



## **Independent Environmental Audit:**

**Calga Sand Quarry**

**DA 94-4-2004, NSW**



Audit Reference:	<b>AQUAS Job No. 1231.03</b>
Audit Organisation:	<b>Hanson Constructions Materials</b>
Auditors:	<b>James Hart, AQUAS Martin Hicks, AQUAS Peter Dundon,</b>
Date of Audit:	<b>3 July 2018</b>
Draft Report Submitted:	<b>19 October 2018</b>
Final Report Submitted:	<b>25 October 2018</b>

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## Independent Audit Certification Form

**Development Name** Calga Sand Quarry  
**Development Consent No.** DA 94-4-2004 (as modified June 2017)  
**Description of Development** Sand Quarry  
**Development Address** Lot 2 in DP 229889, Peats Ridge Road, Calga  
**Operator** Hanson Heidelberg Group (Hanson)  
**Operator Address** Level 10, 35 Clarence Street Sydney, NSW 2000

## Independent Audit

**Title of Audit** Independent Environmental Audit: Calga Sand Quarry (DA 94-4-2004), NSW

I certify that I have undertaken the independent audit and prepared the contents of the attached independent audit report and to the best of my knowledge:

- The audit has been undertaken in accordance with relevant approval condition(s) and in accordance with the auditing standard AS/NZS ISO 19011:2014 and Post Approval Guidelines – Independent Audits;
- The findings of the audit are reported truthfully, accurately and completely;
- I have exercised due diligence and professional judgement in conducting the audit;
- I have acted professionally, in an unbiased manner and did not allow undue influence to limit or over-ride objectivity in conducting the audit;
- I am not related to any owner or operator of the development as an employer, business partner, employee, sharing a common employer, having a contractual arrangement outside the audit, spouse, partner, sibling, parent, or child;
- I do not have any pecuniary interest in the audited development, including where there is a reasonable likelihood or expectation of financial gain or loss to me or to a person to whom I am closely related (i.e. immediate family);
- Neither I nor my employer have provided consultancy services for the audited development that were subject to this audit except as otherwise declared to the lead regulator prior to the audit; and
- I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from fair payment) from any owner or operator of the development, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so.

Note.

a) The Independent Audit is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.

b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).

Signature



**Name of Lead or Principal Auditor** James Hart  
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**Auditor Certification** Exemplar Global Lead Environmental Auditor No 12107  
**Date** 25 October 2018

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## Abbreviations

AQMP	Air Quality Management Plan
DA	Development Approval
DP&E	Department of Planning and Environment
DoH	Department of Housing
EMS	Environmental Management Strategy
EPA	Environment Protection Authority
EPL	Environment Protection Licence
LRMP	Rehabilitation and Landscape Management Plan
NMP	Noise Management Plan
NOW	NSW Office of Water
OEH	Office of Environment and Heritage
RMS	Roads and Maritime Services
SWMP	Site Water Management Plan
WAL	Water Access Licence

# 1 INTRODUCTION

## 1.1 Overview

Hanson Construction Material Pty Ltd (Hanson) operate the Calga Sand Quarry, an existing sand quarry located at Lot 151 Peats Ridge Rd, Calga NSW 2250. The Quarry is located on the Somersby Plateau, approximately 1.0km northwest of the Calga Interchange on the M1 Freeway within Lot 2 in DP 229889, Peats Ridge Road, Calga, and is surrounded by rural land holdings, national park and the Australian Walkabout Park.

Hanson was granted Development Approval in June 2017 for the Calga Sand Quarry Extension (Stage 3). This approval was granted as an extension to the original development approval (DA94-4-2004).

The conditions of approval require Hanson to appoint an independent auditor to assess compliance with the Minister's Conditions of Approval obtained for the quarry operations.

Schedule 5, condition 11 of the approval requires an Independent Environmental Audit to be conducted within one year of the date of the commencement of quarrying operations, and every 3 years thereafter, unless the Secretary of the DPE directs otherwise. The condition requires the proponent to commission and pay the full cost of the audit. The audit must:

- a) Be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been approved by the Secretary;
- b) Include consultation with relevant agencies;
- c) Assess the environmental performance of the project, and whether it is complying with the relevant requirements in this consent and any relevant EPL or necessary water licences for the development (including any assessment, strategy, plan or program required under these approvals);
- d) Review the adequacy of any strategy/plan/program required under this approval; and, if necessary
- e) Recommend appropriate measures or actions to improve the environmental performance of the development, or any assessment, strategy, plan or program required under the abovementioned approvals.

## 1.2 Audit Objectives

The objective of this Independent Environmental Audit was to assess the operations at the Calga Sand Quarry and provide a report in accordance with the requirements of Schedule 5, condition 11 of the development approval.

## 1.3 Audit Scope and Criteria

The scope of this audit was limited to the site, being within Lot 2 in DP 229889, Peats Ridge Road, Calga, and the activities and processes carried out by Hanson in operating the quarry. The audit is the first for the project and covered the period since between when operations commenced under SSD\_6084 and the date of the site inspection, i.e. June 2017 to June 2018.

The audit scope included:

- the conditions of all relevant approvals;

- management plan requirements;
- the requirements of relevant regulatory agencies;
- the status of the operation;
- the performance of the operation;
- results from previous audits;
- any incidents or community complaints;
- feedback received from other regulatory agencies on the performance of the operation; and
- feedback received from the community / community consultative committee on the performance of the operation.

The audit criteria were developed by the Lead Auditor, and are included as a checklist at the end of this report.

## 2 Methodology

The audit methodology included a review of approval conditions and key management plans prepared for the quarry operations, interviews with project personnel, and a site inspection to assess the level of compliance with and implementation of those requirements.

### 2.1 Audit Team

The audit was conducted by the following:

Auditor	Role	Qualifications and Experience
James Hart	Lead Environmental Auditor Exemplar Global No 12105	See attached CV
Martin Hicks	Environmental Auditor	See attached CV
Peter Dundon	Groundwater Specialist	

James Hart, Martin Hicks and Peter Dundon were endorsed by the Secretary of the Department of Planning and Environment on 23 May 2018.

### 2.2 Approvals and Documents Audited

The following documents and approvals were reviewed and included within the audit:

- Development Approval – DA94-4-2004 (Modified June 2017);
- Air Quality Management Plan – Calga Sand Quarry, Final 19 October 2017;
- Noise Management Plan – Calga Sand Quarry, Final 19 October 2017;
- Site Water Management Plan – Calga Sand Quarry, February 2006;
- Rehabilitation and Landscape Management Plan – Calga Sand Quarry, August 2006;
- Environmental Management Strategy – Calga Sand Quarry, February 2006;
- Groundwater Contingency Strategy V04, Calga Sand Quarry, November 2016;
- Environmental Protection Licence No 11295, NSW EPA, 24 July 2016;
- Environmental Management Annual Review, Calga Quarry 1 January 2017 to 31 December 2017;



- Calga Sand Quarry Complaints Registers; and
- Water Access Licences 2541, 17384, 20019 and 27185.

### 2.3 Agency and Community Consultation

The following people were consulted with prior to the audit to obtain feedback and to focus the audit criteria towards key issues.

Contact	Agency	Comments
Emmanuel Smith-Aspros Compliance Officer	Department of Planning & Environment	Close out of previous audit issues.
Lisa Andrews	Community Consultative Committee – Chairperson.	The main interest of concern for the community is traffic (truck) movements, dust and rehabilitation
Matthew Corradin A/Unit Head Hunter South	NSW Environment Protection Authority – North Branch	Ensuring the scheduled activities are correct; Ensuring the fee based activity scales are correct; and Reviewing air quality monitoring results and determining whether point and/or fugitive dust emissions are being mitigated and managed appropriately.
Mairin Ireland Environmental Management Coordinator Environmental Reporting	Central Coast Council	No specific issues.
Kerry Lee Water Regulation Officer Customer Assessments and Approval Customer and Community		No response.

### 2.4 Name and Position of Persons Interviewed

The following site personnel were interviewed during the conduct of the audit:

Name	Position/Role	Organisation	Date of Interview
Shane Pescud	Quarry Manager	Hanson Construction Materials	3/07/2018
Paul Slough	Project Manager	Hanson Construction Materials	3/07/2018
Belinda Pignone	Graduate Environmental and Compliance Coordinator	Hanson Construction Materials	3/07/2018

## 2.5 Audit Process

The audit commenced with an Opening Meeting to confirm the scope, purpose, and timeline of the audit. The Opening Meeting was held at 08.00am, 3 July 2018, in the Calga Sand Quarry site office.

Key operational documents were reviewed, and evidence of compliance was sought through the interview process. Key documents were the various management plans required under the approval. Documentation included a combination of hard copy records and electronic records maintained by Hanson, with records generally available during the audit. Additional records were provided subsequent to the onsite audit.

A site inspection was then conducted, which included inspection of roads and drainage structures, inspection of access control measures implemented, and inspection of quarrying operations. At the time of audit, activities being undertaken included extraction, crushing and loading operations.

A closing meeting was held at 5.00pm on 3 July 2018 where the preliminary audit findings were presented. Where aspects of the audit remained unresolved, Hanson was requested to provide additional information.

## 2.6 Audit Compliance Definitions

<b>Compliant</b>	Where the auditor has collected sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit
<b>Not verified</b>	Where the auditor has not been able to collect sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the audit.
<b>Non-compliance</b>	Where the auditor has collected sufficient verifiable evidence to demonstrate that the intent of one or more specific elements of the regulatory approval have not been complied with within the scope of the audit.
<b>Administrative non-compliance</b>	A technical non-compliance with a regulatory approval that would not impact on performance and that is considered minor in nature (e.g. report submitted but not on the due date, failed monitor or late monitoring session).
<b>Not triggered</b>	A regulatory approval requirement has an activation or timing trigger that had not been met at the time of the audit inspection, therefore a determination of compliance could not be made.
<b>Observation</b>	Observations are recorded where the audit identified issues of concern which do not strictly relate to the scope of the audit or assessment of compliance. Further observations are considered to be indicators of potential non-compliances or areas where performance may be improved.
<b>Note</b>	A statement or fact, where no assessment of compliance is required.

## 2.7 Issues to be considered in reviewing this report

This audit was based on a review of compliance with the approval conditions for the operation of Calga Sand Quarry.

In particular, the audit focused on the implementation of measures described in the various Environmental Management Plans to manage the impacts of the activities on the surrounding environment. The checklist appended to this report identifies those compliance issues that could be assessed given the stage of the project.

By its very nature an audit does not guarantee full compliance of all aspects of the project with the undertakings of the Management Plans and associated documentation. However; in the opinion of the auditor, the extent and scope of the field inspection together with the records maintained by Hanson were sufficient evidence to verify general compliance of the activities with the requirements of the conditions of approval.

## 3 AUDIT FINDINGS

### 3.1 Overview

Specific activities being undertaken at the time of audit were:

- Loading and haulage of material from the extraction area to the processing plant;
- Washing and screening of material;
- Stockpiling of materials;
- Loading of trucks for dispatch; and
- Operation of front end loader.

The attached checklists record the outcomes of the audit process. Ten non-compliances and fifteen administrative non-compliances were identified, where compliance with the conditions of consent, EPL, or management plans could not be verified. The following sections summarise key findings for review and action by Hanson as appropriate.

### 3.2 Previous Audit Findings

Previous audit findings were reviewed as part of the current audit to assess implementation of actions identified to address issues. Information available showed previous findings had generally been addressed. A summary of previous findings and status is provided in Appendix C.

### 3.3 Development Consent (SSD\_6084)

#### **Schedule 2 – Administrative Controls**

The site had implemented processes to generally manage compliance with the administrative control requirements of the conditions of consent. Review of administrative controls did not identify any non-compliances or administrative non-compliances.

#### **Schedule 3 – Environmental Performance Conditions**

All of the required management plans had been developed and provided to DPE for review and approval.

One non-compliance was raised in relation to noise management. Comparative sound level measurements of equipment had not been conducted, and signs had not been displayed at the exit to the site to remind all drivers to leave in a quiet manner. It was reported that signs had been obtained and were awaiting installation.

Four non-compliances were raised in relation to groundwater management. While a SWMP and Groundwater Contingency Strategy had been prepared, impact assessment criteria for groundwater

dependent ecosystems has not been documented in the plans. Further, the Groundwater Monitoring Program is required be prepared in accordance with the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004. There non-compliances were raised where implementation of the recommendations of the Mackie Environmental Research report could not be demonstrated as follows:

- All identified bores within 500m of the quarry had not been hydraulically tested;
- Continuous water level monitoring equipment installed in key monitoring bores CQ4, CQ11S and CQ13 had not been maintained in serviceable condition; and
- No water level or flow metering equipment has been installed on any private bore within 500m of quarry.

Six administrative non-compliances were identified where compliance with conditions of Schedule 3 were not demonstrated.

While information on environmental performance had been provided on the company website, Groundwater audits had not been included in the information provided.

The quarry is required to manage particulate matter emissions to ensure they do not exceed site criteria. While monitoring equipment has been purchased the equipment has not been installed.

While a Groundwater Contingency Strategy had been prepared for the Quarry, the Groundwater Contingency Strategy does not correctly describe the basis for the provision of water supply in accordance with the conditions of consent.

The Drivers code of conduct had not been submitted within required time frames, and the Annual Production Data had not been provided to DRG.

While waste transport dockets were available for waste removed from site, the Quarry had not implemented a process to monitor waste generated.

While annual production data had been included in the Annual Reviews, the annual production data had not been provided to the DRG.

#### **Schedule 4 – Additional Procedures**

Conditions of Approval under Schedule 4 Additional Procedures had not been triggered.

#### **Schedule 5 – Environmental Management, Reporting and Auditing**

Processes had been implemented to comply with environmental management requirements. An Environmental Management Strategy had been documented and implemented, management plans prepared, and an annual review process implemented.

One administrative non-compliance was identified in relation to environmental reporting. The 2017 Annual review had not been submitted to DP&E within the required timeframe.

#### **3.4 Environmental Protection Licence (EPL 11295)**

An EPL had been issued for the operations, which places requirements on the site for the management of air, noise, water, and complaints. The site had complied with requirements for monitoring of air and water, and complaints management and reporting processes have been implemented and met.

One administrative non-compliance was raised where requirements of the EPL had not been fully met. While a complaints register had been prepared and maintained, the register did not include the personal details of the complainant or, if no such details were provided, a note to that effect.

Review of the NSW EPS public register found that no non-compliances had been raised in the 2014-2018 monitoring period.

### 3.5 Air Quality Management Plan

While compliance with aspects of the Air Quality Management Plan was found, two non-compliances and one administrative non-compliance were raised where requirements of the AQMP had not been implemented.

Dust deposition monitoring had been conducted, with annual dust deposition levels being below the site criteria. However, several monthly results at monitoring location CD1 had exceeded the annual criteria. No investigations had been undertaken to assess the cause of the exceedences.

All personnel and contractors working at the Quarry are required to undergo an induction and annual re-induction including information on the management of dust and air quality while working on site. However, the site induction does not include any specific information on management of site air quality.

An administrative non-compliance was raised in relation to toolbox talks. While toolbox talks had been conducted, records did not demonstrate that meetings included discussion on air quality issues.

### 3.6 Site Water Management Plan

Review of compliance with the groundwater component of the Site Water Management Plan was conducted by Peter Dundon, with a copy of the report provided in Appendix A.

The groundwater component of the audit identified four non-compliances. While the site water Management Plan includes a monitoring program for Groundwater Dependent Ecosystems, the Site Water Management Plan does not include impact assessment criteria.

There non-compliances were raised where implementation of the recommendations of the Mackie Environmental Research report could not be demonstrated as follows:

- All identified bores within 500m of the quarry had not been hydraulically tested;
- Continuous water level monitoring equipment installed in key monitoring bores CQ4, CQ11S and CQ13 had not been maintained in serviceable condition; and
- No water level or flow metering equipment has been installed on any private bore within 500m of quarry.

Groundwater non-compliances were raised as non-compliances with the Condition of Consent Schedule 3 Condition 16.

While compliance with aspects of the SWMP was found, one non-compliance and one administrative non-compliance was raised where requirements of the SWMP had not been implemented.

A non-compliance was raised in relation to the recording of discharge water volumes. Records of water volumes in dams and, where water had been discharged from site records of the volume discharged, were not maintained.

An administrative non-compliance was raised in relation to erosion and sediment controls. While erosion and sediment controls had been implemented on site, the controls implemented were not consistent with the requirements of the SWMP.

### 3.7 Landscape and Rehabilitation Management Plan

The Quarry has been operating under a LRMP which had been submitted and approved in 2006. An updated RLMP had been prepared by Hanson in 2016 and submitted to DP&E for approval. It was noted that approval of this document had been delayed pending input from the local aboriginal council. Requirements of the Landscape and Rehabilitation Management Plan (LRMP) had generally been implemented. C Toolijooa Environmental Restoration have been engaged to conduct rehabilitation and weed management for the site.

Erosion and sediment controls had been established and maintained.

No non-compliances had been identified in relation to the landscape and rehabilitation management. However, two administrative non-compliance were raised in relation to:

- Vegetation clearance procedures had not been updated to reflect the current status of the project, and
- Records of general waste collected had not been maintained.

### 3.8 Noise Management Plan

The site had implemented measures to comply with site working hours, and noise monitoring had been conducted during operational periods of the quarry in accordance with the requirements of the noise management plan and the EPL. Noise monitoring results indicated the site was complying with noise limits.

One non-compliance was raised in relation to noise management.

- While all personnel and contractors working at the Quarry are required to undergo an induction and annual re-induction including information on the management of noise while working on site the site induction does not include any specific information on management of noise impacts.

Four administrative non-compliances were also raised in relation to:

- While noise monitoring had been conducted, noise monitoring had not been conducted at all the site specified in the NMP (Not conducted at CN-9).
- Noise monitoring reports do not include all information required to demonstrate noise monitoring had been conducted in compliance with all the requirements of the Noise Management Plan and EPL. Records of calibration, use of a hand held anemometer to confirm wind speeds, and comment on noise characteristics (e.g. tonal) were not included.
- Where noise complaints had been received, records did not always show who made the complaint or who responded to the complaint, and complaints had not always been responded to in a timely manner.
- While toolbox talks had been conducted, records did not demonstrate that meetings included discussion on noise management issues.

### 3.9 Environmental Management Strategy

An Environmental Management Strategy (EMS) had been developed and implemented for the site. The original EMS had been approved in 2006. An updated EMS had been prepared in 2016 and

submitted to DP&E for approval. Approval for the updated EMS had not been obtained at the time of audit.

While general compliance with the requirements of the EMS was found, one administrative non-compliance was identified where the implementation of the requirements of the EMS had not been adequately demonstrated.

An administrative non-compliance was raised in relation to requirements for the independent environmental audit. The EMS had not been updated to reflect the auditing requirement as identified in the DA 94-4-2004, modified 2017.

### 3.10 Water Access Licences

Four water access licences have been obtained for the Quarry, collection of surface water (WAL 17384) and three for groundwater extraction (WAL 2541, 20019 and 27185). Two non-compliances were raised where compliance with the requirements of the Water Access Licences could not be demonstrated.

Non-compliances were raised for:

- Water Access Licence 17384 sets limits on the volume of water taken. However, records of water collected had not been recorded retained. This issue was raised as a non-compliance.
- Water Access Licences (WAL 2541, 20019 and 27185) have maximum allowable extraction volumes allocated, and require water to be extracted at a maximum rate of 0.2l/sec. Records of groundwater quantity extracted or rates had not been retained require water.



## 3.11 Areas of Non-compliance

Issue No.	Risk Rating	Condition	Requirement	Issue sighted
N-01	Low	Schedule 3– Specific Environmental Conditions 7 Noise Management Plan 8.2	<p>The Applicant must:</p> <p>(a) implement best practice management to minimise the construction, operational and road transportation noise of the development;</p> <p>(b) minimise the noise impacts of the development during meteorological conditions when the noise criteria in this consent do not apply (see Appendix 4);</p> <p>(c) carry out noise monitoring (at least every 3 months or as otherwise agreed with the Secretary) to determine whether the development is complying with the relevant conditions of this consent; and</p> <p>(d) regularly assess noise monitoring data and modify and/or stop operations on site to ensure compliance with the relevant conditions of this consent, to the satisfaction of the Secretary.</p> <p>Note: Required frequency of noise monitoring may be reduced if approved by the Secretary.</p>	<p>Management practices to minimise noise impacts have been identified in Section 7 of the Noise Management Plan.</p> <p><b>Practices had been implemented in accordance with the plan with the exception of:</b></p> <ul style="list-style-type: none"> <li>• <b>Comparative sound level measurements of equipment had not been undertaken annually;</b></li> <li>• <b>Signs had not been displayed at the exit to the site to remind all drivers to leave in a quiet manner.</b></li> </ul> <p><b>Recommendation:</b> Sound power levels of equipment used on site should be determined and monitored in accordance with the Noise Management Plan.</p> <p>Erect signs at the exit to the site to remind all drivers to leave in a quiet manner.</p>



N-02	Low	Schedule 3– Specific Environmental Conditions 15	<p>The Groundwater Monitoring Program must include:</p> <ul style="list-style-type: none"> <li>a) a program to collect detailed baseline data, based on sound statistical analysis, to benchmark the pre-quarrying natural variation in groundwater levels, yield and quality in groundwater bores within the predicted drawdown impact zone identified in the Amendment Report;</li> <li>b) groundwater impact assessment criteria for monitoring bores and privately-owned bores;</li> <li>c) a program to monitor impacts on the groundwater supply of potentially affected landowners, groundwater dependent ecosystems, and on vegetation; and</li> <li>d) a protocol for the investigation, notification and mitigation of identified exceedences of the groundwater impact assessment criteria.</li> </ul> <p>Note: The Groundwater Monitoring Program must be prepared in accordance with the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004, available from the Department), unless otherwise authorised by the Secretary.</p>	<p><b>The approved SWMP does not include impact assessment criteria for groundwater dependent ecosystems (GDEs). The amended SWMP which is awaiting approval includes identification of and monitoring program for GDEs, but does not include impact assessment criteria.</b></p> <p><b>Recommendation:</b> Revise the SWMP and include impact assessment criteria for groundwater dependent ecosystems (GDEs).</p>
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N-03	Low	Schedule 3– Specific Environmental Conditions 16	<p>The Groundwater Monitoring Program must include:</p> <p>a) a program to collect detailed baseline data, based on sound statistical analysis, to benchmark the pre-quarrying natural variation in groundwater levels, yield and quality in groundwater bores within the predicted drawdown impact zone identified in the Amendment Report;</p> <p>b) groundwater impact assessment criteria for monitoring bores and privately-owned bores;</p> <p>c) a program to monitor impacts on the groundwater supply of potentially affected landowners, groundwater dependent ecosystems, and on vegetation; and</p> <p>d) a protocol for the investigation, notification and mitigation of identified exceedences of the groundwater impact assessment criteria.</p> <p>Note: The Groundwater Monitoring Program must be prepared in accordance with the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004, available from the Department), unless otherwise authorised by the Secretary.</p>	<p>Mackie Environmental Research Pty Ltd recommended privately-owned groundwater bores within predicted drawdown zone to be identified and subjected to hydraulic testing.</p> <p>All identified bores within 500m of the quarry were hydraulically tested in 2006-2008, except those for which landholder approval was denied.</p> <p><b>A further bore survey in 2015 identified 3 further bores within 500m of the quarry. Only one of these (CP13) has been tested. CP14 and CP15 not yet tested.</b></p> <p><b>Recommendation:</b> Undertake hydraulic testing CP14 and CP15 in accordance with the recommendations provided in groundwater assessment reports prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004.</p>
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N-04	Low	Schedule 3– Specific Environmental Conditions 16	<p>The Groundwater Monitoring Program must include:</p> <ul style="list-style-type: none"> <li>a) a program to collect detailed baseline data, based on sound statistical analysis, to benchmark the pre-quarrying natural variation in groundwater levels, yield and quality in groundwater bores within the predicted drawdown impact zone identified in the Amendment Report;</li> <li>b) groundwater impact assessment criteria for monitoring bores and privately-owned bores;</li> <li>c) a program to monitor impacts on the groundwater supply of potentially affected landowners, groundwater dependent ecosystems, and on vegetation; and</li> <li>d) a protocol for the investigation, notification and mitigation of identified exceedences of the groundwater impact assessment criteria.</li> </ul> <p>Note: The Groundwater Monitoring Program must be prepared in accordance with the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004, available from the Department), unless otherwise authorised by the Secretary.</p>	<p>Continuous water level monitoring equipment installed in key monitoring bores CQ4, CQ11S and CQ13 as a requirement specified by MER (2005) <b>has not been working since at least January 2016, but has not been investigated for repair or replacement.</b> During this time, only bi-monthly manual water level monitoring has been undertaken on these bores.</p> <p><b>Recommendation:</b> Repair or replace defective continuous water level monitoring equipment.</p>
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N-05	Low	Schedule 3– Specific Environmental Conditions 16	<p>The Groundwater Monitoring Program must include:</p> <ul style="list-style-type: none"> <li>a) a program to collect detailed baseline data, based on sound statistical analysis, to benchmark the pre-quarrying natural variation in groundwater levels, yield and quality in groundwater bores within the predicted drawdown impact zone identified in the Amendment Report;</li> <li>b) groundwater impact assessment criteria for monitoring bores and privately-owned bores;</li> <li>c) a program to monitor impacts on the groundwater supply of potentially affected landowners, groundwater dependent ecosystems, and on vegetation; and</li> <li>d) a protocol for the investigation, notification and mitigation of identified exceedences of the groundwater impact assessment criteria.</li> </ul> <p>Note: The Groundwater Monitoring Program must be prepared in accordance with the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004, available from the Department), unless otherwise authorised by the Secretary.</p>	<p><b>No water level or flow metering equipment as specified by MER (2005) has been installed on any private bore within 500m of quarry.</b></p> <p><b>Recommendation:</b> Install water level or flow monitoring equipment on private bores within 500m of the quarry as per the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004).</p>
N-06	Low	Air Quality Management Plan Section 9.3.1 9.3.2	<p>Three triggers for reactive management will be applied.</p> <ul style="list-style-type: none"> <li>a) Air Quality Complaint. Any complaint received, either directly or via Council, EPA or other regulatory agency, will trigger the implementation of the response and corrective action measures described in Section 10.</li> <li>b) Exceedance of air quality criteria established through air quality monitoring. Any record of deposited dust or particulate matter exceeding the criteria in Section 5 will trigger the response and corrective action measures described in Section 9.4.</li> <li>c) Extraordinary events or conditions. Extraordinary events relevant to the Quarry include events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.</li> </ul>	<p>No complaints have been received. Dust deposition results for CD1 show increasing trend, with monthly results from February 2018 exceeding 12 month annual average criteria, although 12 month average has not exceeded criteria.</p> <p><b>No formal investigation has been undertaken to assess the cause of the exceedences.</b></p> <p><b>Recommendation:</b> Undertake and document an investigation to determine the cause of increasing dust depositions rates for CD1. Implement corrective actions as determined from the investigation.</p>

<b>N-07</b>	Low	Air Quality Management Plan Section 13.2 Noise Management Plan 7.4	All personnel and contractors working at the Quarry undergo an induction and annual re-induction including information on the management of dust and air quality while working on site.	Quarry induction includes section on environmental management and controls, <b>however site specific environmental requirements have not been included.</b> <b>Recommendation:</b> Review the site induction to include site specific information on environmental management and controls.
<b>N-08</b>	Low	Water Management Plan Section 3.5 Water Balance Review	During operation of the quarry, measurements of actual water use and availability will be made so that the water balance can be refined, if necessary. The following information will be collected and used. • Water levels (related to storage volumes) in the water storage dams. • Rainfall within the quarry catchment will be recorded by the on-site weather station. Evaporation rates will also be recorded. • Quantities of water discharged from the Quarry Site.	Rainfall data is collected. Reported that water was discharged on one occasion. <b>There is no record of discharge volume from EPL 1 or record of water levels.</b> <b>Recommendation:</b> Implement process to measure and record discharge volumes and water levels.
<b>N09</b>	Low	Water Access Licence 17384	The volume of water taken in any three (3) consecutive water years from 1 July 2010 must be recorded in the logbook at the end of those three water years. The maximum volume of water permitted to be taken in those years must also be recorded in the logbook.	<b>Records of water taken had not been maintained. A logbook recording details of water taken was not available, and a meter had not been installed.</b> <b>Recommendation:</b> Provide logbook and record volume of ground water taken.
<b>N10</b>		Water Access Licence 2541, 20019, 27185	The approval holder must not take water from the approved work at a rate that exceeds 0.2 L/second.	<b>Records of water volumes or extraction rates had not been maintained.</b> <b>Recommendation:</b> Implement process to measure and record the rate of water take in accordance with water licence requirements.

