	29.9.21	30.9.21
Signature of operator:					BM	XP	XP	BM

Priority "HIGH" Faults. The machine must be tagged OUT OF SERVICE and NOT operated until repaired.

Control levers all functional	✓	✓	✓	✓	✓	✓	✓	✓
Warning Lights/Alarms	✓	✓	✓	✓	✓	✓	✓	✓
Guards	✓	✓	✓	-	✓	✓	✓	✓
Hydraulic Controls	✓	✓	✓	✓	✓	-	✓	✓
Seat Belt	✓	✓	✓	✓	✓	✓	✓	✓

Priority "MEDIUM" Faults. Report to manager, authorisation required before operating machine

Body / Bucket damage	✓	✓	✓	✓	-	✓	✓	✓
Bolts / nuts	✓	✓	-	✓	-	✓	✓	✓
Pins and Brushes	✓	✓	✓	✓	-	✓	✓	✓
Oil Leaks	✓	✓	✓	✓	-	✓	✓	✓
Reverse Warning Device	✓	✓	✓	✓	-	✓	✓	✓
Water Leaks	✓	✓	✓	✓	✓	✓	✓	✓
Fuel Leaks	✓	✓	✓	✓	✓	✓	✓	✓
Air Leaks	✓	✓	✓	✓	✓	✓	✓	✓
Horn	✓	✓	✓	✓	✓	✓	✓	✓
Lights	✓	✓	✓	✓	✓	✓	✓	✓
Gauges	✓	✓	✓	✓	✓	✓	✓	✓
CB / 2Way Radio	✓	✓	✓	✓	✓	✓	✓	✓
Fire Extinguisher	✓	✓	✓	✓	✓	✓	✓	✓

Priority "LOW" Faults. Report required repairs to manager.

Windscreens/Windows	X	X	X	X	X	X	X	X
Air conditioner	✓	✓	✓	✓	✓	✓	✓	✓
Steps / Access / Handrails	✓	✓	✓	✓	✓	✓	✓	✓
Mirrors	✓	✓	✓	✓	✓	✓	✓	✓
Wipers / Washers	✓	✓	✓	✓	✓	✓	✓	✓
Flashing Lights	X	X	X	X	X	X	X	X
Oils	✓	✓	-	✓	✓	-	✓	✓

Fluids – All vehicles shall be refuelled and fluids checked before use

Fuel	✓ Lts	✓ Lts	✓ Lts	✓ Lts	✓ Lts	✓ Lts	✓ Lts	✓
Hydraulic Oil	✓	✓	✓	✓	✓	✓	✓	✓
Steering Oil	✓	✓	✓	✓	✓	✓	✓	✓
Radiator Fluid / Coolant	✓	✓	-	✓	✓	✓	✓	✓
Engine Oil	✓	✓	✓	✓	✓	✓	✓	✓
Swing Gear Box Oil	✓	✓	✓	✓	✓	✓	✓	✓

Alt

Emailed 24/9/21

Extractive Materials Return 2020-2021

NSW GOVERNMENT | Regional NSW

Form S1 – Period Ending 30 June 2021

Quote RIMS ID in all correspondence

Quarry Id: Rims ID: 400801

Operators Name: GRANTS ROAD SAND
Address: 270 GRANTS RD
SOMERSBY NSW
2250

Email: info@grantsrdsand.com.au
Quarry Name: GRANTS ROAD SAND
Quarry Address: 270 GRANTS RD

Inquiries please telephone:
(02) 4063 6713
Completed or Nil Returns
Email –
mineral.royalty@planning.nsw.gov.au
Postal Address (see below)

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

The return should be completed and forwarded to **Senior Advisory Officer, RESOURCE ECONOMICS, STRATEGY, PERFORMANCE & INDUSTRY DEVELOPMENT, DEPARTMENT OF REGIONAL NSW, PO BOX 344 HUNTER REGION MAIL CENTRE NSW 2310 on or before 31 October 2021**. 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.

Director, Resources Policy

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

Typical Geology – Hawkesbury Sandstone

Nearest Town to Quarry - Gosford

Local Council Name – Central Coast

Deposited Plan and Lot Number/s of Quarry DP 358 717 Lot 1 Portion 81

Email Address of Operator – info@grantsrdsand.com.au

Name of Owner or Licensee – GR & AK Jones

Postal Address of Licensee – 270 Grants Rd, Somersby NSW 2251

Licence/Lease Number/s (if any)

From Mining, Exploration & Geoscience (NSW Mineral Resources) _____

From Crown Lands or other NSW Department _____

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, information entered in this return is correct and no blank spaces left where figures should have been inserted.

- **SIGNATURE of PROPRIETOR or MANAGER** S Jones **DATE 24/09/2021**
- **CONTACT PERSON for this return – Steven Jones (Quarry Manager)**
- **NAME** (Block letters) STEVEN JONES **Telephone** 0418 116 861

Information about a water licence or approval

Use this tool to search for information about water licences and approvals issued under the *Water Act 1912* or *Water Management Act 2000*.

Select the type of licence or approval and enter the licence or approval number:

- **Water access licence (WAL):** a WAL number starts with the letters 'WAL' followed by several numbers; a WAL also has a reference number that starts with a two digit number, followed by 'AL' and then several numbers.
- **1912 water licence:** a water licence number starts with a two digit number, followed by a two letter code and then several numbers. Note: a PT reference number cannot be entered.
- **Approval:** an approval number starts with a two digit number, followed by a two letter code (WA, UA, CA or FW) and then several numbers.

Search for information about either a:

◉ **Water access licence (WAL) issued under the *Water Management Act 2000***

Water Access Licence (WAL) Number WAL 36988

A WAL number starts with the letters 'WAL' followed by several numbers

Can't find your WAL number? Do you have a reference number? A reference number starts with a two digit number, followed by 'AL' and then several numbers. Use the following tool to find your WAL by entering your reference number. Enter the reference number to find the WAL number.

Notes:

The search results will list the conditions imposed on the water access licence. Any approved water supply work/s nominated on the water access licence are identified by the approval number/s for the work/s.

The information about a water access licence provided in the search results is a summary and may not always be up to date. If you require full and up to date details about a particular water access licence (including current holders, share and extraction component details, encumbrances and notations) you should search the Water Access Licence Register administered by NSW Land Registry Services.

○ *Water Act 1912* Licences and Authorities

○ Approval issued under the *Water Management Act 2000*

Find out if a *Water Act 1912* licence has been converted

○ Water licence conversion status

« Previous Search Print Export

Search Results

Category [Subcategory]	Status	Water Source	Tenure Type	Management Zone	Share Components (units or ML)	IDEC (Daily flow shares)

Aquifer	Current	Kulnura Mangrove Mountain Groundwater Source	Continuing	50.00	N/A

Extraction Times or Rates

Subject to conditions water may be taken at any time or rate

- Conditions

Plan Conditions

Water sharing plan **North Coast Fractured and Porous Rock Groundwater Sources 2016**

Take of water

MW0547-00001 The total volume of water taken under this licence in any water year must not exceed a volume equal to:
A. the sum of water in the account from the available water determination for the current year, plus
B. the water carried over in the account from the previous water year, plus
C. the net amount of water assigned to or from the account under a water allocation assignment, plus
D. any water re-credited by the Minister to the account.

MW0112-00004 The maximum water allocation that may be carried over in the account for this access licence from one water year to the next water year is:
A. a volume equal to 20 % of the share component of the licence, or
B. 0.2 ML/unit share of the share component of the licence.

Monitoring and recording

MW0606-00001 The volume of water taken in the water year must be recorded in the logbook at the end of each water year. The maximum volume of water permitted to be taken in that water year must also be recorded in the logbook.

MW2339-00001 A logbook must be kept, unless the work is metered and fitted with a data logger. The logbook must be produced for inspection when requested by the relevant licensor.

MW2338-00001 The completed logbook must be retained for five (5) years from the last date recorded in the logbook.

MW2337-00001 The following information must be recorded in the logbook for each period of time that water is taken:
A. date, volume of water, start and end time when water was taken as well as the pump capacity per unit of time, and
B. the access licence number under which the water is taken, and
C. the approval number under which the water is taken, and
D. the volume of water taken for domestic consumption and/or stock watering.

This condition ceases to apply to a work on the day that the recording and reporting requirements apply to that work under the Water Management (General) Regulation 2018.

Reporting

MW6037-00002 Once the water access licence holder becomes aware of a breach of any condition on this water access licence, the water access licence holder must notify the Minister as soon as practicable. The Minister must be notified by:
A. email: nrar.enquiries@nrar.nsw.gov.au, or
B. telephone: 1800 633 362. Any notification by telephone must also be confirmed in writing within seven (7) days of the telephone call.

Other Conditions

NIL

Disclaimer: WaterNSW is making the information available on the understanding that it does not warrant that the information is suitable for any intended use. In using the information supplied, the user acknowledges that they are responsible for any deductions or conclusions arrived at from interpretation of the data.

Privacy: The information provided is limited to meet the requirements of section 57 of the *Privacy and Personal Information Act 1998*.

Exporting and printing: Search results show a maximum of 50 rows per page. Search results can only be printed page by page.

More information: Should you require further information or technical assistance, please submit your request to water.enquiries@waternsw.com.au or contact 1300 662 077



Grants Road Sand Quarry
Annual Review

1 January 2020 to 31 December 2020

PROJECT APPROVAL 08_0099

paa DESIGN
architecture
planning
urban design
landscape architecture
Peter Andrews + Associates
PTY LTD

March 2021

Project Summary

Name of Operation	Grants Road Sand Quarry
Name of Operator	Steven Jones
Development consent / project approval #	08_0099
	Modification to the Project Approval dated 4 May 2018
Name of holder of development consent / project approval	GR and AK Jones
Environment Protection Licence	11240
Water licence #	WAL 17474; WAL36455; WAL 17440; WAL 36988; WAL37745; WAL37746
Name of holder of water licence	GR and AK Jones
MOP/RMP start date	25 July 2014
MOP/RMP end date	30 June 2044
Annual Review start date	1 January 2020
Annual Review end date	31 December 2020
Name of authorised reporting officer	Vanessa Colclough
Title of authorised reporting officer	Environmental Planner / Director
Date	30 March 2021

Document History and Status

Project: 20_024

Client: GR & AK Jones - Grants Road Sand Quarry

Version	Date issued	Issue	Author
A	30 March 2021	Annual submission to the Department of Planning, Industry and Environment	Vanessa Colclough

Peter Andrews + Associates Pty Ltd
paa.design architecture planning urban design landscape architecture

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1. Introduction

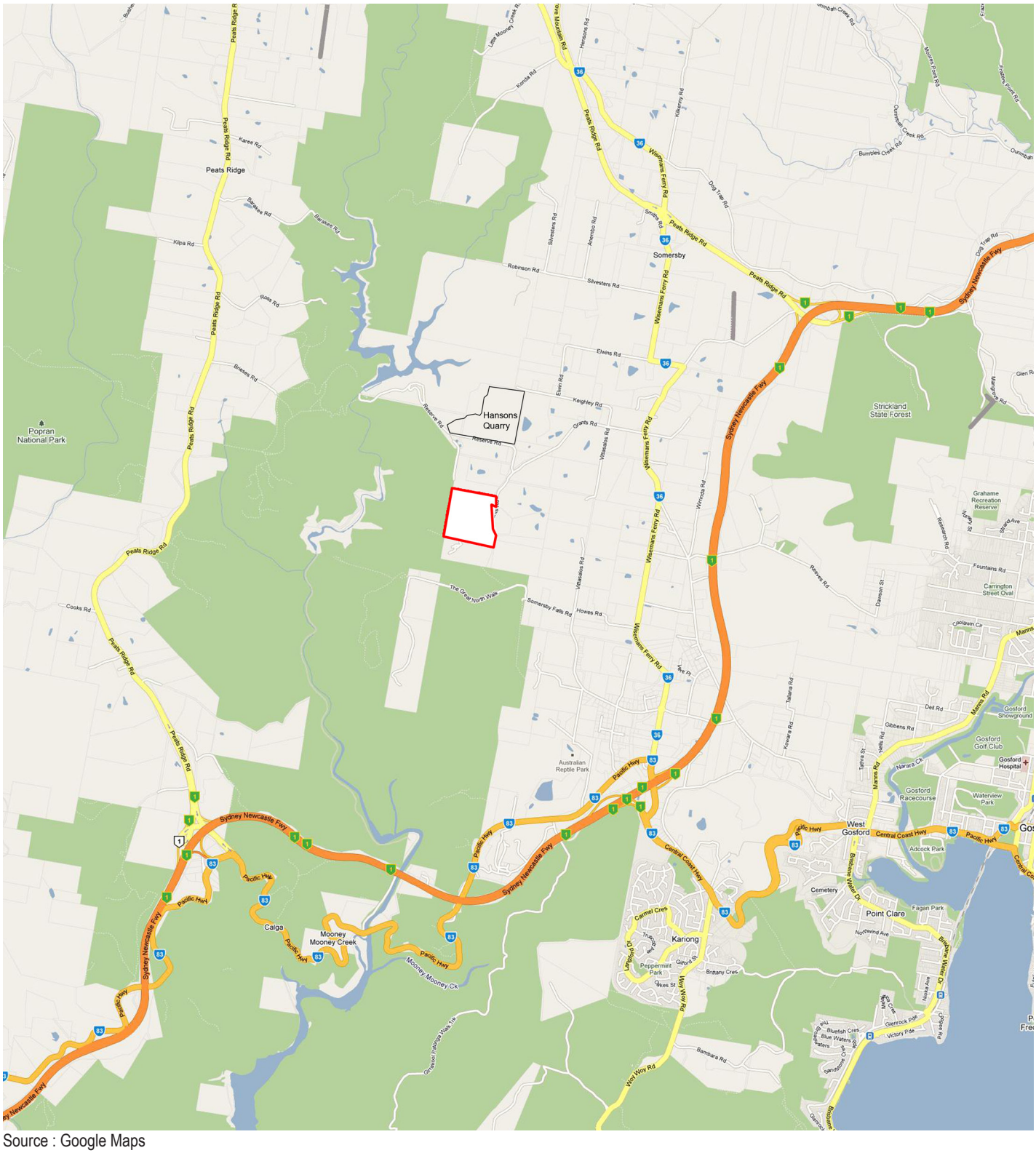
This Annual Review has been prepared for the Grants Road Sand Quarry located at 270 Grants Road, Somersby in accordance with Condition 4 Annual Review of Schedule 5 Environmental Management, Reporting and Auditing of the Project Approval 08_0099 dated 25 July 2014 and the Modification to the Project Approval dated 4 May 2018. The Annual Review is for the period from 1 January 2020 to 31 December 2020 (the reporting period). Figure 1 shows the location and extent of the quarry. The Project Approval is included in Appendix 1 and Notice of Modification in Appendix 2.

The modification to the Project Approval was for the Environmental Assessment of the project titled Section 75W Modification Application for Changes to Biodiversity Offset Area for Approved Grants Road Sand Quarry Extension 270 Grants Road Somersby, dated December 2017 and supplementary ecological survey report titled Additional Ecological Information Report, dated March 2018.

This Annual Report provides a review of the activities that have occurred during the reporting period and documents the activities and environmental monitoring undertaken at the Quarry in 2020.

Schedule 5 condition 4 of the Project Approval and Modification requires that an Annual Review be undertaken by the end of March each year to review the environmental performance of the project. The Annual Review must:

> *(a) describe the development (including any rehabilitation) that was carried out in the past 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 project over the past calendar year, which includes a comparison of these results against the:*
>
> - *relevant statutory requirements, limits or performance measures/criteria;*
> - *requirements of any plan or program required under this approval;*
> - *monitoring results of previous years; and*
> - *relevant predictions in the EA;*
>
> *(c) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;*
>
> *(d) identify any trends in the monitoring data over the life of the project;*
>
> *(e) identify any discrepancies between the predicted and actual impacts of the project, 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 project.*



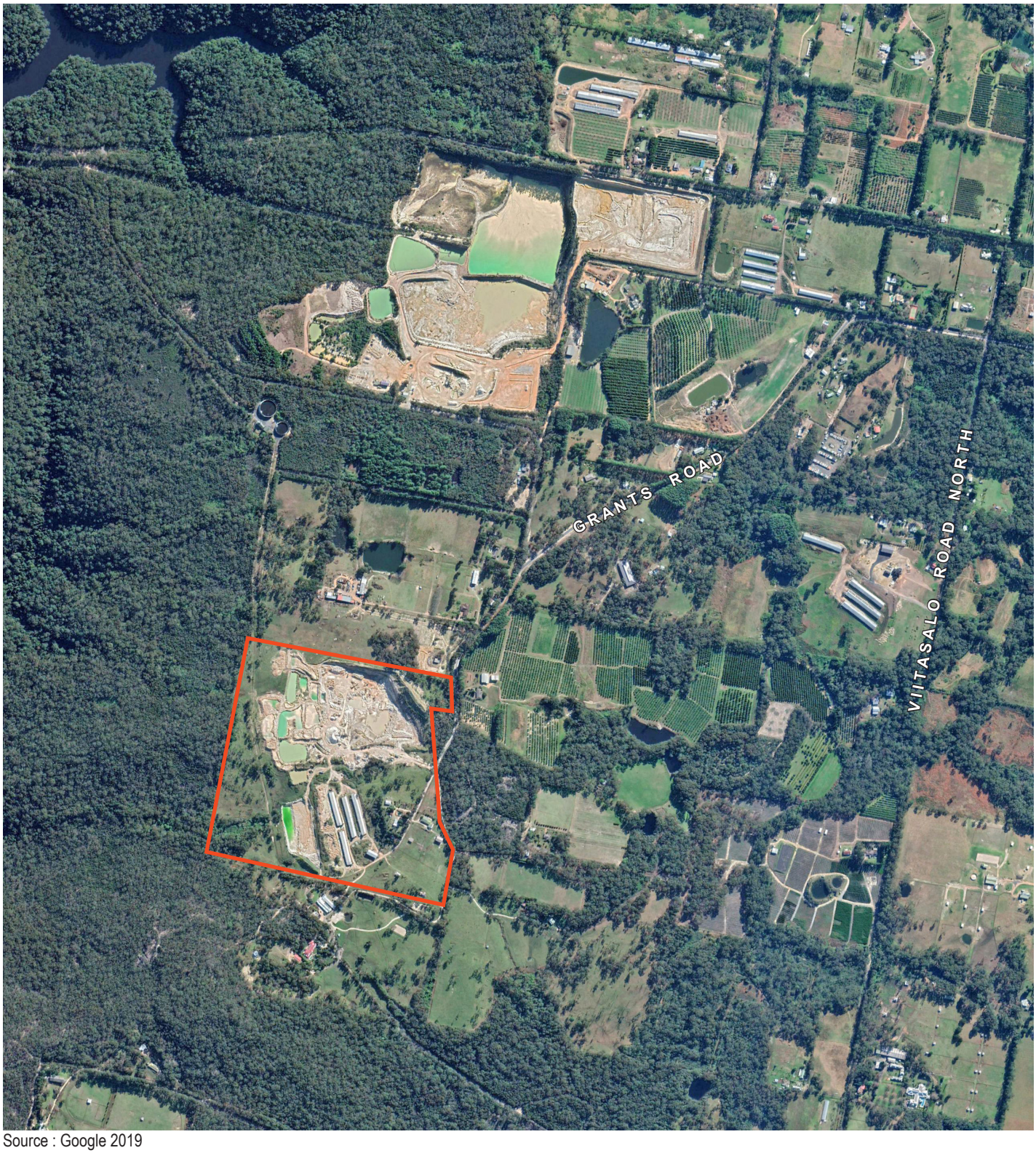
Source : Google Maps

Legend

The Site

North

Figure 1 - Locality Plan



Source : Google 2019

Legend

The Site

North

Figure 2 - Aerial Photograph

2. Performance Requirements

2.1. Management

Grants Road Sand Quarry is under the management of Quarry Manager, Mr. Steven Jones. Whilst, all employees and contractors/suppliers have a responsibility for the effective and ongoing management of environmental impacts at the quarry, the Quarry Manager has specific duties and responsibilities including:

- Day to day implementation of the EMP.
- Ensuring site personnel have undertaken appropriate environmental awareness training and are observing all necessary management requirements.
- Ensure all required environmental auditing/monitoring is undertaken.
- Consultation with relevant stakeholders and complaints handling.

Contact details for any information in regard to the quarry or the operations can be directed as follows:

Quarry Manager – Mr Steven Jones - ph: 0418 116 861
Website - www.grantsrdsand.com.au
Email - info@grantsrdsand.com.au
Address - 270 Grants Road, Somersby NSW 2260

2.2. Hours of operation

The hours of operation for the quarry and for construction activities are:

- Monday to Friday 7.00am to 6.00pm; and
- Saturdays from 7.00am to 1.00pm.

Other activities, e.g. maintenance carried out on site may be conducted outside the above hours if conducted in a manner that is inaudible at all privately-owned residences. The following activities may be carried out on the site outside the above hours:

- Delivery or dispatch of materials as requested by the Police or other authorities; and
- Emergency work to avoid the loss of lives, property and/or to prevent environmental harm.

In such circumstances, the Proponent shall notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter. No such circumstances occurred during the reporting period.

2.3. Licences

The Licences held for the quarry during the reporting period are listed in the following table.

Table 1 – Licences

Approval / Licence	Approval / Licence Number	Issue Date	Expiry Date
Project Approval	08_0099	25 July 2014	30 June 2044
Environment Protection Licence	11240	13 October	
Water Licence	WAL 17474	11 December 2012	
Water Licence	WAL36455	1 November 2013	
Water Licence	WAL 17440	24 April 2014	
Water Licence	WAL 36988	13 January 2015	
Water Licence	WAL37745		
Water Licence	WAL37746		

2.4. Approval Requirements

The requirements and compliance under the Project Approval are outlined in Appendix 3 for the project. Additional information regarding the monitoring of the project is outlined in Section 4 of this Annual Review.

3. Activities undertaken during the Reporting Period

3.1. Activities

The following outlines the key activities undertaken at Grants Road Sand Quarry during the reporting period.

Table 2 – Key Activities

Month	Activities
January	• Updating the website throughout the year with relevant reports. • Weed management undertaken throughout the year. • Maintaining equipment and implementing improvements to machinery to reduce any impacts.
February	
March	• Submission of the 2019 Annual Report to the Department of Planning, Industry and Environment.
April	
May	
June	
July	• Bi-annual community consultation meeting held – Late due to Covid
August	• Required signage incorporated on western fence.
September	
October	
November	
December	• Various monitoring undertaken throughout the year for the Annual Review. • Second bi-annual community consultation meeting held • Heritage 5 Yearly Monitoring Report undertaken

Source: Grants Road Sand Quarry 2020

3.2. Quarrying and Extraction

The annual production for the quarry for the period from 1 January 2020 to 31 December 2020 is outlined below.

Table 3 – Production Summary

Material	Approved limit (Project approval MP_00800	Previous reporting (actual)	This report period (actual)	Next reporting period (forecast)
Sand and sandstone products	250,000 tonnes per annum	127 705.47 tonnes	103190.51 tonnes	100 000 to 140 000 tonnes

4. Environmental Monitoring

Grants Road Sand Quarry engaged the various consultants to undertake the environmental monitoring of the quarry site in accordance with Project Approval 08_0099 and Notice of Modification dated 4 May 2018. The following provides a summary and the environmental monitoring reports are attached in the relevant appendices.

4.1. Water Quality

The Water Quality Monitoring Report including surface water and ground water has been prepared by Larry Cook Consulting Pty Ltd and is attached in Appendix 4.

Water level monitoring is undertaken in four (4) dedicated monitoring bores. Water quality sampling and testing is carried out in two of these monitoring bores and at three surface water monitoring sites. The Water Monitoring Sites are identified in the following table. Regular water sampling was undertaken from 1 January 2020 to 31 December 2020.

Table 4 – Register of Water Monitoring Sites

Monitoring Site	Monitoring Type	Location	Monitoring
W1	Surface Water	North-west discharge point	Water quality
W4	Surface Water	Culvert on south-west waterway	Water quality
S1	Surface Water	South-west waterway on western boundary of Lot1	Water quality
G4 (BH 4)	Groundwater	Bore on NW corner of decant Pond	Water quality and automated water level
G3 (BH 3)	Groundwater	Bore in NW corner of Lot 1 (control bore)	Water quality and automated water level
DDH 2	Groundwater	Southern central part of Lot 1	Automated water level

Previous monitoring site DDH1 for groundwater located in the northern central part of Lot 1 is no longer in use due to the expansion of the sand quarry. Therefore, it is proposed to maintain and use the three monitoring sites in the network being G3, G4 and DDH2

Summary of the results:

GEOCHEMISTRY

- The pH of the surface water sampled is slightly acidic to rarely slightly alkaline that reflects rainwater recharge over the quarry precinct and potential mixing with local groundwater hosted by the Hawkesbury Sandstone. The recorded pH measurements are within the range of acceptable and agreed discharge levels.
- The relatively lower pH values recorded in the groundwater samples reflects rainwater recharge (carbonic acid) and retention of water within Hawkesbury Sandstone. These levels are typical of aquifers hosted by the Hawkesbury Sandstone in the Mangrove Mountain area and wider Sydney Basin.
- The concentrations of Total Suspended Solids (TSS) recorded in groundwater samples were at low concentrations or less than the LOR with low to non-detect levels recorded in the surface water samples. Therefore, the recorded TSSs are less than the discharge level limit.
- Trace levels of nutrients in surface water samples likely reflect the agricultural history of the district (fertilisers and chicken growing).
- No impacts from current approved quarrying activities on this aquifer system were detected.

WATER LEVEL MONITORING

- The close correlation between rain events and the rise in water levels recorded in shallow monitoring bores suggests relative rapid recharge of the shallow aquifer system, especially in Monitoring Bore BH 3 and to a lesser extent in BH4. This is consistent with the results of extensive groundwater investigations over the Site and surrounding district.
- The close correlation between rain events and the rise in water levels recorded in shallow monitoring bores suggests relative rapid recharge of the shallow aquifer system, especially in Monitoring Bore BH 3 and to a lesser extent in BH4. This is consistent with the results of extensive groundwater investigations over the Site and surrounding district.
- The hydrographs for the relatively deeper monitoring bores also show a direct response to rainfall events but with a more subdued magnitude.
- No potential impacts from approved quarrying activities on this aquifer system were detected.

4.2. Noise

A site attended noise audit was undertaken of the quarry on 11 January 2021 by Atkins Acoustics and Associates Pty Ltd and is attached in Appendix 5. The results of the audit are as follows.

Site inspections during the audit identified that onsite extraction and processing was established in Areas A, B and C.

Activities included:

- McClosky (Tricon) Screen and one loader south-east portion of Area A.
- Two excavators one with breaker preparation works eastern side Area B.
- Washing Plant and one loader south area of Area A.
- Dozer ripping eastern portion Area C.
- Dam water pump Area C.

Site inspection and attended noise audits were conducted between 7.00am and 10:00pm on Monday 11 January 2021. Weather observations and conditions reported at the onsite weather station during the audit were calm to light north-west to north-east wind (0 - 1.5m/sec), air temperature 22-24°C, relative humidity 60% and clear sky.

The site attended sound pressure level measurements were conducted at three (3) locations selected to represent the residential receivers identified in Grants Road Sand Noise Management Plan.

The reference measurement locations are:

- Location 1: 'Ibels' - 380 Somersby Falls Road
- Location 2: 'McGregor' - 239 Grants Road
- Location 3: 'Sammut' - 210 Grants Road

The noise measurement instrumentation selected comprised a SVAN949 Sound and Vibration Analyzer. The meter was programmed to calculate and record 15 minute statistical levels. Attended measurements during the audit where appropriate were used to assess source noise contributions associated with Grants Road Sand Quarry operations. A summary of the measurement results and calculated contributions is presented in the following table.

Measurements at all reference assessment locations were influenced by cicada and insect noise.

Table 5 – Audit Measurement Results – January 2021

Measured Ambient Sound Pressure Levels dBA				Grants Road Sand Contribution	Comments
L_{Aeq}	L_{A10}	L_{A90}	L_{A1}	$L_{Aeq,\ 15min}$*	
Location 1: Ibels Residence – 380 Somersby Falls Road					
64.2	66.4	61.4	67.9	<35	Cicadas, birds, GRS mobile plant audible at times estimated LAmax 34/6dBA.
63.7	65.8	60.7	68.5	<35	Cicadas, GRS mobile plant audible at times estimated LAmax 36/7dBA

Location 2: McGregor Residence – 239 Grants Road					
43.7	45.3	39.9	53.5	<40	Distant road traffic, Insects, GRS FEL loader bucket scraping audible at times LAmax 37/8dBA; Onsite GRS mobile plant LAmax 34/5dBA
57.56	53.9	44.0	69.3	<40	Distant road traffic, Insects, Onsite GRS mobile plant LAmax 34/5dBA; Distant chain saw 40/2dBA
Location 3: Sammut Residence – 210 Grants Road					
42.7	42.7	40.0	51.5	<40	Distant road traffic, Birds, Insects.
44.0	44.5	40.3	52.7	<40	Distant road traffic; Insects; Birds, GRS onsite mobile plant LAmax 35/7dBA.

Onsite measurements were also conducted to confirm sound power levels for the operating site plant and equipment.

The findings of the measurement results show that noise from Grants Road Sand Quarry activities complied with the DoPE (*Application Number 08_0099, MOD 1),* noise condition LAeq, 15min 40dBA. The Site Quarry Manager confirmed that no noise related incidents were reported during the period from 28 November 2019 to 10 January 2021.

A review of the audit measurement results and previous reported audit measurements has shown that noise contributions from Grant Road Sand Quarry have remained steady.

4.3. Air Quality

Baseline air quality and meteorological reporting has been undertaken for the site by ERM Australia Pacific Pty Ltd and is attached in Appendix 6. All monitoring for air quality is conducted in accordance with the NSW Environmental Protection Agency (EPA).

The automatic weather station (AWS) and High Volume Air Sampler (HVAS) are located onsite and are used to provide the baseline monitoring for the quarry site.

The dominant winds for the annual period were from the west. The average wind speed for the period was 2.1 m/s and the percentage occurrence of calm wind conditions (less than or equal to 0.5 m/s) was 3.3 %. July was the coldest month on average with January the hottest month on average. A maximum daily average of 32°C was recorded on 23 January 2020. March recorded the highest monthly rainfall of 137 mm.

The results for the available PM_{10} data in 2020 are of a possible sixty samples (over approximately 12 months), twenty-five (25) samples are reported, resulting in a low data recovery rate of approximately 42%. The average PM_{10} concentration over the recorded 9-month period was 4.3 µg/m3, which is well below the annual EPA impact assessment criterion of 25 µg/m3. All reported results are below the EPA maximum 24-hour average criterion of 50 µg/m3 for PM_{10}.

Dust deposition is measured at two locations, R1 and R4. Of a possible 12 samples, all 12 samples are reported for both sites. The average monthly dust deposition level for the period of 2020 was 2.2 g/m2/month at R1 and 0.7 g/m2/month at R4. The results for R1 are all below the EPA cumulative annual average criterion of 4 g/m2/month. There are two monthly results for R1 above the EPA cumulative annual average criterion of 4 g/m2/month. These were 6.8 g/m2/month in January and 12.2 g/m2/month in June 2021. The measurement in January is likely to be the result of unprecedented bushfire activity in the Hunter and Greater Sydney area at that time. The June value is anomalous and may have been contaminated. If this value is discounted then the annual average would be reduced to 1.2 g/m2/month, but even if it is retained, the annual average is well below the criterion. No values at R4 was above this criterion.

The dust sample collected by the deposition gauges includes both dust generated by site activities (incremental dust impact) and dust from all other local sources (background dust levels). Even with the background levels accounted for, the annual average deposition levels are considerably below both the incremental and cumulative annual criteria, when the anomalous June value at R1 is discounted.

A number of crystalline silica measurements were taken on 15 September 2020. The samples were measured over the course of a shift, using personal air-samplers in the breathing zone of operators on dozers, excavators and loaders at the site. The results collected and corrected for the number of hours worked in a shift. These are presented in the report by *WorkPlace Environment Consultants* (WEC, 2020).

The results indicate that levels were below the relevant workplace health and safety standards. Levels in the ambient air at the nearest residences would be many orders of magnitude lower than these.

4.4. Groundwater Dependent Ecosystems

The Groundwater Dependent Ecosystems monitoring report was undertaken by Conacher Consulting and is attached in Appendix 7.

The monitoring program for the Groundwater dependent ecosystems consists of a combination of aerial photograph assessment and mapping of GDEs within the predicted drawdown area, floristic plot surveys and field assessment for indicators and signs of potential project related impacts. The following variables were measured:

i. *Native Plant Composition*
Plot surveys were completed comparing the results of the baseline plot monitoring results from the 2018 monitoring period with the current plot conditions. The native flora species present and projected foliage cover were assessed. Comments are provided for the species observed, including GDE species, which are reliant on moist soil conditions.

ii. *Exotic Plant Composition*
All exotic flora species and total cover of exotic flora species were recorded for each plot.

iii. *GDE Extent and Distribution*
Mapping of GDE's was informed by aerial photograph analysis and interpretation using Nearmap imagery dated 14 January 2021.

iv. *Vegetation Photo Point Monitoring*
Photographs were taken for each monitoring quadrat from each cardinal point.

v. *Surface Erosion and Sedimentation Monitoring*
A visual inspection of the downstream and downslope GDE patches from the quarry site was undertaken to monitor for any surface erosion or sedimentation impacts from the quarry operations.

vi. *Comparison with Groundwater Monitoring Data*
A review of the groundwater monitoring undertaken by Larry Cook Consulting.

The review of the Groundwater Dependent Ecosystems concludes that all performance targets have been met for GDEs and requirement for mitigation or response measures has not been triggered in relation to 2020 site operations.

4.5. Somersby Mintbush Monitoring

The 2020 annual monitoring report for Somersby Mintbush *Prostanthera junonis* has been prepared by Conacher Consulting and is attached in Appendix 8.

Counts of flowering *P. junonis* plants were undertaken on 30 November 2020 and 21 December 2020 at the Somersby Mintbush subpopulation locations adjacent to the quarry allotment identified by NSW NPWS (2000). The results of the counts are provided in Table 6.

Table 6 – Somersby Mint Bush Cumulative Count Results

Sub-Population Number	Count Results 2015	2016	2017	2018	2019	2020
3	0	2 flowering plants (several non-flowering juvenile regrowth plants observed)	18 flowering plants	42 flowering plants	29 flowering plants	46 flowering plants
4	0	No flowering plants. Several non-flowering juvenile plants observed	34 flowering plants	394 flowering plants	484 flowering plants	498 flowering plants (including outlier to the north)

The report concludes:

i. An increase in the sub-population 4 of Somersby Mintbush was recorded compared to previous monitoring periods.

ii. The Somersby Mintbush population increase recorded is likely a result of reduced shading, increased rainfall and continued regeneration following the 2015 hazard reduction burning operations of the NPWS.

iii. Maintenance of the northern section of the western property boundary fence is required.

iv. Suitable environmental controls should continue to be maintained for the Project.

4.6. Landscape and Rehabilitation Monitoring

The review of the landscape and rehabilitation activities has been prepared by Conacher Consulting and is included in Appendix 9. An initial Landscape and Rehabilitation Plan (LRMP) for the project was approved on 11 December 2015. Since the preparation of this LRMP, the Biodiversity Offset Areas and Landscape Buffer Areas for the project have been revised through an approved Modification Application (No 1).

A revised Landscape and Rehabilitation Management Plan (LRMP) (Conacher Consulting Version 2 - 2019) and a new Biodiversity Offset Management & Habitat Rehabilitation Plan (Conacher Consulting November 2019) have been prepared to meet the current project approval and commitment requirements. These new documents have been forwarded to the Department of Planning, Industry and Environment and have been approved by the Department.

The following works have been completed in accordance with the Biodiversity Offset Strategy requirements for the project:

- Management of fauna nest boxes.
- Fencing of Biodiversity offset areas.

The Project is compliant with the requirements of the current Landscape and Rehabilitation Management Plan and Biodiversity Offset Management & Habitat Rehabilitation Plan prepared in compliance with the Conditions for the current Project Approval.

The progressive implementation of these plans is being undertaken as required.

No revisions to the current Landscape and Rehabilitation Management Plan and Biodiversity Offset Management & Habitat Rehabilitation Plan documents are recommended this stage.

4.7. Heritage

The fence was constructed around the Grants Road RE1 Aboriginal Site and the initial monitoring of the site was undertaken in 2015.

As per the inspection, post approval, undertaken by Insite Heritage Pty Ltd, in 2015, the sandstone block wall, 8m perimeter fencing and signage have remained in-situ throughout 2020.

The monitoring of Howes Reserve did not show any indication of impact from the quarrying activities at Grant Sands. The vertical crack on the southern side of the Howes Reserve rockshelf has not widened during the intervening period, which indicates that vibration has not caused any impact to the Reserve.

In general the vegetation on Howes reserve is generally becoming thicker. The engravings in the reserve remain clearly discernible and there was no evidence of dust build up or vegetation encroachment on to the engravings.

The anthropomorphic figure RE1 on the Grant Sands site has become more difficult to discern due to natural weathering. The soft nature of the sandstone of the site makes the engraving vulnerable to natural weathering processes. Darkinjung LALC and Guringai Tribal Link were going to talk to the community groups and consider what, if anything, can be done to protect or rejuvenate the site. No works will be undertaken with out consultation with NPWS. Refer to Heritage report at Appendix 10.

Biodiversity offsets
There has been no activity (i.e.. ground disturbance works) in the biodiversity offset area that has required a cultural heritage inspection in 2020.

Complaints
There have been no complaints regarding cultural heritage in this period.

4.8. Community Consultation

Meetings of the Community Consultations Committee (CCC) were held on 30 July 2020 and 17 December 2020 at Somersby Garden Estate. Refer to minutes of CCC meetings at Appendix 11.

No community complaints were received.

4.9. Visual

An earth and sound mound have been constructed in the north eastern area of the quarry site by Grants Road Sand Quarry. This mound has been vegetated using existing grasses located on the site to minimise visual impact. This vegetation is to be continuously maintained.

4.10. Waste Management

All waste generated is managed appropriately and no on-site disposal of general waste occurs. Grants Road Sand Quarry is also committed to reducing, reusing and recycling prior to disposal of waste.

The quarry site also is permitted to accept VENM and ENM. The quarry has received 4890.01 tonnes of geotechnical certified VENM and 1002.64 tonnes of ENM during January to December 2020.

4.11. Bushfire

Bushfire management of the quarry site is implemented by the Quarry Manager including maintaining the site and the onsite water cart is set up for firefighting purposes and also able to provide onsite water for fire brigade tankers. The Quarry Manager is also an active member of the Somersby Rural Fire Service.

5. 2021 Reporting Period

The following identifies the measures and activities that are proposed to be undertaken during the 2021 calendar year.

General

- Environmental Audit to be carried out by September 2021.
- Maintaining equipment and implementing improvements to machinery to reduce any impacts.
- Research and applying best practice in quarry management.
- Updating of the website to include additional environmental reporting and relevant data from the quarrying activities.

Water Quality

- Continue acquisition and charting of water level measurements in the revised network of three groundwater monitoring bores G3, G4 and DDH2.
- Upgrade the water level sensor network to satellite telemetry to ensure reliable communications and downloads. This incorporates acquisition and installation of satellite data loggers in G3, G4 and DDH2.
- Carry out regular routine surface water and groundwater monitoring in the monitoring network during 2021 in accordance with the requirements documented in the surface water and groundwater management plans. This includes maintenance and make repairs to pressure sensors to maintain integrity and communications.
- Continue oil & grease testing at surface water sample site S1 (when flowing) at the frequency of one sample per month when discharge occurs.
- Submit water samples to the project laboratory (ALS) for analysis, compile results and assess any trends and exceedances and, if required, implement a response and action plan in accordance with the environmental management plans.
- Prepare a report giving the results of the 2021 monitoring program and an assessment of any trends and potential impacts. This will include an ongoing assessment of hydrographs, pH, TSS, TDS, nitrogenous compounds and other tests as required.

Noise Quality

- Implement best management practice to minimise the construction, operational and road noise of the project.
- Assess the noise monitoring data and relocate, modify or stop operations on site to ensure compliance.
- Maintain the effectiveness of noise suppression equipment on plant and equipment on site.
- Minimise the noise impacts of the project during certain meteorological conditions.
- Continuation of the of the earth mounding/bunding on the western site boundaries.
- Additionally, and dependent on product demand, it is expected that the depths of the working platforms (Areas A,B and C) could increase by 3-4 metres.

Air Quality

- Current mitigation processes are to be sustained.
- Monitoring for air quality to be conducted in accordance with the NSW Environmental Protection Agency.
- Quarterly monitoring for crystalline silica.
- Preparation of the Annual report.

Biodiversity

Groundwater Dependent Ecosystem

- Detailed monitoring and reporting of the Groundwater dependent ecosystems.

Somersby Mintbush

- Further counts of the previously identified locations of *P. junonis*.
- Continuation of suitable erosion and sedimentation controls and maintenance.
- The trigger levels will be utilised in future monitoring to improve and assess performance for the Project in relation to Somersby Mintbush. Additional monitoring items should be added to the list in the future if deemed necessary. None of these identified triggers have occurred during the current monitoring period.

Landscape and Rehabilitation

- Works within the bio offset area subject to the Landscape and Rehabilitation Plan.
- Annual reporting.

Heritage

- Consultation with the Aboriginal Land Councils through the preparation of newsletters updating on activities of the Quarry.
- Inspection of biodiversity area subject to any works being undertaken.

Community Consultation

- Undertake community consultative committee meetings biannually.

Waste Management and Minimisation

- Ensuring best practice is implemented throughout the quarry site.

Visual Impact

- Maintaining and improving the vegetation on all constructed mounds.
- Maintaining and improving the site where appropriate.

Bushfire Management

- Ensuring bushfire management practices are implemented.

6. Community + Complaints

6.1. Complaint Management

The quarry has not received any complaints during the reporting period. The Community Consultative Committee has been established and has agreed to meet biannually in March and September.

7. Trends

7.1. Trends in the monitoring data

Trends in monitoring data identified to date for the quarry expansion are outlined in the following table:

Table 8 – Trends in Monitoring Data

Key Issue	Trends
Noise	Noise contributions have remained steady.
Somersby Mint Bush	Continuing regrowth of *P. junonis* was observed at subpopulation 4.

7.2. Discrepancies between the predicted and actual impacts of the project

There have been no discrepancies identified.

Appendix 1
PROJECT APPROVAL 08_0099

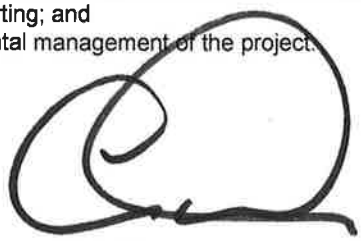
Project Approval

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

As delegate for the Minister of Planning, I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

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



Chris Wilson
Executive Director
Development Assessment Systems & Approvals

Sydney 25 July 2014

SCHEDULE 1

Application Number:	08_0099
Proponent:	GR and AK Jones
Approval Authority:	Minister for Planning
Land:	Lot 1 DP358717
Project:	Grants Road Sand Quarry Extension

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DEFINITIONS

Annual Review	The review required by condition 3 of schedule 5
BCA	Building Code of Australia
Biodiversity Offset Strategy	The conservation and management of the Proponent's offset sites on Lot 1 DP358717
CCC	Community Consultative Committee
Conditions of this approval	Conditions contained in Schedules 2 to 5 inclusive
Council	Gosford City Council
Department	Department of Planning and Environment
DRE	Division of Resources and Energy (within the Department of Trade and Investment, Regional Infrastructure and Services)
EA	Environmental Assessment of the project titled *Grants Road Sand Quarry Extension - Environmental Assessment Report* prepared by Peter Andrews and Associates, dated April 2013; and the Proponent's response to the issues raised in submissions, dated December 2013
Environmental Consequences	The environmental consequences of quarrying operations, including erosion, sedimentation and adverse impacts on water quality, water quantity and biodiversity
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	Environment Protection Licence issued under the POEO Act
Feasible	Feasible relates to engineering considerations and what is practical to build or carry out
GDEs	Groundwater Dependent Ecosystems
High Priority GDEs	GDEs listed in Schedule 5 of the *Water Sharing Plan for the Kulnura Mangrove Mountain Groundwater Sources 2003*, including *Hawkesbury Coastal Banksia Woodland* and *Sandstone Hanging Swamps*
Incident	A set of circumstances that: • causes, or threatens to cause, material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this approval
Land	As defined in the EP&A Act, except where the term is used in the noise and air quality conditions in Schedules 3 and 4 of this approval, where it is defined as the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Material harm to the environment	Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Minister	Minister for Planning, or delegate
Minor	Not very large, important or serious
Mitigation	Activities associated with reducing the impacts of the project
Negligible	Small and unimportant, such as to be not worth considering
NOW	NSW Office of Water
OEH	Office of Environment and Heritage
POEO Act	*Protection of the Environment Operations Act 1997*
Privately-owned land	Land that is not owned by a public agency or a mining or quarrying company (or its subsidiary)
Project	The project as described in the EA, including existing quarrying operations and disturbance
Proponent	GR and AK Jones or any person who seeks to carry out the approved project under this approval
Public Infrastructure	Linear and related infrastructure that provides services to the general public, such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications etc.
Quarrying operations	The extraction, processing and transportation of extractive materials on the site and the associated removal of vegetation, topsoil and overburden

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 project to a good condition and for the purpose of establishing a safe, stable and non-polluting environment
RMS	Roads and Maritime Services
Secretary	Secretary of the Department, or nominee
Site	The land described in Schedule 1
Statement of Commitments	The Proponent's commitments in Appendix 1
VENM	Virgin Excavated Natural Material and/or Excavated Natural Material

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. In addition to meeting the specific performance criteria established under this approval, the Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.