## 3.12 Areas of Administrative Non-compliance

Issue No.	Condition	Requirement	Issue sighted
A-01	Schedule 3– Specific Environmental Conditions 9	<p>The Applicant must:</p> <p>(a) implement best practice management to minimise the dust emissions of the development;</p> <p>(b) regularly assess meteorological and air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this consent;</p> <p>(c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note d under Table 3);</p> <p>(d) monitor and report on compliance with the relevant air quality conditions in this consent; and</p> <p>(e) minimise the area of surface disturbance and undertake progressive rehabilitation of the site,</p> <p>to the satisfaction of the Secretary</p>	<p>Processes had been implemented for minimising dust emissions in accordance with Section 7 of the Air Quality Management Plan.</p> <p>Dust deposition monitoring has been conducted. Monitoring results for CD01 had exceedance criteria. It is noted that CD01 was located on the Quarry site (See N-02).</p> <p>While a monitor had been purchased for the site, monitoring of particulate matter (TSP and PM<sub>10</sub>) had not been implemented at the time of audit.</p> <p><b>Recommendation:</b> Install particulate matter monitor and undertake monitoring for TSP and PM<sub>10</sub>.</p>
A-02	Schedule 3 – Specific Environmental Conditions 16	<p>Within 6 months of the date of this consent, the Applicant must prepare a Groundwater Contingency Strategy for the development, in consultation with the DPI-Water, and landowners within the predicted drawdown impact zone identified in the Amendment Report, and to the satisfaction of the Secretary. The strategy must include:</p> <p>a) the procedures that would be followed in the event of any exceedance of the groundwater impact assessment criteria, or other identified impact on groundwater; and</p> <p>b) measures to mitigate, remediate and/or compensate any identified impacts to provide an alternative long-term supply of water to the affected landowner that is equivalent to the loss attributed to the development.</p>	<p>The approved SWMP does not specifically describe a Groundwater Contingency Strategy (GCS), however a stand-alone GCS has been written (Martens &amp; Associates, 2016) and approved by the department. <b>However, this GCS does not correctly describe the basis for provision of a compensatory water supply in accordance with the Consent.</b> The revised SWMP submitted to the department in draft for approval also does not specifically describe a GCS, although the elements of the GCS are included.</p> <p><b>Recommendation:</b> Update the GCS to ensure that the basis for provision of a compensatory water supply is described in accordance with the Consent.</p>

Issue No.	Condition	Requirement	Issue sighted
A-03	Schedule 3 – Specific Environmental Conditions 28A	<p>The Applicant must prepare a Driver's Code of Conduct for the development to the satisfaction of the Secretary. This code must:</p> <ul style="list-style-type: none"> <li>a) be submitted to the Secretary no later than 28 July 2017, or as otherwise agreed by the Secretary;</li> <li>b) include details of the safe and quiet driving practices that must be used by drivers transporting products to and from the quarry;</li> <li>c) describe the measures to be put in place to ensure compliance with the Drivers' Code of Conduct.</li> </ul> <p>The Applicant must implement the Driver's Code of Conduct as approved from time to time by the Secretary.</p>	<p>Records showed that the Driver's Code of Conduct was prepared prior to 25/07/17. However, records show the Driver's Code of Conduct was sent to DPE on 10/11/17 and approved 23/11/17.</p> <p><b>The Driver's Code of Conduct had not been submitted to the Secretary by 28 July 2017.</b></p> <p><b>Recommendation:</b> Implement process to track compliance requirements and ensure that required information is submitted to agencies within the required timeframes.</p>
A-03	Schedule 3 – Specific Environmental Conditions 35	<p>The Applicant must:</p> <ul style="list-style-type: none"> <li>(a) monitor the amount of waste generated by the development;</li> <li>(b) investigate ways to minimise waste generated by the development;</li> <li>(c) implement reasonable and feasible measures to minimise waste generated by the development; and</li> <li>(d) report on waste management and minimisation in the Annual Review.</li> </ul> <p>to the satisfaction of the Secretary.</p>	<p>While waste transport dockets were available for waste removed from site, <b>the Quarry had not implemented a process to monitor waste generated. A waste register was not maintained.</b></p> <p><b>Recommendation:</b> Implement a process to track and record waste generated and removed from site.</p>
A-04	Schedule 3 – Specific Environmental Conditions 39	<p>The Applicant must:</p> <ul style="list-style-type: none"> <li>(a) provide annual production data to the DRG using the standard form for that purpose; and</li> <li>(b) include a copy of this data in the Annual Review.</li> </ul>	<p>Annual production data was included in the annual review.</p> <p><b>Annual production data had not been provided to the DRG.</b></p> <p><b>Recommendation:</b> Provide annual production data to DRG using the standard form as required.</p>



Issue No.	Condition	Requirement	Issue sighted
A-05	Schedule 5— Environmental Management, Reporting and Auditing 4, 10	Within 3 months of the submission of an: (a) incident report under condition 8 below; (b) Annual Review under condition 10 below; (c) audit report under condition 11 below; and (d) any modifications to this consent, the Applicant must review the strategies, plans and programs required under this consent, to the satisfaction of the Secretary. Within 4 weeks of conducting any such review, the Applicant must advise the Secretary of the outcomes of the review, and provide any revised documents to the Secretary for review and approval. Note: This is to ensure that strategies, plans and programs are updated on a regular basis, and to incorporate any recommended measures to improve environmental performance of the development.	Annual review for 2017 has been prepared and submitted to DP&E on 1 May 2018 (Extension obtained 19/03/18 to submit by 30/04/18).  <b>Annual review for 2017 had not been submitted within the required timeframe.</b>  <b>Recommendation:</b> Implement process to track compliance requirements and ensure that required information is submitted to agencies within the required timeframes.
A-06	Air Quality Management Plan Section 13.2.3  Noise Management Plan Section 13.2	Regular toolbox meetings are held to discuss whole-of-site production, management, safety and environmental issues	While it was reported that toolbox meetings had been conducted which included environmental requirements, records sighted did not show evidence of inclusion of environmental issues in inductions.  <b>Recommendation:</b> Ensure toolbox meeting records include detail on environmental issues where discussed.
A-07	EPL M5 Recording of Pollution Complaints	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies. The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	Complaints register maintained. The Complaints Register does not include the personal details of the complainant. <b>The register does not include personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect.</b>  <b>Recommendation:</b> Review complaints register to include details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect



Issue No.	Condition	Requirement	Issue sighted
A-08	Noise Management Plan Section 8.3.2	Attended monitoring by a suitable qualified practitioner will be undertaken quarterly in 15minute periods at a selection of the residential locations surrounding the Quarry (Figure 4). The selection will include CN-1, CN-2, CN-6 and CN-9.	Noise monitoring was conducted at CN-1, CN-2, CN-3, CN-6. <b>Noise monitoring has not been conducted at CN-9.</b>  <b>Recommendation:</b> Ensure noise monitoring is conducted at all locations as required by the noise management plan.
A-09	Noise Management Plan Section 8.4	During attended monitoring a small anemometer is used to confirm wind speed is suitable for noise measurements.	<b>Report does not include:</b> <ul style="list-style-type: none"> <li>• Confirmation that an anemometer had been used to confirm wind speed during monitoring.</li> <li>• Calibration data for the sound level meter;</li> <li>• Whether the noise was substantially tonal, impulsive, intermittent or low frequency in nature</li> </ul> <b>Recommendation:</b> Ensure noise reports include all information as required by the noise management plan and EPL.
A-10	Noise Management Plan Section 10.2	All complaints are referred to the Quarry Manager (or his nominee), thoroughly investigated and documented in the Quarry Complaints Register with the following information recorded. <ul style="list-style-type: none"> <li>• Date of the complaint</li> <li>• Time of the complaint</li> <li>• Name of complainant (if available).</li> <li>• How the complaint was received.</li> <li>• Detailed description of the complaint.</li> <li>• Person who received the complaint</li> </ul>	<b>Where complaints had been received, the following issues were identified:</b> <ul style="list-style-type: none"> <li>• Name of complainant not provided.</li> <li>• Complaints received on 23/01/16 and 13/02/16 were not responded to until approximately 4 hours after the complaint was received (when the site had closed).</li> <li>• Details of who received the complaint were not recorded.</li> <li>• Person conducting the investigation was not recorded.</li> <li>•</li> </ul> <b>Recommendation:</b> Review and revise the complaints register to ensure that all required information is included.

Issue No.	Condition	Requirement	Issue sighted
A-11	Site Water Management Plan Section 4.1 Erosion and Sediment Control Plan	All erosion and sediment control structures will be constructed or erected in accordance with the recommendations identified in the relevant standard drawing and construction notes of DoH (2004).	<b>Erosion and sediment control drawings were not available. Erosion and sediment control structures have not been constructed in accordance with DoH (2004).</b>  <b>Recommendation:</b> Provide erosion and sediment control drawings for the site. Ensure erosion and sediment controls are constructed in accordance with requirements of the site Water Management Plan.
A-12	Site Water Management Plan Section 4.4.5 Quarry Haulage Roads	The internal quarry haul roads within the Quarry Site will be constructed to ensure surface drainage is optimised and stabilised, thereby reducing roadside erosion and sedimentation.  Cross-fall drainage structures and mitre drainage will be implemented for the entire length of each haul road. Crowning will generally be implemented on any steeper sections of the haul road. Outfall drainage will be constructed where the road traverses small fill batter areas and in-fall drainage will occur where the road traverses larger fill batter areas.  Mitre drains will be constructed to take water from the shoulders or table drains of the internal haul roads to the internal dirty water control system. Road runoff will be intercepted at regular intervals to reduce runoff velocity in each mitre drain. Drain spacing will not exceed 50m.	While erosion and sediment controls have been implemented, controls were not as described in the management plan. E.g. Cross fall and drainage, Outfall drainage, mitre drains and sand bag weirs have been installed, but <b>actual operations are not as described in the management plan.</b>  <b>Recommendation:</b> Review the SWMP to assess the suitability of erosion and sediment controls identified. Where changes are identified, update the SWMP to reflect identified controls.
A-13	Landscape and Rehabilitation Management Plan Section A2.1.1 Vegetation Clearance Procedures	The area cleared in each campaign will generally be no greater than that required to accommodate the quarry's development requirements for the following 12 months. The limits of each planned clearing campaign will be clearly delineated on the ground to avoid excessive clearing. On areas devoid of tree and large shrub vegetation, the vegetation will be collected with the topsoil and either transferred directly to an area that has been prepared for topsoil application or, alternatively will be stockpiled for later use in rehabilitation. Direct transferral is the preferred alternative. Any trees felled will be either immediately transferred to areas of the final landform designated for establishment of native vegetation, or stockpiled for later use in this fashion.	The whole of the quarry site has been cleared and revegetation progressing.  <b>The Landscape and Rehabilitation Management Plan has not been updated to reflect current arrangements for managing vegetation clearance.</b>  <b>Recommendation:</b> Update the Landscape and Rehabilitation Management Plan to reflect the site arrangements for managing vegetation clearance.

Issue No.	Condition	Requirement	Issue sighted
A-14	Environmental Management Strategy Section 5.1 Environmental Audit	Condition 5(5) requires an independent external audit of the operation within 3 years from the issue of development consent, hence for the period ending 6 December 2008 and every five years thereafter. The Company will nominate the name of the proposed auditor for the initial audit by 6 September 2008 to enable sufficient preparation time for the audit. A similar procedure will be followed for subsequent environmental audits unless the same auditor is to be commissioned, and is already approved by the Director-General.	Initial audit by 6 September 2008. Current audit due 6 September 2018. Noted that the modification to consent granted June 2017. Environmental Audit requirement updated to require: Within a year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission, commence and pay the full cost of an Independent Environmental Audit of the development. <b>Environmental Management Strategy has not been updated to reflect current requirement.</b>  <b>Recommendation:</b> Update the Environmental Management Strategy to reflect the current requirements for independent external audits.
A-15	Schedule 3 Regular Reporting 9	The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.	Air quality, noise and water quality monitoring results were provided on the company website. Groundwater audit reports were not provided on the website.  <b>Recommendation:</b> Provide all relevant records of environmental performance on the company website.

### 3.13 Observations

Issue No.	Condition	Requirement	Issue sighted
O-01	Schedule 5– Environmental Management, Reporting and Auditing  4	The Applicant must establish and operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. The CCC must be operated in general accordance with the Department's Community Consultative Committee Guidelines State Significant Projects (November 2016), or later version.  Note: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.	Community Consultative Committee meeting minutes had been uploaded into the complaints register section of the website.  <b>Recommendation:</b> Move Community Consultative Committee meeting minutes to the correct section of the website. Ensure future minutes are uploaded to the correct section of the website.
O-02	Site Water Management Plan  Section 4.4.7	The Quarry Manager will undertake regular general environmental inspections and following substantial rainfall events to ensure that all the water management controls outlined in Sections 4.4.1 to 4.4.6 are functioning as designed and required	Daily inspections are carried out using the Daily Toolbox / Shift Handover Record Sheet. Viewed 12/6/18.  Uses a tick against each aspect.  Leading Hand fills in the report. Not the Quarry Manager.  <b>Recommendation:</b> Revise the SWMP to reflect actual inspections arrangements for the site.
O-03	Site Water Management Plan  Section 5.3.2	Water samples will be taken in accordance with Development Consent requirements and Environment Protection Licence 11295 issued for the site by the DEC (EPA). This will include analysis for key parameters, including: <ul style="list-style-type: none"><li>• pH;</li><li>• Electrical Conductivity;</li><li>• Total Grease; and</li><li>• Suspended Solids.</li></ul>	The environmental protection licence for the site requires oil and grease to be monitored, while the Site Water Management Plan requires Total Grease.  <b>Recommendation:</b> Update the SWMP to require monitoring of oil and grease, not total grease.

### 3.14 Areas of compliance

All other relevant conditions audited were found to be either compliant or not applicable. Refer to the audit checklist provided as an attachment for full details of compliance.

## 4 CONCLUSIONS

Hanson had developed management plans and associated documentation to address the requirements of the conditions of consent. While compliance with requirements of the conditions of consent and management plans was generally demonstrated, 24 issues were identified where compliance could not been fully demonstrated.

As a result of the audit, ten non-compliances and fifteen administrative non-compliances were raised where compliance with the requirements of the conditions of consent, management plans prepared for the site or water access licences was not demonstrated. Hanson should ensure that actions are identified and implemented to address the findings contained within this audit to enable compliance with the development obligations and ensure environmental impacts of the developments are appropriately managed.

### ATTACHMENTS

- ✓ **Substantive Changes**
- ✓ **Auditor CV**
- ✓ **Audit Checklists**

### CIRCULATION

- ✓ **Hanson Pty Ltd**
- ✓ **AQUAS Pty Ltd**

## 5 Substantive Changes.

No substantive changes were made to the audit report following review of the draft by Hanson.



## CV – James Hart

### CURRENT POSITION

Senior Project Manager



### QUALIFICATIONS

Newcastle University, Graduate Diploma in Occupational Health and Safety, 2003

Newcastle University, Graduate Diploma in Environmental Science, 1997

Newcastle University, Bachelor of Science (Chemistry), 1981

Exemplar Global - Lead Quality, OHS, Environmental Auditor No. 12105

### Major Projects

- ✓ Lead Work Health and Safety Auditor – Audit Panel for ACT Government Procurement and Capital Works
- ✓ Lead Environmental Auditor – Gladstone Ports Corporation - Western Basin Dredging and Disposal Project, WICET project, Tug Berths Dredging project.
- ✓ Lead Quality, Safety, Environmental and Risk Auditor – Sydney Trains SEQR Audit Panel
- ✓ Lead WHS Auditor - TfNSW Lead Auditor Support Resource Panel
- ✓ Lead Quality, Safety, Environmental Auditor – Transgrid Audit Panel
- ✓ Lead Quality, WHS and Environmental Auditor – Roads and Maritime Services Audit Panel
- ✓ Lead Quality, WHS and Environmental Auditor – SAI Global Assurance Services
- ✓ Independent Certifier's Safety Manager – North West Rail Link - Tunnels & Station Civil Works
- ✓ Independent Verifier's audit and compliance consultant – Hexham Relief Roads Project
- ✓ Independent Certifier's Safety Manager – Westconnex project.

### Relevant Experience

James Hart spent a decade as an industrial chemist before gaining postgraduate qualifications in environmental science and occupational health and safety. Prior to joining AQUAS in 2010, he worked for 15 years in a range of consulting positions as an environment, safety, and quality auditor. His career highlights include two years in the UK and Europe, conducting manufacturing site audits for multi-national commercial organisations, where he enjoyed the challenges of working with different languages, cultures, and regulatory frameworks. James' work with AQUAS takes him all over Australia, conducting audits across a broad range of sectors including commercial, infrastructure and government facilities.

James has extensive technical experience in his three areas of specialisation: quality, safety, and environmental compliance. The scope of his work varies according to the specific requirements of each engagement and may include an audit of contractors' plans and documentation during the approvals stage, and/or site audits to verify compliance with existing documentation. James has a cooperative, open and positive attitude and strong relationship-building skills. He is valued by both clients and contractors for his 'firm but fair' approach, his willingness to explain the rationale and benefits of each requirement, and to share his knowledge to help contractors resolve issues and achieve compliance.

- More than 20 years' international experience in quality, safety, and environmental auditing
- Experience across a broad range of sectors including commercial, government, and infrastructure
- Detailed technical knowledge and postgraduate qualifications with a commitment to ongoing learning
- Valued for being open, transparent and 'firm but fair'
- Strong relationship-building skills across all levels
- Cooperative and positive in his approach, committed to sharing knowledge and facilitating compliance.

## Project Experience

- ✓ Environmental auditor – Independent audit of the Austen Quarry on behalf of Hy-Tec Industries Pty Ltd.
- ✓ Lead Environmental auditor – 3<sup>rd</sup> Party Environmental audits on behalf of Gladstone Ports Corporation for the Western Basin Dredging and Disposal project.
- ✓ Lead Environmental auditor – 3<sup>rd</sup> Party Environmental audits on behalf of Gladstone Ports Corporation for the WICET dredging project.
- ✓ Environmental auditor – Independent audit of the Oberon Quarries Pty Ltd on behalf of Oberon Quarries Pty Ltd.
- ✓ Environmental auditor - Independent Environmental Audit of the Tinda Creek Sand Quarry project on behalf of Hy-Tec Industries Pty Ltd.
- ✓ Environmental auditor – Pacific Complete - Pimlico to Teven project on behalf of RMS.
- ✓ Environmental auditor – Independent audit of the Mackas Sands Sand Extraction, Lot 218 and Lot 220, Salt Ash.
- ✓ Environmental Auditor - Pacific Complete - Woodburn to Broadwater project on behalf of RMS.
- ✓ Environmental auditor – New Bridge over Sportmans Creek at Lawrence, on behalf of RMS.
- ✓ Lead WHS and Environmental audit, NSW TrainLink internal audit program 2014-2015.
- ✓ Quality, safety and environmental auditor – Mayfield Intermodal Remediation project.
- ✓ Quality, safety and environmental auditor – Kooragang Island Waste Emplacement Facility remediation project.

James had also undertaken WHS and environmental inspections on behalf of clients to monitor implementation of WHS and environmental controls on worksites. Project where inspection services have been provided include:

- ✓ Gerringong Upgrade – Mt Pleasant to Toolijooa Road Project, NSW RMS;
- ✓ Nabitac Upgrade project, NSW RMS;
- ✓ Hunter Expressway project, NSW RMS;
- ✓ Five Islands project, NSW RMS;
- ✓ NIER building construction project, University of Newcastle.

This wide range of experience has provided James with a broad skill range of auditing skills in the quality, OHS and environmental management sectors.

## Experience History

### 2011 – Present: AUSTRALIAN QUALITY ASSURANCE & SUPERINTENDENCE (AQUAS)

Senior Consultant / SEQR Auditor

- ✓ Environmental auditor – Independent audit of the Austen Quarry to assess compliance with the Department of Planning and Environment's conditions of approval.
- ✓ Environmental auditor – Independent audit of the Tinda Creek Sand Quarry to assess compliance with the Department of Planning and Environment's conditions of approval.
- ✓ Environmental auditor – Independent audit of the Oberon Quarry to assess compliance with the Department of Planning and Environment's conditions of approval.
- ✓ Certified independent environmental audit for the Western Basin Dredging and Disposal project, and the WICET Coal Berth Dredging project in Gladstone Queensland.
- ✓ Independent audits of the Mackas Sands development to assess compliance with the Department of Planning and Environment's conditions of approval
- ✓ Lead Quality, Safety, Environmental and Risk Auditor – Sydney Trains SEQR Audit Panel
- ✓ Independent audit of Mackas Sands Sand Extraction, Lot 218 and Lot 220, Salt Ash on behalf of the NSW Department of Planning and Infrastructure.
- ✓ HSE audits of various construction projects on behalf of Transgrid.
- ✓ QHSE audits on behalf of the South Australian Department of Transport, Environment and Infrastructure.
- ✓ Environmental and Health and safety audits of road construction projects on behalf of NSW Roads and Marine Services;
- ✓ Health Safety and Environmental audits on behalf of the project verifier for the Hunter Express and Kempsey bypass projects.
- ✓ Development of OHS management system for Williams River Steel to enable certification to AS4801:2001 and Federal Safety commissioner accreditation.
- ✓ QHSE audits of projects associated with the rehabilitation of lands associated with the former BHP site in Newcastle, NSW.
- ✓ QHSE Audits of rail bridge replacement projects on behalf of Transfield Services Limited.



- ✓ Environmental audit of the Curragh North Coal Mine to assess compliance with the requirements of the EPBC conditions of approval.

#### **2008-2010: JAMES HART CONSULTING**

- ✓ Provided Quality, Environmental, and OHS auditing services to UK certification authorities.
- ✓ Conducted preliminary document review (gap analysis), certification, surveillance and recertification audits were undertaken both within the UK and Europe, and were conducted against the requirements of ISO 9001:2008, ISO 14001:2004, ISO 14001:2004RC, and OHSAS 18001:2007.
- ✓ Provided auditor verification services, verifying auditors on behalf of SAI Global throughout Europe.

#### **2000-2004; May 2007 - Nov 2008: GHD PTY LTD**

##### *Senior Environmental Chemist*

- ✓ RTA Audit Panel for conducting OH&S and environmental audits of RTA projects.
- ✓ Department of Planning approved Environmental Auditor for the Sandgate Rail Separation project.
- ✓ Co-ordination of environmental projects, and occupational hygiene and hazardous materials surveys.
- ✓ OHS, Quality and EMS coordinator for the office, with responsibility for ensuring that quality and environmental management procedures and practices were implemented and maintained.
- ✓ Management of a range of environmental monitoring projects including site contamination assessments, and quarterly monitoring programs for landfill sites.

#### **Sep 2007 – May 2008: SAI GLOBAL**

##### *Management Systems Auditor*

- ✓ Conducted Quality, OHS and Environmental management systems audits for companies certified by SAI Global against the requirements of ISO 9001:2000, ISO 14001:2004, AS/NZS 4801:2001, and OHSAS 18001. Audits conducted included preliminary document review (gap analysis), certification, surveillance and recertification audits.

#### **Mar 2004 – Sep 2006: URS Australia**

##### *Senior Environmental Chemist*

- ✓ Conducted occupational health and safety and environmental due diligence and compliance audits and inspections for clients.
- ✓ NSW Roads and Traffic Authority (RTA) panel for conducting OH&S and environmental audits.
- ✓ Audit panel as a Lead Health Safety and Environmental Auditor to conduct HSE audits of gas and electrical projects for AGL Energy Ltd.
- ✓ Department of Planning approved auditor responsible for conducting annual environmental compliance audits of Port Waratah Coal Services – Kooragang Stage Three Expansion for compliance with the department of Planning's conditions of consent.
- ✓ Co-ordination of environmental noise monitoring projects for URS in NSW
- ✓ Verifiers Environmental and OHS representative for the Nabiac Upgrade project, a major road construction project on the mid north coast of NSW.
- ✓ OHS Advisor and representative for the Newcastle Office, with responsibility for the implementation of the OHS program and coordination of OHS initiatives in the Office.

#### **1994 – 2000: METFORD LABORATORIES**

##### *Senior Environmental Chemist*

- ✓ Co-ordination of sampling programs for environmental and occupational hygiene purposes.
- ✓ Management of dust monitoring programs for various mines in the Hunter Valley.
- ✓ Management of water (surface and groundwater) monitoring programs for various mines and industry in the Hunter Valley.
- ✓ Sampling and analysis of soils, waters, and airborne contaminants.
- ✓ Management of environmental noise monitoring programs and workplace surveys for occupational noise.

#### **1989- 2004: GENKEM PTY LTD**

*Plant Chemist*

- ✓ Management of the laboratory operations for the site.
- ✓ Investigations into the use of metal coagulants and polyacrylamide flocculants for the clarification of process and waste waters from the mining and food processing.
- ✓ Responsible for ensuring EPA licence requirements for the site were met.

**2004 – 1989: CSR WOOD PANELS**

*Plant Chemist*

- ✓ Responsible for supervising a group of seven concerned with materials testing, press plate preparation, process material additions, effluent treatment and waste board recovery.
- ✓ Led and assisted in several investigations aimed at improving product quality, and technical investigations relating to new product development.

**1977- 1982: BHP LABORATORIES**

*Chemistry Degree Trainee*

- ✓ Employed as a Chemistry Degree Trainee and later as a chemist in the Newcastle Steelworks laboratory.
- ✓ Analysis of raw materials and products associated with the steel making process.





## **Appendix A. - Previous Audit Findings**

Recommendation	Action proposed	Status
It is recommended that Rocla undertake the census of all groundwater bores within 500 metres of the extraction area as committed.	The requested bore census will be completed by 1 September 2015. A copy of the census will be provided to the Department of Planning and Environment.	Bore census completed in 2015. Two additional bores identified.
It is recommended that Rocla develop a noise compliance management procedure to assist site personnel to appropriately report and respond to exceedences of noise limits on both the development consent and EPL.	It is proposed to incorporate a noise compliance management procedure as one of the procedures of the new Noise Management Plan prepared in the event the NSW Land and Environment Court approves the Southern Extension of the Quarry. In the event the Court refuses the application to extend Calga Quarry, the existing Noise Management Plan would be modified with the inclusion of the noise compliance management procedure within 3 months of the Court's determination. Prior to the determination of the NSW Land and Environment Court, and the preparation of the required plan, Rocla will ensure the requirements necessary to be followed in such a procedure, are adopted.	Noise Management Plan developed for Hanson construction Materials in 2017. Response to exceedences and complaints are included in Section 9 and 10.
It is recommended that the SWMP be updated to identify any GDEs that require monitoring and include impact assessment criteria for GDEs, as well as consider impacts to groundwater dependent surface water bodies.	It is proposed to update the Site Water Management Plan (SWMP) in the manner recommended in the event the NSW Land and Environment Court approves the Southern Extension of the Quarry. In the event the Court refuses the application to extend Calga Quarry, the existing SWMP would be modified within 3 months of the Court's determination.	The site water Management Plan has not been updated since the previous audit. A revised SWMP dated May 2018 has been submitted to the Department in draft, but has not yet received formal approval. The draft updated SWMP includes details of identified GDEs but does not include impact assessment criteria for the GDEs. <b>See Non-compliance N-02.</b>
The requirements in this note do not appear to have carried over to the southern extension project approval (PA 06 0278), which will supersede this development consent upon surrender of the consent by Rocla. However, good groundwater resource management practice would dictate that the previous recommendations in this regard should be complied with. Ensure Groundwater Monitoring Program or SWMP is amended to include commitments for evaluating long term impacts of the final void on regional	It is proposed to update the Site Water Management Plan (SWMP) incorporating a groundwater component with the Groundwater Monitoring Program in the manner recommended in the event the NSW Land and Environment Court approves the Southern Extension of the Quarry. In the event the Court refuses the application to extend Calga Quarry, the existing SWMP would be modified and updated with all matters relevant to the Groundwater Monitoring Program within 3 months of the Court's determination.	Groundwater Contingency Strategy – Calga Sand Quarry, November 2016 developed. Hanson has commissioned Dundon Consulting Pty Ltd to undertake the assessment and develop a closure and post-closure plan.

groundwater resources and to develop a closure and post closure groundwater management plan at least 5 years prior to closure of the quarry, to the satisfaction of DoP.		
Address the previous audit's recommendation to amend the SWMP to specifically address the noted commitments and undertake the required consultation, or provide evidence that this condition has been satisfied.	It is proposed to update the Site Water Management Plan (SWMP) incorporating a groundwater component with the Groundwater Monitoring Program in the manner recommended in the event the NSW Land and Environment Court approves the Southern Extension of the Quarry. In the event the Court refuses the application to extend Calga Quarry, the existing SWMP would be modified and updated with all matters relevant to the Groundwater Monitoring Program within 3 months of the Court's determination	The site water Management Plan has not been updated since the previous audit. A revised SWMP dated May 2018 has been submitted to the Department in draft, but has not yet received formal approval.
No quarrying is to be undertaken in Stage 3/6 until this condition is satisfied. It is noted that this requirement does not appear to have carried over to the recent project approval (PA06 0278). However, good practice in groundwater resource management dictates that a post-closure groundwater management plan should be prepared in accordance with the recommendations of the 2009 audit.	Rocla has committed not to undertake any further extraction activities within Stage 3/6 until such time as a qualified hydrogeologist prepares an assessment of the potential long term impacts of the final extraction void.	No further extraction activities have occurred within Stage 3/6.
It is recommended that Rocla obtain written confirmation from DP&E that it is satisfied with the Rehabilitation and Landscape Management Plan.	It is proposed to update the Rehabilitation and Landscape Management Plan (RLMP) in the manner recommended in the event the NSW Land and Environment Court approves the Southern Extension of the Quarry. In the event the Court refuses the application to extend Calga Quarry, the existing RLMP would be modified within 3 months of the Court's determination and submitted to the DPE for approval.	Rehabilitation and Landscape Management Plan updated August 2016.
It is recommended that Rocla complete the review of the Rehabilitation and Landscape Management Plan and ensure future reviews are undertaken in accordance with the required timing.	It is proposed to update the Rehabilitation and Landscape Management Plan (RLMP) in the manner recommended in the event the NSW Land and Environment Court approves the Southern Extension of the Quarry. In the event the Court refuses the application to extend Calga Quarry, the existing RLMP would be modified within 3 months of the Court's determination.	Rehabilitation and Landscape Management Plan updated August 2016.
It is recommended that Rocla ensure that future reviews, and if necessary revision, of	Rocla's rehabilitation bond for the existing quarry was last reviewed on 22 March 2012. The bond currently stands at \$533,128. In the event the NSW Land and	Rehabilitation bond submitted by Hanson Construction Materials. Lodged 9/11/16.

the rehabilitation bond are completed by the due date.	Environment Court approves the Southern Extension of the Quarry, Rocla anticipates a new rehabilitation bond will be required. In the event the Court refuses the application to extend Calga Quarry, the existing rehabilitation bond will be reviewed by 22 March 2017.	Required no later than 18/11/16
It is recommended that Rocla confirm the RMS is satisfied with the works undertaken on the provision of a painted seagull arrangement to Peats Ridge Road.	In the event the NSW Land and Environment Court approves the Southern Extension of Calga Quarry, Rocla anticipates that there will be no further requirement for an approval for the painted seagull intersection on Peats Ridge Road. In the event the Court refuses the application to extend Calga Quarry, Rocla will <u>again</u> request the satisfaction of RMS for the painted seagull arrangement	Certification that the painted seagull arrangement had been modified to meet the RTA Road Design Guide for rural seagull intersections was provided by Guidance Road Management.
It is recommended that Rocla confirm DP&E and RMS are satisfied with the works undertaken to ensure compliance with this condition.	In the event the NSW Land and Environment Court approves the Southern Extension of the Quarry, Rocla anticipates that there will be no further requirement for an approval for the long term access road. In the event the Court refuses the application to extend Calga Quarry, Rocla will <u>again</u> request the satisfaction of DPE and RMS for the long term access road.	Certification for the intersection upgrade provide from Gosford City Council.
It is recommended that Rocla confirm that DP&E is satisfied with the parking arrangements at Calga Sand Quarry to ensure compliance with this condition.	In the event the NSW Land and Environment Court approves the Southern Extension of the Quarry, Rocla anticipates that there will be no further requirement for an approval for on-site parking. In the event the Court refuses the application to extend Calga Quarry, Rocla will <u>again</u> request the satisfaction of DPE for on-site parking.	Confirmation that DP&E are satisfied with the parking arrangements have not been documented, although it was reported that DP&E have been in attendance at site with no issues raised in relation to parking. It was noted that a suitable clearly delineated parking area had been provided for workers and visitors to site.
<i>Schedule 4, Condition 1 — Non-compliance</i> It is recommended that Rocla develop a procedure to investigate potential exceedances of conditions and where an exceedance is confirmed, satisfy the notification and reporting procedures in the development consent.	Rocla proposes to develop the notification procedure with respect to non-compliant monitoring results. A copy of the procedure would be finalised within three months of the Land and Environment Court's determination of the application regarding the Southern Extension of the Quarry. This timing is proposed to allow any additional requirements relating to the Southern Extension should Project Approval be issued by the Court. It is noted that the procedure would be incorporated into each plan with a monitoring component.	Noise Management Plan - Reactive Management, Section 9.4 .2. Identifies process for responding to exceedance of noise criteria. Section 11 – Incident Notification includes a procedure for responding to and the notification of noise exceedances.
<i>Schedule 5, Condition 1(f) — Administrative Non-compliance</i> It is recommended that as Rocla is required	In the event the NSW Land and Environment Court approves the Southern Extension of the Quarry and PA06 0278 is relied upon, it is proposed to update the Environment Management Strategy (EMS) to reflect all matters relevant to	Environmental Management Strategy prepared and submitted to DP&E for



to prepare plans, programs and strategies for the December 2013 Project Approval (PA06 0278), that updates to all plans, programs and strategies (including the EMS) be undertaken at this time within the timeframe specified by PA06 0278, or as agreed with DP&E.	the Southern Extension. All updates to the EMS, and other relevant documents will be prepared in accordance with the requirements specified in the approval.	approval.
<i>Schedule 5, Condition 6A — Administrative Non-compliance</i> It is known that with the new Project Approval (PA06 0278) updates to strategies, plans and programs will be required to conform to the conditions in the new approval and the approved project. It is recommended that revisions to strategies, plans and programs be undertaken in light of the new approval.	Rocla proposes to prepare the required revisions to strategies, plans and programs within the timeframe nominated in the Project Approval by the NSW Land and Environment Court, should the Southern Extension be approved.	Management plans have been reviewed and updated following acquisition of the Quarry by Hanson Construction Materials.
<i>Schedule 5, Condition 10 — Administrative Non-compliance</i> It is recommended that Rocla make the updated AQMP and EMP publicly available on the Rocla website. It is recommended that Rocla make the 2009, 2010 and 2013 complaints register publicly available on the Rocla website. It is recommended that Rocla ensure all approved strategies, plans, programs, or other applicable documents required to be made publicly available on the Rocla website, be uploaded to the website. In addition, it is recommended that any of these documents, or similar, required by the new Project Approval (PA06 0278) be made publicly available, as applicable.	Rocla has already uploaded the updated Air Quality Monitoring Plan and Environmental Monitoring Program onto its website. <a href="http://www.roclaquarries.com.au">www.roclaquarries.com.au</a> All complaint registers since 2009 are now loaded on the Calga Sand Quarry website. Rocla will ensure that all approved strategies, plans, programs or other applicable documents are uploaded to its website within one month of their submission to DPE and/or other relevant agencies	Verified
<i>Condition L1 — Observation</i> It is recommended that the SWMP be	Rocla will revise the Site Water Management Plan to address the matters raised in the audit documentation	Update Site Water Management Plan has been prepared and submitted to DPE for

<p>revised to more clearly address the active management of water in the site water management system that has the potential to flow offsite in wet periods.</p> <p>It is also recommended that Rocla, as part of modifying the EPL for the recently approved project, should confirm with the EPA that a discharge licence is not required based on the proposed approach to actively managing the quality of water that may flow offsite.</p>		<p>review and approval.</p> <p>Variation to EPL (January 2018) includes an approved discharge point.</p> <p>Management of surface water is addressed in Sections 5.3 and 5.4 of the SWMP.</p>
<p><i>Condition L6.1 - Non-compliance</i></p> <p>It is recommended that Rocla develop a noise compliance management procedure to assist site personnel to appropriately report and respond to exceedences of noise limits on both the development consent and EPL.</p>	<p>It is proposed to incorporate a noise compliance management procedure as one of the procedures of the new Noise Management Plan prepared in the event the NSW Land and Environment Court approves the Southern Extension of the Quarry. In the event the Court refuses the application to extend Calga Quarry, the existing Noise Management Plan would be modified with the inclusion of the noise compliance management procedure within 3 months of the Court's determination.</p> <p>Prior to the determination of the NSW Land and Environment Court, and the preparation of the required plan, Rocla will ensure the requirements necessary to be followed in such a procedure, are adopted</p>	<p>Noise Management Plan – Section 9.3 Reactive Management.</p> <p>Section 11 – Incident Notification addresses requirements for responding to and the notification of noise exceedences.</p>
<p><i>Condition M5.2 — Non-compliance</i></p> <p>It is recommended that Rocla ensure the telephone complaints line is listed and advertised, to ensure the community knows how to make a complaint.</p>	<p>Rocla considers that the requirements of this condition have in fact been satisfied as it displays the “Environmental Complaints” phone contact details on signs on both sides of the Calga Quarry entry (from Peats Ridge Road) and phone numbers are available on the Rocla website (though the purpose of using these numbers for environmental complaints is not specified). The independent audit noted that the complaints line is not available in public advertisements.</p> <p>Rocla is satisfied that the display of the complaints line at the Quarry entrance and the Company's phone number on the Company website would satisfy the requirement to notify the public of the complaints line details and purpose. Rocla will update its website to include specific reference to the purpose of using the displayed number as a complaints line.</p>	<p>Plant contact details provided on website.</p> <p>Customer feedback form provided which includes recording of complaints.</p>

<p><i>Condition R1.1(b) — Non-compliance</i> It is recommended that Rocla include a summary of monitoring results in their 2013/2014 Annual Return and that this summary is signed by both the Company Director and Company Secretary as required by Condition R1.8.</p>	<p>The requirement for a monitoring summary is a generic requirement as Annual Returns often include tables to be completed recording the extent of monitoring undertaken. The Annual Return for EPL 11295 does not contain any tables to be completed for: B2 – Concentration Monitoring Summary; or B3 – Volume and Mass Monitoring. The absence of these tables from the Annual Return is consistent with Licence Conditions L3 (Concentration Monitoring) and L4 (Volume and Mass Monitoring) which specify they are “Not Applicable”. In light of this information, Rocla considers it has been compliant with EPL Condition R1.1(b).</p>	<p>Response considered appropriate.</p>
<p><i>Noise Monitoring Program</i> It is recommended Rocla undertake routine monitoring of the sound power levels of the major items of equipment used on the site to ensure the sound power levels are at or below the nominated levels in Table 3.2 of the NMP. It is recommended Rocla revise the NMP and include a schedule for the routine monitoring of the sound power levels of the major items of equipment used on the site.</p>	<p>It is proposed to update the Noise Management Plan (NMP) (including noise monitoring) in the manner recommended in the event the NSW Land and Environment Court approves the Southern Extension of the Quarry. In the event the Court refuses the application to extend Calga Quarry, the existing NMP would be modified within 3 months of the Court’s determination.</p>	<p>Routine monitoring of sound power level included in the Noise Management Plan (Section 8.2). Monitoring conducted in 2016. No monitoring conducted in 2017. Refer Non-compliance N-01.</p>
<p><i>Noise Monitoring Program</i> It is recommended Rocla review the response protocol and ensure the protocol is used every time a noise exceedance is identified.</p>	<p>Rocla will incorporate a response protocol in the updated Noise Management Plan.</p>	<p>Response procedure included in Section 9.4 Response and Corrective Actions</p>
<p><i>Noise Monitoring Program</i> It is recommended that the NMP is updated to reflect the change in the noise monitoring protocol or the NMP be modified to allow flexibility in the noise monitoring protocol. It is recommended that the NMP be revised to include specific details on the minimum</p>	<p>The Noise Management Plan will be updated incorporating the recommended contents arising from the independent audit</p>	<p>Noise monitoring reports include information as required by the Noise Management Plan. Do not include <math>L_{A1,1min}</math> The following information was not included in the Noise report:</p> <ul style="list-style-type: none"> <li>• Calibration data for the sound level meter;</li> </ul>

information to be collected and reported during the attended noise monitoring program in order to satisfy the EPL requirements. Specifically, the NMP should reflect the requirement of the EPL to assess for tonal, impulsive, intermittent or low frequency noise		<ul style="list-style-type: none"> <li>Whether the noise was substantially tonal, impulsive, intermittent or low frequency in nature;</li> </ul> <p>A small anemometer had not been used to confirm wind speed is suitable for noise measurements. Noise monitoring not conducted in accordance with EPL Clause 7.1.</p> <p>See Administrative Non-compliance A-09</p>
<i>Noise Monitoring Program</i> It is recommended that the NMP be revised to include an outline of the preferred format for the noise monitoring reports and how the monitoring data is to be presented.	The Noise Management Plan will be updated in the preferred format based upon the recommendation from the independent audit.	Preferred format of the noise monitoring reports not included in the Noise Management Plan.
<i>Noise Monitoring Program</i> It is recommended Rocla review the NMP and include a regular review process for the NMP.	Rocla intends to implement a process to review all management plans required for the Calga Sand Quarry (and Southern Extension, if approved) throughout the ongoing life of the Quarry	Noise Management Plan Section 14 Plan Review and Continual Improvement Protocol
<i>Groundwater Monitoring Program</i> It is recommended that the Groundwater Monitoring Program in the SWMP be updated to identify GDEs that require monitoring and include impact assessment criteria for GDEs, as well as consider impacts to groundwater dependent surface water bodies.	It is proposed to update the Site Water Management Plan (SWMP) (including the groundwater monitoring program for GDEs) in the manner recommended in the event the NSW Land and Environment Court approves the Southern Extension of the Quarry. In the event the Court refuses the application to extend Calga Quarry, the existing SWMP would be modified within 3 months of the Court's determination.	Site Water Management Plan does not include impact assessment criteria for GDEs. <b>See Non-compliance N-02.</b>
Prepare and obtain approval for an appropriate Groundwater Contingency Strategy as part of the development of management plans required by the Project Approval.	The requested Groundwater Contingency Strategy would be included within the updated Site Water Management Plan.	Groundwater Contingency Strategy prepared by Martens Consulting Engineers, November 2016. Submitted to DP&E for approval.



## **Appendix B. – Audit Checklists**

<b>AUDIT CHECKLIST</b>		
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>



## 6 Checklist - Development Consent (SSD\_6084 Modified June 2017).

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Schedule 2– Administrative Controls</b>					
<b>Obligation to Minimise Harm to the Environment</b>					
1.	1	The Applicant must implement all practicable measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the development.	No material harm to the environment as a result of the operations had been reported.	C	
<b>Terms of Approval</b>					
2.	2	The Applicant must carry out the development: (a) generally in accordance with the EIS, EA (Mod 1) and EA (Mod 3); and (b) in accordance with the conditions of this consent and the Project Layout Plans.	Results of this audit show that the development has been carried out in general accordance with requirements. Non-compliances have been raised where compliance with the requirements of the conditions of consent or management plans was not verified.	Note	
3.	3	If there is any inconsistency between the documents in condition 2(a), the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail over the documents in condition 2(a) to the extent of any inconsistency.		Note	
4.	4	The Applicant must comply with any requirement/s of the Secretary arising from the Department's assessment of: (a) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this consent (including any stages of these documents); (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with this consent; and (c) the implementation of any actions or measures contained in these documents.	Hanson has generally complied with requirements arising from DP&E assessments of Hanson documentation.	C	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Limits on Approval</b>					
5.	5	This Applicant may carry out quarrying operations on the site until 1 July 2030. Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional requirements and undertakings to the satisfaction of the Secretary. Consequently, this consent will continue to apply in all respects other than the right to conduct quarrying operations until the rehabilitation of the site and those requirements and undertakings have been carried out to the standard required by the applicable conditions.	Current year 2018	C	
6.	6	This consent is granted for Stage 3 only, as described in the Amendment Report, and shown conceptually on the plan in Appendix 1.	All works have been conducted within Stage 3.	C	
7	7	The Applicant must not transport more than 400,000 tonnes of product per year from the site.	Current production 181,183 T for January to June 2018 Production for January to December 384,623T	C	
<b>Structural Adequacy</b>					
8	8	The Applicant must ensure that any new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. Notes: <ul style="list-style-type: none"> <li>Under Part 4A of the EP&amp;A Act, the Applicant is required to obtain construction and occupation certificates for any building works.</li> <li>Part 8 of the EP&amp;A Regulation sets out the detailed requirements for the certification of development.</li> </ul>	No new buildings since the previous audit of the project.	NT	
<b>Demolition</b>					
9	9	The Applicant must ensure that all demolition work is carried out in accordance with AS 2601-2001: The Demolition of Structures, or its latest version.	No demolition of structures on site.	NT	



<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Protection of Public Infrastructure</b>					
10	10	The Applicant must: a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and b) relocate, or pay the full costs associated with relocating any public infrastructure that needs to be relocated as a result of the development.	No reported damage to public infrastructure	NT	
<b>Operation of Plant And Equipment</b>					
11	11	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.	Daily prestarts are carried out for plant and equipment.  Hanson uses a SAP Plant Maintenance system to record and track all scheduled maintenance, and to record the outcomes of the maintenance.	C	

<b>AUDIT CHECKLIST</b>		
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>



AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Schedule 3– SPECIFIC ENVIRONMENTAL CONDITIONS</b>					
<b>GENERAL EXTRACTION AND PROCESSING PROVISIONS</b>					
<b>Identification of Boundaries</b>					
12	1	<p>Prior to carrying out any development, the Applicant must:</p> <ul style="list-style-type: none"> <li>(a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction;</li> <li>(b) submit a survey plan of these boundaries to the Secretary; and</li> <li>(c) ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff and inspecting officers to clearly identify those limits,</li> </ul> <p>to the satisfaction of the Secretary.</p> <p>Note: The limit of extraction includes the area described in the documents listed in condition of schedule 2, and shown conceptually on the plan in Appendix 1.</p>	<p>Calga Sand Quarry Extension Plan Showing Pegged Location Setout of the Proposed Extraction Cells.</p> <p>5/12/05.</p>	C	
<b>Noise</b>					
<b>Impact Assessment Criteria</b>					
13	2	<p>The Applicant must ensure that the operational noise generated by the development does not exceed the criteria in Table 1 at any residence on privately-owned land.</p> <p>Noise generated by the development is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy. Appendix 4 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.</p> <p>However, the noise criteria in Table 1 do not apply if the Applicant has an agreement with the relevant landowner to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.</p>	<p>Noise monitoring has been undertaken on a quarterly basis by an external consultant.</p> <p>No exceedences of noise criteria as a result of site activities have been identified during monitoring.</p>	C	

<b>AUDIT CHECKLIST</b>			
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>	

Land Acquisition																									
14	3	If the noise generated by the development exceeds the criteria in Table 1 by more than 5 dB(A), then the Applicant must, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 8 of schedule 4, unless there is a valid noise agreement between the Applicant and an affected landowner. 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.	All noise monitoring since the previous audit in 2014 were compliant with site criteria.	NT																					
Noise Mitigation																									
15	4	Prior to carrying out any extraction, the Applicant must construct an acoustic barrier in accordance with the quarry design in the Amendment Report (as reproduced in Appendix 1), to the satisfaction of the Secretary. The construction of the acoustic barrier must be completed within 5 working weeks.	Acoustic barrier has been constructed.	C																					
Operation Hours																									
16	5	<div><div>The applicant must comply with the operating hours in Table 2.</div><div>Table 1: Operating Hours</div><table><tr><td>Activity</td><td>Day</td><td>Time</td></tr><tr><td rowspan="3">Extraction and processing</td><td>Monday-Friday</td><td>7:00am to 6:00pm</td></tr><tr><td>Saturday</td><td>7:00am to 4:00pm</td></tr><tr><td>Sunday and Public Holidays</td><td>Nil</td></tr><tr><td rowspan="3">Delivery and distribution</td><td>Monday-Friday</td><td>5:00am to 10:00pm</td></tr><tr><td>Saturday</td><td>5:00am to 4:00pm</td></tr><tr><td>Sunday and Public Holidays</td><td>Nil</td></tr><tr><td>Maintenance ( if inaudible at</td><td>Any day</td><td>Anytime</td></tr></table></div>	Activity	Day	Time	Extraction and processing	Monday-Friday	7:00am to 6:00pm	Saturday	7:00am to 4:00pm	Sunday and Public Holidays	Nil	Delivery and distribution	Monday-Friday	5:00am to 10:00pm	Saturday	5:00am to 4:00pm	Sunday and Public Holidays	Nil	Maintenance ( if inaudible at	Any day	Anytime	<div>Reported that sales and production were in accordance with the times identified.</div> <div>Records of truck movements verified compliance with delivery and distribution times.</div>	C	
Activity	Day	Time																							
Extraction and processing	Monday-Friday	7:00am to 6:00pm																							
	Saturday	7:00am to 4:00pm																							
	Sunday and Public Holidays	Nil																							
Delivery and distribution	Monday-Friday	5:00am to 10:00pm																							
	Saturday	5:00am to 4:00pm																							
	Sunday and Public Holidays	Nil																							
Maintenance ( if inaudible at	Any day	Anytime																							

<b>AUDIT CHECKLIST</b>			
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>	

		neighbouring residences )					
17	6	The following activities may be carried out at the premises outside the hours specified in Table 2: a) the delivery of materials as requested by Police or other authorities for safety reasons; and b) emergency work to avoid the loss of lives, property and/or to prevent environmental harm.  In such circumstances the Applicant must notify EPA and affected residents prior to undertaking the works, or within a reasonable period in the case of emergency			No work had been required to be conducted outside of normal work hours.	C	
Operating Conditions							
18	7	The Applicant must: (a) implement best practice management to minimise the construction, operational and road transportation noise of the development; (b) minimise the noise impacts of the development during meteorological conditions when the noise criteria in this consent do not apply (see Appendix 4); (c) carry out noise monitoring (at least every 3 months or as otherwise agreed with the Secretary) to determine whether the development is complying with the relevant conditions of this consent; and (d) regularly assess noise monitoring data and modify and/or stop operations on site to ensure compliance with the relevant conditions of this consent,  to the satisfaction of the Secretary. Note: Required frequency of noise monitoring may be reduced if approved by the Secretary.			Management practices to minimise noise impacts have been identified in Section 7 of the Noise Management Plan.  <b>Practices had been implemented in accordance with the plan with the exception of:</b> <ul style="list-style-type: none"><li>• <b>Comparative sound level measurements of equipment had not been conducted;</b></li><li>• <b>Signs had not been displayed at the exit to the site to remind all drivers to leave in a quiet manner.</b></li></ul> Alternative work areas had been identified to reduce noise propagation during adverse weather conditions. Attended noise monitoring conducted on a quarterly basis, with annual unattended monitoring conducted. Records did not identify any exceedance of site criteria as a result of site activities.	N	01
Noise Management Plan							
19	7A	The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with the EPA; (b) be submitted to the Secretary prior to operating the crushing system, unless otherwise agreed by the Secretary;			Noise Management Plan Version 2, 20 September 2017 prepared.  Letter of approval provided for Noise Management Plan and Air Quality Management Plan 19/10/17.  Crushing system has not been installed.	C	

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		<p>(c) describe the measures that would be implemented to ensure:</p> <ul style="list-style-type: none"> <li>• compliance with the noise criteria in this consent;</li> <li>• best practice noise management is being employed; and</li> <li>• noise impacts of the development are minimised during meteorological conditions under which the noise criteria in this consent do not apply (see Appendix 4);</li> </ul> <p>(d) describe the proposed noise management system; and</p> <p>(e) include a monitoring program to be implemented to measure noise from the development against the noise criteria in Table 1, and which evaluates and reports on the effectiveness of the noise management system on site.</p> <p>The Applicant must implement the approved Noise Management Plan as approved from time to time by the Secretary.</p>	Letter from EPA 17/08/17 shows consultation with EPA had occurred.		
AIR QUALITY					
Air Quality Impact Assessment Criteria					
20	8	The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated on site do not exceed the criteria in Table 3, Table 4 and Table 5 at any residence on privately-owned land, or on more than 25% of any privately-owned land.	<p>Dust management practices had been identified in Section 7 of the Air Quality Management Plan and implemented for the site.</p> <p>Dust deposition monitoring conducted has not identified any off-site exceedences.</p>	C	
Operating Conditions					
21	9	<p>The Applicant must:</p> <ul style="list-style-type: none"> <li>(a) implement best practice management to minimise the dust emissions of the development;</li> <li>(b) regularly assess meteorological and air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this consent;</li> <li>(c) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see note d under Table 3);</li> <li>(d) monitor and report on compliance with the relevant air quality conditions in this consent; and</li> <li>(e) minimise the area of surface disturbance and undertake progressive</li> </ul>	<p>Processes had been implemented for minimising dust emissions in accordance with Section 7 of the Air Quality Management Plan.</p> <p>Meteorological and Dust emission monitoring conducted.</p> <p><b>While a monitor had been purchased for the site, monitoring of particulate matter (TSP and PM10) had not been implemented at the time of audit.</b></p> <p>Evidence of progressive rehabilitation sighted during site inspection.</p>	A	01

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		rehabilitation of the site, to the satisfaction of the Secretary			
<b>Air Quality Management Plan</b>					
22	9A	<p>The Applicant must prepare an Air Quality Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared in consultation with the EPA;</li> <li>(b) be submitted to the Secretary prior to operating the crushing system, unless otherwise agreed by the Secretary;</li> <li>(c) describe the measures that would be implemented to ensure: <ul style="list-style-type: none"> <li>• compliance with the relevant conditions of this consent;</li> <li>• best practice management is being employed; and</li> <li>• the air quality impacts of the development are minimised during adverse meteorological conditions and extraordinary events;</li> </ul> </li> <li>(d) describe the proposed air quality management system;</li> <li>(e) include an air quality monitoring program that: <ul style="list-style-type: none"> <li>• is capable of evaluating the performance of the development;</li> <li>• includes a protocol for determining any exceedences of the relevant conditions of consent;</li> <li>• effectively supports the air quality management system; and</li> <li>• evaluates and reports on the adequacy of the air quality management system.</li> </ul> </li> </ul> <p>The Applicant must implement the approved Air Quality Management Plan as approved from time to time by the Secretary</p>	<p>Letter of approval provided for Air Quality Management Plan 19/10/17.</p> <p>Evidence of consultation with EPA sighted. E.g. 2/12/16 – Discussion on continuous particulate monitoring.</p> <p>Section 5 - compliance with the relevant conditions of this consent</p> <p>Section 7 – Dust and Particulate Matter Control Measures;</p> <p>Section 9.2.3 – Adverse meteorological conditions</p> <p>(d) – Section 9 – Air Quality Management System</p> <p>(e) – Section 8 – Air Quality Monitoring Program</p>	C	
<b>SURFACE AND GROUNDWATER</b>					
23		Note: The Applicant is required to obtain licences and permits for the development under the Protection of the Environment Operations Act 1997 and the Water Act 1912.	Four groundwater bore licences have been obtained.	C	
<b>Groundwater Impact Assessment Criteria</b>					
24	10	The Applicant must provide compensatory water supply, in accordance with the Groundwater Contingency Strategy and to the satisfaction of the Secretary, where the development results in a reduction of pumping yield in	Impact assessment criteria exceeded in 2013. No impact on private water supply.	C	

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		<p>privately-owned groundwater bores of 10 percent or greater.</p> <p>Notes:</p> <ul style="list-style-type: none"> <li>If the Applicant has reached a negotiated agreement with an affected landowner in regard to groundwater, and a copy of the agreement has been forwarded to the Secretary, then the Applicant may exceed the groundwater impact assessment criteria in accordance with the negotiated agreement.</li> <li>The Applicant must establish the basis for determining development-related impact in the Groundwater Monitoring Program (see condition 15).</li> <li>The Applicant must establish additional groundwater impact assessment criteria for its groundwater monitoring bores, in accordance with the Groundwater Monitoring Program, to provide advance warning of a potential exceedance of the groundwater impact assessment criteria.</li> </ul>	<p>Probable impact identified on privately owned bore.</p> <p>Assessed as &lt;10% reduction in pumping yield.</p>		
<b>Monitoring and Management</b>					
25	11	<p>Prior to carrying out any development, the Applicant must prepare a Water Management Plan for the development, in consultation with the DPI-Water, and to the satisfaction of the Secretary. This plan must be prepared by a suitably qualified hydrogeologist/hydrologist whose appointment/s have been approved by the Secretary, and must include:</p> <p>a) a Water Balance;</p> <p>b) an Erosion and Sediment Control Plan;</p> <p>c) a Surface Water Monitoring Program; and</p> <p>d) a Groundwater Monitoring Program.</p> <p>The Applicant must implement the approved Water Management Plan as approved from time to time by the Secretary.</p>	<p>Water quality Management Plan had been previously approved. Currently under review. Draft plan which was with the Department of Industry – Water for review.</p> <p>Awaiting comments.</p> <p>Compliance with requirements verified previous audit.</p>	C	
26	12	<p>The Water Balance must:</p> <p>a) include details of all water extracted (including water make), dewatered, transferred, used and/or discharged by the quarry; and</p> <p>b) describe measures to minimise water use by the development.</p>	Water balance included in the Water Management Plan	C	
27	13	<p>The Erosion and Sediment Control Plan must:</p> <p>a) be consistent with the requirements of the Department of Housing's</p>	Erosion and Sediment control plan developed and included in Section 4 of the Site Water Management Plan.	C	

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		Managing Urban Stormwater: Soils and Construction manual; b) identify activities that could cause soil erosion and generate sediment; c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters; d) describe the location, function, and capacity of erosion and sediment control structures; and e) describe what measures would be implemented to maintain the structures over time.			
28	14	The Surface Water Monitoring Program must include: a) detailed baseline data on surface water flows and quality in water bodies that could potentially be impacted by the quarry; b) surface water impact assessment criteria; c) a program to monitor surface water flows and quality; d) a protocol for the investigation, notification and mitigation of identified exceedences of the surface water impact assessment criteria; and e) a program to monitor the effectiveness of the Erosion and Sediment Control Plan.	Baseline data and assessment criteria was included in Section 6.2 of the Site Water Management Plan. Program to monitor surface water flows and quality in 6.3 Water quality monitoring schedule Protocol for the investigation, notification and mitigation of identified exceedences of the surface water impact assessment criteria in 6.5 – Investigation and reporting of exceedences.	C	
29	15	The Groundwater Monitoring Program must include: a) a program to collect detailed baseline data, based on sound statistical analysis, to benchmark the pre-quarrying natural variation in groundwater levels, yield and quality in groundwater bores within the predicted drawdown impact zone identified in the Amendment Report; b) groundwater impact assessment criteria for monitoring bores and privately-owned bores; c) a program to monitor impacts on the groundwater supply of potentially affected landowners, groundwater dependent ecosystems, and on vegetation; and d) a protocol for the investigation, notification and mitigation of identified exceedences of the groundwater impact assessment criteria.  Note: The Groundwater Monitoring Program must be prepared in accordance with the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004, available from the Department), unless otherwise authorised by the Secretary.	Site Water Management Plan – Section 7 includes the Groundwater Monitoring Program. a) Section 7.3 Baseline Monitoring Data. b) Section 7.4 Interim Impact Assessment Criteria c) 7.2 – Scope of Groundwater Monitoring Program d) 7.5 Investigation and Reporting of Exceedences  <b>Impact assessment criteria for groundwater dependent ecosystems (GDEs) not included.</b>	N	02