TERMS OF APPROVAL

2. The Proponent shall carry out the project generally in accordance with the:
   (a) EA;
   (b) Statement of Commitments; and
   (c) conditions of this approval.

   Note: The statement of commitments is reproduced in Appendix 1.

3. If there is any inconsistency between the above documents, the more recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

4. The Proponent 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 approval;
   (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with this approval; and
   (c) the implementation of any actions or measures contained in these documents.

LAPSING OF APPROVAL

5. If the project has not been physically commenced within 5 years of the date of this approval, then this project approval shall lapse.

LIMITS ON APPROVAL

Quarrying Operations

6. The Proponent may carry out quarrying operations on the site until 30 June 2044.

   Note: Under this approval, the Proponent is required to rehabilitate the site and carry out additional undertakings to the satisfaction of the Secretary. Consequently, this approval 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 Limit

7. The Proponent shall not extract process and transport more than 250,000 tonnes of quarry products from the site in any calendar year.

SURRENDER OF EXISTING DEVELOPMENT CONSENT

8. By the end of December 2015, or as otherwise agreed by the Secretary, the Proponent shall surrender all existing development consents that it holds for the site in accordance with Section 104A of the EP&A Act.

   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. Surrender of consent should not be understood as implying that works legally constructed under a valid consent can no longer be legally maintained or used.

9. Prior to the surrender of this development consent, the conditions of this approval shall prevail to the extent of any inconsistency with the conditions of that consent.

STRUCTURAL ADEQUACY

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

Notes:

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

DEMOLITION

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

PROTECTION OF PUBLIC INFRASTRUCTURE

12. The Proponent shall:
    (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and
    (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project.

Note: This condition does not apply to damage to roads caused as a result of general road usage.

OPERATION OF PLANT AND EQUIPMENT

13. The Proponent shall ensure that all the plant and equipment used at the site is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

UPDATING AND STAGING OF STRATEGIES, PLANS OR PROGRAMS

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

With the agreement of the Secretary, the Proponent may prepare a revision of or a stage of a strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this approval.

Notes:

- *While any strategy, plan or program may be submitted on a staged basis, the Proponent will need to 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/s of the project to which the strategy, plan or program applies; the relationship of this stage/s to any future stages; and the trigger for updating the strategy, plan or program.*
- *For the avoidance of doubt, existing approved management plans, strategies or monitoring programs for the Grants Road Sand Quarry will continue to apply until the approval of a similar plan, strategy or program under this approval (see condition 8 above).*
- *See also condition 5 of Schedule 5.*

PRODUCTION DATA

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

IDENTIFICATION OF APPROVED EXTRACTION LIMITS

16. By 30 September 2014, unless otherwise agreed with the Secretary, the Proponent shall:
    (a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction within the entire site; and
    (b) submit a survey plan of these boundaries with applicable GPS coordinates to the Secretary.

17. While quarrying operations are being carried out, the Proponent shall ensure that these boundaries are clearly marked at all times in a manner that allows operating staff to clearly identify the approved limits of extraction.

SCHEDULE 3
ENVIRONMENTAL PERFORMANCE CONDITIONS

SOIL AND WATER

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

Water Supply

1. The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of operations under the approval to match its available water supply, to the satisfaction of the Secretary.

Compensatory Water Supply

2. The Proponent shall provide a compensatory water supply to any owner of a privately-owned groundwater bore where monitoring indicates that the project is causing (or contributing to, in conjunction with another quarry project) a reduction in pumping yield of more than 10%, or a 2 metre decline in the water table, in consultation with NOW, and to the satisfaction of the Secretary.

   The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply must be provided (at least on an interim basis) within 24 hours of the loss being identified.

   If the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

   If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Secretary.

Pollution of Waters

3. Unless an EPL authorises otherwise, the Proponent shall comply with section 120 of the POEO Act during the carrying out of the project.

Water Management Plan

4. The Proponent shall prepare and implement a Water Management Plan for the project 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 NOW, and be submitted to the Secretary for approval by the end of November 2014; and
   - (c) include a:
     - (i) Site Water Balance that includes:
       - details of:
         - sources and security of water supply;
         - water use and management on site;
         - any off-site water transfers;
         - reporting procedures; and
       - measures that would be implemented to minimise clean water use on site;
     - (ii) Surface Water Management Plan, that includes:
       - detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the project;
       - a detailed description of the water management system on site, including the:
         - clean water diversion system;
         - erosion and sediment controls;
         - dirty water management system; and
         - water storages;
       - a program to monitor and report on surface water flows and quality in water bodies that could potentially be affected by the project; and

- a comparison of monitoring results with modelled predictions;

(iii) Groundwater Management Plan, that includes:

- detailed baseline data on groundwater levels, yield and quality in local sandstone aquifers, privately-owned groundwater bores and in areas of high priority GDEs that could be affected by the project;
- groundwater impact assessment criteria for local sandstone aquifers, privately-owned bores and high priority GDEs;
- a program to monitor and report on:
  - groundwater inflows to the quarrying operations;
  - the impacts of the project on:
    - local sandstone aquifers;
    - privately-owned groundwater bores; and
    - high priority GDEs,

  including provision for continuous groundwater monitoring; and
- a program to validate the groundwater model for the project, and comparison of monitoring results with modelled predictions;
- a protocol, developed in consultation with Central Coast Sands Quarry, to appropriately apportion responsibility for any potential impacts to privately-owned groundwater bores and/or high priority GDEs that may be affected cumulatively by the project and operations at Central Coast Sands Quarry;
- an investigation of opportunities to maintain ecosystem function in high priority GDEs to the west and northwest of the project through facilitating run-on of clean surface waters; and

(iv) a Surface and Ground Water 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 project; and
- the procedures that would be followed if any unforeseen impacts are detected during the project.

Note: In the event that there is a dispute between the Proponent and Central Coast Sands Quarry concerning the development, finalisation or implementation of the above protocol, then either party may refer the matter to the Secretary for resolution. The decision of the Secretary on the matter shall be final.

NOISE

Hours of Operation

5. The Proponent shall only conduct construction activities and quarrying operations on the site:
   (a) between 7.00 am and 6.00 pm, Monday to Friday;
   (b) between 7.00 am and 1.00 pm, Saturday; and
   (c) at no time on Sunday or public holidays.

   Note: The Proponent may carry out other activities e.g. maintenance, on the site provided that these activities are conducted in a manner that is inaudible at all privately-owned residences.

6. The following activities may be carried out on the site outside the hours specified in condition 5:
   (a) delivery or dispatch of materials as requested by Police or other authorities; and
   (b) emergency work to avoid the loss of lives, property and/or to prevent environmental harm.

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

Noise Impact Assessment Criteria

7. The Proponent shall ensure that the construction and operational noise generated by the project does not exceed the criteria in Table 1 at any residence on privately-owned land.

Table 1: Noise criteria

Receiver Location	***$L_{Aeq\ (15\ min)}$ dB(A)***
All privately-owned residences	40

Noise generated by the project is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the *NSW Industrial Noise Policy*. Appendix 2 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.

However, the noise criteria in Table 1 do not apply if the Proponent has an agreement with the relevant landowner to exceed the noise criteria, and the Proponent has advised the Department in writing of the terms of the agreement.

Operating Conditions

8. The Proponent shall:
   (a) implement best management practice to minimise the construction, operational and road noise of the project;
   (b) regularly assess noise monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the noise criteria in this approval;
   (c) maintain the effectiveness of noise suppression equipment on plant and equipment on site;
   (d) minimise the noise impacts of the project during meteorological conditions under which the noise limits in this approval do not apply (see Appendix 2); and
   (e) carry out regular noise monitoring to determine whether the project is complying with the relevant conditions of this approval,

   to the satisfaction of the Secretary.

Noise Management Plan

9. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:
   (a) be prepared in consultation with the EPA, and submitted to the Secretary for approval by the end of November 2014;
   (b) describe the measures that would be implemented to ensure:
      - compliance with the relevant conditions of this approval;
      - best management practice is being employed; and
      - the noise impacts of the project are minimised during meteorological conditions under which the noise criteria in this approval do not apply;
   (c) describe the proposed noise management system; and
   (d) include a monitoring program that:
      - uses attended monitoring to evaluate the compliance of the project against the noise criteria in this approval;
      - 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 at the project, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.

AIR QUALITY

Air Quality Impact Assessment Criteria

10. The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 2, 3, 4 and 5 at any residence on privately-owned land.

Table 2: Long-term criteria for particulate matter

Pollutant	***Averaging Period***	***[d] Criterion***
Total suspended particulate (TSP) matter	Annual	[a] 90 µg/m^3

Particulate matter < 10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 3: 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 4: 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

Table 5: Impact assessment criterion for crystalline silica

Pollutant	***Averaging Period***	***Criterion***
[e] Chronic Reference Exposure Level (REL) (PM_4)	Annual	3 µg/m^3

References to Tables 2 to 5:

[a] Total impact (ie. incremental increase in concentrations due to the project plus background concentrations due to all other sources);

[b] Incremental impact (ie. incremental increase in concentrations due to the project 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 the EPA; and

[e] Crystalline silica must be analysed in accordance with a test method approved by the Department of Health.

Operating Conditions

11. The Proponent shall:
    (a) implement best practice management to minimise the dust emissions of the project;
    (b) regularly assess air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this approval;
    (c) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see note d under Table 5);
    (d) implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site; and
    (e) minimise the area of surface disturbance and maximise progressive rehabilitation of the site; and
    (f) carry out regular air quality monitoring to determine whether the project is complying with the relevant conditions of this approval,

    to the satisfaction of the Secretary.

Air Quality Management Plan

12. The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with the EPA and submitted to the Secretary for approval by the end of November 2014;
    (b) describe the measures that would be implemented to ensure:
        - compliance with the relevant conditions of this approval;
        - best practice management is being employed; and
        - the air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events;
    (c) describe the proposed air quality management system; and
    (d) include an air quality monitoring program that:
        - is capable of evaluating the performance of the project;

- includes a protocol for determining any exceedances of the relevant conditions of approval;
- effectively supports the air quality management system; and
- evaluates and reports on the adequacy of the air quality management system.

METEOROLOGICAL MONITORING

13. For the life of the project, the Proponent 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.

TRANSPORT

Monitoring of Product Transport

14. The Proponent shall:
    (a) keep accurate records of the:
        - amount of quarry products transported from the site (per calendar month and year); and
        - number of laden vehicle movements from the site (per hour, day, week, calendar month and year); and
    (b) publish these records on its website biannually.

Operating Conditions

15. The Proponent shall ensure that:
    (a) all project-related heavy vehicles enter and exit the site in a forward direction;
    (b) all laden vehicles entering or leaving the site have their loads covered; and
    (c) all laden vehicles leaving the site are cleaned of sand and other material that may fall on the road, before leaving the site.

Grants Road Maintenance

16. The Proponent shall, in conjunction with the operator of the Central Coast Sands Quarry, cause to be prepared a road condition assessment and road maintenance contributions study of Grants Road. The study must:
    (a) be undertaken by a suitably qualified, experienced and independent person(s) endorsed by the Secretary;
    (b) be undertaken in consultation with Council;
    (c) be submitted to the Secretary for approval by the end of March 2015;
    (d) be co-funded by the Proponent and the operator of the Central Coast Sands Quarry on a basis which is proportionate to the maximum number of tonnes of quarry product expected to be dispatched from each quarry over the life of their major project approvals, and the length of Grants Road affected by laden vehicles from each quarry;
    (e) assess current road condition of the length of Grants Road affected by laden vehicles from each quarry, and future road maintenance requirements for this length of road over the life of the major project approvals for both quarries;
    (f) give consideration to the usage of Grants Road by laden vehicles from each quarry over the past five years and the predicted usage of Grants Road by laden vehicles from each quarry over the life of their major project approvals, including any importation of VENM; and
    (g) recommend per tonne/per kilometre road maintenance contributions for the project for the haulage of quarry products and VENM on Grants Road.

    If the Proponent and the operator of the Central Coast Sands Quarry cannot agree on any aspect of undertaking this study or the implementation of its recommendations, then either party may refer the matter to the Secretary for resolution. The decision of the Secretary on the matter shall be final.

17. The Proponent shall pay contributions to Council for the maintenance of Grants Road, in accordance with the study required under condition 16, unless otherwise agreed by the Secretary.

Traffic Management Plan

18. The Proponent shall prepare and implement a Traffic Management Plan for the project, to the satisfaction of the Secretary. This plan must:
    (a) be submitted to the Secretary for approval by the end of November 2014;
    (b) include a drivers' code of conduct to minimise the impacts of project-related trucks on local residences and road users; and
    (c) describe the measures that would be put in place to ensure compliance with the drivers' code of conduct.

BIODIVERSITY

Biodiversity Performance Measures

19. The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 6, to the satisfaction of the Secretary.

Table 6: Biodiversity impact performance measures

Feature	***Measure***
High priority GDEs located within 1 kilometre of extraction operations	Minor environmental consequences, including: • negligible erosion of the surface of the GDEs; • negligible sedimentation within the GDEs; • minor changes in the size of the GDEs; • no significant change to the composition or distribution of species within the GDEs.
Somersby Mintbush	Negligible environmental consequences

Offsets

20. If the Proponent exceeds the performance measures in Table 6 and the Secretary determines that:
    (a) it is not reasonable or feasible to remediate the impact or environmental consequence; or
    (b) remediation measures implemented by the Proponent have failed to satisfactorily remediate the impact or environmental consequence;
    then the Proponent shall provide a suitable offset to compensate for the impact or environmental consequence, to the satisfaction of the Secretary.

    Note: Any offset required under this condition must be proportionate with the significance of the impact or environmental consequence.

Groundwater Dependent Ecosystem Monitoring and Management Program

21. The Proponent shall undertake additional studies on the high priority GDEs located within 1 kilometre of extraction operations under the approval and potentially impacted by the project. The studies shall be undertaken in consultation with NOW and include:
    (a) a description of the nature and extent of groundwater reliance for each GDE;
    (b) long-term monitoring of the condition of the GDEs;
    (c) performance indicators for project-related environmental consequences on GDEs and trigger levels to initiate mitigation/response measures; and
    (d) mitigation/response measures to ensure minor environmental consequences on the GDEs,
    to the satisfaction of the Secretary.

Somersby Mintbush Monitoring and Management Program

22. The Proponent shall prepare and implement, in consultation with OEH and Council, a Somersby Mintbush (*Prostanthera junonis)* Monitoring Program within the vicinity of the site. This program must include:
    (a) a baseline assessment of the extent and condition of the Somersby Mintbush populations before commencement of quarrying operations under the approval;
    (b) long-term monitoring of these populations;
    (c) establishment of performance indicators for project-related environmental consequences on Somersby Mintbush and trigger levels to initiate mitigation/response measures; and

(d) mitigation/response measures to ensure negligible environmental consequences on the Somersby Mintbush,

to the satisfaction of the Secretary.

Biodiversity Offset Strategy

23. The Proponent shall implement the biodiversity offset strategy described in the EA, as summarised and revised in Table 7, and shown conceptually in Appendix 3, to the satisfaction of the Secretary.

Table 7: Summary of the biodiversity offset strategy

Area	*Offset Criteria*	*Size (hectares)*
On-site Offset Area	Existing vegetation to be enhanced to establish: • at least 4 ha of moderate – good quality Scribbly Gum Woodland and/or another native vegetation community commensurate with the local surroundings; and • suitable habitat for threatened fauna species including the provision of at least 36 nest boxes.	6.37

Note: See condition 26 for additional requirements relating to the management of the biodiversity offset strategy.

Long Term Security of Offset

24. The Proponent shall make suitable arrangements to provide appropriate long-term security for the offset areas prior to the commencement of extraction operations under this approval unless otherwise agreed by the Secretary, to the satisfaction of the Secretary.

LANDSCAPE

Rehabilitation Objectives

25. The Proponent shall rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be generally consistent with the rehabilitation strategy in the EA, and comply with the objectives in Table 8.

Table 8: Rehabilitation objectives

Feature	*Objective*
Site (as a whole)	• Safe, stable and non-polluting. • Minimise the visual impact of the final landforms as far as is reasonable and feasible.
Surface Infrastructure	• To be decommissioned and removed, unless the Secretary agrees otherwise.
Quarry Benches	• Suitably landscaped and revegetated using native species.
Quarry Pit Floor	• Establish land with a level of at least Class 4 agricultural suitability over 80% of the quarry floor.
Community	• Ensure public safety. • Minimise the adverse socio-economic effects associated with quarry closure.

Progressive Rehabilitation

26. The Proponent shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.

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

Landscape and Rehabilitation Management Plan

27. The Proponent shall prepare and implement a Landscape and Rehabilitation Management Plan for the site, including the offset area, to the satisfaction of the Secretary. This plan must:
    (a) be prepared by suitably qualified person(s) whose appointment has been approved by the Secretary;
    (b) be prepared in consultation with OEH, DRE and Council, and submitted to the Secretary for approval by the end of July 2015;
    (c) describe how the implementation of the biodiversity offset strategy would be integrated with the overall rehabilitation of the site;
    (d) describe the short, medium, and long term measures that would be implemented to:
        - manage the remnant vegetation and habitat on the site and in the offset areas;
        - implement the biodiversity offset strategy; and
        - ensure compliance with the rehabilitation objectives and the progressive rehabilitation obligations in this approval;
    (e) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy and the rehabilitation of the site, including triggers for any necessary remedial action;
    (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:
        - enhancing the quality of remnant vegetation and fauna habitat;
        - landscaping the site and along public roads to minimise visual and lighting impacts;
        - restoring native endemic vegetation and fauna habitat;
        - maximising the salvage of environmental resources within the approved disturbance area – including tree hollows, vegetative and soil resources – for beneficial reuse;
        - ensuring minimal environmental consequences for threatened species, populations and habitats;
        - minimising the impacts on native fauna, including undertaking pre-clearance surveys;
        - controlling weeds and feral pests;
        - controlling erosion;
        - controlling access; and
        - bushfire management;
    (g) include a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;
    (h) identify the potential risks to the implementation of the biodiversity offset strategy and rehabilitation of the site, and include a description of the contingency measures that would be implemented to mitigate these risks; and
    (i) include details of who would be responsible for monitoring, reviewing and implementing the plan.

Conservation and Rehabilitation Bond

28. The Proponent shall lodge a Conservation and Rehabilitation Bond with the Department within 6 months of the approval of the Landscape and Rehabilitation Management Plan, 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. The sum of the bond shall be determined by:
    (a) calculating the cost of implementing the biodiversity offset strategy over the next 3 years;
    (b) calculating the cost of rehabilitating disturbed areas of the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and
    (c) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs,

    to the satisfaction of the Secretary.

    Notes:
    - *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 and Rehabilitation Management Plan is largely complete, the Secretary may waive the requirement for the lodgement of a bond in respect of the remaining expenditure.*

- *If the rehabilitation of the site area is completed to the satisfaction of the Secretary, then the Secretary will release the bond. If the rehabilitation of the site is not completed to the satisfaction of the Secretary, then the Secretary will call in all or part of the bond, and arrange for the completion of the relevant works.*

29. Within 3 months of each Independent Environmental Audit (see condition 9 of Schedule 5), the Proponent shall review, and if necessary revise, the sum of the Conservation and Rehabilitation Bond to the satisfaction of the Secretary. This review must:
    (a) consider the performance of the implementation of the rehabilitation of the site to date;
    (b) consider the effects of inflation; and
    (c) calculate the cost of rehabilitating the disturbed areas of the site (taking into account the likely surface disturbance over the next 3 years of quarrying operations.

HERITAGE

Heritage Management Plan

30. The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared by suitably qualified person(s) whose appointment has been approved by the Secretary;
    (b) be prepared in consultation with OEH and local Aboriginal stakeholders;
    (c) be submitted to the Secretary for approval by the end of November 2014;
    (d) include a description of the measures that would be implemented for:
        - protecting, monitoring and managing Aboriginal sites within the site, including the biodiversity offset strategy;
        - maintaining and managing reasonable access for Aboriginal stakeholders to cultural heritage items on site and in the biodiversity offset areas;
        - managing the discovery of any human remains or previously unidentified Aboriginal objects on site, including (in the case of human remains) stop work provisions and notification protocols;
        - ongoing consultation with the local Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on-site and in the biodiversity offset areas;
        - ensuring any workers on site receive suitable heritage inductions prior to carrying out any activities which may disturb Aboriginal sites, and that suitable records are kept of these inductions; and
        - the long term management of the Aboriginal cultural heritage values of the site post extraction operations and rehabilitation of the site.

VISUAL

30. The Proponent shall implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the project to the satisfaction of the Secretary.

31. The Proponent shall:
    (a) vegetate any earthen perimeter bund at the project within 3 months of establishing the bund, using appropriate flora species to minimise the visual and off-site sedimentation impacts of the project; and
    (b) maintain this vegetation in a good condition throughout the remainder of the project,
    to the satisfaction of the Secretary.

WASTE MANAGEMENT

32. The Proponent shall:
    (a) minimise and monitor the waste generated by the project;
    (b) ensure that the waste generated by the project is appropriately stored, handled and disposed of;
    (c) manage on-site sewage treatment and disposal in accordance with the requirements of Council; and
    (d) report on waste management and minimisation in the Annual Review,
    to the satisfaction of the Secretary.

33. Prior to importing any VENM to the site, the Proponent must obtain a 'resource recovery exemption' under the POEO Act and provide evidence of this approval to the Department.

DANGEROUS GOODS

34. The Proponent shall ensure that the storage, handling, and transport of dangerous goods are done in accordance with the relevant *Australian Standards*, particularly AS1940 and AS1596, and the *Dangerous Goods Code*.

BUSHFIRE

35. The Proponent shall:
    (a) ensure that the project is suitably equipped to respond to any fires on site; and
    (b) assist the Rural Fire Service and emergency services as much as possible if there is a fire in the vicinity of the site.

SCHEDULE 4
ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. As soon as practicable after obtaining monitoring results showing:
   (a) an exceedance of any relevant criteria in Schedule 3, the Proponent shall notify the affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with the relevant criteria; and
   (b) an exceedance of any relevant air quality criteria in Schedule 3, the Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and current tenants of the land (including the tenants of land which is not privately-owned.

INDEPENDENT REVIEW

2. If an owner of privately-owned land considers the project 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 project 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 Proponent 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 project is complying with the relevant criteria in Schedule 3; and
      - if the project is not complying with these criteria, then identify measures that could be implemented to ensure compliance with the relevant criteria; and
   (b) give the Secretary and landowner a copy of the independent review.

SCHEDULE 5
ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. The strategy must:
   (a) be submitted to the Secretary for approval by the end of November 2014;
   (b) provide the strategic framework for environmental management of the project;
   (c) identify the statutory approvals that apply to the project;
   (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
   (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 project;
      - receive, record, handle, and respond to complaints;
      - resolve any disputes that may arise during the course of the project;
      - respond to any non-compliance;
      - respond to emergencies; and
   (f) include:
      - copies of any strategies, plans and programs approved under the conditions of this approval; and
      - a clear plan depicting all the monitoring to be carried out under the conditions of this approval.

Management Plan Requirements

2. The Proponent shall ensure that the management plans required under this approval 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;
      - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project 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 project;
      - effectiveness of any management measures (see c above);
   (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
   (f) a program to investigate and implement ways to improve the environmental performance of the project 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.

Adaptive Management

3. The Proponent must assess and manage project-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 approval 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 Proponent must, at the earliest opportunity:

(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;
(b) consider all reasonable and feasible options for remediation (where relevant) 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.

Annual Review

4. By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:
   (a) describe the development (including any rehabilitation) that was carried out in the past 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 project over the past calendar year, which includes a comparison of these results against the:
      - relevant statutory requirements, limits or performance measures/criteria;
      - requirements of any plan or program required under this approval;
      - monitoring results of previous years; and
      - relevant predictions in the EA;
   (c) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;
   (d) identify any trends in the monitoring data over the life of the project;
   (e) identify any discrepancies between the predicted and actual impacts of the project, 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 project.

Revision of Strategies, Plans and Programs

5. Within 3 months of the submission of an:
   (a) annual review under condition 4 above;
   (b) incident report under condition 7 below;
   (c) audit report under condition 9 below; or
   (d) any modification to the conditions of this approval,

   the Proponent shall review the strategies, plans and programs required under this approval, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Secretary.

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

Community Consultative Committee

6. If directed by the Secretary, the Proponent shall establish and operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Secretary. Any such CCC must be operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version).

   Notes:
   - *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval.*
   - *In accordance with the Department's guideline, the CCC should be comprised on an independent chair and appropriate representation from the Proponent, Council (if available) and the local community.*
   - *This CCC can be combined with any other CCC established under conditions of consent or approval for State Significant quarry developments on the Somersby Plateau.*

REPORTING

Incident Reporting

7. The Proponent shall immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Proponent 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 Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.

AUDITING

Independent Environmental Audit

9. By 30 June 2015 and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
   (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
   (b) include consultation with the relevant agencies;
   (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or necessary water licences for the project (including any assessment, strategy, plan or program required under these approvals);
   (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and
   (e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, strategy, plan or program required under the abovementioned 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 completion of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

11. By the end of November 2014, the Proponent shall:
   (a) make copies of the following publicly available on its website:
      - the documents referred to in condition 2 of Schedule 2;
      - all current statutory approvals for the project;
      - all approved strategies, plans and programs required under the conditions of this approval;
      - a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs;
      - a complaints register, updated monthly;
      - the annual reviews of the project;
      - any independent environmental audit, and the Proponent's response to the recommendations in any audit;
      - minutes of CCC meetings;
      - any other matter required by the Secretary; and
   (b) keep this information up to date,

   to the satisfaction of the Secretary.

APPENDIX 1
STATEMENT OF COMMITMENTS

Subject	Commitments	Timing
1. General Arrangements	The development shall be carried out in accordance with the Environmental Assessment (April 2013) prepared by Peter Andrews + Associates Pty Ltd and this Addendum Report. This Addendum Report will override the Environmental Assessment where there is an inconsistency.	Ongoing
2. Staging	Staging of the development will be in accordance with the staging of works set out in the Environmental Assessment (April 2013).	Ongoing
3. Statutory Requirements	Obtain and maintain all relevant approvals and licences.	As required and continuous
	Comply with all conditional requirements in all approvals and licences.	As required
4. Hours of Operation	7.00am to 6.00pm Monday to Friday 7.00am to 1.00pm Saturday	Ongoing
5. Reporting Requirements	Undertake monitoring for the key areas as identified below.	As required
	Incorporate relevant data/monitoring information in the Annual Reports.	Annually
	Incorporate the management measures into the Environmental Management Plan. The development is to operate at all times within the terms and conditions of the Environmental Management Plan.	Prior to commencement and subject to five yearly reviews
	Update procedures manual for the operation of the quarry with regards to the quarry expansion including the following and ensure all staff are aware of procedures. • Operation of plant and equipment • Environmental monitoring • Restrictions imposed on quarrying • Vegetation removal • Sedimentation and erosion • Transportation	Prior to commencement of the operations
	Provision of the annual production data to the Department of Trade and Investment	Annually
6. Soils and Land capability	Locate areas for acoustic earth mounds.	Prior to topsoil stripping operations
	Maintain topsoil for rehabilitation and minimise soil loss through erosion.	Ongoing
	Vegetate all mounds with Kikuyu grass	As required
	Implement downslope sedimentation controls as required	Until the surface of the mounds are vegetated
7. Groundwater	Undertake automatic water level measurements in water level data logger in monitoring bores	Initially 4-hourly samples. Assess data after 12 months and depending on the results, decrease frequency to 8-hourly samples
	Undertake groundwater sampling in representative monitoring bores	Initially 3 monthly. Assess data after 12 months and depending on the results, decrease frequency to 6

Subject	Commitments	Timing
		monthly samples
	Undertake automatic rainfall measurements in tipping bucket rain gauge data logger on site	Continuous logging at every 0.2mm tip with time/date stamps.
	Preparation of the Groundwater Management Plan, which incorporates the development of a water level and water quality monitoring program and the development of a set of trigger levels and mitigation measures if adverse impacts occur on the environmental and/or neighbouring water users.	Within 6 months of the project approval
	Provide a complete set of results of the production and monitoring program including a review and assessment of the statistical analysis to the *Senior Hydrogeologist NOW* and the quarry owner.	Annually
	Communicate with any landowner if there is a scientifically and independently demonstrated significant impact on any neighbouring water users surrounding the site.	As required
8. Surface Water	Preparation of an Environmental Management Plan for the quarry extension based on a continuation of the current environmental management and mitigation measures for the quarry expansion as outlined in the current EMP.	Prior to the commencement of the quarry operations
	Construct earth bunds and surface water diversion banks and drains around the perimeter of the entire quarry pit void. Bunds and/or diversion drains will require ongoing minor realignments as the quarry pit develops and advances especially through zone 'C'. Bunds can be designed as 'multi-purpose' to provide additional public 'Highwall' safety in addition to surface water flow management.	Prior to the commencement of the quarry operations and ongoing
	Relocate the chicken farming operations storage shed that is currently located on the south west drainage path to the south of the site and bund the storage site to contain runoff while chicken farming is ongoing at the site.	Prior to the commencement of the quarry operations and ongoing
	Construct 'out of pit' containment infrastructure in the south-eastern most section of the property boundary adjacent to Zone E to capture and passively treat contaminated surface water runoff whilst simultaneously providing additional water security. Infrastructure to consist of: 1. One 10 Megalitres (ML) Pollution Control Dam (PC Dam) to receive nitrogen rich runoff from Zones F&G where the existing chicken and machinery sheds are located. This dam will gravity flow via a spillway into a shallow polishing pond. Control structures such as rock 'rip rap' or similar will be required to control water runoff velocity prior to entering the PC Dam. 2. Broad shallow polishing pond/s will receive any water spilled or transferred from PC Dam and provide passive treatment through suitable wetland plant species. 3. Pipeline and pumps for transfer of water each way between the in-pit decant pond and out of pit PC Dam. 4. A floating siphon in the PC Dam to maintain a 5 ML operating level. Ensure PC Dam and pond are located outside of the water pipeline easement and located generally as shown on the plans. Access to the ponds will be along the southern boundary across the water pipeline easement.	Prior to the commencement of the quarry operations and ongoing
	Continue monitoring of surface water at locations W1 and W4	Monitor until stage 2 of the quarry commences.

	After construction of the control pond and polishing pond, it is proposed that the quality of the treated quarry discharge released to the south west waterway is monitored at the future surface water quality monitoring location S1 shown in Appendix 2 of this report. Initially, the control pond and polishing dam will be used mainly to treat runoff from the chicken farming operations, the existing dwelling and a small area of pasture, and will only be used to treat water captured within the quarry during large rainfall events until the commencement of stage 2 of the quarry. As the quarry extends to the maximum quarry footprint in stage 2, pumping out of the quarry may occur as regularly as weekly. Undertake water quality monitoring by a grab sample taken during discharge downstream of the control pond and polishing pond at location S1 on a monthly	Monthly water monitoring
	basis. The parameters will be monitored and compared against the proposed discharge limits as follows: • Suspended solids 40mg/L • Oil and grease – 5 and/or none visible • pH – 6.0-8.0	
9. Biodiversity and Environmental Management	Identify the boundaries of the quarry.	Prior to clearing of vegetation
	Preparation of a detailed Biodiversity Offset Management and Habitat Rehabilitation Plan for areas to be retained as biodiversity offsets within the site.	Prior to the clearing of vegetation
	Biodiversity offsetting will be undertaken to compensate for unavoidable impacts to biodiversity within the site including the removal of 1.5 hectares of Cleared Land with Remnant Trees vegetation and the loss of 18 hollow bearing trees. The areas within the site proposed for biodiversity offsetting are located in the north-eastern section of the site and along the western section of the site. The offsetting strategy proposed will result in the improvement and maintenance of biodiversity values on the site for the medium to long term. A total of 7.1 hectares of land will be retained and managed as a biodiversity offset to compensate for the loss of 1.5 hectares of Cleared Land with Remnant Trees vegetation. Offset areas will be protected in perpetuity and subject to a 10 year rehabilitation and maintenance period. The areas proposed for retention comprise the following: • 0.85 hectares of Disturbed Scribbly Gum Woodland; • 3.5 hectares of Cleared Land with Remnant Trees Vegetation; and • 2.75 hectares of Cleared Land. The areas proposed for offsetting will be subject to protective fencing to exclude livestock and local populations of feral Rusa Deer, intensive replanting of endemic tree and shrub species within cleared areas and weed management of noxious and environmental weeds. A total of 170 hollow-bearing trees will be retained and 36 nest boxes will be erected to compensate for the loss of 18 hollow bearing trees.	The first 10 years of Stage 2
	All hollow-bearing trees to be removed are to be inspected and sectionally dismantled by an arborist, under the supervision and direction of an ecologist. Where possible, escaped fauna is to be caught by the consulting ecologist and transported to a suitable release area. If juvenile or injured fauna are encountered they are to be captured and transported to a wildlife carer or a veterinary surgeon as required. In the case where the arborist declares a tree or stag unsafe to climb, machine removal with a rotating grab or similar will be required.	Prior to removal of the hollow-bearing trees

10. Noise	Incorporate noise reducing measures (upgraded exhausts, enclosures/panels to engines, or localised plant specific shielding*) to achieve the following noise reductions: • Dozer 4db; • Trencor 3dB; • McCloskey 3dB; and • Sandwash Plant 8dB for air cooled 6 cylinder engine* (Smaller 4 cylinder engine is now operating with a purpose designed enclosure and exhaust resulting in an 8dB reduction and does not require further attenuation). All reversing alarms replaced with level varying or broadband "quacker" type alarms.	Prior to the use of the plant equipment.
	Plant and equipment to be maintained to ensure acoustic performance is not de-rated and complies with the recommended limits outlined in the Noise Impact Assessment (NIA) and incorporating the specified noise controls.	Throughout the life of the quarry.
	A Site Operational Management Plan (SOMP) be developed to ensure that the dozer, Trencor and McCloskey do not operate simultaneously.	Throughout the life of the quarry.
	Provision of an earth mounds 3-4 metres high along the southern and south-eastern quarry boundaries as shown on Figure 14 of the Environmental Assessment before commencing Precincts E, F and G.	Prior to quarrying of stage 2.
	The SOMP to document procedures to maximise site shielding and minimise number of plant and equipment on exposed locations, particularly on the eastern and southern portions of the quarry (areas B, C, F and G). That is, where practical and feasible only one (1) item of plant would operate at an exposed level (<8m below ground level) at any one time and extraction to proceed against a working face where practical.	During quarrying of the stage 2.
	A site weather station will be installed and continually monitor ambient weather conditions including wind speed and direction at a height of ten (10) metres above ground level. The current weather conditions would be utilised to manage day to day quarry operations, and the SOMP incorporate strict protocols including: • Cease operations within Precinct F and G during north-north-west or west wind conditions up to 3m/s with respect to the operation of the dozer, Trencor and McCloskey in exposed locations (<8m below ground level); and • Utilise periods of high winds >5m/s (particularly east and south-east winds) and/or rain with elevated background noise levels to extract material within exposed locations (Areas B, F and G).	During quarrying of the relevant precincts.
	A Complaints Management Procedure (CMP) be prepared to deal with any noise complaints as follows and include: • Site contact telephone number during business hours to lodge complaints or seek additional information (and message service for out of hours). If phone unattended it should divert to mobile phone of site quarry manager; • Log to record compliant including time of alleged noise issue, duration, description of noise, prevailing weather conditions and complainants contact details; • Complaints to be responded to in a timely manner. Where the noise is currently occurring, Quarry Manager shall investigate and determine noise source is noise is likely to be exceeding Approval Noise Limits. If exceedance is occurring, operations to be amended or ceased; • Audits at sensitive receiver locations to identify noise contributions, compliance and determine if additional procedures or controls to minimise noise from the site are required; • A record of noise investigations to be maintained on site and complainants informed of outcomes of investigations and actions implemented following any noise complaints; and • All site plant including trucks to be regularly inspected and maintained to ensure that the equipment is operating in accordance with specifications and satisfied the noise limits referenced in the NIA (min Annually).	Prior to the commencement of the quarry extensions.

	Undertake an Annual Noise monitoring program that incorporates: • Site attended noise measurements at the three (3) reference locations and record aural observations, statistical noise levels (LA90, LAeq), weather conditions and quarry operations. Typically measurement considering of two (2) 15 minute measurement periods at each receiver; • Attended nearfield or midfield measurements to confirm operating noise levels and determine sound power levels of individual plant and equipment for comparison with source noise data utilised in the EIS Noise Impact Assessment; • Assessment of noise audit measurement results against Conditions of Consent and any pending Licence to determine compliance; • Provide recommendations for ameliorative or management measures for Quarry operator where noise exceedances are identified; • Preparation of Annual Noise Monitoring Report for submission to Consent Authority and/or EPA.	Annually
11. Air Quality	Preparation of an air quality management plan incorporating PM_{10} monitoring at the most affected off-site sensitive location.	Annually
	Minimise dust impacts at sensitive residences through the following onsite management procedures. These procedures to meet the KPIs outlined in this report and be reviewed. • Water of unsealed roads; • Use of wheel-wash and operation of sealed road from wheel-wash to the front gate; • Covering of loads during hauling; • Water of stockpiles when necessary; • Limiting vehicle speed onsite; and	Annually
	• Limiting the area of disturbed land and progressive rehabilitation of completed areas.	
	Carry out campaign monitoring for respirable crystalline silica. The monitoring would assess the exposure of quarry workers to respirable crystalline silica (in accordance with Australian Standard (AS 2985-2009) - Workplace atmospheres - Method for sampling and gravimetric determination of respirable dust.	First year of the quarry extension (on a day of maximum throughput). Monitoring to be repeated quarterly in the first year and if more than two consecutive results demonstrate low risk, monitoring would be discontinued.
	Incorporate greenhouse gas reduction measures for the operation of the project including: • Opportunities to increase energy efficiency will be continuously reviewed including opportunities to minimise haul distances for quarry material, ensuring trucks are fully loaded to maximise productivity and efficiency, reducing trips by coordinating delivery and removal of materials. • Consideration of the use of alternative fuels where economically and practically feasible. • Regular maintenance of diesel powered equipment to ensure operation at peak efficiency. • Consideration of energy efficiency for all electrical equipment, appliances, lighting and hot water system.	Throughout the life of the quarry
12. Roadworks and Traffic Management	All vehicles leaving the site with loads of extracted material are to be sufficiently covered to prevent windblown dust.	Ongoing
13. Heritage	Grants Rd RE1 and RE2 sites are to be preserved.	Continuous
	Incorporate a ten (10) metre buffer on the southern, eastern and western boundary of the anthropomorphic figure (Grants Rd RE1).	For the life of the quarry

	The bund wall for the quarry extension in the area of Grants Rd RE1 to be constructed of block wall rather than earth in between the engraving and the boundary.	Prior to the quarrying of Precinct C
	The engraving (Grants Rd RE1) is incorporated into the monitoring programme currently in place for the adjacent Howes Aboriginal Reserve.	Five yearly
	A protective fence is constructed 8 metres around each side of the Grants Rd RE 1 site to prevent inadvertent damage. The fence should incorporate appropriate signage to ensure the access within the fenced zone is limited to maintenance activities such as grass cutting.	Prior to the quarrying of Precinct C
	Traffic is to be directed around the small mundoe at the Grants Rd RE 2 site to ensure minimal disturbance.	Continuous
	An additional monitoring site visit be undertaken to review the recommendations effectiveness to protect the site.	12 months after the project approval
	The quarry operator to develop and implement an Aboriginal Cultural Heritage Induction Program for all personnel associated with the quarry operations. A register is to be kept off staff/contractors that have been inducted.	Prior to the commencement of the quarry extensions
	Should any materials suspected of being of Aboriginal occupation origin be located during the quarry operations that work cease in that location immediately and that the Office of Environment & Heritage be contacted immediately.	For the life of the quarry
14. Visual Impact	Vegetate all stockpiles and the acoustic earth mounds using appropriate species noting that the current conditions of consent requires the use of Kikuyu grass for the stabilisation of stockpiles.	For the life of the quarry
	Maintain grass covered mounds.	For the life of the quarry
	Maintain the site.	For the life of the quarry
	Keep the site clean and tidy where possible.	Continuous
	Progressively revegetate all areas where quarrying is completed.	Upon completion of quarrying in a precinct
15. Bushfire Protection	Provision of an on-site mobile water pump and tank, with firefighting hose connections to be located on site.	For the life of the quarry
	Management of the site to provide a defendable space to the bushfire hazard. These areas are to be regularly inspected and maintained by the landowners.	For the life of the quarry
16. Waste Management	Keep the site clean and tidy where possible	For the life of the quarry
	Ensure all general waste / garbage is removed by a licensed waste collection contractor at least on a weekly basis.	Continuous
	Preparation of a waste management plan for the demolition of any structures.	Prior to demolition.
17. Mine Rehabilitation	Ensure completed areas of the quarry are revegetated to reduce sedimentation and erosion and dust emissions and visual impact.	As required
	Preparation of a quarry rehabilitation plan to identify staging for rehabilitation.	Within five years of commencement of the quarry extension
	A detailed decommissioning plan will be prepared as part of the review of the Environmental Management Plan.	Towards the end of the life of the Quarry (two years prior)
	A five year monitoring program to be implemented upon completion of the rehabilitation.	Five years after the rehabilitation.

APPENDIX 2
NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in Table 2 is to apply under all meteorological conditions except the following:
   a) during periods of rain or hail; or
   b) wind speeds greater than 3 m/s measured at 10 m above ground level.

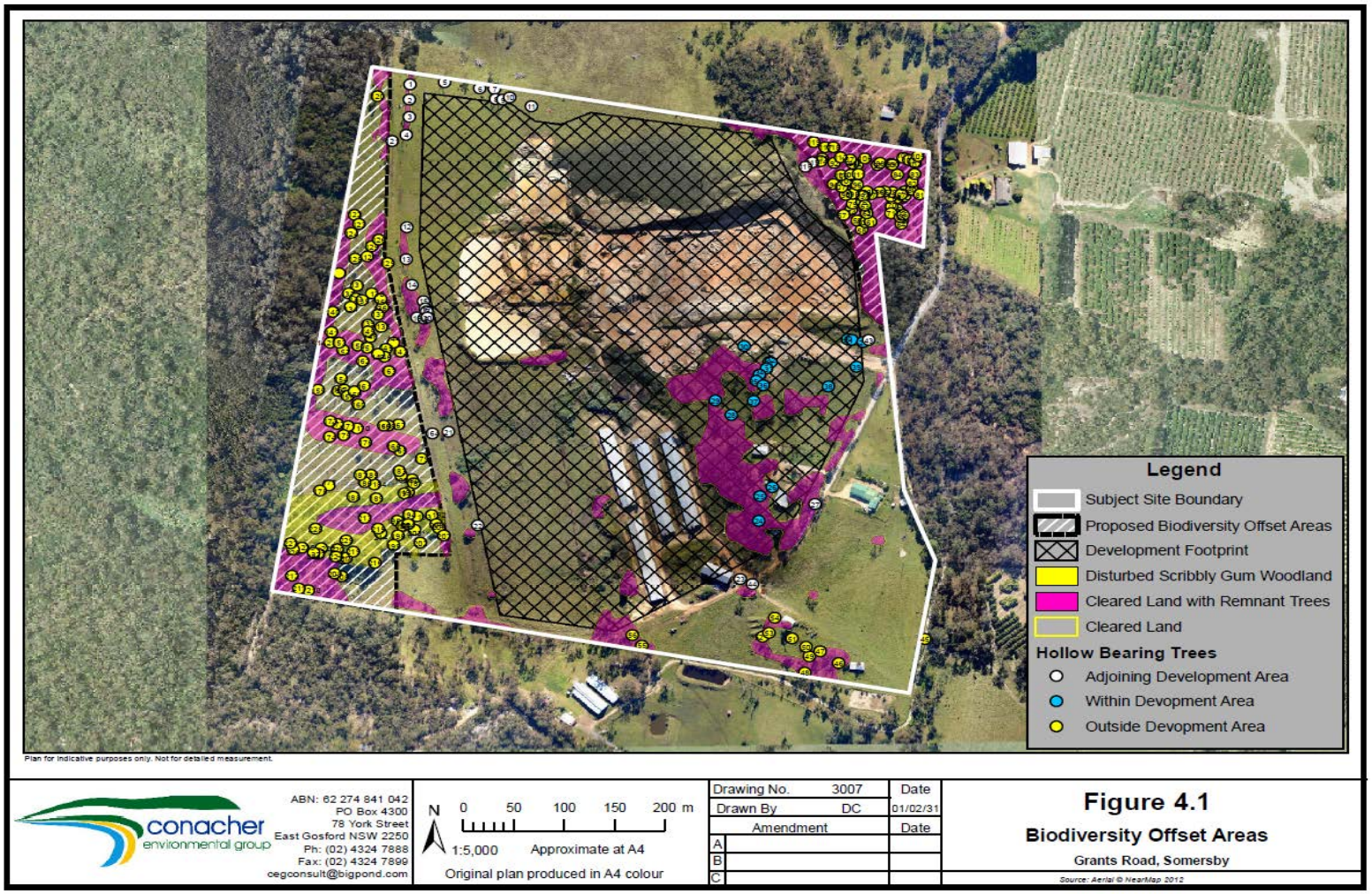
Determination of Meteorological Conditions

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 in the vicinity of the site.