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Groundwater Contingency Strategy					
30	16	<p>Within 6 months of the date of this consent, the Applicant must prepare a Groundwater Contingency Strategy for the development, in consultation with the DPI-Water, and landowners within the predicted drawdown impact zone identified in the Amendment Report, and to the satisfaction of the Secretary. The strategy must include:</p> <p>a) the procedures that would be followed in the event of any exceedance of the groundwater impact assessment criteria, or other identified impact on groundwater; and</p> <p>b) measures to mitigate, remediate and/or compensate any identified impacts to provide an alternative long-term supply of water to the affected landowner that is equivalent to the loss attributed to the development.</p> <p>Note: The strategy must be prepared in accordance with the procedures detailed in schedule 4, and the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004, available from the Department), unless otherwise authorised by the Secretary.</p>	<p>Groundwater Contingency Strategy developed for the project by Martens Consulting Engineers.</p> <p>Submitted to DP&amp;E for review on 31/08/16.</p> <p>Revision history shows review by DPI Water.</p> <p>Section 6 of the Water Management Plan identifies a process for the management of exceedance of groundwater impact criteria.</p> <p><b>The GCS does not correctly describe the basis for provision of a compensatory water supply in accordance with the Consent.</b> The revised SWMP submitted to the department in draft for approval also does not specifically describe a GCS, although the elements of the GCS are included.</p> <ul style="list-style-type: none"> <li>MER report July 2005 – Hydraulic testing as specified by MER (2005) has not been carried out on two private bores CP14 and CP15 identified in the follow-up bore census of 2015. Further, the three private bores identified in the 2015 census have not been included in the monitoring network.</li> <li>MER report July 2005 – Continuous water level monitoring equipment installed in key monitoring bores CQ4, CQ11S and CQ13 as a requirement specified by MER (2005) has not been working since at least January 2016, but has not been investigated for repair or replacement. During this time, only bi-monthly manual water level monitoring has been undertaken on these bores.</li> <li>MER report July 2005 – No water level or flow metering equipment as specified by MER (2005) has been installed on any private bore within 500m of quarry. It may be that landholder approval was not given, but there is no record to confirm this.</li> </ul>	A	02
				N	03
				N	04
				N	05

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Annual Independent Groundwater Audit					
31	17	Each year from the date of this consent, or as otherwise directed by the Secretary, the Applicant must undertake an independent audit of the groundwater impacts of the development to determine compliance with the groundwater impact assessment criteria, to the satisfaction of the Secretary. The audit must be conducted by a suitably qualified and independent hydrogeologist whose appointment has been approved by the Secretary.	Independent audit conducted by independent hydrogeologist and included in Appendix 3 of the AEMR.	C	
	18	Deleted		Note	
Quarry Closure Groundwater Management Plan					
32	19	<p>Prior to the commencement of quarrying in Stage 3/6 or 5 years prior to the cessation of quarrying (whichever is the sooner), the Applicant must commission a suitably qualified hydrogeologist, whose appointment has been approved by the Secretary, to assess the potential long term impacts of the final void on groundwater resources, and to develop a quarry closure and post-closure groundwater management plan. The plan must:</p> <p>a) be prepared in consultation with the DPI-Water, the CCC, and landowners within the predicted drawdown impact zone identified in the Amendment Report; and</p> <p>b) include strategies, in accordance with the Groundwater Contingency Strategy, to ensure the long-term security of water supply to any landowner whose groundwater bores exceed, or are likely to exceed in the future, the groundwater impact assessment criteria, to the satisfaction of the Secretary.</p>	<p>Reported that the expected life of the quarry is less than 5 years.</p> <p>Dundon Consulting Pty Ltd have been engaged (21 May 2018) to prepare the Quarry Closure and post closure groundwater management plan.</p> <p>This plan was reported to be in the early stages of preparation.</p>	C	
Meteorological Monitoring					
33	20	Prior to carrying out any development, the Applicant must establish and subsequently maintain a meteorological station in the vicinity of the development, to the satisfaction of the EPA and the Secretary. The station must as a minimum, unless otherwise authorised by the Secretary, monitor daily rainfall and evaporation in accordance with the requirements in Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.	<p>Meteorological station established.</p> <p>Monitoring of Temperature, wind speed and direction, relative humidity, solar radiation, rainfall, Air pressure. Evapotranspiration included in monthly reports.</p>	C	

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REHABILITATION AND LANDSCAPING					
Rehabilitation					
34	21	The Applicant must progressively rehabilitate the site to the satisfaction of the Secretary, in a manner that is generally consistent with the concept final landform in the Amendment Report (as reproduced in Appendix 2). The rehabilitation of the site must include at least 1 hectare of open heathland/sedgeland in low lying and drainage areas	Revegetation has commenced at perimeters. Above the benches of Cells 3, 4, 5, 6. and around cells 4 (current silt cell) and 3 (future silt cell). Toolijooa engaged for monitoring the progress of rehabilitation.	C	
Rehabilitation and Landscaping Management Plan					
35	22	<p>Within 6 months of the date of this consent, the Applicant must prepare and subsequently implement a Rehabilitation and Landscape Management Plan for the development in consultation with Council and OEH, and to the satisfaction of the Secretary: This plan must:</p> <ul style="list-style-type: none"> <li>a) identify the areas likely to be disturbed by the development;</li> <li>b) describe in general the short, medium, and long-term measures that would be implemented to rehabilitate the site, including consideration of avoiding impacts on Aboriginal cultural heritage and integrating the rehabilitated site with the Aboriginal cultural landscape;</li> <li>c) describe in detail the measures that would be implemented over the next 5 years to rehabilitate the site;</li> <li>d) describe how the performance of these measures would be monitored over time;</li> <li>e) set completion criteria for the rehabilitation of the site;</li> <li>f) include a Vegetation Clearing Protocol, a Pest and Weed Management Plan, and a Landscape Plan; and</li> <li>g) include a program to monitor the development's effects on vegetation, including threatened species and groundwater dependent ecosystems.</li> </ul>	<p>Rehabilitation and Landscape Management Plan (2006) developed.</p> <p>The Rehabilitation and Landscape Management Plan has not been updated since 2006.</p> <p>Records showed that the Rehabilitation and Landscape Management Plan had been updated in 2016 following acquisition of the Quarry by Hanson.</p> <p>Extension of time for submission of the plan to DP&amp;E was granted on 19/10/17, with completion awaiting input from the local aboriginal land council.</p> <p>Vegetation Clearing Protocol –Appendix 2</p> <p>Pest and Weed Management Plan – Appendix 3</p> <p>Landscape Plan – Appendix 4</p> <p>Program to monitor the development's effects on vegetation, including threatened species and groundwater dependent ecosystems – Section 4.2.</p>	C	

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36	23	<p>Within 4 years of providing the Rehabilitation and Landscape Management Plan to the Secretary, and every 5 years thereafter, the Applicant must review and update the plan to the satisfaction of the Secretary.</p>	<p>Rehabilitation and Landscape Management Plan August 2006 available.</p> <p>Reported that the plan was under review at the time of audit.</p> <p>Draft plan 20/09/17 sighted.</p> <p>Evidence was sighted to demonstrate that the RLMP had been reviewed and updated following acquisition of the Quarry by Hanson.</p> <p>The draft RLMP was awaiting input from the local aboriginal council before submission to DP&amp;E for approval. Evidence of liaison with DP&amp;E on the status of the RLMP was sighted.</p>	C	
<b>Rehabilitation Bond</b>					
37	24	<p>Within 12 months of the date of this consent, the Applicant must lodge a rehabilitation bond for the development with the Secretary. The sum of the bond must be calculated at \$2.50/m2 for the total additional area to be disturbed in each 5 year review period, or as otherwise directed by the Secretary.</p> <p>Notes:</p> <ul style="list-style-type: none"> <li>• If the rehabilitation is completed to the satisfaction of the Secretary, the Secretary will release the rehabilitation bond.</li> <li>• If the rehabilitation is not completed to the satisfaction of the Secretary, the Secretary will call in all or part of the rehabilitation bond, and arrange for the satisfactory completion of these works.</li> </ul>	<p>Rehabilitation bond lodged 9/11/16. Required no later than 18/11/16.</p> <p>Bank Guarantee REF 5039900320 sighted.</p>	C	
38	25	<p>Within 4 years of lodging the rehabilitation bond with the Secretary, and every 5 years thereafter, unless the Secretary directs otherwise, the Applicant must review, and if necessary revise, the sum of the bond to the satisfaction of the Secretary. This review must consider:</p> <ol style="list-style-type: none"> <li>a) the effects of inflation;</li> <li>b) any changes to the total area of disturbance; and</li> <li>c) the performance of the rehabilitation against the completion criteria of the Rehabilitation and Landscape Management Plan.</li> </ol>	<p>Review due in 2022.</p>	NT	
<b>TRAFFIC AND TRANSPORT</b>					

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Site Access					
39	26	<p>Prior to the commencement of extraction in the applicable quarry stages, the Applicant must:</p> <ul style="list-style-type: none"> <li>a) seal the internal access road from the site entrance to the Stage 3 extraction limit for Stages 3/1 and 3/2; and</li> <li>b) seal the internal access road from the site entrance to the administration area for Stages 3/3 onwards, to the satisfaction of the Secretary.</li> </ul> <p>Note: The access road and quarrying stages are as shown in Appendix 1.</p>	Sealed internal access road provided	C	
40	27	<p>Prior to carrying out any development, the Applicant must provide a painted seagull arrangement to Peats Ridge Road, to improve egress for vehicles turning right from the access road, to the satisfaction of the RMS.</p>	<p>Painted seagull arrangement provided.</p> <p>Certification provided to show that the design met the RTA Road Design Guide provided by Guidance Road Management (via Gosford Council).</p>	C	
41	28	<p>The Applicant must ensure that the long term access road is designed to:</p> <ul style="list-style-type: none"> <li>a) accommodate heavy vehicle turning paths for the left hand turn from Peats Ridge Road into the access road, to the satisfaction of the RMS and the Secretary; and</li> <li>b) provide for vehicular access to the pit floor, to the satisfaction of the DPI and the Secretary.</li> </ul>	Sealed long term access road provided.	C	
42	28A	<p>The Applicant must prepare a Driver's Code of Conduct for the development to the satisfaction of the Secretary. This code must:</p> <ul style="list-style-type: none"> <li>a) be submitted to the Secretary no later than 28 July 2017, or as otherwise agreed by the Secretary;</li> <li>b) include details of the safe and quiet driving practices that must be used by drivers transporting products to and from the quarry;</li> <li>c) describe the measures to be put in place to ensure compliance with the Drivers' Code of Conduct.</li> </ul> <p>The Applicant must implement the Driver's Code of Conduct as approved from time to time by the Secretary.</p>	<p>Records showed that the Driver's Code of Conduct was prepared prior to 25/07/17. However, no record of submission prior to November 2017.</p> <p>Records indicated that the Driver's Code of Conduct had been submitted on 5/10/17. Letter from DP&amp;E 19/10/17 requiring the document to be updated to address comments from DP&amp;E.</p> <p>Sent to DPE on 10/11/17 and approved 23/11/17.</p> <p><b>The Drivers Code of Conduct had not been submitted to the Secretary within the required timeframe.</b></p> <p>Records of Declaration from Drivers following induction into Code of Conduct sighted (e.g. GW 22/06/18, MM, 30/06/18, LB 10/03/18).</p>	A	03

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<b>Parking</b>					
43	29	The Applicant must provide sufficient parking on-site for all quarry-related traffic, in accordance with Council's parking codes, and to the satisfaction of the Secretary.	On-site parking area provided.	C	
<b>Road Haulage</b>					
46	30	The Applicant must ensure that all loaded vehicles entering or leaving the site are covered.	All loads sighted during the day of audit were covered.	C	
47	31	The Applicant must ensure that all loaded vehicles leaving the site are cleaned of materials that may fall on the road before they are allowed to leave the site.	Wheel wash provided for vehicles exiting the site from the quarry working area.	C	
<b>Visual Impact</b>					
48	32	The Applicant must (a) implement all practicable measures to minimise the visual impacts of the development; (b) establish, re-vegetate and subsequently maintain the acoustic barrier to minimise the visual impacts of development, in accordance with the concept final landform in the Amendment Report (as reproduced in Appendix 2); (c) include a progress report on the re-vegetation and maintenance of the acoustic barrier in the Annual Review, to the satisfaction of the Director General.	Revegetation had commenced in available areas on the site. Acoustic barrier has been installed. Progress report on the re-vegetation and maintenance of the acoustic barrier were included in the 2017 Annual Review Section 7.6 of the AEMR provides a summary of progress on rehabilitation of the site.	C	
49	33	The Applicant must take all practicable measures to prevent and/or minimise any off-site lighting impacts from the development	Load and despatch undertaken up to 10pm at night. Lighting from vehicles and amenities area. Car park lighting on 2 hour timer which is turned on as required.	C	
50	34	All external lighting associated with the development must comply with Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting	Lighting provided for parking area and amenities. Lights are downward facing.	C	
<b>Waste Management</b>					
51	35	The Applicant must:	<b>Waste register not maintained.</b>	<b>A</b>	<b>04</b>

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		(a) monitor the amount of waste generated by the development; (b) investigate ways to minimise waste generated by the development; (c) implement reasonable and feasible measures to minimise waste generated by the development; and (d) report on waste management and minimisation in the Annual Review. to the satisfaction of the Secretary.	<b>Records of general waste not maintained.</b> Records of waste removed from site were provided by the waste transporter. Coast and Valley oil distributors provided summary of oil waste removed from site. Sims Metal spreadsheet provided summary of metal waste removed from site. AEMR includes reporting on waste generated by the site.		
<b>Hazard management</b>					
<b>Dangerous Goods</b>					
52	36	The Applicant must ensure that the storage, handling, and transport of dangerous goods is conducted in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code.	Diesel tank 30,000l self bunded tank Minor quantities of oils. Dangerous goods storage cabinet provided for storage of minor quantities of flammable goods.	C	
<b>Safety</b>					
53	37	The Applicant must secure the development to ensure public safety to the satisfaction of the Secretary.	Perimeter chain wire fencing provided. Barbed wire fencing provided on southern border. Locked gates at entry	C	
<b>Bushfire management</b>					
54	38	The Applicant must: a) ensure that the development is suitably equipped to respond to any fires on site; and b) assist the Rural Fire Service and emergency services as much as possible if there is a fire on site.	Portable fire extinguishers only. 12,000l water cart available on site. No fires have occurred on site. Reported that assistance will be provided to RFS in the event of bushfire. Emergency plan Section 21 Scrub/ Bush fire provides response to fires.	C	
<b>Production Data</b>					
55	39	The Applicant must: (a) provide annual production data to the DRG using the standard form for	<b>Not provided to DRG at this stage.</b>	<b>A</b>	<b>04</b>

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		that purpose; and (b) include a copy of this data in the Annual Review.	Annual production data provided in the annual review (verified for 2016)		
<b>Quarry Exit Strategy</b>					
56	40	At least 3 years prior to the cessation of quarrying, the Applicant must prepare a Quarry Exit Strategy for the development, in consultation with the Council, and to the satisfaction of the Secretary. The plan must: (a) define the objectives and criteria for quarry closure; (b) investigate options for the future use of the site, including any final void/s; (c) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the development; and (d) describe how the performance of these measures would be monitored over time.	Not applicable at this stage.  Reported that the site is expected to continue operations until 2021 (pers comms P Slough)	NT	
<b>ABORIGINAL CULTURAL HERITAGE</b>					
<b>Condition Report</b>					
57	41	Prior to the installation of the crushing system, the Applicant must prepare a condition report for the Women's Site (AHIMS # 45-3-00119 and 45-3-2195) to the satisfaction of the Secretary. The report must: (a) be prepared in consultation with the relevant Aboriginal parties by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary; (b) assess the existing condition of the Women's Site; (c) consider any damage to the Women's Site that may have arisen from quarrying in the past or that may occur from quarrying in the future; (d) provide any further recommendations regarding the management of the Women Site's in respect of the operation of the crushing system.  The Applicant must submit the condition report to the Secretary and implement the recommendations of the report to the satisfaction of the Secretary.	Reported that a condition assessment had been conducted and a report prepared but has not been provided at this stage.  Crushing system has not been installed.	NA	
58	42	For twelve months following the installation of the crushing system, or as otherwise directed by the Secretary, the Applicant must monitor ground		NT	



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		vibration levels at a nearby appropriate location, provide accurate predictions of vibration impacts at the Women's Site and publish the monitoring results and predictions on its website			
59	43	After twelve months of operating the crushing system, the condition of the Women's Site must be reassessed by suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary. Within six weeks of this reassessment, the Applicant must submit a revised condition report to the Secretary for review. The condition of the Women's Site must be reviewed in each Independent Environmental Audit		NT	
<b>Aboriginal Heritage Management Plan</b>					
60	44	<p>The Applicant must prepare an Aboriginal Heritage Management Plan for the development to the satisfaction of the Secretary. The plan must:</p> <ul style="list-style-type: none"> <li>(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;</li> <li>(b) be prepared in consultation with OEH and relevant Aboriginal parties;</li> <li>(c) be submitted to the Secretary for approval prior to the installation of the crushing system, unless the Secretary agrees otherwise;</li> <li>(d) identify any Aboriginal sites or potential archaeological deposits that may be affected through the continued operation of the development;</li> <li>(e) describe the processes undertaken to identify the appropriate site for monitoring ground vibration levels, the installation and maintenance of the vibration monitoring equipment and the methods used to accurately predict vibration levels at the Women's Site;</li> <li>(f) identify reasonable and feasible measures to be implemented to reduce intrusive noise at the Women's Site while it is in use;</li> <li>(g) include a description of the measures that would be implemented to: <ul style="list-style-type: none"> <li>(i) protect and monitor known sites of archaeological and cultural significance within the vicinity of the site;</li> <li>(ii) manage any new Aboriginal objects or relics that are discovered;</li> <li>(iii) store Aboriginal heritage items salvaged on site; and</li> <li>(iv) ensure ongoing consultation and involvement of the relevant Aboriginal parties in the conservation and management of Aboriginal cultural heritage on or surrounding the site.</li> </ul> </li> </ul>	<p>Aboriginal Heritage Management Plan has been prepared in draft.</p> <p>6/06/18- Correspondence from OEH advising that the site was being recommended of the Calga Aboriginal Cultural Landscape on the State Heritage Register to the Minister for Heritage.</p>	C	

**AUDIT CHECKLIST**

Project: Calga Sand Quarry

Company: Hanson Construction Materials

Date: 3 July 2018



AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Schedule 4– ADDITIONAL PROCEDURES</b>					
<b>NOTIFICATION OF LANDOWNERS</b>					
61	1	If the results of monitoring required in schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria in schedule 3, then the Applicant must notify the Secretary and the affected landowners and/or existing or future tenants accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the criteria in schedule 3.	Monitoring results have not identified an impact generated by the development greater than the relevant impact assessment criteria in schedule 3.	NT	
<b>INDEPENDENT REVIEW</b>					
62	2	<p>If an owner of privately-owned land considers the development to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.</p> <p>If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant must:</p> <p>a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to:</p> <ul style="list-style-type: none"> <li>consult with the landowner to determine his/her concerns;</li> <li>conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3; and</li> <li>if the development is not complying with these criteria, then identify measures that could be implemented to ensure compliance with the relevant criteria; and</li> </ul> <p>b) give the Secretary and landowner a copy of the independent review.</p>	<p>No request for an independent review has been received.</p> <p>2013 – Independent review conducted on groundwater yield from a bore on an adjacent property, although this was in response to a complaint.</p>	NT	
63	3	If the independent review determines that the quarrying operations are complying with the relevant criteria in schedule 3, then the		NT	

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		Applicant may discontinue the independent review with the approval of the Secretary.			
<b>LAND ACQUISITION</b>					
64	8	<p>Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant must make a binding written offer to the landowner based on:</p> <p>a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the development, having regard to the:</p> <ul style="list-style-type: none"><li>existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and</li><li>presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date;</li></ul> <p>b) the reasonable costs associated with:</p> <ul style="list-style-type: none"><li>relocating within the Gosford local government area, or to any other local government area agreed to by the Secretary; and</li><li>obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and</li></ul> <p>c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.</p> <p>Upon receiving such a request, the Secretary shall request the President of the NSW Division of the Australian Property Institute</p>		NT	

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		<p>to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.</p> <p>Within 14 days of receiving the independent valuer's report, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.</p> <p>However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions.</p> <p>Within 14 days of this determination, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination.</p> <p>If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the Secretary determines otherwise.</p> <p>The Applicant must pay all reasonable costs associated with the land acquisition process described in this condition, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.</p>			

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<b>Schedule 5– ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING</b>					
<b>ENVIRONMENTAL MANAGEMENT</b>					
<b>Environmental Management Strategy</b>					
65	1	<p>If the Secretary requires, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must:</p> <p>(a) be submitted to the Secretary for approval within 6 months of the Secretary requiring preparation of the strategy by notice to the Applicant;</p> <p>(b) provide the strategic framework for environmental management of the development;</p> <p>(c) identify the statutory approvals that apply to the development;</p> <p>(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;</p> <p>(e) describe the procedures that would be implemented to:</p> <ul style="list-style-type: none"> <li>• keep the local community and relevant agencies informed about the operation and environmental performance of the development;</li> <li>• receive, record, handle and respond to complaints;</li> <li>• resolve any disputes that may arise during the course of the development;</li> <li>• respond to any non-compliance;</li> <li>• respond to emergencies; and</li> </ul> <p>(f) include:</p> <ul style="list-style-type: none"> <li>• copies of any strategies, plans and programs approved under the conditions of this consent; and</li> <li>• a clear plan depicting all the monitoring to be carried out under the conditions of this consent.</li> </ul>	Environmental Management Strategy prepared February 2006.	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
		The Applicant must implement any Environmental Management Strategy as approved from time to time by the Secretary.			
<b>Evidence of Consultation</b>					
66	2	Where consultation with any public authority is required by the conditions of this consent, the Applicant must: (a) consult with the relevant public authority prior to submitting the required document to the Secretary for approval; (b) submit evidence of this consultation as part of the relevant document; (c) describe how matters raised by the authority have been addressed and any matters not resolved; and (d) include details of any outstanding issues raised by the authority and an explanation of disagreement between any public authority and the Applicant	Evidence of consultation with public authorities was verified during the audit.  E.g. 6/06/18- Correspondence from OEH advising that the site was being recommended of the Calga Aboriginal Cultural Landscape on the State Heritage Register to the Minister for Heritage. 2/12/16 – Discussion on continuous particulate monitoring.	C	
<b>Management Requirements</b>					
67	3	The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: <ul style="list-style-type: none"> <li>the relevant statutory requirements (including any relevant approval, licence or lease conditions);</li> <li>any relevant limits or performance measures/criteria; and</li> <li>the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;</li> <li>a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</li> </ul> (d) a program to monitor and report on the:		C	

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		<ul style="list-style-type: none"> <li>impacts and environmental performance of the development; and</li> <li>effectiveness of any management measures (see (c) above);</li> </ul> <p>(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;</p> <p>(f) a program to investigate and implement ways to improve the environmental performance of the development over time;</p> <p>(g) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> <li>incidents;</li> <li>complaints;</li> <li>non-compliances with statutory requirements; and</li> <li>exceedences of the impact assessment criteria and/or performance criteria; and</li> </ul> <p>(h) a protocol for periodic review of the plan.</p> <p>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</p>			
<b>Revision of Strategies, Plans &amp; Programs</b>					
68	4	<p>Within 3 months of the submission of an:</p> <p>(a) incident report under condition 8 below;</p> <p>(b) Annual Review under condition 10 below;</p> <p>(c) audit report under condition 11 below; and</p> <p>(d) any modifications to this consent,</p> <p>the Applicant must review the strategies, plans and programs required under this consent, to the satisfaction of the Secretary.</p> <p>Within 4 weeks of conducting any such review, the Applicant must advise the Secretary of the outcomes of the review, and provide any revised documents to the Secretary for review and approval.</p>	<p><b>Annual review for 2017 has been prepared and submitted to DP&amp;E on 1 May 2018 (Extension obtained 19/03/18 to submit by 30/04/18).</b></p> <p>Modification to consent in June 2017.</p> <p>Reviews required to be completed by the end of July 2018.</p> <p>Noise Management Plan, Air Management Plan submitted</p>	<b>A</b>	<b>05</b>

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		Note: This is to ensure that strategies, plans and programs are updated on a regular basis, and to incorporate any recommended measures to improve environmental performance of the development.	and approved. Water Management plan, LRMP yet to be submitted (to be submitted with the Aboriginal Heritage Management Plan)		
<b>Updating and Staging of Strategies , Plans or Programs</b>					
69	5	<p>To ensure that strategies, plans or programs required under this consent are updated on a regular basis, and that they incorporate any appropriate additional measures to improve the environmental performance of the development, the Applicant may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Applicant may also submit any strategy, plan or program required by this consent on a staged basis.</p> <p>With the agreement of the Secretary, the Applicant 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 consent.</p> <p>Notes:</p> <ul style="list-style-type: none"> <li>• <i>While any strategy, plan or program may be submitted on a staged basis, the Applicant will need to ensure that the operations associated with the development are covered by suitable strategies, plans or programs at all times.</i></li> <li>• <i>If the submission of any strategy, plan or program is to be staged; then the relevant strategy, plan or program must clearly describe the specific stage/s of the development to which the strategy, plan or program applies; the relationship of this stage/s to any future stages; and the trigger for updating the strategy, plan or program.</i></li> </ul>	Management plans were currently being reviewed.	C	
<b>Adaptive Management</b>					
70	6	The Applicant must assess and manage development-related risks to ensure that there are no exceedences of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this	<p>No exceedences of criteria have occurred.</p> <p>Non-compliance have been raised where compliance with requirements of schedule 3 has not been verified.</p>	Note	



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		<p>consent and may be subject to penalty or offence provisions under the EP&amp;A Act or EP&amp;A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:</p> <ul style="list-style-type: none"> <li>(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;</li> <li>(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</li> <li>(c) implement remediation measures as directed by the Secretary;</li> </ul> <p>to the satisfaction of the Secretary.</p>			
<b>COMMUNITY CONSULTATIVE COMMITTEE</b>					
71	7	<p>The Applicant must establish and operate a Community Consultative Committee (CCC) for the development to the satisfaction of the Secretary. The CCC must be operated in general accordance with the Department's Community Consultative Committee Guidelines State Significant Projects (November 2016), or later version.</p> <p>Note: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.</p>	<p>Community consultative committee established.</p> <p>Meetings conducted 6 monthly.</p> <p>Community Consultative Committee meeting minutes available on the website from 2006 to November 2016.</p> <p><b>Community Consultative Committee meeting minutes for 2017 and 2018 were uploaded into the complaints register section of the Website.</b></p>	<b>O</b>	<b>01</b>
<b>REPORTING</b>					
<b>Incident Reporting</b>					
72	8	<p>The Applicant must immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Applicant must provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.</p>	No environmental incidents have been reported.	NT	

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<b>Regular Reporting</b>					
73	9	The Applicant must provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.	Air quality, noise and water quality monitoring results were provided on the company website.	C	
<b>Annual Review</b>					
74	10	<p>By the end of March each year, or other timing as may be agreed by the Secretary, the Applicant must submit a report to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must:</p> <p>(a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;</p> <p>(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the:</p> <ul style="list-style-type: none"> <li>relevant statutory requirements, limits or performance measures/criteria;</li> <li>requirements of any plan or program required under this consent;</li> <li>monitoring results of previous years; and</li> <li>relevant predictions in the documents listed in condition 2(a) of Schedule 2;</li> </ul> <p>(c) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(d) identify any trends in the monitoring data over the life of the development;</p> <p>(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and</p>	<p>Annual reviews completed and submitted.</p> <p>Annual reviews for 2017 has been prepared and submitted to DP&amp;E on 1 May 2018 (Extension obtained 19/03/18 to submit by 30/04/18).</p>	A	05

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		(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.  The Applicant must ensure that copies of the Annual Review are submitted to Council and are available to the Community Consultative Committee (see condition 7 of Schedule 5) and any interested person upon request.			
<b>INDEPENDENT ENVIRONMENTAL AUDIT</b>					
75	11	<p>Within a year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission, commence and pay the full cost of an Independent Environmental Audit of the development. This audit must:</p> <ul style="list-style-type: none"><li>(a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</li><li>(b) include consultation with the relevant agencies;</li><li>(c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL or necessary water licences for the development (including any assessment, strategy, plan, report or program required under these approvals);</li><li>(d) review the adequacy of strategies, plans or programs required under the abovementioned approvals;</li><li>(e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any assessment, strategy, plan or program required under the abovementioned approvals; and</li><li>(f) be conducted and reported to the satisfaction of the Secretary.</li></ul> <p>Note: This audit team must be led by a suitably qualified auditor</p>	<p>Date of consent 28/10/2005.</p> <p>Modification June 2017 introduced requirement for 3 yearly audits (previously 5 years).</p> <p>This audit commissioned June 2018, within a year of the modification of the consent.</p>	C	

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		and include experts in any fields specified by the Secretary.			
76	12	Within 12 weeks of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report.	Previous environmental audit completed in February and April 2014, with the report provided in March 2015.	C	
<b>Access to Information</b>					
77	13	<p>Within 6 months of the date of this consent, the Applicant must:</p> <p>(a) make the following information publicly available on its website:</p> <ul style="list-style-type: none"> <li>the documents listed in condition 2(a) of Schedule 2;</li> <li>current statutory approvals for the development;</li> <li>all approved strategies, plans and programs required under the conditions of this consent;</li> <li>a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;</li> <li>a complaints register, updated monthly;</li> <li>the annual reviews of the development;</li> <li>any independent environmental audit, and the Applicant's response to the recommendations in any audit; and</li> <li>any other matter required by the Secretary; and</li> </ul> <p>(b) keep this information up-to-date, to the satisfaction of the Secretary.</p>	<p>Records available on Hanson website. E.g.</p> <p>Calga EIS Summary May 2004  Calga Environmental Impact Statement May 2004  Calga Specialist Consultant Studies 2004  DA Amendment June 2005  Calga Final determination Report  Consolidated Consent Mod 3  Notice of Modification 3  Management plans and Environmental Management Strategy available.</p>	C	

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## 7 Checklist – Environmental Protection Licence (EPL 11295)

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>A3 Information supplied to the EPA</b>					
7.	A3.1	<p>Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.</p> <p>In this condition the reference to "the licence application" includes a reference to:</p> <ul style="list-style-type: none"> <li>a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and</li> <li>b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.</li> </ul>	<p>Quarry 400ktpa sales limit Last year 384,625tpa</p> <p>Monitor discharge point 1 SW on discharge. pH TSS Remainder SW are following 50mm event. pH TSS oil and grease.</p> <p>Monitoring conducted by Carbon Base. Dust deposition is monitored monthly.</p>	C	
<b>3 Limit Conditions</b>					
<b>L1 Pollution of waters</b>					
8.		Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	No breaches of S120.	C	
<b>L2 Concentration limits</b>					
9.	L2.1	For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), The concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table. Licence Discharge point 1 – Overflow from dam (pH, TSS, O&G)	No breaches of EPL at EPL Point 1.	C	
10.	L2.2	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.	No breaches of EPL.	C	
11.	L2.3	To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.	Noted.		