Compliance Monitoring

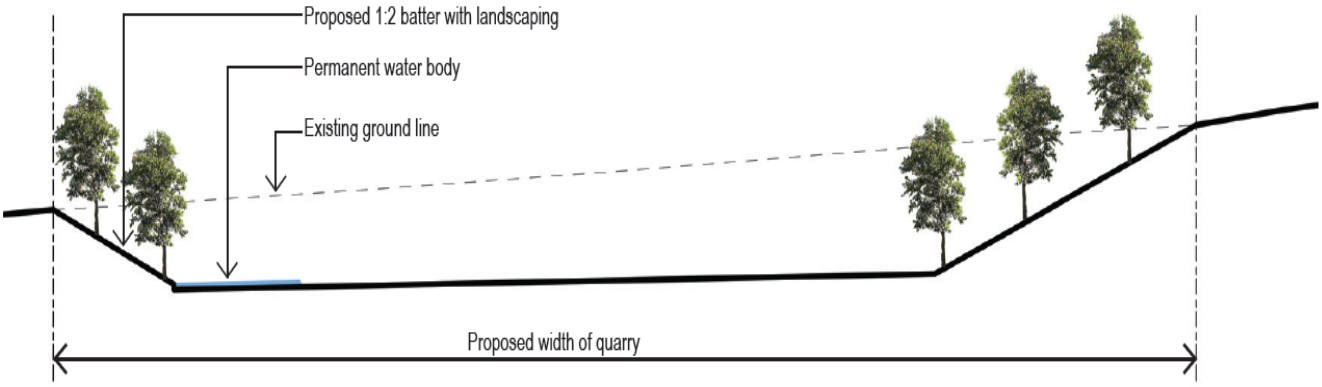
3. Attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval.
4. Unless otherwise agreed with the Secretary, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (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 the 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 3
BIODIVERSITY OFFSET STRATEGY



APPENDIX 4
CONCEPTUAL FINAL LANDFORM





Appendix 2
NOTICE OF MODIFICATION

Notice of Modification

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

As delegate of the Minister for Planning, I modify the project approval referred to in Schedule 1, as set out in Schedule 2.

Howard Reed

Howard Reed
Director
Resource Assessments

Sydney 04 May 2018

SCHEDULE 1

Project approval 08_0099 for the Grants Road Sand Quarry, granted by the Executive Director Development Assessment Systems & Approvals, as delegate of the Minister for Planning, on 25 July 2014.

SCHEDULE 2

1. In Schedule 1, replace "Lot 1 DP358717" with "Lot 1 and 2 DP358717".

2. In the list of definitions, delete the terms "Biodiversity Offset Strategy", "Council", "DRE", "NOW", "Project" and "Secretary", and their definitions, and insert the following terms and definitions in alphabetical order:

Biodiversity Offset Strategy	The conservation and management of the Proponent's offset sites on Lot 1 and 2 DP358717, as shown in Appendix 3
Council	Central Coast Council
DoI Water	Department of Industry - Water
DRG	Division of Resources and Geoscience in the Department
EA (MOD 1)	Environmental Assessment of the project titled *Section 75W Modification Application for Changes to Biodiversity Offset Area for Approved Grants Road Sand Quarry Extension 270 Grants Road Somersby,* dated December 2017 and supplementary ecological survey report titled *Additional Ecological Information Report*, dated March 2018
Feasible	Means what is possible and practicable in the circumstances
Landscape buffer areas	The buffer areas as shown in Appendix 3
Modification 1	The modifications to the project as described in EA (MOD 1)
Project	The project as described in the documents in condition 2 of Schedule 2, as well as quarrying operations and disturbance existing on the site as at 25 July 2014
Secretary	Planning Secretary under the EP&A Act or nominee

3. Delete all references to "shall" and replace with "must", except in conditions 3, 5 and 9 of Schedule 2, the note to condition 4 of Schedule 3 and the final sentence of condition 16 of Schedule 3.

4. Delete all references to "DRE" and replace with "DRG".

5. Delete all references to "NOW" and replace with "DoI Water".

6. Delete all references to "biodiversity offset strategy" and replace with "Biodiversity Offset Strategy".

7. In condition 1 of Schedule 2:
   (a) after the words "specific performance", insert the words "measures and"; and
   (b) delete the words "and/or minimise any" and replace with ", if prevention is not reasonable or feasible, minimise any material".

8. In condition 2 of Schedule 2, delete sub-paragraphs (b) and (c) and replace with:

   (b) EA (MOD 1); and
   (c) Statement of Commitments.

9. Following condition 2 of Schedule 2, insert the following:

   2A. The Proponent must carry out the project in accordance with the conditions of this approval.

10. In the Notes to condition 10 of Schedule 2, delete the term "4A" and replace with "6".

11. In condition 13 of Schedule 2, after the words "plant and equipment used at the site", insert the words ", or used to monitor the performance of the project,".

12. After condition 17 of Schedule 2, insert the following:

COMPLIANCE

18. The Proponent must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this approval relevant to activities they carry out in respect of the project.

13. In condition 23 of Schedule 3:
(a) before the words "described in the EA", insert the word "as";
(b) after the term "EA, ", insert the words "EA (MOD 1) and Landscape and Rehabilitation Management Plan and";
(c) delete the words "and revised"; and
(d) delete Table 7, and its Note, and replace with the following:

Table 7: Summary of the Biodiversity Offset Strategy

Area	***Offset Criteria***	***Size (hectares)***
On-site Offset Area	Existing vegetation to be managed and maintained as: • Scribbly Gum Woodland and/or other native vegetation community commensurate with the local surroundings, including at least 4.44 ha in moderate to good condition; and • suitable habitat for threatened fauna species including the provision of at least 36 nest boxes in the biodiversity offset and landscape buffer areas.	7.0

Note: See Statement of Commitment No 9 for additional biodiversity offset requirements.

14. Delete condition 24 of Schedule 3 and replace with:

24. Within 6 months of the determination of Modification 1, or as otherwise agreed by the Secretary, the Proponent must:
   (a) engage an independent registered surveyor to survey and permanently mark the boundaries of the offset areas;
   (b) submit a survey plan of these boundaries to the Secretary;
   (c) ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff, the landowner and inspecting officers to clearly identify those boundaries; and
   (d) cause restrictive and positive covenants under the *Conveyancing Act 1919* to be placed on the titles of the land referring to the surveyed offset areas, to ensure that the Proponent and the landowner:
      - manage the offset areas for conservation in perpetuity;
      - implement the Landscape and Rehabilitation Management Plan; and
      - permit ongoing access to the offset areas by the Department and other relevant public authorities for the purposes of monitoring compliance with the covenants and Landscape and Rehabilitation Management Plan,

   to the satisfaction of the Secretary.

15. In condition 25 of Schedule 3:
(a) after the words "rehabilitation strategy", insert the words "as described"; and

(b) after the term "EA,", insert the words "EA (MOD 1) and Landscape and Rehabilitation Management Plan".

16. In condition 27 of Schedule 3:
(a) before the words "would be integrated" in sub-paragraph (c), insert the words "and Statement of Commitment Number 9";
(b) delete the word "and" at the end of the second bullet point in sub-paragraph (d); and
(c) delete the third bullet point in sub-paragraph (d) and insert the following:

- manage the buffer areas surrounding the extraction area; and
- ensure compliance with the rehabilitation objectives and the progressive rehabilitation obligations in this approval;

17. In the Notes to condition 28 of Schedule 3, delete the term "*Biobanking*" and replace with "*Stewardship*".

18. In condition 29 of Schedule 3, after the words "Independent Environmental Audit (see condition 9 of Schedule 5)", insert the words "or approval of each revised version of the Landscape and Rehabilitation Management Plan".

19. In condition 5 of Schedule 5:
(a) before the words "strategies, plans and programs", insert the words "suitability of all";
(b) delete the number "4" and replace with "6".

20. After condition 5 of Schedule 5, insert the following:

CONSULTATION

5A. Where the conditions of this approval require consultation with an identified party, the Proponent must:
(a) consult with the relevant party prior to submitting the subject document to the Secretary for approval; and
(b) provide details of the consultation undertaken, including:
- the outcome of that consultation, matters resolved and unresolved; and
- details of any disagreement remaining between the party consulted and the Proponent and how the Proponent has addressed any unresolved matters.

However, if the Secretary agrees, a strategy, plan or program may be prepared without consultation being undertaken with an identified party required under a condition of this consent.

21. In condition 6 of Schedule 5:
(a) delete the words "*Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version)" and replace with "*Community Consultative Committee Guidelines: State Significant Projects (2016)*"; and
(b) in the second bullet point of the Notes, delete the word "on", and replace with "of".

22. In condition 9 of Schedule 5:
(a) after the word "be" in sub-paragraph (a), insert the words "led and ";
(b) after the words "relevant agencies" in sub-paragraph (b), insert the words "and the CCC";
(c) delete the word "and" at the end of sub-paragraph (d);
(d) delete the full stop at the end of sub-paragraph (e) and replace with "; and"; and
(e) insert the following sub-paragraph:

(f) be conducted and reported to the satisfaction of the Secretary.

23. Delete condition 10 of Schedule 5 and replace with the following:

10. Within 3 months of commencing each audit, or within another timeframe agreed by the Secretary, the Proponent must submit a copy of the audit report to the Secretary and any other agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The Proponent must implement these recommendations, to the satisfaction of the Secretary.

24. In Appendix 1, in Statement of Commitment Number 9:
(a) delete the number "7.1" after the words "A total of", and replace with "7";
(b) delete the bullet points and replace with:

- Offset Area A. 1.05 hectares of Scribbly Gum Woodland in the east of Lot 1 DP358717;
- Offset Area B. 1.51 hectares of Scribbly Gum Woodland in the west of Lot 1 DP358717; and

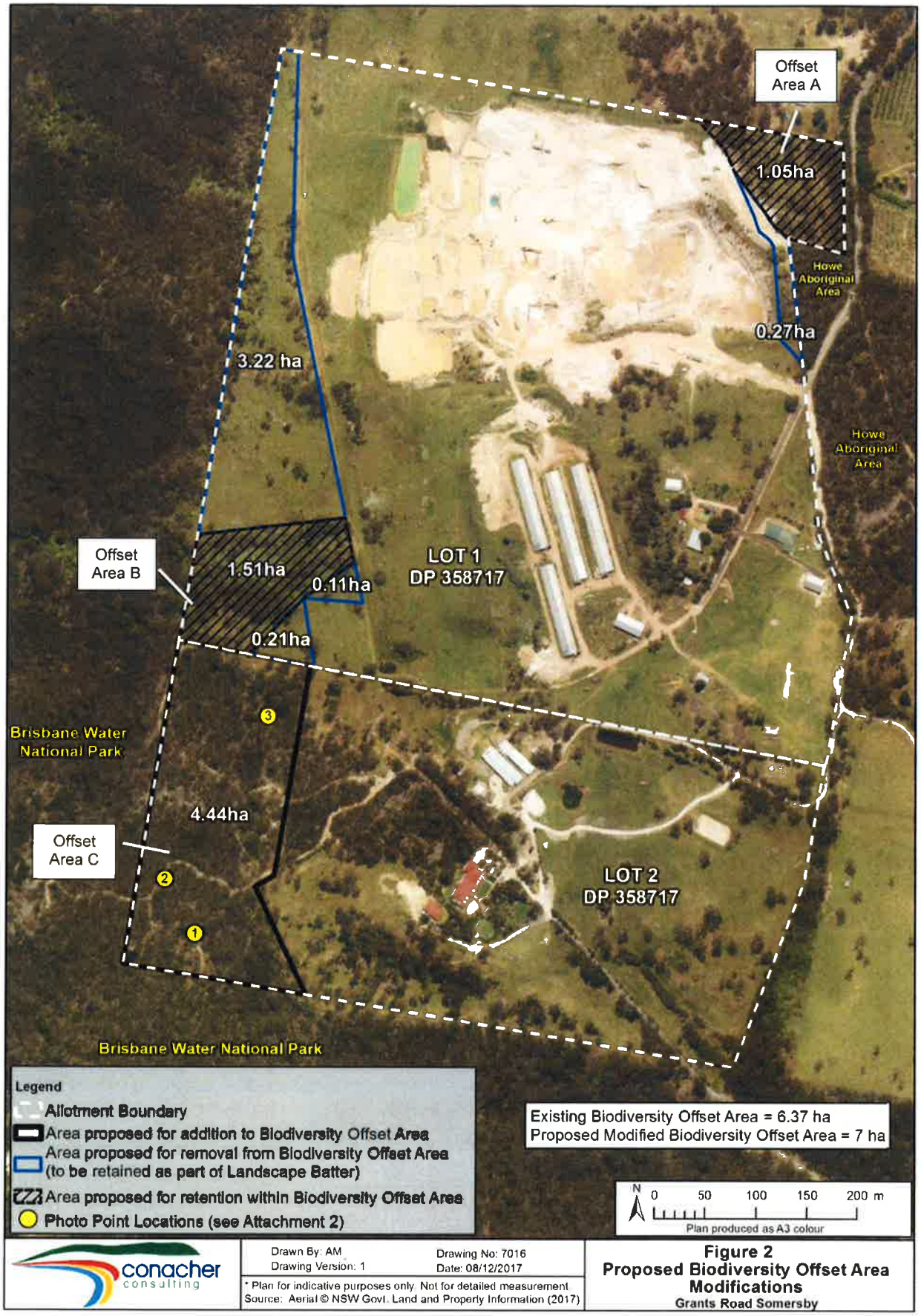
- Offset Area C. 4.44 hectares of Red Bloodwood - Scribbly Gum heathy woodland on sandstone plateaux of the Sydney Basin Bioregion in the west of Lot 2 DP358717.

(c) after the words "exclude livestock", insert "(all areas)";
(d) after the word "feral", delete the words "Rusa Deer, intensive", and insert "deer (Areas A and B),";
(e) after the words "environmental weeds", insert "(Areas A and B)"; and
(f) after the words "36 nest boxes will be erected to compensate for the loss of 18 hollow bearing trees.", insert the words "Any shortfall in hollow-bearing trees will be supplemented by installing either salvaged hollow sections of trees at a ratio of one salvaged hollow section per hollow-bearing tree, or nest boxes at a ratio of two salvaged nest boxes per hollow-bearing tree.".

25. Delete Appendix 3 and replace with the following:

APPENDIX 3

BIODIVERSITY OFFSET AND LANDSCAPE BUFFER AREAS



conacher consulting

Drawn By: AM
Drawing Version: 1
Drawing No: 7016
Date: 08/12/2017

* Plan for indicative purposes only. Not for detailed measurement
Source: Aerial © NSW Govt. Land and Property Information (2017)

Figure 2
Proposed Biodiversity Offset Area Modifications
Grants Road Somersby



conacher consulting

Drawn By: AM
Drawing Version: 1
Drawing No: 8013
Date: 08/12/2017

* Plan for indicative purposes only. Not for detailed measurement.
Source: Aerial © Nearmap (2018) Air Photo Date: 08/08/2017

Landscape Buffer Areas

Grants Road, Somersby

Appendix 3
APPROVAL CONDITIONS + COMPLIANCE

Compliance Checklist

The requirements under the Project Approval and a summary of the compliance with the relevant condition are outlined in the following table for the project. It should be noted that the following table has been updated in accordance with the Modification to the Project Approval dated 4 May 2018.

Unique ID	Compliance Requirement	Monitoring Methodology	Evidence and Comments
Schedule 2 Administrative Conditions			
1.	In addition to meeting the specific performance measures and criteria established under this approval, the Proponent must implement all reasonable and feasible measures to prevent, if prevention is not reasonable or feasible, minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the project.	Extent of the project	Complies. Refer to Section 4.0 for monitoring results.
2.	The Proponent must carry out the project generally in accordance with the: (a) EA; (b) EA (MODI); and (c) Statement of Commitments	Extent of the project	Complies.
2A.	The proponent must carry out the project in accordance with the conditions of approval.	Extent of the project	Complies.
3.	If there is any inconsistency between the above documents, the more recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.	Extent of the project	Noted.
4.	The Proponent must 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 approval; (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with this approval; and (c) the implementation of any actions or measures contained in these documents.	Extent of the project	Complies.
5.	If the project has not been physically commenced within 5 years of the date of this approval, then this project approval shall lapse.	25 July 2019	Complies. Project has been physically commenced and therefore condition no longer applies.
6.	The Proponent may carry out quarrying operations on the site until 30 June 2044.	30 Jun 2044	Complies. Consent still operational.
7.	Production must not extract, process and transport more than 250,000 tonnes of quarry products.	Per calendar year	Complies. The annual production for the quarry for 2019 was 127 705.47 tonnes.
8.	Surrender of existing development consent for the quarry	By the end of December 2015	Complies. The existing development consent was surrendered by notification to the then Gosford City Council (now Central Coast Council).
9.	Conditions of this approval shall prevail to the extent of any inconsistency with the conditions of that consent	Prior to the surrender of the above development consent.	Condition no longer applicable as the previous consent has been surrendered.

Unique ID	Compliance Requirement	Monitoring Methodology	Evidence and Comments
10.	All new and upgraded structures to comply with the relevant requirements of the BCA	Prior to construction	Complies – no new or upgraded structures undertaken to date.
11.	Demolition work carried out in accordance with the relevant Australian Standard	At demolition	Complies – no demolition works undertaken to date.
12.	Protection of public infrastructure	At all times	Complies – no impact on public infrastructure.
13	All plant and equipment maintained and operated in a proper and efficient manner	At all times	Complies.
14.	Updating and staging of strategies, plans or programs to incorporate any appropriate additional measures to improve the environmental performance of the project.	On a regular basis	Complies – no action required.
15.	Provide quarry production data to DRG and report as part of the Annual Review.	Annually	Complies. Production data provided to DRG. Production data recorded in the Annual Review.
16.	A registered surveyor to mark out the boundaries of the approved limits of extraction within the entire site and submit a survey plan of these boundaries with applicable GPS coordinates to the Secretary.	30 September 2014	Survey undertaken and provided to the Department. Survey marks outlined on the boundary.
17.	Ensure boundaries are clearly marked at all times in a manner that allows operating staff to clearly identify the approved limits of extraction.	Extent of quarrying operations	Survey marks are in place.
18.	Ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this approval relevant to activities they carry out in respect of the project.	Extent of quarrying operations	Complies.
Schedule 3 Environmental Performance Conditions			
Soil and Water			
1.	Ensure sufficient water for the project	Extent of quarrying operations.	Sufficient water is available for the project.
2.	Provide a compensatory water supply to any owner of a privately-owned groundwater bore where monitoring indicates that the project is causing (or contributing to, in conjunction with another quarry project).	When there is a reduction in pumping yield of more than 10% or a 2 m decline in the water table.	Not applicable as there has not been the decline in the water table.
3.	Compliance with s120 of the POEO Act.	Extent of the project	Complies.
4.	Preparation of the Water Management Plan	30 November 2014	Water Management Plan prepared and approved by the Department.
Noise			
5.	Construction activities and quarrying operations on the site to only occur: (a) between 7.00 am and 6.00 pm, Monday to Friday; (b) between 7.00 am and 1.00 pm, Saturday; and (c) at no time on Sunday or public holidays.	Extent of the project	Complies.
6.	The following activities may be carried out on the site outside the hours specified in condition 5: (a) delivery or dispatch of materials as requested by	Extent of the project	Complies.

<table>
<tr><th>Unique ID</th><th>Compliance Requirement</th><th>Monitoring Methodology</th><th>Evidence and Comments</th></tr>
<tr><td></td><td>Police or other authorities; and
(b) emergency work to avoid the loss of lives, property and/or to prevent environmental harm.</td><td></td><td></td></tr>
<tr><td>7.</td><td>The Proponent must ensure that the construction and operational noise generated by the project at any residence on privately owned land does not exceed the following:
<table><tr><th>Receiver Location</th><th>LAeq,15min dB(A)</th></tr><tr><td>All privately owned residences</td><td>40</td></tr></table>
This noise criteria does not apply if the Proponent has an agreement with the relevant landowner to exceed the noise criteria, and the Proponent has advised the Department in writing of the terms of the agreement.</td><td>Extent of the project</td><td>Complies. The Noise monitoring reports show that operational noise on private residences does not exceed 40 dB(A).</td></tr>
<tr><td>8.</td><td>The Proponent must:
(a) implement best management practice to minimise the construction, operational and road noise of the project;
(b) regularly assess noise monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the noise criteria in this approval;
(c) maintain the effectiveness of noise suppression equipment on plant and equipment on site;
(d) minimise the noise impacts of the project during meteorological conditions under which the noise limits in this approval do not apply;
(e) carry out regular noise monitoring to determine whether the project is complying with the relevant conditions of this approval,
to the satisfaction of the Secretary.</td><td>Extent of the project</td><td>Complies. Refer to Section 4.0.</td></tr>
<tr><td>9.</td><td>Preparation of the Noise Management Plan</td><td>30 November 2014</td><td>Noise Management Plan prepared and approved by the Department.</td></tr>
<tr><td colspan="4">Air Quality</td></tr>
<tr><td>10.</td><td>Ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed below at any residence on privately-owned land</td><td></td><td>Dust deposition sampling and PM10 monitoring measurements undertaken. No exceedances in reporting period for PM10 or deposited dust.</td></tr>
</table>

<table>
<tr><th>Unique ID</th><th>Compliance Requirement</th><th>Monitoring Methodology</th><th>Evidence and Comments</th></tr>
<tr><td></td><td>Long-term criteria for particulate matter
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>d Criterion</th></tr>
<tr><td>Total suspended particulate (TSP) matter</td><td>Annual</td><td>[a] 90 µg/m^3</td></tr>
<tr><td>Particulate matter < 10 µm (PM_{10})</td><td>Annual</td><td>[a] 30 µg/m^3 Note 1</td></tr>
</table>
Note 1: 30 µg/m^3 criterion has been amended to 25 µg/m^3</td><td>Extent of project</td><td>Complies. The average PM_{10} concentration over the recorded 9 month period was 4.3 µg/m^3, which is well below the annual EPA impact assessment criterion of 25 µg/m^3</td></tr>
<tr><td></td><td>Short-term criteria for particulate matter
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>d Criterion</th></tr>
<tr><td>Particulate matter < 10 µm (PM_{10})</td><td>24 hours</td><td>a 50 µg/m^3</td></tr>
</table></td><td>Extent of project</td><td>Reported results are well within the EPA maximum 24-hour average criterion of 50 µg/m^3.</td></tr>
<tr><td></td><td>Long-term criteria for deposited dust
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>Maximum increase in deposited dust level</th><th>Maximum total deposited dust level</th></tr>
<tr><td>[c] Deposited Dust</td><td>Annual</td><td>[b] 2 g/m^2/month</td><td>[a] 4 g/m^2/month</td></tr>
</table></td><td>Extent of project</td><td>The average dust deposition level over the recorded period was 2.2 g/m^2/month at R1 and 0.7 g/m^2/month at R4, which are well below the EPA cumulative annual average criterion of 4 µg/m^3.</td></tr>
<tr><td></td><td>Impact assessment criterion for crystalline silica
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>d Criterion</th></tr>
<tr><td>[e] Chronic Reference Exposure Level (REL) (PM_4)</td><td>Annual</td><td>3 µg/m^3</td></tr>
</table></td><td>Undertake monitoring at maximum throughput. Monitoring will be repeated quarterly and if two consecutive results demonstrate low risk the monitoring will be discontinued.</td><td>Complies. The inferred annual average respirable crystalline silica concentration is 1.25µg/m^3.</td></tr>
</table>

Unique ID	Compliance Requirement	Monitoring Methodology	Evidence and Comments
11	The Proponent must: (a) implement best practice management to minimise the dust emissions of the project; (b) regularly assess air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this approval; (c) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see note d under Table 5); (d) implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site; and (e) minimise the area of surface disturbance and maximise progressive rehabilitation of the site; and (f) carry out regular air quality monitoring to determine whether the project is complying with the relevant conditions of this approval, to the satisfaction of the Secretary.	Extent of project	Complies. Air quality monitoring is carried out regularly and shows compliance with the air quality criteria. Equipment is monitored to minimise the release of greenhouse gas emissions.
12.	Prepare the Air Quality Management Plan	30 November 2014	The Air Quality Management Plan has been prepared and approved by the Department.
Meteorological Monitoring			
13.	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.	Extent of the project	Complies. A suitable meteorological station has been placed on site.
Transport			
14.	Keep accurate records of the: • Amount of quarry products transported from the site (per calendar month and year) and • Number of laden vehicle movements from the site (per hour, day, week, calendar month and year).	Publish the records on the website biannually	Complies.
15.	Ensure that: • Project related heavy vehicles enter and exit the site in a forward manner. • All loads will be covered entering or leaving the site. • All laden vehicles leaving the site are cleaned of sand and other material that may fall on the road, before leaving the site.	Extent of the project	Complies.
16.	In conjunction with the operator of the Central Coast Sands Quarry, prepare a road condition assessment and road maintenance contributions study of Grants Road.	31 March 2015	Complies. Grants Road assessment and maintenance report prepared and approved by the Department.

<table>
<tr><th>Unique ID</th><th>Compliance Requirement</th><th>Monitoring Methodology</th><th>Evidence and Comments</th></tr>
<tr><td>17.</td><td>Pay contributions to Council for the maintenance of Grants Road</td><td>Payment in accordance with the study required under condition 16, unless otherwise agreed by the Secretary.</td><td>Contributions paid to Central Coast Council.</td></tr>
<tr><td>18.</td><td>Prepare a Traffic Management Plan including a drivers' code of conduct.</td><td>30 November 2014</td><td>Traffic Management Plan prepared and approved by the Department.</td></tr>
<tr><td colspan="4">Biodiversity</td></tr>
<tr><td>19.</td><td>Ensure that the project does not cause any exceedances of the performance measures in the following table, to the satisfaction of the Secretary

<table><tr><th>Feature</th><th>Measure</th></tr><tr><td>High priority GDEs located within 1 kilometre of extraction operations</td><td>Major environmental consequences including:
• negligible erosion of the surface of the GDEs;
• negligible sedimentation within the GDEs;
• minor changes in the size of the GDEs;
• no significant change to the composition or distribution of species within the GDEs.</td></tr><tr><td>Somersby Mintbush</td><td>Exceedances of Trigger Levels</td></tr></table></td><td>Annually</td><td>All performance targets have been met.</td></tr>
<tr><td>20.</td><td>If the performance measures in Condition 19 are exceeded and the Secretary determines that:
(a) it is not reasonable or feasible to remediate the impact or environmental consequence; or
(b) remediation measures implemented by the Proponent have failed to satisfactorily remediate the impact or environmental consequence;

then the Proponent shall provide a suitable offset to compensate for the impact or environmental consequence, to the satisfaction of the Secretary.</td><td>As required</td><td>All performance measures met.</td></tr>
<tr><td>21.</td><td>Undertake additional studies on the high priority GDEs located within 1 kilometre of extraction operations under the approval and potentially impacted by the project. The studies must be undertaken in consultation with DoI Water.</td><td>Annually</td><td>Complies. GDE Monitoring and Management Plan approved by the Department.</td></tr>
<tr><td>22.</td><td>The Proponent must prepare and implement, in consultation with OEH and Council, a Somersby Mintbush (Prostanthera junonis) Monitoring Program within the vicinity of the site.</td><td>Annually</td><td>Complies. Somersby Mintbush Monitoring Plan approved by the Department.</td></tr>
</table>

<table>
<tr><th>Unique ID</th><th>Compliance Requirement</th><th>Monitoring Methodology</th><th>Evidence and Comments</th></tr>
<tr><td>23.</td><td>Implement the biodiversity offset strategy described in the EA, EA (EA Mod 1) and Landscape and Rehabilitation Management Plan and as summarised and revised in the following table:

<table><tr><th>Area</th><th>Offset Criteria</th><th>Size (ha)</th></tr><tr><td>On-site offset area</td><td>Existing vegetation to be managed and maintained as:
• Scribbly Gum Woodland and/or other native vegetation community commensurate with the local surroundings, including at least 4.44 ha in moderate to good condition; and
• suitable habitat for threatened fauna species including the provision of at least 36 nest boxes in the biodiversity offset and landscape buffer areas.</td><td>7.0</td></tr></table></td><td></td><td>Complies. The on-site offset area has been set aside. 36 nest boxes have been placed within the area.</td></tr>
<tr><td>24.</td><td>The Proponent must:
(a) engage an independent registered surveyor to survey and permanently mark the boundaries of the offset areas;
(b) submit a survey plan of these boundaries to the Secretary;
(c) ensure that these boundaries are clearly marked at all times in a permanent manner;
(d) cause restrictive and positive covenants under the Conveyancing Act 1919 to be placed on the titles of the land referring to the surveyed offset areas, to ensure that the Proponent and the landowner:
- manage the offset areas for conservation in perpetuity;
- implement the Landscape and Rehabilitation Management Plan; and
- permit ongoing access to the offset areas by the Department and other relevant public authorities for the purposes of monitoring.</td><td>Within 6 months of the determination of Modification 1, or as otherwise agreed by the Secretary,</td><td>The surveyor has prepared and submitted the survey plan to the Department of Planning, Industry and Environment. The surveyor has also completed and submitted the revised Landscape and Rehabilitation Management Plan and Biodiversity offset area and Habitat Rehabilitation Plan to reflect the modified Biodiversity Offset Strategy.

The 88B Instrument has been lodged with the Department</td></tr>
</table>

Unique ID	Compliance Requirement	Monitoring Methodology	Evidence and Comments
Landscape			
25.	Rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be generally consistent with the rehabilitation strategy in the EA, EA (Mod 1) and Landscape and Rehabilitation Management Plan comply with the following objectives: • Safe, stable and non-polluting. • Minimise the visual impact of the final landforms as far as is reasonable and feasible. • Surface infrastructure to be decommissioned and removed, unless the Secretary agrees otherwise. • Quarry benches suitably landscaped and revegetated using native species. • Establish land with a level of at least Class 4 agricultural suitability over 80% of the quarry floor. • Ensure public safety. • Minimise the adverse socio-economic effects associated with quarry closure.	At the end of the quarry project.	Not applicable at this time of review.
26.	Rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active, and which are not ready for final rehabilitation.	Progressively throughout the quarry operations as required.	Not applicable at this time as all open areas are currently being quarried.
27.	Prepare and implement a Landscape and Rehabilitation Management Plan for the site, including the offset area, to the satisfaction of the Secretary.	31 July 2015 Revised plan November 2019	Landscape and Rehabilitation Management Plan prepared and approved by the Department.
28.	Lodge a Conservation and rehabilitation bond with the Department.	Within six months of approval of the Landscape and rehabilitation management plan	Conservation and rehabilitation bond lodged with the Department.
29.	Review, and if necessary, revise, the sum of the Conservation and Rehabilitation Bond to the satisfaction of the Secretary. This review must: (a) consider the performance of the implementation of the rehabilitation of the site to date; (b) consider the effects of inflation; and (c) calculate the cost of rehabilitating the disturbed areas of the site taking into account the likely surface disturbance over the next 3 years of quarrying operations.	Within 3 months of each Independent Environmental Audit	Not required at this time of the review.
Heritage			
30.	Prepare Heritage Management Plan	30 November 2014	Heritage Management Plan prepared and approved by the Department.

Unique ID	Compliance Requirement	Monitoring Methodology	Evidence and Comments
Visual			
30.	Implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the project to the satisfaction of the Secretary.	Extent of project.	Complies.
31.	Vegetate any earthen perimeter bund at the project, using appropriate flora species to minimise the visual and off-site sedimentation impacts of the project; and maintain this vegetation in a good condition throughout the remainder of the project, to the satisfaction of the Secretary.	Within 3 months of establishing the bund	Perimeter bunds vegetated and to be maintained.
Waste Management			
32.	(a) minimise and monitor the waste generated by the project; (b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; (c) manage on-site sewage treatment and disposal in accordance with the requirements of Council; and (d) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.	Progressively throughout the quarry operations as required and reported annually.	Complies.
33.	Obtain a 'resource recovery exemption' under the POEO Act and provide evidence to the Department	Prior to import of any VENM to the site.	EPA have advised that a resource recovery exemption is not required. This has been acknowledged and approved by the Department.
Dangerous Goods			
34.	Ensure that the storage, handling, and transport of dangerous goods are done in accordance with the relevant *Australian Standards*, particularly AS1940 and AS1596, and the *Dangerous Goods Code*	Extent of project.	Complies.
Bushfire			
35.	Ensure that the project is suitably equipped to respond to any fires on site and assist the Rural Fire Service and emergency services as much as possible if there is a fire in the vicinity of the site.	Extent of project.	Complies.
Schedule 4 Additional Procedures			
1.	Notification of monitoring results to landowners where: (a) An exceedance of any relevant criteria in Schedule 3, the Proponent must notify the affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with the relevant criteria, and. (b) an exceedance of any relevant air quality criteria in Schedule 3, the proponent shall send a copy of the NSW Health fact sheet entitled Mine Dust and You (as may be updated from time to time) to the affected landowners and current tenants of the land (including the tenants of land which is not privately owned).	As soon as practicable after obtaining monitoring results	Complies. No exceedances have been determined as part of the monitoring results.

Unique ID	Compliance Requirement	Monitoring Methodology	Evidence and Comments
2.	If an owner of privately-owned land considers the project 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 project on his/her land. If the Secretary is satisfied that an independent review is warranted, then the Proponent must: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to: • consult with the landowner to determine his/her concerns; • conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 3; and • if the project is not complying with these criteria, then identify measures that could be implemented to ensure compliance with the relevant criteria; and (b) give the Secretary and landowner a copy of the independent review.	Within 2 months of the Secretary's decision.	Not required at this time of the review.
Schedule 5 Environmental Management, Reporting and Auditing			
1.	The Proponent must prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary	30 November 2014	Environmental Management Strategy prepared and approved by the Department.
2.	The Proponent must ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines	Annually	Complies.
3.	Assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Where any exceedance of these criteria and/or performance measures has occurred, the Proponent must, at the earliest opportunity: (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur; (b) consider all reasonable and feasible options for remediation (where relevant) 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.	Extent of Project.	Assessed as part of the monitoring and annual review. As stated above a sign is proposed to be erected on the boundary fence to identify the subpopulation of the Somersby Mintbush. Air quality exceedance occurred; however, this has been due to the bushfires.
4.	Annual review of the environmental performance of the project to the satisfaction of the Secretary.	By the end of March each year, or other timing as may be agreed by the Secretary.	Complies. Annual Review to be submitted by end of March 2020.

Unique ID	Compliance Requirement	Monitoring Methodology	Evidence and Comments
5.	Review the strategies, plans and programs required under this approval, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Secretary.	Within 3 months of the submission of an: (a) annual review under condition 4 above; (b) incident report under condition 7 below; (c) audit report under condition 9 below; or (d) any modification to the conditions of this approval,	Strategies will be assessed as part of the Annual Review and amended and resubmitted if required.
5A	Where the conditions of this approval require consultation with an identified party, the Proponent must: (a) consult with the relevant party prior to submitting the subject document to the Secretary for approval; and (b) provide details of the consultation undertaken. However, if the Secretary agrees, a strategy, plan or program may be prepared without consultation being undertaken with an identified party required under a condition of this consent.	Extent of Project.	Not required to date.
6.	Establish and operate a Community Consultative Committee (CCC) to the satisfaction of the Secretary.	If directed by the Secretary.	The Department of Planning, Industry and Environment required the quarry to operate under the existing Community Consultative Committee. Currently operational.
7.	Notify the Secretary and any other relevant agencies of any incident. Provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Immediately Within 7 days of the date of the incident.	It is considered no incidences from the quarry has occurred.
8.	Provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.	Extent of project.	Complies. All reporting provided on the website once approved.
9.	Commission and pay the full cost of an Independent Environmental Audit of the project.	By 30 June 2015 and every 3 years thereafter, unless the Secretary directs otherwise.	Initial Independent Environmental audit undertaken in 2015. Environmental audit undertaken in 2018.

Unique ID	Compliance Requirement	Monitoring Methodology	Evidence and Comments
10.	Submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	Within 3 months of completion of the audit, or as otherwise agreed by the Secretary.	Next Environmental audit due September 2021.
11.	Make copies of the following publicly available on its website: • the documents referred to in condition 2 of Schedule 2; • all current statutory approvals for the project; • all approved strategies, plans and programs required under the conditions of this approval; • a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs; • a complaints register, updated monthly; • the annual reviews of the project; • any independent environmental audit, and the Proponent's response to the recommendations in any audit; • minutes of CCC meetings; • any other matter required by the Secretary; and keep this information up to date, to the satisfaction of the Secretary.	Extent ` of project	Complies. The Grants Road Sand Quarry website incorporates: • Modification to The Project Approval • The Project Approval • Environmental Assessment • The Environmental Strategy • Plans of Management • Complaints Register • Truck movements • Independent Audit • Annual Reviews • Minutes of the CCC meetings

Appendix 4
WATER QUALITY MONITORING
Larry Cook Consulting Pty Ltd

Larry Cook Consulting Pty Ltd

WATER MONITORING
PERIOD 1.1.20 – 31.12.20

GRANTS ROAD SAND QUARRY

Grants Road Sand
Lot 1 in DP358717
270 Grants Road Somersby

PREPARED FOR: **GRANTS ROAD SAND**

PROJECT NUMBER: **21027**

DATE: **15TH MARCH 2021**

Larry Cook Consulting
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1.0 INTRODUCTION

1.1 PURPOSE AND OBJECTIVES

Grants Road Sand was granted state government approval to produce a range of sand products and high-quality hard rock in their quarrying operations at Lot 1 in DP358717, 270 Grants Road Somersby (the Site). A modified project approval was granted by the Minister of Planning under Section 75J of the Planning and Assessment Act 1979 in 2018 to incorporate Lot 2 in DP 358717 and a modification (MOD 1) regarding a Biodiversity Offset Area.

Larry Cook Consulting Pty Ltd was commissioned by *Grants Road Sand* to prepare an annual Water Monitoring Report documenting the results of ongoing water monitoring in a network of dedicated monitoring bores and surface water monitoring sites strategically located within the *Grants Road Sand* quarry precinct. Monitoring included collection and compilation of automated water level measurements and prescribed water quality testing.

The objectives of the water monitoring are documented in the Groundwater Management Plan prepared by *Larry Cook Consulting Pty Ltd* for *Grants Road Sand* in 2014 (Ref. 11017-D dated November 2014) and in the Surface Water Management Plan prepared by *Larry Cook Consulting Pty Ltd* for *Grants Road Sand* in 2015 (Ref. 11017-E dated February 2015). The objectives of the management plans were prepared in accordance with Schedule 3 Part 4 (c) (i, ii, iii & iv) of the Project Approval.

2.0 SITE DETAILS

2.1 LOCATION AND SITE IDENTIFICATION

The existing sand quarry and proposed quarry extension are located on Grants Road in Lots 1 and 2 in DP358717 on the Somersby Plateau.

The location of the Property is shown in **Figure 1**. The topographic map sheet covering the Property is the 1:25,000-scale Gosford topographic map sheet (9131-2S.) The approximate MGA coordinates of the centre of the proposed Project Site are Easting 338500 m and Northing 6304250 m. The key features required to identify the Site are summarised in **Table 1**.

Table 1
Site Identification Details

Site	**Description**
Site Name	Grants Road Sand
Site Owner	G.R. & A.K. Jones
Address	270 Grants Road Somersby NSW 2250

Title Plan	Lots 1 and 2 in DP358717
LGA	Central Coast Council

3.0 WATER MONITORING SITES

A network of groundwater monitoring bores and surface water monitoring sites are established on the Site.

Water level monitoring is undertaken in four dedicated monitoring bores. Water quality sampling and testing is carried out in two of these monitoring bores and at three surface water monitoring sites. The locations of the surface water and groundwater monitoring (sample) sites are shown in **Figure 2** and locations of the monitoring bores (sampling and water level) annotated in **Figure 3.** A register of the monitoring sites provided in **Table 2**.

Table 2
Register of Water Monitoring Sites

Monitoring Site	Monitoring Type	Location	Monitoring
W1	Surface Water	North-west discharge point	Water quality
W4	Surface Water	Culvert on south-west waterway	Water quality
S1	Surface Water	South-west waterway on western boundary of Lot 1	Water quality
G4 (BH 4)	Groundwater	Bore on NW corner of decant Pond	Water quality and automated water level
G3 (BH 3)	Groundwater	Bore in NW corner of Lot 1 (control bore)	Water quality and automated water level
DDH 1	Groundwater	Northern central part of Lot 1	Automated water level
DDH 2	Groundwater	Southern central part of Lot 1	Automated water level

4.0 GROUNDWATER LICENSING

Four active groundwater licenses are held by the owners. A register listing the licenses and annual water entitlements is provided in **Table 3**.

Table 3 Water Take					
License	**WSP and Water Source**	**Water Entitlement**	**Passive Take/Inflows**	**Active Pumping**	**Total**
WAL 36455	Water Sharing Plan North Coast and Porous Rock Kulnura Mangrove Mountain Groundwater Source	14 ML	Passive Take	Nil	82 ML
WAL 36988		50 ML			
WAL 37745		6 ML			
WAL 37746		12 ML			

It is noted that the sand processing operation utilises rainfall stored in dams/ponds. Groundwater is not used for the sand extraction activities or processing operations. A total of 82 ML licensed water entitlement is held which is used to offset pit inflow (passive take) predicted in the computer groundwater model.

5.0 AUTOMATED WATER LEVEL MEASUREMENTS

5.1 INTRODUCTION

Automated water level measurements are collected in water level sensors (pressure transducers) installed in the network of four monitoring bores. The devices are 2G/3G compatible. However, the sensors have, except for one (DDH2), experienced terminal issues relating to the phone connection. It is understood that Telstra are no longer maintaining their 3G network so when there is a communication problem, the device ceases to perform. This is exacerbated by inherent poor intermittent phone reception in this part of the Somersby area (interference issues). Field maintenance has also been an issue in 2020 due to COVID 19 travel and on-site restrictions.

It is proposed to significantly improve the communications and reliability by replacing the present water level sensor network with a cost-effective and available satellite solution. Grants Road Sand have placed an order with *Ontoto* to purchase and install Ontoto's *Astro* satellite data logger which incorporates a Holykell HPT604 Water Level Pressure Sensor with a pressure range 0-20m.

5.2 REQUEST FOR VARIATION IN NUMBER OF MONITORING SITES

Monitoring site DDH1 has been destroyed as a consequence of the expanding sand quarry. Monitoring bore DDH cannot be replaced. It is therefore proposed to maintain the three remaining monitoring sites in the network (G3, G4 and DDH2).

5.3 WATER LEVEL MONITORING RESULTS

Composite hydrographs are presented in **Figure 4**. The following observations and comments are provided:

- The composite hydrographs reveal a general rise in the water table between June and mid-September 2016 followed by a commensurate decline to about February 2017.

  A rise in the water levels between February 2017 and mid-April 2017 is in response to significant rainfall events between about late February and late March. The recharge response to rainfall is most noted in Monitoring Bore BH3.

  With the exception of a small rise (spike) in water levels recorded in mid-June 2017 in response to a rain event at the same time, water levels in all four monitoring bores has shown a gradual decline to levels recorded in mid-February 2017.

  The water levels in all four monitoring bores are observed to rise between March and April 2018 then plateau with a hint of water level decline through to about October 2018. Communication problems with sensors in BH 3 and DDH 2 are presently being assessed and reinstated.

  A gentle increase in water level is noted in DDH1 between October and November 2018 with sharp spikes observed during the same period in BH 4. The water levels are noted to gently fall through to the end of 2018.
- A gradual steady decline in the water table is noted in monitoring bores DDH 1 and DDH2 to November 2019 interrupted by sharp rainfall recharge events recorded in mid-March and September. The rate of decline is observed to accelerate significantly between November and the end of 2019 with a recorded 2.5 m decrease in the water level. The water level sensors installed in monitoring sites G3 (BH3) and G4 (BH4) had data transmission issues associated with the 3G system.
- During 2020, the hydrograph for DDH1 was interrupted by reception problems but generally shows a declining trend.
- The character of the hydrographs for monitoring bores DDH 1 and DDH 2 is consistent with predictions that the relative deeper sub-horizontal sandstone aquifers that can be effectively separated and semi-confined (and sometimes confined) by interbedded relatively massive sandstone units that possess lower hydraulic conductivities. Although this relatively deeper set of aquifers in DDH 1 and DDH 2 show a direct response to rainfall events, they do not usually respond as rapidly or in magnitude (amount of water level fluctuations) to the shallower aquifer intersected in the relatively shallow monitoring bores BH 3 and BH 4.
- No potential impacts from current approved quarrying activities on this aquifer system were detected.

6.0 WATER SAMPLING

Prescribed water sampling was undertaken in the nominated groundwater monitoring bores and surface water monitoring sites by *Grants Road Sand* during the reporting period 1.1.19 through 31.12.19. Two campaigns of sampling and testing were undertaken: in May 2020 and December 2020. It is understood that one of the surface water monitoring sites (S1) was dry during the sampling periods in May and December.