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>L3 Noise Limits</b>					
12.	L3.1	Noise from premises must not exceed the following limits at the locations and times specified. Where $L_{Aeq}$ means the equivalent continuous Noise level - the level of noise equivalent to the energy-average of noise levels over a measurement period.	Quarterly noise monitoring undertaken by Wilkinson Murray. No exceedences of noise limits have been recorded.	C	
13.	L3.2	The noise emission limits identified in this licence apply under all meteorological conditions except for: a) wind speeds greater than 3 metres/second at 10 metres above ground level; or b) temperature inversion conditions between 1.5 degrees Celsius and 3 degrees Celsius per 100 metres and wind speed up to 2 metres per second at 10 metres above ground level; or c) temperature inversion conditions greater than 3 degrees Celsius per 100 metres.	Noted.	Note	
14.	L3.3	For the purpose of condition L3.1: a) Data recorded by the meteorological station identified as EPA Licence Point 2 must be used to determine meteorological conditions; and b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.	Meteorological station installed at EPL Point 2 alongside the office. Hanson collect meteorological data. Pass on data to Carbon Base and Wilkinson Murray.	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
15.	L3.4	<p>To determine compliance:</p> <p>a) with the Leq(15 minute) noise limits in condition L3.1, the noise measurement equipment must be located:</p> <ul style="list-style-type: none"><li>• approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or</li><li>• within 30 metres of a dwelling facade, but not closer than 3 metres, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable</li><li>• within approximately 50 metres of the boundary of a National Park or a Nature Reserve.</li></ul> <p>b) with the L<sub>1(1min)</sub> noise limits in condition L3.1, the noise measurement equipment must be located within 1 metre of a dwelling façade.</p> <p>c) with the noise limits in condition L3.1, the noise measurements equipment must be located:</p> <ul style="list-style-type: none"><li>• at the most affected point at a location where there is no dwelling at the location; or</li><li>• at the most affected point within an area at a location prescribed by condition L3.4(a) or L3.4(b).</li></ul>	<p>Four noise monitoring locations CN1, 2, 3, and 6. CN sites are sited at dwellings located off site. Main noise impacts observed during attended monitoring have been from road noise and animals/insects.</p>	C	
16.	L3.5	<p>A non-compliance of condition L3.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured:</p> <p>a) at a location other than an area prescribed by condition L3.3(a) and L3.3(b); and/or</p> <p>b) at a point other than the most affected point at a location.</p>	<p>No non-compliances have been recorded.</p>	C	
17.	L3.6	<p>For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.</p>	<p>As per the Wilkinson Murray Quarterly Noise Monitoring Reports. No exceedences have been recorded. Reports posted to Calga website and included in EPA Annual Return.</p>	C	

<b>AUDIT CHECKLIST</b>			
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L4 Hours of operation							
18.	L4.1	Activities at the premises must be undertaken on the days and at the times in the following table.	Working hours were reported to be in accordance with the approved hours.  No complaints have been received for working outside of approved hours.	C			
		Activity				Day	Time
		Extraction and Processing				Monday - Friday	7.00am to 6.00pm
		Extraction and Processing				Saturday	7.00am to 4.00pm
		Extraction and Processing Sunday				Sunday and Public Holidays	Nil
		Delivery and Distribution				Monday-Friday	5.00am to 10.00pm
		Delivery and Distribution				Saturday	5.00am to 4.00pm
		Delivery and Distribution				Sunday	Nil
		Maintenance (If inaudible at neighbouring residences)				Any day	Any Time
19.	L4.2	This condition does not apply to the delivery of material outside the hours of operation permitted by condition L7.1, if that delivery is required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances, prior notification must be provided to the EPA and affected residents as soon as possible or within a reasonable period in the case of emergency.	.	Note			



<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>4 Operating Conditions</b>					
20.	O1	<b>Activities must be carried out in a competent manner</b> Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity	No notices issued by EPA.	C	
21.	O2	<b>Maintenance of plant and equipment</b> All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.	Daily prestarts are carried out for plant and equipment. Hanson uses a SAP Plant Maintenance system to record and track all scheduled maintenance, and to record the outcomes of the maintenance.	C	
22.	O3	<b>Dust</b> O3.1 All operations and activities occurring at the premises must be carried out in a manner that will minimise dust at the boundary of the premises.  Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Processes had been implemented to minimise dust generation for the site activities. A water cart was used for dust suppression, and a sealed road was provided for access to the site. Annual limit of 4g/m <sup>2</sup> /mth set for insoluble solids in the EPL. While monthly results for dust deposition have exceeded 4g/m <sup>2</sup> /mth, the annual average remains below 4g/m <sup>2</sup> /mth. Dust deposition has increased each month since Dec 2017. It was reported that the increased dust levels were likely to be due to short term works in the region of the site near the dust gauge.	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
23.	O4	<b>Emergency response</b> The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.	Emergency Response Plan on display in crib room, weigh bridge, and in main office. Viewed plan in crib room. Viewed content of plan.	C	
<b>5 Monitoring and Recording Conditions</b>					
<b>M 1 Monitoring Records</b>					
24.	M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.	Monitoring records are kept on the Hanson network and uploaded to the company website.	C	
25.	M1.2	All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them.	All records are kept on the Hanson network and uploaded to the Hanson website.	C	
26.	M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.	Details of monitoring are provided by the relevant subcontractor, kept on the Hanson network, and uploaded to the Hanson website.	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>M2 Requirement to monitor concentration of pollutants discharged</b>					
27.	M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:	Dust deposition monitoring is carried out by monthly by Carbon Based.	C	
28.	M2.2	Air Monitoring Requirements Points 3,4,5,6,7,8 Insoluble Solids g/m <sup>2</sup> /mth	Dust deposition monitoring is carried out by monthly.	C	
29.	M2.3	Water/ Land Monitoring Requirements  Point 1 – pH and TSS, Oil and Grease - Weekly during any discharge	One discharge at EPL Point 1 carried out. Carbon Based conducted water quality sampling and analysis prior to discharge. Discharged water was within EPL limits.	C	
<b>M3 Testing methods - concentration limits</b>					
30.	M3.1	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.	Monitoring is carried out by Carbon Base. Analysis is carried out by ALS (NATA-certified). Results are reported to EPA.	C	
31.	M3.2	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.	Monitoring is carried out by Carbon Based. Analysis is carried out by ALS (NATA-certified). Results are reported to EPA.	C	

<b>AUDIT CHECKLIST</b>			
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>M4 Weather monitoring</b>					
32.	M4.1	At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively	Monitoring is carried out by Carbon Based. Analysis is carried out by ALS (NATA-certified). Results are reported to EPA.	C	
<b>M5 Recording of pollution complaints</b>					
33.	M5.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	Complaints management system maintained by Hanson. Complaints register kept in Hanson network and on website.	C	
34.	M5.2	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	<b>The Complaints Register does not include the personal details of the complainant or, if no such details were provided, a note to that effect.</b> It was reported that the register does not include personal details because it is published to the Hanson website.	A	07
35.	M5.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	All records are kept on the Hanson network and uploaded to the Hanson website.	C	
36.	M5.4	The record must be produced to any authorised officer of the EPA who asks to see them	EPA has visited the site since the last audit. This was to assist in determination of EPL discharge Point 1.	C	
<b>M6 Telephone complaints line</b>					

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
37.	M6.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.	Hanson operates a telephone complaints line. The number is provided on the main gate and identified as a complaints line. Hanson also operates a customer feedback form on the Hanson website.	C	
38.	M6.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	The number provided on the main gate is identified as a complaints line.	C	
39.	M6.3	The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.	Noted.	Note	
<b>M7 Noise monitoring</b>					
40.	M7.1	To assess compliance with the noise limits presented in the noise monitoring table in condition L3.1, attended noise monitoring must be undertaken in accordance with condition L3.4 and: a) at each one of the locations listed in Condition L3.1; b) occur annually in a reporting period; c) occur during each day, evening and night period as defined in the NSW Industrial Noise Policy for a minimum of: i) 1.5 hours during the day; ii) 30 minutes during the evening; and iii) 1 hour during the night. d) occur for three consecutive operating days. Note: The frequency of monitoring may be varied by the EPA once the variability of the noise impact is established.	Attended quarterly noise monitoring is carried out by Wilkinson Murray in accordance with the Noise Management Plan and Schedule 3 Condition 7. . Condition M7.1 is a new requirement under the recent EPL variation (20/02/2018) and has not yet been triggered (annual monitoring for 2018 not conducted prior to audit).	C	

<b>AUDIT CHECKLIST</b>			
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>6 Reporting Conditions</b>					
<b>R1 Annual return documents</b>					
41.	R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: <ul style="list-style-type: none"> <li>1. a Statement of Compliance,</li> <li>2. a Monitoring and Complaints Summary,</li> <li>3. a Statement of Compliance - Licence Conditions,</li> <li>4. a Statement of Compliance - Load based Fee,</li> <li>5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,</li> <li>6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and</li> <li>7. a Statement of Compliance - Environmental Management Systems and Practices.</li> </ul>	The most recent Annual Return was provided to EPA 20 September 2017. Annual returns on EPA website provided from 2002 to 2017. Annual returns are in the form required by EPA.	C	
42.		At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	Last Annual Return was provided 20 September 2017. Annual returns on EPA website provided from 2002 to 2017.	C	
43.	R1.2	A copy of the form in which the Annual Return must be supplied to the EPA accompanies this licence.  Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	Noted.	Note	
44.	R1.3	An Annual Return must be prepared in respect of each reporting period, except as provided below.  Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.	The most recent Annual Return was provided to EPA 20 September 2017. Annual returns on EPA website provided from 2002 to 2017.	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
45.	R1.4	Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period. Note: An application to transfer a licence must be made in the approved form for this purpose	The EPL was transferred from Rocla to Hanson on 9 June 2016. Annual Returns for Rocla and Hanson are on the EPA Public Register and confirm that the requirements of R4.1 have been met.	C	
46.	R1.5	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.	Not triggered.	NA	
47.	R1.6	The Annual Return for the reporting period must be supplied to the EPA via eConnect EPA or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	The Annual Return for 23 July 2016 was provided to EPA 21 September 2016. The Annual Return for 23 July 2017 was provided to EPA 20 September 2017.	C	
48.	R1.7	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	Records kept on Hanson network and on Hanson website.	C	
49.	R1.8	Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder	Annual Returns have been provided to the EPA in the EPA required format. There have been no non-compliances noted by the EPA.	C	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>R2 Notification of environmental harm</b>					
<b>4.4.1 Minimal Disturbance</b>					
50.		Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.	There have been no incidents at the site that have caused or threatened material harm to the environment.	NT	
51.	R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.	Not triggered.	NT	
52.	R2.1	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	Not triggered.	NT	
<b>R3 Written report</b>					
53.	R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	Not triggered.	NT	
54.	R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.	Not triggered.	NT	



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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
55.	R3.3	The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters.	Not triggered.	NT	
56.	R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.	Not triggered.	NT	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>R4 Other reporting conditions</b>					
<b>R4.1 Noise Monitoring Report</b>					
57.	R4.1	<p>A noise compliance assessment report must be submitted to the EPA within 30 days of the completion of the annual monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:</p> <ul style="list-style-type: none"> <li>a) as assessment of compliance with noise limits presented in condition L3.1; and</li> <li>b) an outline of any management actions taken within the monitoring period to address any exceedences of the limits contained in condition L3.1.</li> </ul>	Condition R4.1 is a new requirement under the recent EPL variation and has not yet been triggered.	NT	
<b>7 General Conditions</b>					
<b>G1 Copy of licence kept at the premises or plant</b>					
58.	G1.1	A copy of this licence must be kept at the premises to which the licence applies.	<p>EPL kept on Hanson network.</p> <p>Hard copy kept in folder in training room.</p>	C	
59.	G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.	Hard copy kept in folder in training room.	C	

<b>AUDIT CHECKLIST</b>		
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>



## 8 Checklist – Air Quality Management Plan.

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>2. Objectives and Performance Outcomes</b>					
1.	1.3	<p>The objectives of the Plan are to ensure:</p> <ul style="list-style-type: none"> <li>• dust management at the Quarry is continually improved;</li> <li>• any air quality or meteorological alerts are investigated and actions taken are recorded;</li> <li>• there are no exceedences of the air quality criterion; and</li> <li>• no complaints are received from the community in relation to dust.</li> </ul>		Note	
2.	1.4	<p>The key performance outcomes from the Plan are:</p> <ul style="list-style-type: none"> <li>• compliance with all criteria relating to air quality at the Calga Sand Quarry (see Section 5.3);</li> <li>• implementation of all identified air quality management and mitigation measures (see Section 7);</li> <li>• all identified monitoring is undertaken, documented and displayed in accordance with the Plan (see Section 8 and Section 12);</li> <li>• complaints are handled and responded to in an appropriate manner (see Section 10);</li> <li>• corrective and preventative measures are implemented, if required (see Section 9); and</li> <li>• incidents are reported in an appropriate and timely manner (see Section 11).</li> </ul>		Note	
<b>3. Approved Activities</b>					
3.	3.1	<p><b>Preparatory Activities</b></p> <p>The approved activities within the Quarry Site for which this Plan relates to includes ongoing extraction in Extraction Stages 3/4, 3/5 and 3/6 and the related processing, product stockpiling, silt management and product despatch.</p>		note	

<b>AUDIT CHECKLIST</b>			
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
4.	3.2	<b>Processing Operations</b> Processing of the friable sandstone and any imported materials is undertaken by either washing (wash plant) or dry screening (mobile mortar sand plant).		C	
5.	3.3	<b>Off- site Transportation Products</b> The existing northern entrance off Peats Ridge Road will be retained and used in the current fashion during operations in Extraction Stages 3/4, 3/5 and 3/6. The internal sealed access road (Figure 2) will continue to be used principally by the road-registered trucks entering the Quarry and transporting products from the Quarry but also provide access to the administration buildings for all light vehicles.	Access/ egress was through the northern entrance off Peats Ridge Road. Internal sealed access road used.	C	
<b>4.2 Community Consultation</b>					
6.	4.2.1	Consultation with the local community has principally focused on discussions with landholders whose land is either currently being used or is proposed to be used as a location for dust monitoring equipment.	Community Consultative committee established for the project.	C	
<b>6. Existing Environment and Potential / Predicted Air Quality Impacts</b>					
<b>6.2 Meteorology</b>					
7.	6.2.1	Condition 3(20) of DA 94-4-2004 requires that: “Prior to carrying out any development, the Applicant must establish and subsequently maintain a meteorological station in the vicinity of the development, to the satisfaction of the EPA and the Secretary. The station must as a minimum, unless otherwise authorised by the Secretary, monitor daily rainfall and evaporation in accordance with the requirements in Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.”	Meteorological station established.  Monitoring of Temperature, wind speed and direction, relative humidity, solar radiation, rainfall, Air pressure. Evapotranspiration included in monthly reports.	C	
<b>6.3 Ambient Air Quality Data</b>					
8.	6.3.1	Deposited dust is measured at six monitoring locations surrounding the quarry where deposited dust is 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.	Dust monitoring records available. Reports included in the Environmental Monitoring Report provided by C Base.	C	

<b>AUDIT CHECKLIST</b>			
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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>6.4 Potential Air Quality Impacts</b>					
<b>8. Air Quality Monitoring Program</b>					
<b>8.1 Introduction</b>					
9.	8.1	In order to assess dust emissions from the Quarry, a continuous particulate matter monitor will be installed to measure PM10 emissions.	Updated licence provided in February 2018. Updated to allow use of E-Sampler. E-Sampler purchased but has not been installed at this stage.	C	
10.	8.1	The existing network for the monitoring of deposited dust will be maintained.		C	
<b>8.2 Monitoring Equipment and Locations</b>					
11.	8.2	Dust monitoring equipment will be installed in accordance with the following standards: • Australian Standard AS/NZS 3580.1.1:2007 Methods for sampling and analysis of ambient air – Guide to Siting Air Monitoring Equipment. • AS/NZS 3580.10.1:2003 Methods for Sampling and Analysis of Ambient Air, Determination of Particulates – Deposited Matter – Gravimetric method	Dust gauges site were installed in general accordance with AS/NZS 3580.1.1:2007.	C	
12.	8.2	The particulate matter monitoring equipment will be set to continuous operation and PM10 sample results will be collected digitally via a direct download from the equipment. Data would also be collected manually on a monthly basis.	Particulate monitoring equipment yet to be installed.	NA	
13.	8.2	The particulate matter monitor would incorporate an SMS alert function (described in Section 9.3).	SMS alert function reported to be included in purchased particulate monitor.	C	
<b>8.3 Monitoring Frequency</b>					
14.	8.3	The frequency of air quality monitoring measurements is shown in Table 10.	Dust deposition monitoring has been undertaken in accordance with relevant frequencies.	C	
<b>8.4 Meteorological Monitoring</b>					
15.	8.4.1	Hanson will ensure that the meteorological station continues to operate in accordance with the guidelines outlined in Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (NSW EPA, 2016).	Meteorological station in operation on site at the time of audit.	C	

<b>AUDIT CHECKLIST</b>			
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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
16.	8.4.2	The parameters to be measured are summarised in Table 10 and the location of the meteorological station displayed on Figure 4.	Air temperature • Humidity • Rainfall • Atmospheric pressure • Heat index/ wind chill • Solar radiation • Wind speed • Wind direction measured. Evapotranspiration calculated and included in monthly reporting.	C	
<b>8.5 Compliance Evaluation</b>					
17.	8.5	Ongoing performance with regards air quality will be established through evaluation of monitoring results against the assessment criteria described in Section 5.3	Monthly report provided by consultant which summarises results with comparison against assessment criteria.	C	
18.	8.5.2	If monitoring results exceed the relevant criteria level the response and corrective actions specified in Section 9.3.2 would be implemented.	Dust deposition results for CD1 show increasing trend, with monthly results from February 2018 exceeding 12 month annual average criteria, although 12 month average has not exceeded criteria.	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #		
9. Air Quality Management System							
9.2 Proactive Management							
9.2.1 Operating Hours							
19.	9.2.1.1	All operations will be undertaken in accordance with the approved hours of operation presented in Table 12		Reported that sales and production were in accordance with the times identified.	C		
		Activity	Day				Time
		Extraction and processing*	Monday-Friday				7:00am to 6:00pm
			Saturday				7:00am to 4:00pm
			Sunday & Public Holidays				Nil
		Delivery and distribution	Monday-Friday				5:00am to 10:00pm
			Saturday				5:00am to 4:00pm
			Sunday & Public Holidays				Nil
		Maintenance (if inaudible at neighbouring residences)	Any day				Any time
		* Note: Construction activities, such as the construction of the acoustic barrier, must only be carried out between 7:00am to 6:00pm Monday to Friday, and 8:00am to 1:00pm on Saturdays. No construction activities are to be undertaken on Sundays or Public Holidays.					

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>9.2.2 Meteorological Forecasting</b>					
20.	9.2.2	In the event of adverse weather conditions likely to prevail for extended periods of times, areas of the Quarry will be identified where works can be undertaken to minimise noise propagation towards residences. This will generally involve working at lower elevations within the Quarry	Dozer, 2 front end loaders, 2 haul trucks, dust cart, excavator and small service vehicles operate on site. Reported that water cart operations are adjusted to manage dust levels.	C	
<b>9.2.3 Adverse Meteorological Conditions</b>					
21.	9.2.3.4	During dry conditions, and high wind speeds at the Quarry the Quarry Manager will: – conduct visual assessment of operations to identify current dust generating sources; – inform operators to consider dust management options; and – check availability and operational status of control equipment.	Reported to be included in toolbox meetings.	C	
22.	9.2.3.5	During adverse conditions such as when wind speed is higher than 8m/s and blowing from the south, north or west. The Quarry Manager will: – curtail activities capable of generating dust in exposed areas; – increase the frequency and volume of water applied to internal roads in use by haul trucks; – extend watering activities to exposed areas capable of generating dust; and – generally, curtail activities capable of generating dust across the Quarry.	Reported that extension of watering activities to exposed areas was undertaken.  No complaints or exceedences of dust levels as the result of adverse weather conditions have been recorded.	C	
23.	9.2.3.6	All periods of curtailed activities will be recorded for inclusion in the Annual Review.		NT	
<b>9.2.4 Air Quality Monitoring</b>					
24.	9.2.4	The continuous particulate matter monitor will incorporate an SMS alarm that will be sent to the Quarry Manager when pre-determined levels are breached, which would in turn indicate when action is required	Continuous particulate matter monitor not installed at time of audit.	NT	
25.	9.2.4.3	It is proposed that trigger levels would be reviewed regularly to ensure they are working appropriately i.e. they are ensuring that dust levels remain below ambient air quality goals.		NT	



<b>AUDIT CHECKLIST</b>			
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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
26.	9.2.4.4	<p><b>Trigger Level 1:</b> 1-hour PM10 concentrations are above 100µg/m3 for three consecutive hours. Under Trigger Level 1, the Quarry personnel will determine which way the wind is blowing for the same three-hour period and determine what Quarry activities are most likely contributing to the elevated PM10 levels. The Quarry Manager will ensure that control measures and actions outlined in Section 7 are being implemented. Additional dust control measures to be implemented will depend on the activities occurring on site at the time but may involve:</p> <ul style="list-style-type: none"> <li>• increasing the frequency of watering for exposed areas and stockpiles;</li> <li>• increasing the frequency of watering on unsealed roads; and</li> <li>• modifying site activities depending on the sources contributing to the elevated levels.</li> </ul>		NT	
27.	9.2.4.5	<p><b>Trigger Level 2:</b> 1-hour PM10 concentrations are above 200 µg/m3 for three consecutive hours and the wind is blowing from the Quarry towards the residences (i.e. blowing from the north, east or west). In the event Trigger level 2 is exceeded at the monitoring location, the Quarry Manager will identify those activities capable of generating dust and instruct that the activity be curtailed until 1-hour PM10 concentrations drop below 100 µg/m3.</p>		NT	
<b>9.3 Reactive Management</b>					
<b>9.3.1 Triggers</b>					
28.	9.3.1	<p>Three triggers for reactive management will be applied.</p> <p>a) Air Quality Complaint. Any complaint received, either directly or via Council, EPA or other regulatory agency, will trigger the implementation of the response and corrective action measures described in Section 10.</p> <p>b) Exceedance of air quality criteria established through air quality monitoring. Any record of deposited dust or particulate matter exceeding the criteria in Section 5 will trigger the response and corrective action measures described in Section 9.4.</p> <p>c) Extraordinary events or conditions. Extraordinary events relevant to the Quarry include events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.</p>	<p>No complaints have been received</p> <p>Dust deposition results for CD1 show increasing trend, with monthly results from February 2018 exceeding 12 month annual average criteria, although 12 month average has not exceeded criteria.</p> <p>Noted that a tripping campaign directly alongside CD1 in stage 3 cell 5 had commenced during this period. No external exceedences reported during this period.</p> <p><b>No formal investigation has been documented to assess the cause of the exceedences.</b></p>	N	06

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>9.3.2 Response and Corrective Actions</b>					
29.	9.3.2	<p><b>Compliance with Dust Deposition Levels</b></p> <p>If monthly dust deposition monitoring results exceed 3.7g/m<sup>2</sup>/month, during any month, the following additional analysis will be conducted to determine compliance.</p> <ul style="list-style-type: none"> <li>• Obtain meteorological monitoring data for the monitoring period and review the data for the period to determine the dominant wind direction, average wind speeds, percentage calm conditions (less than 0.5 m/s) and significant periods of strong winds (greater than 6 m/s). Calm conditions can result in poor dispersion of activity-dependent emissions from the Quarry. However, wind erosion from exposed surfaces would not be expected to occur under these conditions. Strong winds may also result in wind erosion from other exposed areas in the vicinity of the Quarry.</li> <li>• Where the dominant winds are not blowing across the Quarry and towards the monitoring location(s), the concentration of deposited dust is unlikely to have resulted from Quarry activities and no further action is required.</li> <li>• Where the dominant wind is blowing across the Quarry, compare the upwind and downwind sites to determine if other upwind sources are contributing to the total deposited dust level.</li> <li>• Determine if the wind speeds are conducive to wind erosion from exposed surfaces (strong winds/wind gusts greater than 6 m/s).</li> </ul> <p>Following the investigation of the above, the wind speed, wind direction and the upwind/downwind results will be used to determine the likelihood of the Quarry contributing to elevated levels above the impact assessment criterion</p>	<p>Dust deposition at CD1 has been increasing since November 2017, with results for May 2018 at 7.1g/m<sup>2</sup>.mth.</p> <p><b>No formal investigation has been documented to assess the cause of the exceedences.</b></p> <p>.</p>	<b>N</b>	<b>06</b>

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
30.	9.3.2	<p><b>Compliance with the 24-Hour PM10 goal</b></p> <p>Where 24-hour PM10 concentrations are above the concentrations indicated for the assessment criteria in Section 5.3, the following additional analysis will be conducted to establish whether a non-compliance has occurred.</p> <ul style="list-style-type: none"><li>• Obtain meteorological monitoring data for the relevant 24-hour period and process the data to determine, dominant wind direction, average wind speeds, percentage calm conditions (less than 0.5 m/s) and significant periods of strong winds (greater than 6 m/s).</li><li>• Where the dominant winds are not blowing across the Quarry and towards the monitoring location, the level above the assessment criterion is unlikely to have resulted from Quarry activities and does not represent non-compliance.</li><li>• Where the dominant winds are blowing across the Quarry and towards the monitoring location, the following additional analysis is required to determine if dust from the Quarry has contributed to the elevated levels and/or if wind-blown dust from other upwind sources are also contributing.</li><li>• Determine if the wind speeds are conducive to wind erosion from exposed surfaces (strong winds/wind gusts greater than 6 m/s) or if calm conditions were prevalent (less than 0.5 m/s).</li><li>• Obtain a site activity log for the elevated level day to determine what activities were occurring and characterise the activities based on being wind speed independent, wind speed dependent or wind erosion sources.</li></ul>	Continuous particulate matter monitor not installed at time of audit.	NT	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
31.	9.3.2	<b>Internal Investigation and Corrective Actions</b> In the event that preliminary investigations indicate that meteorological factors were not relevant to the identified exceedance of the air quality criteria identified in Section 5.3, the exceedance will be investigated to determine the likely cause(s). An investigation will then follow to determine: <ul style="list-style-type: none"><li>• what immediate action(s) need to be taken to fix the problem in the short term, if applicable;</li><li>• the root causes of the problem (e.g. management system, equipment design / performance, human factors/behaviour, work environment or training);</li><li>• corrective actions required to eliminate the root cause(s);</li><li>• action(s) taken to verify effectiveness of corrective action(s) (i.e. what measures and checks are taken to ensure the corrective actions that are in place are effective to prevent any further exceedance); and</li><li>• on completion of the investigation, an electronic copy will be forwarded to Development Manager for review/approval of corrective and preventative actions.</li></ul>	Dust deposition at CD1 has been increasing since November 2017, with results for May 2018 at 7.1g/m <sup>2</sup> .mth.  <b>No formal investigation has been documented to assess the cause of the exceedences.</b>	<b>N</b>	<b>06</b>
32.	9.3.2	<b>Extraordinary Events or Conditions</b> Extraordinary events include any of the following, relevant to operations at the Quarry. It is noted that air quality criteria do not apply under these conditions. <ul style="list-style-type: none"><li>• Bushfires.</li><li>• Prescribed burning.</li><li>• Dust storms.</li><li>• Sea Fog.</li><li>• Fire incidents.</li><li>• Any other activity agreed by the Secretary.</li></ul>		Note	
33.	9.3.2	The Quarry Production Manager will limit or modify operational activities, as is practical, to minimise the potential of air quality impacts and ensure compliance during these periods		NT	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>10. Complaints Handling And Response</b>					
34.	10.1	Air quality-related complaints may be received either via one of the following methods. <ul style="list-style-type: none"> <li>• Directly via email, telephone call or text message.</li> <li>• Indirectly via the relevant government agencies.</li> </ul>	No air quality related complaints had been received.	NT	
35.	10.2	All complaints are referred to the Quarry Manager (or his nominee), thoroughly investigated and documented in the Quarry Complaints Register with the following information recorded. <ul style="list-style-type: none"> <li>• Date of the complaint.</li> <li>• Time of the complaint.</li> <li>• Name of complainant (if available).</li> <li>• How the complaint was received.</li> <li>• Detailed description of the complaint.</li> <li>• Person who received the complaint.</li> </ul>		NT	
36.	10.3	Once the Quarry Manager is satisfied that the complaint is substantiated, an investigation of the location, source(s) and cause(s) of the complaint will be undertaken		NT	
37.	10.4	Following investigation of the issue, the Quarry Manager will provide feedback to the complainant that details the investigations undertaken, the results of the investigation and measures implemented to ensure that operations remain compliant.		NT	
38.	10.5	A description of any follow-up investigations and the response provided to the complainant will also be recorded in the Complaints Register upon satisfactory closure of the issue.		NT	
39.	10.6	All complaints received are summarised in the Annual Review, which is made publicly available via the Hanson website. Complaints are also summarised in the Annual Return document to the EPA		NT	