The samples were submitted to the project's NATA accredited laboratory ALS Environmental for a suite of prescribed tests and determinations listed in **Table 4** in order to reveal any trends in the results and any potential contamination from quarrying and sand washing activities. The samples were transported to the project laboratory under Chain of Custody (COC) protocol.

Table 4 List of Analytes and Tests
pH
Total Suspended Solids (TSS)
Total Dissolved Solids
Nitrite + Nitrate as N
Total Kjeldahl Nitrogen as N
Total Nitrogen as N
Total Phosphorus as P

7.0 QUALITY ASSURANCE & QUALITY CONTROL

7.1 DATA QUALITY OBJECTIVES

The data quality objectives of the investigation were to obtain sufficient representative data to allow a high quality groundwater assessment including:

- Characterisation of groundwater quality; and
- Identification of any risks posed to the environment.

The assessment was conducted to a standard consistent with generally accepted and current professional consulting practice for such an investigation. The evaluation criteria (Decision Rules) adopted for the investigation are summarised in **Table 5**.

Table 5 Data Quality Objectives	
DQO	**Evaluation Criteria**
Documentation completeness	Completion of calibration records, chain of custody documentation, laboratory test certificates from NATA-accredited laboratory
Data comparability	Use of appropriate techniques for the sampling, storage and transportation of samples. Use of NATA accredited laboratory.
Data representativeness	Adequate sampling coverage dictated by distribution of pre-selected monitoring bores, and selection of representative samples

Precision and accuracy for sampling and analysis	Use properly trained and qualified field personnel. Achieve laboratory QC criteria.

7.2 FIELD QA/QC

The Quality Assurance and Quality Control QA/QC protocols used during the fieldwork are listed in **Table 6**.

Table 6
Field QA/QC

Protocol	Description
Sampling Team	The fieldwork was managed and carried out by an experienced technician or suitably trained staff member.
QA/QC System	All fieldwork was conducted in accordance with Industry Standard Sampling Procedure.
Chain of Custody Forms	All samples were logged and transferred under appropriately completed Chain of Custody (COC) Forms.
Preservation	All samples were delivered to the project laboratory in appropriately preserved containers, with preservation consisting of packing samples in eskies with ice.
Blind Field Duplicates	Duplicate testing was not carried out for these assessments.

7.3 LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

The project laboratory (ALS) used for the tests and chemical analysis of samples during 2020 is NATA accredited for the selected tests and analysis.

8.0 RESULTS

Laboratory results are summarised in **Table 7**. Copies of the laboratory certificates supplied by Grants Road Sand are provided in **Annexure 1**.

In summary:

- Monitoring Site S1 on the south-western boundary of the Site (drainage) was noted to be dry during attempts to collect a sample in May and December 2020.
- Water sampling was successfully undertaken in May and December 2020.
- The **pH of the surface water** (W1 and W4) was reported as slightly acidic (6.41 and 6.43 respectively) in the May 2020 sampling campaign but ranged from slightly alkaline in W1 (7.33) to near neutral in W4 (6.99) in the December 2020 sampling.

Table 7 Composite Analytical Results

SAMPLE		Guidelines			G3								G4							
DESCRIPTION					Monitoring Bore (Groundwater)								Monitoring Bore (Groundwater)							
DATE																				
ANALYTE	UNIT	Drinking Water - Health Guidelines [1]	Trigger Value for the Protection of Freshwater Aquatic Ecosystems [2] (95% level protection)	Limit of Reporting	14/3/18	18/6/18	25/9/18	1/12/18	12/8/19	17/12/19	22/5/20	15/12/2020	14/3/18	18/6/18	25/9/18	1/12/18	12/8/19	17/12/19	22/5/20	15/12/2020
pH	pH Units	ISD		0.01	5.83	4.46	4.35		5.25	5.1	5.45	5.34	5.91	4.68	4.4		5.24	5.2	5.32	4.96
Total Suspended Solids	mg/L			5.0	<5	<5	<5		<5	<5	<5	<5	<5	<5	<5		<5	5	<5	<5
Total Dissolved Solids	mg/L			10.0	113	109	99		100		92	96	124	106	101		100		93	96
Nitrate + Nitrite as N	mg/L			0.0	4.37	4.63	4.64		4.58		5.12	5.06	4.99	4.24	4.66		4.66		2.00	5.06
Total Nitrogen as N	mg/L			0.1	4.8	5.2	5.1		5.1		6.7	5.8	5.7	4.9	5.2		5.3		7.1	5.7
Total Kjeldahl Nitrogen	mg/L			0.1	0.4	0.6	0.5		0.5		1.6	0.7	0.7	0.7	0.5		0.6		2	0.6
Total Phosphorus as P	mg/L			0.01	<0.01	<0.01	<0.01		<0.01		<0.01	<0.01	<0.01	0.01	0.01		<0.01		<0.01	<0.01

SAMPLE		Guidelines			W1								W4							S1							
DESCRIPTION					Surface Water Monitoring Site								Surface Water Monitoring Site							Surface Water Monitoring Site							
DATE																											
ANALYTE	UNIT	Drinking Water - Health Guidelines [1]	Trigger Value for the Protection of Freshwater Aquatic Ecosystems [2] (95% level protection)	Limit of Reporting	14/3/18	18/6/18	25/9/18	1/12/18	12/8/19	17/12/19	22/5/20	15/12/2020	14/3/18	18/6/18	25/9/18	1/12/18	12/8/19	17/12/19	22/5/20	15/12/2020	14/3/18	18/6/18	29/6/17	1/12/18	12/8/19	17/12/19	22/5/20	15/12/2020
pH	pH Units	ISD		0.01	6.67	6.72	DRY	DRY	7.17	DRY	6.41	7.33	6.67	6.74	DRY	DRY	6.91	DRY	6.43	6.99	6.05	6.51	DRY	DRY	6.41	DRY	DRY	DRY
Total Suspended Solids	mg/L			5.0	15	<5			<5		<5	9	12	<5			7		<5	10	<5	<5			<5			
Total Dissolved Solids	mg/L			10.0	97	178			71		44	71	105	174			72		49	68	253	159			72			
Nitrate + Nitrite as N	mg/L			0.0	0.04	0.05			0.08		0.03	0.04	0.05	0.05			0.09		0.02	0.04	0.04	0.05			0.09			
Total Nitrogen as N	mg/L			0.1	1.6	1.0			0.9		0.9	1	1.6	1.0			0.8		0.6	0.9	1.0	1.00			0.60			
Total Kjeldahl Nitrogen	mg/L			0.1	1.6	1.0			0.8		0.9	1	1.5	1.0			0.7		0.6	0.9	1.0	1.00			0.50			
Total Phosphorus as P	mg/L			0.01	0.12	0.08			0.02		0.02	0.06	0.1	0.08			0.04		0.02	0.07	0.07	0.08			0.01			

[1] **Drinking Water Guidelines**: National Water Quality Management Strategy 2011 Version 3.1 updated March 2015

[2] **Australian and New Zealand Guidelines for Fresh and Marine Water Quality**. National Water Quality Management Strategy (ANZECC 2000)

Note: ISD denotes insufficient data to set a guideline value based on health considerations

- The **pH of groundwater** (G3 and G4) tested in May 2020 is moderately acidic (5.45 and 5.32 respectively). The pH measured in the December 2020 sampling also returned moderately acidic values between 5.34 in G3 to 4.96 in G4.
- The concentrations of **Total Suspended Solids (TSS)** recorded in the two **surface water** monitoring sites (W1 and W2) were less than the Limit of Reporting (LOR) in the May sampling but returned low concentrations of 9 and 10 mg/L in W1 and W4 respectively in the December sampling.
- The concentrations of **Total Suspended Solids (TSS)** recorded in the two **groundwater** monitoring bores (G3 and G4) were all less than the LOR for both sampling rounds.
- The concentrations of **Total Dissolved Solids (TDS)** recorded in the two **surface water** samples W1 and W4 are 44 and 49 mg/L for the May sampling. Values of 71 and 68 mg/L were returned for the same monitoring sites in December. These values indicate low salinity.
- Levels of TDS between 92 and 93 mg/L were recorded in **groundwater** samples G3 and G4 for the May round of sampling and 96 mg/L for the same bores in December. These levels also indicate low salinity.
- The concentrations of **Nitrate plus Nitrite** range from 0.02 to 0.04 mg/L in the two surface water samples collected in May and December. The levels recorded in the groundwater monitoring bores are higher; between 2.0 and 5.12 mg/L in G4 and G3 respectively and 5.06 mg/L recorded in both bores in December. Relative soluble nitrate is likely associated with the 100-year agricultural history of the area.
- The concentrations of **Total Kjeldahl Nitrogen** (TKN) range from 0.6 to 1.0 mg/L in surface water samples to between 0.6 and 2.0 mg/L in the two groundwater samples.
- Levels of **Total Phosphorus** were recorded at less than the LOR in the two groundwater samples and between 0.02 and 0.07 mg/L mg/L in surface water samples. Phosphorus is likely associated with the current agricultural history of the area.
- No potential impacts from current approved quarrying activities on this aquifer system were detected.

9.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

Based on the results of surface water and groundwater testing obtained during the period 1.1.20 through 31.12.20, the following discussion, conclusions and recommendations are provided.

GEOCHEMISTRY

- The pH of the surface water sampled is slightly acidic to rarely slightly alkaline that reflects rainwater recharge over the quarry precinct and potential mixing with local groundwater hosted by the Hawkesbury Sandstone. The recorded pH measurements are within the range of acceptable and agreed discharge levels.

- The relatively lower pH values recorded in the groundwater samples reflects rainwater recharge (carbonic acid) and retention of water within Hawkesbury Sandstone. These levels are typical of aquifers hosted by the Hawkesbury Sandstone in the Mangrove Mountain area and wider Sydney Basin.
- The concentrations of Total Suspended Solids (TSS) recorded in groundwater samples were at low concentrations or less than the LOR with low to non-detect levels recorded in the surface water samples. Therefore, the recorded TSSs are less than the discharge level limit.
- Trace levels of nutrients in surface water samples likely reflect the agricultural history of the district (fertilisers and chicken growing).
- No impacts from current approved quarrying activities on this aquifer system were detected.

WATER LEVEL MONITORING

- The close correlation between rain events and the rise in water levels recorded in shallow monitoring bores suggests relative rapid recharge of the shallow aquifer system, especially in Monitoring Bore BH 3 and to a lesser extent in BH 4. This is consistent with the results of extensive groundwater investigations over the Site and surrounding district.
- The hydrographs for the relatively deeper monitoring bores also show a direct response to rainfall events but with a more subdued magnitude.
- No potential impacts from approved quarrying activities on this aquifer system were detected.

RECOMMENDATIONS

- Continue acquisition and charting of water level measurements in the revised network of three groundwater monitoring bores G3, G4 and DDH2.
- Upgrade the water level sensor network to satellite telemetry to ensure reliable communications and downloads. This incorporates acquisition and installation of satellite data loggers in G3, G4 and DDH2.
- Carry out regular routine surface water and groundwater monitoring in the monitoring network during 2021 in accordance with the requirements documented in the surface water and groundwater management plans. This includes maintenance and make repairs to pressure sensors to maintain integrity and communications.
- Continue oil & grease testing at surface water sample site S1 (when flowing) at the frequency of one sample per month when discharge occurs.
- Submit water samples to the project laboratory (ALS) for analysis, compile results and assess any trends and exceedances and, if required, implement a response and action plan in accordance with the environmental management plans.
- Prepare a report giving the results of the 2021 monitoring program and an assessment of any trends and potential impacts. This will include an ongoing assessment of hydrographs, pH, TSS, TDS, nitrogenous compounds and other tests as required.

10.0 ENVIRONMENTAL PERFORMANCE

A summary of the environmental performance assessed against the approved criteria documented in the Groundwater Management Plan and Surface Water Management Plan is provided in **Table 8**.

Table 8 Environmental Performance						
Environmental Aspect	**Approval Criteria**	**Summary Monitoring Results Period 1/1/17-31/12/17**	**Summary Monitoring Results Period 1/1/18-31/12/18**	**Summary Monitoring Results Period 1/1/19-31/12/19**	**Summary Monitoring Results Period 1/1/20-31/12/20**	**Proposed Improvement Measures**
Groundwater	Section 4 - Schedule 3 of Project Approval and Appendix 1 - Statement of Commitments. • Undertake automated water level measurements in four nominated monitoring bores G3 (BH3), G4 (BH4), DDH1 & DDH2. Minimum 4 hourly readings.	• Hydrographs for the four monitoring bores reveals fluctuations in water level associated with climate changes. Shallow monitoring bores show sharp rises due to rainfall recharge events.	• Hydrographs for the four monitoring bores reveals fluctuations in water level associated with climate changes. Shallow monitoring bores show sharp rises due to rainfall recharge events.	• Hydrographs for the two operational monitoring bores reveals fluctuations in water level associated with climate changes.	• The hydrograph for the one operational monitoring bore reveals fluctuations in water level associated with climate changes.	• Replace/upgrade 3G compatible water level sensors with satellite data loggers to ensure effective communications and reliability.

	• Undertake groundwater sampling in representative monitoring bores G3 & G4. Three monthly sampling • Undertake automated rainfall measurements – tipping bucket rain gauge.	• No impacts from quarrying activities on the aquifer system were detected • Automated daily rainfall collected	• No impacts from quarrying activities on the aquifer system were detected • Automated daily rainfall collected	• No impacts from quarrying activities on the aquifer system were detected • Automated daily rainfall collected	• No impacts from quarrying activities on the aquifer system were detected Automated daily rainfall collected	• Ensure the integrity of the installed sampling equipment and full suite of analytes is tested.
Surface Water	Section 4 - Schedule 3 of Project Approval and Appendix 1 - Statement of Commitments. • Undertake surface water sampling at representative sampling sites W1, W4 - three monthly sampling	• Results of pH, TDS, TSS, N compounds, TKN, TP • No exceedances or impacts from quarrying activities on the aquifer	• Results of pH, TDS, TSS, N compounds, TKN, TP • No exceedances or impacts from quarrying activities on the aquifer	• Results of pH, TDS, TSS, N compounds, TKN, TP • No exceedances or impacts from quarrying activities on the aquifer	• Results of pH, TDS, TSS, N compounds, TKN, TP • No exceedances or impacts from quarrying activities on the aquifer	• Continue oil & grease testing at site S1when discharge is flowing

	and testing when ponds discharging, and monthly testing for site S1 when discharging.	system were detected	system were detected	system were detected	system were detected	

11.0 COMPLIANCE STATUS

A summary of the compliance requirements, monitoring methodology and evidence for the development is provided in **Table 9**.

Table 9 Compliance Status				
Section	**Compliance Requirement**	**Development Phase**	**Monitoring Methodology**	**Evidence**
Section 7 in Appendix 1 - Statement of Commitments - Groundwater	• Water level measurements	• At all times	• Automated real time measurements in water level sensors, data loggers with telemetry	• Real time minimum 4-hourly measurements downloaded as required. Data stored/archived in a dedicated data base and hydrographs constructed
	• Water sampling and testing	• At all times	• Regular prescribed sampling (3 monthly for G3 and G4).	• COCs and laboratory certificates
	• Rainfall monitoring	• At all times	• Automated real time measurements of rainfall with telemetry	• Real time 4-hourly measurements downloaded as required. Data stored/archived in a dedicated data base
	• Compile results of the monitoring program including a review and assessment of trends, exceedances and impacts	• Annually	• Reporting	• Annual report

Section 8 in Appendix 1 - Statement of Commitments – Surface Water	• Water sampling and testing	• At all times	• Regular prescribed sampling (3 monthly for W1 and W4 and 1 monthly for S1)	• COCs and laboratory certificates
	• Compile results of the monitoring program including a review and assessment of trends, exceedances and impacts	• Annually	• Reporting	• Annual report

12.0 CLOSURE

Please do not hesitate to contact Larry Cook on 0428 884645 if you have any questions or you require further information.

For and on behalf of
Larry Cook Consulting



Larry Cook
Hydrogeologist and Environmental Consultant

ANNEXURES

Annexure 1

Laboratory Certificates

Sampling May 2020

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2017976**	Page	: 1 of 2
Client	: **GR & AK Jones**	Laboratory	: Environmental Division Sydney
Contact	: Ms Leanne Jones	Contact	: Customer Services ES
Address	: 270 Grants Rd Somersby NSW 2350	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: Water Samples	Date Samples Received	: 26-May-2020 09:30
Order number	: ----	Date Analysis Commenced	: 26-May-2020
C-O-C number	: ----	Issue Date	: 01-Jun-2020 16:42
Sampler	: Steven Jones		
Site	: ----		
Quote number	: Blanket Quote		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)			Client sample ID	**W1**	**W4**	**G3**	**G4**	**----**
			Client sampling date / time	22-May-2020 09:30	22-May-2020 09:30	22-May-2020 09:30	22-May-2020 09:30	----
Compound	*CAS Number*	*LOR*	*Unit*	**ES2017976-001**	**ES2017976-002**	**ES2017976-003**	**ES2017976-004**	**--------**
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.41**	**6.43**	**5.45**	**5.32**	**----**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**44**	**49**	**92**	**93**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	<5	<5	<5	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.03**	**0.02**	**5.12**	**5.06**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.9**	**0.6**	**1.6**	**2.0**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.9**	**0.6**	**6.7**	**7.1**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.02**	**0.02**	<0.01	<0.01	**----**

Sampling December 2020

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2045733**	Page	: 1 of 2
Client	: **GR & AK Jones**	Laboratory	: Environmental Division Sydney
Contact	: Ms Leanne Jones	Contact	: Customer Services ES
Address	: 270 Grants Rd Somersby NSW 2350	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: Water Samples	Date Samples Received	: 23-Dec-2020 09:15
Order number	: ----	Date Analysis Commenced	: 23-Dec-2020
C-O-C number	: ----	Issue Date	: 05-Jan-2021 18:09
Sampler	: Steven Jones		
Site	: ----		
Quote number	: Blanket Quote		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

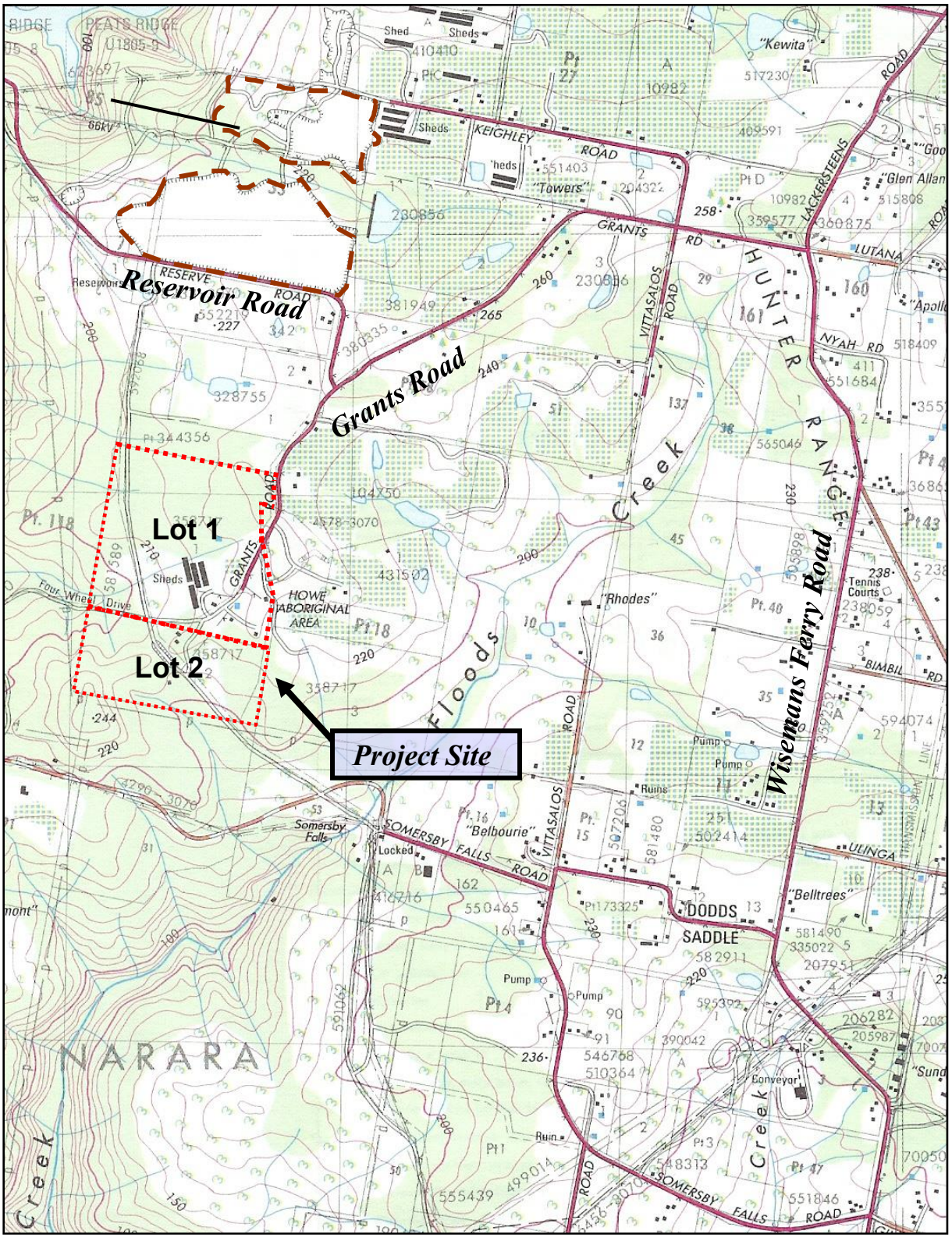
Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

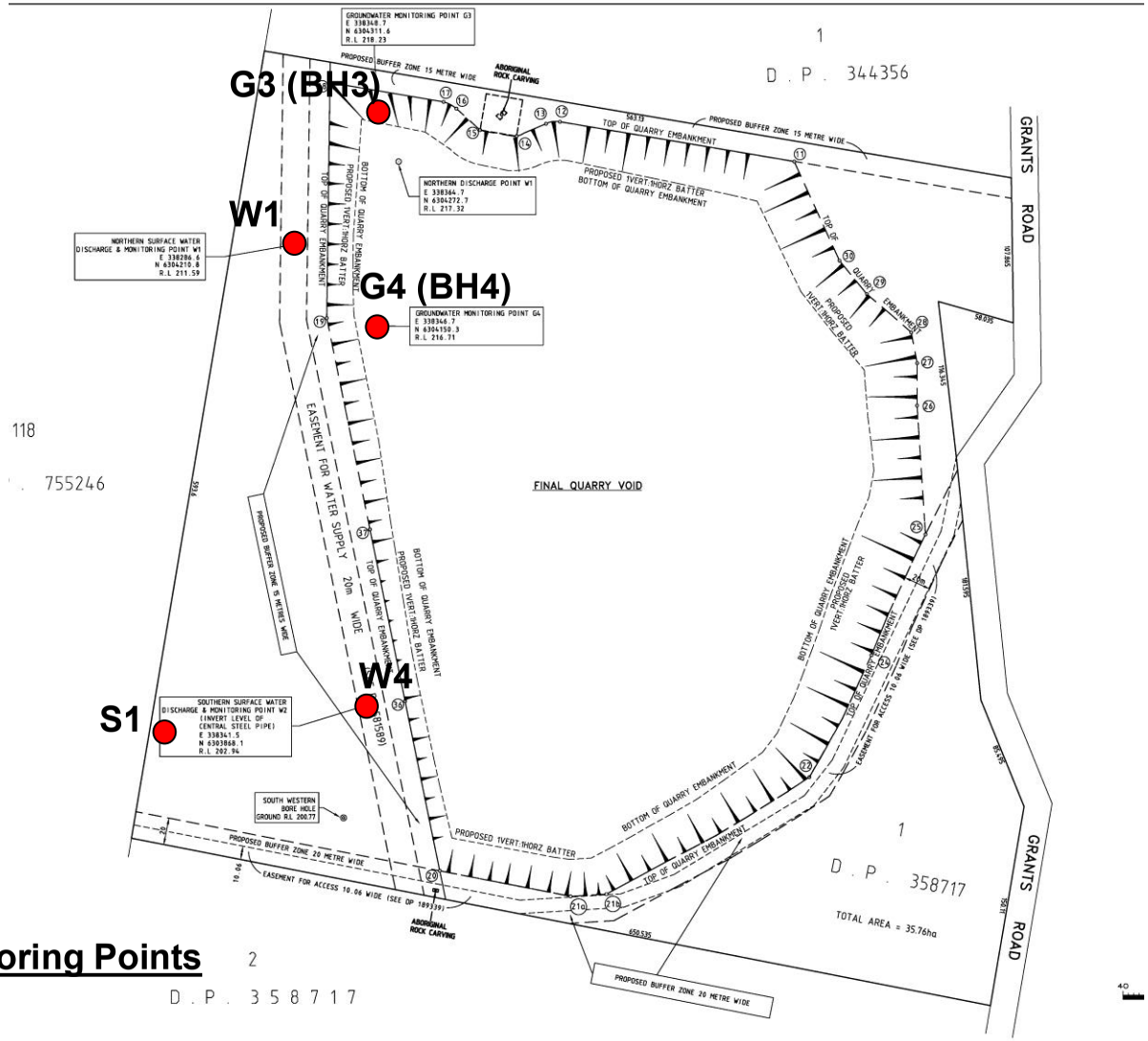
Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)			Sample ID	**W1**	**W4**	**G3**	**G4**	**----**
			Sampling date / time	15-Dec-2020 16:30	15-Dec-2020 16:30	15-Dec-2020 16:30	15-Dec-2020 16:30	----
Compound	*CAS Number*	*LOR*	*Unit*	**ES2045733-001**	**ES2045733-002**	**ES2045733-003**	**ES2045733-004**	**--------**
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.33**	**6.99**	**5.34**	**4.96**	**----**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**71**	**68**	**96**	**96**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**9**	**10**	<5	<5	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.04**	**0.04**	**5.06**	**5.06**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.0**	**0.9**	**0.7**	**0.6**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.0**	**0.9**	**5.8**	**5.7**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.06**	**0.07**	<0.01	<0.01	**----**

FIGURES



Larry Cook Consulting **PO Box 8146** **Tumbi Umbi NSW 2261** **Ph: 02 4340 0193**	**Grants Road Sand Quarry**	Scale: As shown
	Location of Project Site	**FIGURE 1**



Surface Water Monitoring Points
W1, W4 & S1

Groundwater Monitoring Points
G3 & G4

Modified after Stephen Thorne & Associates (2015)

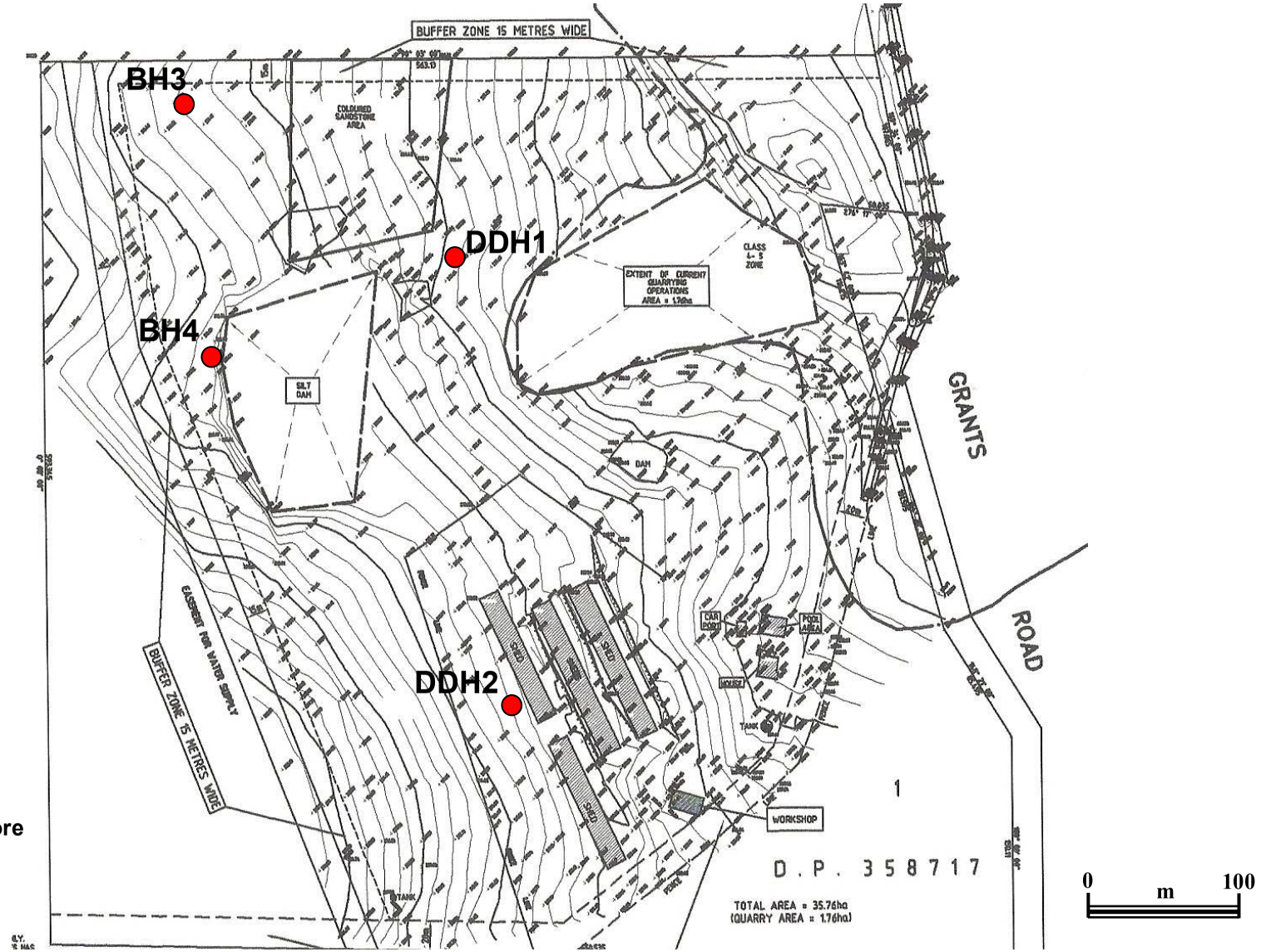
Larry Cook Consulting
PO Box 8146
Tumbi Umbi NSW 2261
Ph 02 4340 0193

Grants Road Sand Quarry

Locations of Monitoring Sites

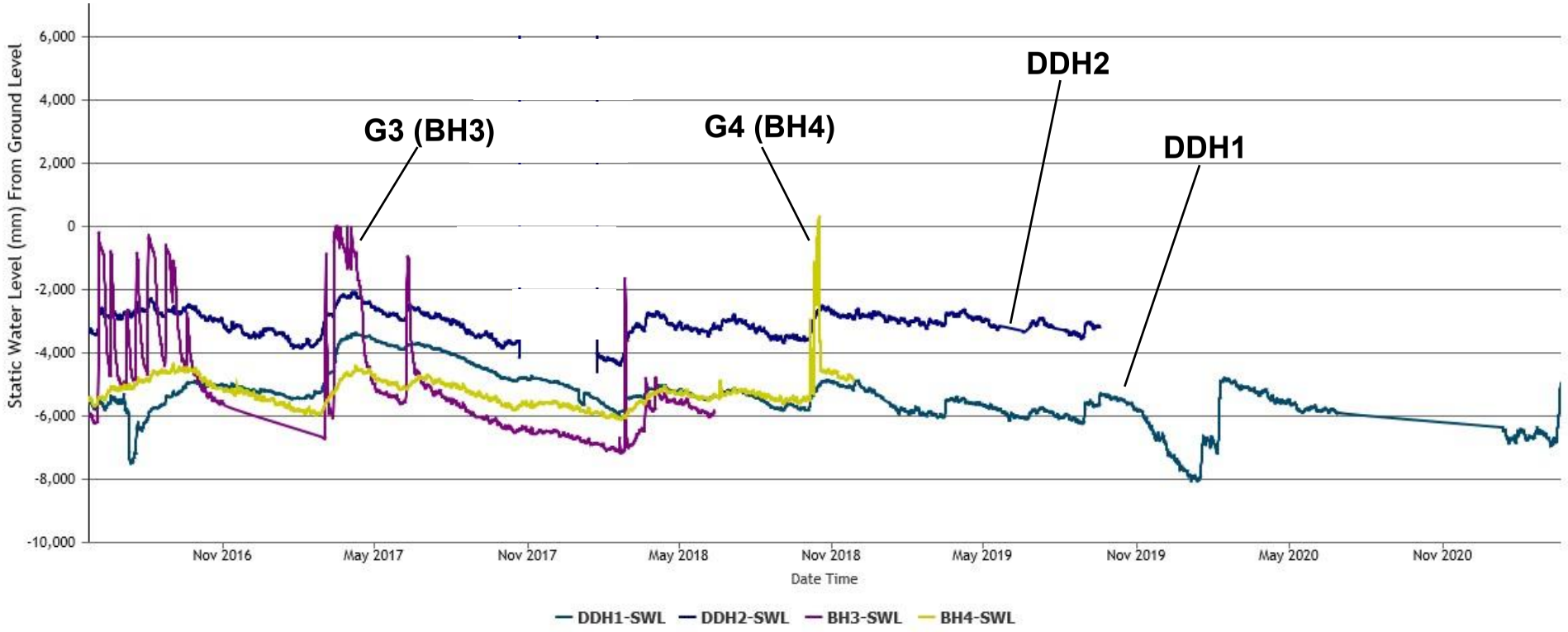
Scale: As shown

FIGURE 2



● Existing Monitoring Bore

Larry Cook Consulting **PO Box 8146** **Tumbi Umbi NSW 2261** **Ph 02 4340 0193**	**Grants Road Sand Quarry** Site Plan and Locations of Monitoring Bores	N	Scale: As shown **FIGURE 3**



Larry Cook Consulting
PO Box 8146
Tumbi Umbi NSW 2261
Ph 02 4340 0193

Grants Road Sand Quarry

Composite Hydrographs

N

Scale: As shown

FIGURE 4

Appendix 5
NOISE AUDIT DECEMBER 2019
Atkins Acoustic

51.7027.R7:GA/DT/2021

ATKINS ACOUSTICS

Postal Address
P.O. Box 432
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A.B.N. 19 068 727 195
Telephone: 02 9879 4544
Fax: 02 9879 4810
Email: AtkinsAcoustics@bigpond.com.au

Grants Road Sand Pty Ltd.
Grants Road
SOMERSBY NSW 2250

Attention: Steve Jones

14 January 2021

Atkins Acoustics and Associates Pty Ltd.
Consulting Acoustical & Vibration Engineers

ENVIRONMENTAL NOISE AUDIT GRANTS ROAD SAND QUARRY SOMERSBY JANUARY 2021

1.0 INTRODUCTION

Atkins Acoustics was retained by Grants Road Sand Pty Ltd to conduct an environmental noise audit of the Grants Road Sand Quarry operations. This report has been prepared to address the 2020 annual noise monitoring requirements and compliance with Condition 7. An Environmental Performance Table and Compliance Status Table is provided in *Attachment 1*. The audit was conducted by Graham Atkins. Grahams qualifications and membership include BE, MAAS, MIEAust and CPEng. Graham is employed by Atkins Acoustics and Associates Pty Ltd a Member Firm of the AAAC.

The quarry currently operates under approval from the Department of Planning and Environment (DoPE), Application number 08_0099. MOD 1, dated April 2018. Specific noise conditions (Schedule 3 - Conditions 5, 6, 7, 8 & 9) contained within the approval include a requirement for the preparation of a *NMP* (*Schedule 3 - Condition 9*) to the satisfaction of the Secretary.

The approval includes:

- extraction, processing and transportation of up to 250,000 tonnes per annum of various grades of washed sand, mortar sand, sandstone blocks and retaining wall rocks for a period of approximately thirty (30) years.
- total extraction of approximately nine point five (9.5) million tonnes (Mt) of extractable sand and sandstone.
- extension of quarry by approximately twenty (20) hectares.
- extraction to depth of thirty-five (35) metres, and
- extraction by dozer and excavator.

The quarry operates from 7.00am to 6.00pm Monday to Friday and 7.00am to 1.00pm Saturday.

2.0 APPROVAL CONDITIONS (Noise)

Project construction and quarry operational noise conditions imposed by the DoPE (*Application Number 08_0099, MOD 1),* dated April 2018 – Schedule 3 are presented below:

NOISE

Hours of Operation

5. The Proponent shall only conduct construction activities and quarrying operations on the site:
   (a) between 7.00 am and 6.00 pm, Monday to Friday;
   (b) between 7.00 am and 1.00 pm, Saturday; and
   (c) at no time on Sunday or public holidays.

   Note: The Proponent may carry out other activities e.g. maintenance, on the site provided that these activities are conducted in a manner that is inaudible at all privately-owned residences.

6. The following activities may be carried out on the site outside the hours specified in condition 5:
   (a) delivery or dispatch of materials as requested by Police or other authorities; and
   (b) emergency work to avoid the loss of lives, property and/or to prevent environmental harm.

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

Noise Impact Assessment Criteria

7. The Proponent shall ensure that the construction and operational noise generated by the project does not exceed the criteria in Table 1 at any residence on privately-owned land.

Table 1: Noise criteria

Receiver Location	$L_{Aeq\ (15\ min)}$ ***dB(A)***
All privately-owned residences	40

Noise generated by the project is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the *NSW Industrial Noise Policy*. Appendix 2 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.

However, the noise criteria in Table 1 do not apply if the Proponent has an agreement with the relevant landowner to exceed the noise criteria, and the Proponent has advised the Department in writing of the terms of the agreement.

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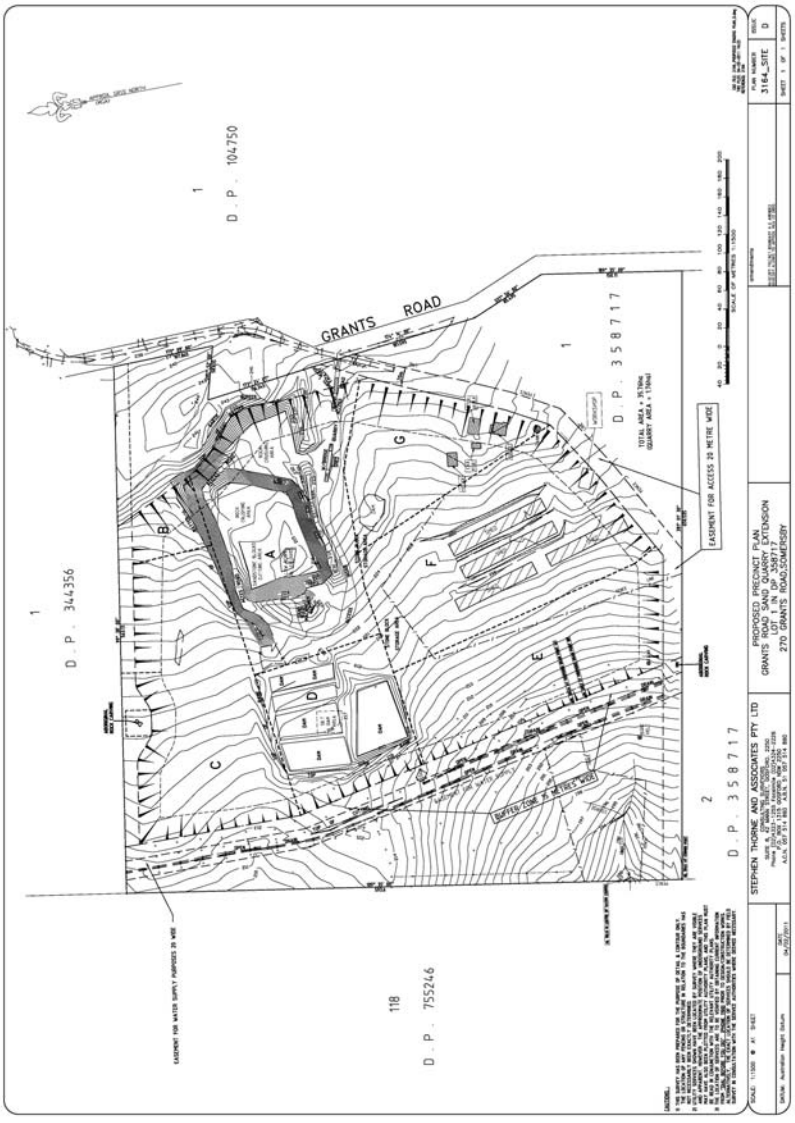
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3.0 DESCRIPTION OF SITE ACTIVITIES

The audit identified onsite extraction and processing of quarry products on Areas A, B and C *(Figure 1)*. Operating plant and equipment identified during the audit included:

- McClosky (Tricon) Screen and one loader south-east portion of Area A.
- Two excavators one with breaker preparation works eastern side Area B.
- Washing Plant and one loader south area of Area A
- Dozer ripping eastern portion Area C
- Dam water pump Area C

Figure 1. Quarry Precinct Layout



4.0 OVERVIEW

The noise audit was undertaken between 7.00am and 10.00pm, Monday 11 January 2021.

In accordance with the Approval Conditions noise measurements were conducted at three (3) reference residential locations shown in *Attachment 2.*

Location 1:	'Ibels' - 380 Somersby Falls Road
Location 2:	'McGregor' - 239 Grants Road
Location 3:	'Sammut' - 210 Grants Road

4.1 Measurement Instrumentation

The measurement instrumentation comprised a Svan 949 Sound and Vibration Analyzer. The meter was programmed to calculate and record 15 minute statistical levels. The reference calibration level of the meter was checked prior to and after the measurements with a Bruel & Kjaer Sound Level Calibrator Type 4230 and remained within ± 0.5dBA. The meter carried appropriate and current NATA calibration *(Attachment 3).*

Measurements were undertaken in accordance with procedures documented in Australian Standard AS1055-1997 ' Acoustics - Description and Measurement of Environmental Noise' and the NSW Environmental Protection Authority, Noise Policy for Industry *(NPfI)* guidelines.

4.2 Weather Conditions

Weather observations and conditions reported at the onsite weather station during the audit were calm to light north-west to north-east wind (0 - 1.5m/sec), air temperature 22-24°C, relative humidity 60% and clear sky.

4.3 Review of Noise Related Incidents

The Site Quarry Manager confirmed that no noise related incidents were reported during the period from 28 November 2019 to 10 January 2021.

5.0 MEASUREMENT RESULTS

5.1 Off-site Measurement Results

Attended measurements during the audit where appropriate were used to assess source noise contributions associated with Grants Road Sand Quarry operations. A summary of the measurement results and calculated contributions is presented in *Table 1*. Measurements at all reference assessment locations were influenced by cicada and insect noise. At reference location 1(Ibels) cicada's controlled the ambient noise.

Table 1: Audit Measurement Results

dBA re: 20 x 10^{-6} Pa

Measured Ambient Sound Pressure Levels dBA				Estimated Grants Road Sand Contribution	Comments
L_{Aeq}	L_{A10}	L_{A90}	L_{A1}	$L_{Aeq, 15min}$	
Location 1: Ibels Residence – 380 Somersby Falls Road					
64.2	66.4	61.4	67.9	<35	Cicadas, birds, GRS mobile plant audible at times estimated LAmax 34/6dBA.
63.7	65.8	60.7	68.5	<35	Cicadas, GRS mobile plant audible at times estimated LAmax 36/7dBA
Location 2: McGregor Residence – 239 Grants Road					
43.7	45.3	39.9	53.5	<40	Distant road traffic, Insects, GRS FEL loader bucket scraping audible at times LAmax 37/8dBA; Onsite GRS mobile plant LAmax 34/5dBA
57.56	53.9	44.0	69.3	<40	Distant road traffic, Insects, Onsite GRS mobile plant LAmax 34/5dBA; Distant chain saw 40/2dBA.
Location 3: Sammut Residence – 210 Grants Road					
42.7	42.7	40.0	51.5	<40	Distant road traffic, Birds, Insects.
44.0	44.5	40.3	52.7	<40	Distant road traffic; Insects; Birds, GRS onsite mobile plant LAmax 35/7dBA.

5.2 Site Audit Results

In addition to the offsite noise measurements *Table 2* presents a summary of sound power levels for the operating site plant and equipment.

Table 2: Quarry Plant and Equipment Sound Power Levels

dBA re: 10^{-12} Watts

1/1 Octave Spectrum	Sound Power Level dB 10-12 Watts							
	Alice Chase Dozer	Cat 336D With Breaker	Cat 330F Loader	Cat 980G Loader	Sand Wash Plant	Diesel Water Pump	Cat 980G Loader	McClosky Tricon Screen
31	97	105	99	106	111	92	108	110
62	106	111	104	107	108	124	122	101
125	100	115	106	114	95	103	103	103
250	98	117	102	111	94	102	101	106
500	98	120	101	104	91	100	101	107
1K	98	116	98	102	91	102	102	106
2K	92	112	95	97	88	101	97	102
4K	85	107	90	93	81	94	90	94
8K	80	101	83	94	75	86	83	86
16K	74	92	72	88	68	76	73	79
dBA	101	121	103	108	96	107	106	109

5.3 Compliance Status

The results in *Table 1* demonstrate that noise from Grants Road Sand Quarry activities complied with the DoPE (*Application Number 08_0099, MOD 1),* noise condition $L_{Aeq, 15min}$ 40dBA. *Table 3* presents a summary of the noise compliance status for the Grants Road Sand Quarry operations.