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<b>11. Incident Management</b>					
<b>11.1 Incident Management And Notification</b>					
40.	11.1.1	On identification of a notifiable incident, non-compliance incident, or where the action is in response to a complaint related to nuisance emissions (dust deposition), an investigation into the source of the incident or complaint causing emissions will be commenced in accordance with Quarry's Pollution Incident Response Management Plan.	No notifiable incidents have occurred or complaints in relation in to air quality have been received.	NT	
41.	11.1.2	DPE and the EPA will be notified as soon as practically possible following any notifiable incident or non-compliance incident		NT	
42.	11.1.3	In accordance with Condition 4(1) of DA 94-4-2004, Hanson will notify affected landowners in writing of any exceedance of assessment criteria.		NT	
43.	11.1.7	The Quarry Manager will notify the EPA, as soon as practical, following identification of a notifiable incident.	No notifiable incidents have occurred.	NT	
44.	11.1.8	Any non-compliance incident that results in non-compliance against air quality criteria but does not result in material harm to the environment will be reported in the Annual Review and EPL Annual Return documents.		NT	
45.	11.1.9	Following implementation and review of the corrective measures, the investigation process and results will be documented.		NT	
46.	11.1.10	If the investigation is the result of a complaint, feedback will be provided to the complainant in accordance with the process described in Section 9.		NT	
<b>11.3 Incident Reporting</b>					
47.	11.3.1	In accordance with Condition 8 of Schedule 5 of DA 94-4-2004, within 7 days of any incident, Hanson will prepare a report describing the incident and summarising the results if investigations or corrective actions implemented in accordance with the Quarry's Pollution Incident Response Management Plan or the Noise Management System (see Section 9).		NT	
48.	11.3.2	A summary of all incidents, including dates of occurrence, corrective measures taken and their success will be compiled and reported in the Annual Review to the DPE and Annual Return to the EPA.		NT	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>12. Publication Of Monitoring Information And Reporting</b>					
49.	12.1	Hanson will include all air quality monitoring results within the appendices to the Annual Review. That document, once approved by the relevant government agencies, will be published on the Company's website.	Air quality monitoring results were included in the 2017 Annual Review.	C	
50.	12.2	In accordance with the requirements of Section 66(6) of the Protection of the Environment Operations Act 1997, the Requirements for Publishing Pollution Monitoring Data" (NSW EPA, 2012), and the Web-based Reporting Guideline (DPE, 2015), Hanson will publish a meaningful summary of all pollution monitoring data on the Hanson website within 14 days of the monitoring results being received.	Monthly monitoring report, including air quality data up to April 2018 included on Website.	C	
51.	12.3	In addition, Hanson will provide a copy of obtained data (the value of each individual monitoring sample) at no cost to any member of the public, when requested.	No requests have been received.	NT	
52.	12.4	The data will be published in a format that summarises raw data, is comprehensible by the general public and also includes all accompanying necessary information.	Raw data and graphical representation provided.	C	
53.	12.5	<p>The following documents will also be available on the Hanson website in accordance with the Web-based Reporting Guideline (DPE, 2015).</p> <ul style="list-style-type: none"> <li>• All statutory environmental, planning and cultural heritage approvals.</li> <li>• Hanson's environmental management strategy documents relevant to the Calga Quarry.</li> <li>• Compliance related documents including independent audits, Annual Review documents and a register of any incidents notified to DPE.</li> <li>• The community complaints register (updated monthly).</li> <li>• Minutes of the Community Consultative Committee meetings.</li> </ul>	Community Consultative Committee meeting minutes available...	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>13. Personnel Management</b>					
<b>13.1 Roles And Responsibility</b>					
54.	13.1.1	Table 13 outlines the roles and responsibilities of all personnel involved with the operation of the Calga Sand Quarry with respect to management of air quality.		Note	
<b>13.2 Competence Training And Awareness</b>					
55.	13.2.1	All personnel and contractors working at the Quarry undergo an induction and annual re-induction including information on the management of dust and air quality while working on site.	Quarry induction includes section on environmental management and controls, however it is not clear from the induction as to what is specifically included in the induction.	<b>N</b>	<b>07</b>
56.	13.2.2	After completing the induction, workers will sign a statement of attendance and records of this are kept in the administration office.	Induction records available.	C	
57.	13.2.3	Regular toolbox meetings are held to discuss whole-of-site production, management, safety and environmental issues	Toolbox meeting records sighted. Records sighted did not show evidence of inclusion of environmental issues in inductions.	<b>A</b>	<b>06</b>
<b>Plan Review and Continual Improvement Protocol</b>					
58.	14.1	The Plan will be reviewed annually from the date of approval or (in accordance with Condition 5(4) of DA 94-4-2004) within three months of submission of an Annual Review, an incident report resulting from a notifiable incident, each independent environmental audit and any modification to DA 94-4-2004.	Air Quality Management Plan reviewed and updated September 2017.	C	



<b>AUDIT CHECKLIST</b>			
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## 9 Checklist – Site Water Management Plan.

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>3.5 Water Balance Review</b>					
1.	3.5.1	During operation of the quarry, measurements of actual water use and availability will be made so that the water balance can be refined, if necessary. The following information will be collected and used. <ul style="list-style-type: none"> <li>• Water levels (related to storage volumes) in the water storage dams.</li> <li>• Rainfall within the quarry catchment will be recorded by the on-site weather station. Evaporation rates will also be recorded.</li> <li>• Quantities of water discharged from the Quarry Site.</li> </ul>	Rainfall data is collected. Reported that water was discharged on one occasion in April 2018. <b>There is no record of volume discharged from EPL 1.</b> <b>There is no record of water levels in the water storage dams.</b>	N	08
2.	3.5.2	Based upon an analysis of this information, as well as production rates of sand and silt, Rocla will review and update the water balance appropriately.	Updated water balance provided in development of the Draft Water Quality Management Plan (May 2018).	C	
3.	3.5.3	The sand washing process will be monitored over time, and any likely improvements to reduce the water consumption will be investigated and implemented where economically feasible and practical.	The operations do not require potable water. All water used on site is sourced from the onsite bore or via surface water controls.	C	
<b>4 EROSION AND SEDIMENT CONTROL PLAN</b>					
<b>4.1 Introduction</b>					
4.	4.1.1	All erosion and sediment control structures will be constructed or erected in accordance with the recommendations identified in the relevant standard drawing and construction notes of DoH (2004).	<b>Hanson does not have these drawings. Erosion and sediment control structures have not been constructed in accordance with DoH (2004).</b>	A	11

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>4.4 Erosion and Sediment Controls</b>					
<b>4.4.1 Minimal Disturbance</b>					
5.	4.4.1	Land disturbance will be minimised by clearing one extraction cell at a time ahead of extraction activities and leaving this disturbed for the shortest possible times	Refer to Landscape Management Plan. Whole of site is disturbed. Revegetation is progressive.	C	
6.	4.4.1	This will be achieved by: • limiting the cleared width to that required to accommodate excavation within the active Stage 3 and other associated structures; and • programming the works so that only the areas which are actively being excavated are cleared, therefore limiting the time the areas are exposed and limiting the potential for erosion and sedimentation.	Whole of site is disturbed.	C	
7.	4.4.1	General vegetation clearing and soil stripping will not be undertaken until earthwork operations are ready to commence.	These works have been completed.	C	
8.	4.4.1	All proposed erosion and sediment control measures will be implemented in advance of, or in conjunction with, clearing and stripping operations	These works have been completed.	C	
9.	4.4.1	Prior to clearing commencing, the limits of clearing shall be marked by pegs placed at intervals on each side of the disturbed area.	These works have been completed.	C	
10.	4.4.1	All operations will be planned to ensure that there is no damage to any trees outside the limits to be cleared	Extraction sequence planning has been carried out.	C	
<b>4.4.2 Management of Soil Stockpiles</b>					
11.	4.4.2	Topsoil stripping within the disturbed area will be undertaken as far as practicable, when the soil is in a slightly moist condition thus reducing damage to soil structure	Stripping works have been completed.	C	
12.	4.4.2	The soil materials will be moistened if very dry and will not be stripped in wet conditions.	Stripping works have been completed.	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
13.	4.4.2	Stripped soil will be placed directly onto the disturbed areas and spread immediately if excavation sequences, equipment scheduling and weather conditions permit.	Stripping works have been completed. Restoration of Stage 1 / 2 has commenced.	C	
14.	4.4.2	If longer term stockpiling, i.e. greater than 6 months, is required, a maximum stockpile height of two (2) metres will be maintained to preserve biological viability and reduce soil deterioration.	There are no soil stockpiles on site.	NT	
15.	4.4.2	Soil stockpiles will be sown with the sterile cover crop (annual species).	There are no soil stockpiles on site.	NT	
16.	4.4.2	Where the stockpile is not wholly contained within the quarrying area and associated "dirty" water management system, temporary sediment control measures such as sand bags and silt fences will be used to prevent sediment from leaving the area.	Not triggered. No soil stockpiles. All product stockpiles are within the quarry.	NT	
17.	4.4.2	Stockpiles will be placed in areas so as to avoid impediment of natural localised drainage lines and minimise the likelihood of water ponding against the stockpile.	There are no soil stockpiles on site.	NT	
18.	4.4.2	Topsoil will be re-spread in the reverse sequence to its removal, so that the organic layer, containing any seed or vegetation, is returned to the surface.	Not yet triggered.	NT	
19.	4.4.2	Topsoil will be spread to a minimum depth of 50mm on 3:1 or steeper slopes and to a minimum depth of 100mm on flatter slopes.	Not yet triggered.	NT	
20.	4.4.2	Re-spreading on the contour will aid runoff control and increases moisture retention for subsequent plant growth.	Not yet triggered.	NT	
21.	4.4.2	Re-spread topsoil will be levelled to achieve an even surface, avoiding a compacted or an oversmooth finish.	Not yet triggered.	NT	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>4.4.3 Clean Water Diversion Works</b>					
22.	4.4.3	During periods of heavy rainfall, clean surface water flows onto the Quarry Site via three manmade drains that carry water sourced from Peats Ridge Road and from a small contributing catchment to the northeast of Stage 3 (approximately 10ha). This water will be diverted around Stage 3 to prevent the clean water entering the extraction area and compromising silt cell dewatering activities.	Clean water is diverted around the site and to the catchment dam.	C	
23.	4.4.3	To achieve the clean water diversion, a new channel will be constructed at the base of the earth bund, i.e. acoustic barriers, required to be constructed around the perimeter of Stage 3.	The channel has been constructed at the base of the earth bund.	C	
24.	4.4.3	The new diversion channel will be utilised as a permanent mitigation control on the site to minimise erosion and divert run-on water around the disturbed areas for the life of the Stage 3 quarry	The channel is considered permanent.	C	
25.	4.4.3	The diversion channel will be constructed during the initial stage of site preparation	The channel has been constructed.	C	
26.	4.4.3	The channel will be trapezoidal in shape with a 3 m base width and 3:1 (H:V) batters	The channel was constructed as per this requirement.	C	
27.	4.4.3	All completed banks will be topsoiled and sown with sterile cover crops.	The channel was topsoiled and sown with sterile cover as per this requirement.	C	
28.	4.4.3	A piped culvert will be used to convey the channel flows under the site entrance road.	Piped culverts are used to channel water under all internal and access roads.	C	
29.	4.4.3	The channel will discharge to two locations, as agreed between Rocla and the affected adjoining land holder.	This discharge requirement is no-longer relevant. All discharge from the bund channel is now to the Hanson site. Surface water management requirements have been updated in the Draft Surface Water Management Plan (May 2018).	Note	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
30.	4.4.3	Fifty percent will be discharged into a large agricultural dam (Dam 13) on the neighbouring property (see Figure 2).	This discharge requirement is no-longer relevant. All discharge from the bund channel is now to the Hanson site. The 50/50 agreement has been rescinded as the neighbour no-longer needs the additional water. All water now flows into the site water storage dams. Surface water management requirements have been updated in the Draft Surface Water Management Plan (May 2018).	Note	
31.	4.4.3	The remaining fifty percent of the diverted clean water will be accepted and contained onsite, via a piped discharge from the diversion channel outlet to one of the water storage dams (i.e. 7a or 7b/c).	All water now flows into the site water storage dams.	C	
32.	4.4.3	This water will then be used by Rocla, and contained within the quarry water management system	Noted.		
33.	4.4.3	Ultimately, any overflow from the water storage dams will enter the tributary of Cabbage Tree Creek.	Via EPL monitoring Point 1.	C	
34.	4.4.3	The outlet of the diversion channel will have a 50/50 duel pipe culvert to split the flows into the two separate flow paths.	All water now flows into water storage dams via the split culvert outlet.	C	
<b>4.4.4 In-pit Water Management &amp; Sediment Removal</b>					
35.	4.4.4	For Stage 3, the quarry floor will generally be graded so that it drains in a southerly direction towards the existing quarry and dirty water control system.	Stage 3 flows Stage 1 / 2 and water is collected and drains to the water storage dams.	C	
36.	4.4.4	In the event that suspended sediment is observed in the water storage, the use of other options, such as flocculation, will be investigated and implemented	Flocculants and/or coagulants will be used where necessary prior to discharge from EPL Point 1.	C	
<b>4.4.5 Quarry Haul Roads</b>					
37.	4.4.5	The internal quarry haul roads within the Quarry Site will be constructed to ensure surface drainage is optimised and stabilised, thereby reducing roadside erosion and sedimentation.	All roads have been constructed using dozers.	C	

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38.	4.4.5	Cross-fall drainage structures and mitre drainage will be implemented for the entire length of each haul road.	<b>Cross fall and drainage has been employed, but actual operations are not as described in the management plan.</b>	A	12
39.	4.4.5	Crowning will generally be implemented on any steeper sections of the haul road.	Crowning has been constructed.	C	
40.	4.4.5	Outfall drainage will be constructed where the road traverses small fill batter areas and in-fall drainage will occur where the road traverses larger fill batter areas.	<b>Outfall drainage has been constructed, but actual operations are not as described in the management plan.</b>	A	12
41.	4.4.5	Mitre drains will be constructed to take water from the shoulders or table drains of the internal haul roads to the internal dirty water control system. Road runoff will be intercepted at regular intervals to reduce runoff velocity in each mitre drain. Drain spacing will not exceed 50m.	<b>Mitre drains have been installed, but actual operations are not as described in the management plan</b>	A	12
<b>4.4.6 Additional Erosion &amp; Sediment Controls</b>					
42.	4.4.6	Additional control works including, but not limited to, sediment fencing, sand bag sediment filters and revegetation will be employed where suitable.	Not triggered.	NA	
43.	4.4.6	Silt-stop fencing and sandbag weirs will be installed in the longitudinal drainage adjoining the roads / disturbed areas and will be in advance of, and in conjunction with, earthworks to prevent contaminated or "dirty water" leaving the site. The weirs will be installed at 50m intervals.	<b>Silt-stop fencing and sandbag weirs are no longer appropriate to site conditions. Weirs have been installed, but actual operations are not as described in the management plan.</b>	A	12
44.	4.4.6	Any batters will be constructed to minimise exposed areas, i.e. minimise the potential surface for erosion	<b>Actual operations are not as described in the management plan.</b>	A	12
45.	4.4.6	Stabilisation, revegetation and rehabilitation works will be undertaken quickly to minimise erosion.	<b>Actual operations are not as described in the management plan.</b>	A	12
46.	4.4.6	Hydromulching will be used where appropriate to immediately protect underlying fill material from wind and water erosion.	Hydromulching has been used in steeper areas.	C	
47.	4.4.6	Hydromulching applications will typically consist of sterile annual grasses, bitumen or polymer binder, seed and fertiliser	Hydromulching has utilised sterile grasses, binder, and native seeds.	C	

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<b>4.4.7 Maintenance of Erosion Control Structures</b>					
48.	4.4.7	The Quarry Manager will undertake regular general environmental inspections and following substantial rainfall events to ensure that all the water management controls outlined in Sections 4.4.1 to 4.4.6 are functioning as designed and required	Daily inspections are carried out using the Daily Toolbox / Shift Handover Record Sheet. Viewed 12/6/18. Uses a tick against each aspect. Leading Hand fills in the report. Not the Quarry Manager.	O	02
49.	4.4.7	The Quarry Manager will also ensure that any contractors on site are operating within the environmental controls as required for their activities.	Hanson's environmental controls are communicated to contractors through the contractor orientation process.	C	
50.	4.4.7	0 (>20mm of rain) to check for scouring of diversion drains and accumulation of materials in sediment traps (e.g. sediment fences & sand bags) and storage dams.	The daily toolbox / Shift Handover Record Sheet includes provision for recording of inspection of drainage and dams. Required to be completed on a daily basis.	C	
51.	4.4.7	Inspection will include the following. <ul style="list-style-type: none"> <li>• Haul Roads</li> <li>• Water Diversion Channel</li> <li>• Sediment Controls</li> <li>• Water Storage Dams</li> <li>• Additional Sediment Controls</li> </ul>	The daily toolbox / Shift Handover Record Sheet includes provision for recording of inspection of drainage and dams. Required to be completed on a daily basis.	C	
52.	4.4.7	<b>Haul Roads</b> The haul roads will be visually inspected to ensure that the appropriate mitigation measures are functioning to convey the surface flows from the road surface and work areas without causing excessive erosion to the road or work areas or the adjacent land. The pipe culverts will also be inspected for any signs of erosion around the culvert or in the drainage line immediately downstream of the culvert. Where controls are observed to be not functioning correctly, the surface will be restored to meet the required standard. Where significant erosion is observed to be occurring on a regular basis, additional controls will be constructed, such as additional mitre drains, scour protection of road drainage, and the re-grading of surface.	Inspection form lists haul roads and drainage.	C	

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53.	4.4.7	<b>Water Diversion Channel</b> The water diversion channel will be inspected to ensure that it is functioning to divert the surface run-on in accordance with its design. Any signs of erosion along the length of the banks and at the points of discharge will be noted and remedial works undertaken as required. Where significant erosion is observed additional erosion controls will be constructed. Such as establishment of further vegetation cover, armouring of the channel surface and construction of rock scour protection at the entry and discharge locations.	Inspection form lists haul roads and drainage.	C	
54.	4.4.7	<b>Sediment Controls</b> Regular visual checks will be made of the silt cells to ensure that there is no noticeable increased discoloration of the water decanted to the "clean water" storages	Inspection form lists haul roads and drainage.	C	
55.	4.4.7	<b>Water Storage Dams</b> Visual checks will be regularly made of all the clean water dams on site to ensure that there is no noticeable increased discoloration in the dams.	Inspection form lists haul roads and drainage.	C	
56.	4.4.7	<b>Additional Sediment Controls</b> All sediment fencing and sand bag sediment filters will be inspected to ensure that they are functioning adequately.	Inspection form lists haul roads and drainage.	C	
57.	4.4.7	Where controls are observed not to be functioning correctly, the eroded area will be restored to meet the required standard.	Noted.	Note	
58.	4.4.7	Where significant erosion is observed to be occurring on a regular basis, additional controls will be constructed generally in accordance with the Department of Housing's Managing Urban Stormwater: Soils and Construction Manual (DoH, 2004).	Noted.	Note	



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<b>5 Surface Water Monitoring Program</b>					
<b>5.2 Baseline Water Quality Data for Receiving Waters and Assessment Criteria</b>					
59.	5.2	The following DEC (EPA) criteria have been adopted, namely: <ul style="list-style-type: none"> <li>• pH – +/- 1 unit from background;</li> <li>• Electrical Conductivity – &lt;1 500µs/cm;</li> <li>• Total Grease – &lt;10mg/L; and</li> <li>• Suspended Solids, &lt;50mg/L.</li> </ul>	Management plan requirements differ from EPL requirements. Criteria in draft SWMP – Section 6.2 consistent with EPL requirements. Draft SWMP – Section 6.3 requires Total grease to be monitored	O	03
<b>5.3 Water Quality Monitoring Schedule</b>					
60.	5.3	Surface water quality will be monitored monthly, with samples taken from the water flowing at existing sites A, B, C and D, and also from a new site (Site F) taken directly from Dam	Surface water quality is monitored monthly. Water quality reports were viewed.	C	
61.	5.3.2	Water samples will be taken in accordance with Development Consent requirements and Environment Protection Licence 11295 issued for the site by the DEC (EPA). This will include analysis for key parameters, including: <ul style="list-style-type: none"> <li>• pH;</li> <li>• Electrical Conductivity;</li> <li>• Total Grease; and</li> <li>• Suspended Solids.</li> </ul>	Management plan requirements differ from EPL requirements. <b>Draft SWMP – Section 6.3 requires total grease to be analysed. EPL requires oil and grease.</b>	O	03
62.	5.3.3	Opportunistic grab samples may also be taken periodically from the other dams or the tributary of Cabbage Tree Creek system during significant rainfall events. These samples will be analysed for the same parameters as above.	Noted.	Note	

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<b>5.4 Investigation and Reporting of Exceedences</b>					
63.	5.4	For each sampling event, water quality results will be compared against the assessment criteria in the plan (refer Section 5.2) and any other relevant criteria that may be defined by DEC (EPA). Initially, however, whenever possible, the water would be re-sampled to verify the result recording	Water quality reports viewed. Water quality results are compared against the assessment criteria.	C	
64.	5.4	Any exceedance of criteria will trigger an immediate investigation to determine the cause of the exceedance and preparation of a corrective action plan to re-establish or introduce additional appropriate controls as necessary.	Not triggered.	NT	
65.	5.4	The reporting of all monitoring and measurement data will be undertaken in accordance with the requirements of the development consent, including notification of monitoring/investigation results to external organisations if required.	Reporting has been carried out quarterly. The new requirement is monthly.	C	
66.	5.4	All results will be reported in the Annual Environmental Management Report (AEMR).	AEMRs viewed.	C	
67.	5.4	Rocla will also report results to the DEC (EPA), as soon as practicable after any incident with actual or potential significant off-site impacts on people or the bio-physical environment.	Not triggered.	NT	
<b>5.5 Erosion and Sediment Control Monitoring</b>					
68.	5.5.1	The measurement of concentrations of suspended solids over time will establish the effectiveness of the various erosion and sediment controls.		Note	
69.	5.5.2	The water quality monitoring results will be reviewed in conjunction with the visual observations undertaken as part of the routine maintenance (refer Section 4.4.7).		Note	

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## 10 Checklist –Landscape and Rehabilitation Management Plan

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Medium and Long Term Rehabilitation of the Quarry</b>					
60.	3.4	It is envisaged that the vegetation progressively established on the silt cells will provide for bands of native vegetation interspersed with open areas that will be suitable for ongoing agricultural/horticultural use.	Revegetation has commenced around cells 4 (current silt cell) and 3 (future silt cell).	C	
61.	3.4	The vegetated acoustic bund wall will be retained to minimise any impact on the established vegetation, although a decision might be made to remove the 2m high fence atop the earth mound.	Acoustic bund has been retained to date. East and northern sides.	C	
62.	3.4	The rehabilitation of the retained quarry benches will involve the profiling of each bench to ensure drainage flows toward the back of the bench and along to defined drop- own points.  These points will, where considered necessary, be armoured with oversize to reduce the impact of the water flow. It is intended the benches will be revegetated with appropriate native tree and shrub species (see Section 3.5.2).	Drainage witnessed back to former cell 1 and down gradient catchment dams. Rock armour has been installed as required. Plant spp are endemic. Supplied by Toolijooa Environmental Restoration.	C	
63.	3.4	Similarly, the quarry perimeter above the retained benches is intended to be revegetated with native tree and shrub species.		Note	
<b>Rehabilitation Procedures</b>					
<b>Silt Cells</b>					
64.	3.5.1	As identified in Sections 3.3.2 to 3.3.6 and Figures 3.2(a) to 3.2(e), the silt generated from the Sand Wash Plant will be stored on the quarry floor in a series of silt cells. These cells will be approximately 5m deep and constructed within the confines of sound undisturbed rock walls.	The current silt cell is Cell 4.  Silt cell operations are not done in lifts. Operations were previously conducted in this manner.  It is noted that a draft RLMP has been prepared by Hanson and submitted to DP&E. The draft RLMP identifies the updated process for managing silt cells.	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
65.	3.5.1	On completion of each cell, the fines will be allowed time to consolidate after which they will be capped with overburden and oversize material to a depth of up to 1.5m to stabilise the surface of each cell. After the silt cells are capped, and providing they are not required for any other land use, the capped surface will be covered with a layer of topsoil to a depth of approximately 0.15m.	Silt cell operations are not done in lifts. Operations were previously conducted in this manner.	C	
66.	3.5.1	Whenever possible, this topsoil will be directly transferred from an active stripping area elsewhere within the quarry. This area will then be either sown using native seed and tubestock with species listed in Table 3.1 or sterile Japanese Millet and a range of pasture species.	Overburden (silty/clay) from stage 5 used on stage 1 / 2 for rehabilitation. Will regenerate directly into this material, with some mulch. Millet used on slopes along with spray mulch.	C	
<b>Quarry Floor and Benches</b>					
67.	3.5.2	In those areas where silt cells are not present, overburden and/or oversize rock material will be used to produce the desired gently sloping land profile, and a topsoil cover of approximately 0.15m placed over the profiled ground.	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NT	
68.	3.5.2	The rehabilitation of the quarry benches will require the profiling of each bench to ensure drainage flows toward the back of the bench and along to defined drop-down points. These points will, where considered necessary, be armoured with oversize to reduce the impact of the water flow. As for all the previous areas described, up to 0.3m of overburden and a topsoil layer of 0.15m, along with straw or previously cleared vegetation, will be used to cover the bench and provide the ideal	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NT	
<b>Quarry Perimeter</b>					
69.	3.5.3	Areas disturbed within this zone, e.g. Access roads, stockpiles, will be ripped and profiled to provide the referred landform. Where necessary, overburden from the quarrying operations will be utilised to aid in the creation of the final landform.	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NT	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
70.	3.5.3	Where disturbance has resulted in the removal of a soil layer, topsoil previously stockpiled onsite will be placed to a depth of approximately 0.15m, and covered with any broken tree trunks and branches cleared as part of pre-stripping activities. Hydro-seeding or hand seeding of the area with local native species indicative of the surrounding environment will follow and tubestock planted in a 1.5m grid pattern with a slow release fertiliser tablet suitable for native vegetation placed into each tubestock hole.	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NT	
<b>Infrastructure</b>					
71.	3.5.4	After the completion of the extraction and processing operations, all infrastructure will be removed from the quarry site. Areas on the quarry perimeter will be rehabilitated in accordance with the procedures set out in Section 3.5.3, while those areas on the quarry floor, such as the internal access roads, stockpiles and processing plant sites, revegetated in a similar fashion to that set out in Section 3.5.1 and 3.5.2. Where necessary, the internal roads completed on solid sandstone will be cross-rippled to assist with plant growth.	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NT	
<b>Management of Weeds and Ongoing Rehabilitation</b>					
72.	3.5.5	Rocla will maintain its current weed management strategy, which involves selective weed spraying programs, predominantly during the Spring months. Rocla will use the services of an ecological or rehabilitation consultant to monitor the revegetation of completed areas of the quarry and the spread of noxious weeds (Toepfers Rehabilitation Environmental and Ecological Services Pty Ltd has been used in the past). Rocla will continue to document completed and planned rehabilitation work in each AEMR.	Noted that the reference to Rocla has been updated to Hanson in the Draft RLMP (2016). <i>Toolijooa Environmental Restoration</i> appointed for these purposes. Rehabilitation progress is included in the AEMR.	C	

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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>4.0 COMPLETION CRITERIA, MONITORING AND REPORTING</b>					
<b>Completion Criteria</b>					
73.	4.1	<b>Water Resources</b> <ul style="list-style-type: none"> <li>The quarry site will be free-draining to the southwest without any pooling of water against the base of the retained quarry benches (with the exception of Dam 14).</li> <li>Water quality on and discharged from the quarry site will consistently meet the following standards.</li> </ul>	Quarry site generally drains to catchment dams. Water currently pooling at base of Stage 2. Runs via drain to catchment dams. Water quality discharge point 1 used once last year. Water monitored by Carbon Base using ALS for analyses.	C	
74.	4.1	<b>Erosion and Sediment Control</b> <ul style="list-style-type: none"> <li>All drainage lines will be stabilised. Discharge from the quarry site will consistently meet the Suspended Solids criteria noted above.</li> <li>Dust deposition monitoring results will meet the DEC nominated criteria.</li> </ul>	Drainage lines are stabilised with rock where required. DD monitored monthly by Carbon Base and reported in AEMR.	C	
75.	4.1	<b>Vegetation Cover</b> <ul style="list-style-type: none"> <li>With the exception of the retained quarry walls and benches, a grass cover will be maintained over the quarry site.</li> </ul>	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NT	
76.	4.1	<b>Species Diversity</b> <ul style="list-style-type: none"> <li>Of the 20 species included in the revegetation program (<b>Table 3.1</b>), at least 75% will be represented in the final landform.</li> </ul>	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NT	
77.	4.1	<b>Threatened Species</b> <ul style="list-style-type: none"> <li>Populations of the threatened flora species identified on and adjacent to the quarry site, <i>Darwinia glaucophylla</i> and <i>Hibertia procumbens</i>, will be monitored.</li> </ul>	<i>Toolijooa</i> monitor for threatened spp. Reported in AEMR.	C	
78.	4.1	<b>Noxious Weeds</b> <ul style="list-style-type: none"> <li>The spread of W3 noxious weeds identified within the quarry site, namely, Crofton Weed, <i>Ageratina adenophora</i>, and Blackberry, <i>Rubus fruticosus</i>, will be prevented and their distribution restricted.</li> </ul>	<i>Toolijooa</i> monitor for weeds, and spray routinely.	C	

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<b>Monitoring</b>					
79.	4.2	Monitoring the progress of rehabilitation will be undertaken by a specialist ecological or rehabilitation consultant.	<i>Toolijooa</i> have been engaged for these purposes.	C	
80.	4.2	As has previously been undertaken at the Calga Sand Quarry, rehabilitation areas will be defined and the works undertaken within each area during the previous 12 months identified. The rehabilitation consultant will inspect the rehabilitation and comment on the relative progress against the relevant completion criteria noted in Section 4.1. In addition, the rehabilitation or ecological consultant will monitor the number and distribution of the two threatened flora species identified on or adjacent to the quarry site.	<i>Toolijooa</i> have been engaged for these purposes.	C	
<b>Reporting</b>					
81.	4.3	Monitoring of surface water, groundwater and dust deposition will be reported to Rocla. These results, and the results of annual rehabilitation progress monitoring, will be reported in each AEMR for the quarry. A summary of monitoring will be placed on the Rocla web site and updated at least every 3 months. Reports will be forwarded to the Department of Planning and Gosford Council as per consent Conditions 10 and 11.	<i>Carbon Base</i> have been engaged for these purposes.  The AEMR is provided annually as required. Review of Hanson website shows monitoring reports provided on website.	C	
<b>Off-site Monitoring</b>					
82.	5.0	As described in Section 4.1, monitoring the number and distribution of the threatened species, <i>Darwinia glaucophylla</i> and <i>Hibertia procumbens</i> , will be undertaken on an annual basis by a suitably qualified ecologist. The ecologist will inspect each of the individual or sub-population locations previously identified on the quarry site and adjoining land and describe the conditions will be made and commentary on the general status of surrounding vegetation provided.	<i>Toolijooa</i> have been engaged for these purposes.	C	

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83.	5.0	An additional search of the quarry site and adjoining land will then be performed to determine whether any additional individuals or sub-populations of the targeted threatened flora species are present.	<i>Toolijooa</i> have been engaged for these purposes.	C	
<b>Vegetation Clearance Procedures</b>					
84.	A2.1.1	The area cleared in each campaign will generally be no greater than that required to accommodate the quarry's development requirements for the following 12 months.	The whole of the quarry site has been cleared. Revegetation is progressive as per above. The vegetation clearance procedures have been updated to reflect current arrangements in the Draft RLMP submitted to DP&E.	C	
85.	A2.1.1	The limits of each planned clearing campaign will be clearly delineated on the ground to avoid excessive clearing.	<b>The whole of the quarry site has been cleared. Clearing has not been a campaign as per the management plan.</b>	A	13
86.	A2.1.1	On areas devoid of tree and large shrub vegetation, the vegetation will be collected with the topsoil and either transferred directly to an area that has been prepared for topsoil application or, alternatively will be stockpiled for later use in rehabilitation. Direct transferral is the preferred alternative	<b>Vegetative material that is used for revegetation is provided by the rehabilitation contractor. Site won vegetative matter is not used.</b>	A	13
87.	A2.1.1	Any trees felled will be either immediately transferred to areas of the final landform designated for establishment of native vegetation, or stockpiled for later use in this fashion.	<b>The site no-longer contains trees. Trees cannot therefore be felled and reused in the final landform.</b>	A	13
88.	A2.1.1	To ensure post-extraction rehabilitation is carried out with stock from local trees and is consistent with the composition of the original local vegetation community, this protocol includes procedures for the collection and propagation of seed from vegetation of the quarry site.	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NA	
<b>Pre-requisite Works</b>					
89.	A2.1.2	No clearing or vegetation removal will be undertaken prior to the installation of erosion and sediment controls	Erosion and sediment controls have been installed.	C	



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<b>Seed Collection, Handling And Storage</b>					
90.	A2.2	Suitable horticulturists will be contracted to collect native species and propagate for rehabilitation.	<i>Toolijooa</i> have been engaged to collect native species and propagate for rehabilitation.	C	
<b>Plant Propagation</b>					
91.	A2.2.1	Seedling propagation activities will be undertaken by a nursery or horticulturalist commissioned by Rocla and this person(s) will be experienced in the propagation of native species.	<i>Toolijooa</i> have been engaged for seedling propagation.	C	
<b>WEED AND FERAL PEST CONTROL</b>					
<b>Weed Control</b>					
92.	A3.1.1	Two species are declared Noxious Weeds for the Gosford City Shire. These species are: • Crofton Weed ( <i>Ageratina adenophora</i> ); and • Blackberry ( <i>Rubus fruticosus</i> ). These noxious weed species will be targeted in regular campaigns to ensure their control and, where possible, eradication.	<i>Toolijooa</i> have been engaged for regular weed control.	C	
93.	A3.1.1	Inspection of all revegetated areas for noxious and other weed species will be undertaken regularly by a suitably qualified person on an annual basis.	<i>Toolijooa</i> have been engaged for weed inspections.	C	
94.	A3.1.1	Herbicides with the capacity to move through the soil will not be used.	Glyphosate herbicide has been selected and is used at a concentration of 360g/L.	C	
<b>Feral Animal Control</b>					
95.	A3.1.2	Sampling for all the nominated vertebrate pests will be conducted in conjunction with the quarry rehabilitation monitoring program.	<i>Toolijooa</i> has been engaged to sample for vertebrate pests. No pests have been identified on site.	C	
96.	A3.1.2	Rocla will participate fully with local landholders in any vertebrate pest control programs.	Hanson has not had to be involved with local landholders. No pest issues on site. The National Park and the horse riding club run baiting campaigns for vertebrate pests.	C	

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97.	A3.1.2	A program of Feral Cat and House Mouse control using appropriate poison bait (when necessary).	This program has not yet been necessary.	C	
<b>Appendix 4 - Landscape Management Plan – Stage 3</b>					
<b>Introduction</b>					
98.	A4.1	<p>Landscaping of the quarry site involves three primary elements:</p> <ul style="list-style-type: none"> <li>• the construction and vegetation of an acoustic bund wall around the northern, western and part of the southern quarry perimeter;</li> <li>• general housekeeping activities and operational procedures; and</li> <li>• final land form.</li> </ul> <p>The Landscape Plan concentrates on these elements of site landscape management.</p>	<p>Acoustic wall constructed and vegetated.</p> <p>Activities include progressive rehabilitation.</p> <p>Final landform not yet triggered.</p>	C	
<b>Landscaping Design</b>					
99.	A4.2	<p><b>Figure A4.1</b> presents the location of the acoustic bund wall, a cross-section of the bund wall and the view that will ultimately be afforded from vantage points simulated as Residences 4 and 5. The major features of the landscape design are as follows.</p> <ul style="list-style-type: none"> <li>(i) A flat surface of 4m has been retained on the top of the earthen bund.</li> <li>(ii) Larger vegetation will be established on the residence side of the earthen bund to aid visual amenity.</li> <li>(iii) The 2m colour bond fence has been erected on the quarry side edge on top of the earthen bund to create additional space for the establishment of larger vegetation.</li> <li>(iv) The 2m colour bond fence is of a neutral colour to blend with the establishing vegetation.</li> <li>(v) The native vegetation establishment program will extend to the north of the earthen bund within the boundary of the quarry site.</li> <li>(vi) Drainage control features have been established prior to construction activities and sown with a vegetative cover.</li> </ul>	<p>Rehabilitation has progressed as per this requirement.</p> <p>Bund constructed as per this requirement.</p>	C	

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<b>Vegetation Establishment</b>					
100.	A4.2.4	Hydroseeding and mulching has been completed, the bund vegetation will be monitored.	<i>Toolijooa</i> has been engaged for these purposes. Monitoring is included in the AEMR.	C	
101.	A4.2.4	The top of the earthen bund, berm established on the residence side surface and available areas between the earthen bund and Project Site perimeter will be planted with native tubestock. The species would include: <i>Hardenbergia violaceae, kennedia rubicunda, Acacia suaveolens, Banksia serrata, Banksia robur, Banksia spinulosa, Angophora costata, Angophora hispida, Eucalyptus eximia, Eucalyptus gummiifera, Eucalyptus haemostoma, Kunzea capitata, Kunzea ambigua.</i>	The bund was constructed as per this requirement. Viewed Phil Douglas Environmental report. This report includes the nominated plant spp.	C	
102.	A4.2.4	Tubestock are to be planted in a 1.5m <sup>2</sup> grid pattern and reviewed for growth annually.	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NT	
103.	A4.2.4	Tubestock planting is to be undertaken preferentially in Autumn with a slow release fertiliser tablet placed in each tubestock hole prior to planting	Quarry rehabilitation has not progressed to this stage and so this requirement has not been triggered.	NT	
<b>Maintenance</b>					
104.	A4.2.5	Inspection of the acoustic bund wall to ensure minimal erosion and sedimentation. In the event this is identified, remediation works would be undertaken.	<i>Toolijooa</i> inspect the bund wall. Vegetation replacement is as per the <i>Toolijooa</i> Revegetation Works Program.	C	
105.	A4.2.5	Plant growth is to be monitored with addition of fertiliser applied during drought conditions or in the event vegetation appears highly stressed	Plant growth monitoring is carried out by <i>Toolijooa</i> . Revegetation is as per the <i>Toolijooa</i> Revegetation Works Program.	C	
106.	A4.2.5	On establishment of larger eucalypt style vegetation on the top of the earthen bund, the earthen bund is to be inspected for structural stability with action taken should evidence of slope instability be identified.	Eucalypts have been established. Inspections are as per the Revegetation Works Program.	C	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Consultation</b>					
107.	A4.2.6	Rocla would liaise with surrounding residents in an effort to ensure landscape management meets the reasonable expectations of these residents.	Hanson liaise with the CCC and provide updates on revegetation.	C	
<b>Housekeeping</b>					
108.	A4.3.1	<p>The quarry site will be maintained in a clean and tidy state at all times with particular emphasis placed on the following activities.</p> <ul style="list-style-type: none"> <li>• Raw sand, product sand, clay and other raw materials will only be stockpiled in designated areas.</li> <li>• Clearly marked skip bins will be placed at appropriate locations on the quarry site and personnel educated as to the use of these.</li> <li>• All maintenance work will be undertaken within the designated maintenance area of the quarry site and wastes placed in hydrocarbon storage area.</li> <li>• Putrescible wastes and general rubbish is removed from site to licenced disposal facilities.</li> </ul>	<p>Site inspection showed that:</p> <ul style="list-style-type: none"> <li>• Product was stockpiled in designated areas.</li> <li>• Skip bins were provided and marked.</li> <li>• Designated maintenance area.</li> </ul> <p>Veolia engaged as the garbage contractor. Coast and Valley Waste Oil engaged as the used oil contractor. Waste register records waste oil volumes and occasional scrap steel. <b>Records general waste collected by Veolia not maintained.</b></p>	<b>A</b>	<b>03</b>
<b>Operational Procedures</b>					
109.	A4.3.2	Where practicable, any areas of disturbance should be minimised with maximum emphasis placed upon using existing disturbed or prepared areas or facilities. Existing disturbed areas that are unlikely to be required should be rehabilitated.	Whole of site is disturbed with existing and ongoing works. Revegetation is progressive.	C	
110.	A4.3.2	Undertake regular inspections of the quarry site to identify areas where rehabilitation can be implemented.	Inspections are as per the Revegetation Works Program.	C	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

## 11 Checklist – Noise Management Plan.

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>1 Introduction</b>					
111.	1.1.	The Plan will be used as a tool to manage noise-related issues during Extraction Stages 3/4, 3/5 and 3/6 of operations.		note	
<b>3. Approved Activities</b>					
112.	3.1.	<b>Off- site Transportation Products</b> The existing northern entrance off Peats Ridge Road will be retained and used in the current fashion during operations in Extraction Stages 3/4, 3/5 and 3/6.  The internal sealed access road (Figure 2) will continue to be used principally by the road-registered trucks entering the Quarry and transporting products from the Quarry but also provide access to the administration buildings for all light vehicles.	No changes to the transport arrangements have occurred	C	
<b>5.3 Assessment Criteria</b>					
113.	5.3.3.	In addition, the noise criteria in Table 3 will not apply if Hanson has an agreement with the relevant landowner to exceed the noise criteria, and has advised the Department in writing of the terms of this agreement	Hanson had not entered into any agreements with land owners.	NT	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #		
7. Noise Related Control Measures							
7.2 Operating Hours and Conditions							
114.	7.2.1.	Table 5 Operating Hours		Reported that sales and production were in accordance with the times identified.	C		
		Activity	Day				Time
		Extraction and processing*	Monday-Friday				7:00am to 6:00pm
			Saturday				7:00am to 4:00pm
			Sunday & Public Holidays				Nil
		Delivery and distribution	Monday-Friday				5:00am to 10:00pm
			Saturday				5:00am to 4:00pm
			Sunday & Public Holidays				Nil
		Maintenance (if inaudible at neighbouring residences)	Any day				Any time
		* Note: Construction activities, such as the construction of the acoustic barrier, must only be carried out between 7:00am to 6:00pm Monday to Friday, and 8:00am to 1:00pm on Saturdays. No construction activities are to be undertaken on Sundays or Public Holidays.					
7.3 Quarry Operational Controls Measures							
7.3.1 Adverse Weather Conditions							
115.	7.3.1	Weekly and daily weather data is reviewed to plan operations	Meteorological station provided on site which provides continuous data. Included in toolbox talk records.	C			

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>7.3.2 Quarry Excavation</b>					
116.	7.3.2	Since residences are generally located in an arc to the north and east of the quarry, the preferred method of extraction within each stage is to commence in the south and progress in a northerly direction behind a working face and benches. However, all benches need to be limited in height to maintain safe operations at all times.	Work in the quarry was being conducted in Stage 3/ Cell 5. Work was noted to be well below the natural ground level.	C	
<b>7.3.3 Equipment Maintenance / Contractors Equipment</b>					
117.	7.3.3	All equipment will be well maintained to ensure noise levels do not exceed the specified limits over time.	Routine maintenance program implemented or plant and equipment using SAP.	C	
118.	7.3.3	In this regard, Quarry personnel will undertake comparative sound level measurements in accordance with Section 8.2 if they perceive an increase in noise, or alternatively repair equipment.	No noise monitoring of plant and equipment has been conducted.	N	01
119.	7.3.3	All equipment used by subcontractors or obtained on short term hire for more than 5 days will be supplied with a test certificate to demonstrate it also complies with the specified limit.	No noise monitoring of plant and equipment has been conducted	N	01
120.	7.3.3	Any equipment on site during an attended quarterly monitoring period that hasn't been tested as part of the annual test, will be tested to confirm it complies with specified limits.	No noise monitoring of plant and equipment has been conducted	N	01
<b>7.3.4 Truck Engine Brakes</b>					
121.	7.3.4.1.	Signs at the entrance to the Quarry and also at the top of the decline will remind drivers to avoid the use of engine brakes except in an emergency. In this regard, a reminder to select a low gear prior to descent is preferred.	Sign provided at entry to site.	C	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>7.3.5 Reversing Alarms</b>					
122.	7.3.5	Any plant which operates on site is required to have a modern Squawker alarm rather than a tonal beep alarm	Reported that squawker alarms were provided on all plant. All plant reviewed during the site inspection had squawker alarms fitted.	C	
123.	7.3.5	Subcontractors with plant likely to be used on site more than 5 days per year will also need to have a squawker style alarm.	No subcontractor plant on site	NT	
124.	7.3.5	Supply and delivery trucks are only required to have squawk style alarms if used on site prior to 7:00am or after 6:00pm		Note	
<b>7.3.6 Equipment Maintenance</b>					
125.	7.3.6	Unless equipment is immobile, all maintenance work will typically be conducted in the workshop area.	Workshop area provided.	Note	
<b>7.4 Transportation Operations Control Measures</b>					
126.	7.4	All drivers who visit the site on a regular basis will be required to undertake a specific site induction dealing with truck noise on the nearby roads requiring them to drive quietly on approaching and leaving the site, including the need to use engine brakes when slowing.	Inductions did not include noise management measures.	N	07
127.	7.4	Signs will be placed at the exit to the site to remind all drivers to leave in a quiet manner	Not displayed	N	01
128.	7.4	Any drivers who visit the site in vehicles considered by site personnel to be excessively noisy or who drive in an unacceptable manner will be refused future entry.		NT	



<b>AUDIT CHECKLIST</b>			
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>	

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>8. Air Quality Monitoring Program</b>					
<b>8.1 Introduction</b>					
129.	8.1.1.	Regular noise monitoring at surrounding residences is required under DA 24-4-2004 (3 monthly). In addition, sound level measurements on site are also necessary to confirm the equipment is operating at noise levels at or below the noise levels used for assessment	Noise monitoring conducted on a quarterly basis by consultant. Attended Compliance Noise Monitoring 29 March 2018 reviewed.	C	
130.	8.1.2.	All measurements required under the license will be conducted using Class 1 Sound level meters, with a current NATA certificate, which should be field calibrated before and after use.	Noise reports show measurements conducted using a Bruel and Kjaer Type 1 meter. <b>Noise report does not include calibration records for equipment used.</b>	A	09
<b>8.2 On-Site Testing Of Equipment</b>					
131.	8.2.1.	This should be undertaken annually for all plant by a suitably qualified practitioner, in conjunction with one of the quarterly visits, and at the first quarterly visits after any new equipment has been introduced to site.	No on-site noise testing of equipment has been undertaken. Noise monitoring did not identify any noise impact at residences from site operations.	N	01
<b>8.3 Off-Site Locations</b>					
132.	8.3.	Attended monitoring by a suitable qualified practitioner will be undertaken quarterly in 15minute periods at a selection of the residential locations surrounding the Quarry (Figure 4).	Noise monitoring conducted by Wilkinson Murray. Attended Compliance Noise Monitoring 29 March 2018 sighted. Monitoring conducted in 15 minute intervals.	C	
133.	8.3.2.	The selection will include CN-1, CN-2, CN-6 and CN-9.	Noise monitoring was conducted at CN-1. CN-2, CN-3, CN-6. <b>Noise monitoring was not conducted at CN-9.</b>	A	08

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
134.	8.3.3.	<p>Additional locations may be selected from those listed below based on wind direction on the day of the measurements (i.e. all locations in the downwind direction must be included in compliance assessment), areas where noise-generating activities are occurring within the Quarry and measurement outcomes (i.e. all locations in close proximity of exceedences will be included in compliance assessment).</p> <ul style="list-style-type: none"> <li>• CN-3 Receiver 5: Kashouli Residence (30m south of the dwelling in the direction of the Site); and</li> <li>• CN-4 Receiver 6: Townsend Residence (at the garden fence to the south of the dwelling).</li> <li>• CN-7 Receiver 9: (at the most exposed point within 30m from the dwelling in the direction of the quarry)</li> <li>• CN-8 Receiver 20: (at the most exposed point within 30m from the dwelling in the direction of the quarry)</li> </ul>	Noise monitoring was conducted at CN-2.	C	
<b>8.4 Meteorological Monitoring</b>					
135.	8.4	Hanson will ensure that the meteorological station continues to operate in accordance with the guidelines outlined in Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA, 2016).	Meteorological station in operation on site at the time of audit.	C	
136.	8.4	The parameters to be measured are summarised in Table 6.	<p>Variables measured:</p> <ul style="list-style-type: none"> <li>• Air temperature • Humidity • Rainfall • Atmospheric pressure • Evaporation • Solar radiation • Wind speed • Wind direction</li> </ul>	C	
137.	8.4	During attended monitoring a small anemometer is used to confirm wind speed is suitable for noise measurements.	<p>Commentary on weather conditions and data from the site's weather station included in the noise monitoring report. <b>Noise reports do not show the use of a small anemometer during attended monitoring.</b></p>	A	09

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>9. Noise Management System</b>					
<b>9.2 Proactive Management</b>					
<b>9.2.1 Meteorological Forecasting</b>					
138.	9.2.1	In the event of adverse weather conditions likely to prevail for extended periods of times, areas of the Quarry will be identified where works can be undertaken to minimise noise propagation towards residences. This will generally involve working at lower elevations.	Reported that site operations were modified to adjust for weather conditions.	C	
<b>9.2.2 Proactive Mitigation Measures</b>					
139.	9.2.2	<p>Preparatory measures that can be put in place for adverse weather include:</p> <ul style="list-style-type: none"> <li>• Long-term (annual) scheduling of activities to limit noise generating activities during the seasonal or daily periods when noise enhancing conditions are most likely to occur.</li> <li>• Short-term modification of noise generating activities in response to forecasting of noise-enhancing conditions in the short-term. Modifications could include the following. <ul style="list-style-type: none"> <li>– Relocation of activities, e.g. extraction, to locations further from sensitive receivers or afforded better noise attenuation (by natural or constructed screening).</li> <li>– Modification (reduced intensity) of activities, e.g. reduction in the number of operating noise sources.</li> <li>– Modification to period over which activities are to occur, e.g. avoidance of early mornings and late evenings.</li> <li>– Postponement of activities until forecast provides for a cessation of noise enhancing conditions.</li> </ul> </li> </ul>	Reported that site operations were modified to adjust for weather conditions	C	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>9.3 Reactive Management</b>					
<b>9.3.1 Triggers</b>					
140.	9.3.1	<p>Two triggers for reactive management will be applied.</p> <ul style="list-style-type: none"> <li>a) Noise Complaint. Any complaint received, either directly or via Council, EPA or other regulatory agency, will trigger the implementation of the response and corrective action measures described in Section 10.</li> <li>b) Exceedance of noise criteria established through noise monitoring. Any record of noise exceeding the criteria in Section 5 will trigger the response and corrective action measures described in Section 9.4.2.</li> </ul>	Noise complaints had been received in 2016. Records showed follow up with complainant.	C	
<b>9.4 Response and Corrective Actions</b>					
<b>9.4.1 Noise Monitoring</b>					
141.	9.4.1	<p>In the event that noise monitoring identifies an exceedance of the noise criteria identified in Section 5, the exceedance will be investigated to determine the likely cause(s). An investigation will then follow to determine:</p> <ul style="list-style-type: none"> <li>• what immediate action(s) need to be taken to fix the problem in the short term, if applicable;</li> <li>• the root causes of the problem (e.g. management system, equipment design / performance, human factors/behaviour, work environment or training);</li> <li>• corrective actions required to eliminate the root cause(s);</li> <li>• action(s) taken to verify effectiveness of corrective action(s) (i.e. what measures and checks are taken to ensure the corrective actions that are in place are effective to prevent any further exceedance); and</li> <li>• on completion of the investigation, an electronic copy will be forwarded to Development Manager for review/approval of corrective and preventative actions.</li> </ul>	No noise exceedances had been reported	NT	

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AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>10. Complaints Handling and Response</b>					
142.	10.1.	Noise-related complaints may be received via one of the following methods. • Directly via an email, telephone call or text message. • Indirectly via the relevant government agencies.	Noise complaints had been received in 2016 by text message from local resident.	Note	
143.	10.2.	All complaints are referred to the Quarry Manager (or his nominee), thoroughly investigated and documented in the Quarry Complaints Register with the following information recorded. • Date of the complaint • Time of the complaint • Name of complainant (if available). • How the complaint was received. • Detailed description of the complaint. • Person who received the complaint	Noise complaints received in 2016. Included in complaints register. e.g. 22/04/16 – Australian Walkabout Wildlife Park. January to March 2016 – 3 complaints (21/01/16, 23/01/16, 13/02/16). All via test. <b>Name of complainant not provided.</b> <b>Complaints received on 23/01/16 and 13/02/16 were not responded to until approximately 4 hours after the complaint was received (when the site had closed).</b> <b>Details of who received the complaint were not recorded.</b> 24/11/17 – Noise complaint from same receiver. Attended site to assess complaint. Quarry noise not audible.	<b>A</b>	<b>10</b>
144.	10.3.	Once the Quarry Manager is satisfied that the complaint is substantiated, an investigation of the location, sources and causes of the complaint will be undertaken	Comment included in register showing response to complaint. Response included attending site to assess noise levels.	C	
145.	10.4.	Following investigation of the issue, the Quarry Manager will provide feedback to the complainant that details the investigations undertaken, the results of the investigation and measures implemented to ensure that operations remain compliant.	<b>Records showed that the actions undertaken to assess the complaint, but not the person who conducted the investigation.</b>	<b>A</b>	<b>10</b>

<b>AUDIT CHECKLIST</b>			
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>	

<b>AQUAS Audit Ref No</b>	<b>Cond. No.</b>	<b>Condition</b>	<b>Finding and Recommendations</b>	<b>Compliance rating</b>	<b>Assessment Issue #</b>
146.	10.5.	A description of any follow-up investigations and the response provided to the complainant will also be recorded in the Complaints Register upon satisfactory closure of the issue.	No follow-up investigations were required.	C	
147.	10.6.	All complaints received are summarised in the Annual Review, which is made publicly available via the Hanson website. Complaints are also summarised in the Annual Return document to the EPA.	Included in Section 8.2 of the Annual Review.	C	
<b>11. Incident Management</b>					
<b>11.1 Incident Management and Notification</b>					
148.	11.1.1.	On identification of a notifiable incident, non-compliance incident, or where the action is in response to a complaint related to nuisance emissions an investigation into the source of the incident or complaint causing emissions will be commenced in accordance with the Quarry's Pollution Incident Response Management Plan.	No notifiable incidents or non-compliance incident had occurred. Records of complaints shows complaints had been responded to and addressed.	C	
149.	11.1.2.	DPE and the EPA will be notified as soon as practically possible following any notifiable incident or non-compliance incident.		NT	
150.	11.1.3.	In accordance with Condition 4(1) of DA 24-4-2004, Hanson will notify affected landowners in writing of any exceedance of assessment criteria (non-compliance incident).		NT	
151.	11.1.5.	On identification of the source of emissions resulting in or contributing to the incident, the Quarry Manager, will implement one or more of the corrective measures identified in the Noise Management System (see Section 9).		NT	
152.	11.1.6.	Following implementation and review of the corrective measures, the investigation process and results will be documented		NT	
153.	11.1.7.	If the investigation is the result of a complaint, feedback will be provided to the complainant in accordance with the process described in Section 10.	Records showed that for all complaints the Quarry had attempted to contact the complainant to provide feedback.	C	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>11.3 Incident Reporting</b>					
154.	11.3.1.	In accordance with Condition 8 of Schedule 5 of DA 94-4-2004, within 7 days of any incident, Hanson will prepare a report describing the incident and summarising the results if investigations or corrective actions implemented in accordance with the Quarry's Pollution Incident Response Management Plan or the Noise Management System (see Section 9).	No notifiable incidents or non-compliance incident had occurred.	NT	
155.	11.3.2.	A summary of all incidents, including dates of occurrence, corrective measures taken and their success will be compiled and reported in the Annual Review to the DPE and Annual Return to the EPA.	Annual review – Section 10.	C	
<b>12. Publication of Monitoring Information and Reporting</b>					
156.	12.1.	Hanson will include all noise monitoring results within the appendices to the Annual Review. That document, once approved by the relevant government agencies, will be published on the Company's website.	Provided in Appendix 2 of the Annual Review.	C	
157.	12.2.	In accordance with the requirements of Section 66(6) of the Protection of the Environment Operations Act 1997, the Requirements for Publishing Pollution Monitoring Data" (NSW EPA, 2012), and the Wed-based Reporting Guideline (DPE, 2015), Hanson will publish a meaningful summary of all pollution monitoring data on the Hanson website within 14 days of the monitoring results being received.	Noise monitoring results up to March 2018 were available on the company website.	C	
158.	12.3.	In addition, Hanson will provide a copy of obtained data (the value of each individual monitoring sample) at no cost to any member of the public, when requested.		Note	
159.	12.4.	The data will be published in a format that summarises raw data, is comprehensible by the general public and also includes all accompanying necessary information.	Report from noise consultant provided that includes all necessary data in an easily understood format.	C	
<b>13. Personnel Management</b>					
<b>13.1 Roles and Responsibility</b>					
160.	13.1	Table 7 outlines the roles and responsibilities of personnel with reference to management of noise.		Note	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Audit Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>13.2 Competence Training and Awareness</b>					
161.	13.2	All personnel and contractors working at the Quarry undergo an induction. This induction includes information on the management of noise while working on site.	Quarry induction includes section on environmental management and controls, however it is not clear from the induction as to what is specifically included in the induction.	<b>N</b>	<b>07</b>
162.	13.2	After completing the induction, workers will sign a statement of attendance and records of this are kept in the administration office.	Induction records were available.	C	
163.	13.2	Regular toolbox meetings are held to discuss whole-of-site production, management, safety and environmental issues. Matters relating to noise are raised during these meetings, when necessary.	While it was reported that toolbox meetings had been conducted which included environmental requirements, records sighted did not show evidence of inclusion of environmental issues in inductions.	<b>A</b>	<b>06</b>
<b>14. Plan Review and Continual Improvement Protocol</b>					
164.	14.1.	The Plan will be reviewed annually from the date of approval or (in accordance with Condition 5(4) of DA 94-4-2004) within three months of submission of an Annual Review, an incident report resulting from a notifiable incident, each independent environmental audit and any modification to DA 94-4-2004.	Noise Management Plan reviewed September 2017. Annual review for 2018 submitted 1 May 2018.	C	
165.	14.2.	This will ensure the adequacy of the Plan and allow for opportunities of adaptive management and continual improvement. This will include a review of monitored noise levels and updating of trigger levels, as necessary, as the Quarry development progresses. Each review will also evaluate the effectiveness of the overall noise monitoring program and whether it should be modified or scaled back.		Note	



<b>AUDIT CHECKLIST</b>		
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## 12 Checklist - Environmental Management Strategy.