Table 3 – Noise Compliance Status

Unique ID	Compliance Requirement	Development Phase	Monitoring methodology	Evidence and comments
7	The Proponent must ensure that the construction and operational noise generated by the project does not exceed $L_{Aeq\ 15min}$ 40dBA at all privately owned residences	At all times	Daily onsite inspection of plant and equipment. Annual Noise Audit Acoustic Consultant	Annual Compliance Report from Acoustic Consultant

5.4 Noise Trends

A review of the measurement results *(Table 4)* and previous reported levels has shown that noise contributions from Grant Road Sand Quarry have remained steady.

Table 4 – Environmental Performance Summary

Environmental Aspect	Approval Criteria: Requirements in the management plan.	Summary of Monitoring Results in the Previous Reporting Period	Summary of Monitoring Results in this Reporting Period	Improvement Measures to be implemented
Noise	Schedule 3 Conditional 7 of the Approval	Location 1: <40dBA Location 2: <40dBA Location 3: <40dBA	Location 1: <40dBA Location 2: <40dBA Location 3: <40dBA	Extension of earth mounding, routine maintenance program, replacement of faulty noisy plant/equipment

5.5 Noise Mitigation Planning

Noise mitigation options planned for the next calendar year, include the continuation of the earth mounding/bunding on the western site boundaries. Additionally, and dependent on product demand, it is expected that the depth of the working platforms (Areas A, B and C) could increase by 3-4 metres.

6.0 CONCLUSION

Atkins Acoustics was retained by Grants Road Sand Pty Ltd to conduct an environmental noise audit for the Somersby Quarry.

The quarry currently operates under approval from the Department of Planning and Environment, Application number 08_0099. MOD 1, dated April 2018.

The noise audit was undertaken between 7.00am and 10.00pm, Monday 11 January 2021.

The findings of the measurement results show that noise from Grants Road Sand Quarry activities complied with the DoPE (*Application Number 08_0099, MOD 1),* noise condition $L_{Aeq,\ 15min}$ 40dBA.

The Site Quarry Manager confirmed that no noise related incidents were reported during the period from 28 November 2019 to 10 January 2021

A review of the audit measurement results *(Table 1)* and previous reported audit measurements has shown that noise contributions from Grant Road Sand Quarry have remained steady.

Noise mitigation options planned for the next calendar year, include the continuation of the earth mounding/bunding on the western site boundaries. Additionally and dependent on product demand, it is expected that the depth of the working platforms (Areas A, B and C) could increase by 3-4 metres.

ATKINS ACOUSTICS & ASSOCIATES PTY LTD.



ATTACHMENT 1: ENVIRONMENTAL PERFORMANCE & COMPLIANCE STATUS SUMMARY

ENVIRONMENTAL PERFORMANCE TABLE

Environmental Aspect	Approval Criteria	Summary of Monitoring Results in the Previous Monitoring Period	Summary of Monitoring Results in this Monitoring Period	Recommendations
Noise	The proponent shall ensure that the construction and operational noise generated by the project does not exceed $L_{Aeq\ 15min}$ 40 at any residence on privately-owned land	No exceedances	No exceedances	• Continue to undertake noise monitoring to determine whether the project is complying with the relevant conditions of Aaproval. • Maintain the effectiveness of noise suppression equipment on plant and equipmentpn site

COMPLIANCE STATUS TABLE

Schedule and Condition Number	Approval Criteria	Compliance	Evidence	Recommendations
Schedule 3 Condition 7	The proponent shall ensure that the construction and operational noise generated by the project does not exceed $L_{Aeq\ 15min}$ 40 at any residence on privately-owned land	Compliant	Attended annual noise audit	• Continue to undertake noise monitoring. • Continue onsite inspections of plant and equipment to ensure noise mitigations are operational and effective

ATTACHMENT 2: ASSESSMENT MONITORING LOCATIONS

(Reference Source: Six Maps)



ATTACHMENT 3: Svan Certificate of Calibration.

CERTIFICATE OF CALIBRATION

CERTIFICATE NO.: SLM 42246 & FILT 5696

Equipment Description:	Sound & Vibration Analyzer		
Manufacturer:	Svantek		
Model No:	Svan-949	**Serial No:**	9713
Microphone Type:	7052E	**Serial No:**	48484
Preamplifier Type:	SV12L	**Serial No:**	22940
Filter Type:	1/3 Octave	**Serial No:**	9713
Comments:	All tests passed for type 1. (See over for details)		
Owner:	Atkins Acoustics 21 Ernest Street Hunters Hill NSW 2110		
Ambient Pressure:	1005 hPa ±1.5 hPa		
Temperature:	23 °C ±2° C	**Relative Humidity:**	59% ±5%
Date of Calibration:	18/03/2020	**Issue Date:**	18/03/2020

Acu-Vib Test Procedure: AVP05 (SLM) & AVP06 (Filters)

CHECKED BY: IKB **AUTHORISED SIGNATURE:** Hein Soe

Accredited for compliance with ISO/IEC 17025 - Calibration
The results of the tests, calibration and/or measurements included in this document are traceable to Australian/national standards.
The uncertainties quoted are calculated in accordance with the methods of the ISO Guide to the Uncertainty of Measurement and quoted at a coverage factor of 2 with a confidence interval of approximately 95%.

NATA
WORLD RECOGNISED ACCREDITATION
Accredited Lab. No. 9262
Acoustic and Vibration Measurements

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AVCERT05 Rev. 1.3 15.05.18

Appendix 6
BASELINE AIR QUALITY MONITORING
Environmental Resources Management (ERM)



Compliance Monitoring Annual Report

2020 Grants Road Sand

12 February 2021

Project No.: 0476648

The business of sustainability

ERM

Document details	
Document title	Compliance Monitoring Annual Report
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Project No.	0476648
Date	12 February 2021
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Author	Charlie Yu; Jane Barnett
Client Name	Grants Road Sand

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				ERM approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
Draft	00	Charlie Yu	Jane Barnett	Jane Barnett	05.02.21	
Final	00	Charlie Yu	Jane Barnett	Jane Barnett	12.02.21	Includes final deposition data

12 February 2021

Compliance Monitoring Annual Report

2020 Grants Road Sand

ERM Australia Pacific Pty Ltd

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1. EXECUTIVE SUMMARY

As part of the Conditions of Approval issued on 25 July 2014 for the Grants Road Sand Quarry Extension, the proponent is required to monitor meteorological and dust parameters and report annually on the results and findings. This report summarises the measured data for each of these parameters for the 2020 calendar year.

There was no exceedance of the annual average air quality criterion. There were also no reported incidents or complaints received.

The information in this report provides a summary of the measurements of particulate matter (PM_{10}), deposited dust, respirable crystalline silica (RCS) and meteorological parameters measured at the site from 1 January to 31 December 2020.

2. INTRODUCTION

ERM Australia Pacific Pty Ltd (ERM) has been commissioned by Grants Road Sand to undertake the annual reporting for compliance monitoring at the Grants Road Sand Quarry, located on the NSW Central Coast at Somersby.

The results of the monitoring programs are provided on an annual basis. This report summarises the data collected during the January to December 2020 period.

All monitoring for air quality is conducted in accordance with the NSW Environmental Protection Agency (EPA)[1] "*Approved methods for the sampling and analysis of air pollutants in NSW*" (**NSW DEC 2005**).

Specifically, the approved methods relevant to this monitoring plan are:

- AM-1 – Guide for the siting of sampling equipment.
- AM-2 – Guide for measurement of horizontal wind for air quality applications.
- AM-4 – Meteorological monitoring guidance for regulatory modelling applications.
- AM-18 – Particulate matter – PM_{10} – high volume sampler with size-selective inlet.
- AM-19 – Particulates – deposited matter – gravimetric method.

AM-1 refers to the Australian Standard (AS) 2922 – 1987, however this has been superseded by AS/NZS 3580.1.1:2007 Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment.

The siting of all instrumentation is undertaken in accordance with the requirements set out in both AS 2922 – 1987 and AS/NZS 3580.1.1:2007. Where conflicts arise, preference will be given to the more recent standard.

AM-2 refers to the Australian Standard AS 2923 – 1987 "Ambient Air – Guide for the Measurement of Horizontal Wind for Air Quality Applications". As 2923 applies to the determination of wind speed and direction for the purpose of air quality applications and sets out requirements for apparatus, calibration and maintenance, siting and installation and data recording and processing (including appropriate methods for wind averaging). A monitoring site for the meteorological station (met station) was chosen in accordance with AS 2923 – 1987. The location is away from buildings or other obstructions that would otherwise impact on the prevailing with flow.

[1] The NSW EPA exists as a legal entity operated within the Office of Environment and Heritage (OEH) which came into existence in April 2011. OEH was previously part of the Department of Environment, Climate Change and Water (DECCW). The DECCW was also recently known as the Department of Environment and Climate Change (DECC), and prior to that the Department of Environment and Conservation (DEC). The terms NSW EPA, OEH, DECCW, DECC and DEC are interchangeable in this report.

2.1 Project name and project application number

Project name: Grants Road Sand Quarry Extension

Application Number: 08_0099

2.2 Project address

270 Grants Road, Somersby NSW 2250. The site itself is shown in **Figure 1**.

2.3 Project phase

Operational Compliance Report.

2.4 Compliance reporting period

Annual reporting period includes 1 January 2020 to 31 December 2020.

2.5 Project activity summary

Measurements for Respirable Crystalline Silica (RCS), PM_{10}, deposited dust and meteorological parameters have been analysed and reported consistent with project requirements.

3. COMPLIANCE STATUS SUMMARY

Unique ID	Compliance Requirement	Development Phase	Monitoring methodology	Evidence and comments
Schedule 3, Condition 10	Ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria.	Operation	Dust deposition sampling and PM_{10} monitoring measurement as described in Section 2.	No exceedances in reporting period for PM_{10} or deposited dust.
Schedule 3, Condition 11, Part a	Implement best practice management to minimise the dust emissions of the project.	Operation	SMS alerts from on-site weather station when wind speeds are high. Operations are modified or ceased during these periods.	Remote access to the weather station to enable SMS alerts.
Schedule 3, Condition 11, Part b	Regularly assess air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this approval.	Operation	Dust deposition sampling, PM_{10} monitoring and meteorological measurement as described in Section 2.	Analysis of data throughout the year to ensure levels below short-term criteria and on track to remain below annual criteria.
Schedule 3, Condition 11, Part c	Minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events.	Operation	SMS alerts from the on-site weather station when winds are above certain speeds, as detailed in the Air Quality Management Plan.	Remote access to the weather station to enable SMS alerts.
Schedule 3, Condition 11, Part f	Carry out regular air quality monitoring to determine whether the project is complying with the relevant conditions of this approval.	Operation	Dust deposition sampling, PM_{10} monitoring and meteorological measurement as described in Section 2.	No exceedances in reporting period for PM_{10} or deposited dust.
Schedule 3, Condition 13	For the life of the project, the Proponent 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.	Operation	10 m meteorological mast installed at the site complying with all relevant methods listed in Section 2.	Data capture rate for all parameters for 2020 was above the required 90%
Schedule 4, Condition 7	Immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested	Operation	PM_{10} monitoring as described in Section 2.	No incidents recorded.

4. NON-COMPLIANCES

There are no instances of non-compliance recorded during the 2020 reporting period. Summaries of the monitoring data through the year are shown in Appendix A.

5. PREVIOUS REPORT ACTIONS

No outstanding items from previous reporting period (2019) required action.

6. INCIDENTS

No incidents were notified from Grants Road Sand Quarry during the 2020 reporting period.

7. COMPLAINTS

No complaints arising from Grants Road Sand Quarry were received during the 2020 reporting period.

8. MONITORING DATA SUMMARIES

8.1 Meteorology

The valid data recovery rate for each meteorological parameter during the reporting period is 100%.

8.1.1 Wind data

A wind rose for the annual period 2020 is presented in **Figure 2**. The wind rose indicates that winds from the west are dominant. The average wind speed for the period was 2.1 m/s and the percentage occurrence of calm wind conditions (less than or equal to 0.5 m/s) was 3.3%.

8.1.2 Temperature

A plot of the hourly average temperature, recorded at 2 m and 10 m, is shown in **Figure 3**. July was the coldest recorded month on average and January was the hottest month on average. The maximum daily average of 32°C was recorded on 23 January 2020. The monthly average temperature is shown in **Table 2**.

8.1.3 Rainfall

A plot of the daily average rainfall is shown in **Figure 4** and the monthly average rainfall is shown in **Figure 5**. March recorded the highest monthly total rainfall of 137 mm.

8.2 Air Quality

The NSW EPA specifies air quality assessment criteria relevant for assessing impacts from air pollution (**NSW DEC, 2005**). These criteria are health-based (i.e. they are set at levels to reduce the risk of adverse health effects). The EPA criteria are consistent with the National Environment Protection Measures for Ambient Air Quality (referred to as the Ambient Air-NEPM) (**NEPC, 1998, NEPC, 2003**). In January 2017, the NSW EPA released their updated Approved Methods (**EPA, 2016**) to amend the annual average PM_{10} criterion from 30 µg/m^3 down to 25 µg/m^3. The data for this report is referenced to the 25 µg/m^3 criteria only.

Table 3 and **Table 4** summarise the air quality criteria for concentrations of particulate matter and deposited dust levels that are relevant to this study. That is, the criteria stated form the basis for the standards to be achieved at the quarry.

8.2.1 Particulate matter (PM_{10})

The results for the available PM_{10} data are presented in **Figure 6**. Of a possible 60 samples (over approximately 12 months), twenty five (25) samples are reported, resulting in a low data recovery rate of approximately 42%. There were issues with the electric connection for the high volume air sampler in the last few months of the year, with the last sample being collected on 18 October. These issues were corrected in January 2021.

The average PM_{10} concentration over the recorded 9 month period was 4.3 µg/m^3, which is well below the annual EPA impact assessment criterion of 25 µg/m^3. All reported results are below the EPA maximum 24-hour average criterion of 50 µg/m^3 for PM_{10}.

The dust sample collected by the HVAS monitor includes both dust generated by site activities (incremental dust impact) and dust from all other local sources (background dust levels). However as stated previously, even with the background levels accounted for, PM_{10} levels are considerably below their respective 24-hour and annual criterion.

8.2.2 Dust deposition

Dust deposition is measured at two locations, R1 and R4, as shown in **Figure 1**. The results for the available dust deposition data are presented in **Figure 7**. Of a possible 12 samples, all 12 samples are reported for both sites. The annual average monthly dust deposition level for the period of 2020 was 2.2 g/m^2/month at R1 and 0.7 g/m^2/month at R4. There are two monthly results for R1 above the EPA cumulative annual average criterion of 4 g/m^2/month. These were 6.8 g/m^2/month in January and 12.2 g/m^2/month in June 2021. The measurement in January is likely to be the result of unprecedented bushfire activity in the Hunter and Greater Sydney area at that time. The June value is anomalous and may have been contaminated. If this value is discounted then the annual average would be reduced to 1.2 g/m^2/month, but even if it is retained, the annual average is well below the criterion. No values at R4 was above this criterion.

The dust sample collected by the deposition gauges includes both dust generated by site activities (incremental dust impact) and dust from all other local sources (background dust levels). Even with the background levels accounted for, the annual average deposition levels are considerably below both the incremental and cumulative annual criteria, when the anomalous June value at R1 is discounted.

8.2.3 Respirable crystalline silica

A number of crystalline silica measurements were taken on 15 September 2020. The samples were measured over the course of a shift, using personal air-samplers in the breathing zone of operators on dozers, excavators and loaders at the site. The results collected and corrected for the number of hours worked in a shift. These are presented in the report by *WorkPlace Environment Consultants* (WEC, 2020).

A summary of the results is shown below, indicating that levels were below the relevant workplace health and safety standards. Levels in the ambient air at the nearest residences would be man orders of magnitude lower than these.

Job	Test	Time	Result	Standard
Bulldozer Operator Mark Barber Komatsu 375	respirable dust respirable silica inhalable dust	9:00-14:41 15 Sep 2020	<0.04 mg/m^3 <0.005 mg/m^3 0.10 mg/m^3	2.1 mg/m^3 (10-hour) 0.035 mg/m^3 (10-hour) 7 mg/m^3 (10-hour)
Excavator Operator Ben McGowan Cat 349F	respirable dust respirable silica inhalable dust	7:05-12:45 15 Sep 2020	0.05 mg/m^3 <0.005 mg/m^3 0.10 mg/m^3	2.1 mg/m^3 (10-hour) 0.035 mg/m^3 (10-hour) 7 mg/m^3 (10-hour)
	Cutting wheel			
Sales Loader Operator Sonny Vaka Cat 980G	respirable dust respirable silica inhalable dust	7:15-13:53 15 Sep 2020	0.10 mg/m^3 0.017 mg/m^3 0.60 mg/m^3	2.1 mg/m^3 (10-hour) 0.035 mg/m^3 (10-hour) 7 mg/m^3 (10-hour)
Quarry Manager Steven Jones Cat 972	respirable dust respirable silica inhalable dust	7:31-13:49 15 Sep 2020	0.07 mg/m^3 <0.004 mg/m^3 0.26 mg/m^3	2.1 mg/m^3 (10-hour) 0.035 mg/m^3 (10-hour) 7 mg/m^3 (10-hour)
	Production loader – Feeding screen			
Comments Light-moderate winds, last rains 12.2-2.6-0.2 mm 10-11-13 Sep (Gosford)				

APPENDIX A FIGURES & TABLES

Table 1: Weather Station Parameters

Parameter	Unit	Frequency	Averaging Period	Sampling Method
Rainfall	mm	Continuous	1 Hour	AM-4
Temperature	°C		10 Minute	AM-4
Temperature @ 10m	°C			AM-2 and AM-4
Wind Speed @ 10m	m/s			AM-2 and AM-4
Wind Direction @ 10m	Degrees			AM-2 and AM-4
Sigma Theta	Degrees			AM-2 and AM-4
Relative Humidity	%			AM-4
Solar Radiation	W/m^2			AM-4

Monitoring Locations

The Grants Road Sand Quarry compliance monitoring locations are shown in **Figure 1**. Featured are the automatic weather station (AWS), the High Volume Air Sampler (HVAS) and two dust deposition gauges (R1 and R4).

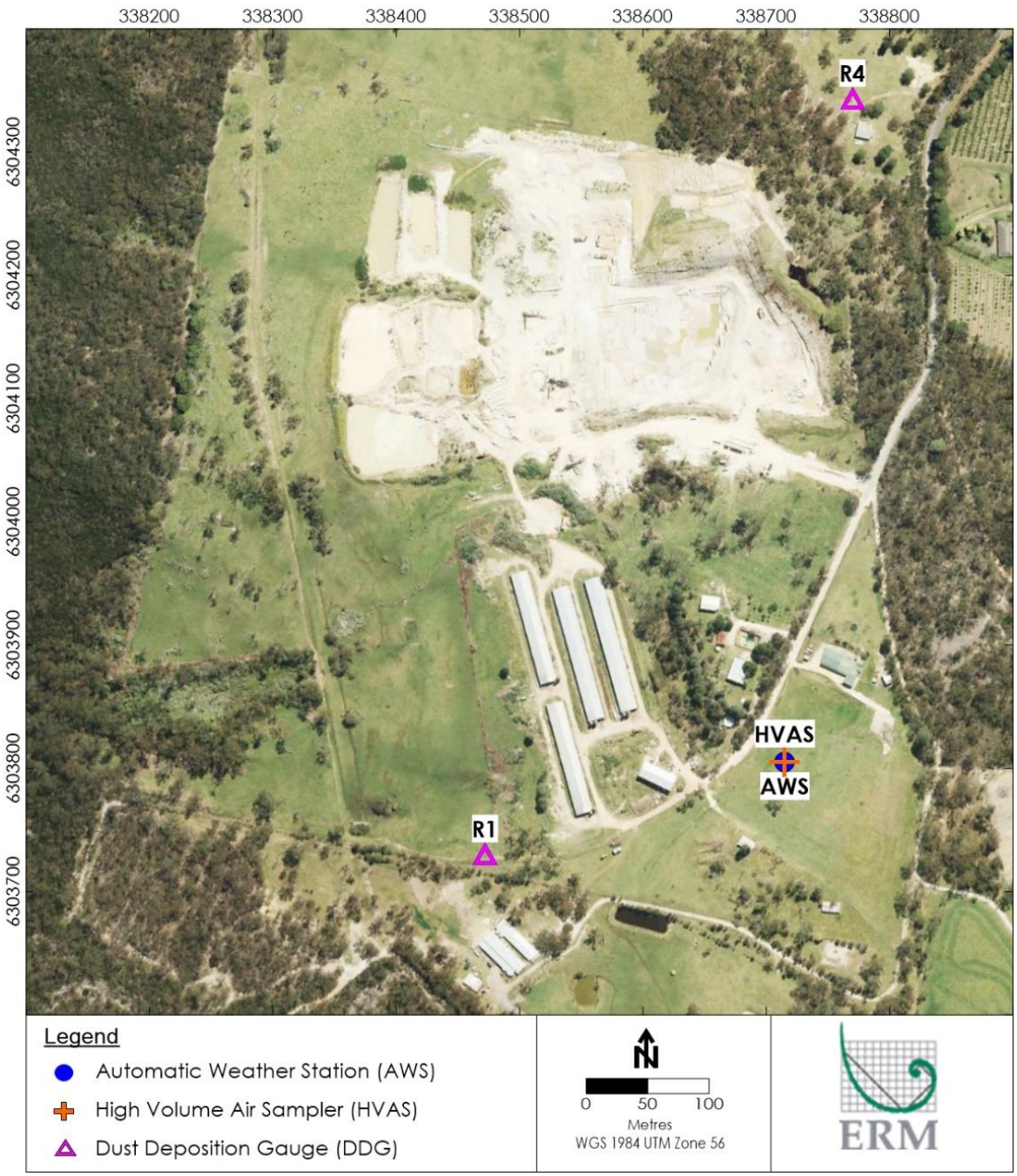


Figure 1: Monitoring Locations at Grants Road Quarry

Wind Data

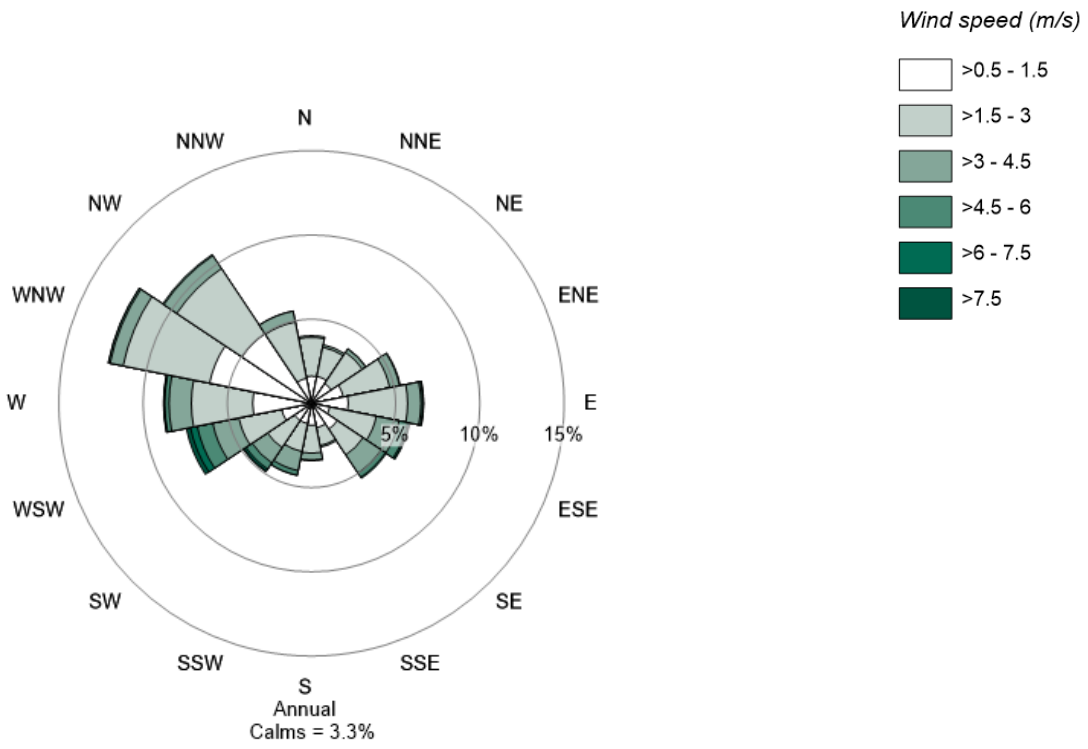


Figure 2: Grants Road Sand Wind Rose, 2020

Temperature

Table 2: Monthly Average Temperature, 2020

Month	Monthly Average Temperature at 2m (°C)	Monthly Average Temperature at 10m (°C)
January	22.6	22.5
February	21.2	21.2
March	18.8	18.9
April	17.6	17.9
May	13.3	13.6
June	11.8	12.1
July	11.5	11.8
August	11.8	12.1
September	15.5	15.6
October	17.3	17.3
November	19.4	19.3
December	19.5	19.5

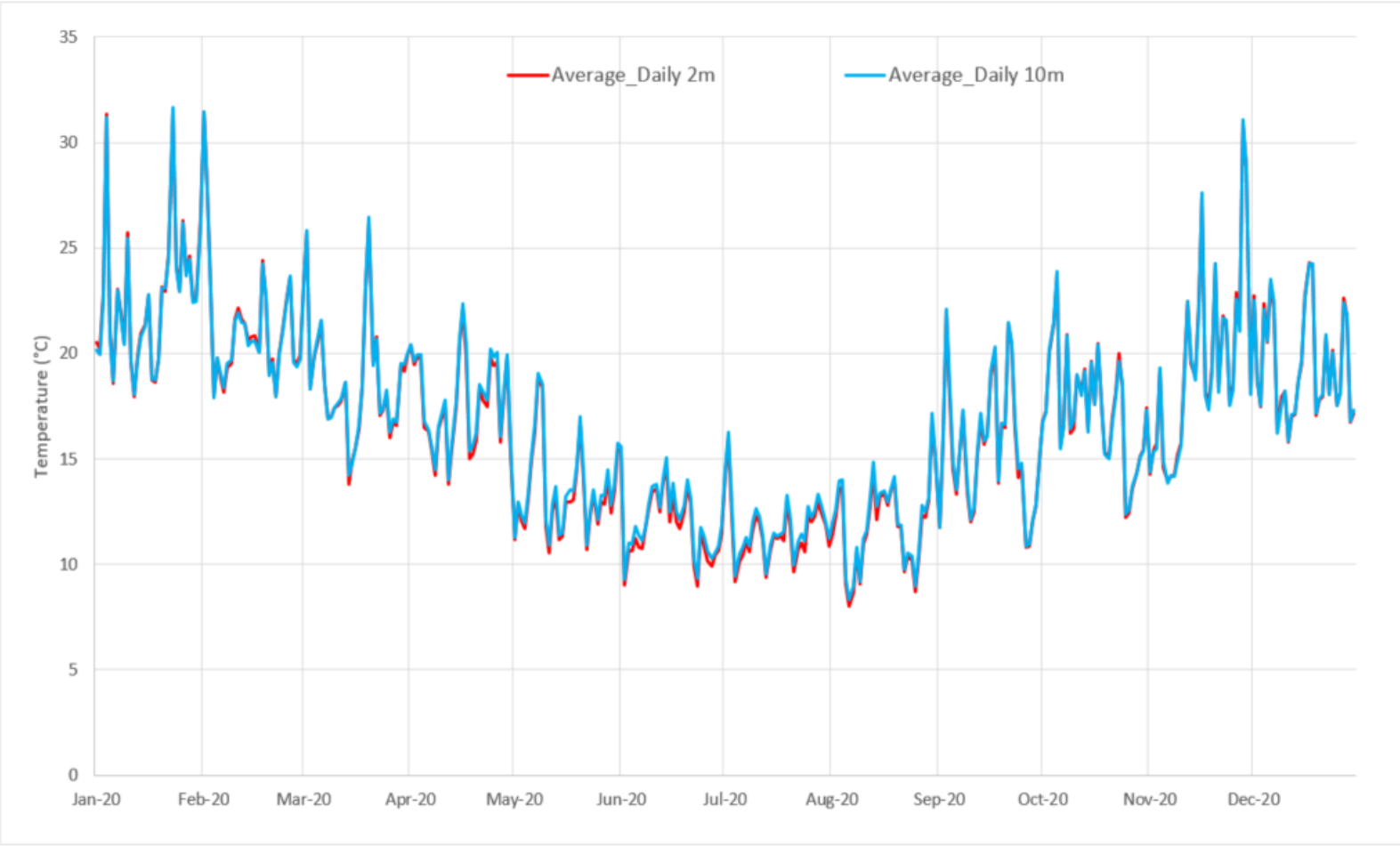


Figure 3: Average Daily Temperature, 2020

Rainfall

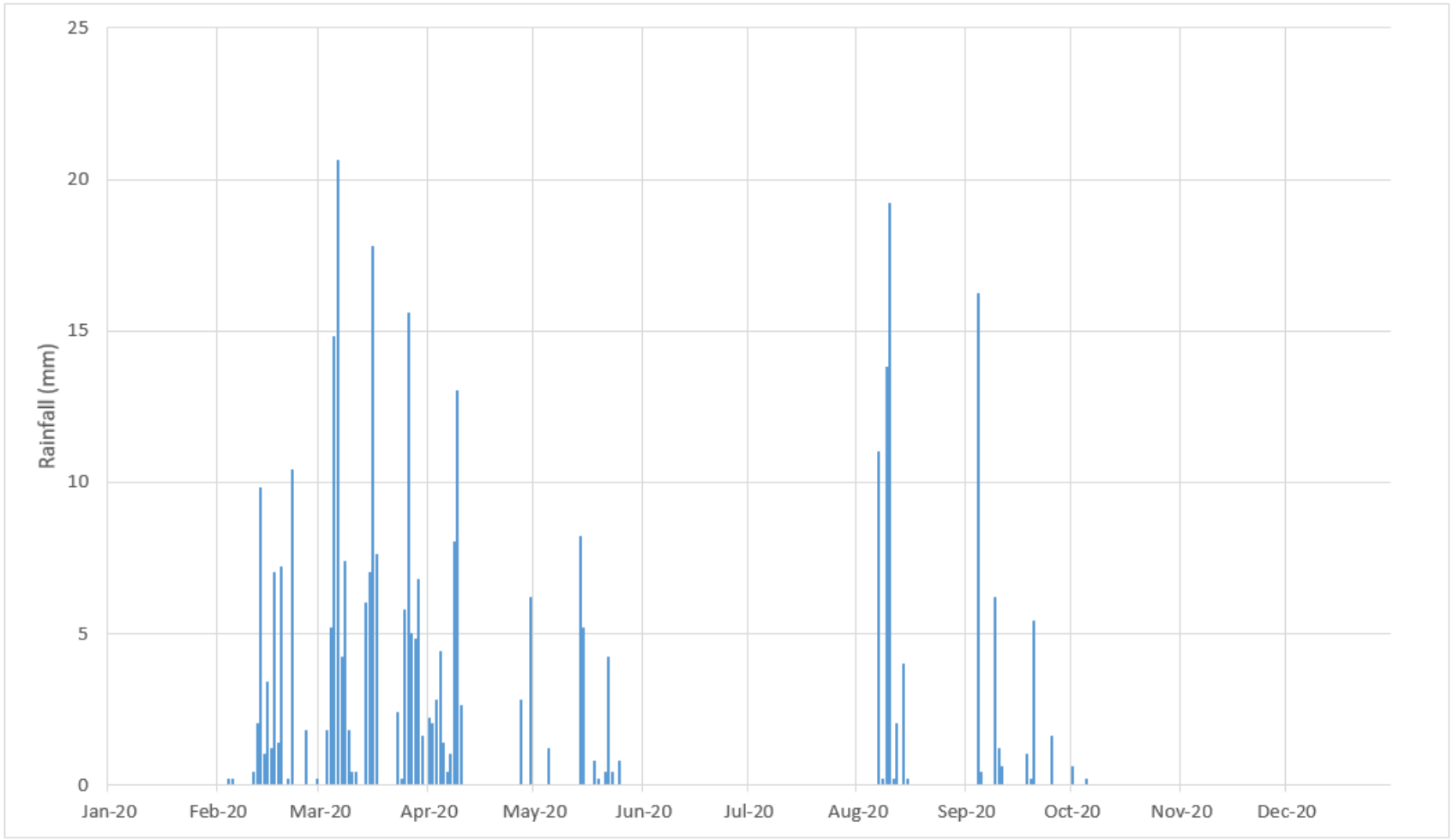


Figure 4: Daily Rainfall, 2020

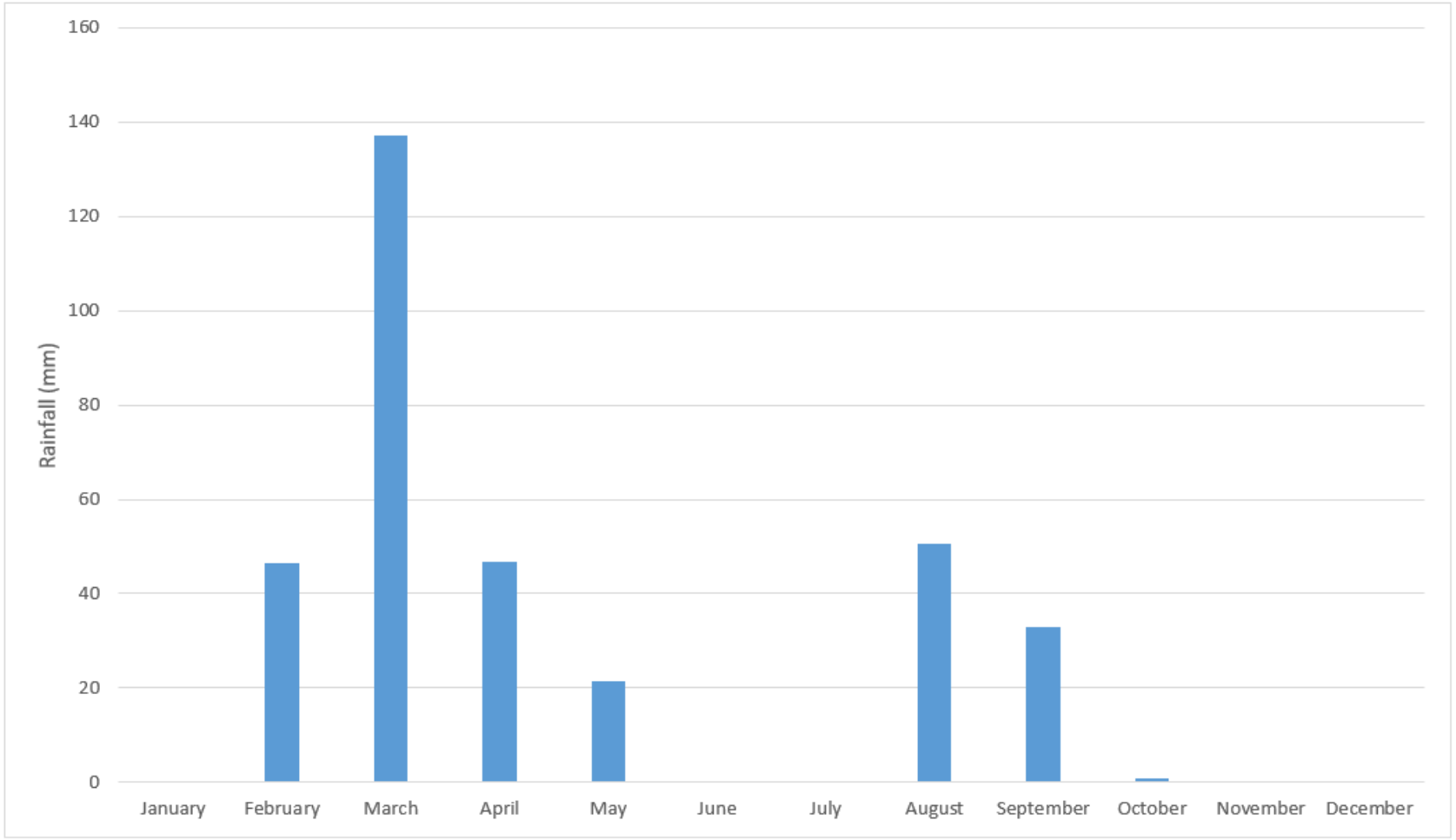


Figure 5: Monthly Rainfall Total, 2020

Air Quality

The NSW EPA specifies air quality assessment criteria relevant for assessing impacts from air pollution (**NSW DEC, 2005**). These criteria are health-based (i.e. they are set at levels to reduce the risk of adverse health effects). The EPA criteria are consistent with the National Environment Protection Measures for Ambient Air Quality (referred to as the Ambient Air-NEPM) (**NEPC, 1998, NEPC, 2003**). In January 2017, the NSW EPA released their updated Approved Methods (**EPA, 2016**) to amend the annual average PM_{10} criterion from 30 µg/m^3 down to 25 µg/m^3. The data for this report is referenced to the 25 µg/m^3 criteria only.

Table 3 and **Table 4** summarise the air quality criteria for concentrations of particulate matter and deposited dust levels that are relevant to this study. That is, the criteria stated form the basis for the standards to be achieved at the quarry.

Table 3: Air Quality Standards / Goals for Particulate Matter

Pollutant	Averaging Period	Standard / Goal	Agency
Particulate matter with an equivalent aerodynamic diameter less than 10 µm (PM_{10})	24-hour maximum	50 µg/m^3	EPA impact assessment criteria; NEPM reporting goal (allows five exceedances per year for bushfires)
	Annual mean	25 µg/m^3	EPA impact assessment criteria

Notes: µg/m^3 – micrograms per cubic metre, µm – micrometre.

Table 4: Air Quality Standards / Goals for Deposited Dust

Pollutant	Averaging Period	Standard / Goal	Agency
Deposited dust (insoluble solids)	Annual mean	2 g/m^2/month (Incremental)	EPA impact assessment criteria
	Annual mean	4 g/m^2/month (Cumulative)	EPA impact assessment criteria

Notes: g/m^2/month – grams per metre square per month

NSW has not set any impact assessment criteria for crystalline silica but references the Victorian EPA ambient assessment criterion for mining and extractive industries of 3 µg/m^3 (annual average as $PM_{2.5}$) (**VEPA**, **2007**).

Particulate Matter (PM_{10})

Measured Results

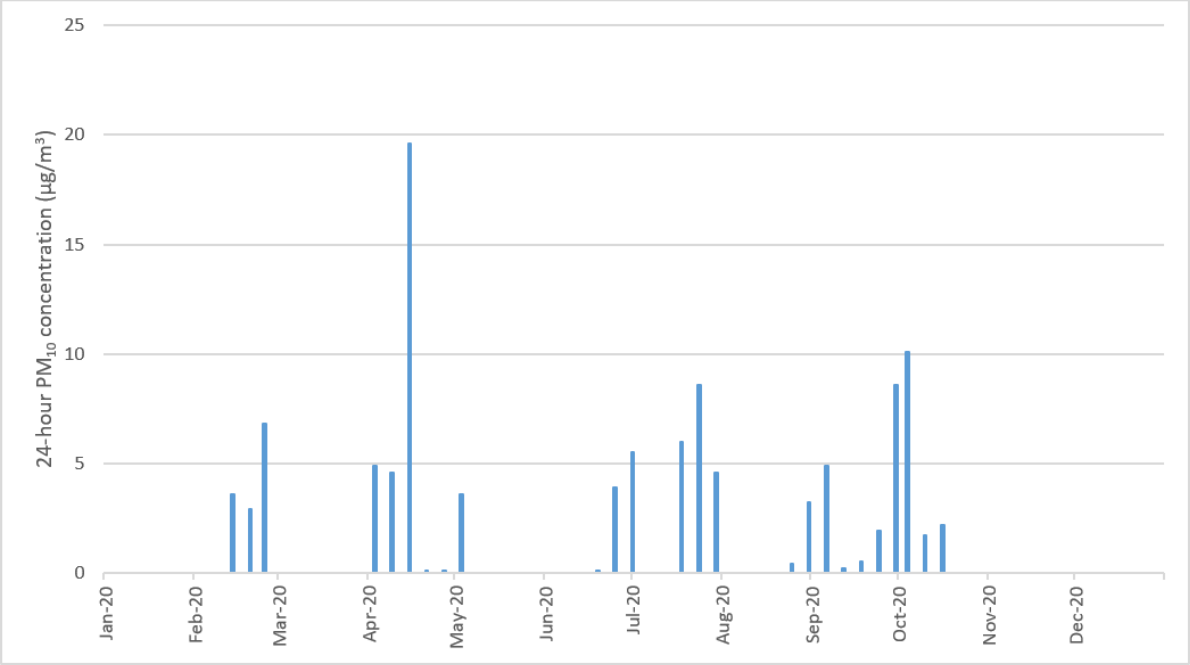


Figure 6: HVAS monitoring results for PM_{10}, 2020

Comparison to the environmental assessment predictions

The Air Quality Assessment (AQA) for the Grants Road Sand Quarry Extension was completed by PAEHolmes in 2013, Air Quality Impact Assessment – Extension of Grants Road Quarry (**PAEHolmes, 2013**). The cumulative results predicted in the assessment indicate that the 24 hour PM_{10} ground level concentrations at the current location of the HVAS would be in the order of 70 µg/m^3. In view of the elevated PM_{10} concentration at nearby NSW DPIE's Wyong station on 4 December 2019 (PM_{10} = 106.6 µg/m^3) during which regional bushfire events were well documented, it is therefore considered that the exceedance shown in **Figure 6** above was attributable to bushfire activity. It is important to note that air quality across NSW was severely affected in December 2019 by extensive smoke from bushfires[1]. Nevertheless the second highest measured cumulative 24-hour PM_{10} concentration was 48.4 µg/m^3 in 2019, a value considerably lower than the conservative predictions made in the air quality assessment.

The predicted annual average PM_{10} concentration in the AQA was approximately 30 µg/m^3 at the HVAS location, however an annual average concentration of 14.6 µg/m^3 was measured in 2019. This is consistent with the 24-hour results, where the actual concentration has been established to constitute 50% or less than the predicted concentration at the same location. Given the results of the data during the monitoring period, currently no action is required to control environmental performance. Rather it is recommended that current mitigation processes are sustained.

[1] https://worldview.earthdata.nasa.gov/?t=2019-12-04-T23%3A44%3A56Z&as=2019-02-09-T00%3A00%3A00Z&ae=2019-02-19-T00%3A00%3A00Z&l=MODIS_Aqua_Thermal_Anomalies_All,MODIS_Aqua_Thermal_Anomalies_Night,MODIS_Aqua_Thermal_Anomalies_Day,Reference_Labels(hidden),Reference_Features(hidden),Coastlines,VIIRS_SNPP_CorrectedReflectance_TrueColor(hidden),MODIS_Aqua_CorrectedReflectance_TrueColor(hidden),MODIS_Terra_CorrectedReflectance_TrueColor&ab=on

Dust Deposition

Measured Results

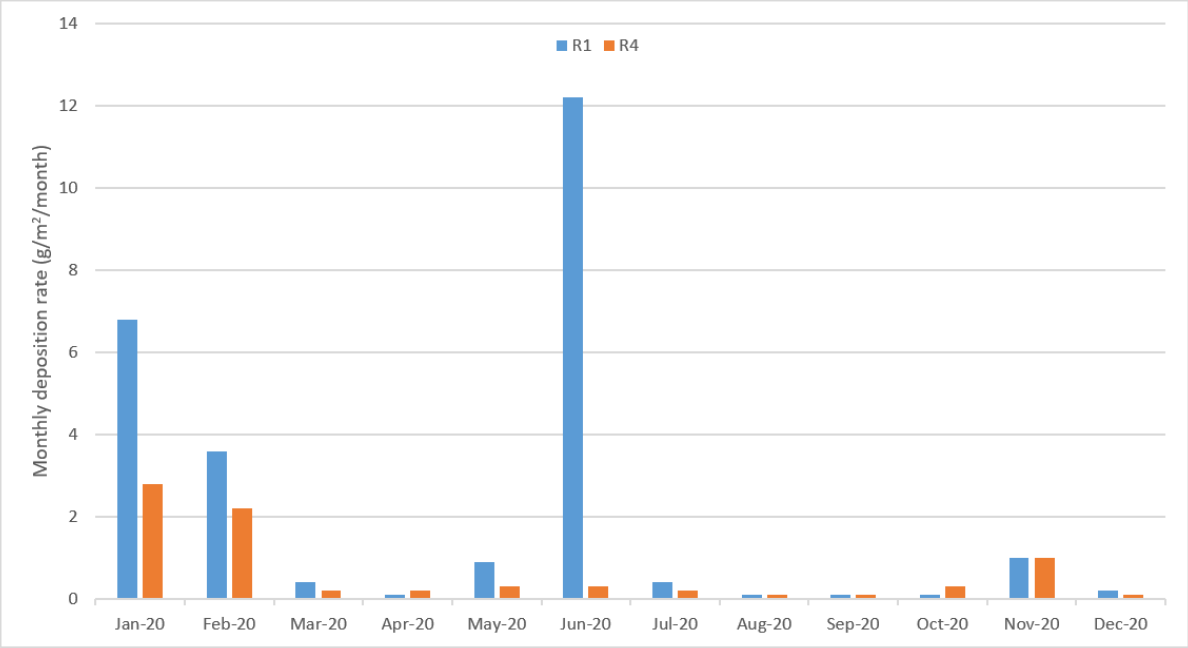


Figure 7: Dust deposition monitoring results for 2020

Comparison to environmental assessment predictions

The Air Quality Assessment (AQA) for the Grants Road Sand Quarry Extension was completed by PAEHolmes in 2013, Air Quality Impact Assessment – Extension of Grants Road Quarry (**PAEHolmes, 2013**). The cumulative results predicted in the assessment indicate that the annual dust deposition level at the locations of the deposition gauges would be in the order of 1.7 g/m^2/month at R1 and 1.9 g/m^2/month at R4.

Given the results of the data during the monitoring period, currently no action is required to control environmental performance. Rather, it is recommended that current mitigation processes are sustained.

APPENDIX B REFERENCES

Australian Standard / New Zealand Standard (2015). Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM_{10} high volume sampler with size-selective inlet - Gravimetric method. AS 3580.9.6:2015.

Australian Standard / New Zealand Standard (2007). Methods for sampling and analysis of ambient air - Guide to siting air monitoring equipment. AS 3580.1.1:2007

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PAEHolmes (2013). “Air Quality Impact Assessment – Extension of Grants Road Quarry”.

VEPA (2007). “Protocol for Environmental Management: Mining and Extractive Industries”, Prepared by the Victorian EPA, December 2007.

WEC (2020). “*Exposure to Dust and Crystalline Silica Dust (Sep 2020), Grants Rd Sands*”, report prepared by WorkPlace Environment Consultants, 15 October 2020.

Appendix 7
GROUNDWATER DEPENDENT ECOSYSTEM
Conacher Consulting

HIGH PRIORITY GROUNDWATER DEPENDANT ECOSYSTEM
2020 ANNUAL MONITORING REPORT

GRANTS ROAD
SAND QUARRY EXTENSION

MARCH 2021
REF: 21022

PREFACE

This report has been prepared by *Conacher Consulting* to address the 2020 annual reporting requirements for High Priority Groundwater Dependant Ecosystems for the Grants Road Sand Quarry Extension Project at Somersby.

REPORT PREPARED BY:

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NPWS Scientific Licence Number: SL100361
Senior Ecological Consultant / Project Manager

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SECTION 1

INTRODUCTION & METHODS

1.1 DOCUMENT INTENT

This report has been prepared by *Conacher Consulting* to address the 2020 annual monitoring requirements of Condition 21 "Groundwater Dependant Ecosystem Monitoring and Management Program" of the Schedule 3 Environmental Performance Conditions specified within the Project Approval for the Grants Road Sand Quarry Extension project (Project Approval No. 08_0099 Mod 1). An Environmental Performance Table and Compliance Status Table is provided in Appendix 1.

1.2 PROJECT SITE DETAILS

The site is located within Lots 1 & 2 DP 358717, Grants Road Somersby.

1.3 MONITORING METHODOLOGY

The monitoring program for High Priority Groundwater Dependant Ecosystems (GDEs) consists of a combination of aerial photograph assessment and mapping of GDEs within the predicted drawdown area, floristic plot surveys and field assessment for indicators and signs of potential project related impacts.

Four monitoring plots were surveyed for the 2019 monitoring period at the selected locations shown in Figure 1.1. The monitoring survey was undertaken on 10 March 2021. The following monitoring variables were assessed:

i. Native Plant Composition
Plot surveys were completed comparing the results of the baseline plot monitoring results from the 2018 monitoring period with the current plot conditions. The native flora species present and projected foliage cover were assessed. Comments are provided for the species observed, including GDE species which are reliant on moist soil conditions.

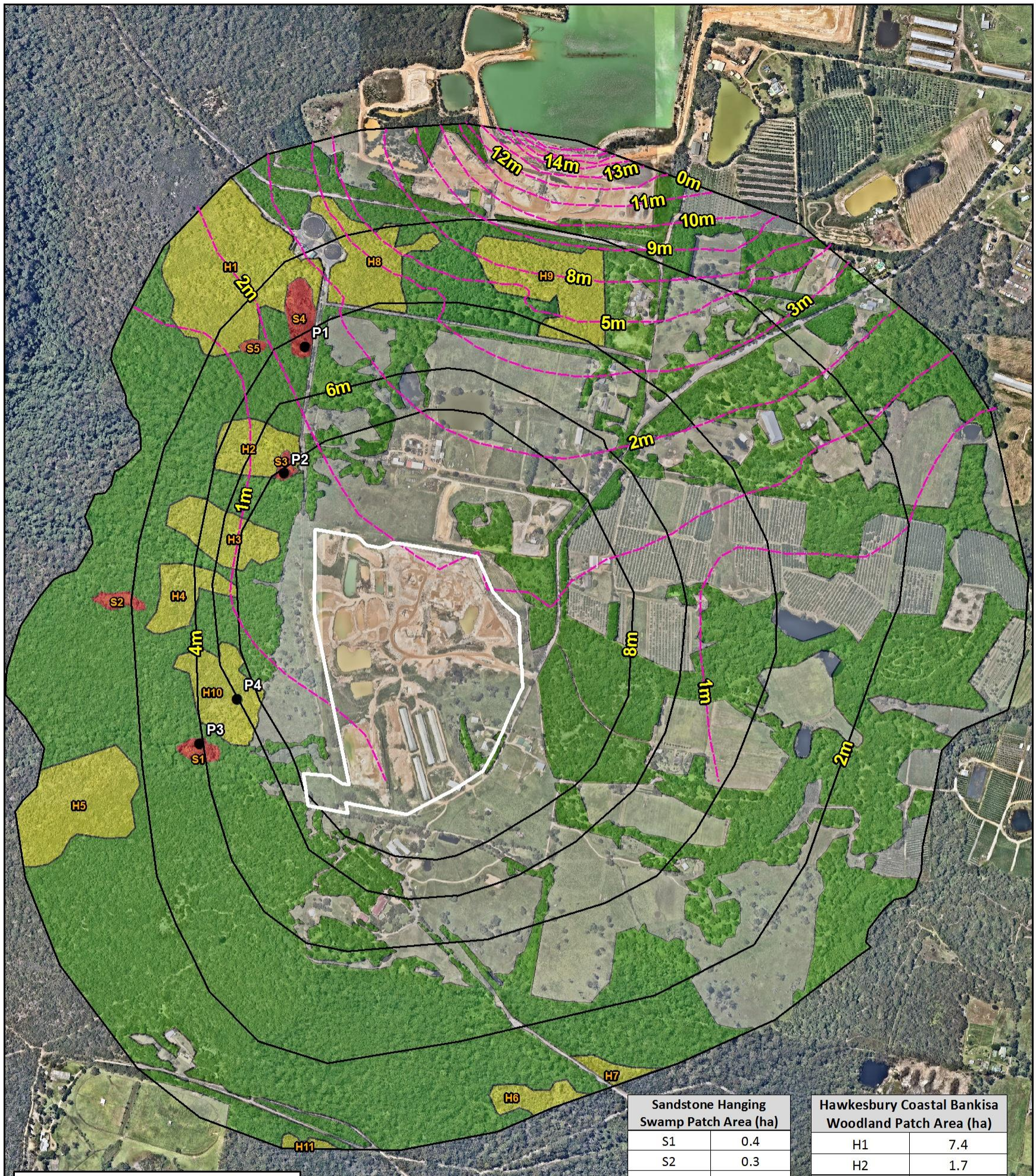
ii. *Exotic Plant Composition*
All exotic flora species and total cover of exotic flora species was recorded for each plot.

iii. *GDE Extent and Distribution*
Mapping of GDE's was informed by aerial photograph analysis and interpretation using Nearmap imagery dated 14 January 2021.

iv. Vegetation Photo Point Monitoring
Photographs were taken for each monitoring quadrat from each cardinal point during the monitoring survey.

v. Surface Erosion and Sedimentation Monitoring
A visual inspection of the downstream and downslope GDE patches from the quarry site was undertaken to monitor for any surface erosion or sedimentation impacts from the quarry operations.

vi. Comparison with Groundwater Monitoring Data
The groundwater monitoring undertaken by Larry Cook Consulting for the current and previous monitoring periods was reviewed and is discussed in Section 2.3 of this Report.



Sandstone Hanging Swamp Patch	Area (ha)
S1	0.4
S2	0.3
S3	0.2
S4	0.8
S5	0.1

Hawkesbury Coastal Bankisa Woodland Patch	Area (ha)
H1	7.4
H2	1.7
H3	2.2
H4	1.5
H5	4.4
H6	0.9
H7	0.5
H8	3.1
H9	4.0
H10	2.5
H11	0.2

conacher consulting

Drawn By: AM/DC
Drawing Version: 1
Drawing No: 20024
Date: 22/03/2021

* Plan for indicative purposes only. Not for detailed measurement.
Source: Aerial © Nearmap (2020) Air Photo Date: 14/01/2021

Figure 1
Ground Dependent Ecosystem Monitoring Details
Grants Road, Somersby

SECTION 2

MONITORING RESULTS

2.1 GROUNDWATER DEPENDANT ECOSYSTEMS WITHIN 1KM

High Priority Groundwater Dependant Ecosystems (GDEs) were defined in the Water Sharing Plan for the Kulnura Mangrove Mountain Groundwater Source (Dept. of Infrastructure, Planning and Natural Resources 2006). The following High Priority GDEs have been identified within 1km of the site:

- Sandstone Hanging Swamp; and
- Hawkesbury Coastal Banksia Woodland.

These map units relate to mapping prepared by House (2003) which has been superseded by Council's current vegetation mapping prepared by Bell (2019). Further updated mapping for the modelled drawdown area has been prepared by *Conacher Consulting* and is provided in Figure 1.1. This mapping provides an estimate of the current extent of High Priority GDEs within the modelled groundwater drawdown area.

No detected decrease in the extent of this GDE has occurred due to project related impacts since the previous monitoring period.

Sandstone Hanging Swamp
The floristic composition of this vegetation type indicates that it is likely to have high dependence on groundwater and can be considered a high-dependence facultative GDE.

No decrease in the previously mapped extent of this GDE has been detected since the previous monitoring period.

The current estimated extent of Sandstone Hanging Swamp within the modelled drawdown area is 1.8 hectares. The sizes of individual patches are mapped and listed in Figure 1.1.

Hawkesbury Coastal Banksia Woodland
The floristic composition of this vegetation type indicates that it is likely to be either a low-dependence facultative GDE or not a GDE.

The current estimated extent of Hawkesbury Banksia Scrub Woodland within the modelled drawdown area is 28.6 hectares. The sizes of individual patches mapped and listed in Figure 1.1.

2.2 FLORISTIC MONITORING RESULTS

Full floristic plots were sampled for the current monitoring period, a total of four plots were surveyed. A summary of the floristic plot survey results is provided in Table 2.1 and full floristic plot results are provided in Table 2.2.

Indicator species were determined from the floristic plot results, these species occur in moist or swamp environments such as coastal upland swamps. There are several other species characteristic of Hawkesbury Coastal Banksia Woodland and Sandstone Hanging Swamp within the plots sampled, however these are considered to be not indicative of wet environments and can often be found in adjoining areas which do not contain high priority groundwater dependant ecosystems.

An increase in indicator species richness and cover was observed for monitoring plots 1 and 2. The species richness remained the same for indicator species in monitoring plot 3, with an increase in indicator species cover. The values for indicator species remained unchanged for monitoring plot 4. There was a decline in total species cover for monitoring plot 4 as a result of the *Banksia ericifolia* (Swmap Banksia) thinning event that occurred during the monitoring period. Previous browning of *Gleichenia microphylla* observed for the 2019 monitoring period was not evident during the current surveys.

TABLE 2.1
FLORISTIC PLOT RESULT SUMMARY

Variables	Plot 1 Sandstone Hanging Swamp	Plot 2 Sandstone Hanging Swamp	Plot 3 Sandstone Hanging Swamp	Plot 4 Hawkesbury Coastal Banksia Woodland
Indicator Species Richness				
2018 Monitoring Period	9	11	13	4
2019 Monitoring Period	9	11	13	4
2020 Monitoring Period	12	13	13	4
Indicator Species Cover				
2018 Monitoring Period	84.1	63	74.15	0.75
2019 Monitoring Period	79.1	63	69.15	0.75
2020 Monitoring Period	85.3	66.1	74.15	0.75
Total Species Richness				
2018 Monitoring Period	39	40	50	35
2019 Monitoring Period	39	40	50	35
2020 Monitoring Period	47	48	51	36
Total Species Cover				
2018 Monitoring Period	140.3	112.55	163.45	137.65
2019 Monitoring Period	140.3	112.55	163.45	137.65
2020 Monitoring Period	153	113	179	98.5

TABLE 2.2 2020 MONITORING PERIOD FLORISTIC PLOT RESULTS							
Family	**Scientific Name**	**Common Name**	**Plot 1**	**Plot 2**	**Plot 3**	**Plot 4**	**Browning / Dieback Observations**
TREES							
Casuarinaceae	*Allocasuarina littoralis*	Black She-Oak		0.25		1	
Myrtaceae	*Angophora costata*	Sydney Red Gum			2		
Myrtaceae	*Angophora hispida*	Dwarf Apple				0.5	
Myrtaceae	*Corymbia gummifera*	Red Bloodwood			4		
Myrtaceae	*Eucalyptus haemastoma*	Broad-leaved Scribbly Gum			10		
Myrtaceae	*Eucalyptus piperita*	Sydney Peppermint			15		
Myrtaceae	*Eucalyptus resinifera subsp. resinifera*	Red Mahogany	10			5	
Myrtaceae	*Eucalyptus scias*	Large-fruited Red Mahogany	15				
Myrtaceae	*Eucalyptus sieberi*	Silvertop Ash	0.3	10			
Phyllanthaceae	*Glochidion ferdinandi*	Cheese Tree		0.5			
SHRUBS							
Apiaceae	*Platysace linearifolia*		1	0.5	20		
Araliaceae	*Polyscias sambucifolia subsp. Long Leaflets*	Elderberry Panax		0.25	0.5		
Cunoniaceae	*Bauera rubioides*	River Rose	1	2	2		
Cunoniaceae	*Callicoma serratifolia*	Black Wattle			0.25		
Dilleniaceae	*Hibbertia procumbens*	Spreading Guinea Flower				0.1	
Ericaceae	*Epacris obtusifolia*	Blunt-leaf Heath	0.25	0.1	0.1		
Ericaceae	*Epacris pulchella*	Wallum Heath				0.2	
Euphorbiaceae	*Amperea xiphoclada*				0.25		
Euphorbiaceae	*Pseudanthus orientalis*			0.1			
Fabaceae (Faboideae)	*Almaleea paludosa*		0.1				

TABLE 2.2 2020 MONITORING PERIOD FLORISTIC PLOT RESULTS							
Family	**Scientific Name**	**Common Name**	**Plot 1**	**Plot 2**	**Plot 3**	**Plot 4**	**Browning / Dieback Observations**
Fabaceae (Faboideae)	*Bossiaea scolopendria*					0.1	
Fabaceae (Faboideae)	*Dillwynia floribunda*				1	0.2	
Fabaceae (Faboideae)	*Pultenaea rosmarinifolia*		2	0.1			
Fabaceae (Faboideae)	*Viminaria juncea*	Native Broom	0.5	0.25	0.25		
Fabaceae (Mimosoideae)	*Acacia elata*	Cedar Wattle		1			
Fabaceae (Mimosoideae)	*Acacia linifolia*	White Wattle			0.1		
Fabaceae (Mimosoideae)	*Acacia longifolia subsp. longifolia*	Sydney Golden Wattle	0.5	0.5			
Fabaceae (Mimosoideae)	*Acacia myrtifolia*	Red-stemmed Wattle	0.1				
Fabaceae (Mimosoideae)	*Acacia oxycedrus*	Spike Wattle	15	0.1	1	0.1	
Fabaceae (Mimosoideae)	*Acacia parvipinnula*	Silver-stemmed Wattle	0.5				
Fabaceae (Mimosoideae)	*Acacia suaveolens*	Sweet Wattle	0.5			0.2	
Fabaceae (Mimosoideae)	*Acacia terminalis subsp. Long inflorescences*	Sunshine Wattle	0.2	0.2	0.25		
Myrtaceae	*Callistemon citrinus*	Crimson Bottlebrush	0.1	0.25			
Myrtaceae	*Leptospermum polygalifolium subsp. cismontanum*	Tantoon			20	10	
Myrtaceae	*Leptospermum polygalifolium subsp. polygalifolium*	Tantoon	1	2			
Myrtaceae	*Leptospermum trinervium*	Flaky-barked Tea-tree				0.1	
Pittosporaceae	*Pittosporum revolutum*	Rough Fruit Pittosporum				0.1	
Pittosporaceae	*Pittosporum undulatum*	Sweet Pittosporum				0.2	
Proteaceae	*Banksia ericifolia*	Heath-leaved Banksia	15	1	0.5	30	Dieback evident in plots 1 & 2 from previous fire event. Thinning / tree fall event observed for plot 4
Proteaceae	*Banksia robur*	Swamp Banksia			0.5		

TABLE 2.2 2020 MONITORING PERIOD FLORISTIC PLOT RESULTS							
Family	**Scientific Name**	**Common Name**	**Plot 1**	**Plot 2**	**Plot 3**	**Plot 4**	**Browning / Dieback Observations**
Proteaceae	*Grevillea sericea subsp. sericea*	Pink Spider Flower	0.1		0.25		
Proteaceae	*Grevillea speciosa*	Red Spider Flower	0.3				
Proteaceae	*Hakea teretifolia*	Needlebush	0.2	0.25			
Proteaceae	*Lambertia formosa*	Mountain Devil			0.25		
Proteaceae	*Persoonia isophylla*		0.25				
Proteaceae	*Persoonia lanceolata*	Lance Leaf Geebung	0.3				
Proteaceae	*Persoonia levis*	Broad-leaved Geebung			0.25		
Proteaceae	*Petrophile pulchella*	Conesticks				0.25	
Santalaceae	*Leptomeria acida*	Sour Currant Bush	0.1				
Thymelaeaceae	*Pimelea linifolia*	Slender Rice Flower		0.1	0.1		
Groundcovers (Forbs)							
Anthericaceae	*Thysanotus juncifolius*				0.1		
Apiaceae	*Actinotus minor*	Lesser Flannel Flower		0.5	1	1	
Apiaceae	*Hydrocotyle laxiflora*	Stinking Pennywort		0.1			
Apiaceae	*Xanthosia pilosa*	Woolly Xanthosia	0.1	0.1			
Apiaceae	*Xanthosia tridentata*	Rock Xanthosia	0.1	0.1	0.5	0.1	
Blandfordiaceae	*Blandfordia grandiflora*	Christmas Bells	0.1				
Dilleniaceae	*Hibbertia procumbens*	Spreading Guinea Flower	0.1				
Droseraceae	*Drosera binata*	Forked Sundew		0.1			
Droseraceae	*Drosera peltata*	A Sundew		0.1			
Euphorbiaceae	*Monotaxis linifolia*			0.25	0.1		
Goodeniaceae	*Dampiera stricta*		0.1	0.2			
Goodeniaceae	*Goodenia hederacea*	Forest Goodenia	0.1				
Goodeniaceae	*Goodenia paniculata*			0.1			

TABLE 2.2 2020 MONITORING PERIOD FLORISTIC PLOT RESULTS							
Family	**Scientific Name**	**Common Name**	**Plot 1**	**Plot 2**	**Plot 3**	**Plot 4**	**Browning / Dieback Observations**
Haemodoraceae	*Haemodorum corymbosum*		0.1				
Haloragaceae	*Gonocarpus micranthus*			0.1			
Haloragaceae	*Gonocarpus tetragynus*	Poverty Raspwort			0.25		
Haloragaceae	*Gonocarpus teucrioides*	Germander Raspwort	0.1		0.5		
Orchidaceae	*Cryptostylis erecta*	Bonnet Orchid		0.1			
Phormiaceae	*Dianella caerulea var. producta*	Blue Flax-lily	0.1	0.1		0.25	
Phormiaceae	*Dianella prunina*	Blue Flax-lily				0.25	
Groundcovers (Ferns)							
Dennstaedtiaceae	*Histiopteris incisa*	Bat's Wing Fern		3	0.5	0.2	
Dennstaedtiaceae	*Pteridium esculentum*	Bracken		20	5		
Gleicheniaceae	*Gleichenia microphylla*	Scrambling Coral Fern	80	60	70	0.1	Previous browning not evident
Lindsaeaceae	*Lindsaea linearis*	Screw Fern			0.1	0.25	
Selaginellaceae	*Selaginella uliginosa*	Swamp Selaginella		0.1	0.1		
Groundcovers (Monocots)							
Cyperaceae	*Corizandra cymbaria0*		1	1			
Cyperaceae	*Cyathochaeta diandra*					10	
Cyperaceae	*Gahnia clarkei*	Tall Saw-sedge	1	0.5	0.25		
Cyperaceae	*Gahnia sieberiana*	Red-fruit Saw-sedge	2		1		
Cyperaceae	*Gymnoschoenus sphaerocephalus*	Button Grass	0.5	0.5			
Cyperaceae	*Lepidosperma laterale*					5	
Cyperaceae	*Ptilothrix deusta*					20	
Cyperaceae	*Schoenus apogon*	Fluke Bogrush	0.1				
Cyperaceae	*Schoenus brevifolius*	Zig-zag Bog-rush	0.2		0.25		

TABLE 2.2 2020 MONITORING PERIOD FLORISTIC PLOT RESULTS							
Family	**Scientific Name**	**Common Name**	**Plot 1**	**Plot 2**	**Plot 3**	**Plot 4**	**Browning / Dieback Observations**
Cyperaceae	*Schoenus melanostachys*				0.5		
Lomandraceae	*Lomandra gracilis*					10	
Lomandraceae	*Lomandra longifolia*	Spiny-headed Mat-rush			1		
Lomandraceae	*Lomandra multiflora subsp. multiflora*	Many-flowered Mat-rush				0.1	
Lomandraceae	*Lomandra obliqua*					0.1	
Poaceae	*Entolasia marginata*	Bordered Panic			0.25	1	
Poaceae	*Entolasia stricta*	Wiry Panic	1	5	5		
Poaceae	*Eragrostis brownii*	Brown's Lovegrass		0.1			
Poaceae	*Microlaena stipoides var. stipoides*	Weeping Grass				1	
Poaceae	*Oplismenus aemulus*	Basket Grass				0.1	
Poaceae	*Plinthanthesis paradoxa*				0.25		
Restionaceae	*Empodisma minus*		1	0.5	2	0.1	
Restionaceae	*Eurychorda complanata*			0.25	0.5		
Xyridaceae	*Xyris gracilis*		0.1				
Groundcovers (Other)							
Apocynaceae	*Parsonsia straminea*	Common Silkpod	0.1		0.1	0.2	
Bignoniaceae	*Pandorea jasminoides*	Bower Vine		0.1			
Dicksoniaceae	*Calochlaena dubia*	Rainbow Fern			10		
Dilleniaceae	*Hibbertia scandens*	Climbing Guinea Flower		0.25			
Doryanthaceae	*Doryanthes excelsa*	Gymea Lily			1		
Fabaceae (Faboideae)	*Hardenbergia violacea*	False Sarsaparilla				0.1	
Lauraceae	*Cassytha glabella*		0.1	0.1			
Lauraceae	*Cassytha pubescens*	Downy Dodder-laurel			0.1		

TABLE 2.2 2020 MONITORING PERIOD FLORISTIC PLOT RESULTS							
Family	**Scientific Name**	**Common Name**	**Plot 1**	**Plot 2**	**Plot 3**	**Plot 4**	**Browning / Dieback Observations**
Luzuriagaceae	*Eustrephus latifolius*	Wombat Berry				0.1	
Orchidaceae	*Cymbidium suave*	Snake Orchid			0.1		
Pittosporaceae	*Billardiera scandens*	Hairy Apple Berry	0.1	0.1	0.1		
Rubiaceae	*Gynochthodes jasminoides*	Sweet Morinda		0.1	0.1	0.5	
Vitaceae	*Cissus hypoglauca*	Giant Water Vine			0.25		
Xanthorrhoeaceae	*Xanthorrhoea arborea*		0.25	0.25			
Exotics							
Verbenaceae	*Lantana camara*	Lantana	0.1				
	Ageratina adenophora	Crofton Weed			x		Observed adjacent to Plot 3 / was evident in baseline surveys

2.3 QUALITATIVE MONITORING RESULTS

i. GDE Surface Erosion and Sedimentation

No surface erosion attributable to the quarry operations was observed within any of the GDE areas shown in Figure 1.1 during the monitoring surveys.

ii. Assessment of Groundwater Monitoring Data

The Water Monitoring Reports prepared by Larry Cook Consulting (2019, 2020, 2021) for the 2018-2020 monitoring periods have been reviewed, these reports have identified that no groundwater impacts attributable to the quarry operations have been detected during the monitoring.

iii. GDE Photo Point Results

The results of the photo point surveys are provided in Figures 2.1 to 2.4.



Figure 2.1a – Plot 1 Photo-monitoring point north aspect



Figure 2.1b - Plot 1 Photo-monitoring point east aspect



Figure 2.1c - Plot 1 Photo-monitoring point south aspect



Figure 2.1d - Plot 1 Photo-monitoring point west aspect



Figure 2.2a – Plot 2 Photo-monitoring point north aspect



Figure 2.2b - Plot 2 Photo-monitoring point east aspect



Figure 2.2c - Plot 2 Photo-monitoring point south aspect



Figure 2.2d - Plot 2 Photo-monitoring point west aspect



Figure 2.3a – Plot 3 Photo-monitoring point north aspect



Figure 2.3b - Plot 3 Photo-monitoring point east aspect



Figure 2.3c - Plot 3 Photo-monitoring point south aspect



Figure 2.3d - Plot 3 Photo-monitoring point west aspect



Figure 2.4a – Plot 4 Photo-monitoring point north aspect



Figure 2.4b - Plot 4 Photo-monitoring point east aspect



Figure 2.4c - Plot 4 Photo-monitoring point south aspect



Figure 2.4d - Plot 4 Photo-monitoring point west aspect

SECTION 3

COMPLIANCE WITH PERFORMANCE MEASURES

3.1 EROSION

The performance target requires negligible erosion of the surface within the GDEs as a result of adverse impacts attributable to the quarry operations authorised under the project approval. The trigger level for management intervention is observable erosion of the surface within the GDEs, directly attributable to the quarry operations authorised under the project approval.

No surface erosion within GDE areas attributable to the quarry operations was observed and no management intervention is required.

3.2 SEDIMENTATION

The performance target for sedimentation is that negligible sedimentation within the GDEs occurs as a result of adverse impact attributable to the quarry operations authorised under the project approval.

The trigger level for management intervention is observable sedimentation within the GDEs, attributable to the quarry operations authorised under the project approval.

No sedimentation within high priority GDE vegetation, attributable to the quarry operations was observed.

3.3 HIGH PRIORITY GROUND WATER DEPENDANT ECOSYSTEM EXTENT

The performance target for High Priority GDE size is for only minor changes in the sizes of the GDEs as a result of adverse impact attributable to the quarry operations authorised under the project approval.

The high priority GDEs within 1km of the site are likely to form a continuum across the landscape in response to fire and soil moisture availability (Bell 2013).

The trigger level for management intervention is adverse change in size of the GDEs of greater than 20% mappable extent, directly attributable to the quarry operations authorised under the project approval.

In order to determine that a reduction in the extent of a High Priority GDE was attributable to the quarry operations a correlation with reduced GDE patch size or dieback and groundwater levels would be required. No reduction in GDE patch size has been determined for the current monitoring period.

3.4 GROUND WATER DEPENDANT ECOSYSTEM SPECIES COMPOSITION & DISTRIBUTION

The performance target for species composition and distribution is for no significant change to the composition or distribution of species within the GDEs, as a result of adverse impact attributable to the quarry operations authorised under the project approval.

The trigger level for management intervention is adverse change in composition or distribution of the dominant species, directly attributable to the quarry operations authorised under the project approval.

The GDE areas were burnt prior to site inspections undertaken in 2015 and are currently regenerating. Further changes between monitoring events are expected within monitoring plots 1 & 2 as these areas continue to regenerate, these changes are not related to the quarry operations at the subject site.

For the 2019 monitoring period there was no significant adverse species composition or distribution changes within the GDEs, as a result of the project. Some browning of vegetation, particularly *Gleichenia microphylla,* however this is considered to be related to hot and dry climatic conditions experienced during the spring and early summer directly prior to monitoring. The previous browning detected was not observed during the current monitoring period.

During the current monitoring period thinning of *Melaleuca ericifolia* (Swamp Paperbark) was observed, particularly within Hawkesbury Coastal banksia Woodland Patch H10 including within GDE Monitoring Plot 4 where many Swamp Paperbarks have recently fallen over. Further analysis of current and historical aerial photographs has identified that dieback of Swamp Paperbark within patch H10 commenced following the 2015 back burning operations of the NPWS. The recent thinning event is likely due to landscape changes such as increased wind loading and altered surface water runoff patterns associated with the previous back burning in 2015.

No evidence was observed indicating that the recent thinning of Swamp Paperbark was caused by the operation of the quarry.

3.5 MITIGATION AND RESPONSE MEASURES

Monitoring has identified that all performance targets have been met for GDEs and it is recommended that a requirement for mitigation or response measures has not been triggered in relation to 2020 site operations.

SECTION 4

CONCLUSIONS & RECOMMENDATIONS

4.1 CONCLUSIONS

The quarry operations for the current monitoring period have not exceeded the compliance and performance measures for High Priority Groundwater Dependant Ecosystems.

4.2 RECOMMENDATIONS

The implementation of mitigation and response measures in relation High Priority Groundwater Dependant Ecosystems and the current quarry operations is considered not necessary.

5. REFERENCES

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APPENDIX 1
ENVIRONMENTAL PERFORMANCE & COMPLIANCE STATUS SUMMARY

Details on the Environmental Performance and Compliance Status in relation to High Priority GDEs have been requested for the Annual Reporting. This information is provided in Tables A1.1 and A1.2.

TABLE A1.1
ENVIRONMENTAL PERFORMANCE TABLE

Environmental Aspect	Approval Criteria	Summary of Monitoring Results in the Previous Monitoring Period	Summary of Monitoring Results in this Monitoring Period	Improvement Measures to be Implemented
High Priority Groundwater Dependant Ecosystems within 1km	The proponent must ensure that the project does not cause exceedances of the following performance measures: • Negligible erosion of the surface of GDEs • Negligible sedimentation within the GDEs • Minor changes in the size of the GDEs • No Significant change to the composition or distribution of species within the GDEs	No exceedances	No exceedances	Ensure appropriate erosion and sediment controls are maintained.

A compliance status table is provided in Table A1.2.

TABLE A1.2
COMPLIANCE STATUS TABLE

Unique ID	Compliance Requirement	Development Phase	Monitoring Methodology	Evidence & Comments
Condition 19.	Negligible erosion of the surface of GDEs	Operations	Visual monitoring	Annual Monitoring Reports
	Negligible sedimentation within the GDEs	Operations	Visual monitoring	Annual Monitoring Reports
	Minor changes in the size of the GDEs	Operations	Aerial photograph and ground assessment	Annual Monitoring Reports
	No Significant change to the composition or distribution of species within the GDEs	Operations	Plot surveys	Annual Monitoring Reports

Appendix 8
SOMERSBY MINTBUSH
Conacher Consulting

SOMERSBY MINTBUSH
2020 ANNUAL MONITORING REPORT

GRANTS ROAD
SAND QUARRY EXTENSION

MARCH 2021
REF: 21007

PREFACE

This report has been prepared by *Conacher Consulting* to address the 2020 annual monitoring and reporting requirements for Somersby Mintbush for the Grants Road Sand Quarry Extension Project at Somersby.

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SECTION 1

INTRODUCTION

1.1 DOCUMENT INTENT

This report has been prepared by *Conacher Consulting* to address the monitoring requirements of Condition 22 "Somersby Mintbush Monitoring and Management Program" of the Schedule 3 Environmental Performance Conditions specified within the Project Approval for the Grants Road Sand Quarry Extension project (Project Approval No. 08_0099 Mod 1). An Environmental Performance Table and Compliance Status Table is provided in Appendix 1.

1.2 PROJECT SITE DETAILS

The site is located within Lots 1 & 2 DP 358717, Grants Road Somersby.

1.3 PREVIOUS MONITORING RESULTS

2015 Monitoring Surveys
These surveys included a baseline assessment of the Somersby Mintbush (*Prostanthera junonis*) locations previously identified adjacent to the site and described as Population 7 Reservoir Road Brisbane Water National Park. They were undertaken on 23 October 2015 and 7 November 2015.

No specimens of *P. junonis* were observed during the baseline surveys as the locations where this species was previously identified had been subject to a controlled burn undertaken by NPWS.

During the baseline surveys, the previous location of *P. junonis* identified along the Great North Walk track showed noticeable signs of erosion caused by poor track maintenance and design.

2016 Monitoring Surveys
Regrowth of *P. junonis* was observed at subpopulations 3 and 4. Two flowering plants were detected at sub-population 3 where none were detected in recent years, the presence of several juvenile non-flowering plants were also noted.

No flowering plants and several juvenile non-flowering plants were observed at the location of sub-population 4.

The low numbers of flowering plants detected and evidence of regrowth plants was considered to be a result of the NPWS hazard reduction burn undertaken during October 2015.

2017 Monitoring Surveys
Regrowth of *P. junonis* was observed at subpopulations 3 and 4. Flowering plants were detected at sub-population 4 which were not detected in recent years.

The increasing numbers of flowering plants detected and evidence of several regrowth non-flowering plants was considered to be a result of regeneration following the NPWS hazard reduction burn undertaken during October 2015 and the reduced shade from tall shrub cover.

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2018 Monitoring Surveys
P. junonis was observed at subpopulations 3 and 4. Large numbers of plants were detected at sub-population 4 which were not detected in previous years.

The ongoing trend of increasing numbers of flowering plants detected is considered to be a result of regeneration following the NPWS hazard reduction burn undertaken during October 2015 and the reduced shade levels from tall shrub cover.

2019 Monitoring Surveys
P. junonis was observed at subpopulations 3 and 4. An increase in the number of plants was observed at sub-population 4 and a slight decrease in the number of flowering plants was counted as sub-population 3.

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SECTION 2

ANNUAL MONITORING RESULTS

2.1 ANNUAL SOMERSBY MINTBUSH COUNT RESULTS

Counts of flowering *P. junonis* plants were undertaken on 30 November 2020 and 21 December 2020 at the Somersby Mintbush subpopulation locations adjacent to the quarry allotment identified by NSW NPWS (2000). Both sub-populations are located within Brisbane Water National Park.

Flowering plants were identified and counted. Plants were defined as any flowering *P. junonis* plants in a patch with a separation distance of ≥30cm from the nearest *P. junonis* plant. The results of the counts are provided in Table 2.1 and the locations of the sub-populations are shown in Figure 2.1. An Environmental Performance Table is provided in Appendix 1.

TABLE 2.1
SOMERSBY MINT BUSH ANNUAL MONITORING COUNT RESULTS

Sub-Population Number	Count Results					
	2015	**2016**	**2017**	**2018**	**2019**	**2020**
3	0	2 flowering plants (several non-flowering juvenile regrowth plants observed)	18 flowering plants	42 flowering plants	29 flowering plants	46 flowering plants
4	0	No flowering plants several non-flowering juvenile plants observed	34 flowering plants	394 flowering plants	484 flowering plants	498 flowering plants (including outlier to the north)

An additional outlier near sub-population 4 consisting of 4 flowering plants was found adjacent to the walking track approximately 60 m to the north-east of sub-population 4.

2.2 QUALITATIVE MONITORING RESULTS

Photographs of the habitats at subpopulations 3 and 4 for the current monitoring period are provided in Figures 2.2 and 2.3.

2.2.1 Signs of Surface Erosion

No signs of surface erosion attributable to the project were observed.

Ongoing erosion of the track through subpopulation 4 was observed, as was in previous years. This is attributable to poor track maintenance and natural surface flows not attributable to the project. No noticeable NPWS maintenance of this track within the Brisbane Water National Park has occurred since the commencement of monitoring.

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2.2.2 Signs of Sedimentation

No signs of sedimentation at the monitoring locations attributable to the project were observed.

2.2.3 Density of Surrounding Vegetation

The density of the surrounding vegetation has been increasing since the NPWS hazard reduction burn completed in October 2015.

Dieback and decomposition of the *Banksia ericifolia* was evident particularly for Sub-population 4. Vigorous regrowth of a dense heathy shrub cover was observed at sub-population 3. The following estimates of the vegetation density for both sub-populations are provided:

Sub-population 3

Tree Cover:	Approximately 5% to 10m tall
Shrub Cover:	Open with approximately 70% cover to 2-3m tall with vigorously regenerating heath.
Groundlayer:	Approximately 50% cover to 1m.

Sub-population 4

Tree Cover:	Approximately 20% to 8m tall
Shrub Cover:	Approximately 5-60% cover to 4m tall, with dieback of tall shrub cover observed.
Groundlayer:	Approximately 60% cover to 1.5m.

It is considered that the current reduced density of shrub cover has provided ongoing favourable conditions for Somersby Mintbush growth of both sub-populations, however the shrub cover is rapidly regenerating and increasing in both density and height at Sub-population 3.

2.2.4 Fire Disturbance

No signs of fire disturbance attributable to the project were observed. No fire disturbance within the current monitoring period was observed.

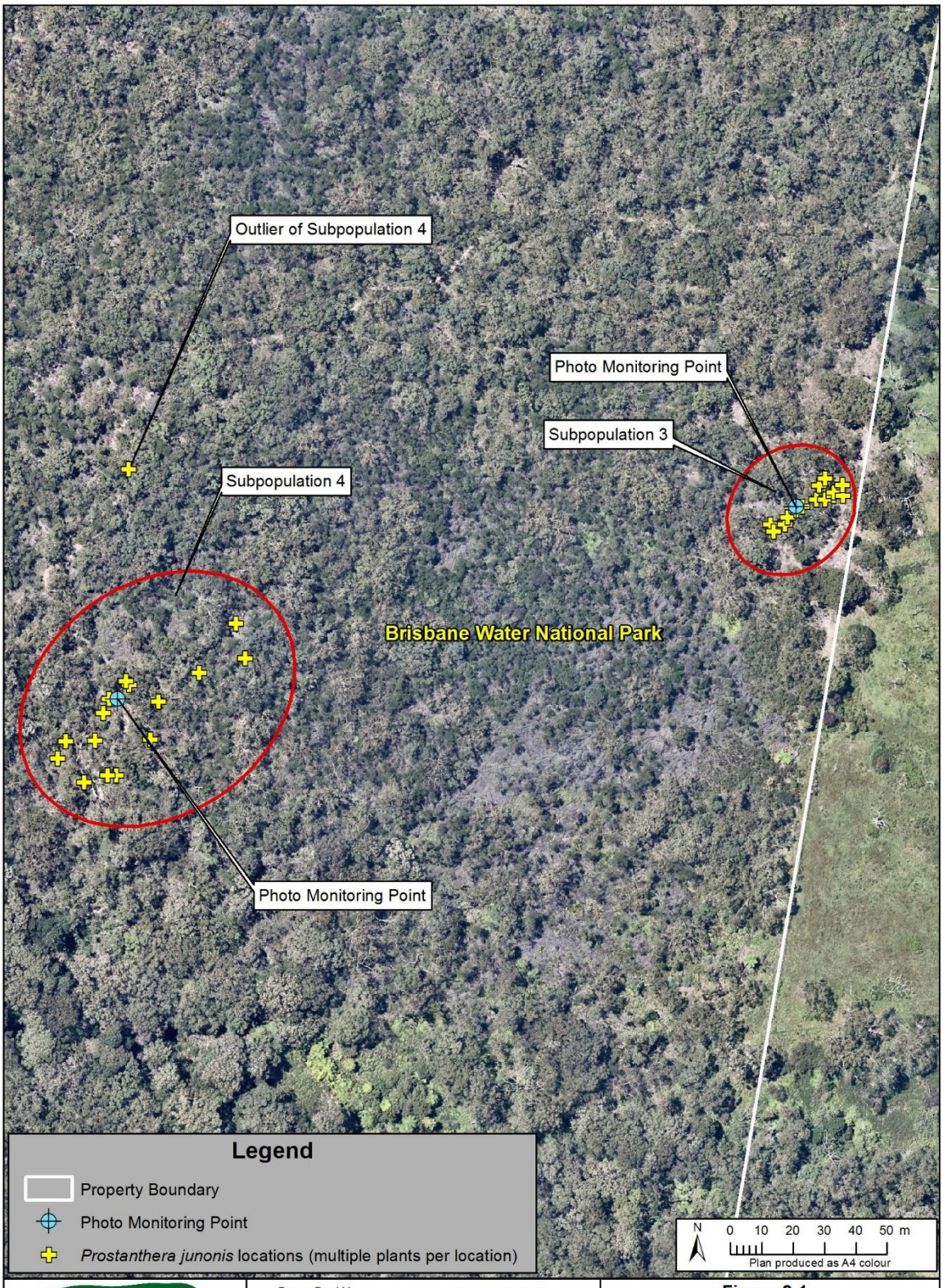
2.2.5 Herbivory

No signs of herbivory were observed.

2.2.6 Other Disturbances

No further disturbances were observed during the current monitoring period.

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Drawing No: 21007
Date: 21/01/2021

* Plan for indicative purposes only. Not for detailed measurement.
Source: Aerial © Nearmap (2021) Air Photo Date: 14/01/2021

Figure 2.1
***Prostanthera junonis* Observation Locations**
Grants Road, Somersby



Figure 2.2a – Sub-population 3 photo monitoring point north aspect



Figure 2.2b – Sub-population 3 photo monitoring point east aspect

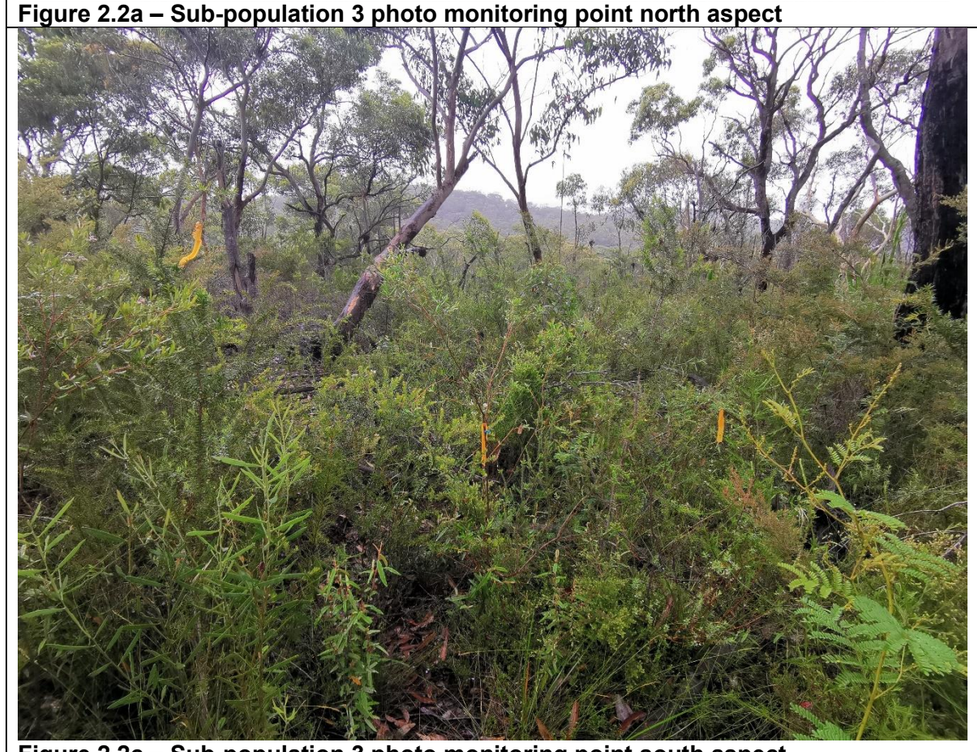


Figure 2.2c – Sub-population 3 photo monitoring point south aspect



Figure 2.2d – Sub-population 3 photo monitoring point west aspect



Figure 2.3a – Sub-population 4 photo monitoring point north aspect



Figure 2.3b – Sub-population 4 photo monitoring point east aspect



Figure 2.3c – Sub-population 4 photo monitoring point south aspect



Figure 2.3d – Sub-population 4 photo monitoring point west aspect

2.3 DETAILS OF NON-COMPLIANCE MATTERS

An assessment of the project performance indicators and responses required is provided in Table 2.2.