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Environmental Management Program</b>					
166.	4.1	The Company will regularly review, and if necessary update, the environmental management program in consultation with the relevant government authorities and local community and report any changes within the relevant Annual Environmental Management Report (AEMR).	Construction Environmental Management Plan sub plans have been reviewed. Crusher variation and heritage requirements require sub plans to be updated. Updates haven't been approved because of the variation. So, strategy has not been reviewed, pending heritage and crusher variation.	C	
<b>Annual Reporting</b>					
167.	4.2	The Company proposes to submit each AEMR for the period ending 6 December each year by no later than 31 January in the following year. It is envisaged that the AEMR would be the subject of a review by the Community Consultative Committee and relevant Government Agencies during the month of March following the submission of each AEMR	AEMR provided to DP&E. AEMR uploaded to the Hanson website.	C	
168.	4.2	An Annual Return will also be submitted to the DEC (EPA) each year reporting on compliance with conditions and criteria contained within EPL 11295. The anniversary date for EPL 11295 is 24 July	Annual Returns submitted. Refer to EPL checklist.	C	

<b>AUDIT CHECKLIST</b>			
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AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Environmental Audit</b>					
169.	5.1	Condition 5(5) requires an independent external audit of the operation within 3 years from the issue of development consent, hence for the period ending 6 December 2008 and every five years thereafter. The Company will nominate the name of the proposed auditor for the initial audit by 6 September 2008 to enable sufficient preparation time for the audit. A similar procedure will be followed for subsequent environmental audits unless the same auditor is to be commissioned, and is already approved by the Director-General.	Initial audit by 6 September 2008. Current audit due 6 September 2018. Noted that the modification to consent granted June 2017. Environmental Audit requirement updated to require: Within a year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission, commence and pay the full cost of an Independent Environmental Audit of the development. <b>Environmental Management Strategy should be updated to reflect current requirement.</b>	A	14
170.	5.1	The Company will submit the results of the audit to the Director-General within 3 months of the audit being conducted together with a detailed response to recommendations contained within the report.	Not yet triggered.	NT	
<b>Groundwater Audit</b>					
171.		Condition 3(17) requires a suitably qualified and independent hydrogeologist (approved by the Director-General to undertake an audit of the groundwater impacts of the quarry operation. It is noted that this condition specifies that the groundwater audit is undertaken annually unless directed otherwise by the Director-General.	Peter Dundon appointed.	C	

<b>AUDIT CHECKLIST</b>			
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>	

<b>AQUAS Ref No</b>	<b>Cond. No.</b>	<b>Condition</b>	<b>Finding and Recommendations</b>	<b>Compliance rating</b>	<b>Assessment Issue #</b>
<b>Communication With the Local Community and Government Agencies</b>					
172.	6.1	<p>Community and government consultation during the operation of the Calga Sand Quarry will primarily be undertaken through the following three mechanisms.</p> <ul style="list-style-type: none"> <li>• Direct, one-to-one contact between a Company representative and surrounding land owners and relevant Government Agencies.</li> <li>• The establishment of, and involvement with, a Community Consultative Committee.</li> <li>• AEMR preparation, submission and annual AEMR meetings with Government Agencies.</li> </ul>	<p>Liaison with surrounding landowners has included with National Parks and the horse riding school.</p> <p>The CCC has been established.</p> <p>The AEMR is provided as required.</p>	C	
173.	6.2	<p>It is recognised that the community surrounding the Calga Sand Quarry is comparatively small, and as such, the Company intends to inform any relevant residents(s) about any activity that may be of interest e.g. commencing activities in a new stage, the results of specific monitoring etc. In any event, a Company representative would visit each land owner at least every 12 months to provide them with a summary copy of the AEMR.</p>	<p>A Company representative has not visited each land owner to provide them with a summary copy of the AEMR.</p> <p>Noted that the Draft EMR presented to DP&amp;E for review does not require a Company representative to visit each land owner to provide them with a summary copy of the AEMR. The AEMR is made available through the Company's website.</p>	C	
174.	6.2	<p>The Company would maintain a communications directory of all relevant officers within each involved Government Agency in order that they can also be contacted in the event an activity/event on site warrants direct notification.</p>	<p>Communications directory in the form of the emergency plan.</p> <p>Emergency contact list in Emergency Management Plan and on crib room wall.</p>	C	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Community Consultative Committee</b>					
175.	6.3	<p>The CCC will:</p> <p>(a) be comprised of at least:</p> <ul style="list-style-type: none"> <li>• 2 representatives from the Company, including the person responsible for environmental management at the quarry ;</li> <li>• representatives from Gosford City Council (if available); and</li> <li>• 2 representatives from the local community, whose appointment has been approved by the Director-General in consultation with Council;</li> </ul> <p>(b) be chaired by an independent chairperson endorsed by the Director-General;</p> <p>(c) meet at least twice each year; and</p> <p>(d) review and provide advice on the environmental performance of the development, including any environmental management plans, monitoring results, audit reports, and complaints.</p>	<p>The CCC has six local residents, two Hanson personnel, and no Council staff (GCC declined).</p> <p>The CCC has an independent chair.</p> <p>Viewed minutes of CCC meetings. Six month meetings confirmed.</p>	C	

<b>AUDIT CHECKLIST</b>			
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
176.	6.3	As required by Condition 5(9), the Company will, at its own expense: (a) ensure that 2 of its representatives attend the Committee's meetings; (b) provide the Committee with regular information on the environmental performance and management of the development; (c) provide meeting facilities for the Committee; (d) arrange site inspections for the Committee, if necessary; (e) take minutes of the Committee's meetings; (f) make these minutes available to the public; (g) respond to any advice or recommendations the Committee may have in relation to the environmental management or performance of the development; and (h) forward a copy of the minutes of each Committee meeting, and any responses to the Committee's recommendations to Council within a month of the Committee meeting.	Reviewed CCC meeting minutes. Measures a, b, c, d, e, f, g reviewed in minutes.  Minutes have not been provided to Council. <b>Minutes of meetings for 2017 and 2018 were incorrectly uploaded onto the complaints register section of the website.</b>  Noted that the Draft EMR presented to DP&E for review does not require the meeting minutes to be provided to Council. Meeting minutes are required to be made available to the public, and a copy to be forwarded to the Secretary within a month of the committee meeting.	O	01
177.	6.3	Outcomes of CCC meetings, and any related actions, will also be documented in relevant AEMRs.	Section reviewed in AEMR.	C	
<b>Annual Environmental Management Report</b>					
178.	6.4	The preparation and circulation of the Annual Environmental Management Report (AEMR) to all relevant Government Agencies will provide each agency with an update of overall performance of the quarry and the plans for the ensuing year. An annual meeting will be held with representatives of involved agencies during the month of February to review the contents of the document. This annual contact with Government Agencies representatives through this process would supplement any direct contact(s) discussed in Section 6.2.	<b>An annual meeting with representatives of involved agencies to review the contents of the AEMR has not been held.</b>  It is noted that this require is not included in the Draft EMS which has been presented to DP&E for review. The AEMR is made available though the Company website.	C	

<b>AUDIT CHECKLIST</b>			
<b>Project:</b> Calga Sand Quarry	<b>Company:</b> Hanson Construction Materials	<b>Date:</b> 3 July 2018	

AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Complaint Management</b>					
179.	7	The Company advertises a pager number (9963 2242) for the recording of complaints regarding the operation of the Calga Sand Quarry. This complaints line operates 24 hours per day, 7 days per week.	Hanson has a 24/7 telephone line and web site for complaints. There is no-longer a pager number in use. Draft EMS identifies a mobile and landline number for the reporting of complaints	C	
180.	7	All complaints received will be managed using the Company's recording forms (see Appendix 2). Complaints are directed to the Quarry Manager as soon as practicable after the receipt of the complaint by the paging service.	Complaints register viewed. Complaints reports are provided on web site.	C	
181.	7	All complaints received will be reported in the respective AEMR's and the complaints register will also be made available to auditors during the required external audits of the Calga Sand Quarry.	Complaints reports are incorporated in the AEMR.	C	
<b>Dispute Management</b>					
182.	8	In the event that a dispute arises between the Company and a public authority, other than the DoP, or any surrounding land owner relating to the operation of the Calga Sand Quarry or requirements applicable under Development Consent (DA 94-4-2004), the Company will refer the matter to the Department of Planning who would initiate the independent dispute resolution process referred to in Appendix 3 of the development consent. Ultimately, the facilitator appointed by the Department of Planning would provide a decision to the Department which would be binding on all parties.	Not yet triggered.	NT	

<b>AUDIT CHECKLIST</b>		
<b>Project: Calga Sand Quarry</b>	<b>Company: Hanson Construction Materials</b>	<b>Date: 3 July 2018</b>



AQUAS Ref No	Cond. No.	Condition	Finding and Recommendations	Compliance rating	Assessment Issue #
<b>Management Of Non-Compliances</b>					
183.	9	In the case of monitored pollution or discharge criteria, any non-compliance will be drawn to the attention of the Quarry Manager who will review the recorded non-compliance and request confirmation through re-sampling or re-calculation as appropriate. Should the non-compliance be confirmed, a mitigation strategy will be developed in consultation with an appropriate independent environmental professional, if required. DoP, DNR, GCC and/or DEC will be informed of the non-compliance as required, and each non-compliance will be documented in the relevant AEMR and/or Annual Return, including any corrective actions undertaken, and the effectiveness of the corrective action	Not triggered.  No non-compliances.	NT	
184.	9	In the event that the submission of documentation is to occur beyond the due date, all relevant parties will be informed together with the new date when the documentation will be supplied. It is the Company's objective not to submit documentation beyond the due date, however, such a procedure is considered appropriate in the event that such a circumstance arises.	The AEMR was delayed on the last submission. Hanson personnel requested an extension from DP&E and the request was granted.	C	
185.	9	In accordance with the conditions of EPL 11295, in the event of a non-compliance incident causing or threatening material harm to the environment, i.e. a pollution incident, the DEC (EPA) will be notified immediately. Written details of the notification will be provided to DEC (EPA) within 7 days from the date on which the incident occurred.	There have been no reportable incidents to date.	C	
<b>Management Of Cumulative Impacts</b>					
186.		Cumulative impacts arising from the operation of the Calga Sand Quarry are only likely to arise as a result of the accumulated traffic levels on Peats Ridge Road involving heavy vehicles from other quarries in the Peats Ridge and Kulnura area that also travel along Peats Ridge Road.	Note.	Note	

## **Appendix C. – Groundwater Management Audit Report**



**Dundon Consulting Pty Limited**

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25 October 2018

Hanson Construction Materials Pty Ltd  
Level 10, 35 Clarence Street  
SYDNEY, NSW 2000

Attention: Ms Belinda Pignone

Dear Belinda,

**Calga Quarry – DA 94-4-2004 – Independent Environmental Audit**

The Modified Development Consent for the Calga project requires that every 3 years, an Independent Environmental Audit (EIA) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary. By letter dated 23<sup>rd</sup> May 2018, the Secretary endorsed the audit team comprising:

- James Hart (AQUAS) – Lead Auditor
- Martin Hicks (AQUAS), and
- Peter Dundon (Dundon Consulting Pty Ltd).

This letter addresses the aspects of the consent and other relevant licences and regulations that relate to groundwater, as part of the overall EIA.

**MODIFIED CONSENT – MOD 3 June 2017**

The consent conditions relating to groundwater are included in Schedule 3, Conditions 10 to 19. Each of these conditions in turn is considered to determine compliance or non-compliance.

**Groundwater Impact Assessment Criteria**

10. The Applicant must provide compensatory water supply, in accordance with the Groundwater Contingency Strategy and to the satisfaction of the Secretary, where the development results in a reduction of pumping yield in privately-owned groundwater bores of 10 percent or greater.

***Compliant*** – *there has been no case where it has been confirmed that there has been any reduction of pumping yield in any privately-owned groundwater bore attributable to the quarry.*

**Monitoring and Management**

11. Prior to carrying out any development, the Applicant must prepare a Water Management Plan for the development, in consultation with the DPI-Water, and to the satisfaction of the Secretary. This plan must be prepared by a suitably qualified hydrogeologist/hydrologist whose appointment/s have been approved by the Secretary, and must include:
- a) a Water Balance;
  - b) an Erosion and Sediment Control Plan;
  - c) a Surface Water Monitoring Program; and
  - d) a Groundwater Monitoring Program.

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

**Compliant** – the Site Water Management Plan (SWMP) was approved by the Department in February 2006. A revised SWMP dated May 2018 has been submitted to the Department in draft, but has not yet received formal approval.

**?Non-compliant** – it was noted in the 2009-2014 audit that the SWMP did not include impact assessment criteria for GDEs, and it was recommended that the SWMP be updated to identify any GDEs that require monitoring and include impact assessment criteria for GDEs, as well as consider impacts to groundwater dependent surface water bodies. The draft updated SWMP includes details of identified GDEs but does not include impact assessment criteria for the GDEs.

12. The Water Balance must:

- a) include details of all water extracted (including water make), dewatered, transferred, used and/or discharged by the quarry; and
- b) describe measures to minimise water use by the development.

**Compliant** – detailed in Section 3 of the SWMP.

13. The Erosion and Sediment Control Plan must:

- a) be consistent with the requirements of the Department of Housing's Managing Urban Stormwater: Soils and Construction manual;
- b) identify activities that could cause soil erosion and generate sediment;
- c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;
- d) describe the location, function, and capacity of erosion and sediment control structures; and
- e) describe what measures would be implemented to maintain the structures over time.

**Compliant** – detailed in Section 4 of the SWMP.

14. The Surface Water Monitoring Program must include:

- a) detailed baseline data on surface water flows and quality in waterbodies that could potentially be impacted by the quarry;
- b) surface water impact assessment criteria;
- c) a program to monitor surface water flows and quality;
- d) a protocol for the investigation, notification and mitigation of identified exceedances of the surface water impact assessment criteria; and
- e) a program to monitor the effectiveness of the Erosion and Sediment Control Plan.

**Compliant** – detailed in Section 5 of the SWMP.

15. The Groundwater Monitoring Program must include:

- a) a program to collect detailed baseline data, based on sound statistical analysis, to benchmark the pre-quarrying natural variation in groundwater levels, yield and quality in groundwater bores within the predicted drawdown impact zone identified in the Amendment Report;
- b) groundwater impact assessment criteria for monitoring bores and privately-owned bores;
- c) a program to monitor impacts on the groundwater supply of potentially affected landowners, groundwater dependent ecosystems, and on vegetation; and
- d) a protocol for the investigation, notification and mitigation of identified exceedances of the groundwater impact assessment criteria.

*Note: The Groundwater Monitoring Program must be prepared in accordance with the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004, available from the Department), unless otherwise authorised by the Secretary.*

**Compliant** – detailed in Section 6 of the SWMP.

### **Groundwater Contingency Strategy**

16. Within 6 months of the date of this consent, the Applicant must prepare a Groundwater Contingency Strategy for the development, in consultation with the DPI-Water, and landowners within the predicted drawdown impact zone identified in the Amendment Report, and to the satisfaction of the Secretary. The strategy must include:

- a) the procedures that would be followed in the event of any exceedance of the groundwater impact assessment criteria, or other identified impact on groundwater; and
- b) measures to mitigate, remediate and/or compensate any identified impacts to provide an alternative long-term supply of water to the affected landowner that is equivalent to the loss attributed to the development.

*Note: The strategy must be prepared in accordance with the procedures detailed in schedule 4, and the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004, available from the Department), unless otherwise authorised by the Secretary.*

**?Non-compliant** – The elements of a Groundwater Contingency Strategy (GCS) were imbedded within Section 6.4 of the SWMP, although not clearly identified as such. This was identified in the two previous 3-yearly IEAs (2009 and 2014) and recommendations were made to amend the SWMP to specifically address the requirements of this condition. A GCS was prepared by Martens and Associates Pty Ltd (dated August 2016) but has not yet been approved by the Secretary. The revised draft SWMP has been amended to include the main features of the GCS, but not clearly identified as such.

*I consider that the Martens' GCS includes a number of errors, but in particular one critical error. Martens has misrepresented the triggers for provision of a compensatory water supply. The GCS (Martens, 2016) states at page 11, Section 3.2 Compensatory Water Supply ... "Schedule 3 Condition 10 requires the Applicant (i.e. the operator) to provide compensatory water supply in accordance with this GCS if exceedance of impact assessment criteria (as detailed in Section 2.2) occurs". The Martens' GCS describes in Section 2.2 the impact assessment criteria as being an exceedance of water level of water quality values.*

*However, Schedule 3 Condition 10 actually says ... "The Applicant must provide compensatory water supply, in accordance with the Groundwater Contingency Strategy and to the satisfaction of the Secretary, where the development results in a reduction of pumping yield in privately-owned groundwater bores"*

**of 10 percent or greater.** The exceedance of an impact assessment criterion triggers an investigation to determine the cause of the exceedance. It is only necessary to provide a compensatory water supply if a private water bore suffers a loss of yield in excess of 10%, and that loss is attributable to the quarry operations.

There have been two identified exceedances of the groundwater impact assessment criteria, at monitoring bores CQ11 in late-2011 and CQ10 in mid-2013. The response actions detailed in Section 6.4 of the SWMP have been followed in relation these exceedances, and in both cases, the investigations confirmed that the drawdown exceedances attributed to the quarry has not adversely impacted the yield of any privately-owned groundwater bore. The response action included test pumping both private bores to confirm their current yield potential relative to their pre-quarrying potential. The responses in both cases have been **compliant**.

There have been no exceedances of the water quality criteria.

#### **Annual Independent Groundwater Audit**

17. Each year from the date of this consent, or as otherwise directed by the Secretary, the Applicant must undertake an independent audit of the groundwater impacts of the development to determine compliance with the groundwater impact assessment criteria, to the satisfaction of the Secretary. The audit must be conducted by a suitably qualified and independent hydrogeologist whose appointment has been approved by the Secretary.

**Compliant** – An independent groundwater audit has been undertaken each year since the DA date.

#### **Reporting**

18. Deleted

#### **Quarry Closure Groundwater Management Plan**

19. Prior to the commencement of quarrying in Stage 3/6 or 5 years prior to the cessation of quarrying (whichever is the sooner), the Applicant must commission a suitably qualified hydrogeologist, whose appointment has been approved by the Secretary, to assess the potential long term impacts of the final void on groundwater resources, and to develop a quarry closure and post-closure groundwater management plan. The plan must:
- a) be prepared in consultation with the DPI-Water, the CCC, and landowners within the predicted drawdown impact zone identified in the Amendment Report; and
  - b) include strategies, in accordance with the Groundwater Contingency Strategy, to ensure the long-term security of water supply to any landowner whose groundwater bores exceed, or are likely to exceed in the future, the groundwater impact assessment criteria,

to the satisfaction of the Secretary.

**Not compliant** – there was a non-compliance in April 2011, when quarrying commenced in Stage 3/6 prior to preparation of the closure and post-closure groundwater management plan. This non-compliance was acknowledged by the quarry operator in October 2011, and quarrying ceased immediately in Stage 3/6.

Quarrying in Stage 3/6 has not yet resumed, so there has been no further non-compliance with this Condition. Hanson has commissioned Dundon Consulting Pty Ltd to undertake the assessment and develop a closure and post-closure plan in accordance with this condition.

Consent Conditions 15 and 16 state that those conditions must be undertaken "... in accordance with the recommendations of the independent groundwater assessment reports (prepared by Mackie Environmental Research Pty Ltd, dated July 2005 and December 2004, available from the Department), unless otherwise authorised by the Secretary."

### **MER REPORT – Dated December 2004**

Compliance with the recommendations in the December 2004 MER report are summarised below.

#### **Initiate and maintain rainfall and evaporation monitoring**

**Compliant** – a weather station is installed at the quarry site. Apart from periods of missing data due to equipment maintenance or repairs, a continuous record of rainfall and evaporation has been maintained at the site since at least April 2006 when formal monthly monitoring reports commenced.

#### **Identify privately-owned groundwater bores within predicted drawdown zone and subject them to hydraulic testing**

**Not compliant** – all identified bores within 500m of the quarry were hydraulically tested in 2006-2008, except those for which landholder approval was denied. A further bore survey in 2015 identified 3 further bores within 500m of the quarry. Only one of these (CP13) has been tested. CP14 and CP15 not yet tested. The locations and land ownership status of CP14 and CP15 were notified to Hanson by letter dated 12 August 2016.

#### **Install additional monitoring bores near private bores and conduct pumping tests**

**Compliant** – network of bores installed in 2006 and tested in 2006-8.

#### **Maintain groundwater monitoring program in all monitoring bores, including water levels, basic water quality bi-monthly and ionic speciation 6-monthly**

**Compliant** – program has been maintained as prescribed in all monitoring bores, and also in all private bores within 500m of quarry where possible (ie in excess of requirements).

#### **Prior to commencement of each stage, commission a qualified person approved by the DG to conduct an independent groundwater audit**

**Compliant** – audit reports have been prepared by DG approved person each year from 2006 to present. DA specified annual audit reports (ie more frequent than at start of each quarry stage).

#### **If quarry operations adversely affect any private groundwater use or GDEs, implement amelioration measures**

**Compliant** – see comments re Condition 16 above.

#### **Five years prior to closure of quarry, evaluate long-term impacts and prepare a closure and post-closure plan**

**Compliant** – DA specified 5 years prior to closure or start of quarry stage 6. See comments re Condition 19 above.

### **MER REPORT – Dated July 2005**

#### **All existing bores within 500m of quarry will be yield tested**

**Non-compliant** – all bores within 500m known in 2006 were tested, where landowner gave approval. Three bores identified since then, only one of which has been yield tested.

**Multiple intermediate monitoring bores to be installed on Rozmanec property, completed to different depths**

**Non-compliant** – landowner approval initially not granted, so a single piezometer CQ10 was installed at the nearest accessible location on the quarry property. Landowner approval ultimately given in 2013, and drilling of a new piezometer on the Rozmanec property recommended during successive annual independent groundwater audits. However, new monitoring bore has not been installed. Hanson advise that negotiations are under way with landowners to use their existing bore CP8 as a monitoring bore.

**Install continuous water level recorders with readings 8-hourly**

**Compliant** – automatic water level dataloggers installed on all monitoring bores between quarry and each private bores, as well as other selected monitoring bores, and set to record water level at 6-hourly intervals.

**?Non-compliant** – dataloggers in three of the specified monitoring bores (CQ4, CQ11S and CQ13) have been not working since at least January 2016. This has been reported in 2015, 2016 and 2017 annual independent groundwater audit reports, but they have not been investigated and dataloggers replaced or repaired.

**Install at least 2 monitoring piezometers in locations and to depths determined by DG; multi-level bores preferred**

**Compliant** – shallow and deep bores installed at 5 locations in 2006. Program and report accepted by DG.

**Install continuous monitoring recorders on monitoring bores, with maximum 8-hour frequency**

**Compliant** – 13 monitoring bores equipped with dataloggers, set to record 6-hourly.

**Undertake test pumping (minimum 6 hour duration) of all test bores within 500m of quarry**

**Non-compliant** – all bores within 500m known in 2006 were tested, where landowner gave approval. Three bores identified since then, only one of which has been yield tested. CP14 and CP15 are untested.

**Install water level and flow metering equipment in private groundwater bores**

**?Non-compliant** – No approval was given by landholders to install water level or flow monitoring equipment.

**Daily rainfall gauging at quarry site**

**Compliant** – weather station installed in 2006 and rainfall measured daily.

**Conduct annual independent groundwater audits**

**Compliant** – annual audits carried out from 2006 to present.

**Restore any loss of pumping yield attributable to the quarry**

**Compliant** – no adverse impacts from quarry on bore yield have occurred.



## **SUMMARY of COMPLIANCE WITH CONSENT and REFERENCED MER REPORTS**

In accordance with the compliance definitions detailed in Table 2.6 of the draft AQUAS audit report, I consider that there have been a total of 6 non-compliances, viz.

- Condition 11 – The approved SWMP does not include impact assessment criteria for groundwater dependent ecosystems (GDEs). The amended SWMP which is awaiting approval includes identification of and monitoring program for GDEs, but does not include impact assessment criteria.
- Condition 16 – The approved SWMP does not specifically describe a Groundwater Contingency Strategy (GCS), however a stand-alone GCS has been written (Martens & Associates, 2016) but has not yet been approved by the department. However, this GCS does not correctly describe the basis for provision of a compensatory water supply in accordance with the Consent. The revised SWMP submitted to the department in draft for approval also does not specifically describe a GCS, although the elements of the GCS are included.
- Condition 19 – Quarrying activity commenced early in Stage 3/6 in April 2011, prior to completion of Closure and Post-Closure Management Plan. This noncompliance was notified to the Department, and quarrying activity immediately ceased to prevent ongoing non-compliance. Preparation of the Closure and Post-Closure Management Plan has commenced.
- MER report July 2005 – Hydraulic testing as specified by MER (2005) has not been carried out on two private bores CP14 and CP15 identified in the follow-up bore census of 2015. Further, the three private bores identified in the 2015 census have not been included in the monitoring network.
- MER report July 2005 – Continuous water level monitoring equipment installed in key monitoring bores CQ4, CQ11S and CQ13 as a requirement specified by MER (2005) has not been working since at least January 2016, but has not been investigated for repair or replacement. During this time, only bi-monthly manual water level monitoring has been undertaken on these bores.
- MER report July 2005 – No water level or flow metering equipment as specified by MER (2005) has been installed on any private bore within 500m of quarry. It may be that landholder approval was not given, but there is no record to confirm this.

## **ENVIRONMENTAL PERFORMANCE**

This audit has included consideration of the Annual Independent Groundwater Audit reports which confirm that the Calga Quarry project has achieved good overall performance in relation to groundwater impacts.

Two areas of exceedance of the groundwater level criteria have been identified and investigated. The investigation has confirmed that the exceedances are within the predicted levels of impact determined from the most recent groundwater modelling, and also that there has been no consequential adverse impact on the yield potential or quality of any privately-owned bore.

The two reported cases of a landowner advising the quarry operator of a loss of yield of their bore have been investigated by repeat test pumping, and it has been determined from that investigation that any loss of yield that may have occurred cannot be attributed to the quarrying activities.

Overall, the water level impacts on the groundwater continue to be less than the impacts predicted by the EIS modelling, and less than the impacts predicted by the most recent groundwater modelling undertaken as part of the Southern Extension investigations. There have been no adverse impacts on groundwater quality. The groundwater pumped abstractions and incidental groundwater inflows to the quarry are within the access licence entitlements.

## **GROUNDWATER LICENCES**

Groundwater bores owned by Hanson at Calga Quarry and their current licence status is detailed below:

Bore	Registered No	Licence No	Allowable Extraction / Status	Expiry
Water Supply Bore				
Plant bore	??	20WA100255	Share Component 6ML/y (20AL100254/WAL2541)	30 June 2027
Monitoring Bores (on Quarry property)				
CQ3	GW102245	??	Monitoring	
CQ4	GW104246	??	Monitoring	
CQ10	GW202214	20BL170313	Monitoring	
Monitoring Bores (southern extension property)				
MW7	GW201798	20BL165571	Monitoring	
MW8	GW201799		Monitoring	
MW9	GW201800		Monitoring	
MW10	GW201801		Monitoring	
MW13	GW201802		Monitoring	
MW16	GW201803		Monitoring	
MW17	Not known		Monitoring	
Monitoring Bores (on neighbouring private properties)				
CQ5	Not known	Not known	Monitoring	
CQ7	Not known	Not known	Monitoring	
CQ8	Not known	Not known	Monitoring	
CQ9	Not known	Not known	Monitoring	
CQ11S	GW202191	20BL170191	Monitoring	
CQ11D	GW202192		Monitoring	
CQ12	GW202193		Monitoring	
CQ13	GW202215	20BL179190	Monitoring	

There is one water supply bore owned by Hanson at the Calga Quarry. This is located adjacent to the sand wash plant. Hanson holds access licence 20WA100255 for this bore, with an extraction entitlement of 6 ML/y. The licence expires on 30 June 2027.

I would be happy to discuss any of the above if necessary.

Yours faithfully,



Peter Dundon  
Director