TABLE 2.2
SOMERSBY MINTBUSH COMPLIANCE ASSESSMENT FOR 2019 MONITORING PERIOD

Trigger Levels	1 - Erosion and Sedimentation		2 - Fire Impacts		3 - Stock Herbivory		4 - Other Disturbances		5 - Population Decline	
	Trigger	**Response**	**Trigger**	**Response**	**Trigger**	**Response**	**Trigger**	**Response**	**Trigger**	**Response**
Low Impact	Sediment / erosion event offsite within 5m of Somersby Mintbush Population	-Report to GRSQ -Include in Annual Report -Immediately correct /improve erosion and sediment control - Consult with OEH to rehabilitate area	Fire outbreak on quarry site within vicinity of Somersby Mintbush Population	-Report to GRSQ -Include in Annual Report -Extinguish fire and improve controls to present reoccurrence.	One-off herbivory event from stock on site resulting in minor grazing on Somersby Mintbush Habitat	-Report to GRSQ -Include in Annual Report -Immediately repair / improve fences - Remove any manure	NA	NA	Somersby Mintbush dieback in excess of 10%	-Report to GRSQ -Include in Annual Report - Assess whether natural shading has reduced population - Identify whether attributable to the project -Provide offsets if attributable to the project and recovery does not occur
Moderate	Sediment / erosion event which directly impacts on Somersby Mintbush Population but does not result in population dieback	-Immediately Report to GRSQ - Immediately Report to DPE -Include in Annual Report -Immediately correct /improve erosion and sediment controls - Consult with OEH to rehabilitate area	Fire outbreak from quarry site which impacts habitats of Somersby Mintbush Population but does not result in Somersby Mintbush dieback	-Immediately Report to GRSQ & DPE -Include in Annual Report -Extinguish fire and improve controls to prevent reoccurrence. - Monitor and provide offsets if recovery does not occur	Repeat herbivory events from stock on site resulting in grazing on Somersby Mintbush Habitat	-Report to GRSQ -Include in Annual Report -Immediately repair / improve fences -Remove any manure - Report to DPE	NA	NA	Somersby Mintbush dieback in excess of 25%	-Report to GRSQ -Include in Annual Report - Assess whether natural shading has reduced population - Identify whether attributable to the project -Consult with DPE/OEH -Provide offsets if attributable to the project and recovery does not occur
High Impact	Sediment / erosion event which directly impacts on Somersby Mintbush Population resulting in population dieback	-Immediately Report to GRSQ - Immediately Report to DPE -Include in Annual Report -Immediately correct /improve erosion and sediment control - Consult with OEH to rehabilitate area	Fire outbreak from quarry site which impacts habitats of Somersby Mintbush Population & results in Somersby Mintbush dieback	-Immediately Report to GRSQ & DPE -Include in Annual Report -Extinguish fire and improve controls to prevent reoccurrence. - Monitor and provide offsets if recovery does not occur	Repeat herbivory events from stock on site resulting in grazing on Somersby Mintbush Habitat and noticeable physical habitat damage	-Report to GRSQ -Include in Annual Report -Immediately repair / improve fences - Remove any manure - Report to DPE	Disturbance event from quarry operations associated with machinery or soil movements	-Report to GRSQ - Report to DPIE -Include in Annual Report -Improve operational procedures - Provide offsets if attributable to the project and recovery does not occur	Somersby Mintbush dieback in excess of 50%	-Report to GRSQ -Include in Annual Report - Identify whether attributable to the project -Consult with DPIE - Assess whether natural shading has reduced population -Provide offsets if attributable to the project and recovery does not occur
2020 Monitoring Period Results	**No impact observed**	**No response required**	**No impact observed**	**No response required**	**No impact observed, however maintenance of western boundary required**	**Fence improvement required (northern section of western boundary fence)**	**No impact observed**	**No response required**	**Population increases observed at both sub-populations**	**No response required**

2.4 MONITORING TRENDS

A increase in the total number of plants was recorded at both subpopulations compared to all previous monitoring events.

The increased numbers of flowering plants detected at both sub-populations is likely to be a result of the reduced shrub cover present following the NPWS hazard reduction burn during October 2015.

Vigorous regrowth of the shrub cover for sub-population 3 has been observed over the last few monitoring events and it is expected that shading of *P. junonis* by a dense shrub cover will eventually cause the population numbers to decline.

Continuing regrowth of *P. junonis* was observed at subpopulation 4. The tall shrub cover at sub-population 4 has died back since the hazard reduction burn and the levels of tall shrub regrowth at this location are not as vigorous as sub-population 3.

2.5 PROJECT IMPACT DISCREPANCIES

No project impact discrepancies between the predicted and actual impacts of the project were observed for the current monitoring period regarding Somersby Mintbush.

2.6 MEASURES TO IMPROVE PROJECT PERFORMANCE

Signposting of Somersby Mintbush Sub-population 3 has been undertaken along the western property boundary fence. Two signs were installed marking the location of *P. junonis* opposite the property boundary in accordance with the previous monitoring recommendation. The signs read “Sensitive Environmental Area - No Access”.



Figure 2.4. New signage installed on the property boundary fence opposite *P. junonis* Sub-population 3.

SECTION 3

CONCLUDING COMMENTS

3.1 CONCLUDING COMMENTS

The following concluding comments are provided:

i. An increase in the sub-population 4 of Somersby Mintbush was recorded compared to previous monitoring periods.

ii. The Somersby Mintbush population increase recorded is likely a result of reduced shading, increased rainfall and continued regeneration following the 2015 hazard reduction burning operations of the NPWS.

iii. Maintenance of the northern section of the western property boundary fence is required.

iv. Suitable environmental controls should continue to be maintained for the Project.

REFERENCES

Conacher Consulting (2016) Somersby Mintbush 2015 Monitoring Report, Grants Road Sand Quarry Extension Lot 1 DP 358717 270 Grants Road Somersby.

Conacher Consulting (2017) Somersby Mintbush 2016 Monitoring Report, Grants Road Sand Quarry Extension Lot 1 DP 358717 270 Grants Road Somersby.

Conacher Consulting (2018) Somersby Mintbush 2017 Monitoring Report, Grants Road Sand Quarry Extension Lot 1 DP 358717 270 Grants Road Somersby.

Conacher Consulting (2019) Somersby Mintbush 2018 Annual Monitoring Report, Grants Road Sand Quarry Extension.

Conacher Consulting (2020) Somersby Mintbush 2019 Annual Monitoring Report, Grants Road Sand Quarry Extension.

NSW National Parks and Wildlife Service (2000) Somersby Mintbush *Prostanthera junonis* Recovery Plan. NSW NPWS. Hurstville NSW.

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APPENDIX 1
ENVIRONMENTAL PERFORMANCE & COMPLIANCE STATUS SUMMARY

Details on the Environmental Performance and Compliance Status in relation to Somersby Mintbush have been requested for the Annual Reporting. This information is provided in Tables A1.1 and A1.2.

TABLE A1.1
ENVIRONMENTAL PERFORMANCE TABLE

Environmental Aspect	Approval Criteria	Summary of Monitoring Results in the Previous Monitoring Period	Summary of Monitoring Results in this Monitoring Period	Improvement Measures to be Implemented
Somersby Mintbush	Negligible Environmental Consequences	**Sub Pop 3.** 29 plants **Sub Pop 4** 484 plants No erosion, sedimentation observed. Disturbance to vegetation adjoining sub population 3 observed.	**Sub Pop 3.** 49 plants **Sub Pop 4** 498 plants	Undertake maintenance to western boundary fence. Previous signage improvement measures have been implemented as recommended.

A compliance status table is provided in Table A1.2.

TABLE A1.2
COMPLIANCE STATUS TABLE

Unique ID	Compliance Requirement	Development Phase	Monitoring Methodology	Evidence & Comments
Condition 19.	Negligible environmental consequences	Operations	Direct population counts and qualitative observation of impacts	Annual Monitoring Reports

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Appendix 9
LANDSCAPE & REHABILITATION MONITORING
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LANDSCAPE REHABILITATION
&
BIODIVERSITY OFFSET AREA

2020 ANNUAL MONITORING REPORT

GRANTS ROAD
SAND QUARRY EXTENSION

MARCH 2021
REF: 21021

PREFACE

This Report has been prepared by *Conacher Consulting* to address the 2020 annual monitoring and reporting requirements under the Landscape & Rehabilitation Management Plan and Biodiversity Offset Management & Habitat Rehabilitation Plan for the Grants Road Sand Quarry Extension Project at Somersby.

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SECTION 1

INTRODUCTION & BACKGROUND

1.1 INTRODUCTION

This Landscape Rehabilitation & Biodiversity Offset Area 2020 Annual Monitoring Report has been prepared by *Conacher Consulting* for the Grants Road Sand Quarry Extension (Application No. 08-0099 / Mod 1).

This Report provides details on the compliance with the Landscape & Rehabilitation Management and Biodiversity Offset Management requirements for the Grants Road Sand Quarry Extension Project at Somersby.

1.2 DETAILS ON CURRENT MANAGEMENT PLANS

A revised Landscape and Rehabilitation Management Plan (LRMP) (Conacher Consulting 2019) and a Biodiversity Offset Management & Habitat Rehabilitation Plan (Conacher Consulting 2019) have been prepared to meet the current project approval and commitment requirements.

This Report provides details on the works and performance of the Project in relation to these documents and the following Project Approval Conditions and Commitments:

i. Schedule 2 Environmental Performance Conditions

- Condition 23 Biodiversity Offset Strategy
- Condition 24 Long Term Security of Offset
- Condition 25 Landscape Rehabilitation Objectives
- Condition 26 Progressive Rehabilitation
- Condition 27 Landscape & Rehabilitation Management Plan
- Condition 28 Conservation & Rehabilitation Bond

ii. Statement of Commitments

- No. 6 Soils and Land Capability
- No. 9 Biodiversity & Environmental Management

SECTION 2

BIODIVERSITY OFFSET STRATEGY ANNUAL REPORTING

2.1 BACKGROUND

Details on the implementation of the current approved Biodiversity Offset Strategy is outlined within the Biodiversity Offset Management & Habitat Rehabilitation Plan (BOMHRP) (Conacher Consulting 2019). The annual monitoring and compliance requirements and results are addressed in Table 2.1.

2.2 BIODIVERSITY OFFSET AREA WORKS COMPLETED

The following works have been completed in accordance with the Biodiversity Offset Strategy requirements for the Project:

i. Installation of Fauna Nest Boxes

The nest box locations are shown in Figure 2.1 (Appendix 1). The results of the nest box monitoring are provided in Appendix 3. Fauna nest boxes were initially installed within the Biodiversity Offset Areas in 2015. The nest box locations are shown in Figure 2.1. Several of the nest boxes were installed in parts of the site which are now designated as a Landscape Buffer Area. All boxes within the site are to continue to be maintained, however where nest box maintenance is required, some nest boxes may be relocated to the current Biodiversity Offset Areas of the site.

During the current monitoring period nine nest boxes have been identified as requiring r replacement and three need to be remounted. This is to be undertaken during the 2021 operational period.

ii. Fencing of Biodiversity Offset Areas

The Biodiversity Offset Areas A & B are required to be protected with deer and livestock proof fencing. The fencing was inspected during the current monitoring period and found to be compliant, with no maintenance required. The location of Biodiversity Offset Area fencing is shown in Figure 2.1.

iii. Collection of Initial Baseline Floristic Monitoring Data

The collection of floristic monitoring data within plots established within each of the Biodiversity Offset Areas was undertaken during the current monitoring period. This data is provided in Appendix 3 of this Report.

2.3 BIODIVERSITY OFFSET STRATEGY COMPLIANCE DETAILS

A compliance assessment for the Projects Biodiversity Offset Strategy requirements for the current monitoring period is provided in Table 2.1.

TABLE 2.1 BIODIVERSITY OFFSET STRATEGY MONITORING COMPLIANCE DETAILS							
Unique ID	**Compliance Requirement**		**Development Phase**	**Monitoring Methodology**	**Evidence Required**	**Monitoring Results**	**Improvement Measures Required**
	Task	**Description**					
Condition 27 (f) Commitment 9 BOMHRP-1	Soil Management	Install erosion and sediment controls to protect offset areas and prevent soil loss during weed control and rehabilitation activities	Operation 1-3 years	Project ecologist inspection Works records	Annual Monitoring Report -Photographs	Existing grassed areas left downslope of the soil capping works are providing erosion and sediment control.	Monitor regularly and ensure any additional measures are implemented as necessary
Condition 27 (f) Commitment 9 BOMHRP-2	Soil Management	Undertake soil and landform remediation and stabilisation works for heavily disturbed areas	Operation 1-3 years	Project ecologist inspection works records	Annual Monitoring Report -Photographs -Mapping	Soil capping has commenced in the southern part of offset area B	Monitor and progressively implement over additional areas where required.

TABLE 2.1 BIODIVERSITY OFFSET STRATEGY MONITORING COMPLIANCE DETAILS							
Unique ID	**Compliance Requirement**		**Development Phase**	**Monitoring Methodology**	**Evidence Required**	**Monitoring Results**	**Improvement Measures Required**
	Task	**Description**					
Condition 27 (f) Commitment 9 BOMHRP-3	Weed Management	Undertake Primary Weed Control Works	Operation 1-3 years	Project ecologist inspection Works records	Annual Monitoring Report -Monitoring Plot Data -Mapping	Primary weed control has been undertaken in Biodiversity Offset Area A and B. Physical removal of Lantana camara and Pampas Grass undertaken and spraying of Crofton Weed and Blackberry commenced. See Figures 2.2 to 2.4 for weed mapping.	Continue works progressively.
Condition 27 (f) Commitment 9 BOMHRP-4	Weed Management	Undertake Secondary Weed Control Works	Operation 4-10 years	Project ecologist inspection Works records	Annual Monitoring Report -Monitoring Plot Data -Mapping	Not commenced.	Follow up primary weed control with secondary weed control during 2021.

TABLE 2.1 BIODIVERSITY OFFSET STRATEGY MONITORING COMPLIANCE DETAILS							
Unique ID	**Compliance Requirement**		**Development Phase**	**Monitoring Methodology**	**Evidence Required**	**Monitoring Results**	**Improvement Measures Required**
	Task	**Description**					
Condition 27 (f) Commitment 9 BOMHRP-5	Revegetation	Obtain planting material (seeds / plant stock)	Operation 1-6 years	Tax invoice records	Annual Monitoring Report -Tax Invoices	Initial brush matting trials have commenced over capping areas. Further tube stock planting or seeding will be required if brush matting is not successful. Works complete by quarry, tax invoices not relevant.	Continue to monitor during 2021.
Condition 27 (f) Commitment 9 BOMHRP-6	Revegetation	Undertake seeding and planting works	Operation 1-6 years	Project ecologist inspection Works records	Annual Monitoring Report -Plot data -Photos -Mapping	As above. Plot data not relevant, further time required to observe works results.	None required.
Condition 27 (f) Commitment 9 BOMHRP-7	Revegetation	Maintain plantings	Operation 1-6 years	Project ecologist inspection Works records	Plot data -Photos -Mapping	No plantings require maintenance at this time.	None required.

TABLE 2.1 BIODIVERSITY OFFSET STRATEGY MONITORING COMPLIANCE DETAILS							
Unique ID	**Compliance Requirement**		**Development Phase**	**Monitoring Methodology**	**Evidence Required**	**Monitoring Results**	**Improvement Measures Required**
	Task	**Description**					
Condition 27 (f) Commitment 9 BOMHRP-8	Access Control	Install fencing to exclude livestock and deer from Offset Areas A & B	Operation 1-3 years	Project ecologist inspection	Annual Monitoring Report -Fence mapping -Photos	See fence locations in Figure 2.1. No maintenance required for current monitoring period.	None required.
Condition 27 (f) Commitment 9 BOMHRP-9	Access Control	Maintain fencing to exclude livestock from Offset Area C	Operation 1-26 years	Project ecologist inspection	Annual Monitoring Report	No maintenance required for current monitoring period.	None required.
Condition 27 (f) Commitment 9 BOMHRP-10	Access Control	Maintain all exclusion fencing in working condition	Operation 1-26 years	Project ecologist inspection	Annual Monitoring Report	No maintenance required for current monitoring period.	None required.
Condition 27 (f) Commitment 9 BOMHRP-11	Habitat Enhancement	Install nest boxes and hollow logs to meet hollow tree offset requirement as clearing occurs	Operation 1-6 years	Project ecologist inspection	Annual Monitoring Report	Five nest boxes identified as requiring maintenance for current monitoring period.	Complete maintenance/replacement works for five nest boxes during 2021 period.
Condition 27 (f) Commitment 9 BOMHRP-12	Habitat Enhancement	Salvage environmental/habitat resources where available from quarry footprint and transfer to Offset Areas A & B	Operation 1-10 years	Project ecologist inspection Works records	Annual Monitoring Report -Photos	Not required during 2018. Undertake progressively as footprint clearing is undertaken.	None required.

TABLE 2.1 BIODIVERSITY OFFSET STRATEGY MONITORING COMPLIANCE DETAILS							
Unique ID	**Compliance Requirement**		**Development Phase**	**Monitoring Methodology**	**Evidence Required**	**Monitoring Results**	**Improvement Measures Required**
	Task	**Description**					
Condition 27 (f) Commitment 9 BOMHRP-13	Bushfire Management	Protect non-established plantings from bushfire	Operation 1-6 years	Project ecologist inspection	Annual Monitoring Report	No applicable for current monitoring period.	None required.
Condition 27 (f) Commitment 9 BOMHRP-14	Bushfire Management	Allow natural bushfire disturbance and revegetation for areas containing established vegetation	Operation 1-26 years	Project ecologist inspection	Annual Monitoring Report -Monitoring Plot data -Photographs	No fire events detected during current monitoring period.	None required.
Condition 27 (f) Commitment 9 BOMHRP-15	Bushfire Management	Protect nest boxes from fire and/or replace if burnt out	Operation 1-10 years	Project ecologist inspection	Annual Monitoring Report	No fire events detected during current monitoring period.	None required.
Condition 27 (f) Commitment 9 BOMHRP-16	Monitoring Evaluation & Reporting	Undertake Annual Monitoring as per the Monitoring Strategy	Operation 1-26 years	Project ecologist inspection	Annual Monitoring Report	This report has been prepared to address this requirement.	None required.
Condition 27 (f) Commitment 9 BOMHRP-17	Monitoring Evaluation & Reporting	Re-assess risks to implementation of actions	Operation 1-10 years	NA	Annual Monitoring Report	No risks identified	None required.
Condition 27 (f) Commitment 9 BOMHRP-18	Monitoring Evaluation & Reporting	Implement adaptive response strategies	Operation 1-10 years	NA	Annual Monitoring Report	Non applicable	None required.
Condition 27 (f) Commitment 9 BOMHRP-19	Monitoring Evaluation & Reporting	Prepare annual monitoring reports	Operation 1-26 years	Project ecologist reporting	Annual Monitoring Report	This report has been prepared to address this requirement.	None required.

SECTION 3

LANDSCAPE & REHABILITATION MANAGEMENT PLAN ANNUAL REPORTING

The details of the results of annual monitoring for the Landscape & Rehabilitation Management Plan (LRMP) are provided in Table 3.1. Details on the compliance with specific approval conditions are documented as follows.

3.1 LANDSCAPE REHABILITATION OBJECTIVES (CONDITION 25)

A requirement for rehabilitation works has not been triggered during the current monitoring period.

3.2 PROGRESSIVE REHABILITATION (CONDITION 26)

A requirement for rehabilitation works has not been triggered during the current monitoring period.

3.3 LANDSCAPE & REHABILITATION MANAGEMENT PLAN (CONDITION 27)

A Revised Landscape and Rehabilitation Management Plan has been prepared to address this condition of the current project approval under Modification 1. The implementation of the Biodiversity Offset Strategy Component is addressed in Section 2.1 of this Report. The requirement for physical Landscape Rehabilitation works was not triggered during the current monitoring period.

3.4 CONSERVATION & REHABILITATION BOND (CONDITION 28)

The Conservation and Rehabilitation Bond Calculation Report (Conacher Consulting December 2016 Ref: 4143/6) was prepared to address Condition No. 28 of Schedule 3 of the approval. This Report calculated that the Conservation and Rehabilitation Bond be set at $306,000.00. This figure has been accepted by the Department of Planning and Environment. The financial arrangements for the rehabilitation bond have been finalised.

TABLE 3.1 LANDSCAPE REHABILITATION MANAGEMENT PLAN COMPLIANCE DETAILS							
Unique ID	**Compliance Requirement**		**Development Phase**	**Monitoring Methodology**	**Evidence Required**	**Monitoring Results**	**Improvement Measures Required**
	Task	**Description**					
LRMP (v2 - 2019) Landscape Buffer Area Management Actions No.1-4	Earth Mound & Bund Construction & Management	1.Progressively construct bund and earth mound around quarry pit	Operational / progressive as quarrying occurs	Visual site inspection and aerial photograph inspection	Annual mapping of bund and earth mound locations	Initial mound construction has occurred	None required.
		2.Vegetate bund and mound areas with Kikuyu Grass or other suitable species	Operational / progressive as bunds and mounds are constructed	Visual inspection by Project Environmental Consultant	Documentation in monitoring reports	Revegetation commenced & ongoing	Control weeds on mounds to assist further revegetation
		3.Construct and maintain sandstone block bund around Aboriginal archaeological site RE1	Prior to operation	Subject to monitoring by the project Archaeologist.	Refer to Environmental Plan of Management & Aboriginal Cultural Heritage Management Plan	NA	NA
		4.Implement downslope sediment controls for bunds and mounds until they are vegetated	Operational / progressive as bunds and mounds are constructed	Visual inspection	Annual monitoring reporting	Existing bunds are vegetated.	None required
LRMP (v2 - 2019) Landscape Buffer Area Management Action No. 5-6	Tree Protection	5.Survey trees to be retained within the Landscape Buffer Area in close proximity to earth mounds	Operational / Years 4-6	Initial survey and further visual inspection	Initial mapping of tree locations and monitoring reporting	Trees to be retained which are not protected by existing site fencing are shown in Figure 3.1.	None required.

TABLE 3.1 LANDSCAPE REHABILITATION MANAGEMENT PLAN COMPLIANCE DETAILS							
Unique ID	**Compliance Requirement**		**Development Phase**	**Monitoring Methodology**	**Evidence Required**	**Monitoring Results**	**Improvement Measures Required**
	Task	**Description**					
		6.Provide protection for trees to be retained in the landscape buffer during bund construction	Operational / for life of the quarry	Visual inspection by Project Environmental Consultant	Annual Reporting	Trees to be retained which are not protected by existing site fencing are shown in Figure 3.1.	None required.
LRMP (v2 - 2019) Landscape Buffer Area Management Actions No. 7-9	Aboriginal Archaeological Site Management	7.Maintain fencing and sandstone bund around Aboriginal archaeological site RE1	Operational / for the life of the quarry	Subject to monitoring by the project Archaeologist.	Refer to Environmental Plan of Management & Aboriginal Cultural Heritage Management Plan	NA	NA
		8.Maintain vehicle access diversion around Aboriginal archaeological site RE2	Operational / for the life of the quarry	As above.	As above.	NA	NA
		9.Implement Aboriginal Cultural Heritage Program	Operational / for the life of the quarry	As above.	As above.	NA	NA

TABLE 3.1 LANDSCAPE REHABILITATION MANAGEMENT PLAN COMPLIANCE DETAILS							
Unique ID	**Compliance Requirement**		**Development Phase**	**Monitoring Methodology**	**Evidence Required**	**Monitoring Results**	**Improvement Measures Required**
	Task	**Description**					
LRMP (v2 - 2019) Landscape Buffer Area Management Action No. 10	Access Management	10.Ensure that common boundary fencing adjoining the Biodiversity Offset Areas and Aboriginal archaeological heritage sites is maintained	Operational for the life of the quarry	Project Ecologist inspection and annual monitoring reporting	Annual reporting	Compliant for Biodiversity Offset Areas. Refer to separate monitoring by Project Archaeologist for protection of Aboriginal Heritage Sites	None required
LRMP (v2 - 2019) Landscape Buffer Area Management Action No. 11	Bushfire Hazard Reduction & Weed Management	11. Undertake bushfire hazard reduction and weed management through grazing and slashing of the landscape buffer.	Operational for the life of the quarry	Project Ecologist inspection and annual monitoring reporting	Annual reporting	Compliance, the landscape buffer has been slashed and grazed by cattle.	Continue ongoing grazing and slashing program
LRMP (v2 - 2019) Landscape Buffer Area Management Action No. 12	Rubbish Management	12.Monitor for rubbish accumulations and remove as necessary	Operational for the life of the quarry	Visual inspection by Project Environmental Consultant	Annual reporting	Compliant	None required
LRMP (v2 - 2019) Quarry Area Biodiversity Management Plan Actions.	Habitat Clearing Management	Implement pre-clearing, clearing and reporting requirements	Operational prior to and during clearing works	Project Ecologist Reporting	Annual reporting	Compliant / no habitat tree clearing undertaken within Quarry Footprint	None required

TABLE 3.1 LANDSCAPE REHABILITATION MANAGEMENT PLAN COMPLIANCE DETAILS							
Unique ID	**Compliance Requirement**		**Development Phase**	**Monitoring Methodology**	**Evidence Required**	**Monitoring Results**	**Improvement Measures Required**
	Task	**Description**					
Quarry Area Rehabilitation Plan Actions 1-4	Site	-Safe, stable and non-polluting -Minimise the visual impact of the final landforms as far as is reasonable and feasible	Operation / progressive and post operation	-Land survey -Observation by suitably qualified Environmental Consultant	Record within quarry operation procedures and annual monitoring reports	Rehabilitation not required during current monitoring period	None required.
	Surface Infrastructure	To be decommissioned and removed unless the Secretary agrees otherwise	Post operation	-Observation by suitably qualified Environmental Consultant	As above	As above	None required.
	Quarry Benches	Suitably landscaped and revegetated using native species	Operation / progressive and post operation	-Observation by suitably qualified Environmental Consultant	As above	As above	None required.
	Quarry Pit Floor	Establish land with a level floor of at least Class 4 agricultural suitability over 80% of the quarry floor	Operation / progressive and post operation	-Observation by suitably qualified Environmental Consultant	As above	As above	None required.

SECTION 4

CONCLUSIONS & RECOMMENDATIONS

4.1 CONCLUDING COMMENTS

The Project is compliant with the requirements of the current Landscape and Rehabilitation Management Plan and Biodiversity Offset Management & Habitat Rehabilitation Plan prepared in compliance with the Conditions for the current Project Approval.

The progressive implementation of these plans is being undertaken as required.

No revisions to the current Landscape and Rehabilitation Management Plan and Biodiversity Offset Management & Habitat Rehabilitation Plan documents are recommended this stage.
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REFERENCES

Conacher Consulting (November 2019) Biodiversity Offset Management & Habitat Rehabilitation Plan, Grants Road Sand Quarry Extension. Unpublished Report.

Conacher Consulting (November 2019) Landscape and Rehabilitation Management Plan Version 2 Grants Road Sand Quarry Extension. Unpublished Report.

APPENDIX 1
FIGURES

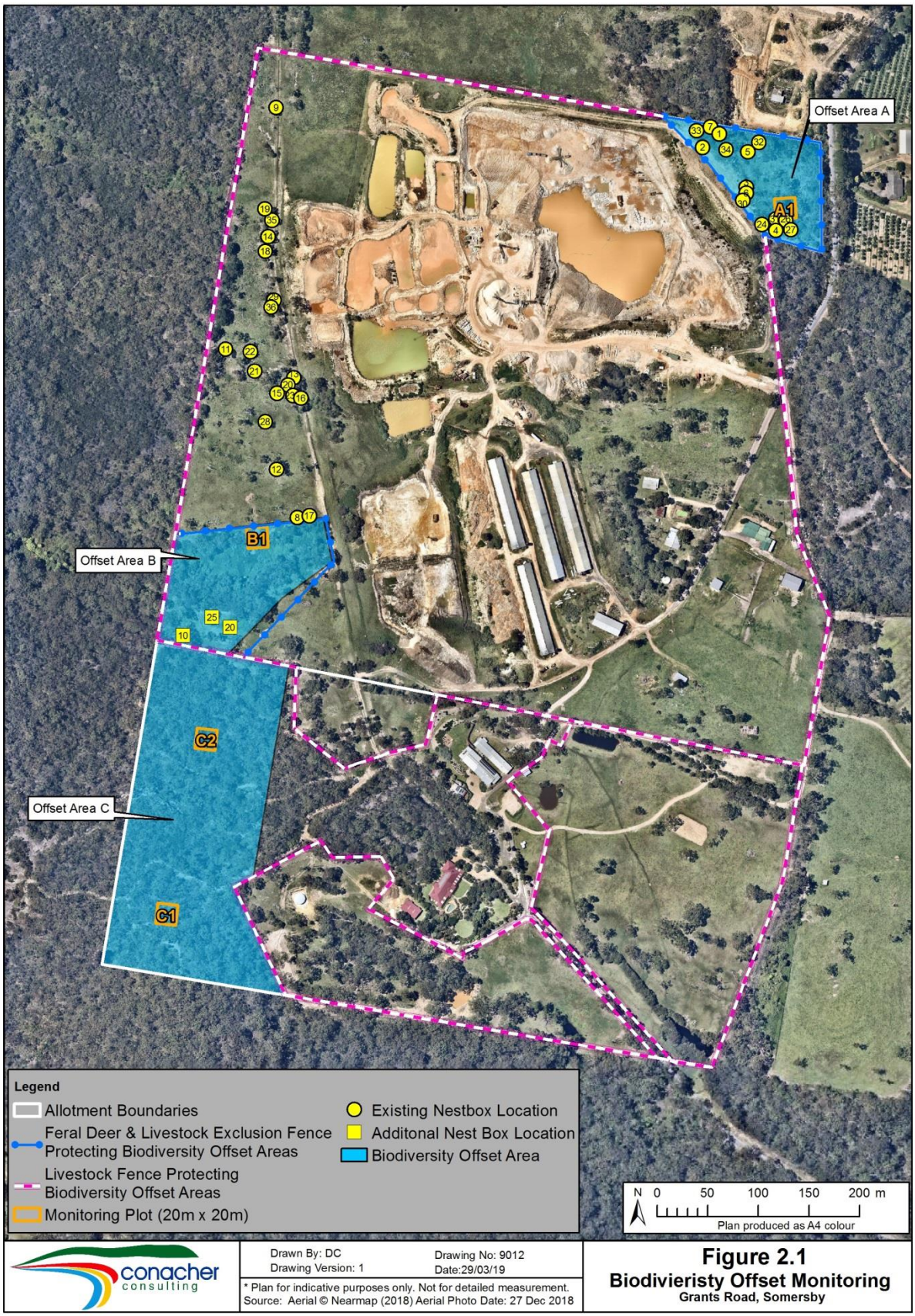


Figure 2.1
Biodivieristy Offset Monitoring
Grants Road, Somersby

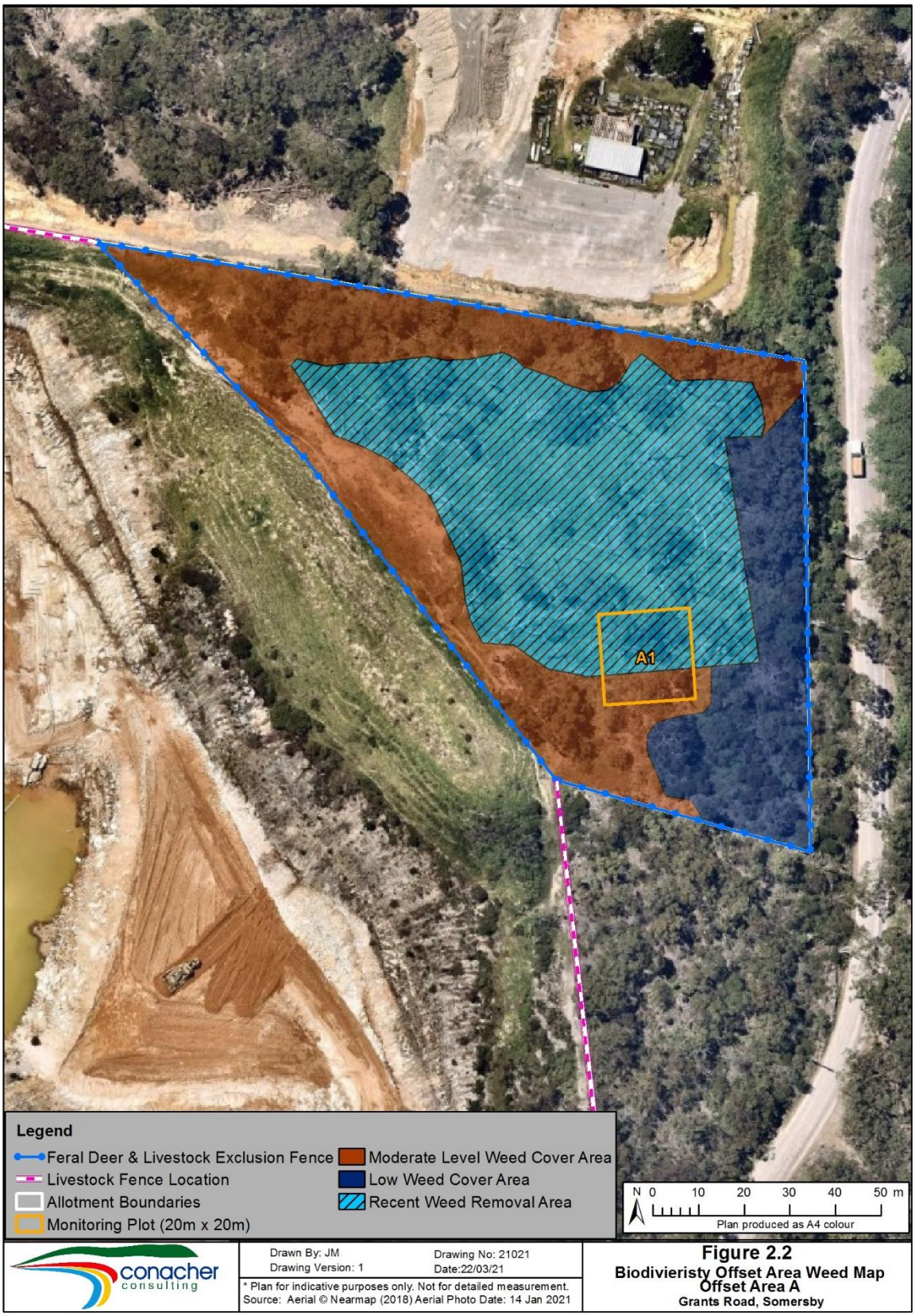


Figure 2.2
Biodivieristy Offset Area Weed Map
Offset Area A
Grants Road, Somersby

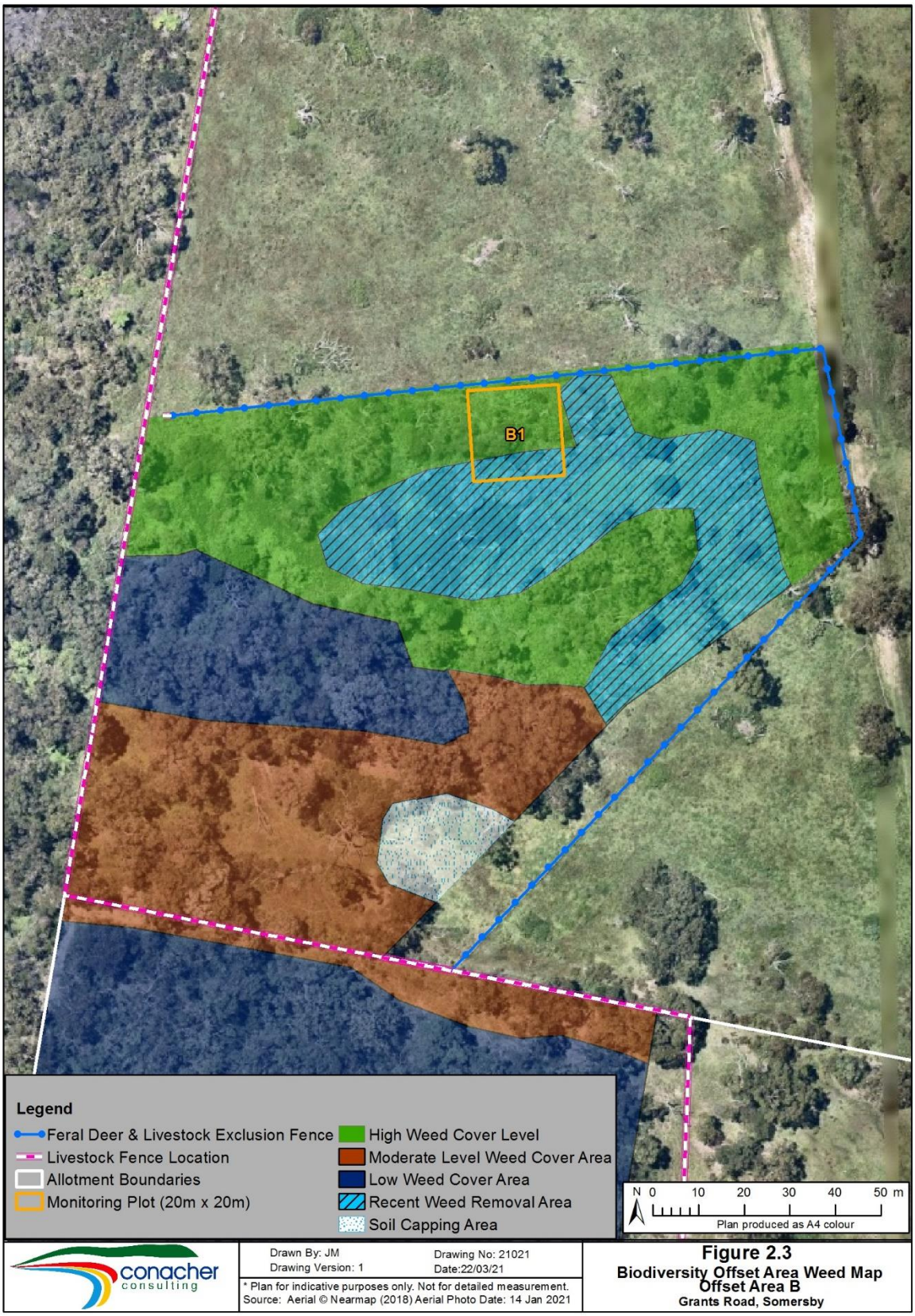


Figure 2.3
Biodiversity Offset Area Weed Map
Offset Area B
Grants Road, Somersby

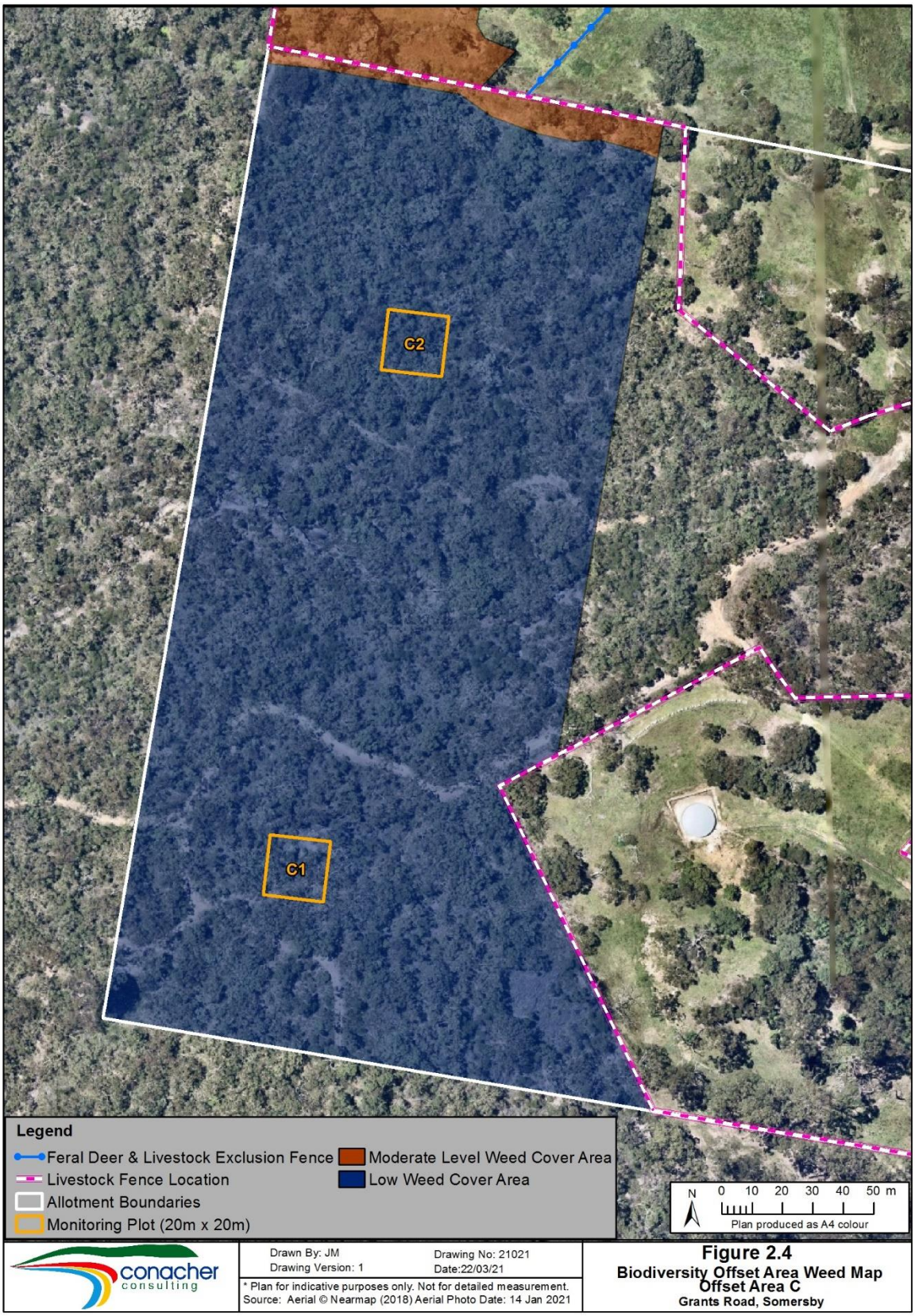
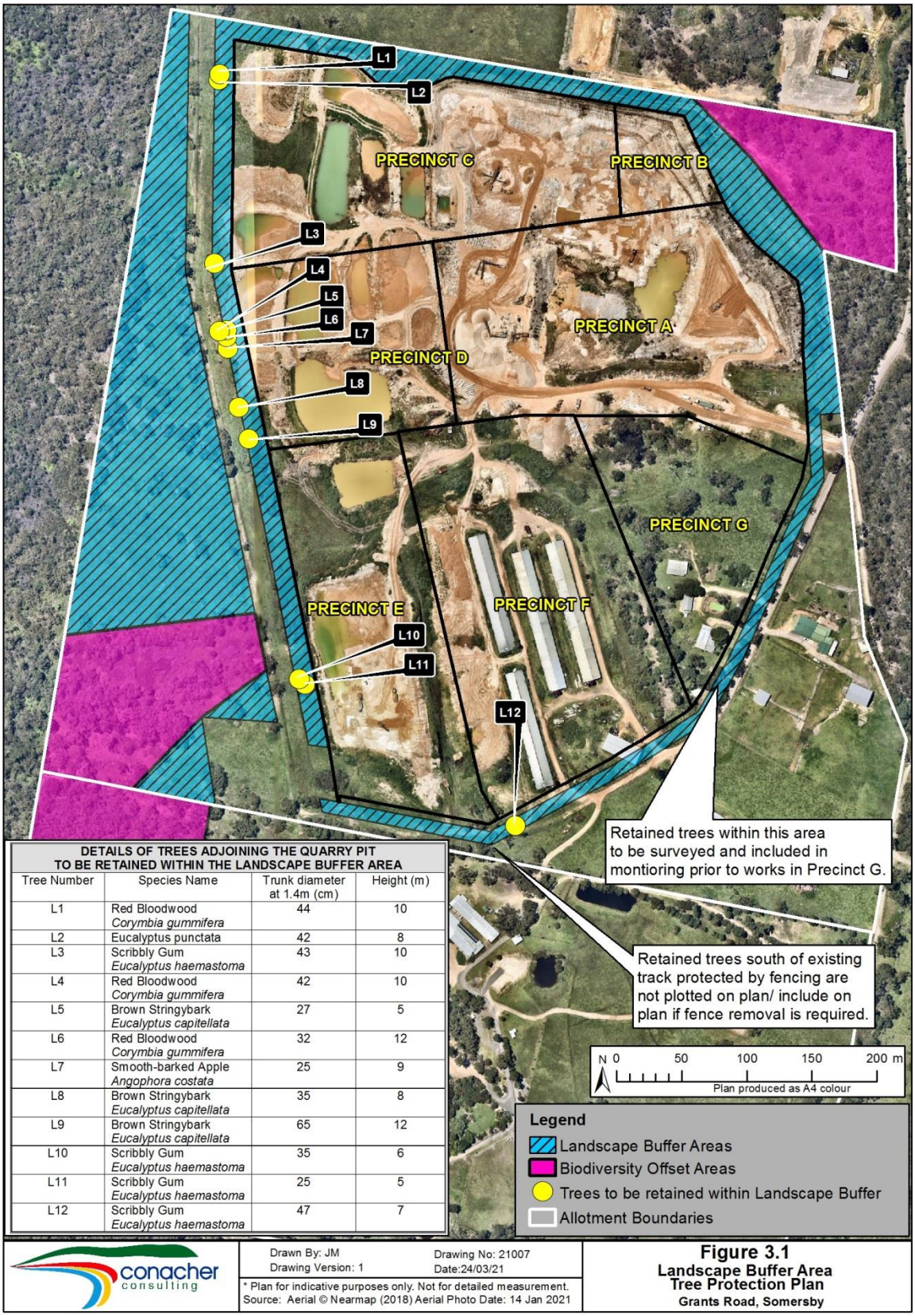


Figure 2.4
Biodiversity Offset Area Weed Map
Offset Area C
Grants Road, Somersby



DETAILS OF TREES ADJOINING THE QUARRY PIT TO BE RETAINED WITHIN THE LANDSCAPE BUFFER AREA

Tree Number	Species Name	Trunk diameter at 1.4m (cm)	Height (m)
L1	Red Bloodwood *Corymbia gummifera*	44	10
L2	Eucalyptus punctata	42	8
L3	Scribbly Gum *Eucalyptus haemastoma*	43	10
L4	Red Bloodwood *Corymbia gummifera*	42	10
L5	Brown Stringybark *Eucalyptus capitellata*	27	5
L6	Red Bloodwood *Corymbia gummifera*	32	12
L7	Smooth-barked Apple *Angophora costata*	25	9
L8	Brown Stringybark *Eucalyptus capitellata*	35	8
L9	Brown Stringybark *Eucalyptus capitellata*	65	12
L10	Scribbly Gum *Eucalyptus haemastoma*	35	6
L11	Scribbly Gum *Eucalyptus haemastoma*	25	5
L12	Scribbly Gum *Eucalyptus haemastoma*	47	7

conacher consulting

Drawn By: JM
Drawing Version: 1
Drawing No: 21007
Date:24/03/21

* Plan for indicative purposes only. Not for detailed measurement.
Source: Aerial © Nearmap (2018) Aerial Photo Date: 14 Jan 2021

Figure 3.1
Landscape Buffer Area Tree Protection Plan
Grants Road, Somersby

APPENDIX 2
MONITORING PHOTOGRAPHS



Plate 1 – Soil capping works in Biodiversity Offset Area B



Plate 2 – Soil capping works and habitat log retention in Biodiversity Offset Area B



Plate 3 – *Leptospermum polygalifolium* plant material used for brush matting revegetation in Biodiversity Offset Area B.



Plate 4 – Piled Lantana removed within Biodiversity Offset Area B.



Plate 5. Pampas grass removal within Biodiversity Offset Area B.



Plate 6. Weed control area in Biodiversity Offset Area A.



Plate 7. Piled Lantana removed within Biodiversity Offset Area A.



Plate 8. Fencing in well maintained condition along southern boundary of Biodiversity Offset Area A.



Plate 9. Landscape Buffer Area north of Biodiversity Offset Area recently slashed for bushfire fuel management and weed suppression.

APPENDIX 3
NEST BOX ANNUAL MONITORING RESULTS

Fauna nest box monitoring data is provided in Table A2.1. Three nest boxes need to be remounted and nine nest boxes need to be replaced.

TABLE A2.1
NEST BOX MONITORING RESULTS

Nest Box Number	Type	Maintenance Required	Easting	Northing
1	Side Entry Very Small Bird / Mammal	None	338720	6304269
2	Side Entry Very Small Bird / Mammal	None	338704	6304256
3	Side Entry Small Bird / Mammal (narrow box)	None	338747	6304216
4	Side Entry Small Bird / Mammal	Could not locate / replace if cannot be relocated		
5	Front Entry Small Bird / Mammal (short box)	None	338746	6304252
6	Front Entry Small Bird / Mammal (short box)	None	338747	6304211
7	Front Entry Small Bird / Mammal (short box)	None	338711	6304276
8	Front Entry Small Bird / Mammal (short box)	None	338303	6303890
9	Front Entry Small Bird / Mammal	None	338282	6304295
10		Box has failed / replace		
11	Front Entry Small Bird / Mammal	None	338232	6304056
12	Front Entry Small Bird / Mammal	None	338283	6303937
13	Front Entry Small Bird / Mammal	None	338300	6304028
14	Front Entry Small Bird / Mammal	Box broken in tree fall / replace	338274	6304168
15	Front Entry Small Bird / Mammal	Box has failed / replace	338294	6304021
16	Front Entry Small Bird / Mammal	None	338307	6304008
17	Front Entry Small Bird / Mammal	Box has failed / replace	338303	6303890
18	Side Entry Small Bird / Mammal	Box has failed / replace	338272	6304153
19	Side Entry Small Bird / Mammal	None	338278	6304184
20	Side Entry Small Bird / Mammal	Box has failed / replace	338294	6304021
21	Side Entry Small Bird / Mammal	None	338261	6304035
22	Side Entry Small Bird / Mammal	Box needs to be re-mounted	338257	6304054
23	Side Entry Small Bird /	Box needs to be re-mounted	338299	6304011

TABLE A2.1 NEST BOX MONITORING RESULTS				
Nest Box Number	**Type**	**Maintenance Required**	**Easting**	**Northing**
	Mammal			
24	Side Entry Very Small Bird / Mammal	None	338769	6304184
25		Box has failed / replace		
26	Side Entry Very Small Bird / Mammal	None	338786	6304184
27	Front Entry Small Bird / Mammal	Box needs to be re-mounted	338786	6304184
28	Side Entry Small Bird / Mammal	None	338272	6303985
29	Side Entry Small Bird / Mammal	None	338280	6304105
30	Front Entry Small Bird / Mammal	None	338743	6304203
31	Side Entry Very Small Bird / Mammal (Horizontal mount)	None	338776	6304185
32	Side Entry Very Small Bird / Mammal (Horizontal mount)	Could not locate / replace if cannot be relocated	338759	6304261
33	Side Entry Very Small Bird / Mammal (Horizontal mount)	None	338697	6304272
34	Side Entry Very Small Bird / Mammal (Horizontal mount)	None	338727	6304253
35	Natural Log Rear Entry Bat box	None	338278	6304184
36	Natural Log Rear Entry Bat box	None	338277	6304098

APPENDIX 4
BIODIVERSITY OFFSET MONITORING PLOT DATA

The floristic plot data for each of the Biodiversity Offset Areas (A-C) is provided in Table A4.1 (Areas A & B) and Table A4.2 (Area C).

TABLE A4.1
BASELINE FLORISTIC DATA FOR BIODIVERSITY OFFSET AREAS A & B

Family	Scientific Name	Common Name	Plot A1 Cover	Plot B1 Cover
Trees				
Myrtaceae	*Corymbia gummifera*	Red Bloodwood	3.00	
Myrtaceae	*Eucalyptus capitellata*	Brown Stringybark	5.00	
Myrtaceae	*Eucalyptus haemastoma*	Broad-leaved Scribbly Gum		2.00
Myrtaceae	*Eucalyptus sieberi*	Silvertop Ash	2.00	
Phyllanthaceae	*Glochidion ferdinandi*	Cheese Tree	0.1	
Proteaceae	*Banksia serrata*	Old-man Banksia	3.00	
Shrubs				
Araliaceae	*Polyscias sambucifolia* subsp. *Long Leaflets*	Elderberry Panax	0.10	
Asteraceae	*Ozothamnus diosmifolius*	White Dogwood	10.00	
Dilleniaceae	*Hibbertia linearis*		0.10	
Fabaceae (Faboideae)	*Bossiaea heterophylla*	Variable Bossiaea	0.10	
Fabaceae (Faboideae)	*Bossiaea obcordata*	Spiny Bossiaea	0.10	
Fabaceae (Mimosoideae)	*Acacia fimbriata*	Fringed Wattle	0.50	
Fabaceae (Mimosoideae)	*Acacia floribunda*	White Sally	0.25	
Myrtaceae	*Kunzea ambigua*	Tick Bush	0.25	
Myrtaceae	*Leptospermum polygalifolium* subsp. *polygalifolium*	Tantoon		20.00
Phyllanthaceae	*Breynia oblongifolia*	Coffee Bush	0.10	
Proteaceae	*Banksia ericifolia*	Heath-leaved Banksia		1.00
Proteaceae	*Banksia oblongifolia*	Fern-leaved Banksia		0.50
Proteaceae	*Lomatia silaifolia*	Crinkle Bush	0.10	
Thymelaeaceae	*Pimelea linifolia*	Slender Rice Flower	0.10	
Forbs				
Amaranthaceae	*Alternanthera denticulata*	Lesser Joyweed		0.20
Apiaceae	*Hydrocotyle laxiflora*	Stinking Pennywort	0.10	
Asteraceae	*Euchiton sphaericus*	Star Cudweed	0.10	
Commelinaceae	*Commelina cyanea*	Native Wandering Jew	0.10	
Convolvulaceae	*Dichondra repens*	Kidney Weed	0.10	
Plantaginaceae	*Veronica plebeia*	Trailing Speedwell	0.10	
Polygonaceae	*Persicaria lapathifolia*	Pale Knotweed		20.00
Dennstaedtiaceae	*Hypolepis muelleri*	Harsh Ground Fern	0.50	0.25
Dennstaedtiaceae	*Pteridium esculentum*	Bracken	0.25	
Monocots				
Cyperaceae	*Cyathochaeta diandra*		0.25	
Cyperaceae	*Cyperus polystachyos*		1.00	2.00
Cyperaceae	*Gahnia clarkei*	Tall Saw-sedge	0.10	
Juncaceae	*Juncus usitatus*		0.20	
Lomandraceae	*Lomandra gracilis*		0.10	

TABLE A4.1 BASELINE FLORISTIC DATA FOR BIODIVERSITY OFFSET AREAS A & B				
Family	**Scientific Name**	**Common Name**	**Plot A1 Cover**	**Plot B1 Cover**
Poaceae	*Cynodon dactylon*	Common Couch	20.00	
Poaceae	*Echinopogon caespitosus*	Bushy Hedgehog-grass	0.25	
Poaceae	*Entolasia marginata*	Bordered Panic	0.10	10.00
Poaceae	*Entolasia stricta*	Wiry Panic	2.00	
Poaceae	*Eragrostis brownii*	Brown's Lovegrass	10.00	
Poaceae	*Microlaena stipoides var. stipoides*	Weeping Grass	10.00	
Poaceae	*Oplismenus imbecillis*	Creeping Beard Grass	0.20	
Poaceae	*Sacciolepis indica*	Indian Cupscale Grass		0.50
Other Native Plants				
Rubiaceae	*Gynochthodes jasminoides*	Sweet Morinda		0.25
Vitaceae	*Cissus hypoglauca*	Giant Water Vine		0.25
Exotic Plants				
Araceae	*Zantedeschia aethiopica*	Arum Lily		5.00
Asteraceae	*Ageratina adenophora*	Crofton Weed	1.00	30.00
Asteraceae	*Bidens pilosa*	Cobbler's Pegs	0.10	
Asteraceae	*Conyza bonariensis*	Flaxleaf Fleabane	0.10	
Asteraceae	*Conyza sumatrensis*	Tall fleabane	1.00	0.10
Asteraceae	*Gamochaeta americana*	Cudweed	0.10	
Asteraceae	*Hypochaeris radicata*	Catsear	0.10	
Asteraceae	*Senecio madagascariensis*	Fireweed	0.25	0.10
Asteraceae	*Sonchus asper*	Prickly Sowthistle		0.10
Brassicaceae	*Rorippa microphylla*	One-rowed Watercress		0.10
Cyperaceae	*Cyperus aggregatus*		0.10	
Cyperaceae	*Cyperus congestus*		0.10	1.00
Poaceae	*Andropogon virginicus*	Whiskey Grass	15.00	
Poaceae	*Axonopus fissifolius*	Narrow-leafed Carpet Grass	20.00	
Poaceae	*Cenchrus clandestinus*	Kikuyu Grass	5.00	
Poaceae	*Digitaria sanguinalis*	Crab Grass	0.10	0.25
Poaceae	*Echinochloa crus-galli*	Barnyard Grass		0.20
Poaceae	*Paspalum dilatatum*	Paspalum	5.00	
Poaceae	*Paspalum notatum*	Bahia Grass	1.00	
Poaceae	*Setaria parviflora*	Pigeon Grass	0.10	
Poaceae	*Setaria pumila*	Pale Pigeon Grass		1.00
Polygonaceae	*Acetosella vulgaris*	Sheep Sorrel	0.10	
Rosaceae	*Rubus fruticosus* sp. agg.	Blackberry complex	5.00	0.1
Solanaceae	*Solanum mauritianum*	Wild Tobacco Bush	1.00	0.50
Solanaceae	*Solanum nigrum*	Black-berry Nightshade	0.10	0.10
Verbenaceae	*Lantana camara*	Lantana	0.50	1.00
Verbenaceae	*Verbena bonariensis*	Purpletop	0.10	0.10



Monitoring Plot A1 – View to the north



Monitoring Plot A1 – View to the east



Monitoring Plot A1 – View to the south



Monitoring Plot A1 – View to the west



Monitoring Plot B1 - View to the north.



Monitoring Plot B1 - View to the east.



Monitoring Plot B1 - View to the south.



Monitoring Plot B1 - View to the west.

TABLE A3.2 BASELINE FLORISTIC DATA FOR BIODIVERSITY OFFSET AREA C				
Family	**Scientific Name**	**Common Name**	**Plot C1 Cover**	**Plot C2 Cover**
Canopy				
Myrtaceae	*Corymbia gummifera*	Red Bloodwood	5	10
Myrtaceae	*Eucalyptus haemastoma*	Scribbly Gum	10	
Myrtaceae	*Eucalyptus piperita*	Sydney Peppermint		15
Myrtaceae	*Eucalyptus sieberi*	Silvertop Ash	20	10
Sub-canopy				
Myrtaceae	*Angophora costata*	Smooth-barked Apple	5	1
Proteaceae	*Banksia ericifolia subsp. ericifolia*	Heath-leaved Banksia	3	2
Proteaceae	*Banksia serrata*	Old Man Banksia	1	1
Shrubs				
Apiaceae	*Platysace linearifolia*		15	2
Apiaceae	*Xanthosia pilosa*	Woolly Xanthosia		0.3
Apiaceae	*Xanthosia tridentata*	Rock Xanthosia		1
Dilleniaceae	*Hibbertia bracteata*			1
Dilleniaceae	*Hibbertia empetrifolia subsp. empetrifolia*		0.1	0.2
Dilleniaceae	*Hibbertia linearis*		5	
Dilleniaceae	*Hibbertia procumbens*			0.2
Euphorbiaceae	*Amperea xiphoclada* var. *xiphoclada*	Broom Spurge	1	0.5
Ericaceae	*Leucopogon ericoides*	Pink Beard-heath	2	
Ericaceae	*Woollsia pungens*			3
Fabaceae (Faboideae)	*Bossiaea heterophylla*	Variable Bossiaea	2	0.5
Fabaceae (Faboideae)	*Bossiaea obcordata*	Spiny Bossiaea	0.25	0.5
Fabaceae (Faboideae)	*Bossiaea scolopendria*		0.1	
Fabaceae (Faboideae)	*Dillwynia rudis*		3	4
Fabaceae (Faboideae)	*Hovea linearis*			0.1
Fabaceae (Faboideae)	*Pultenaea rosmarinifolia*	Rosemary Bush-pea		2
Fabaceae (Mimosoideae)	*Acacia linifolia*	White Wattle	3	3
Fabaceae (Mimosoideae)	*Acacia myrtifolia*	Myrtle Wattle		0.2
Fabaceae (Mimosoideae)	*Acacia oxycedrus*	Spike Wattle	0.1	0.25
Fabaceae (Mimosoideae)	*Acacia suaveolens*	Sweet Wattle	0.2	1
Fabaceae (Mimosoideae)	*Acacia terminalis* subsp. *Bright yellow flower*	Sunshine Wattle		0.25
Lamiaceae	*Hemigenia purpurea*		0.25	
Myrtaceae	*Leptospermum parvifolium*			1
Myrtaceae	*Leptospermum polygalifolium* subsp. *cismontanum*	Tantoon		5
Myrtaceae	*Leptospermum trinervium*	Flaky-barked Tea-tree	10	10
Phyllanthaceae	*Phyllanthus hirtellus*	Thyme Spurge	0.3	0.2
Proteaceae	*Banksia ericifolia subsp. ericifolia*	Heath-leaved Banksia	1	5

TABLE A3.2 BASELINE FLORISTIC DATA FOR BIODIVERSITY OFFSET AREA C				
Family	**Scientific Name**	**Common Name**	**Plot C1 Cover**	**Plot C2 Cover**
Proteaceae	*Banksia oblongifolia*	Fern-leaved Banksia		0.5
Proteaceae	*Banksia serrata*	Old Man Banksia	2	
Proteaceae	*Conospermum longifolium* subsp. *longifolium*	Long Leaf Smoke Bush	2	2
Proteaceae	*Grevillea buxifolia subsp. buxifolia*	Grey Spider Flower	5	1
Proteaceae	*Grevillea sericea subsp. sericea*	Pink Spider Flower	5	10
Proteaceae	*Hakea sericea*	Needlebush		3
Proteaceae	*Isopogon anemonifolius*	Broad-leaf Drumsticks	0.5	0.25
Proteaceae	*Lambertia formosa*	Mountain Devil	0.1	0.5
Proteaceae	*Lomatia silaifolia*	Crinkle Bush		0.25
Proteaceae	*Persoonia isophylla*	Pine-leaved Geebung	10	1
Proteaceae	*Persoonia levis*	Broad-leaved Geebung	0.5	1
Proteaceae	*Petrophile pulchella*		0.25	0.25
Rutaceae	*Boronia ledifolia*	Showy Boronia	0.5	4
Rutaceae	*Boronia pinnata*			0.2
Rutaceae	*Philotheca hispidula*		0.5	0.25
Santalaceae	*Leptomeria acida*	Sour Currant Bush		1
Thymelaeaceae	*Pimelea linifolia* subsp. *linifolia*	Slender Rice Flower	5	2
Ground Layer				
Ferns and Allies				
Schizaeacea	*Schizaea bifida*	Comb Fern		0.1
Lindsaeaceae	*Lindsaea linearis*	Screw Fern		0.1
Herbs - Climbers				
Smilacaceae	*Smilax australis*	Native Sarsparilla		0.2
Dicots (Herbs)				
Apiaceae	*Actinotus helianthi*	Flannel Flower	5	
Apiaceae	*Actinotus minor*	Lesser Flanner Flower	0.2	10
Goodeniaceae	*Dampiera stricta*			0.2
Goodeniaceae	*Scaevola ramosissima*	Snake Flower	0.2	
Rubiaceae	*Pomax umbellata*		0.2	
Monocots (Grasses)				
Poaceae	*Anisopogon avenaceus*	Oat Speargrass	5	20
Poaceae	*Entolasia stricta*	Wiry Panic	15	15
Poaceae	*Eragrostis brownii*	Brown's Lovegrass		0.2
Monocots (Others)				
Anthericaceae	*Caesia parviflora*	Pale Grass-lily	0.1	
	Thysanotus tuberosus	Common Fringe Lilly	0.1	
Cyperaceae	*Caustis flexuosa*	Curly Wig	0.2	1
Cyperaceae	*Caustis pentandra*	Thick Twist Rush		0.2
Cyperaceae	*Cyathochaeta diandra*		1	10

TABLE A3.2 BASELINE FLORISTIC DATA FOR BIODIVERSITY OFFSET AREA C				
Family	**Scientific Name**	**Common Name**	**Plot C1 Cover**	**Plot C2 Cover**
Cyperaceae	*Lepidosperma laterale*			0.1
Cyperaceae	*Schoenus melanostachys*	Black Bog-rush		5
Doryanthaceae	*Doryanthes excelsa*	Gymea Lily		5
Haemodoraceae	*Haemodorum planifolium*		1	0.4
Iridaceae	*Patersonia sericea*	Silky Purple-flag	0.1	
Lomandraceae	*Lomandra glauca*	Pale Mat-rush	0.1	
Lomandraceae	*Lomandra obliqua*		0.1	0.1
Orchidaceae	*Cryptostylis erecta*	Bonnet orchid	0.1	
Phormiaceae	*Dianella prunina*		0.1	0.1
Restionaceae	*Empodisma minus*	Wire Rush		0.3
Restionaceae	*Lepyrodia scariosa*		0.1	1
Xanthorrhoeaceae	*Xanthorrhoea media*		4	0.4
Xyridaceae	*Xyris gracilis*			0.3
Exotics				
Poaceae	*Andropogon virginicus**	Whisky Grass		0.1



Monitoring Plot C1 View to the north.



Monitoring Plot C1 View to the east.



Monitoring Plot C1 View to the south.



Monitoring Plot C1 View to the west.



Monitoring Plot C2 View to the north.



Monitoring Plot C2 View to the east.



Monitoring Plot C2 View to the south.



Monitoring Plot C2 View to the west.

Appendix 10
HERITAGE INSPECTION REPORT

INSITE HERITAGE
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M 0412836031
ABN 70 110 716 080

Howes Reserve and Grant Sands Monitoring Report.

Aboriginal art sites

Report to

Grant Sands

March 2021

Introduction

Insite Heritage Pty Ltd were commissioned by Grant Sands to provide an Aboriginal Heritage Monitoring Report of Howes Reserve and the engravings at Grant Sands. The monitoring is required on a five yearly basis under the Aboriginal Cultural Heritage Management Plan (Sect 2.6 - 2015) and project approval no. 08_0099.

Howes Reserve and Grant Sands were revisited in December 2020 and key points were photographed to identify if any changes had occurred over the previous 5 years.

Key observation points were identified across the site for a photographic record.

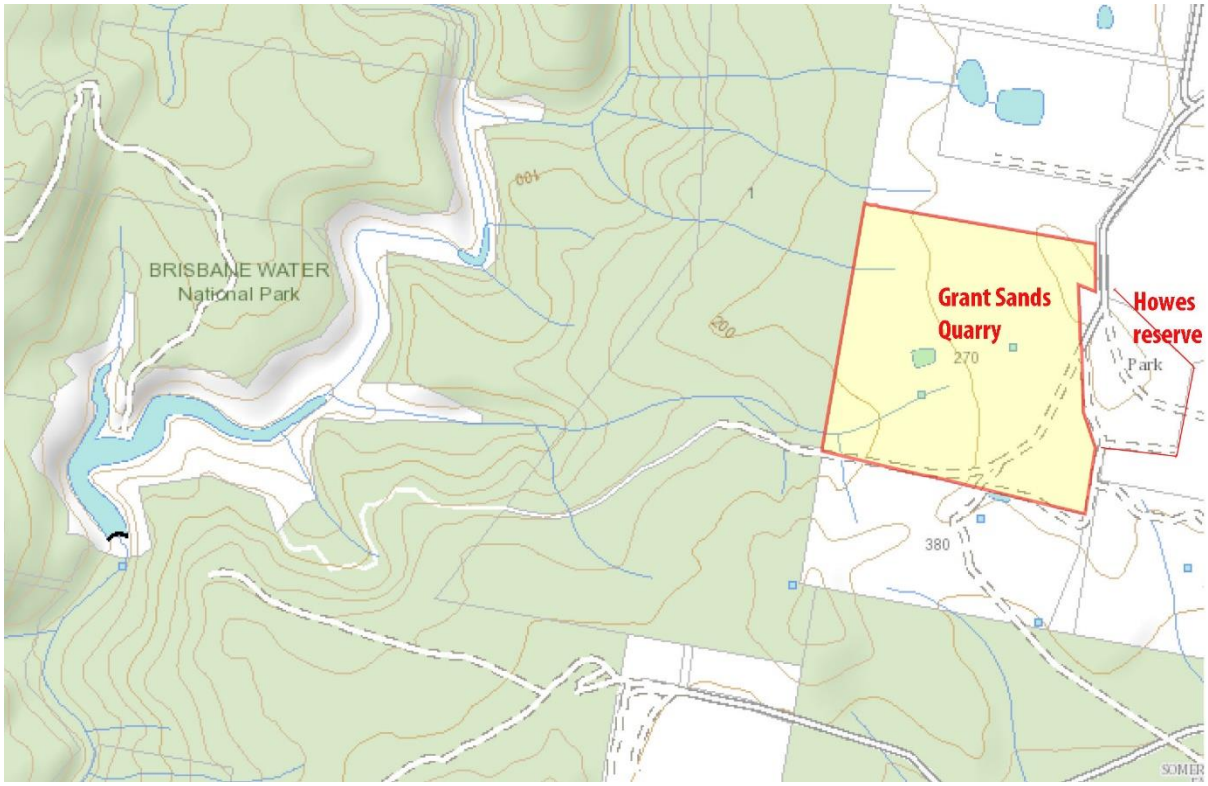


Figure 1 General Location - SIX maps

On the 21st December 2020 the engraving sites were inspected with Tracey Howie (Guringai Tribal Link) and Barry Williams (Darkinjung LALC) to check on any potential impacts caused by the quarry expansion.

Graham Jones (quarry owner) accompanied the team to the engravings on Grant Sands property and following that inspection, the team inspected Howes Reserve.



Figure 2 Photographic points - Google Earth



Plate 1 Howes Reserve - Photographic point 1 view north east



Plate 2 Howes Reserve - Photographic point 2 view north west



Plate 3 Howes Reserve - Photographic point 3 view north to the side face of the rock shelf



Plate 4 A natural crack in the rockshelf on the vertical side view point 3. The crack has not widened since first recording in 2015



Plate 5 Howes Reserve - Photographic point 4 view north east



Plate 6 Howes Reserve - Photographic point 5 view west-over the Daramulum figure



Plate 7 Howes Reserve - View south west photographic point 6 view over two eel or whale figures

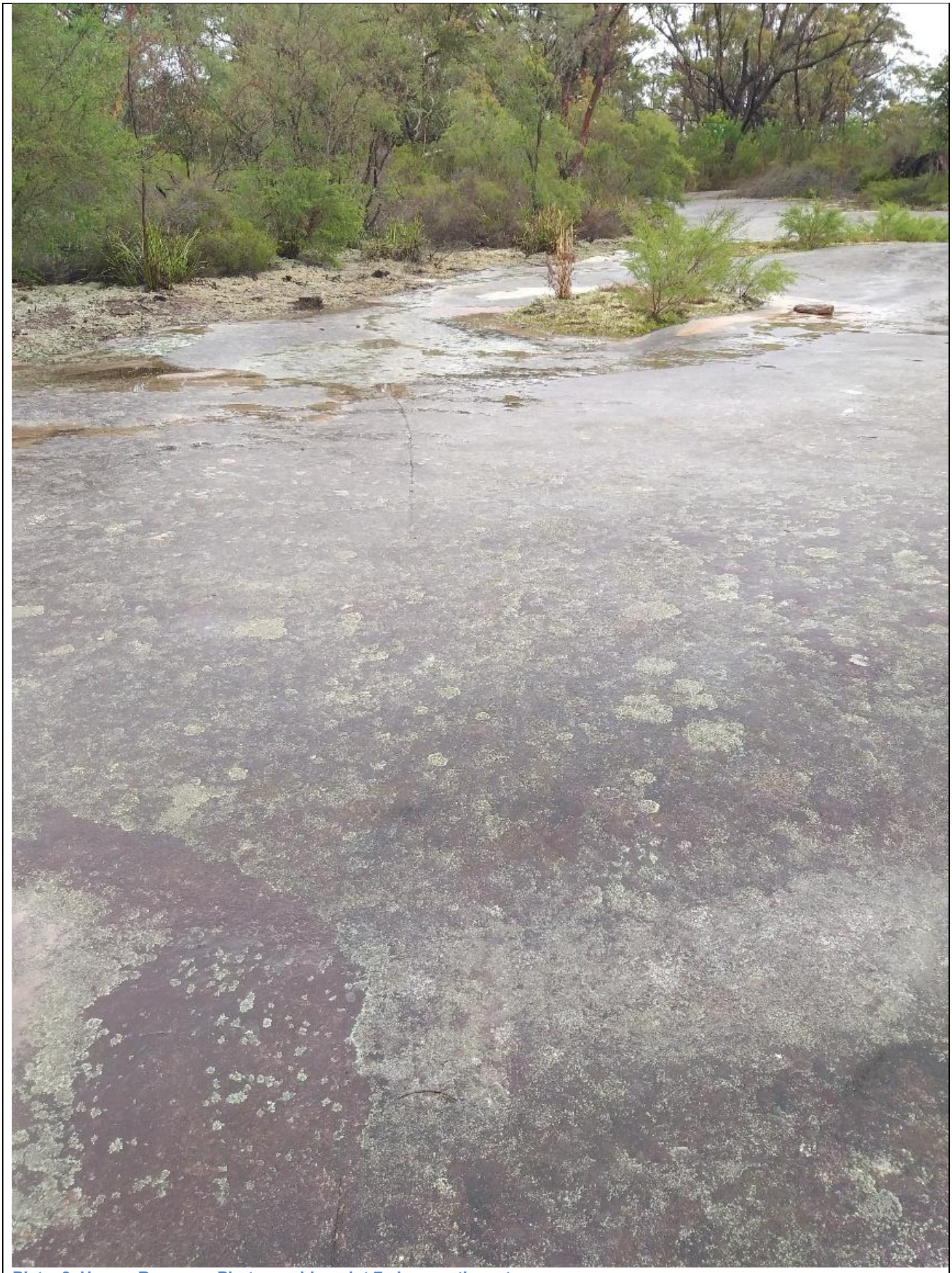


Plate 8 Howes Reserve - Photographic point 7 view south east



Plate 9 Howes Reserve - Photographic point 8 view east



Plate 10 Grant Sands - View west over the rock exposure with engraving 2020



Plate 9 View of Outcrop with Engraving Grants Rd RE 1 2013.

Plate 11 View north over the same sandstone exposure in 2013 when the engraving was identified.



Plate 1 The rock engraving identified at the Grants Rd RE 1 site.

Plate 12 The anthropomorphic engraving highlighted with water 2013 view west



Plate 13 The location of the small mundeo RE2 at Grant Sands and the block placed to divert vehicle movements around it. The mundoe is not discernible due to moss growth

Conclusion

The agents of potential impact to the rock engravings that were identified at the time of the quarry assessment were;

- Vibration – due to heavy machinery and quarrying activities,
- Dust – which could build up over engravings and encourage plant growth – the roots of which could damage engravings.

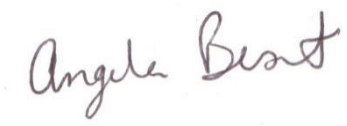
The monitoring of Howes Reserve did not show any indication of impact from the quarrying activities at Grant Sands. The vertical crack on the southern side of the Howes Reserve rockshelf has not widened during the intervening period, which indicates that vibration has not caused any impact to the Reserve.

In general the vegetation on Howes reserve is generally becoming thicker. The engravings in the reserve remain clearly discernible and there was no evidence of dust build up or vegetation encroachment on to the engravings.

The anthropomorphic figure RE1 on the Grant Sands site has become more difficult to discern due to natural weathering. The soft nature of the sandstone of the site makes the engraving vulnerable to natural weathering processes. Darkinjung LALC and Guringai Tribal Link were going to talk to the community groups and consider what, if anything, can be done to protect or rejuvenate the site. No works will be undertaken with out consultation with NPWS.

Regards,

Insite Heritage Pty Ltd



Angela Besant
Snr Archaeologist
Insite Heritage.

References

Insite Heritage 2013 Grants Road Sand Quarry Extension. Report to Peter Andrews & Associates.

Insite Heritage 2015 Grants Road Sand Quarry Extension Aboriginal Cultural Heritage Management Plan (Project Approval No. 08_0099). Report to Peter Andrews & Associates on behalf of GR & AK Jones.

Grant Sands Annual Review 2020 – Heritage
Conditions of Consent Compliance

The Cultural Heritage Management Plan – submitted and approved by the Department of Planning in October 2015.

Cultural Heritage Monitoring

2.13.2 Cultural Heritage Monitoring Reporting
The monitoring of the sites will be undertaken upon completion of the protective fencing and signage of the site Grants Road RE1 or one year after approval (25th July 2015) which ever arises first.

As per the inspection, post approval, undertaken by Insite Heritage Pty Ltd, in 2015, the sandstone block wall, 8m perimeter fencing and signage have remained in-situ throughout 2020. These mitigation measures were undertaken as per the CHMP and Statement of Commitments.



Plate 1 – December 2020 The engraving site Grant Sands note the inner and outer fencing remain in place and are providing the required protection.

It was noted that the engraving has become less discernible over the last six years, which appears to be due to weathering as there was no evidence that the quarry operations have impacted the engraving in any way.

The monitoring of Howes Reserve in conjunction with the Grants Sand site was undertaken with Tracey Howie of Guringai Tribal Link and Barry Williams of Darkinjung LALC as per the CHMP requirement. A visual inspection was undertake in three main areas – the main area of engravings to the south east, the exposed for sheet to the south west including the vertical engraving on the rock shelf face, and the rock shelf to the north side of Howes Reserve.



Figure 1 Grant Sands relative to Howes Reserve – Location of the rock crack and engravings



Plate 1 Engraving on vertical face on the Grant Sands side of Howes Reserve 2020



Plate 2 A natural crack in the rock shelf directly east of plate 3. First recorded in 2015 there has been no change in the width of the crack.



Plate 3 Anthropomorphic figure Howes Reserve located 350m east of the quarry 2020



Plate 4 Eel engravings on rockshelf with plate 3 (one of 3 eels side by side) view south east Rockshelf 3

The inspection of Howes Reserve did not find any evidence of deterioration in the engravings or impact to rock shelves. At the time of inspection it had rained, and it is evident that natural sheet erosion of the sandstone rock shelves and wash from the access road through the reserve, have produced some sand that washes over the lower lying sites.

Biodiversity offsets

There has been no activity (ie. ground disturbance works) in the biodiversity offset area that has required a cultural heritage inspection in 2020. This is due to the purchase of an off-site biodiversity offset.

Complaints
There have been no complaints regarding cultural heritage in this period.

Table 1 – Environmental Performance Heritage.

Environmental Aspect	Approval Criteria: Requirements in the management plan; Relevant predictions in the EA	Summary of Results in the Previous Reporting Period	Summary of Results in this reporting period	Improvement Measures to be implemented
Heritage	Item 2.8 as per the approved CMP Stakeholder access to heritage sites.	A site visit with representatives of Guringai and DLALC was carried out in December 2020.	It was noted that the engraving on Grant Sands site has weathered.	It was agreed that there is little that can be done other than renewal of the engraving. DLALC and Guringai to enquire with the relevant authorities as to if this can be done.
	Item Requirements in the management plan			
	Relevant prediction in the EA	Protection of cultural sites from harm.	Sites remain protected from harm.	Monitoring program carried out in 2020. Report to be lodged with AHMS in 2021.

Table 2 – Compliance Status table – Cultural heritage management plan

Unique ID	Compliance Requirement	Development Phase	Monitoring methodology	Evidence and comments
2.11	OEH to be notified of the discovery of an unknown object or cultural site.	At all times	Identification and notification of finds. No finds this reporting period.	Incident protocol Incident notification tracking report Compliance Report
2.12	Discovery of human remains – notification of OEH and NSW Police.	At all times	Track and compare incident times to Planning Secretary notification times No incidents this reporting period.	Incident protocol Incident notification tracking report Compliance Report
2.13.1	Biodiversity Offset Area to be inspected prior to revegetation works.	At all times.	Notification for inspection required prior to revegetation works in the BDO.	No works notified in this period.
2.13.2	Monitoring of the conserved sites RE1 and RE 2 along with the Howes Aboriginal Reserve every five years.	At all times	Monitored as per requirements	Monitoring report to be prepared and lodged with OEH and Grant Sands. Any issues identified to be managed as per recommendations, in consultation with OEH and stakeholders.

Appendix 11
COMMUNITY CONSULTATION
The Department of Planning, Industry and Environment

COMMUNITY CONSULTATIVE COMMITTEE
MINUTES OF THE MEETING HELD THURSDAY 30TH JULY 2020
AT SOMERSBY GARDENS ESTATE

	NAME	ORGANISATION
PRESENT	Lisa Andrews (LA)	Independent Chairperson
	Charles Sammut (CS)	Community Representative
	Steven Jones (SJ)	Grants Rd Quarry
	Leanne Jones (LJ)	Grants Rd Quarry
	John Birkett (JB)	Community Representative
	Brett Eddy (BE)	Central Coast Council representative
	Jeffrey Gay (JG)	Community Representative

The CCC Meeting was opened at 2.11pm. Attendees were appropriately socially distanced, signed a COVID-19 health check declaration, hand sanitiser was used, masks and gloves were made available.

<table>
<tr><td>WELCOME & INTRODUCTIONS</td><td>The chair welcomed all present and thanked them for their attendance. LA introduced the new community representative, John Birkett, who has been approved by the DPIE for membership on the CCC. JB was invited to provide some background on himself (local resident for 28 years. Retired truck driver).</td><td></td></tr>
<tr><td>APOLOGIES</td><td>Nil.</td><td></td></tr>
<tr><td>DECLARATION OF INTEREST</td><td>LA declared that she is an approved Independent Chairperson with the Department of Planning, appointed by the Secretary to chair this CCC and engaged by Grants Rd Sand.</td><td>No changes to members' previous declarations.</td></tr>
<tr><td>BUSINESS ARISING</td><td>There was 1 actions item from the previous meeting:
<table><tr><th>ITEM</th><th>ISSUE</th><th>RESPONSIBILITY</th></tr><tr><td>1</td><td>Report to DPIE for its consideration of new community representative nomination. (Complete – sent to DPIE 20/9/19)</td><td>LA</td></tr></table></td><td></td></tr>
<tr><td>CORRESPONDENCE</td><td>As per correspondence report sent out with the meeting notice on 14/7/20:
12/9/19 - Email to members with the draft minutes for review.
20/9/19 – Email to members with the finalised minutes
20/9/19 – Email to DPIE with the assessment report for the new community representative.
22/10/19 – Email from DPIE endorsing JB's appointment on this CCC.
22/10/19 - Letter to JB congratulating him and providing CCC guidelines and forms for completion.</td><td>Accepted.</td></tr>
</table>

	• 10/3/20 – Email to members with the meeting notice, agenda & correspondence report for this meeting. • 10/3/20 – Letter to JB with the same information. • 14/7/20 – Email to members with the meeting notice for the rescheduled CCC. • 14/7/20 – Letter to JB with the same information.	
REPORT/PROJECT UPDATE	• SJ advised that the quarry continues to operate in accordance with its approval. • Production slowed due to the COVID-19 pandemic, however, they continue to work with one operator and one machine. • Slowly getting back to 70% production numbers. • JG asked if quarrying was mainly blocks. With SJ responding, yes, blocks and washed sand are main products for the quarry. • SJ advised that they have been able to access JobKeeper for some of the employees. • Building projects are still continuing in Sydney and it is hoped that the new economic stimulus package for the construction industry will assist. • SJ stated that they are pleased with the upgrading of Grants Road and that contributions paid over the years have assisted in these works. BE enquired whether SJ was happy with the signage on the corner or if more was needed. SJ advised that signage was adequate however, was being covered by foliage from vegetation. BE took details, including information provided by JB on an area half way down Grants Road that required trimming (50m past caravan storage property on the opposite side). • SJ stated that during the recent heavy rain, the drainage worked well on Grants Road. • JG recommended that the hard stand area at the intersection of Keighley Rd & Vitasalo Rd be sealed, as currently only gravel. Preference would be 12mm bitumen over the top (smooth). • JG commented that the trucks seemed to have slowed down with no sense of urgency. Also that the front of Mrs Walker's property has been improved with the road works rectifying the dust problem. • SJ advised that the Department of Planning, Industry & Environment has accepted the project's 2019 Annual Report. • Monitoring continues to be carried out on a regular basis for environmental, air, noise and water management with no exceedances. • No complaints have been received. • Truck movements are well within the approved numbers. • BE advised that the Wisemans Ferry Road upgrade, on the northern side of the industrial estate, is close to finalisation. Work is still to	

	occur on the link between Wisemans Ferry Road and Pile Road. • BE explained the proposed upgrade and traffic movement works for the Pile Rd/Wisemans Ferry Road intersection. CS expressed his concern with the proposal due to safety reasons and put forward a motion that the committee write to CC Council raising these concerns; recommending that Piles Rd not be opened up to Wisemans Ferry Road and to remain a cul-de-sac. It was agreed that whilst this issue was outside the project area for this CCC, it is still a forum for the community to raise concerns.	
GENERAL BUSINESS	Nil.	
NEXT MEETING	The CCC meetings will continue to be held bi-annually. LA suggested that as this meeting was postponed 4 months due to the COVID-19 pandemic that the next scheduled meeting be put back two months – proposing Thursday **12th November 2020**, commencing at 2pm (same venue - Somersby Gardens Estate). **Agreed.**	

Meeting closed at 2.43pm with LA thanking all for their attendance.

ACTION ITEM

ITEM	ISSUE	RESPONSIBILITY
1	Write to Central Coast Council regarding the proposed road design for the intersection of Pile Road and Wisemans Ferry Road Somersby.	LA

COMMUNITY CONSULTATIVE COMMITTEE
MINUTES OF THE MEETING HELD THURSDAY 17TH DECEMBER 2020
AT SOMERSBY GARDENS ESTATE

	NAME	ORGANISATION
PRESENT	Lisa Andrews (LA)	Independent Chairperson
	Steven Jones (SJ)	Grants Rd Quarry
	Leanne Jones (LJ)	Grants Rd Quarry
	John Birkett (JB)	Community Representative
	Brett Eddy (BE)	Central Coast Council representative
	Jeffrey Gay (JG)	Community Representative

<table>
<tr><td>WELCOME & INTRODUCTIONS</td><td>The chair welcomed all present and thanked them for accommodating the change in date.</td><td></td></tr>
<tr><td>APOLOGIES</td><td>Charles Sammut.</td><td></td></tr>
<tr><td>DECLARATION OF INTEREST</td><td>LA declared that she is an approved Independent Chairperson with the Department of Planning, appointed by the Secretary to chair this CCC and engaged by Grants Rd Sand.</td><td>No changes to members' previous declarations.</td></tr>
<tr><td>BUSINESS ARISING</td><td>There was 1 actions item from the previous meeting:
<table><tr><th>ITEM</th><th>ISSUE</th><th>RESPONSIBILITY</th></tr><tr><td>1</td><td>Write to Central Coast Council regarding the proposed road design for the intersection of Pile Road and Wisemans Ferry Road Somersby. Complete.</td><td>LA</td></tr></table>Council's response was read out to the committee.
The chair also noted the email from BE on 4/8/20 requesting Council undertake vegetation maintenance along Grants Rd, at the sites identified by members of the committee at the previous CCC.</td><td>LA clarified this issue with members. Advising that whilst it wasn't a matter for this project CCC, however, she was happy to write to Council on the community's behalf.

Noted.</td></tr>
<tr><td>CORRESPONDENCE</td><td>As per correspondence report sent out with the meeting notice on 7/12/20:
4/8/20 – Email from BE advising that he had requested vegetation maintenance to be undertaking along Grants Rd at the sites identified by the members of the committee.
12/8/20 - Email to members with the draft minutes for review.
22/8/20 – Email to members with the finalised minutes
7/11/20 – Email to members postponing the CCC meeting for 12/11/20 and rescheduling for 17/12/20.</td><td>Accepted.</td></tr>
</table>

	• 7/11/20 – Letter & text message to JB with the same information. • 7/12/20 – Email to members with the meeting notice and agenda for this meeting. • 7/12/20 – Letter to JB with the same information.	
REPORT/PROJECT UPDATE	• SJ advised that the quarry continues to operate in accordance with its approval. • Business as usual, however, COVID had affected the commercial operations, which are down 10-15% on previous years. • No complaints have been received or concerns raised by the community. • The job on Grants Road was held up following the recent rain fall. • JG commented that the trucks are not going any faster and the drivers are doing the right thing. JB concurred with this observations, stating that all drivers were behaving. • SJ advised that there have been no exceedances with Dust Monitoring or Noise Monitoring. He advised that the standard has changed for dust monitoring, down from .1 to .05 to measure silica. • BE advised that the Traffic Committee has been in abeyance due to COVID restrictions, however, will be reforming soon. BE recalled that there may have been an issue at an earlier that the CCC wished the Traffic Committee to consider in terms of pedestrian/cyclist interaction on the verge of Grants Rd. Following discussions it was agreed that this was not a major issue. • JG enquired whether SJ was receiving any enquiries about landscape blocks. SJ confirmed that they will quote and supply any size. Customers just need to contact them direct.	
GENERAL BUSINESS	• JG recommended that the new works at the intersection of Keighley Rd & Vitasalo Rd needed a bit of attention, as the bitumen was a bit thin. BE said that he would look at this.	
MEETING SCHEDULE FOR 2021	Given there are no issues, environmental concerns or complaints with the operation of the quarry and following discussions with the committee, it was agreed to move the bi-annual meetings to an annual meeting – Thursday 17th June 2021, commencing at 2pm. Of course, should there be any need to convene the CCC at any time, the chair will call an extraordinary meeting at the request of any community member, stakeholder group or the proponent.	**Agreed**

Meeting closed at 2.28pm with LA thanking all for their attendance.

ACTION ITEM

ITEM	ISSUE	RESPONSIBILITY
1	Look at surface at the intersection of Keighley Rd & Vitasalo Rd	BE
2	Send copy of Central Coast Council's response to the CCC regarding the Piles Rd design and roadworks	LA

JM Environments
0427 893 668
37 Tooke St
COOKS HILL NSW 2300
ABN 67 166 341 288

Appendix E



Photograph 1: Quarry pit with vegetation stabilised bund



Photograph 2: Water in the quarry void



Photograph 3: 10ML dam under construction



Photograph 4: Fenced Cultural Heritage Item (RE1) with block fence in the background



Photograph 5: Example of a survey peg depicting the limits of quarrying



Photograph 6: Sand washing